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The Role of Context in Environmental Policy

Transferring the European Union's Emission Limit Values for Waste Incineration to new EU Member States and to Colombia

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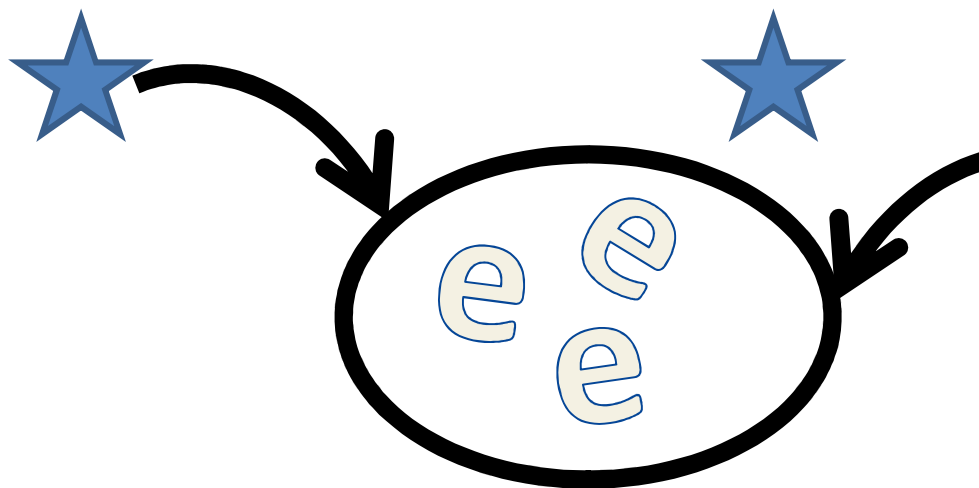
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The Role of Context in Environmental Policy:

Transferring the European Union's Emission Limit Values for Waste Incineration to new EU Member States and to Colombia



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2012



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List of abbreviations

BATNEEC	Best available technique not entailing excessive costs
Cd	Cadmium
CO	Carbon monoxide
CEE	Central Eastern European states
CoR	Committee of the Regions
haz WI	Council Directive 94/67/EC of 16 December 1994 on the incineration of hazardous waste
exi WI	Council Directive of 21 June 1989 on the reduction of air pollution from existing municipal waste incineration plants (89/429/EEC)
new WI	Council Directive of 8 June 1989 on the prevention of air pollution from new municipal waste incineration plants (89/369/EEC)
all WI	Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste
ESC	Economic and Social Committee
ELVs	Emission limit values
EAP	Environmental Action Programme
EIA	Environmental Impact Assessment
COM	European Commission
EEA	European Environment Agency
EP	European Parliament
EU	European Union
1st RA	First Researched Area of this PhD project
4th RA	Fourth Researched Area of this PhD project
Hm	Heavy metals
hr	hour
HCl	Hydrogen chloride
HFl	Hydrogen fluoride
kg	kilogram
Pb	Lead
MS	Member State
Hg	Mercury
Nox	Nitrogen oxides
PM	Particulate matter
2nd RA	Second Researched Area of this PhD project
SEA	Single European Act
SEA	Strategic Environmental Assessment
SO ₂	Sulphur dioxides
3rd RA	Third Researched Area of this PhD project
VOC	Volatile organic compounds
WI	Waste incineration

Abstract

The influence of context in environmental policy has been recognized in the sense that policies are not universally applicable *“a policy that is appropriate in one locale may lead to disastrous results in another”* **Invalid source specified.**; it also has been recognized that an effective policy is related to a high awareness of the context where the policy is applied **Invalid source specified.**

This recognition of the influence of context is important if policies made in one place are to be used in another place. The field of research, which is concerned with these issues, is called Policy Transfer.

When trying to do an effective policy transfer process, one of the critical aspects is to recognize the influence that the donor's and borrower's context has on the policy being transferred. Such influence of these contexts is said to be done by identifying the critical elements from the context which influence the formulation and implementation of the transferred policy **Invalid source specified.Invalid source specified.Invalid source specified..** However, it has been reported that not many have managed to identify these elements *“Both literature and experience suggest a major weakness in the prevailing perspectives on policy formulation and implementation –no one is able to identify the key elements of context that affect implementation strategy and impact. [...] Even those who agree that for policies to work “it all depends” cannot point to what it depends upon”* **Invalid source specified.**

The current project aims at covering this deficit and identifying some of those critical elements from context, which influence the formulation and implementation of the transferred policy, and by this, aims at finding the influence context has in policy.

By presenting how context influences the process of formulating and implementing policy, it is expected that authorities from the borrowing countries would become aware of this influence and would not expect that the process of copying a foreign piece of law will solve their problems. This awareness will help them not to waste time and resources implementing something for which they will not obtain the expected results, something which might just turn into an unenforceable and confusing piece of law, with the further consequences that this can bring.

The point of departure for this PhD project was the situation seen in 2002 in Colombia, where the emission limit value (ELV) presented in the Colombian Resolución that was regulating the process of incinerating waste in the country, were the same values as the ones contained in the EU Directive 2000/76/EC regulating the incineration of waste in the Member States. During an interview carried out with some of the authorities from the Colombian Ministry who participated in the development of the Resolución, it was confirmed that the ELVs were copied from the European norm: *“by copying the European standards we were trying to avoid people bringing into the country the plants that become obsolete in Europe and that are brought here because here the legislation is laxer”*¹ **Invalid source specified.**

This situation, of applying the ELVs from the EU into the Colombian scenario is what motivated the development of this PhD project. In particular, the research aims to answer the question of whether *it is appropriate to use the Emission Limit Values made in one context and apply them to a different context without modifying them?* The particular case investigated is how the context of the EU (the donor context) influenced the formulation of ELVs for waste incineration (the transferred policy), and how countries such as new EU Member States and Colombia (the borrower contexts) prepare for the implementation of the transferred policy

¹ My translation

This study takes concepts from literature to create a *context-influencing criteria* which will help identify how context exerts an influence (chapter 4). It also studies the policy being transferred (the ELVs) by making a historical compilation on how such ELVs had been set throughout the four EU Directives on waste incineration (chapter 5). It also presents the particularities of the EU context which influence the formulation of ELVs (chapter 6) and it looks into the strategies developed by the borrower countries when implementing the transferred policy, in particular, the strategies developed by the EU when implementing the waste incineration Directives into the Member States, as well as those strategies developed in the process of implementing the environmental *acquis* in the Central Eastern European states, and those strategies developed by the Colombian authorities for implementing the foreign ELVs (chapter 7). Each of these four chapters documents what it was referred to as the four Researched Areas of the PhD project

The final chapter closes this study by summarizing the main findings from each of the four Researched Areas and it returns to the main question to be answered with this PhD project. The chapter finalizes with some additional reflections on the literature used as a base for the development of this project; on the task of trying to study *context*; and presents some questions to be explored in further research.

Dansk resumé

Indflydelsen af kontekst i miljøpolitik er blevet erkendt i den forstand, at politikker ikke er generelt anvendelige, "*en politik, der passer til et sted, kan føre til katastrofale resultater andetsteds*" (Honadle, 1999, s. 2). Det har også været erkendt, at en effektiv politik er relateret til en høj bevidsthed om den kontekst, hvori politikken anvendes (Honadle, 1999).

Denne erkendelse af indflydelsen af kontekst er vigtigt, hvis politikker lavet et sted, skal anvendes et andet sted. Det forskningsområde, som beskæftiger sig med disse spørgsmål, kaldes *Policy Transfer*.

Når man forsøger at skabe en effektiv *policy transfer* proces, er en af de kritiske aspekter, at anerkende den indflydelse, donorens og modtagerens kontekst har på den politik, som overføres. En sådan påvirkning af konteksterne siges, at ske ved at identificere de kritiske elementer fra den kontekst, som påvirker udformningen og gennemførelsen af den overførte politik (Honadle, 1999) (Dolowitz, 2000) (Minogue & Cariño, 2006). Imidlertid er det blevet rapporteret, at ikke mange har formået at identificere disse elementer "*Både litteratur og erfaring tyder på en stor svaghed i de fremherskende perspektiver om politik-udformning og politik-gennemførelse – ingen er i stand til at identificere de centrale elementer i konteksten der påvirker implementeringsstrategi og virkninger. [...] Selv dem, som er enige om, at "det hele afhænger" for politikkerne til at fungere, kan ikke pege på, hvad det afhænger af*" (Honadle, 1999, s. 9).

Dette projekt har til formål at afdække dette problem og at identificere nogle af disse kritiske elementer fra konteksten, som påvirker udformningen og gennemførelsen af den overførte politik, og ved dette, stiler efter at finde den indflydelse kontekst har i politik.

Ved at præsentere, hvordan kontekst påvirker udformnings- og gennemførelses-processen af politikker, forventes det, at myndigheder fra modtagerlande bliver bekendt med denne indflydelse og ikke ville forvente, at kopiering af udenlandsk lovgivning vil løse deres problemer. Denne bevidsthed vil hjælpe dem med ikke at spille tid og ressourcer på at gennemføre noget, som de ikke vil opnå de forventede resultater for, hvilket kan blive til et ikke gennemførligt og forvirrende stykke lovgivning, med de yderligere konsekvenser, som dette kan medføre.

Udgangspunktet for dette ph.d.-projekt var situationen set i 2002 i Colombia, hvor emissionsgrænseværdien (ELV), som præsenteredes i den colombianske Resolución, som regulerede processen omkring affaldsforbrænding i landet, bestod af de samme værdier som dem indeholdt i EU-direktiv 2000/76/EF, som regulerer forbrænding af affald i medlemsstaterne. Under et interview foretaget med nogle af de myndigheder fra det colombianske ministerium, som har deltaget i udviklingen af den Resolución, blev det bekræftet, at ELVerne var blevet kopieret fra den europæiske norm: "*ved at kopiere de europæiske standarder, forsøgte vi at undgå, at folk importerer de forbrændingsanlæg, som er forældede i Europa, og som er bragt hertil, fordi lovgivningen her er slappere*" (Interview_at_Ministry, 2009)

Det forhold, at anvende ELVerne fra EU i det colombianske scenario, motiverede udviklingen af dette ph.d.-projekt. Forskningen sigter især efter at besvare spørgsmålet om, *hvorvidt det er hensigtsmæssigt at tage ELVerne defineret i en kontekst og anvende dem i en anden kontekst uden at modificere dem?* Specifikt er det blevet undersøgt, hvordan konteksten af EU (donor kontekst) påvirkede formuleringen af ELVer for affaldsforbrænding (den overførte politik), og hvordan lande, såsom nye EU-medlemsstater og Colombia (modtager kontekster) forbereder sig på gennemførelsen af den overførte politik.

Denne undersøgelse benytter sig af begreber fra litteraturen for at skabe *kontekst-påvirkende kriterier*, som vil hjælpe med at identificere, hvordan kontekst udøver en indflydelse (kapitel 4). Derudover undersøges den politik, som overføres (ELVerne), ved at lave en historisk analyse af hvordan sådanne ELVer var blevet fastsat i de fire EU-direktiver om affaldsforbrænding (kapitel 5). De særpræg af EUs kontekst, som påvirker udformningen af ELVer, præsenteres (kapitel 6), og det ses på de strategier, som udvikles i modtagerlande, når de gennemfører den overførte politik, herunder især de strategier udviklet af EU i forbindelse med gennemførelsen af affaldsforbrændings-direktiverne i medlemsstaterne, samt de strategier, som er udviklet i forbindelse med gennemførelsen af regelværket på miljøområdet i de central-og østeuropæiske stater, og de strategier til gennemførelsen af de udenlandske ELVer, som udvikledes af de colombianske myndigheder (kapitel 7). Hver af disse fire kapitler dokumenter hvad der blev defineret som de fire forskningsområder af dette ph.d.-projekt.

Det sidste kapitel afslutter denne undersøgelse ved at opsummere de vigtigste resultater fra hver af de fire forskningsområder, og kapitlet vender tilbage til det vigtigste spørgsmål, som skal besvares i dette ph.d.-projekt. Kapitlet afslutter med yderligere overvejelser om den anvendte litteratur, som udgangspunkt for udviklingen af dette projekt; om opgaven at forsøge at studere kontekst; og præsenterer nogle spørgsmål, som skal undersøges i fremtidig forskning.

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**Chapter 6: 3rd Researched area:
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Third part

Chapter 8: Final discussion

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Introduction

In 2002 the Colombian Resolución 0058/02 came into effect regulating the incineration of waste in the country. The emission limit values (ELVs¹) presented in there were the same as the ones contained in the European Union (EU) Directive 2000/76/EC regulating the incineration of waste in the Member States (see **Box 1**). During an interview carried out with some of the authorities from the Colombian Ministry who participated in the development of the Resolución, it was confirmed that the ELVs were copied from the European norm: “*by copying the European standards we were trying to avoid people bringing into the country the plants that become obsolete in Europe and that are brought here because here the legislation is laxer*”² (Interview_at_Ministry, 2009).

This situation, of applying the ELVs from the EU into the Colombian scenario is what motivated me to develop this PhD project. Basically, the question I wanted to answer was: *Is it appropriate to do this? To use the ELVs made in one scenario and apply them to a different one, without modifying them?*

Existing literature documents this issue of local authorities looking into foreign models (Dolowitz, 2000)(Dolowitz & Marsh, 1996)(Majone, 2006)(Rose, 1991). The way a local authority can learn from a foreign policy model is by means of a Policy Transfer process. In this process the country donor of the policy is referred as *host or donor*, and the country which tries to apply the policy is referred to as *emulator or borrower*. These authors also present the reasons why some countries would look into foreign policies as a model to follow, for example, when the borrower country will look for solutions to problems in places where the problem has been effectively solved.

However, failure in Policy Transfer has been recognised when no attention has been paid to the different conditions that exist between the donor and the borrower country (Robertson & Waltman, 1992)(Rose, 1991)(Dolowitz, 2000). These conditions can be for example the social, political, and ideological systems of each country, or the particular economic, legal and administrative culture of each one of the settings. In addition, it has been recognized that policies are not universally applicable “*a policy that is appropriate in one locale may lead to disastrous results in another*” (Honadle, 1999, p. 2).

With the current PhD project I aim to explore the influence that the donor’s and the borrower’s context has on the policy which is created and implemented. In particular, the research aims to answer the question of whether it is appropriate to use the ELV made in one context and apply them to a different context without modifying them.

The particular case investigated is how the context of the EU (the donor context) influenced the formulation of ELVs for waste incineration (the transferred policy element³), and how countries such as new EU Member States and Colombia (the borrower contexts) prepare for the implementation of the transferred policy.

The PhD project takes concepts from literature to create a *context-influencing criteria* which will help identify how context exerts an influence (chapter 4). It also studies the policy being transferred (the ELVs) by making a historical compilation on how such ELVs had been set throughout the four EU Directives on waste incineration (chapter 5). It also presents the particularities of the EU context which influence the formulation of ELVs (chapter 6) and it looks into the strategies developed by the borrower countries when implementing the transferred policy, in particular, the strategies developed by the EU when implementing the waste incineration Directives into the Member States, as well as those strategies developed in the process of

¹ In the environmental policy literature the term ELV also stands for *end-of-life-vehicle*, but in this report such term ELV refers to *emission limit values*.

² My translation

³ The relationship ELV-law-policy is explained by saying that ELVs are legislative tools, included in a piece of legislation (law), which at the same time is part of a policy made for regulating the process of waste incineration. In this PhD project the terms ELVs and laws were grouped under the term of “policy”.

implementing the environmental *acquis* in the Central Eastern European states, and those strategies developed by the Colombian authorities for implementing the foreign ELVs (chapter 7). Each of these four chapters documents what I refer as the four Researched Areas of the PhD project.

Each one of these chapters is structured by presenting an introductory text, followed by a description of the methods used for the development of the explored area, as well as the findings obtained, and an analysis of the findings. The chapters closes with a section returning to the research question being explored, and reflections on the literature which was used as a base, reflections on the findings, and reflections on the methods used. Summaries of the sub-sections of the chapters are also included so that it would be easier for the reader to keep track of the information presented. Each of these chapters also has its own list of references and of appendices.

The dissertation closes with a Final Discussion chapter (chapter 8) where I summarize the main findings from each of the four Researched Areas and I return to the main question to be answered with this PhD project. The chapter finalizes with some additional reflections on the literature used as a base for the development of this project; on the task of trying to study *context*; and some questions to be explored in further research.

Box 1: Emission limit values (ELVs) for waste incineration in the EU Directive and Colombian Resolución

Except for some minor differences, the EU Directive and the Colombian Resolución regulate the same set of parameters from the waste incineration processes. These parameters can be categorized as *pollutants other-than-heavy-metals* (Table 1), and *heavy metals* (Table 2). The numbers given as ELVs for these two groups of parameters were the same in the EU Directive and in the Colombian Resolución 0058/02. The Colombian Resolución has been modified two times (in 2004 and 2008) and during both modifications the ELVs basically remained the same.

In the modification from 2004, the preamble of the Colombian Resolución 886 states that as a result of the follow-up evaluations of Resolución 0058, the Ministry was in need to revise the technical, administrative and economic requirements contained in Resolución 0058 (§2). While the ELVs remained the same, the deadline for implementation was extended 1 more year. Initially, the Resolución 0058 specify up to 2,5 years –counted from the date of the norm’s publication- to implement the ELVs.

Colombian Resolución 909 (modification from 2008) regulates the ELVs for all fixed sources of emissions, not only incineration. The ELVs remained the same, except for the type of plants these were applied to. While in the previous two Resoluciones the ELVs were applicable for plants incinerating at more than 100 kg/hr, in this Resolución the ELVs were differentiated for three types of plants: those incinerating less than 500kg/hr, those incinerating more than 500 kg/hr, and incinerators of hospitals and municipalities with less than 20.000 inhabitants and incinerating less than 600 kg/month.

Parameter / Contaminante	EU	Colombian		
	Directive 2000/76 EC (annex V) ⁽¹⁾	Resolución 0058/02 (art 4) ⁽²⁾	Resolución 886/04 (art 3) ⁽²⁾	Resolución 909/08 (art 45) ⁽³⁾
Total dust / Partículas Suspendedas Totales PST	10	10	10	10/15/n.a
Gaseous and vaporous organic substances expressed as total organic carbon / -	10	-	-	-
- / Hidrocarburos Totales HC _T dados como Metano CH ₄	-	10	10	10/10/30
Hydrogen chloride (HCl) / Compuestos gaseosos de Cloro inorgánico, dados como ácido Clorhídrico (HCl)	10	10	10	10/15/30
Hydrogen fluoride (HF) / Compuestos gaseosos de Flúor inorgánico, dados como Fluoruro de Hidrógeno (HF)	1	1	1	1/1/3
Sulphur dioxide (SO ₂) / Óxidos de Azufre, dados como dióxido de Azufre (SO ₂)	50	50	50	50/50/75
Nitrogen monoxide (NO) and nitrogen dioxide (NO ₂) ⁽⁴⁾ / Óxidos de Nitrógeno, dados como dióxido de Nitrógeno (NO ₂)	200	200	200	200/200/250 (given as NO _x)
Carbon monoxide (CO) concentration not to be exceeded in the combustion gases (excluding the start-up and shut-down phase) / Monóxido de Carbono CO	50	50	50	50/50/100

⁽¹⁾ Applicable to all incinerators indistinctive of operating capacity, except for NO_x for which provisional laxer ELVs are given to existing incinerators of less than 6 t/h

⁽²⁾ Applicable to incinerators operating more than 100 kilograms per hour (kg/hr).

⁽³⁾ The Resolución gives ELVs for plants operating at ≥ 500 kg/hr, at <500 kg/hr, and incinerators of hospitals and municipalities with less than 20.000 inhabitants and incinerating ≤ 600 kg/month. The information is presented as “-/-/” respectively.

⁽⁴⁾ Expressed as nitrogen dioxide for existing incineration plants with a nominal capacity exceeding 6 tonnes per hour (t/h) or new incineration plants. Until 1 January 2007 and without prejudice to relevant Community legislation the ELV for NO_x does not apply to plants only incinerating hazardous waste. Provisional exceptions were also given to other existing incineration plants based on the capacity of the plant (see Annex V(a) for further detail).

Table 1: Comparison of the ELVs (mg/m³) for pollutants other than heavy metals given in the Colombian Resoluciones and in the EU Directive 2000/76.

Box 1: ELVs for waste incineration given in the EU and Colombia were same (cont.)

Parameter / Contaminante	EU	Colombian		
	Directive 2000/76 EC (annex V) ⁽¹⁾	Resolución 0058/ 2002 (art 6) ⁽²⁾	Resolución 886/04 ⁽²⁾⁽³⁾	Resolución 909/08 (art 50)
Cadmium and its compounds expressed as cadmium (Cd) / Cadmio y sus compuestos, dados como Cd	0.05 ⁽⁴⁾	0,05	0,05	0,05
Thallium and its compounds expressed as thallium (Tl) / Talio y sus compuestos, dados como Tl				
Mercury and its compounds expressed as mercury (Hg) / Mercurio y sus compuestos dados como Hg	0,05 ⁽⁵⁾	0,03	0,03	0,03/0,05/0,1 ⁽⁶⁾
Arsenic and its compounds expressed as arsenic (As) / Arsénico y sus compuestos, dados como As				
Lead and its compounds expressed as lead (Pb) / Plomo y sus compuestos, dados como Pb				
Chromium and its compounds expressed as (Cr) / Cromo y sus compuestos, dados como Cr	0.5 ⁽⁷⁾	0,5	0,5	0,5
Cobalt and its compounds expressed as (Co) / Cobalto y sus compuestos, dados como Co				
Nickel and its compounds expressed as nickel (Ni) / Níquel y sus compuestos, dados como Ni				
Vanadium and its compounds expressed as vanadium (V) / Vanadio y sus compuestos, dados como V				
Copper and its compounds expressed as copper (Cu) / Cobre y sus compuestos, dados como Cu				
Manganese and its compounds expressed as manganese (Mn) / Manganeso y sus compuestos dados como Mn				
Antimony and its compounds expressed as antimony (Sb) / Antimonio y sus compuestos, dados como Sb				
- / Estaño y sus compuestos, dados como Sn	Not regulated			

⁽¹⁾ Applicable to all incinerators indistinctive of operating capacity.

⁽²⁾ Applicable to incinerators operating more than 100 kilograms per hour (kg/hr).

⁽³⁾ The Resolución does not mention any modifications to the article from the Resolución 0058/02 which gives the ELVs for heavy metals.

⁽⁴⁾ Besides this value, the Directive gave a provisional ELV of 0,1 mg/m³ for existing plants for which the permit to operate has been granted before 31 December 1996, and which incinerate hazardous waste only. This provisional ELV was valid until 1st January 2007.

⁽⁵⁾ The Directive also gives an ELV of 0,1 mg/m³ but this is only until 1st January 2007 and applicable for existing plants for which the permit to operate has been granted before 31 December 1996. Both values correspond to the average values over the sample period of a minimum of 30 minutes and a maximum of 8 hours.

⁽⁶⁾ The Resolución gives ELVs for plants operating at ≥ 500 kg/hr, at <500 kg/hr, and incinerators of hospitals and municipalities with less than 20.000 inhabitants and incinerating ≤ 600 kg/month. The information is presented as “-/-/-” respectively.

⁽⁷⁾ The provisional ELV given in the same conditions as described for Cd and Tl was 1 mg/m³.

Table 2: Comparison of the ELVs (mg/m³) for heavy metals given in the Colombian Resoluciones and in the EU Directive 2000/76.

1.1 Translating the idea into a project

Several questions came to my mind at the beginning of the project: was it a coincidence that the numbers were the same? Isn't there an area of study called Policy Transfer that relates to this issue of transferring policies from different scenarios? Does the setting or scenario where the policies are made play a role in its development process? If so, what is this role? How could it be identified? What about the scenario of the receiver of the policy, should it be prepared before or just adapted after the policy is transferred. Later on I found out that the appropriate term to be used for *scenario* was the one on *context* and so, this is the term used in this project.

After doing some exploratory reading, two theoretical bases were decided to be used for the development of this project: (1) the role of context in environmental law, and (2) the process of transferring policies among contexts. A series of guiding questions were developed for each one of these theoretical basis which served for the further exploration of the existent literature: (1) Context: how could it be defined? How could it be seen that it exerts an influence? How has it been researched? (2) Policy Transfer: What is this? What is the role that context has on this process of transferring policies?

Thanks to the exploratory reading, the central topic of this PhD project was also stated in a clearer way

The central topic of this PhD is the influence context has on policy. This influence is explored by looking at how policies are impacted by the context in which they are formulated and implemented. The discipline of Policy Transfer is concerned with the transfer of policies among places. This discipline recognises two types of contexts: the context of the *donor* of the policy, and the context of the *borrower* of the policy. An effective policy transfer should be aware of these contexts and how they influence the p being transferred.

The aim of this PhD project is to explore how context plays a role in the process of formulating and implementing a policy. In particular, the research aims to answers the question of whether *it is appropriate to use the Emission Limit Values made in one context and apply them to a different context without modifying them?* The particular case investigated is how the context of the EU (the donor context) influenced the formulation of ELVs for waste incineration (the transferred policy), and how countries such as new EU Member States and Colombia (the borrower contexts) prepare for the implementation of the transferred policy.

1.2 Why is this relevant?

Some of the reasons why countries would look into foreign policy models can be associated to economic, political, and internal reasons. These reasons are not mutually exclusive and sometimes it is difficult to identify the border line in between them. While the two first groups of reasons –economic and political– could be seen as motivated by the relation with an external country, the third group is mainly motivated by internal causes. Appendix 1.6 explores more this topic of reasons behind Policy Transfer and places from which inspiration is usually taken.

It has also been mentioned that the way local authorities can learn from foreign models is by means of a Policy Transfer process. However, no matter the good intention of learning from other's experiences or the specific reasons to address, Policy Transfer does not always ends as expected.

Among the reported reasons behind the unsuccessful transfer of policies is for example having the assumption that if the policy was successful in the country of origin, then it will be so anywhere else. Other reasons are for example when there are limited resources for finding the appropriate alternative; or when it is not recognized the influence that the context from the donor and the borrower countries has on the policy to be transferred (**Box 2**).

Box 2: Reasons why policy transfer might go wrong

Based on literature, one could identify four situations in which the transfer will not be so successful as desired:

The first case is related to having the assumption that **if the policy was successful in the country of origin, then it will be so anywhere else**, and this, as Dolowitz & Marsh (2000, p. 17) continue writing, is not guarantee for success. Honadle (1999) also mentioned this when he wrote about environmental policy: that which works under one set of circumstances, many not work under another.

A second case is related to when there are **limitations for finding the appropriate alternative**. Limitations could relate for example to time, when because of the need to solve an urgent problem there is no time to search for the appropriate alternative (Dolowitz, 2000, p. 11); or when an elected politician attracted by the short-term benefit of a measure will not evaluate whether the measure was the appropriate alternative or not to follow in the long term (Robertson & Waltman, 1992, p. 34); or when the pressures to conform to the example set by other countries somehow blind the legislators who cannot see whether that foreign measure is appropriate or not to the local conditions (Robertson & Waltman, 1992, p. 36).

Limitations could also be related to the lack of resources such as professional skills, economic restrictions, or technological resources which would allow policy makers to work in an appropriate policy transfer (Dolowitz, 2000, p. 28). An example of this is given by Dolowitz & Marsh (1996, p. 354) who write that desirable programmes will not be transferred if implementation is beyond the technological abilities of the nations. They give a concrete example related to the emission standards:

“developed nation’s emission standards generally require the installation of high technology monitoring equipment and filters which are beyond the technological and monetary resources of most second and third world countries. Even developed countries might decide not to transfer policies because of the technological complexities involved. On several occasions Canada explicitly rejected particular American environmental protection policies because the technology used to implement them was too expensive and restrictive”.

The third case in which transfer would not be so successful is related to **not recognizing the context’s influence**, that is, the influence that the context from the donor and from the borrower countries has on the policy to be transferred. Influence of the donor’s context can be seen for example in the fact that there will be some elements from that context which influence the success of the policy and which might be inseparable from the donor’s context (Robertson & Waltman, 1992, p. 39). Rose (1991, p. 4) write that problems might arise when the influence of such crucial elements is not recognized, or, as Dolowitz (2000, p. 33) write, when those crucial elements cannot be replicated. Effectiveness of the Policy Transfer will depend on the borrower’s resources (political, bureaucratic, economic), and structures needed to effectively implement the transferred policy.

A specific case which might be related with unsuccessful policy transfer is that of **copying**. As presented by several authors (Rose, 1991), (Honadle, 1999), (Dolowitz & Marsh, 2000), copying doesn’t guarantee success. Copying is considered the simplest type of lesson drawing. It consists of adopting more or less intact a programme already in effect in another place, and it assumes that contextual variables remain constant (Rose, 1991, p. 21). According to Dolowitz & Marsh (1996, p. 351) the easiest way to prove that copying has occurred is to examine the wording of the documents. Copying is the fourth case in which Policy Transfer might go wrong.

One of the reason why a country will choose to copy a foreign policy into their system is the lack of resources. Resources refer to people or time: administrative authorities might not have enough time or knowledge to invest in the development of new ideas, the less-expensive way being to borrow already-made foreign legislation (Robertson & Waltman, 1992, p. 26), (Rose, 1991, p. 13). Other authors referred to other possible reasons behind copying legislation. One of these is human nature: humans are gifted at high-fidelity imitation, and that this is a big part of how humans learn (Hines & House, 2001, p. 5); the other cause might be linked to quick-fix solutions, used mainly by politicians who are interested in short-term benefits (Dolowitz & Marsh, 2000, p. 13).

The current PhD project concentrates in one of these identified reasons for unsuccessful Policy Transfer, being this the non-recognition of the influence that context has in a Policy Transfer process. This is also an area that according to Honadle (1999) has not received much attention. Honadle mentions that, until that point in time, not many have managed to identify the critical elements from context influencing policy formulation and implementation: *“Both literature and experience suggest a major weakness in the prevailing perspectives on policy formulation and implementation –no one is able to identify the key elements of context that affect implementation strategy and impact. [...] Even those who agree that for policies to work “it all depends” cannot point to what it depends upon”* (Honadle, 1999, p. 9).

The current project aims at covering this deficit and identifying some of those critical elements from context which influence policy formulation and implementation, and by this, it aims at finding the influence context has in policy.

By presenting how context influences the process of formulating and implementing policy, it is expected that authorities from the borrowing countries would become aware of this influence and would not expect that the process of copying a foreign piece of law will solve their problems. This awareness will help them not to waste time and resources implementing something for which they will not obtain the expected results, something which might just turn into an unenforceable and confusing piece of law, with the further consequences that this will bring.

Among the consequences cited in literature are the unnecessary expenses used by the industry to interpret and implement such confusing legal framework (Garcia, 2003). If legislation is badly formulated, it will mean investments that may be lost (delValle, 2003). This is something which not only would affect the competitiveness of the industry, but that also would create frictions between authorities and the industrial sector of a country.

This fact is confirmed with that which is included in one of the State of the Environment Reports, written by Colombia’s National Comptroller’s Office⁴: *“There is comprehensive legislation that is constantly being varied or modified, without having sensible and objective studies being done on the actual implementation/application of these legal frameworks, which brings as a consequence that there are no clear rules of the game. This encourages instability and lack of credibility by the productive sectors on the institutions and with the decisions taken by these”*⁵ (Contraloría, 2004, p. 192).

1.3 Theoretical bases

As mentioned above, the aim of this PhD project is to explore and present how context plays a role in the process of formulating and implementing a policy. The particular case to look at being how the context of the EU (donor context) influenced the formulation of ELVs for waste incineration (policy to be transferred), and how countries such as new EU Member States and Colombia (borrower contexts) prepare for the implementation of the transferred policy.

The information which is presented next corresponds to the theoretical bases which were used for the development of this aim, and which serves also as a framework for the research questions that guided the development of this project.

These two theoretical bases refer to (1) the role of context in environmental policy, and (2) the process for transferring policies among different contexts.

⁴ The National Comptroller’s Office is a governmental entity in charge of monitoring and controlling the use of public resources <http://www.contraloriagen.gov.co/web/guest>

⁵ My translation

The influence of context

It is started to be recognized the fact that context exerts an influence. Particularly, in the social sciences there is a tendency to move away from universal, grand explanations, to contextualized studies (Keating, 2008). Keating explains that this moving away from universal grand explanations is because it has been recognized that it is impossible to control all the variables at play, and that because of this, it is often the case that nothing interesting or useful could be said in those attempts of giving grand explanations. Keating argues that the impossibility of controlling all of the variables derives from the fact that context cannot be reduced to a set of variables and that context has an importance in itself (Keating, 2008, p. 103).

It is especially the qualitative studies which recognize the influence of context in the sense that context plays a role for understanding a particular social behaviour (Bryman, 2008). Bryman writes that qualitative researchers tend to provide more descriptive details when reporting their research, and this is because through these descriptions the researcher wants to emphasize the importance of context for understanding a particular social behaviour (Bryman, 2008, p. 387). In other words, to be able to understand behaviour or values, for example, one has to look at the specific environment (context) in which behaviour operates.

Honadle writes that other areas such as natural science, economy and anthropology recognize the importance of context. For example, he writes that natural scientists recognise *“the importance of context for understanding scientific connections and evolutionary processes”* (Honadle, 1999, p. 7).

In literature one could also see how different authors try to identify the mechanisms by which context exerts an influence. For example, and contrary to Keating (2008) who writes that there is a: *“recognition that context itself is important and is complex, not reducible to a set of variables”* (p.103), Schmitter (2008) define context as a collection of variables. Schmitter tries to see how the variables exerts an influence by holding some of them as constant and exploring the influence of the other ones: *“by holding constant across the sample such potentially relevant conditions as cultural identity, geographic location, level of development and temporal proximity, the researcher can at least pretend that variation in them is unlikely to have produced the outcome one is looking at”* (Schmitter, 2008, p. 274).

Another way in which some authors try to explore the influence of context is by means of case study as the research methodology. Case studies are seen by some as a methodology which allow for the analysis of contextual conditions in relation to the case, this, because the holistic focus can be kept. According to Yin (2003), one would choose to use the case study methods because one would *“wanted to cover contextual conditions – believing that they might be highly pertinent to your phenomenon of study”* (p. 13). Yin also writes that the case study method allows retaining the holistic characteristics of real-life events (p. 2), and analyzing the contextual conditions in relation to the case, basically because there are no sharp boundaries between the case and the context (p. 40). The influence of context is seen then by keeping a holistic focus on the case being studied rather than breaking the situation into parts (della Porta & Keating, 2008(a), p. 30).

The role of context in environmental policy

The influence of context on the particular area of environmental policy has been addressed by Honadle (1999). He presents two relationships that exist between context and environmental policy. The first relationship is about policies not being universally applicable: *“a policy that is appropriate in one locale may lead to disastrous results in another”*; the second is that an effective policy relates to a high awareness of the context where the policy is applied: *“context influences the processes that can be used to formulate policy –without contextual sensitivity, effective policies may never be developed”* (Honadle, 1999, p. 2).

One of the arguments presented by Honadle is that context has not been studied as much as it should, considering its importance in environmental policy, and that it is time to include context in the discussions of sustainable development and environmental policy reform (Honadle, 1999, p. 7). Contextual perspectives are relevant for environmental policy in the sense that by looking at them, the researcher could evaluate the past and learn from the mistakes which will allow making a better planning for the future: contextual

perspectives “help us to reinterpret prior experience and shed new light on reasons for success or failure” and “help us analyze specific circumstances and devise improved strategies for future policy reform” (Honadle, 1999, p. 107).

Honadle also refers to an article he wrote in the early 80s, in which he presented a set of indicators and that these indicators might not be applicable to all of the contexts. He continues writing that those who used his article referred more to the indicators and not to the main point he was making with the article about the importance of looking into the context “readers latched on to the indicators without questioning how well they travelled from setting to setting. Contextual considerations were not generally considered legitimate concerns at that time” (Honadle, 1999, p. 107).

Honadle also mentions that, until that point in time, not many have managed to identify the critical elements from context influencing policy formulation and implementation: “Both literature and experience suggest a major weakness in the prevailing perspectives on policy formulation and implementation –no one is able to identify the key elements of context that affect implementation strategy and impact. [...] Even those who agree that for policies to work “it all depends” cannot point to what it depends upon” (Honadle, 1999, p. 9).

Honadle (1999) presents a framework for understanding the influence exerted by context, framework which he refers to as map of context. The map includes three aspects which need to be understood and looked at before implementing a policy. The first aspect is called *problem context* and it is used to describe the problem that the policy wants to address. The second aspect is called *social context* and it is defined as the web of economic, institutional, and psychological hurdles that must be overcome during the design, adoption, and implementation of a policy. The third aspect is called *embeddedness* and it refers to the connectedness among the dimensions of the social context. Each of these aspects have a set of dimensions defining them (**Box 3**).

Box 3: Dimensions of the map of context (adapted from Honadle (1999))					
Problem Context					
Describes the problem that the policy wants to address					
Discreteness	Progression	Mobility	Boundary		
How connected a problem is to other factors and its surroundings	Progression on the severity of the problem	The threat presented by the problem, fixed or mobile one	Political and social boundaries crossed by the threat		
Social Context					
Web of economic, institutional, psychological hurdles that must be overcome during the design, adoption, and implementation of a social policy					
Openness of political culture	Inter-organizational power balance	Salience	Culture requirement	Infrastructure	Resource decision system
Degree of freedom to debate a new law	Balance of resources and agendas among governmental offices	How much a problem has been recognized as critical	How compatible the proposed policy is with the local cultural practices	Which conditions and infrastructure are required that will enable the policy to work	Identify central stakeholders which have access to the resources needed to carry out the policy
Embeddedness					
Connectedness among the dimensions of social context, and amount of change required to implement a policy					
Resource dependency		Psychological dependency		Fluidity	
The difficulty to engage on a reform will depend on how the society is dependent, in terms of revenues or services, to that object which is to be influenced by the proposed policy		Similar to Resource dependency, but the dependency is in terms of self-worth		How attached to old traditions persons are, or if they are open to new ideas	

Honadle continues saying that even though the map will not be the key that would lead to the perfect implementation strategy, it will be a tool that would help in the implementation process since *“it should help us to anticipate difficulties, to plan ways around them, to understand the idiosyncrasies of the landscapes we enter, and to reach our destination in better condition than we would otherwise”* (Honadle, 1999, p. 9).

Key points

from the first theoretical base: the role of context in environmental policy

The influence of context

- The influence from context starts to be recognized; there is a tendency to move away from universal grand explanations.
- Example on the role of context from qualitative studies: context plays a role for understanding a particular social behaviour; to understand behaviour or values, one has to look at the specific environment in which the behaviour operates.
- There are opposite views on how context is seen: while some claim that context cannot be reduced to a set of variables (Keating, 2008), others define context as a collection of variables (Schmitter, 2008).
- Ways in which researchers have tried to explore the influence of context: one is by breaking context into variables, assuming some of them hold constant, and then explore the influence of the others. Others like to keep a holistic focus and use case study, where there are no sharp boundaries between the case and the context.

The role of context in environmental policy

- Two relationships have been found between context and environmental policy: (a) policies are not universally applicable, (b) an effective policy is related to a high awareness of the context where the policy is applied.
- However, context has not been studied as much as it should, considering its importance in environmental policy. Also, that not many have managed to identify the critical elements from context influencing policy formulation and implementation.
- Contextual perspectives are relevant for environmental policy in the sense that by looking at them, the researcher could evaluate the past and learn from the mistakes which will allow making a better planning for the future.
- A map of context is presented as the framework through which the researcher could understand the influence exerted by context in policy.

Clarifying some terminology in Policy Transfer

Policy Transfer refers to the *“process in which knowledge about policies, administrative arrangements, institutions etc in one time and/or place is used in the development of policies, administrative arrangements and institutions in another time and/or place”* (Dolowitz & Marsh, 1996, p. 344).

Different terminology is used when referring to Policy Transfer: copying, emulation, lesson drawing, hybridization, or inspiration (Rose, 1991), (Dolowitz & Marsh, 1996), (Dolowitz, 2000). The distinction between these terms could be made by viewing them as a spectrum or degrees of transfer (Table 3) (Dolowitz, 2000, p. 25).

Copying: direct and complete transfer; without any changes; adopt a program intact; also referred as imitation (Rose, 1991, p. 21), (Dolowitz & Marsh, 1996, p. 351); (Majone, 2006).

Emulation: transfer of ideas but not details; requires adaptation, adjustment; improve original model (Dolowitz, 2000, p. 25), (Rose, 1991, p. 21).

Lesson drawing: political moral drawn from somewhere else; improve existing programs (Rose, 1991, pp. 7, 21).

Hybridization and synthesis: combine elements from two different countries (hybridization) or more than three countries (synthesis) to develop a policy which is best suited; also referred as combination (Dolowitz & Marsh, 1996, p. 351), (Rose, 1991, p. 21).

Inspiration: intellectual stimulus; final outcome not drawn from the original; see it as a speculation of the type: what if that policy was implemented (Dolowitz & Marsh, 2000, p. 13), (Rose, 1991, p. 22).

Table 3: Spectrum or degrees of transfer.

Rose (1991) calls copying, emulation, hybridization, synthesis and inspiration “*alternative ways of drawing a lesson*” (p. 22). In this project the term *Policy Transfer* is used to refer to all those terms of *copying, emulating, lesson drawing, hybridization, synthesis, combination, and inspiration*.

Regarding the setting that a policy is transferred from and to, the donor country of the policy is referred as *host or donor* (Dolowitz & Marsh, 1996) (Minogue, 2006); the country which tries to receive/implement the policy is referred to as *emulator or borrower* (Dolowitz & Marsh, 1996), (Robertson & Waltman, 1992). In this project these settings will be referred to as *donor* and *borrower* respectively.

Steps in an effective Policy Transfer process

As described above, there are different terms related to Policy Transfer. These terms vary depending on the degrees of transfer: from a completely copied form without changing the policy (copying) to a inspirational speculation (inspiration). Rose (1991) who writes that all of those concepts refers to different degrees of *lesson drawing* (p. 22), presents the steps for what one could call an effective lesson-drawing process (pp. 19-24). These steps can be seen represented in Figure 1.

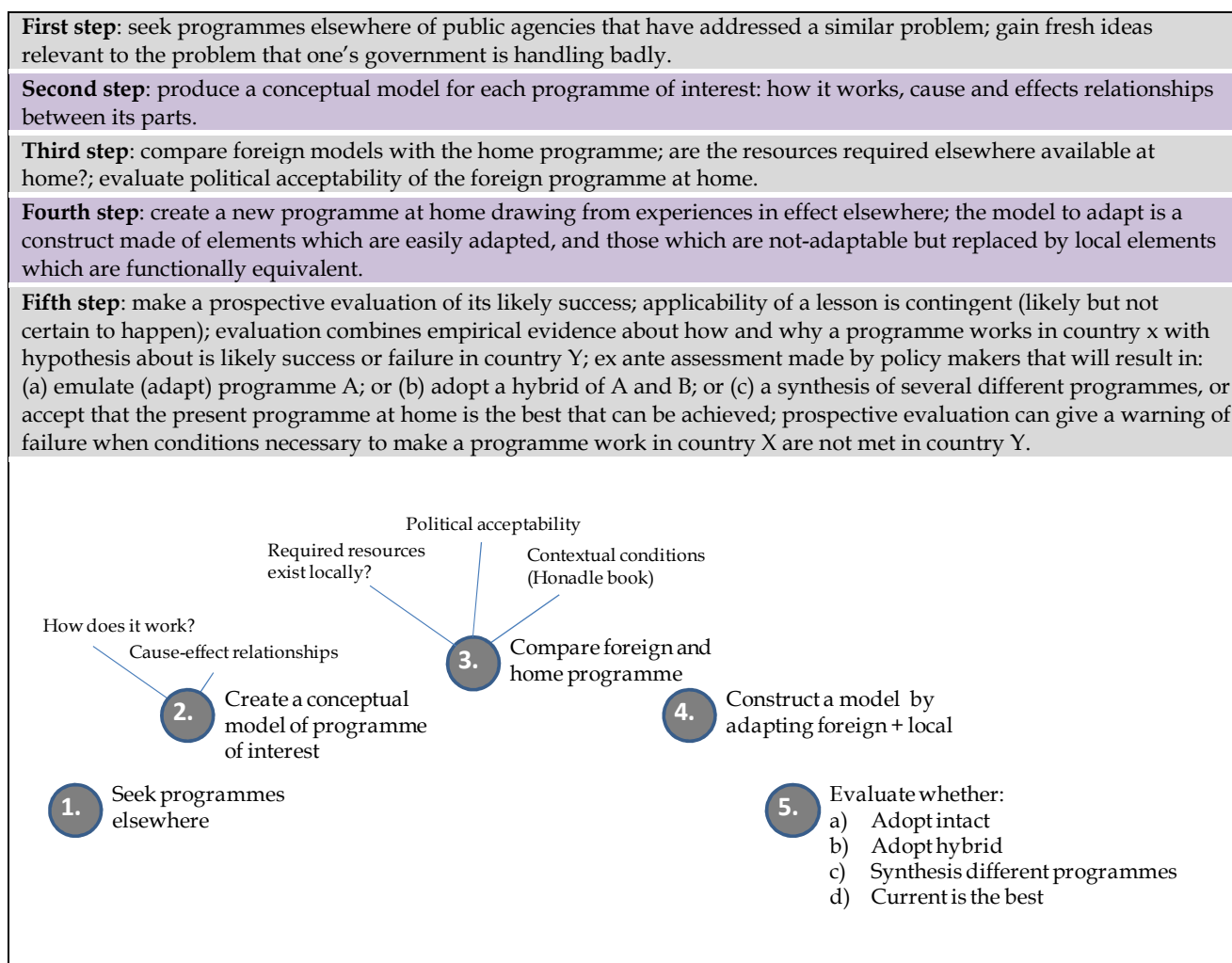


Figure 1: Process to follow for an effective Policy Transfer. Inspired after (Rose, 1991).

Policy Transfer recognises the importance of context

In the area of Policy Transfer, context can be seen as the *settings* where policies are developed: “policy transfer refers to the process by which actors borrow policies developed in one setting to develop programs and policies within another” (Dolowitz & Marsh, 1996, p. 357). In that sense, context could be defined in terms of a *donor setting* and a *borrower settings*, settings which contain the *knowledge, institutions, policies, and programs* (of the donor), and which are then fed into the *policy-making arena for the development and change of policies and programmes* of another (the borrower's) setting (Dolowitz, 2000, p. 9).

The awareness of the importance of context varies in relation to the spectrum or degrees of transfer (Table 3). For example Rose (1991), referring to copying, writes: “copying assumes that a great many different institutional and contextual variables remain constant” (p. 21). On the contrary, *lesson drawing* acknowledges the differences in the contextual variables. This acknowledgment in lesson drawing is manifested by the fact that it is asked whether a programme successful in one setting can be transferred into another one; in other words, if the lessons could be applied across boundaries (Rose, 1991, p. 19). Hybridization, another one of the degrees of transfer, also recognizes the influence of context. Rose (1991) writes: “A hybrid proposal combines recognizable elements from programmes in two different places. Europeans visiting the US may draw a lesson that is a hybrid combining substantive elements of American innovation while replacing elements unique to America with what is normal in their own political system” (p. 22).

Recognition of the influence of context (of the donor and of the borrower) can also be seen when it is said that when looking for lessons, the existence of common problems in different places is accepted, but not assumed that there will be a common response (Rose, 1991, p. 9). In line with this is what Honadle (1999) writes about environmental policy when he writes that "*what works under one set of circumstances may not work under others*" (p. x). Honadle continues writing that this awareness is sometimes not acknowledged "*There is little entertainment of the idea that a set of policies or actions can produce radically different consequences under different situations. But they can, and they have*" (Honadle, 1999, p. 1).

The influence of context is produced basically because of the particular set of circumstances from each place. Under different conditions or circumstances, policies can produce different results: *–the same event in different circumstances can produce different consequences* (Honadle, 1999, p. 134). Honadle particularly refers to these conditions or circumstances as *local economic circumstances, historical trends and socio-political dynamics* (Honadle, 1999, p. 1). This idea is also supported by Dazinger (2005) who writes that every country has its own set of structures which influence the way the country developed, and these structures might not be compatible with other structures that worked in the development of other countries. Dazinger refers to these structures as the *value system, culture, history, economy, and social* (p. 269).

Failure in the Policy Transfer process

Failure in policy transfer has been recognised when no attention has been paid to the different conditions that exist between the donor and the borrower country. Dolowitz (2000) defines these conditions as the social, political, and ideological systems of each country (p. 33), and Minogue (2006) refers to the particular economic, legal and administrative cultures of each one of the settings (p. 77). According to Dolowitz (2000), the context from the donor and borrower country is most of the time ignored by consultants when trying to implement best practices (p. 18). For example, problems are recognized when models of regulation used in developed countries are transferred to developing countries. These models tend to be rooted in structures (economic, social, political conditions) which are different from the structures of developing countries (Minogue & Cariño, 2006, p. 6). Usually there is not much difference between the conditions of developed countries, but the differences are marked when a developed country and an emerging one are being compared (Rose, 1991, p. 14). Honadle (1999) also writes that sometimes poor decisions and recommendations are made because the professionals do not look at the borrower's context (Honadle, 1999, p. x), and that there is a tendency to "*generalize from one type of setting to another and to act as if context makes no difference*" (Honadle, 1999, p. 90).

Regarding the influence of the donor's context, Honadle (1999) writes that there will be failure in the process of policy transfer when the dynamics between the elements (circumstances, structures and conditions) from the donor's context and the program of interest are not fully understood: "*A sure recipe for failure is to replicate project characteristics without understanding the interplay between those characteristics and context*" (p. 94). According to Robertson & Waltman (1992), these elements are sometimes inseparable from the original context and they might be impossible to copy (p. 39). Policy transfer can fail when crucial elements from the donor's context cannot be replicated into the borrower's context (Dolowitz, 2000, p. 33).

An additional problem is that sometimes policy makers will not realise the influence that these rooted elements have in the success of the program of interest, assuming sometimes that same problems from different context will have the same solution (Rose, 1991, p. 4). There could also be the case where policy makers do recognize the importance of these elements, but they might not manage to identify the right set of influencing elements, attributing sometimes wrong causalities to the success of the program (Dolowitz, 2000, p. 24), (Robertson & Waltman, 1992, p. 36). Wrong causalities could also be attributed when authorities from the donor's context are not interested in sharing the right information with the visiting policy maker, so they provide a sanitized version of reality (Dolowitz, 2000, p. 17); or when there is some misunderstanding in the interpretation of concepts (Dolowitz, 2000, p. 29).

Turning now to the influence of the borrower's context, this is represented by the presence –or not – of particular elements which influence the effective operation of the transferred policy. For example, Dolowitz & Marsh (1996) write about the availability of certain resources (political, bureaucratic and economic) on the borrower country as being determinant for the effectiveness of the transferred policy (p. 354). Minogue (2006) refers to the availability of certain structures (legal, administrative, political and economic) needed for the development of the model and that might not be present in the borrower country: *“There is a gap between the structures from the donor and borrower countries and development agencies still get surprised when the transfer of such models don't work”* (p. 74). Dolowitz (2000) refers to conditions such as path dependency, where the systems from previous government restrict the application of new alternatives (p. 26).

Transferring into the borrowing context

Some suggestions are made on what needs to be done when transferring policies among contexts. One suggestion is to take account of the borrower's elements: *“when doing transfer one has to take into account the history, culture and institutions”* (Rose, 1991, p. 21); the other suggestion is to do adaptation or strategies for implementation *“in cross-national lesson-drawing, some adaptation to take account of local circumstances will be necessary”* (Rose, 1991, p. 21), *“to achieve a similar outcome in a different setting, different strategies than those used in the original setting might be needed”* (Honadle, 1999, p. 3).

Honadle (1999) also makes an analogy of the process of implementing policy in borrowers context by comparing it with a cultivation strategy in the sense that it has to be customized to the place and taking into account the characteristics of it: *“A cultivation strategy must be custom-tailored to the time, place, and people involved in its implementation [...] the same can be said for the contexts surrounding the implementation of environmental policies –they exhibit a pattern of pitfalls and possibilities, and making that pattern explicit might help to improve policy performance”* (Honadle, 1999, p. 66).

It is also recognised that the transfer of lessons from one context to another will be successful when, between the donor and the borrower contexts, there is relatively harmonious political culture (Dolowitz, 2000, p. 24); when there are similarities in political ideologies and in resources (Dolowitz & Marsh, 1996, p. 354); and when the institutional structures and the societal values are similar (Dolowitz, 2000, pp. 26, 27). That is, when the borrower and donor contexts are similar.

Key points

from the second theoretical base: the process for transferring policies among different contexts

Terminology and steps in policy transfer

- The definition for the policy transfer process refers to the development of policies in one place by using the knowledge gained in developing similar policies in another place.
- There are different terms related to policy transfer. These terms vary depending on the degrees of transfer: from a completely copied form without changing the policy (copying) to a inspirational speculation (inspiration).
- The donor country of the policy is referred as *host or donor*; the country which tries to receive/implement the policy is referred to as *emulator or borrower*.
- There is a series of identified steps in an effective policy transfer process; the steps refer to: 1) seek the programme of interest, 2) produce a conceptual model of the programme of interest, 3) compare it with the home programme, 4) construct the new programme, 5) make a prospective evaluation of its success.

Policy transfer recognises the importance of context

- In the area of Policy Transfer, context can be seen as the settings where policies are developed; context could be defined in terms of a *donor* setting and a *borrower* settings.
- The awareness of the importance of context varies in relation to the spectrum or degrees of transfer. While in *copying* it is assumed that contextual variables remain constant, *lesson drawing* acknowledges the differences in the contextual variables by asking whether lessons could be applied across boundaries. In *hybridization*, exotic contextual elements are replaced with local contextual ones.
- Recognition of the influence of context can also be seen when it is accepted the existence of common problems in different places, but is not assumed that there will be a common response; particularly about environmental policy, recognition of the influence of context can be seen when it is said that what works under one set of circumstances may not work under other. However, there still seems to be few awareness of this fact (of environmental policies not working the same everywhere).
- Influence of context said to take place through:
 - o The particular set of circumstances from each place: policies can produce different results under different conditions or circumstances. These conditions or circumstances have been referred to as the *local economic circumstances, historical trends and socio-political dynamics*.
 - o The set of structures from every country, which influenced the way the country developed, structures which might not be compatible with the structures used for the development of other countries. In particular it is referred to the *value system, culture, history, economy, and social structures*.

Failure in the policy transfer process

- Failure in policy transfer has been recognised when no attention has been paid to the different conditions that exist between the donor and the borrower country; the context from the donor and borrower country is most of the time ignored by consultants when trying to implement best practices.
- Regarding the influence of the donor's context, failure in the process of policy transfer will occur when the dynamics that exist between the elements (circumstances, structures and conditions) from the donor's context and the program of interest are not fully understood, or when it is not realized the influence that these elements have in the success of the program, or when it is not possible to identify the right set of influencing elements, or when such elements are inseparable from the original context being impossible to replicate them into the borrower's context.
- The influence of the borrower's context is represented by the presence –or not - of particular elements which influence the effective operation of the transferred policy. These elements have been referred for example to political, bureaucratic and economic resources; legal, administrative, political and economic structures.

Transferring into the borrowing context

- Among the suggestions made on what needs to be done when doing a successful transfer of policies among contexts, is that of taking into account and being aware of the borrower's elements such as history, culture and institutions; the other suggestion is to do adaptation or strategies for implementation in order to take account of the local circumstances.
- It is also recognised that the transfer of lessons from one context to another will be successful when, between the donor and the borrower contexts, there is relatively harmonious political culture, ideologies, resources, institutional structures and societal values.

1.4 The research questions

As mentioned above, there has been recognized an influence made by context in environmental policy in the sense that policies are not universally applicable “a policy that is appropriate in one locale may lead to disastrous results in another” (Honadle, 1999, p. 2); it is also been recognized that an effective policy is related to a high awareness of the context where the policy is applied. However, it has been reported as well that not many have managed to identify the critical elements from context influencing policy formulation and implementation. Additionally, among the reported reasons behind the unsuccessful transfer of policies, is when it has not been recognized the influence that the donor’s and borrower’s context has on the policy to be transferred.

Two main theoretical bases have been presented for the development of this PhD’s aim. The first one is about context and the recognition of its influence in environmental policy; the second one is on the process of transferring policies among different contexts, and the importance of recognizing the influence that the donor’s and the borrower’s context have on the policy being transferred.

The information collected from these two theoretical bases served to develop a framework which guided the development of the research questions. This framework is explained in Figure 2. Box 4 remembers the reader on the aim and the main questions to answer with this PhD project.

Box 4: Aim and research questions to answer in this PhD project

The current project concentrates on the influence context has on policy. It aims at presenting how context plays a role in the process of formulating and implementing policies, that is, aims at identifying the critical elements from context influencing policy formulation and implementation. In particular, the research aims to answer the question of whether it is appropriate to use the emission limit values made in one context and apply them to a different context without modifying them?. The particular case investigated is how the context of the EU (donor context) influenced the formulation of ELVs for waste incineration (policy being transferred), and how countries such as new EU Member States and Colombia (the borrower contexts) prepare for the implementation of the transferred policy.

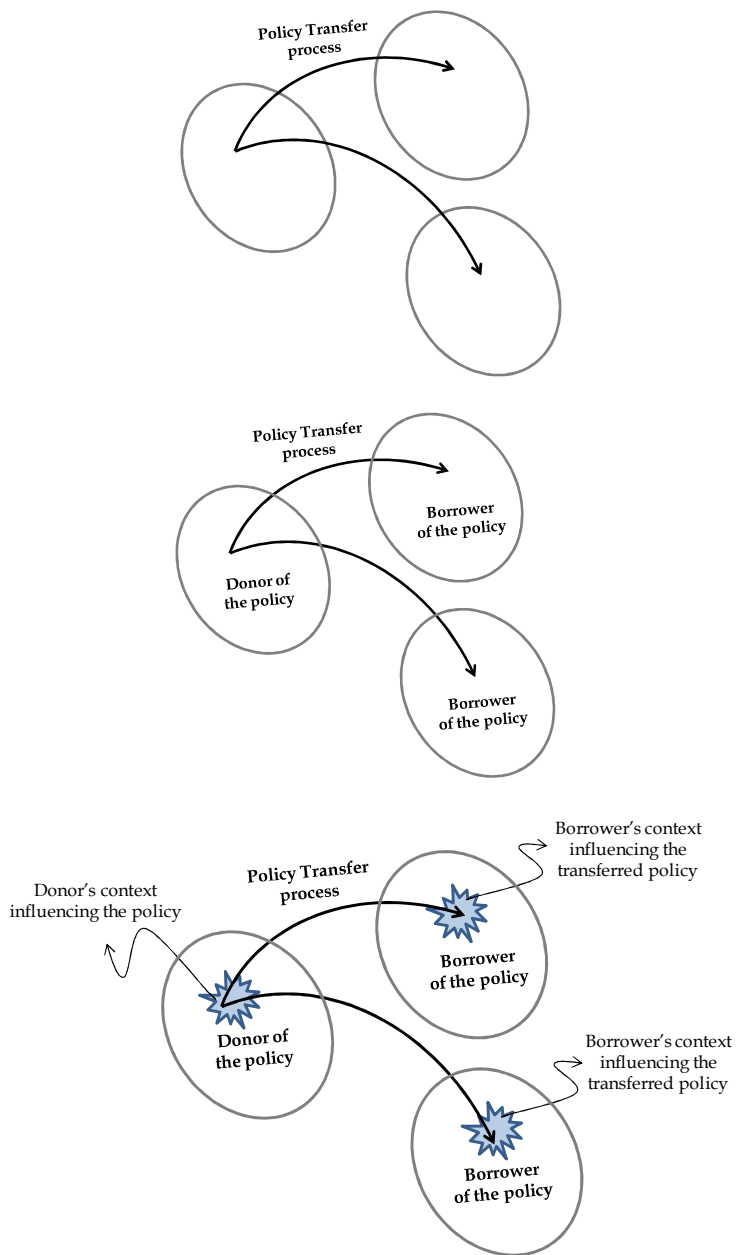
Main research question

Is it appropriate to use the Emission Limit Values made in one context and apply them to a different context without modifying them?

Particular case investigated

How the context of the EU (donor context) influenced the formulation of ELVs for waste incineration (policy being transferred)

How countries such as new EU Member States and Colombia (the borrower contexts) prepare for the implementation of the transferred policy



a) The discipline of policy transfer is concerned with the transfer of policies among places.

b) This discipline recognises two types of contexts: the context of the *donor* of the law, and the context of the *borrower* of the law.

c) An effective policy transfer should be aware of these contexts, and how they influence the law being created and implemented.

Figure 2: Framework build based on the two theoretical bases, and which was used for the development of the research questions.

The point of departure for answering the questions presented in Box 4 is the framework built based on the two theoretical bases found in literature. The representation of the current PhD topic in such framework can be seen in Figure 3.

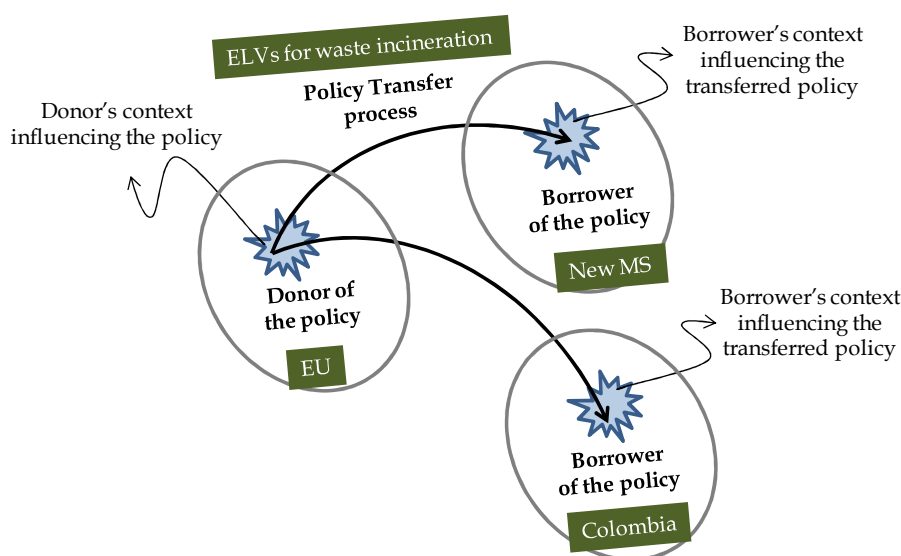


Figure 3: Representation of the current PhD project and its relation to the theoretical framework involving policy transfer and context. The policy being transferred is the ELVs for waste incineration; the donor of the policy is the EU; the borrowers of the policy are the new Member States and Colombia.

In order to answer the questions, four areas from this framework were seen as worth exploring. The areas, which are explained next, are:

- 1) the influence of context
- 2) the understanding of the policy being transferred
- 3) the influence of the donor's context
- 4) the influence of the borrower's context

The influence of context

The influence of context has been identified, and researchers are moving away from attempting universal grand explanations to more contextualized studies (Keating, 2008). For example, Bryman (2008) writes how, in order to understand a particular social behaviour or set of values, the researcher has to look at the specific environment in which these behaviours or values operate. In the specific area of environmental policy, Honadle (1999) refers to the fact that environmental policies are not being universally applicable, given that context influences the formulation of the policy.

Honadle (1999) also writes that the relationship between context and environmental policy is not studied as much as it should, and that not many researchers have managed to identify the critical elements from context which influence the process of policy formulation and implementation. Some authors write about the possibility of reducing context to a set of variables as a way to identify the influence exerted by context (Schmitter, 2008).

The question then is, if the influence of context in the process of formulating and implementing a policy is to be studied, how can it be determined if –and how– context exerts an influence? Would it be possible to

formulate some sort of criteria that will show how this influence takes place? In addition to this, what is context?, how could this be defined?. The research question addressing this particular area is then formulated as:

Research question for the 1st explored area:
How can it be determined if -and how- context exerts an influence?

The expected knowledge to obtain being a set of criteria for defining the influence of context.

Understanding the policy being transferred

According to Rose (1991), one of the steps for achieving an effective policy transfer (Figure 1) is to create a conceptual model of the programme of interest, that is, of the policy aimed to be transferred. This conceptual model aims to understand how the policy works, and what are the cause-effect relationships between its parts.

The programme of interest in this case are the ELVs for waste incineration, and so, it is the internal cause-effect relationships that define the ELVs what will be explored here. In the particular case of the EU ELVs for waste incineration, how were these values formulated?, what lies behind the numbers given as ELVs?, is there a set of criteria that one could distinguish? The research question addressing this particular area is then formulated as:

Research question for the 2nd explored area:
Which criteria played a role in formulating the ELVs for waste incineration in the EU?

The expected knowledge to obtain being the factors influencing the formulation of ELVs for waste incineration in the EU.

The influence of the donor's and borrower's contexts

In the process of policy transfer, Dolowitz (2000) refers to two settings: one corresponds to the donor of the policy, and the other corresponds to the borrower of the policy. Failures in the process of policy transfer occur when no attention is paid to these contexts (Dolowitz, 2000), (Minogue, 2006). In fact, the spectrum or degree of transfer (Table 3) is also related to the level of awareness on these contexts: copying implies that contextual variables of the donor and the borrower context remain constant, and in hybridization, the exotic contextual elements from the donor context are replaced with the local contextual elements (Rose, 1991).

The influence of context has been said to be done through the particular set of circumstances from each place (Honadle, 1999), through the very own country structures (Danziger, 2005), or through the particular systems (Dolowitz, 2000).

Regarding the influence from the donor's context, there is recognition that this context exerts an influence when it is said that failure in the policy transfer process will occur when the programme's characteristics - the programme being the policy aimed to be transferred- are attempted to be replicated without understanding the interplay between those characteristics and the context (Honadle, 1999). The influence of the donor's context is also seen when it is mentioned the existence of elements crucial to the appropriate development of the programme of interest, elements which are inseparable from the donor's context and impossible to replicate in the borrower's context (Robertson & Waltman, 1992) (Dolowitz, 2000).

The question to address then is, what are those elements from the donor's context which influence the programme of interest? The donor's context in this case is the EU, the programme of interest is the ELVs for waste incineration, and the elements to identify are those which are particular to the formulation of such ELVs. The research question addressing this particular area is then formulated as:

Research question for the 3rd explored area:

How has the EU context influenced the formulation of ELVs for waste incineration?

The expected knowledge to obtain being the particularities from the EU context which influenced the numbers given as ELV.

Regarding the influence from the borrower's context, such influence has been represented by the presence – or not- of particular elements which influence the effective operation of the transferred policy. Dolowitz & Marsh (1996) write about the availability of political, bureaucratic and economic resources; and Minogue (2006) refers to the availability of legal, administrative, political and economic structures.

In the process of transferring a policy in the borrower's context, Rose (1991) write about the need to take into account elements such as the history, culture and institutions from the borrower's context; and Honadle (1999) through his *map of context*, refers to a web of economic, institutional, and psychological hurdles that must be overcome during the design, adoption and implementation of a policy in the borrower's context.

In addition to the presence –or not- of particular elements, in the process of transferring a policy in the borrower's context, Rose (1991) also refers to the need of making some adaptations or strategies for implementation.

The question to address here is, what are those **elements** from the borrower's context which must be taken into account before implementing a foreign policy, and what type of adaptations or strategies are necessary for the appropriate implementation of this policy.

Three cases are looked at: the first one explores what is done by the EU so that that the same Directive can be implemented into the different sub-contexts of the Member States; in particular it is looked at what was done to secure implementation of the incineration Directives in the Member States. The second case relates to the process of EU enlargement, in which a candidate state must implement legislation for which it did not participate in its formulation; in particular it is looked at the strategies for implementing the environmental *acquis* in the Central and Eastern European states. The third case relates to the Colombian situation, where the ELVs for waste incineration from the EU 2000/76/EC Directive were implemented in the country's waste incineration legislation (case which was the motivator for the development of this PhD project); in particular it is looked at the strategies followed by the Colombian legislators to secure implementation of these ELVs in the country.

The research question addressing this particular area is then formulated as:

Research question for the 4th explored area:

How has the borrower's contexts influenced the implementation of the transferred policy?

The expected knowledge to obtain being: the contextual elements which have repercussion in the effective operation of the transferred policy, and the strategies used by the borrowers' countries to secure the implementation of the transferred policy.

Finally, a graphical representation of the four Researched Areas explored in this PhD project and the framework inspired from the theoretical basis, can be seen in Figure 4.

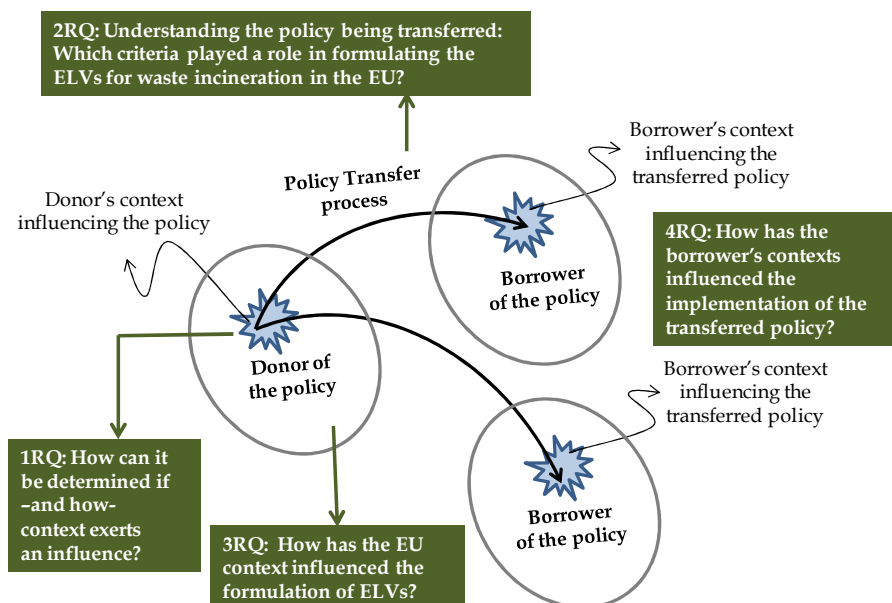


Figure 4: The four areas and research questions explored in this PhD project and its relation to the theoretical framework involving the influence of context and policy transfer.

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1.6 Appendix 1: Reasons behind Policy Transfer and places from which inspiration is usually taken

Reasons why engaging in Policy Transfer

Based on literature one could identify three main groups of reasons why countries would be motivated to be engaged into a Policy Transfer process. These reasons are not mutually exclusive and sometimes it is difficult to identify the border line in between them. While the two first groups of reasons –economic and political- could be seen as motivated by the relation with an external country, the third group is mainly motivated by internal reasons.

Economic reasons such as reducing the gap with the competitors when borrowers look to their primary competitors for lessons to learn and aim to have their system not to fall behind (Dolowitz, 2000, p. 14)); or when the borrower's market is dependent on another country, and so the borrower will try to adopt similar policies to it so that it will get closer to the consumer market (Dolowitz & Marsh, 1996, p. 349)); or when a country is concerned about the different national regulations acting as non-tariff barrier that the country will aim to have such regulation harmonized (Majone, 2006, p. 45)); or when a country, out of fear of losing economic support from transnational corporations or international agencies such as World Bank or IMF, implement policies given by these organisations (Dolowitz & Marsh, 1996, p. 356).

Among the **Political** reasons are for example when the borrower country, aiming for international acceptance, will adapt a specific policy recognized by the international community as a best practice (Dolowitz, 2000, p. 13)); or when as a result of treaty obligations the country is in need to implement a specific policy (Dolowitz, 2000, p. 13). Implementation of foreign policies could also result as a result of military intervention (Busch & Jörgens, 2005, p. 863)).

Internal reasons such as dissatisfaction with current practices, when the borrower country will look at external alternatives to apply locally (Rose, 1991, p. 10) ; or when the borrower country will look for solutions to local problems in other places, usually where the problem has been effectively solved (Dolowitz & Marsh, 1996, p. 346)).

Places which are looked at as the model to follow:

Usually there is a certain type of **places which are looked at for inspiration**. For example (Minogue & Cariño, 2006, p. 7) write that models which are most likely to be imitated are those from powerful countries, economically and politically speaking. Inspiration is also taken from cases which have been successful (Hines & House, 2001, p. 15) and actually also from cases from which one could learn what not to do (Dolowitz & Marsh, 1996, p. 352) being this for example policies that fails or yields ambiguous results (Robertson & Waltman, 1992, p. 44). Inspiration is also drawn from primary competitors (Dolowitz, 2000, p. 14) and economic rivals (Robertson & Waltman, 1992, p. 36) basically because countries do not want to lay behind. Inspiration could also be drawn from geographically contiguous nations (Robertson & Waltman, 1992, p. 36); from nations with deep cultural bonds (Robertson & Waltman, 1992, p. 36) (i.e Australia, UK, USA looking at each other for lessons to learn); or from nations with similar political values (Rose, 1991, p. 14). Finally, inspiration could also be taken from both countries' own past and also from to the global past (Dolowitz, 2000, p. 25). Local levels are also used for inspiration (Dolowitz, 2000, p. 24).

The previous chapter presented an introduction to this PhD project. It was described the motivations behind the idea of carrying out the research (EU's ELVs used in the Colombian context); it was presented the main research questions to address (*Is it appropriate to use the Emission Limit Values made in one context and apply them to a different context without modifying them?*); it was explained the two theoretical bases which are to be used (influence of context in environmental law, and policy transfer process); and it was presented the four research areas which will be explored in order to answer the main research questions.

The current chapter presents the methods which will be used for exploring these four research areas, as well as the particular way I have of looking into the world, and the approach I use in the process of obtaining the knowledge

First Part (ii)

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2. Methodology

della Porta & Keating (2008(a), p. 19) write, quoting from Shapiro, Smith, & Masoud (2004, p. 1), that some people would address the methodological issue for the study of politics as a “*believe that a scientific explanation of political life is possible, that we can derive something akin to physical laws of human behavior*”. That sentence explains quite well the position I took for the development of this project.

When the PhD project started I was having on mind the idea of being able to find all what there was in the “black box” of policy making. I even remember thinking about designing a formula for the number to be given as an ELV. However, as the project developed I realized that of course this was not going to be possible because not everything could be transformed into an element of an equation, and that even though I would try my best, there were going to be things that I would not be able to cover, either because of time (would not have time to cover every single detail) or because of accessibility (was I going to be able to have access to all documents and decisions? What about those things which were not written down) or because I did not even knew they existed.

I developed this view of aiming for a scientific explanation of political life can be seen reflected for example in the way the **2nd researched area** (*on finding the factors influencing the formulation of ELVs for waste incineration*), in which variables were identified, and causal mechanisms were tried to be identified for determining how the ELVs were formulated. I could write this is due to having a bachelor in engineering as my background. Creswell (2007, p. 20) in his book about qualitative research methods describes some of the research characteristics from “*among individuals with prior quantitative research training*” and which could be related to that *scientific explanation of political life* that I was aiming for. Some of these characteristic were: cause-effect oriented; series of logically related steps; rigorous methods of qualitative data collection and analysis; and have theory as starting point. I can say that I fully feel myself identified with that which Creswell said.

For the **3rd and 4th researched areas** (*on finding the influence from the donor and the borrower’s context*) I had another approach on mind, and in that one I felt I was trying to put an order to the information I was reading related to the way the EU created its environmental law, and the way CEE Member States and Colombia implemented the transferred policy. Such process finally translated into the three particularities from the context of the EU which influence the numbers assigned as ELVs, and in the strategies designed by those borrowing countries to secure the implementation of the transferred policy.

For the development of these researched areas I assumed that all of the information that was there, related to ELVs and to the context of Europe and of the CEE and of Colombia, was consigned in written documents: the Directives, the working documents used for the drafting of the Directives, and the written literature on EU environmental law, on CEE enlargement, and on Colombia. Those were the main sources used for the development of this PhD project. However, I admit that I am aware that more knowledge exists on the way ELVs are formulated and influenced by the context of the EU, and that this knowledge might not be even written down, or that it has not even realized that exists. I just decided to concentrate on the written material since I thought of it as a good starting point for the research in this topic.

Not to forget that for the development of the 4th research area I also used the information collected during the interviews with some of the authorities from the Ministry of Environment in Colombia who participated in the drafting of the Resoluciones. The decision for doing this was basically because at that time there were no records such as the EU working documents which one could easily access to identify the process followed by the authorities to draft the legislation.

For the **1st researched area** I also had a similar view as the one for the 2nd researched area where I used as a reference for defining the *context influencing* criteria those persons who had worked practically with the concept of *context*. In this case, besides the written document (journal articles), I also based the

formulation of the criteria on the knowledge that some of the lecturers from the Department I was enrolled in had on *context dependency*.

Besides this particular way of looking into the world, and the way I approach the process of getting the knowledge, there are some values, assumptions and perceptions I bring into the project. For example, that I have a very positive perception of the work that the EU makes; and that I have a strong conviction on legislation as a tool. I also know that the previous knowledge that I have (or that I did not have) about the EU's policy making process, the waste incineration process, and environmental legislation in general, influenced in some manner the way I looked at, interpreted, extracted, analyzed, and presented the information from the sources used in the development of this project.

2.1 Methods

The development of the four areas to be researched in this PhD project (Figure 4 in the *Introduction* chapter) is done with inspiration from the processes of (a) *conceptualization*, (b) *causal explanation of political phenomena*, (c) *selection of case study*, (d) *coding*, and (e) *content analysis* (Table 1).

This chapter presents a general overview of these five processes and the text below presents an explanation of the reasoning behind the selection of each method. The particular way in which these processes are used is something which is presented in detail in each one of the chapters that address the four researched areas.

Research Area	Method used to reach the goal	Reasoning behind the selection of the method
1 st	(a) <i>conceptualization</i>	That which is needed is information on how one could arrive to a concept (<i>context influencing</i>), so the method which would be of help would be on the process of <i>conceptualizing</i> in general (<i>defining a concept for presenting the influence of context</i>).
2 nd	(b) <i>causal explanation of political phenomena</i> , (c) <i>selection of case study</i>	The required method is one that will guide the finding of <i>factors influencing the ELVs making process</i> , and so, the method which would be of help is on approaches to arrive to causal explanations. Given that not all of the ELVs given for waste incineration will be investigated, the method on <i>selection of case study</i> is also explored to help identify those ELVs for which the <i>influencing factors</i> would be found for.
3 rd	(d) <i>coding</i> , (e) <i>content analysis</i>	The method which is required is one that would guide the process of extracting information from literature pointing to a specific topic (<i>particularities of the EU context</i>) and for this, inspiration was obtained from methodologies such as <i>coding</i> and <i>content analysis</i> .
4 th	(d) <i>coding</i> , (e) <i>content analysis</i>	The method which is required is one that would guide the process of extracting information from literature pointing to a specific topic (<i>implementation strategies from borrowers' contexts</i>) and for this, inspiration was obtained from methodologies such as <i>coding</i> and <i>content analysis</i> .

Table 1: Methodologies to be used for the development of the four research areas of this PhD Project.

Conceptualizing

The goal of the first researched area is to arrive to a *context-influencing criteria*. That which is explored in this researched area is on how context exerts an influence; this is done particularly by exploring the concepts of *context* and *context dependency*. In order to reach this goal, I considered relevant to understand the process of *conceptualizing* so that I could get a guideline on how to arrive to this criteria.

The current section presents general information on the process of *conceptualizing*. Specific information about how *context* and *context dependency* have been *conceptualized* is presented in the chapter documenting the 1st researched area (chapter 4).

Bryman (2008) presents some definitions of *concepts*. One of these definitions is that concepts are labels to the elements of the social world: “*a label that we give to elements of the social world that seem to have common features and that strike us as significant*” (p. 143). Another definition is that concepts are categories for organized ideas and or observations (p. 143). A third definition is that concepts are things we want to explain (p. 144).

Mair (2008) writes on why is it necessary to *conceptualize*. Two points are presented by Mair; the first one is on the importance of conceptualizing for a research project; the second one is on the importance of conceptualizing in general. Related to the first point, conceptualizing helps to define what the research is concerned with. As Mair (2008, p. 179) writes: “*The first task of any researcher is to specify the nature of the objects of their research, and hence to define the primary concepts with which the researcher is concerned*”. Not conceptualizing might lead to problems during the course of the research (p. 180). He also writes that conceptualizing the object of research makes it easier to explain to others what the research is about (p. 180).

The second point is related to the importance of conceptualizing in general. Mair (2008) writes that conceptualizing allows for the establishment of a common ground, and this will allow for a better communication and accumulation in the scholar discipline. He continues writing that an abstract concept leads to abstract applications of it: “*they [the concepts] have one quite abstract meaning that is accepted by most users, while the application of this meaning is regularly contested*” (Mair, 2008, p. 195). The risk of this, he continues writing, is that at the end there would not be advances, and the debate would remain on defining the concept. This could be exemplified with the case of *europanization*, presented by Mair (2008) where the discussion moves around the process of conceptualizing *europanization* instead of moving on to the implications associated with *europanization*.

Mair (2008) also write about some authors who argue that there are some concepts which should not be conceptualized since this implies simplification. Those who argue against conceptualization claim that concepts “*carry too much baggage to be reducible to a single unidimensional variable*” (p. 185). Examples such as *political culture* or *democratic stability* are presented as being of an *umbrella* type of concept (Mair, 2008, p. 185).

The response that Mair has to this criticism is that it is precisely these types of concepts the ones that are in need to be conceptualized since it is these concepts the ones which are the source of greatest scholarly confusion. Conceptualizing will reduce its ambiguities (2008, p. 185). Mair also writes that conceptualizing does not mean providing immutable definitions (p. 196). He quotes on other authors to write that concepts should be a suitable interpretation, the interpretation which would be appropriate to the immediate research goal: “*individual research projects will often tailor the meaning of a concept in order to improve operationalization and measurement*”. In this way concepts should be able to be taken as starting point for other researchers in their specific projects: (Mair, 2008, p. 196).

It is seen that conceptualizing is a necessary thing to do, however, as Mair also writes, this process of defining a *concept* is not an easy task. He presents two ways in which conceptualization has been usually done. One is by describing what concept is not; the other is by defining it as a subcategory of a known concept (Mair, 2008, p. 180).

Independent of the method used, Bryman (2008) presents what could be seen as the properties of a “good” concept. A concept should serve as a guide for what one is looking for: “*concepts should be employed in such a way that they give a very general sense of what to look for and act as a means for uncovering the variety of forms that the phenomena to which they refer can assume*” (pp. 373, quoting on Blumer, 1954). Concepts should not be too ample: “*if it is too general, it will simply fail to provide a useful starting point because its guidelines are too broad*”;

concepts should neither be too narrow, otherwise it “becomes a straitjacket [...] fine nuances or alternative ways are sidelined” (pp. 373-4). Bryman also presents that the concept should be a middle point, where the researcher starts with a broad outline of a concept -which is revised and narrowed during the data collection, and then left adaptable for other researchers to revise it in connection with their different and specific research questions of their particular projects (p. 374).

Causal explanations

The goal of the 2nd researched area is to arrive to a list of factors which influenced the numbers given as ELVs; the particular issue explored being the criteria which played a role in the process of formulating the ELVs for waste incineration in the EU.

In order to reach this goal I considered relevant to use a method that would allow building cause-effect relationships, in particular building cause-effect relationships which defined the formulation of ELVs; it was for this reason that I looked into the process of *providing causal explanations of political phenomena*.

The current section presents information on causal explanations of political phenomena. Specific information on cause-effect relationships which defined the formulation of ELVs is presented in the chapter documenting the 2nd researched area (chapter 5).

Héritier (2008) writes about trying to provide causal explanation of political or social phenomena. According to her, when one is trying to find causal explanations, one is providing answers to the “why” type of questions. The goal in this case is to identify factors (*explanans*) that are responsible for the occurrence of the event in question (*explanandum*) (p. 61). However, in social science it is not possible to make deterministic statements of the type: if event X occurs, then behaviour Y will always follow. One could say such thing only when specifying the time and space under which such statement will hold (Héritier, 2008, p. 64). To arrive to such statements one will need to have a specific view on reality: that there are recognizable regularities and a recognizable order in the world; that there is a degree of order and structure; and that changes in the world are patterned and can be understood (Héritier, 2008, p. 61).

Héritier (2008) presents four types of approaches to arrive to causal explanation. The first approach is referred to as *Comparative Statics*. In this approach, the explanatory power is on variables; variables are pre-defined as dependent/independent ones; the aim is to evaluate the influence of an independent variable on the dependent one; this is done mainly through experiments; during the experiment the other variables are assumed constant. With this approach, one should be aware of the possible problems that could occur by attributing explanatory power to variables. For example, there could be a third variable, not identified, which also has causal attributes (spurious); or when causal effects may go in both directions and not in only one direction as initially assumed (endogeneity) (Héritier, 2008, pp. 66-8).

The second approach is *Causal Mechanisms*. In here, the explanatory power is on theory; the concept of dependent/independent variable is still used but the aim is to provide an explanation of the relationship seen between the dependent and independent variables, and the explanation is found on existing theories; the understanding will reduce the risk of mistaking correlations for causation; there could be two types of theories: mutually exclusive, or simultaneously operating (Héritier, 2008, pp. 69-72).

The third approach is *Explanatory Framework and Modular Explanations*. The explanatory power is in a module-constructed theory; the aim is to explain policy outcomes for which the outcome is already known; it implies going back on time; this approach is typical of political science; explanation does not come from one theory but from different modules constructed of theories, the modules are connected by narratives or by a theory; it results on empirically testable statements (Héritier, 2008, pp. 73-5).

The final and fourth approach is *Causal Reconstruction*. The explanatory power is in deeply understanding the case; it has a different view on reality: political outcomes are the result of complex interactions and various forms of multicausality; it is useful when small number of cases are being studied, or where the explanatory factors are highly dependent on each other; it requires a deep understanding of the case, the identification of the causal factors, and the identification of the contingent conditions; differs from comparative statics (the first approach) in that in here it is not assumed that some aspects are constant; generalization can be made only after looking at several cases (Héritier, 2008, pp. 75-7).

Héritier (2008, p. 77) writes that the selection of the approach to use is to be done based on the type of research and the expected outcome. If it is a problem-driven research, then modular explanation (third approach) and causal reconstruction (fourth approach) would apply best (this implies extensiveness of explanation but greater complexity); if it is a theory-driven research, then causal mechanism (second approach) would be the approach to follow (this implies simpler explanations (*parsimony*) but explanations of a partial nature). Héritier does not write a particular recommendation for when to use the first approach.

Something which is useful, especially if one is inclined for using the theory-related approaches (2nd and 3rd), is what Héritier writes about the role of the existing literature (2008, p. 66). She writes that it is rare that only one theory would help explain the phenomenon in question, and so, that the explanation of an outcome may be related to several theories. In order to aggregate theories, it is important to lay a logical relationship between them, and to guarantee that it is the same concept being addressed. She also presents three types of associations between theories: a competitive one, where the empirical propositions are set to compete with each other; an additive one, where theories have complementary domain, and a submissive one, where one theory can be logically incorporated into another.

Selection of the case study

The second researched area relates to the study of the ELVs given for waste incineration in the EU. A total of 20 parameters have been regulated throughout the EU Directives on waste incineration (see section 3.2 *EU environmental policy*, sub-section *EU Directives on waste incineration*). Not all of these ELVs given will be investigated in the current project, therefore information on *selection of case study* was also explored to help the selection of one or two of these parameters, parameters which would be the focus of the process of identifying the causal explanation that lead to their setting.

Yin (2003) write about the type of cases which could be selected. A *critical* case would be that one which will be used to test a theory; the case will confirm, challenge or extend the theory; the case can be used to determine whether the theory's propositions are correct or whether some alternative explanations might be more relevant; the case can represent a significant contribution to knowledge and theory building (p. 39). An *extreme* or *unique* case is that which represents a rare case as such; the case is so rare that is worth documenting and analyzing (p. 41). A *revealing* case is that which represents a rare opportunity to investigate; few social scientists had previously the opportunity to investigate these problems even though the problems are common (as distinguished from rare cases) (p. 42). A *typical* case is representative of a situation; the objective is to capture the circumstances and conditions of an everyday or commonplace situation; lessons learned are assumed to be informative about the experiences of the average person or institution (p. 41). Yin also refers to a *longitudinal* case, which means the same case but studied at different points in time; the aim is to specify how certain conditions change over time (p. 42). Finally, a *pilot* case is that which is not a complete study on its own but only the first of a multiple-case study own (p. 39).

Levy (2008) write that when selecting the case for the case study, scholars should justify the selection in terms of theoretical criteria, and that unless the aim of the study is to explain a particular case as an end in itself, justifications based on "*intrinsic interest*" or "*historical importance*" are no longer regarded as acceptable criteria (p. 7). He also writes that when analysis is on a small number of cases, there should be a "*careful, theory-guided selection of non-random cases*", otherwise there might be the danger of bias in the selection (p. 8).

The specific method followed to select the parameters of interest is presented in chapter 5

Coding and content analysis

The goals of the 3rd and 4th researched areas are to arrive, respectively, to a list of particularities from the EU context which influenced the numbers given as ELVs, and to arrive to the list of strategies used by the borrowers' countries to secure the implementation of the transferred policy.

The point of departure for the development, not only of these researched areas, but also of the first two ones, is information obtained from the existing literature. The empirical data is also collected from written documents. I considered important then to find the appropriate mechanisms by which I could orderly manage the extensive amount of information collected from the different sources, and also by which I could distil the relevant aspects of it. Inspiration for these processes was obtained from methods such as Coding and Content Analysis.

Bryman (2008, p. 543) describes *open coding* as the process of breaking down, examining, comparing, conceptualizing and categorizing data; this process yields concepts, which later are to be grouped and turned into categories. Coding is the starting point for most forms of qualitative data analysis, it is also referred to as indexing. Bryman also presents some information which could be considered as the process for coding:

- Initial coding: is a very detailed process where code is assigned to every line of text; it provides an initial impression of the data; many codes as necessary are generated to encapsulate the data (p. 543).
- Focused coding: implies combining repeated codes and emphasizing the most common one which are the ones that are most revealing about the data; the data is re-explored and re-evaluated in terms of these selected codes (p. 543).
- Axial coding: brings coherence to the coded data, the data are put back together in new ways; connections are made between the categories; this is done by linking codes to consequences, to patterns of interaction, and to causes (p. 543). While in the initial coding the data is fractured into codes, in the axial coding the data is reassembled by making connections between the categories that have appeared out of the coding (Bryman, 2008, p. 543).
- Saturation is seen as the last step where there is no point in reviewing or bringing new data since this one does not add anything new which has not been said already with the previous data (Bryman, 2008, p. 542).

Another method which brings inspiration is that of *Content analysis*. This is an approach to the analysis of documents and texts. It basically seeks to quantify content based on some predetermined categories and in a systematic and replicable manner (Bryman, 2008, p. 274). The main use of content analysis has been in the examination of printed texts (particularly of mass media) (Bryman, 2008, p. 275). Even though the aim of this project is not to quantify, one could get inspired by this method, in the sense that one could analyze documents based on pre-determined categories, and in a systematic and replicable manner. There are some qualities to maintain during the process of content analysis:

- Objectivity: rules are clearly specified in advance for the assignment of the raw material to categories; and the analyst's personal bias is introduced as little as possible.
- Systematic: application of rules is done in a consistent manner. As a result of this, in theory, anyone could employ the rules and obtain the same results (Bryman, 2008, p. 274). The categories used should not overlap; they should cover all possibilities found, and there should be no uncertainty on which category to apply (Bryman, 2008, p. 288).

Bryman (2008) also refers to the possibility of constantly revising the categories, in other words, the initial categories guide the study, but other categories are allowed and expected to emerge during the study.

The specific way in which such methods are operationalized can be seen in chapter 6

The source of the knowledge

Bryman (2008) refers to the use of *documents* as the source of data for a research. He characterises documents as unobtrusive in the sense that no reactive effect will be expected of them, as could be the case when individuals are used as the source of data (p. 515).

Bryman (2008, p. 516) quoting on Scott (1990), presents some criteria for assessing the quality of documents: *authenticity* (genuine evidence and of unquestionable origin); *credibility* (evidence free from error and distortion or biases); *meaning* (the evidence is clear and comprehensible to the reader); and *representativeness* (evidence is a representation of reality).

The criteria of representativeness of reality is explored further by Bryman. He writes there are two views on the type of *reality* associated to documents. One view assumes that documents are representations of reality, the other view presents that documents just convey an impression of reality (Bryman, 2008, p. 526). With the first view it is assumed that the documents presented by an organization are representations of the reality of that organization. The other view is sceptical about this property of documents showing the reality of an organization, and that actually documents have a reality on their own. This second view sees documents for what they are supposed to represent, the impression that authors want to transmit about the organization.

In this project, the empirical data is obtained from the official documents written by the EU institutions for the drafting of the four Directives on waste incineration. These documents -referred in this PhD project as *working documents*- refer to the proposals for Directives written by the European Commission, the reports presented by the European Parliament and the Council of Ministers, and the opinions given by the Economic and Social Committee and the Committee of the Regions for the drafting of such Directives.

Key points

on the methods used for this PhD project

Conceptualizing

- The goal of the 1st researched area is to arrive to a *context-influencing criteria*. In order to reach this goal, the concepts of *context* and *context dependency* were explored. Inspiration was taken from the process of *conceptualizing* in order to explore those concepts and to get a guideline on how to arrive to that *context-influencing criteria*.
- The current section presented general information on the process of *conceptualizing*. Specific information about how *context* and *context dependency* have been *conceptualized* is presented in the chapter documenting the 1st researched area.
- Defining concepts: concepts are labels to elements or categories for organized ideas, or things that need to be explained (Bryman, 2008).
- The need of conceptualizing: There is a need for conceptualizing in research projects: conceptualizing helps to define what the research is concerned with; and there is a need for conceptualizing in general: conceptualizing allows the establishment of a common ground, hence a better communication and accumulation in the scholar discipline (Mair, 2008).
- To conceptualize or not to conceptualize: some authors claim there are some *concepts* which should not be conceptualized since they carry so much background that there is a risk of oversimplification if they are conceptualized; other authors write that these are precisely the concepts which are in need of being conceptualized since they are the ones which are source of greatest scholarly confusion, and conceptualizing them would reduce its ambiguities (Mair, 2008).
- Characteristics of a concept: Conceptualizing does not mean assigning immutable definitions; concepts should be allowed to be tailored to the particular research being carried out; concepts should help improve the operationalization of projects; concepts should be able to be taken by other researchers and be applied in their specific project; concepts should serve as a guide for what one is looking for; concepts should not be too broad (too broad of a guideline does not work very well as a starting point), or too narrow (too narrow leaves things out) (Bryman, 2008) (Mair, 2008).
- How has conceptualizing been done?: Conceptualizing has been done by describing what the concept is not; or by defining it as a subcategory of a known concept; grounded theory is one of the ways of conceptualizing, specifically through processes such as coding, theoretical sampling and theoretical saturation (Bryman, 2008) (Mair, 2008).

Causal explanations

- The goal of the 2nd researched area is to arrive to a list of factors which influenced the numbers given as ELVs. In order to reach this goal it was considered relevant to use the method that would allow building cause-effect relationships, in particular building cause-effect relationships which defined the formulation of ELVs. Inspiration for that was inspired from the process of *providing causal explanations of political phenomena*.
- The current section presented information on causal explanations of political phenomena. Specific information on cause-effect relationships which defined the formulation of ELVs is presented in the chapter documenting the 2nd researched area.
- Conditions under which is possible to make statements of the type "if x, then y": when one specify the time and space under which such statements will hold; and when one has the view that there is a recognizable order in the world, that regularities can be recognized, and that changes in the world are patterned and can be understood (Héritier, 2008).
- Approaches to which one could arrive to causal explanations: (1) use of pre-established variables, which are defined as dependent/independent ones, and where the influence of the independent on the dependent variable is evaluated through experiments; (2) use of theory, and not experiments, to explain the relationship seen between the dependent and independent variables; (3) use of a model constructed from different theories to explain an already-known policy outcome; (4) use of a deep study of a case to identify the causal factors and the contingent conditions that lay behind the occurrence of the case. The selection of the approach is done based on the type of research and expected outcome: 3rd and 4th approach for problem-driven; 2nd for theory driven (Héritier, 2008).
- Role of the existing literature in the process of arriving to causal explanations: literature is especially applicable when using the second or third approaches; it is rare that only one theory would help explain the phenomenon in question; explanation may be related to several theories, and to aggregate theories, a logical relationship should be laid between them; the relationship could be of a competitive nature, or of an additive one (complementing each other) or of a submissive one (one theory incorporated in another) (Héritier, 2008).

Selection of the case study

- The goal of the 2nd researched area is to arrive to a list of factors which influenced the selection of the numbers given as ELVs. However, not all of the 20 ELVs given to regulate the process of WI will be investigated. The method of *selection of case study* was explored to help identify those ELVs for which the factors would be found.
- Type of cases that could be selected: (a) *critical* case: the one which will be used to test a theory; the case will confirm, challenge or extend the theory; the case can be used to determine whether the theory's propositions are correct or whether some alternative explanations might be more relevant; the case can represent a significant contribution to knowledge and theory building. (b) *extreme or unique* case: the case is so rare that is worth documenting and analyzing. (c) *revelatory* case: few social scientists had previously the opportunity to investigate these problems even though the problems are common. (d) *typical* case: representative of a situation; the objective is to capture the circumstances and conditions of an everyday or commonplace situation. (e) *longitudinal* case: the same case but studied at different points in time; the aim is to specify how certain conditions change over time. (f) *pilot* case: that which is not a complete study on its own but only the first of a multiple-case study own (Yin, 2003).

Coding and Content analysis

- The goals of the 3rd and 4th researched areas are to arrive, respectively, to a list of particularities from the EU context which influenced the numbers given as ELVs, and to arrive to the list of strategies used by the borrowers' countries to secure the implementation of the transferred policy.
- The point of departure for the development, not only of these researched areas, but also of the first two ones, is information obtained from the existing literature. The empirical data is also collected from written documents.
- It was important then to find the appropriate mechanisms by which the extensive amount of information collected from the different sources could be orderly managed, and also by which the relevant aspects of it could be distilled. Inspiration for this process was obtained from methods such as *Coding and Content Analysis*.
- Process for coding: (1) *initial coding*: very detailed process where code is assigned to every line of text; it provides an initial impression of the data; many codes as necessary are generated to encapsulate the data. (2) *focused coding*: implies combining repeated codes and emphasizing the ones that are most revealing about the data; the data is re-explored and re-evaluated in terms of these selected codes. (3) *axial coding*: connections are made between the codes; done by linking codes to consequences, to patterns of interaction, and to causes. (4) *saturation* is seen as the last step where there is no point in reviewing or bringing new data since this one does not add anything new (Bryman, 2008).
- Content analysis: predetermined categories are used in a systematic and replicable manner; rules are clearly specified in advance for the assignment of the raw material to categories; the analyst's personal bias is introduced as little as possible; in theory, anyone could employ the rules and obtain the same results; categories used should not overlap, they should cover all possibilities found, and there should be no uncertainty on which category to apply, also there should be the possibility of allowing new categories to emerge during the study (Bryman, 2008).

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The previous chapter presented the particular ways in which I look at the world (e.g, that there are recognizable regularities in the world; that there is a degree of order and structure; that changes in the world are patterned and structured), the values, assumptions and perceptions I bring into this project (e.g, having a very positive perception of the work that the EU makes; the strong conviction I have in legislation as a tool), and my own background which influences the research characteristics of this project (e.g because of my prior quantitative research training as a production engineer, I tend to go for a series of logically related steps, rigorous methods of qualitative data collection, and having theory as starting point).

The chapter also presented some general information about the methods which will be used for exploring the four research areas of this project, and that the particular way in which such methods are applied in the project is something which will be presented in detail in each of the chapters that address the four research areas.

The current chapter presents some information which the reader should consider in order to get a better understanding of this project. This information refers to the process of waste incineration, the pollutants that emerge from this process, the European Union environmental legislation, and the use of emission limit values as a regulating tool.

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3. Background information

3.1 Waste incineration

Incineration refers to the controlled combustion of waste, after which heat, water vapour, nitrogen, carbon dioxide and oxygen are produced (Williams, 2005, p. 246). One of the documents from the Commission writes that an effective combustion process requires the control of four parameters: temperature, residence time, oxygen availability and turbulence (COM(92) 9 final, p. 5).

Most of the attention for incineration is centred on the issue of their emissions to air. Common emissions are carbon dioxide (CO₂), water vapour and nitrogen (N), and these emissions are not considered pollutants. Depending on the composition of the waste or if there is an incomplete combustion, other emissions will be formed. Such emissions, considered pollutants, are nitrogen oxides (NO_x), sulphur dioxides (SO₂), carbon monoxide (CO), hydrogen chloride (HCl), hydrogen fluoride (HF), dioxins and furans, volatile organic compounds (VOC), and heavy metals (Williams, 2005, p. 245). The emissions of most concern in terms of waste incineration are particulate matter (PM), acid gases (HCl, HF, SO₂), and the heavy metals of mercury (Hg), cadmium (Cd) and lead (Pb) (Williams, 2005, p. 263).

The clean-up system for the emissions constitutes the major proportion of costs and space requirements in an incinerator (Williams, 2005, p. 263). The cleaning system consists of several type of equipment depending on the type of pollutant to be removed from the flue-gas: electrostatic precipitators, filters or cyclones for the removal of PM; wet and dry scrubbers for the removal of acid gases, additives into the scrubbers for the removal of Hg and dioxins; and de-NO_x systems for control of NO_x (Williams, 2005, p. 264). Control of the pollutants is also done by controlling the incineration parameters (e.g dioxin formation can be prevented by quickly cooling combustion gases and minimizing the presence of certain metals).

Particulate matter (PM)

PM originates from the incineration process as such but also from the handling of the waste prior to its incineration. This handling includes for example agitation of waste, blowing of combustion air, and ash content in waste (Williams, 2005, p. 273). PM is classified according to its grain size which is usually less than 15 micrometers (µm). The finer particulates go into the flue gas while larger ones settle and do not go into the flue gas. It is the fine particles the ones of concern for health effects since they can penetrate deep into the respiratory system. Concern also arises when heavy metals or organic micropollutants are adsorbed on the surface of these fine particles (Williams, 2005, p. 274). PM₁₀ refers to those particulates of less than 10 µm in size. Exposure to these PM₁₀ is associated with acute and chronic health effects into the respiratory system such as bronchitis, reduced lung function and cancer (Williams, 2005, p. 274). Measurement of PM is based on a reduction of light intensity, where intensity is proportional to the concentration of particles, and where the sample is compared to a clean flue gas stream (Williams, 2005, p. 274). Removal of particles from the flue gas stream is done by having the stream passing through a series of equipments: *cyclones* will tend to remove PM of more than 15 µm and can support temperatures of up to 500°C (Williams, 2005, p. 265); *electrostatic precipitators* will remove down to the sub micron size and the efficiency of removal is around 99%, however, this efficiency could be affected by factors such as temperature, humidity or accumulated layers of particulates (Williams, 2005, p. 266); finally, *fabric filters* are used as the final clean-up step, usually with an addition of additives such as lime and activated carbon to remove heavy metals (Hg for example), and organic micropollutants (such as dioxins and furans) (Williams, 2005, p. 267).

Heavy metals

During the incineration process the basic metals will not be destroyed, they will just change its phase, i.e. they will volatilise under the combustion temperatures between 800-1400°C or will be condensed at lower temperatures and will end up either in the bottom ash or in the flue gas; in the flue gas heavy metals will be adsorbed into the PM or form particles on their own. In addition, the metals could react with other chemicals present in the waste (i.e. chlorine) and this will influence their behaviour (i.e. Ni will not vaporise under normal conditions of an incinerator but will do so in the presence of chlorine) (Williams, 2005, p. 276). Cd and Hg will then be found in the flue gas and fly ash; Fe and Cu will be trapped in the bottom ash (Williams, 2005, p. 277). Concern for health effects result as the heavy metals tend to be adsorbed on the surface of PM and they will pass deep into the respiratory system (Williams, 2005, p. 273). Carcinogenic as well as neurological, hepatic and renal effects are associated with heavy metals. Cd in particular represents a risk by its accumulation in living tissue and associated with increased risk of lung cancer, emphysema and kidney damage (Williams, 2005, p. 279). The primary route for exposure to heavy metals released from incinerators is through the food chain (Williams, 2005, p. 279). Heavy metals from incineration originate from the waste components (Williams, 2005, p. 253). Measurement of heavy metals is done by trapping particulates from the flue gas into a filter and then analyzing its contents for heavy metals (Williams, 2005, p. 297). Removal of heavy metals depends on the metal's volatility and it is done indirectly by removing PM or by adding additives into the equipment that will control the acid gases. *Electrostatic precipitators* and *fabric filters* will collect the heavy metals which are in the fly ash and which are either adsorbed to the surface of the PM or that are particles on their own (Williams, 2005, p. 278). Activated carbon is added to the liquid or powder used to remove the acid gases in the scrubbers (gases are passed countercurrent through sprays of liquid in a tower), the activated carbon helps remove the volatile heavy metals (Williams, 2005, p. 270).

Views on incinerators

Incineration is not very popular in the eyes of the public, a reason for this being the adverse health impacts which are associated with incineration (Cunningham, 2007). An argument against this is that the emission control will take care of the pollutants, however, emission control might be good for new incinerators, but the problem is still with the old ones (Gilbert & Winfield, 2007).

There is also an assumed relationship between incineration and recycling: high incineration implies low recycling given that incineration competes for the high-energy content type of recyclable waste such as paper, wood, or plastics (Gilbert & Winfield, 2007). However, this relationship is disproved given the cases seen in the EU where countries with high incineration rates (The Netherlands, Denmark, Sweden, and Belgium) also have high material recovery (European Environment Agency, 2007a, p. 288).

Gilbert & Winfield (2007) also write about the debate that exists between landfills and incinerators. Given that both are seen as options for final disposal of waste, both alternatives tend to be compared. However, incineration could be considered a pre-stage of landfilling since incineration residues (i.e. ashes) would still need to be landfilled. The arguments which are usually given as pro and con of incineration vs. landfilling are given in terms of land availability (incinerator is the option when there is no land availability); volume of the waste (incineration provides reduction in weight and volume); gases produced (while methane emissions are associated with landfilling; several types of emissions are associated with incineration); energy utilization (methane collected from landfilling could be used for energy production; electricity and district heating could be obtained from incineration); residues from the process (lixiviates are common to landfilling; bottom and fly ash, as well as waste water is common from incineration); type of waste to be disposed of (incineration presented as the best option for disposing hazardous wastes); and costs (generally there are much higher costs associated with incineration) (Williams, 2005). The debate presented by Gilbert & Winfield (2007) finalizes with both sides supporting that the best option is waste reduction.

One last aspect to discuss in relation to incineration is that of energy from waste. Incineration is actually considered in some instances as recycling of waste (Cunningham, 2007) as long as energy is being recovered

(e.g. the view EU has on incineration, see section 3.3 *EU and waste incineration*). Energy generation is also seen as a way to cover the high costs involved in incineration (Williams, 2005, p. 252). Energy recovered from waste incineration is seen in terms of electricity production or district heating (Williams, 2005, p. 246). Heat for both uses is obtained from the combustion gases. Gases leaving the combustion zone are between 750-1000C, and before entering the cleaning equipment the gases should be cooled down to 250-300C. The excess heat is transferred to the boilers to produce steam, which is then used to produce electricity through the steam turbines, or sent out as part of the district heating scheme (Williams, 2005, p. 261). Whereas electricity generated may be sold to the main grid or utilized for district heating will depend on the location of the incineration. Distant locations makes it difficult to utilize it (Cunningham, 2007). However, the energy from waste situation brings the dilemma that it encourages the continued generation of waste (Gilbert & Winfield, 2007).

3.2 EU environmental policy

When the European Community was created by the signature of the Treaty of Rome (1957), no environmental considerations were included in such agreement. Priorities at that time were on achieving economic prosperity and on improving political relations after the war. It was not known neither that the development of their economic objectives would bring consequences for the environment. (Jordan, 2005, p. 1) (Lee, 2005, p. 1).

During the 60s and 70s few rules were created at EC level, which now seem to be of environmental nature but at that time they were set in order to remove the distortions in the free market. Such distortions were brought by the different national legislation of the Member States. One of such regulations was on the classification, labelling and packaging of dangerous substances: 67/548 EEC (Jordan, 2005, p. 6).

It was also during this time that environmental awareness started to emerge, partially because of happenings at the international level (i.e the Stockholm conference) and because some of the Member States were discussing about the need of incorporating non-material values in order to reach the economic objectives (Lee, 2005, p. 1). An action programme aiming at environmental protection was drafted in 1973, known as the first Environmental Action Programme (EAP). One of the topics of this EAP being on waste disposal given that this was an issue which could distort market competition (Haq & Artola, 1995, p. 5).

Subsequent environmental matters developed at an *ad hoc* way and according to the pressures from different Member States (Jordan, 2005, p. 4). These developments were done by over-interpreting the objectives of the Treaty. Laws which were aimed at environmental protection were based on art 100 related to ensuring a single market, or on art 235 related to *any-other-business* (Hildebrand, 2005, p. 23).

The amendment to the Treaty from 1986 known as the Single European Act (SEA) helped formalize the involvement in environmental matters of the European Community. It gave an explicit legal base on which environmental legislation could be based, being these articles 130(r), (s), and (t) (Jordan, 2005, p. 4) (Lee, 2005, p. 17). Art 130(r) is on objectives, principles and factors influencing the EU environmental law; art 130(s) is on the procedures to follow; and art 130(t) is on allowing Member States to set stringent requirements than those given at Community level but only under certain conditions.

Since SEA, the policies for environmental protection at EU level have been evolved and developed. Krämer (2007) presents some of the achievements reached by this environmental legal network. He writes that a link was established between environmental policy and sustainable development; that environmental law is considered a success story in the sense that more benefits to the environment are thought to have been achieved by having a common policy than by having a combination of individual national environmental policies, and that in some Member States, environmental legislation would not exist if it was not because of the EC legislation; that the EC has contributed to the development of international law; that the role of citizens have been recognized as active actors in the monitoring of the environment; that environmental laws should not be seen as an independent area or as a goal on itself, but that it needs to be integrated into the

different economic and administrative sectors; and that the making of environmental laws requires to bring decision-makers together in a regular basis to ensure synergistic effects (Krämer, 2007, pp. 873-5).

Actors involved in the policy making process

There are three main decision-making institutions related to the formulation of environmental legislation: The European Parliament (EP) which represents the EU citizens; The Council of the European Union which represent the Member States; and the European Commission (COM) which represents the interest of the Union. These institutions work together to produce the policies and laws which apply at the EU level. In general, the Commission proposes the laws, and the Parliament and the Council approves and adopts them (European Commission, 2007, p. 3).

There are other bodies who also take part in this law-making process. The European Economic and Social Committee (ESC) which represents interest groups (i.e employer organizations and trade unions) and the Committee of the Region (CoR) composed of representatives from regional and local authorities (European Commission, 2007, p. 3). However, their opinions are not binding and the three previously mentioned institutions are free to take the opinions or not into account.

Legislative process

The main forms of EU laws are Directives and Regulations. Directives set a common goal and leave Member States the decision on how to achieve those goals; usually they should be implemented at Member State level within one or two years after their publication. Regulation set the goals and the means, and usually they should be applicable at the Member State as soon as they enter into force (European Commission, 2007, p. 7).

The rules for decision-making are laid down in the Treaties. Each proposal should be based on a specific article from the Treaty, and is this article which determines the procedure to follow by the decision-making institutions and actors. There are basically three procedures: **codecision**, **consultation** and **assent**. The difference in these three is basically on the role played by the Parliament and by the Council. In **co-decision** the Parliament and the Council need to reach an agreement before the proposal can become a law (European Commission, 2007, p. 7). In the **consultation** the Parliament is consulted but the final decision is on the hands of the Council (European Commission, 2007, p. 9). In the **assent**, Council also needs the assent from the Parliament, but the difference is that while Parliament can ask for amendments in the consultation, it cannot do so in the assent (European Commission, 2007, p. 10). Difference is also on the cases on which each procedure is used: Co-decision is used for most of the EU laws; consultation applies to those which are related to agriculture, taxation and competition; and assent applies when new countries are joining in, or when agreements are made with non-EU countries (European Commission, 2007).

EU and waste incineration

According to the Sixth Environmental Action Plan from 2002, waste management is one of the key priorities of the EU environmental policy (European Environment Agency, 2007, p. 6). EU policy on waste management has been shifting away from the *end-of-pipe* type of legislation towards *prevention at source*. The main objectives presented on waste prevention are on lowering the emissions, lowering the hazardous substances and increasing the efficiency (European Environment Agency, 2007a, p. 282). Waste prevention is now the priority, but according to the European Environment Agency (EEA), few achievements have been reached in this respect since waste amounts are still raising. Among the reasons presented by the EEA for this is the gap that exists between economic growth and waste generation: it has not been possible to decouple the political goal of reaching an increase in economic growth with the continued growth in waste generation that economic growth brings (European Environment Agency, 2007a, p. 282).

The EU gives the framework for waste management, and the Member States give the action. The framework is given in the Waste Framework Directive and Member States tailor these policies to their particular circumstances (European Environment Agency, 2007, p. 6).

The EU presents the concept of *hierarchy of waste* as a way to manage waste. The hierarchy has 5 steps, where emphasis is given on prevention, being this at the top of the priority, followed by re-use, recycling and recovery and finalising with restrictions on waste being sent to landfill. Incineration is placed before landfilling as long as there are high energy rates of recovery and as long as there is strict emission control. Incineration is actually seen as one of the mechanisms used to divert waste from landfill (see **Box 1**). The concept of *hierarchy of waste* is not meant to be taken literally because there would be different implementation of it given cost-effectiveness and local conditions (European Environment Agency, 2007a, p. 282).

Box 1: View of EU on landfill

The EU considers landfill of untreated waste as the worst option for waste management. This given the long-term emissions to soil and groundwater, the methane emissions, and the loss of resources (European Environment Agency, 2007, p. 6).

Statistics from 2004 show that 45% of waste is sent to landfill and 18% is incinerated (European Environment Agency, 2007, p. 8). Countries with low landfill rates are The Netherlands, Denmark, Sweden, and Belgium. These countries also have high incineration and high material recovery, something which disproves the comments made on the fact that high incineration implies low recycling rates. The rest of the countries are extending their incineration capacity in order to comply with the landfill bans from the Landfill Directive, other landfill diversion options being composting or mechanical biological treatment (European Environment Agency, 2007a, p. 288).

In 1999 a Directive was enacted regarding landfill of waste (Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste). The main goal of the Directive was to limit the amount of waste being sent to landfill and to set targets for recycling and recovery. (European Environment Agency, 2007a, p. 283). A Report from 2007 from the EEA writes about some achievements made on the diversion of waste to landfill. Such achievements have been obtained thanks to instruments such as separate collection, recycling, landfill taxes, and alternative disposal methods (European Environment Agency, 2007a, p. 288).

EU Directives on waste incineration (WI)

Between 1989 and 2000 the EU enacted four Directives regulating the process of waste incineration. Two in 1989 regulating municipal waste incineration: one was applicable to *new* WI plants (89/369/EEC) and the other to *existent* WI plants (89/429/EEC). In 1994 came the Hazardous WI Directive (94/67/EC) meant to continue regulating the incineration activity, this time addressing hazardous wastes, topic which had not been dealt with in the previous two Directives. In 2000 came a Directive which regulated, in one document, the activities of incineration and co-incineration of municipal and hazardous waste (2000/76/EC). This Directive repealed the previous 3 Directives. It is the ELVs from this Directive the ones that were used in the Colombian Regulation. These Directives can be seen in Appendix 3.5.

A total of 20 parameters are regulated in these Directives. The legislators grouped the pollutants into heavy metals and non-heavy metals. Regulated since 1989 are hydrogen chloride (HCl), hydrogen fluoride (HF), sulphur dioxide (SO₂), carbon monoxide (CO), particulate matter (PM), total organic carbon (TOC), and the heavy metals lead (Pb), chromium (Cr), copper (Cu), manganese (Mn), nickel (Ni), arsenic (As), mercury (Hg) and cadmium (Cd). In 1994 five more heavy metals were legislated: tin (Sn), vanadium (V), antimony (Sb) and thallium (Tl). In 2000 dioxins and furans complemented the list of regulated parameters. To note is

that the implementation date of the ELV for such parameters depends on the type of incinerator: usually existing plants were given longer adaptation periods.

In November 2010 a new Directive was adopted regulating the control of industrial of emissions (2010/75/EC), covering large combustion plants, waste incineration and a list of industries included in Annex I of the Directive. The Directive brings the same ELVs than given in the 2000 waste incineration Directive. This Directive is not included in the scope of this PhD project.

3.3 Emission Limit Values (ELVs) as a regulating tool

ELV are defined in general as the permissible quantities of a substance which may be discharged into air during a given period of time. The units associated with it are usually milligrams (mg) -but could also be given in nanograms (ng) or micrograms (microg)-, and cubic meter of air (m³). They are applicable to localized sources of pollution (a stack for example). It is worth emphasizing the difference between ELV and ambient quality standards. While ELV limit the amount that an individual source can emit, an ambient quality standard limit the concentration of pollutants permitted in a particular area (Carter, 2001, p. 286).

According to Carter (2001, p. 285) four types of policy instruments are available for a government to use in pursuing its environmental objectives (Figure 1). These instruments are: regulation, market-based instruments, voluntary action, and government expenditure (subsidies).

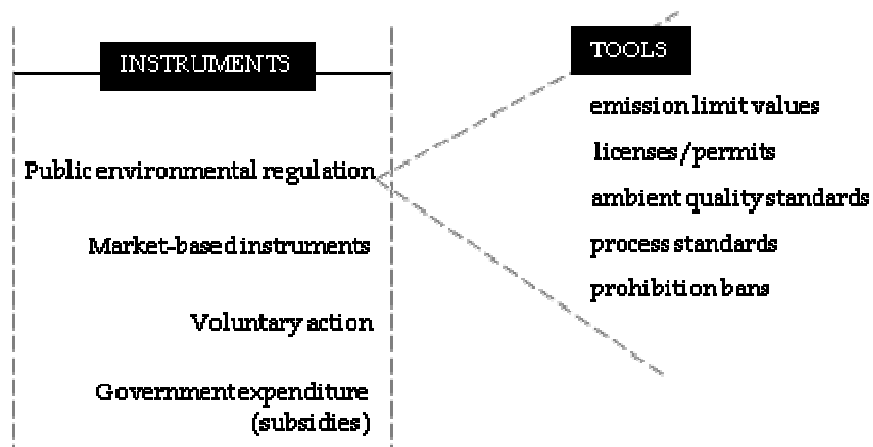


Figure 1: Policy instruments used by governments to achieve its environmental goals

ELV belongs to the first type of instrument, which is public environmental regulation, also called command and control and sometimes referred also as end-of-pipe solutions (Carter, 2001, p. 287), (Howes, 2005, p. 181), (Connelly & Smith, 1999, p. 159). In this PhD project these first type of instruments will be referred to as regulations. Besides ELVs, other tools of the regulation instrument are licenses/permits, ambient quality standards, process standards, and prohibition bans (Persson, 2006, p. 216).

It is the government who specifies the standards that a process has to meet (Carter, 2001, p. 286). The EU writes that these limit levels should be set on the basis of scientific knowledge, and should have the general aim of avoiding, preventing or reducing harmful effects on human health and/or the environment as a whole¹. Standards may be uniform, that is, identical for all firms, or take of a more flexible response, where negotiations are done with individual companies to determine their acceptable levels of emissions (Connelly & Smith, 1999, p. 160). To enforce these rules the government uses state officials and is backed up by the legal system (Carter, 2001, p. 286).

¹ <http://europa.eu/scadplus/leg/en/lvb/l28031a.htm>: Management and quality of ambient air

Regulations has been a powerful tool over the last century, but as times are changing and expectations have shifted, the model for pursuing environmental targets should also respond to the changes (Harman, 2004, p. 142).

Authors such as Carter (2001) and Connelly & Smith (1999) manifest that there is a growing support for other tools which are regarded as more efficient and effective than regulations. These authors express their criticism over ELV:

- High administrative costs: authorities will need to use resources for the enforcement and monitoring of the ELV in addition to the setting process (knowledge of the activities concerned). These activities can be very costly and time-consuming and problems may arise when inadequate funding prevents regulatory agencies from carrying out these activities properly.
- Loss of flexibility in responding to individual companies' needs and peculiarities of the local environment. In addition, it might be unfair since some polluters will find it easier than others to achieve the standards.
- ELV provides no incentives or motivation for polluters to reduce their pollution or improve environmental performance any further than required by law.
- It requires some pre-conditions in order to work, such as an adequate cost of non-compliance and punishment. If the level of these is too low, there will be no motivation to achieve the environmental target.

At the same time that the authors express their criticism, they manifest that regulations are and will continue to be widely used everywhere basically because of the strengths that they present (Carter, 2001, p. 311); (Harman, 2004, p. 143). Paradoxically, some of the issues that had been previously recognised as a criticism by Carter (2001, pp. 287-9), Howes (2005, p. 80), and Connelly & Smith (1999, p. 161), are then perceived as strength:

- A standard offers precision and predictability: the regulator and regulated know what is expected.
- Regulations are in many ways straightforward and uncomplicated; it is readily understood by governments and by the public.
- Regulations are reasonably immune from manipulation, they retain public legitimacy.
- There is no need to investigate each individual case.
- Regulations are perceived as equitable since all polluters are treated identically.
- Standards give each firm the ability to choose how to meet the performance goals set.

In which cases are ELV the best option?

When trying to reach compliance with an environmental goal, authorities have the choice of the four previously mentioned instruments (Figure 1), and it is wrong to think that the selection should be exclusive. As Connelly & Smith (1999, p. 171) states, the selection should be the appropriate mix of instruments, each one suited to achieve a specific end in a specific set of circumstances.

However, the literature reports some cases in which regulation should be a used. Connelly & Smith (1999) write that regulation is the best mean of preventing irreversible damage or unacceptable levels of pollution (p. 174), and that if the goal is to reduce a damaging activity quickly, it is better to use regulations, as incentives take time to introduce and to become effective (p. 173). Harman (2004, p. 143) states that direct regulation will remain a fundamental part of a modern framework, especially for point source emissions.

Specific uses for ELV are given by Carter (2001, p. 311), Persson (2006, p. 214), and Connelly & Smith (1999, p. 173), who states that regulations act as a "back stop" or "safety-net" as security against excess or abuse and to ensure that minimum standards are maintained, especially in when particular environmental conditions are exceeded under other instruments.

Connelly & Smith (1999, p. 172) quote the UK's Department of the Environment:

"A tradable permit system does not do away with the need for accompanying regulatory activity. In particular, somebody would have to oversee the trades and make sure that emissions were being kept within specified limits" [This Common Inheritance: Britain's Environmental Strategy, London: HMSO, 1990, Annex A, A24].

Connelly & Smith (1999, p. 172) further add:

"[...] the use of economic instruments does not offer a miraculous escape from government regulation, it merely alters its character and in practice permits and taxes would seldom, if ever, be used as the sole instruments of policy".

In this context is how it can be seen the utility of ELV:

"[...], where the target for a damaging emission is zero only legal prohibition backed by strong sanctions can ensure that it will be met. Merely taxing heavy metals such as cadmium, for instance, would allow some level of pollution, however low –and this is unacceptable. In other cases, where the environment can absorb a certain level of pollution or resource use, a method based on economic incentives might be suitable" (Connelly & Smith, 1999, p. 172).

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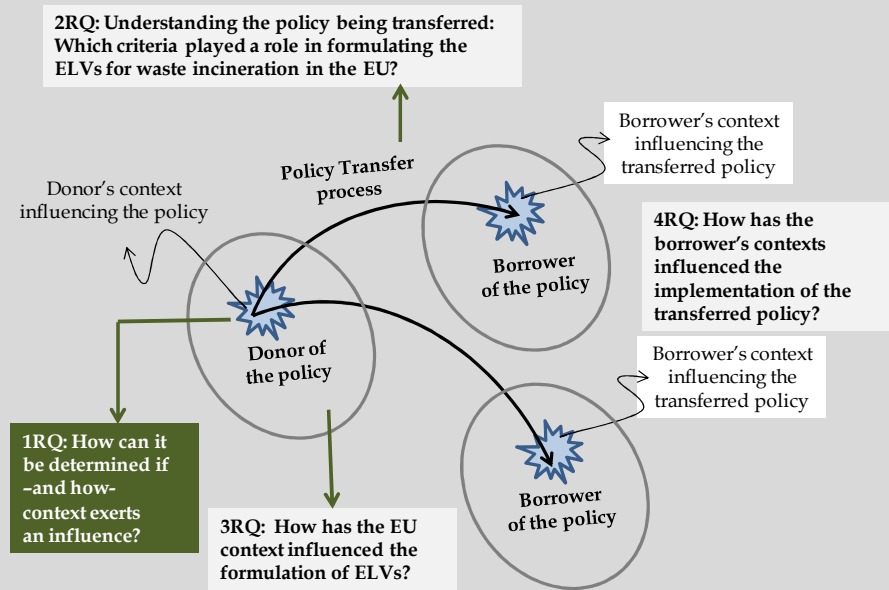
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The aim of this PhD project is to present how context plays a role in the process of formulating and implementing policies. By doing so, this project wants to explore the relationship that exist between context and environmental policy, relationship which is said not to have been studied as much as it should (Honadle, 1999).

Four are the areas explored in this PhD in order to reach this aim. This chapter documents the first of these areas: The influence of context. In particular, it addresses the question: How can it be determined if –and how– context exerts an influence?.



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4. First Area Explored: The Influence of Context

Introduction

As it was presented in section 1.3 *Theoretical bases*, it is started to be recognized in literature the fact that context exerts an influence, and that there is a tendency to move away from universal, grand explanations, to contextualized studies (Keating, 2008). It is specially the qualitative studies which recognize the influence of context in the sense that context plays a role for understanding a particular social behavior (Bryman, 2008). In the specific area of environmental policy, Honadle (1999) refers to the fact of environmental policies not being universally applicable given that the context exerts an influence in the formulation of the policy.

In literature one could also see how different authors try to identify the mechanisms by which context exerts an influence. For example, some authors define context as a collection of variables and try to see how the variables exerts an influence (Schmitter, 2008). Others say that trying to reduce context to a set of influencing variables is not possible and so, that context has to be seen as a unit (Keating, 2008). Others say that the effect of context can be explored by looking at the institutional structures of the context (della Porta & Keating, 2008(a)).

Some authors present that the way context exerts an influence is through the particular set of circumstances, structures, conditions, or systems from each place. Honadle (1999) writes that under different conditions or circumstances, policies can produce different results (p. 134). Honadle also defines these particular set of circumstances as the *local economic circumstances, historical trends and socio-political dynamic* from each place. Dazinger (2005) refers to country structures which influence the way a country developed, and that these development structures might not be compatible with the development structures from other countries (p. 269). In particular, Dazinger refers to the *value system, culture, history, economy, and social* structures. Dolowitz (2000) writes about some *social, political, and ideological systems* of each country (p. 33); and Minogue (2006) refers to the particular *economic, legal and administrative cultures* of each one of the settings (p. 77).

However, it is written also that not many researchers have managed to identify the critical elements from context which influence the process of policy formulation and implementation (Honadle, 1999).

As mentioned in the first part of this PhD report, the aim of this project is to try to identify how context plays a role in the processes of formulating and implementing policies. Four areas were seen as worth exploring in order to reach this aim. The first of these areas relates to the influence of context, and some questions were formulated that would guide de development of this area. Such questions were: How can it be determined if –and how- context exerts an influence? Would it be it possible to formulate some sort of criteria that will show how this influence takes place? In addition to this, What is context?, How could this be defined?. The research question addressing this particular area was formulated then as *How can it be determined if –and how- context exerts an influence?* The expected knowledge to be obtained is a set of criteria for defining the influence of context.

The point of departure is the information found in literature regarding the particular set of circumstances (Honadle, 1999), structures (Danziger, 2005), systems (Dolowitz, 2000), or cultures (Minogue, 2006) as being behind the influence of context. It was decided also to see how other authors have addressed the issue of the influence of context, in particular in the area of environmental policy. This was done through a literature review process, and the information obtained from it was complemented with the information obtained from a PhD course made in spring 2010. The aim of the course was to see how some of the lecturers from the department of Development and Planning of Aalborg University have addressed the issue of the influence of context in their research.

Another point of departure on how to identify the influence of context is to say that context, because of its influence, creates a dependency on an object. In other words, an object which is being influenced by the context becomes dependent on its context. In this way the issue of *the influence of context* was addressed through the concept of *context-dependency*.

4.1 Methods

The goal of this 1st researched area is to arrive to a *context-influencing* criteria. The inputs used for the development of the criteria were two: (1) take inspiration from the method of *conceptualizing* in order to get a guideline on how to define the criteria; and (2) explore how other authors have conceptualized the notions of *context* and *context-dependency*.

Conceptualizing

In chapter 2 *Methodology* it was presented some general information on the process of *conceptualizing*. The key points of this information can be seen in Box 1.

Box 1: Key points from the process of conceptualizing presented in chapter 2 (*Methods*)

- Defining concepts: concepts are labels to elements or categories for organized ideas, or things that need to be explained (Bryman, 2008).
- The need of conceptualizing: There is a need for conceptualizing in research projects: conceptualizing helps to define what the research is concerned with; and there is a need for conceptualizing in general: conceptualizing allows the establishment of a common ground, hence a better communication and accumulation in the scholar discipline (Mair, 2008).
- To conceptualize or not to conceptualize: some authors claim there are some *concepts* which should not be conceptualized since they carry so much background that there is a risk of oversimplification if they are conceptualized; other authors write that these are precisely the concepts which are in need of being conceptualized since they are the ones which are source of greatest scholarly confusion, and conceptualizing them would reduce its ambiguities (Mair, 2008).
- Characteristics of a concept: Conceptualizing does not mean assigning immutable definitions; concepts should be allowed to be tailored to the particular research being carried out; concepts should help improve the operationalization of projects; concepts should be able to be taken by other researchers and be applied in their specific project; concepts should serve as a guide for what one is looking for; concepts should not be too broad (too broad of a guideline does not work very well as a starting point), or too narrow (too narrow leaves things out) (Bryman, 2008) (Mair, 2008).
- How has conceptualizing been done?: Conceptualizing has been done by describing what the concept is not; or by defining it as a subcategory of a known concept (Bryman, 2008) (Mair, 2008).

It was in particular that which was presented by Bryman (2008) as the properties of a “good” concept, what was used as inspiration for defining the *context-influencing* criteria. This is presented in a sub-section below (*Defining the context-influencing criteria*).

How the concepts of *context* and *context dependency* have been conceptualized

As it was previously mentioned, to identify the influence of context I said that context, because of its influence, creates a dependency on an object. In other words, an object which is being influenced by the context becomes dependent on its context. In this way the issue of *the influence of context* was addressed through the concept of *context-dependency*.

It was then considered relevant to explore how the notions of *context* and *context dependency* have been conceptualized by some researchers.

The search of these different conceptualizations made by different authors was done by two different means: (1) one was by means of a literature search, in particular in the topic of environmental policy; (2) the other was by means of a PhD course where lecturers would present how they deal with these concepts in their research.

Three sub-questions guided the search of the different conceptualizations made by the different authors. These questions were:

- How has the topic of *context* and *context-dependency* been researched?
- How has *context* been defined?
- How has the *influence of context* been shown?

The literature search

An initial exploratory search into some journals showed that the topic of *context dependency* was covered by a broad range of areas including for example the natural and social sciences. Concentrating in the area of social sciences – specifically in the topic of environmental policy, a more focused search was made for journal articles containing the words *context* and *context dependency*.

The findings pointed out that the disciplines which have been paying special attention to the issue of *context dependency* are the ones of Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA). Five articles were found which were specifically dealing with the influence of context (Table 1).

Article	Topic of the article
Slootweg & Kolhoff (2003)	Distinguish what are context-dependent and context-independent elements in a framework used to integrate biodiversity aspects in EIA.
Hildén, Furman, & Kaljonen (2004)	Writes about factors which make SEA effective, some of which are context-dependent.
Cherp, Watt, & Vinichenko (2007)	Refer to context influencing the strategy formation in SEA.
Hilding-Rydevik & Bjarnadóttir (2007)	Refers to context influencing the selection of SEA as a tool to achieve sustainable development.
Bina (2008)	Concentrates on how context influences the effectiveness of SEA.

Table 1: Articles that dealt with the topic of context and context dependency.

The information provided by four of these five articles helped to explore the three sub-questions previously mentioned. These articles were: Slootweg & Kolhoff (2003), Hildén, Furman, & Kaljonen (2004), Hilding-Rydevik & Bjarnadóttir (2007), and Bina (2008). The findings from these articles are presented in detail in the following section (4.2 *Findings*). Very few information from the article by Cherp, Watt, & Vinichenko (2007) was seen useful for the development of these questions.

The idea of exploring these articles was to understand the approach used by the authors to research this issue of context exerting an influence; it was not the intention to look into the specific case of EIA and SEA. However, some information about SEA and EIA is presented but only as examples of the methodologies used by the authors on how they conceptualized *context* and *context dependency*.

The PhD Course

The information found from the literature search was complemented with the information obtained from a PhD course on the topic of context dependency. In this course the lecturers were asked to present how they deal with these concepts of *context* and *context dependency* in their research. The information from the course was used as examples to discuss further that which was found through the literature review. More information on the development of the course can be seen in Box 2.

Box 2: The PhD Course of Context Dependency

Some of the PhD students from the department of Planning and Development (Aalborg University) are developing projects which are related to the issue of transferring technologies /policies/ methodologies from successful cases (the EU/Denmark) into their home countries (eg. Japan, USA, China, Colombia). The PhD students behind these projects had the suspicion that *context* is fundamental for the success of such technologies/policies/methodologies, but they were unsure how to address this issue of *context* in their research.

Four of these PhD students, among which was the author of this particular PhD project, presented a proposal for the development of a course in the spring of 2010, where the presenters would be some of the lecturers from the Department who had been working with issues of *context* and *context dependency* in their research. The main idea of the course was to collect the different perspectives managed by these lecturers on how they addressed the issues of *context-dependency* in their research.

Five lecturers agreed to participate, and each one of them was assigned a half-day session. In the first part of the session the lecturer presented his point of view, theories or experiences on what *context* and *context dependency* is; in the second part of the session the discussion was guided by a set of questions, previously decided by the students, and addressed to the lecturers.

The questions were formulated during the first lecture, in which one of the lecturers had the role of moderator, guiding the inquiries from the students and translating them into a list of questions. These questions referred mainly to the student's interests and challenges in the area of *context* and *context-dependency*. The questions can be seen in Table 2.

1. How does the theory we select affect the context we see /work with, or can we be more inductive in finding how context matters.
2. After we know that "context" exerts an influence in our subject of study, how do we define that "context" for our research? (so that we don't drown in an ocean of information when we try to describe it in our PhDs).
3. How does our individual normativity affect the levels of context we pay attention to?
4. What are the dimensions of context?
5. Should policy be adapted to context or context be adapted to policy?
6. Can there be gaps between policy and context?
7. How can case studies be generalised to national contexts?
8. How sensitivity to context matters when working on the research/practice interface: risks when transferring policy/practices.
9. How to have a successful transfer between different contexts?

Table 2: Questions used for the development of the context dependency course.

Each one of the sessions was recorded and later on transcribed by the author of this PhD. The parts considered relevant for this project, both from the transcriptions and from the material that had to be read for the course, were used complementing further that which was found through the literature research.

Defining the *context-influencing* criteria

The *context-influencing* criteria was defined using as input the knowledge obtained from literature research, and complemented with the information obtained during the context dependency course, and following as a guideline that which was presented by Bryman (2008) as the properties of a "good" concept:

- A concept should serve as a guide for what one is looking for: "*concepts should be employed in such a way that they give a very general sense of what to look for and act as a means for uncovering the variety of forms that the phenomena to which they refer can assume*" (pp. 373, quoting on Blumer, 1954).
- Concepts should not be too ample: "*if it is too general, it will simply fail to provide a useful starting point because its guidelines are too broad*"; concepts should neither be too narrow, otherwise it "*becomes a straitjacket [...] fine nuances or alternative ways are sidelined*" (pp. 373-4).

- Concepts should be a middle point, where the researcher starts with a broad outline of a concept - which is revised and narrowed during the data collection, and then left adaptable for other researchers to revise it in connection with their different and specific research questions of their particular projects (p. 374).

4.2 Findings

The information found after the literature search and the development of the PhD course is presented following the three sub-questions previously mentioned on: How has the topic of *context* and *context-dependency* been researched?, How has *context* been defined? and How has the *influence of context* been shown?

How has the topic of *context* and *context-dependency* been researched

Based on the information found through literature review, one can say that the topic of *context dependency* is covered by a broad range of areas. For example, the issue of *context dependency* is seen in topics such as linguistics (i.e. the role of context for understanding the meaning of a sentence (Fischer, 1993)); social experiments (i.e. the importance of looking into the context of a sociological experiment when analyzing results from it (Helm & Morelli, 1985)); knowledge (i.e. the role of context when people acquire knowledge and skills (Flyvbjerg, 2001)); and the science-policy relations (i.e. the credibility of science in two different political contexts (Tuinstra, 2008)).

Among these articles, it was common to find that the authors would implicitly assume what the concepts of *context* and *context dependency* would refer to. That is, the authors would use the concept without giving any further explanation of what that meant. For example, De Mello (2003) concludes that a particular issue is context-dependent, but in her article she does not explain how she arrived to that conclusion:

"[...] the use of climate information is context-dependent, that is, the distribution of costs and benefits associated with information use in policymaking depends on the social, political, and cultural context in which information producers and users work" (De Mello, 2003, p. 101).

During the development of the PhD course, the lecturers also acknowledged that *context* is a concept which is recognized as a study area in itself, but it is also a concept which is sometimes assumed or taken for granted: *"I had some time to really consider what it is mean by contextuality [...] contextuality is not normally a concept that you're discussing very much, is just taken for granted, is taken that everybody knows what's about"* [Lecturer 3].

Other authors use the concept of context more as the background scenario where the object of study takes place. For example, [Lecturer 5] talks about context as the scenario which is relevant depending on the role of engineering (more of this in Appendix 1).

Nevertheless, an evolution could be seen in the sense that some authors are not just saying things like *this is a context-dependency matter* but are trying to explain how context is influencing the objects of their research. That is the case of the four articles which were taken for further inspection (see Table 1 from section 4.1 *Methods*). These articles have *context* as the centre of their research. That is, the authors recognize that *context* has an influence on their object of study and so they go into the task of exploring how the influence of context takes place. For example, Bina (2008) writes about context influencing the effectiveness of the Strategic Environmental Assessment (SEA), and Hilding-Rydevik & Bjarnadóttir (2007) write about the need of adapting the SEA to the context in order to achieve a successful implementation of SEA (see Appendix 2).

One of the lecturers from the PhD course also related to two models where it is recognized that context influences the implementation processes of Environmental Impact Assessment (EIA):

“the first one here is a model describing implementation process made by Søren Winter a Danish political scientist, and here you see that he has described what in Danish is called omgivelser, and “environment” in English, and what he implies with this is of course that there is a kind of context out here that definitely affects the way the implementation process is going [...] in another one they also try to describe that we have something out there that we should take into consideration, and he describes it in one of these boxes that he has something called “the context”, [...] he has also some ideas about what is out in the context, it has something to do with the national environment, the socio economic system, political and administrative system, and institutional factors, and then there are some international impacts as well, and that it is grouped as context” [Lecturer 3].

Yet, in some cases this influence of context into the objects of the research is not clearly explained. That is the case for example of Hildén, Fuman & Kaljonen (2004) who identifies the factors which would make a SEA effective. Some of these factors, four of them, are being influenced by the context but the way this influence takes place is not clearly explained by the authors (Box 3).

Box 3: Dependency on context stated but not clearly explained

Hildén, Fuman & Kaljonen (2004) write how the factor of *Tiering* influences the effectiveness of SEA by “[...] ensuring that there are links from the strategic level to the concrete project level and vice versa (p. 527). The authors also identified the points which are necessary to ensure successful *tiering* (a table with 6 points), and then they mention that these points are related to the context but is not explained how this relation takes place: “many of the key issues identified pinpoint the importance of contextual factors in designing *tiering*. Understanding the organisational structures, for example, is vital” (pp. 527-8).

The same is the case on *Tailoring*, in the sense of tailoring the assessment to each particular case. The authors write: “several of the observations are as such consistent with different types of views of planning, but the strong context dependency underlines, again, the need to improve the links between assessments and problem definition” (p. 530).

For two of the factors *Timing* and *Legal provisions*, the authors try to explain the relationship with context in a more clear way. The relationship of *Timing* with context is explained first by presenting how *timing* influences the effectiveness of SEA “If the environmental assessment is initiated after key decisions on the plan have already been made, it is almost impossible to influence the plan” (p. 528). Then the authors express something that could be interpreted as the political context influencing the *timing*: “The case study material indicates that the aim of the planners is commonly to regard the issue of timing as part of a synoptic process. The political context, however, frequently pushes the process towards struggles over problem definition and timing of the assessment may become important in a tactical sense” (p. 529).

About the *Legal provisions*, the authors make some observations that could be seen as *the need* of having a legal provision pushing for the development of an environmental assessment, such *need* would be seen as something which is context dependent: there are cases where there was no legal requirements and still the environmental assessment was carried out and had a successful influence, and there were other cultures where there was not a common practice to have these assessments and then the legal provisions played the role of starting the assessment activities. Then the authors write: “All these observations stress the context dependency of SEA” (p. 529).

Another example is the case presented in Box 4 where it is addressed the linkage presented by Bina (2008) between the effectiveness of SEA and the elements from the Chinese context. It seems that even though Bina had all the evidence for doing the linkage presenting how context influences the effectiveness of SEA, this linkage was not clearly indicated (or perhaps she was not as clear as she thought she was?).

Box 4: Missing the clarity when explaining the influence of context

In her article, one could see that Bina is trying to show the linkage that exists between the *effectiveness* of SEA and the *elements* from the context. This linkage is done by the use of information presenting: (a) in theory, which elements make a SEA effective; and (b) how is the behaviour of those elements in China. This she did through literature review, interviews and notes from a conference on SEA in China she attended to (Bina, 2008, pp. 718-9).

From the article one could interpret that (a) one element which relates to effectiveness of a SEA is the one on public participation, public participation as one of the aspects of the PEIA¹ regime considered critical in the SEA literature (p. 721), and an element related to, among others, the access to information, and the timing of the public's involvement (p. 721). Bina also presented information on (b) the way this element of public participation behaves in China.

However, when one reads the text, one gets the impression that Bina did not make the linkage between (a) and (b) as clear as it could have been made, considering that she had all the information to do so. Instead she leaves the information there, as if it was the task of the reader to make the clear conclusions that this element of public participation behaves in China in a way that will not allow for a SEA to be effective, and that is because of the particular legal, institutional and cultural dimension (or context) of China:

- Legal: "[...] Article 11 of the Law (2002) refers to the need to hold expert meeting and public hearing and invites those responsible to give the resulting comments serious consideration and to provide an explanation of how these were adopted or rejected" (p:722). Bina then refers to Zhu and Ru (2007) who argue that "Chinese laws and regulations have yet to fully address the three prerequisites for meaningful public participation, that is, access to information, public participation in decision-making process and access to justice" (p. 722).
- Institutional: "[...] public consultation tends to occur at the late stages of the EIA process and if it influences the decision, it tends to be in terms of mitigation measures, the same has been true for the limited PEIAS completed to date" (p. 723).
- Cultural: when Bina refers to Michalak, 2005 who writes: "[...] the tendency is to lecture the public on the need to protect the environment instead of informing the public on problems and solutions and creating space for dialogue" (p. 723).

One could wonder whether stating this linkage in a clear way was among her aims for the article, and the answer to this is that yes, it seems so, because in one of the initial pages she writes that the sections of the article were "[...] linking effectiveness of SEA to its context [...] analysis of key aspects of China's context influencing the shape and effectiveness of the current PEIA regime" (p. 718).

The lecturers from the PhD course have also seen the issue of *context* reflected in the work of some authors, and sometimes seen how these authors manage the issue of *dependency* in a not so clear way. [Lecturer 3] said that even though the influence of context is mentioned, the dependency is not very well explained "we also criticized that article very much yesterday, it is not very well conceived how these relationships between contexts and EIA system is made [...] he actually doesn't use much of his time, not to say none of his time to describe how this context is working in relationship with the EIA system, how does it influence the EIA system, at least not in a very proper scientific manner [...] he says more or less that he believes that everything is influenced by these things out in the environment, and by that he means surroundings, contexts".

Moving into another point related to how the topic of *context* and *context dependency* have been researched, one could see there are different starting points for the researchers to include *context* in their studies and defining what context stands for. For example Hilding-Rydevik & Bjarnadóttir (2007) would take the definition of context given in an English dictionary as starting point: "set of facts or circumstances that surround a situation or event; condition that accompanies or influences some event or activity" (p: 668), and would define context by applying such definition in relation to the terminology of SEA: "set of facts or circumstances that have an impact on the chosen approaches to SEA; set of facts and conditions that have an impact on the outcomes of SEA implementation" (p: 668).

¹ SEA for China's plans and programmes (Bina, 2008, p. 717).

In the case of the PhD course, the definitions on context given by each one of the lecturers was linked to the lecturer's background, intuition, personal interests or previous experiences (Table 3).

Intuition	<i>"you have some intuition, you try this, you try that, and you take some out, you zoom some in [...] you have to argue somewhere, why did I choose this than the other, sure; sometimes that goes afterwards"</i> [Lecturer 2].
Experiences	<i>"this is in my opinion the way it works [presenting the dimensions of context] it is based on all these years of experience, and of course, if you ask anyone of my colleagues they would say I disagree with this, there should be this instead [...] but this is just a way to make a own assessment of what I've learned by digging into a lot of different aspects"</i> [Lecturer 3].
Background	<i>"if you're an engineer, you're in a language community of engineers [...] when we get an education we get a particular pair of glasses to look out in the world"</i> [Lecturer 4]. <i>"Is obvious that the person you are influences very much the way that you do research"</i> [Lecturer 3].

Table 3: Examples of the different starting points used by the lecturers at the moment of including context in their research

These starting points are not exclusive and it could be seen that lecturers used a mixture of them. One of the lecturers summarized this by saying: *"When practitioners decide on what context is, they do it because they have the feeling, or because they're influenced by some practitioners [...] about defining the elements of context, there are the possibilities of pre-selecting the elements or go open minded and find those elements"* [Lecturer 1].

Similar to this is how Honadle (1999) seems to have found the dimensions he presents in his map of context (Table 4). It seems he obtained these dimensions out of his own experiences in the field. When describing the dimensions of context, he presents anecdotes of his work in the field and how he encountered these dimensions.

How has *context* been defined

Different meanings are given to the word *context* depending on the researcher and on the object of the research. For example, context would refer to a geographical place at the national or regional level (Bina, (2008); Hilding-Rydevik & Bjarnadóttir (2007); Hildén, Furman, & Kaljonen (2004)); or context would refer to a society (Slootweg & Kolhoff, (2003)); or context would refer to a political arena (Tuinstra, (2008)); or context would even refer to a person (Fischer, 1993). Hildén, Furman, & Kaljonen (2004) quoting on March and Olsen (publication from 1989) also refer to context as the institutions where the planners are sitting.

Honadle (1999) writes about context as a *setting*, and for him a setting is that which surrounds any environmental, conservation, or sustainable development policy. Hilding-Rydevik & Bjarnadóttir (2007) refers to context as a collection of factors: *"set of facts or circumstances that surround a situation or event; condition that accompanies or influences some event or activity"* (p. 668).

Context has also been seen in terms of a *scenario* – [Lecturer 5] at the PhD course and context as the scenario which is relevant depending on the role of engineering (see Appendix 1); context was also seen in terms of that which is *outside* of the object of study [Lecturer 3] (see Appendix 3).

Some authors define context as a collection of variables and try to see how the variables exerts an influence (Schmitter, 2008). This goes in line with those authors who define context as *"a set of dimensions that (1) can enable –or constrain– SEA's direct effectiveness on PPPs [policies programmes and plans]* (Bina, 2008, p. 719). For example, in its article Bina (2008) presents the context of China by referring to it as a collection of dimensions. The dimensions are those of politics, society, environment, institutions, organizations and

actors. For each of these dimensions she gives short descriptions or summaries of the most important aspects. This information she found after doing interviews, literature reviews and her own observations: “I summarize the aspects of the context that informants identified as particularly relevant to PEIAS [SEA for China’s plans and programmes]. This is not a comprehensive list but its significance is confirmed in the literature and by my own observations at seminars and meeting” (Bina, 2008, p. 724) (see Appendix 4)

Another example of context being defined in terms of dimensions is when Honadle (1999) refers to those dimensions which will influence the performance of a policy. These dimensions make part of what he refers as the social context (Table 4), dimensions which are meant to be useful *when developing an environmental policy implementation process* (Honadle, 1999, p. 96).

Social Context					
Web of economic, institutional, psychological hurdles that must be overcome during the design, adoption, and implementation of a social policy					
Openness of political culture	Inter-organizational power balance	Saliency	Culture requirement	Infrastructure	Resource decision system
Degree of freedom to debate a new law	Balance of resources and agendas among governmental offices	How much a problem has been recognized as critical	How compatible the proposed policy is with the local cultural practices	Which conditions and infrastructure are required that will enable the policy to work	Identify central stakeholders which have access to the resources needed to carry out the policy

Table 4: Dimensions of the Social Context (adapted from Honadle (1999)).

Yet another example of context defined in terms of dimensions, is the definition on technology given by one of the lecturers from the PhD course. [Lecturer 2] defines technology as the composition of four elements: *technique, knowledge, organisation and product*. These elements are influenced by local conditions (a list of 12) which can be categorized in four compartments: *the social relations of production, the socio-political setting, the natural environment and the historical and cultural background*, compartments that together are known as a framework. He then describes the context of his case study by making descriptions of the 4 compartments of the framework (see Box 5).

Box 5: Context is the framework that supports and defines technology [Lecturer 2]

[Lecturer 2] describes the context of his case study by making descriptions of the 4 compartments of the framework: *the social relations of production, the socio-political setting, the natural environment and the historical and cultural background*. These four compartments contain a set of 12 local conditions: *social infrastructure, social capital, labour relations, social division of labour, organisational culture, international relations, living conditions, market conditions, state regulations, economic infrastructure, ecological conditions, and human resources*. These local conditions influence the technology which is defined by a set of four elements: *technique, knowledge, organisation and product*.

[Lecturer 2] describes two of the compartments of the framework. For *the social relations of production* he provides a brief overview of the socio-political and institutional settings, where the topics developed are : a) recent policy changes, b) policy implementation, c) registration conditions, d) public private partnerships, e) small industries development organization, f) impressive ppp arrangement, g) formal education and vocational training, h) informal vocational training, i) classified roads, j) the non-classified transport network, k) power supply, and l) communication.

For the *historical and cultural background* he makes a description on the development of that particular industry which is the object of his study.

How has the *influence of context* been shown?

Four issues emerged from the task of seeing how the influence of context has been shown:

- The influence of context is done through particular properties of context.
- The influence of context is seen when context modifies the elements which define the object of study.
- There are some elements which are not influenced by context, that is, the elements remain the same no matter the context.
- The difficulties when trying to study context.

The first issue, that the **influence of context is done through particular properties of context**, is something which was mentioned at the beginning of this chapter, that is, that the way context exerts an influence is through the particular set of circumstances (Honadle, 1999), structures (Danziger, 2005), systems (Dolowitz, 2000), or cultures (Minogue, 2006) from each place (Figure 1).

The particular properties of each context will then have different effects in the object of study. For example, Honadle (1999) writes that under different conditions or circumstances policies can produce different results (p. 134); Danziger (2005) refers to country structures which influence the way a country developed, and that these development structures might not be compatible with the development structures from other countries (p. 269). To complement this, [Lecturer 2] presents how changes in a set of 12 local conditions will have an influence in the technological setting of the country (Box 5).

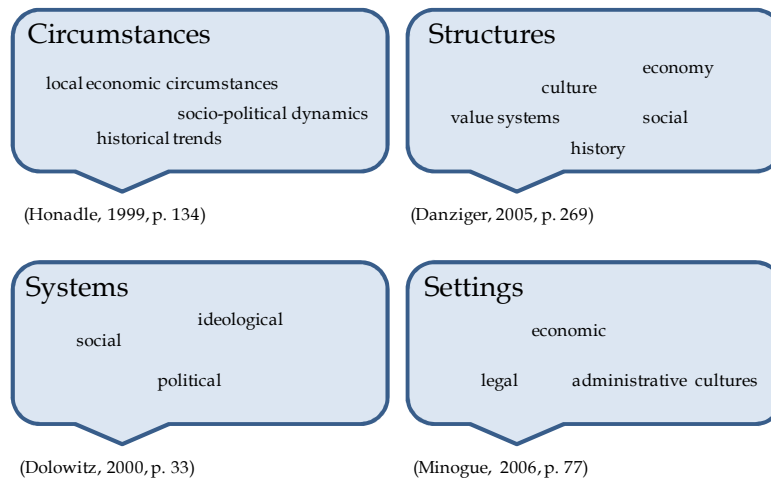


Figure 1: Particular set of circumstances (Honadle, 1999), structures (Danziger, 2005), systems (Dolowitz, 2000), or cultures (Minogue, 2006) as being behind the influence of context.

A specific example of how some authors try to show the influence of particular properties from the context is the one seen in the article by Hilding-Rydevik & Bjarnadóttir (2007). The authors, taking as point of departure concepts given in literature, identified the elements from the context -at the national, regional and organisational level- which influenced the selection of SEA as the particular environmental management tool used to achieve sustainable development (Box 6) (see Appendix 5 for more details).

Box 6: Contextual elements influencing the selection of an environmental management tool

Hilding-Rydevik & Bjarnadóttir (2007) aimed to explain whether context played a role for the differences that existed between the regional organisations and their selection process on tools for promoting the integration of sustainable development.

By *context* they referred to “*specific national characteristic, region-specific issues or regional organisation specific issues*”. Such issues were then explored by means of the concepts of *planning style, national policy style* and the *EIA typology* by Sager (2001), Richardson (1982), and Bartlett & Kurian (1999) respectively.

The result of this process was a list of contextual elements which the authors argued played an influence at the moment planners were deciding for a specific environmental tool for achieving sustainable development. These elements were: the institutional environment, the regional planning style, the national planning style, the problem pressure (defined by the environmental characteristics, the economic performance, and the public opinion), the judicial system, the views on nature, and the views on the tool.

The authors also described the way these contextual elements interrelate among themselves, and how they influence in the selection of the tool:

- The institutional environment influencing the planning style: “*Planning style does not come out of the blue; neither is it primarily the result of one planner’s arbitrary or idiosyncratic improvisation. Style is linked -probably in some loose way- to the institutional environment via the characteristics of the planning agency*” (p. 670).
- Regional planning style influencing the choice of tool: Based on what was previously said, the authors write “*Thus, it can be assumed that the choice of tool can be embedded in the style of the regional programming/planning processes*” (p. 671).
- National policy style influencing national organisations for regional development: “*National organisations for regional development and their operating procedures are in turn embedded in, and characterized by, the different national policy styles and historical contexts*” (p. 671).
- Contextual variables influencing pollution control strategies: *context variables that have impact on pollution control strategies and the outcomes of these strategies [...] national policy style is one of such variable [...] a second being problem pressure [...] the notion of problem pressure includes basic environmental characteristics, economic performance, and public opinion* (p. 671).
- The characteristics of the national policy influencing the success of environmental policy: “*the innovation capability of a national political and judicial system is a necessary, but not sufficient condition for successful environmental policy*” (p. 671).
- The view of nature influencing the selection of the tool: “*distinct differences exist, in terms of the view of nature, between civil servants in the environmental sector in the Nordic countries*” However, the authors do not clarify how the differences on the view of nature influence the selection of a specific tool.
- The view of the tool influences the selection of SEA as *the tool*: the authors refer to a typology developed by Bartlett and Kurian (1999) that “[...] illustrates the different modes of operation expected of EIA” and that even though such typology does not exist for SEA, this one could be used for selecting not only SEA but other environmental tools (p. 671).

In the PhD course it was also seen how [Lecturer 4] described how the influence of particular properties from the context could be seen. He referred to the particular properties of context as the *contingent conditions*, contingent referring to that which is particular to a specific context and which influence the object of interest. In order to find the contingent conditions it is important to have them differentiated from the *necessary conditions* (those which defines the object and which always will be there no matter the context) (Box 7).

Box 7: Difference between the necessary and the contingent conditions

While *contingent* refers to that which is particular to a specific context, *necessary* are the conditions that have to be there so that the object can be called like that: *“to have the concept landlord you also have to have the concept tenant and is not just landlord and tenant, but also rent, because rent is what mediates the relationship between these two people”*.

Necessary conditions are context independent since they will always be there no matter the context: *“this will exist independent of context, no matter where we look”*. Contingent, on the other hand, are those conditions which will appear depending on the context *“the contingent conditions will depend on which context we are, things which will be different from context to context”*. [Lecturer 4] gives an example in the case of tenants and landlords: *“so if we're talking about New York, then for instance often questions of ethnicity and race would be a very particular thing so there would be questions of white landlords, black tenants and things like that; if we're talking about in Denmark ethnicity doesn't play bigger role in the housing market, it would be something else”*. Ethnicity and race will then be contingent elements.

To the question on how to find the *necessary* and *contingent* conditions [Lecturer 4] replied: *“when you have your case then you will sit down and say, ok, in this case, which elements are very particular to this context, is there something here which I shouldn't expect to find elsewhere, then we can say, ok, these are contingent circumstances, the other things I can expect to find elsewhere”*. A way to find the necessary relations is to think *“what is my object, what defines my object, what are the things which necessarily must be there before we can talk about it”*.

He provides an example of a contingent relation identified by some researchers who were studying the case of the windmills in Samsø: *“if I take the people who makes windmills on Samsø [...] it was quite easy for them then to move on to work together in windmills[...] one of the reasons why it happen there was because they had a very long tradition of sort of communal business [...] tradition of working together [...] and they would say, ok, this is kind of specific to this context, [...]so this is probably a contingent, this is something that it's special to this context”*.

He continues saying that a way to find contingent relations is to make a list of all the contingent circumstances which are particular to the context and related to the object of study: *“you can say, in Denmark it is like this, and works like this and this contingent circumstances [...] if I go to Colombia I'll be looking for these things, but I would know that there would be different mechanisms, different contingent circumstances, possible mechanisms that would create something different, it wouldn't be the same”*.

Turning now into the second issue, that the **influence of context is seen when the context modifies the elements which define the object of study**, some authors have tried to identify those important elements from the object studied, and then looking at how those elements are influenced by the context. For example, Bina (2008) identified the elements which made SEA effective, one of which is public participation, then described how the context of China influenced those elements in a particular way, making that the SEA would perform in a different way and not as effective as expected. The description of this can be seen in Box 4.

The third issue of how the influence of context has been shown is that **there are some elements which are not influence by context**, that is, the elements remain the same no matter the context. Slootweg & Kolhoff (2003) define what makes an element influenced or not by context. They present this by refereeing to elements being dependent or independent of a context (Box 8). Context independent elements are the same no matter the context. Context dependent elements are different depending on the context.

Related to the issue of change, Hildén, Furman, & Kaljonen (2004) refer also to *dependency to the context* by writing that some of these factors presented in Box 3 *“[...] appear to vary from country to country, from culture to culture and from case to case”* (p. 529).

Box 8: Elements which are context-dependent and context-independent

Slootweg & Kolhoff (2003) aimed at developing a framework to investigate biodiversity in EIA. In this framework they distinguish between context-dependent and context-independent elements. The differentiation was made to emphasize the fact that stakeholders should be included in the assessment since they are –more than external experts- the ones who can determine the value of a context-dependent element, in this case, the perception that a certain society has on biodiversity (p. 661).

For Slootweg and Kolhoff (2003), *change* is context-independent in the sense that changes coming from an activity will always happen independent of the context (p. 661). For example, a dam will change the river hydrology (p. 659). The authors continue saying that contrary to changes, *impacts* are considered to be context-dependent (p. 661) since the recognition of how critical the modifications in quality and quantity of the functions provided by the ecosystem will be –modifications brought by the *change*-, it is something that varies on the societal context (p. 661).

“Outside experts will be capable of defining most functions of known ecosystems [...] Yet, whether these functions are actually valued by society, [...], is completely dependent on the societal context. This relates to the norms and value system of a society, represented by its laws and regulation” (p. 661).

This issue of elements not being influenced by context, links to the issue of in which cases the study of context is relevant. One of the lecturers from the PhD course presented that while there are some areas in which context is relevant, there were other areas on which it is not so important or applicable.

In the areas on which context does not exert an influence on the object of study, it is known –or assumed- that the object will be the same no matter the context. In these cases the important is not to find how context influences –because usually context have been homogenized- but the interest is on finding a large number of repeated observations from which a causality or correlation could be established. The aim in these cases is to find explanations by the use of generalizations across many contexts [Lecturer 4]. An example of this is the law of gravity, which works the same no matter the context (Sayer, Realism and social science, 2000, p. 20).

This situation is not the same in other areas where the important is to be aware of context *“you cannot generalize how things just happens, but you can try to put up like a schema for possibilities through which things can happen, [...] but how it actually happens can depend on a lot of different things”*, things which are related to its context; that is why it is said that context matters [Lecturer 4].

The fourth issue is about the **difficulties when trying to study context**. One of the difficulties when studying context is about the possibility of going infinite: *“Any discussion of context encounters a sticky problem –the possible dimensions that might be included are infinite. There is no agreed upon point at which the search for contextual ingredients stops. There is no way to determine that the list catches all the important things”* (Honadle, 1999, p. 79).

Related to the last sentence mentioned by Honadle: *“There is no way to determine that the list catches all the important things”* [Lecturer 4] referred to a difficulty when trying to of finding the contingent mechanisms²: *“[...] you can only give hints [...] are we talking about institutions, individual ethnicity, religion, class, gender, all kind of things, and that change historically as well [...] It is very complicated in reality to do some of these things, but it can be a fruitful exercise to think in terms of what must be here”*. Sometimes the mechanisms are observable or they might be familiar from other situations, and other times they might have to be hypothesized *“It should be noted that not all concrete objects are empirically observable, nor are all abstract aspects of objects unobservable [...] they exist regardless of whether anyone happens to be able to observe or otherwise know them”* (Sayer, 1992, pp. 107, 87).

² Mechanisms refers to those elements from the context which help explain how something happens; contingent refers to that which is particular to a specific context and which influence the object of interest.

Another difficulty is related to the case of misattributions of causality “given the presence of multiple systems and causes in the things we study, and the possibility of different causes producing the same effects [...] for instance, you can lose your job for a variety of reasons” (Sayer, 2000, p. 16). These problems are inherent to the study of reality: “In the “open systems” of the social world, the same causal power can produce different outcomes [...] typically, social scientists are dealing not only with systems that are open but ones in which there are many interacting structures and mechanisms. This creates the risk of attributing to one mechanism (and its structure) effects which are actually due to another” (Sayer, 2000, p. 16).

There is also the aspect of actors’ misunderstandings “It also needs to be remembered that social reality is only partly text-like. Much of what happens does not depend on or correspond to actors’ understandings; there are unintended consequences and unacknowledged conditions and things can happen to people regardless of their understandings” (Sayer, 2000, p. 19).

4.3 Summarizing

The aim of this chapter was to determine how context exerts an influence. Such aim was explored by means of developing a set of criteria for defining the influence of context and having as guidance that which was said on the process of *conceptualizing* (e.g, the defined concepts should serve as a guide for what one is looking for; concepts should not be too ample or too narrow; the concept starts as a broad outline, which is revised and narrowed during the project development, and then left adaptable for other researchers to use it in relation to their particular projects). The influence of context was addressed through the concept of *context-dependency*.

The point of departure was to find information on how the topic of *context* and *context dependency* have been researched. The influence of context has been recognized. Some authors have tried to identify the influence of context by breaking context into variables (others write this should not be done); that it is through the particular set of circumstances, structures or conditions from each place that context exerts an influence; and that not many people have managed to identify the critical elements of context influencing policy formulation and implementation.

The information found in literature regarding the particular set of circumstances (Honadle, 1999), structures (Danziger, 2005), systems (Dolowitz, 2000), or cultures (Minogue, 2006) as being behind the influence of context, was considered the departure point, and that this was complemented by a further literature review process exploring how other authors have been addressing the issue of the *influence of context* in their research. Such literature review process was also complemented with the information obtained from a PhD course on the topic of *context dependency*.

Three guiding questions were used for the development of the context-influencing criteria:

- How has the topic of *context* and *context-dependency* been researched?
- How has *context* been defined?, and
- How has *the influence of context* been shown?.

How *context* and *context-dependency* have been researched

The topics of *context* and *context-dependency* have been covered by a broad range of areas including for example the natural and social sciences. In social sciences the influence of context is mentioned, among others, in linguistics (Fischer, 1993), social experiments (Helm & Morelli, 1985), knowledge (Flyvbjerg, 2001), and science-policy relations (Tuinstra, 2008). However, even though these topics of *context* and *context-dependency* have been covered, in some occasions the concept are only mentioned and sentences as *it is context dependent* appear with no explanation on why it was said so, or how that was known. In the same

line, some of the lecturers from the PhD course acknowledged that *context* is a concept which is recognized by the lecturers as a study area in itself, but it is also a concept which is sometimes assumed or taken for granted [Lecturer 3].

Nevertheless, the study of context seems to have been evolving, moving away from saying *it is context dependent*, to having context as the centre of the research. Such situation was the case of four articles taken for further inspection. In these articles it could be seen that a deeper insight had been given to these concepts of *context* and *context dependency*. The authors' articles were not limiting to say that context exerts an influence, but tried to explain how this dependency (or influence) takes place. It has to be said, though, that despite this evolution, sometimes the influence of context was not clearly explained as expected, even though the information for doing so was presented by the authors.

Lecturers take different starting points at the moment of including context in their research. These include the lecturers' intuition, experiences, background, or personal interest; the definition from a dictionary was also taken as point of departure. These starting points are not exclusive, and one could see that lecturers used a mixture of them.

How *context* has been defined

About how context has been defined, one could see that both in literature and the lecturers there are different ways to define *context*. The definition will depend on the topic being researched (i.e. *context* could be a geographical place, a society, a political arena, or a person), and also the definition will depend on the lecturer (i.e. *context* could be defined based on the background of the lecturer, on his interests and experiences).

Context has also been defined in terms of a *setting* which surrounds a situation (Hilding-Rydevik & Bjarnadóttir, 2007) or more specifically, a setting which surrounds a policy (Honadle, 1999). Context has also been seen in terms of a *scenario* [Lecturer 5] or that which is *outside* of the object of study and [Lecturer 3].

Another way in which context has been defined is in terms of a collection of *variables* (Schmitter, 2008), or as a set of *dimensions* (Bina (2008) and Box 13). The term of *dimension* was also used by Honadle (1999) when he referred to the map of context (aspects which need to be understood and looked at before implementing a policy), and by [Lecturer 2] from the PhD course when he referred to a framework that supports and defines technology.

The description of the dimensions defining context was made according to the author's own criteria, or based on inputs from interviews, literature research or observations.

How the *influence of context* has been shown

Four issues emerged from the task of seeing how the influence of context has been shown. The **first** one is that the influence of context is done through particular properties of context: particular set of circumstances (Honadle, 1999), structures (Danziger, 2005), systems (Dolowitz, 2000), or cultures (Minogue, 2006) from each place (Figure 1). The particular properties of context being some concepts found in literature and which the authors took as point of departure in their research (Hilding-Rydevik & Bjarnadóttir, 2007 in Box 6); the particular properties of context which are not expected to be found anywhere else (Lecturer 4 and the contingent conditions in Box 7).

The **second** aspect which emerged from the task of seeing how the influence of context has been shown, is that authors have tried to recognize the influence of context by identifying the important elements from the object studied, and then looking at how those elements are influenced by the context (i.e. Bina (2008)

identifying the elements which made SEA effective, and how one of those elements –public participation– behaved the context of China (Box 4)).

The **third** aspect is that there are some elements which are not influenced by context, remaining the same no matter the context (i.e (Slootweg & Kolhoff, 2003) defining context-dependent and independent elements (Box 8)).

The **fourth** aspect is about the difficulties when trying to study context: possibility of going infinite; the ability of identifying the appropriate set of particularities of context which create an influence; misattributions of causality; and the risk of actors' misunderstandings.

4.4 Concluding: returning to the research question

The question to answer in this chapter was *How can it be determined if –and how– context exert an influence?* The expected knowledge to obtain being a set of criteria for defining the influence of context.

The criteria could be made out of the three points mentioned when it was said on how the influence of context has been shown: (a) That, which influence, are the particular properties of context; (b) That, which is influenced, are the defining elements from the object of the study; (c) If there is an influence from another context, the particular properties of that context will change the way the elements from the object of study were defined in its original context.

The criteria can be seen represented in Figure 2

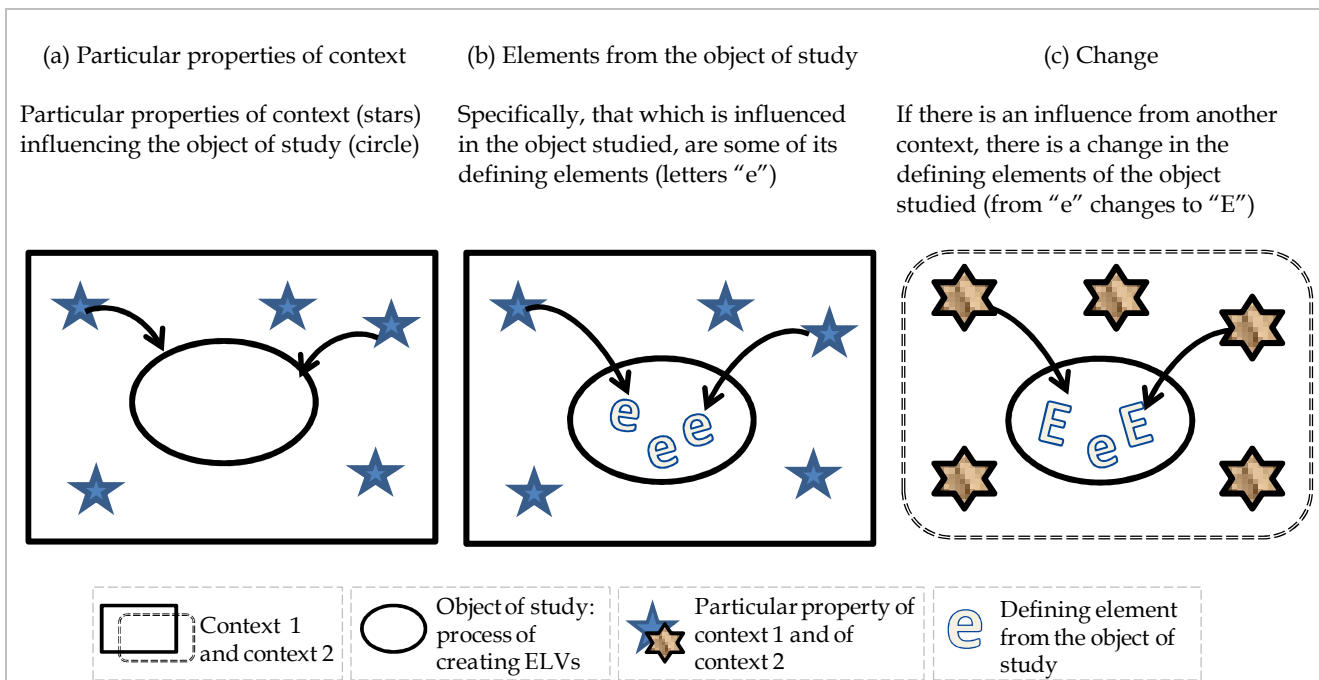


Figure 2: Components of the context-influencing criteria.

The figure on the components of the context-influencing criteria can also be related to the three subsequent researched areas of this PhD project.

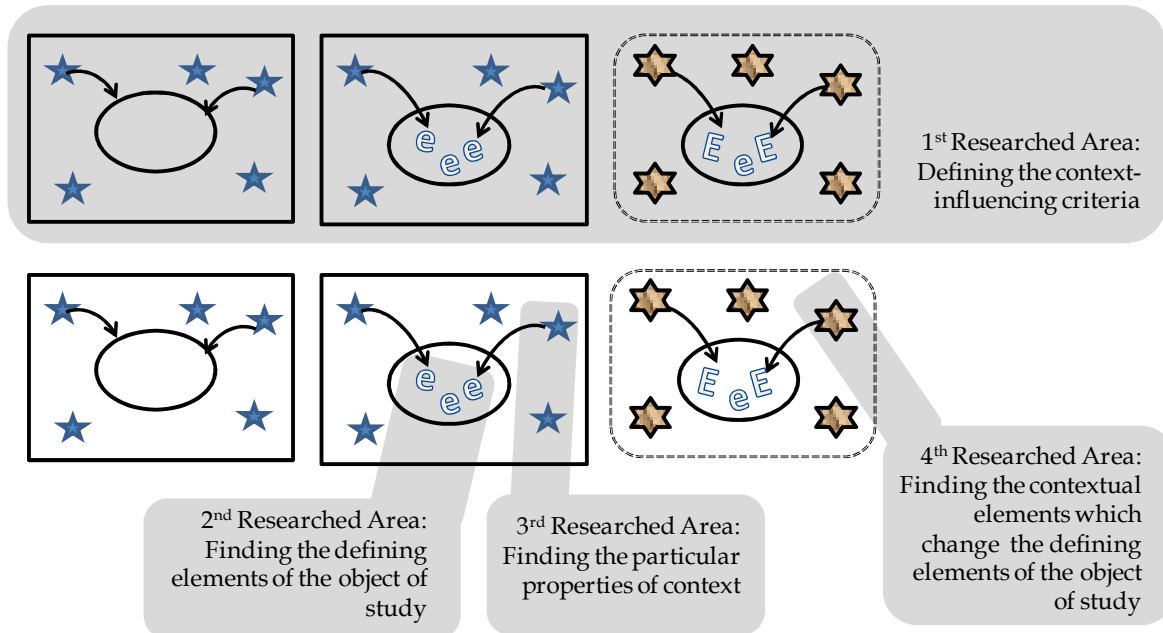


Figure 3: The four research areas explored in this PhD project and its relation to the context-influencing criteria.

4.5 Additional reflections

Reflection on the existing literature

The findings from the journal articles and from the PhD course helped confirm that general information said about the circumstances (Honadle, 1999), structures (Danziger, 2005), systems (Dolowitz, 2000), and cultures (Minogue, 2006) from each place being the particular set of circumstances from a context which exerted the influence. That is, from the articles it was possible to obtain concrete examples on how those circumstances, structures, systems and cultures exerted an influence

The context-influencing criteria given tried to follow that which was said on the process of *conceptualizing*, that is, that the criteria given is not one which is immutable, is one that can be tailored to the particular research being carried, and is one that is expected to help improve the operationalization of the project, that by serving as a guide for what one is looking for.

Reflection on the findings

Besides the context-influencing criteria, lessons can be learned from that which was said about how context has been researched and how has been defined. One of these points is on doing better linkages between how the particular properties of context influence the object of study, and how the defining elements behaves different in a new context. One could wonder why the authors did not clarify this linkage even though -in my opinion- they had all the information to do so (example presented in Box 4). Was it because they were so saturated with the topic that they did not see it? Or was it that they thought they were being clear when in reality they were not? Or was it that because in social science one cannot assert thing but one has to write things in a more open way? It will be interesting to see if I will be able to do that clear linkage that I am criticizing so much.

Another point is that of what is the starting point: intuition, experience, background or personal interest, starting points which are not exclusive. So far I can be said that my starting points used are background (being an engineer and trying to define the concrete influencing elements from context); personal interest (curiosity on how the ELV were defined); and having the intuition that is it a mixture of several factors: political, cultural, economic, social and technical.

Reflection on the methods

The literature review served two purposes, one, to provide some sort of state of the art on how *context* and *context-dependency* has been researched and defined, and two, to provide some inspiration on how to address these concepts in this project. The review also allowed to position the current PhD research, mainly by seeing the issues on which attention should be paid such as trying to be as clear as possible when explaining the *context-influencing* linkages.

The Context-Dependency course was made to collect the experience of some of the lecturers from the Department on how they have integrated the concept of *context* and *context dependency* in their research. The ambition of the PhD course was not to arrive to a strict definition on *context* or *context dependency*, but to share the different concepts that exist. It was also aimed that each course participant would take an individual point of view on what could be taken away for their own PhD projects. A relative large amount of information was obtained from the course, and almost as overwhelming as trying to find the elements of the context which are applicable to the PhD projects, was to find the elements from these lectures that would be applicable in the projects.

Some general comments can be made after the process of gathering the information from both sources. Regarding how the topic of *how context dependency has been researched*, in literature one could see there has been an evolution where *context* is moving from being a peripheral description, to being the central topic of the research. With the PhD course this evolution was not really seen, basically because the lecturers who were called to participate were the ones who it was known had been working already with the topic of *context* in their research. Perhaps an interesting question to make would had been something like: when and how did you start to realize that *context* was an important issue to take into account?

4.6 References

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4.7 Appendix 1: Context is the scenario which is relevant depending on the role of engineering

For [Lecturer 5], *context* means a *scenario*. For each one of the roles of engineering (see Box 9) there is a context, the “scenario” where engineering is developed in, and which is the relevant one. For the economic role the relevant context is the companies or the market; for the social role the relevant context is the cities, the societies; for the cultural role the relevant context is the movements or the cultures.

The definition of context will be subject to a choice: “*in the best of worlds all three of these [economic, social and cultural] would be combined in one, but in the real world it is very seldom the case*” [Lecturer 5]. Therefore, based on the role of engineering that the researcher is interested in studying, the researcher will have to make a choice on which of the three scenarios will be defined as context: “*you don't want to be totally ignorant of the different contexts, but you have to sort of, in some sense, make a little bit of a choice, depending on what kind of project, what technology you're interested. Each kind of context has its own, you could say both methodological but also conceptual aspects*”. For example, “*what [name] is looking at in his thesis, local renewable energy projects and there it seems that the relevant context are the local community, and the cultural traditions [...] the whole meaning of the technology, the importance of the technology is very different than if [he was trying to find how companies compete in the market, and in that case is not so important what the community thinks about it*”.

Box 9: Context as a scenario for engineering

Three types of roles for engineering: *economic*, where the goal is to make a profit, for example, some sort of invention for which the investors would like to get economic benefits; *social* where the goal is to benefit a society, for example, the construction of a bridge that will improve the mobility in a city; *cultural*, where the goal is to reach the values of a particular community, for example, the development of wind mills for a small community who want to be independent of coal-generation electricity.

4.8 Appendix 2: Recognizing the influence of context

In the articles read, authors recognize that *context* has an influence on their object of study and so they into the task of exploring how the influence of context takes place. Bina (2008), for example, writes about the change of the SEA discourse since 1990s, aiming for “[...] *a better understanding of how the context of SEA – politics, culture and society, and the organizations and institutions therein- can influence the effectiveness of assessment*” (p: 718) (see Box 10).

Hilding-Rydevik & Bjarnadóttir (2007) also write that in recent years several scholars “[...] *have highlighted the need to understand the implementation context of SEA, as well as to adapt SEA to such context to ensure the successful implementation of SEA*” (p: 667).

Box 10: Governance capacity framed by the context of SEA

In her article, (Bina, 2008) writes that effectiveness of an SEA is not only related to the role of decision makers and the information provided to them, but to the governance capacity of the decisions makers, capacity which is framed by the context:

“[...] there is a strong dynamic interaction between contextual dimensions, and it is the combination and relationship between these dimensions that determines the capacity for environmental governance, which in turn, influences the design and effectiveness of assessment instruments such as SEA” (p: 720).

She claims that decision makers are having a limited governance capacity, limitation which is constraining the influence of SEA in policies, programmes and plans -PPPs. She continues saying that to strengthen this governance capacity it is necessary to aim at *“[...] an incremental change in mindsets, in the level of awareness, the institutional and organizational setups, and the culture that drives the planning”* (Bina, 2008, p. 719). Changes in mindsets –which will have a more long-term impact- are related to the context in which SEA is applied *“[...] it is the context within which planning and assessment occur, and especially all the qualities that are commonly recognized under the framework concept of good governance that makes the difference”* (Bina, 2008, p. 718).

According to her, the SEA discourse has changed and evolved, and that it moved from *“[...] the technical and rational domain of assessment and evaluation to embrace the diverse realm of good governance, social and policy learning”* (p:718). After two decades of practice, she argues, it has been shown that information alone does not lead to better planning or better choices *“SEA moves beyond PPPs, to include the environmental governance capacity of institutions and organisations”* (Bina, 2008, p. 719).

4.9 Appendix 3: Context is that which is outside of our object of study

[Lecturer 3] defines 6 levels around the object of study, levels which could be depicted as circles around a central one which is the object of study (see Box 11). For him, context are those spheres which are not included in the study, once those layers are included in the projects, it stops being defined as context *“[...] contextual things are things that we have decided not to work with”*.

Defining what is included or not in a project has to do with defining the elements of context which are *influential or not influential “[...] if there were strong relationship, then of course we would have brought it into our focus, and then we would have been working with in our research [...] you’ll find that if you have something that is important then you will normally blame that there is a short distance and a strong causality”*.

The definition of context is dynamic *“[...] when you’re getting interested in the context and you try to involve the historical part or the cultural part, then this delimitation around the object of your study would be expanding so that these would be part of the object, and then the rest of it would still be the context [...] context is not a given thing, it really develops together with your development of your project, and if you’re good researcher and take in relevant contextuality then the amount of contextuality would be lesser”*.

Projects can be become infinite and context can be limited *“[...] if we want to work with everything in the world then of course there wouldn’t be any context left outside in the world [...] when we talk about contextuality is a concept that disappears when we start expanding our projects and involve or integrate fluffy things in it”*.

Box 11: The 6 layers of context

[Lecturer 3] defines 6 levels of context depicting them as circles around a central one which is the object of study. The location of the circle indicates the influence that the level has on the object of study, the closer the circle, the more the influence in the object.

The levels he present, in decreasing order of influence, are: level 2 describing how the object was constructed in society (the social construction of technology, institutions, and capacity theories); level 3 on how it could be assessed the importance of that object in society (technology assessments, evaluation and implementation studies); level 4 and 5 are the historical and cultural issues which could influence the object of study; level 6 and 7 are theories which describe the social and material world and he refers to some authors which in his opinion should be read "*if you want to know something about how is the world*" (Habermas, Bourdieu Beck, Luhmann, Foucault -for the social science, and Bohr, Einstein, Darwin -for the material science).

However, this map could also be interpreted as how deep one could go into a research: one could do research on an object as such; or research on how it was constructed or on how useful is it; or on what is their historical and cultural background; research could also be done on how the object is perceived/understood based on the theories that describe the social and material world.

4.10 Appendix 4: Defining context

For Bina (2008) context refers to the "aggregation of influencing elements". For example, she defines context as:

"a set of dimensions that (1) can enable –or constrain– SEA's direct effectiveness on PPPs [policies programmes and plans], or (2) can be considered the complementary object of SEA –with the aim of promoting incremental effectiveness" (Bina, 2008, p. 719)

She identifies the elements which influence the effectiveness of SEA and groups these elements into dimensions (Box 12).

Box 12: Contextual elements influencing the effectiveness of SEA

As a point of departure, (Bina, 2008) presents the dimensions of context *“Context includes the organization and institutional location of the decision-making process [...] which are themselves situated within and influenced by a given society and its broader social, cultural and political values”* (Bina, 2008, p. 719).

Then she writes how each of these dimensions have an influence in the effectiveness of SEA:

- The political dimension: *“The political dimension of policy-making process is recognized as an often definitive influence over SEA effectiveness. The tendency to try to isolate (even ignore) this dimension and favour a more technocratic interpretation and analysis of the process, has shown its limitations, not least in the policy analysis tradition. Politics plays a key role in defining the purpose of instruments such as SEA”* (p. 719).
- The cultural dimension: *“The cultural dimension is also critical in determining how key activities are conducted in practice. Most aspects, even if legislated for, will still be open to context-specific interpretations: assessments for example, can be viewed as bureaucratic phase or an administrative procedure or as a dynamic process, and other aspects – such as participation, consultation, co-operation, co-ordination, and knowledge management- are all subject to cultural nuances, different constructions of reality, social relations, and rationalities”* (p. 719).
- The administrative dimension : *“The administrative dimension refers to the way all elements of planning and policy-making are managed on a daily basis, including politicians’ interaction with civil servants, and all procedures for data gathering, assessment, planning, and decision-making”* (p. 719). To note is the fact that initially in the article she referred to an *organizational dimension* and later on she calls this the *administrative dimension*.
- The institutional dimension: *“The institutional dimension is interpreted to refer to legal and policy systems in place in a particular context, which are of direct or indirect relevance to the PPP being assessed, and to the SEA process in particular”* (p. 719). (Bina) then refer to a publication by Jordan and Greenaway from 1998 who said that the institutional dimension *“[...] also can include the concept of ideology, as a set of beliefs that reflect and explain reality”*; she also refers to a publication by Bate from 1994 to say that the institutional dimension can also include the concept of culture *“[...] as the pattern of basic assumptions which a given group has invented, discovered or developed in learning to cope with its problems of external...and internal adaptation”* (p. 719).
- The social dimension: is a dimension that (Bina) mentions but for which she does not provide any further explanation.

She also writes that *“the political and cultural dimensions are effectively the backdrop to all other contextual elements”* (p. 719).

Bina (2008) would also define the context by making a list of characteristics that would describe the previously defined dimensions of it. For example she presents the context of China by making short descriptions of each one of the contextual dimensions she previously mentioned, that is, on the politics, society and environment and on the institutions, organization and actors (Box 13). These short descriptions are basically a summary of the most important aspects she found after doing interviews, literature review and attendance to events:

“I summarize the aspects of the context that informants identified as particularly relevant to PEIAS [SEA for China’s plans and programmes]. This is not a comprehensive list but its significance is confirmed in the literature and by my own observations at seminars and meeting” (p: 724).

Box 13: Description of the dimensions from the context of China

For the description of the Chinese dimensions of *politics, society and environment*, (Bina, 2008) writes about China trying to reach these 3 objectives; about the limited resources of China per capita; about the increasing damage to vital resources; about the inequality for poor and rich; about the environmental problems triggering social conflict; about the capacity of the government to implement its policies; and about the hierarchical authority, among others (Bina, 2008, pp. 724-6).

For the description of the Chinese dimensions of *institutions, organization and actors* she writes about the rules and culture that govern cooperation and coordination between organizations (bureaucracy, insufficient coordination, lack of transparency); about the government's top-down approach to decision making; and about ambiguous rules for environmental authorities, among others (Bina, 2008, pp. 726-7).

4.11 Appendix 5: Presenting the influence of context

Hilding-Rydevik & Bjarnadóttir (2007) show the dependency to context of an event (the way SEA is used as a tool) by showing how this event is influenced by particularities from the different regions (contexts) of their study. The particularities in this case relate to how the different regions see the goal of achieving sustainable development, and this the authors refer to as *political will* (Box 14). The authors conclude that being the *political will* one of the factors influencing whether SEA becomes the tool or not to achieve sustainable development, and being that the regions have a different *political will*, then the fact of having SEA as the tool will be region (context)-dependent:

Box 14: Political will as a context-dependent element

Hilding-Rydevik & Bjarnadóttir (2007) see the *political will* as a defining element for the use of tools to achieve sustainable development. They include this element among the "*facts and circumstances that have an impact on the choice of approaches to, and outcomes of, tool such as SEA*". They write that when the political will is there, then the regions use a mix of tools to make sure that sustainable development is included in their work:

"[...] when the regional political will is in place, and when there is a determination that sustainable development should be an important part of, or the basis for, regional development, then the regions use a mix of approaches, measures and tools to promote and progress their work with sustainable development" (p:673).

They conclude that this element of *political will* is context-dependent (p. 674) because of the way it is presented in the different regions of their study. For two of the studied regions, the will is present and so the use of the tools becomes effective to achieve sustainable development:

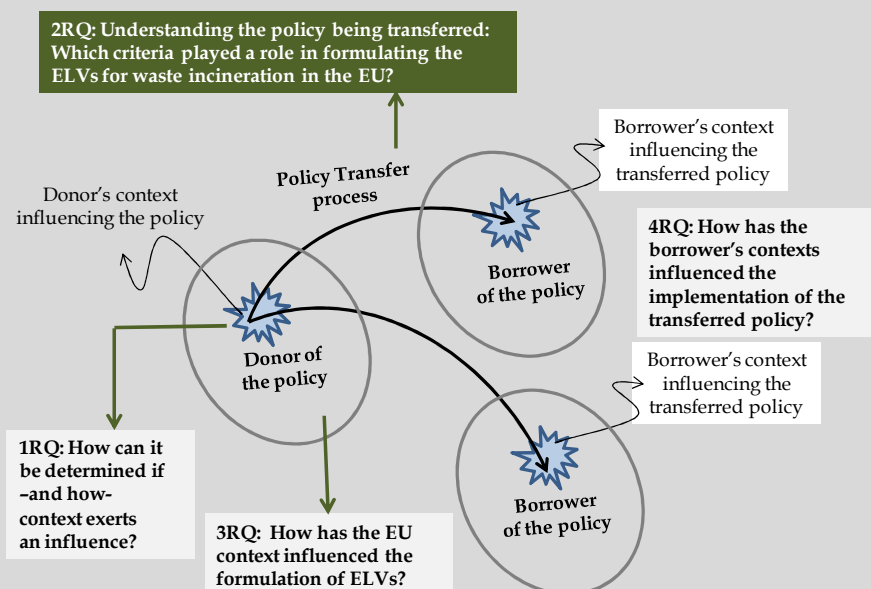
"[...] in the Finnish and Swedish regions the tools used do not become goals in themselves, but rather simply remain a part of, and a means to, the overall organisational development work in relation to sustainable development and regional development" (p: 673).

For another of the regions they write that the will of using the tool is not really present, and so, even though they use it, this is not very effective:

"In the Danish case study region no overall political or sector-encompassing political commitment exists. The SEA tool as such exists in a political vacuum with its implementation lacking an overall policy framework [...] the SEA process remains largely ineffective in the sense that it provides input to the formation of the contents of the plan, but it does so too late in the process" (p:674).

The previous chapter presented a set of criteria that would help identify the influence exerted by context. This criteria was the result of the first area explored for the development of this PhD. This area related to the Influence of Context.

The second area explored in this PhD process relates to the understanding of the policy being transferred, which in this case are the ELVs for waste incineration in the EU. This chapter documents the process by which it was identified the criteria used for formulating such ELVs.



This chapter presents also the core of the empirical data collected for this PhD project, that is, the information extracted from the four Directives used by the EU to regulate the process of incineration of waste, and from the working documents used by the legislators for the drafting of such Directives.

Second Part (ii)

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5. Second Area Explored: The Understanding of the Policy Being Transferred

Introduction

As mentioned in section 1.3 *Theoretical Bases* (figure 1), for an effective Policy Transfer process, legislators should do a pre-evaluation of that foreign policy which is aimed to be implemented locally. This pre-evaluation refers to the development of a conceptual model where it would be identified how the policy works and what are the cause-effect relationships between its parts (Rose, 1991).

Based on this conceptual model, legislators could identify the resources (elements from context) which are required for the effective functioning of that policy (Rose, 1991). Further steps include an evaluations on whether those required resources exist locally, and if not, which local elements could replace them. Finally, an evaluation is done on whether the policy should be adopted exactly – something which implies copying and which according to Honadle (1999) would not guarantee success; or if a hybrid should be constructed; or if the current existing local policy is the best option (see Figure 1 in Chapter 1).

As mentioned in the first part of this PhD report, the aim of this project is to try to identify how context plays a role in the processes of formulating and implementing policies. Four areas were seen as worth exploring in order to reach this aim. The previous chapter addressed the first of this areas and it was related to the influence of context. This chapter addresses the second of the explored areas which aims at understanding the policy being transferred.

In particular, this chapter documents the process by which it was identified the criteria used for formulating the ELVs given for waste incineration in the EU, being ELVs that policy which is the one being transferred. The research question was formulated as *Which criteria played a role in formulating the ELVs for waste incineration in the EU?* the idea being to understand how those ELVs were formulated, what lied behind the numbers given to them, and if there were some internal cause-effect relationships which defined these numbers. The expected knowledge to obtain being the factors influencing the formulation of ELVs for waste incineration in the EU.

The criteria was given in terms of *factors*, where factor refer to that which influence the number given as ELV, that which makes the number different. The idea of searching for *factors* originated after reading Sands (2003) who presents that the feasibility of having specific environmental topics legislated at international level is dependent on something he referred to as *scientific and economic factors*.

The identification of these factors also goes in line with the context-influencing criteria from the previous chapter, in which the factors would be the defining elements from the object of study, elements which are being influenced by context.

5.1 Methods

The goal of the 2nd researched area is to arrive to a list of factors which influenced the numbers given as ELVs; the particular issue explored being the criteria which played a role in the process of formulating the ELVs for waste incineration in the EU.

In order to reach this goal I considered relevant to use a method which would allow building cause-effect relationships, in particular, building cause-effect relationships which define the formulation of ELVs; it was for this reason that I looked into the process of *providing causal explanations of political phenomena*.

Given that not all of the ELVs given for waste incineration will be investigated, the method on *selection of case study* was also explored to help identify those ELVs for which the influencing factors would be found for.

Information on these two topics is presented next.

Causal explanations of political phenomena

There are some points to bare on mind when one is trying to provide causal explanations of political phenomena, in other words, trying to identify the factors which are responsible for the occurrence of the event in question, in this case, the ELVs. The key points of this process –which was explained in more detail in section 2.1 *Methods*- are summarized in Box 1.

Box 1: Key points from the process of providing causal explanations of political phenomena presented in chapter 2 (Methods)

- Conditions under which is possible to make statements of the type “if x, then y”: when one specify the time and space under which such statements will hold; and when one has the view that there is a recognizable order in the world, that regularities can be recognized, and that changes in the world are patterned and can be understood (Héritier, 2008).
- Approaches to which one could arrive to causal explanations: (1) use of pre-established variables, which are defined as dependent/independent ones, and where the influence of the independent on the dependent variable is evaluated through experiments; (2) use of theory, and not experiments, to explain the relationship seen between the dependent and independent variables; (3) use of a model constructed from different theories to explain an already-known policy outcome; (4) use of a deep study of a case to identify the causal factors and the contingent conditions that lay behind the occurrence of the case. The selection of the approach is done based on the type of research and expected outcome: 3rd and 4th approach for problem-driven; 2nd for theory driven (Héritier, 2008).
- Role of the existing literature in the process of arriving to causal explanations: literature is especially applicable when using the second or third approaches; it is rare that only one theory would help explain the phenomenon in question; explanation may be related to several theories, and to aggregate theories, a logical relationship should be laid between them; the relationship could be of a competitive nature, or of an additive one (complementing each other) or of a submissive one (one theory incorporated in another) (Héritier, 2008).

These key points guided the process of finding the factors influencing the selection of numbers given as ELVs (e.g. having the assumption that there is a recognizable order in the world, that changes in the world can be understood, and that it is important to specify the time and space under which the statements will hold). It was also in particular the 3rd approach (the use of a model constructed from different theories to explain an already-known policy outcome) from which most inspiration was obtained for the development of this researched area.

Selecting the cases

Section 2.1 *Methods* also referred to the process of *selecting the case study*. Given that not all of the 20 ELVs given to regulate the process of waste incineration (WI) will be investigated, inspiration from the information of *selection of case study* was explored to help identify those ELVs for which the factors would be found.

Yin (2003) writes about four types of cases which could be selected: a critical case (to test a theory); extreme case (unique case); revelatory case (common but rare the opportunity to investigate); typical case

(representative of a situation). Yin also talks about longitudinal case (same case studied at different points in time) and a pilot case (first of a multiple-case studies).

In this case, I could say that I used the criteria of a *extreme or unique case* (the case is so rare that is worth documenting and analyzing) for selecting PM as one of the ELVs to evaluate, and the criteria of a *typical case* (the objective is to capture the circumstances and conditions of an everyday or commonplace situation) for selecting Cd as the heavy metal to investigate. The way in which I arrived to this selection is explained next.

As mentioned in chapter 3 *Background information*, The EU has created four Directives regulating the incineration of waste. Two in 1989 on municipal waste –one for existing plants (89/429/EEC), the other for new plants (89/369/EEC); one in 1994 on hazardous waste (94/67/EC); and one in 2000 on all types of waste (2000/76/EC) which compiles municipal, hazardous and co-incineration. This last one repealed the previous three ones as from 2005 (and the one that contains the same ELVs for air emissions as the Colombian Resolución did have).

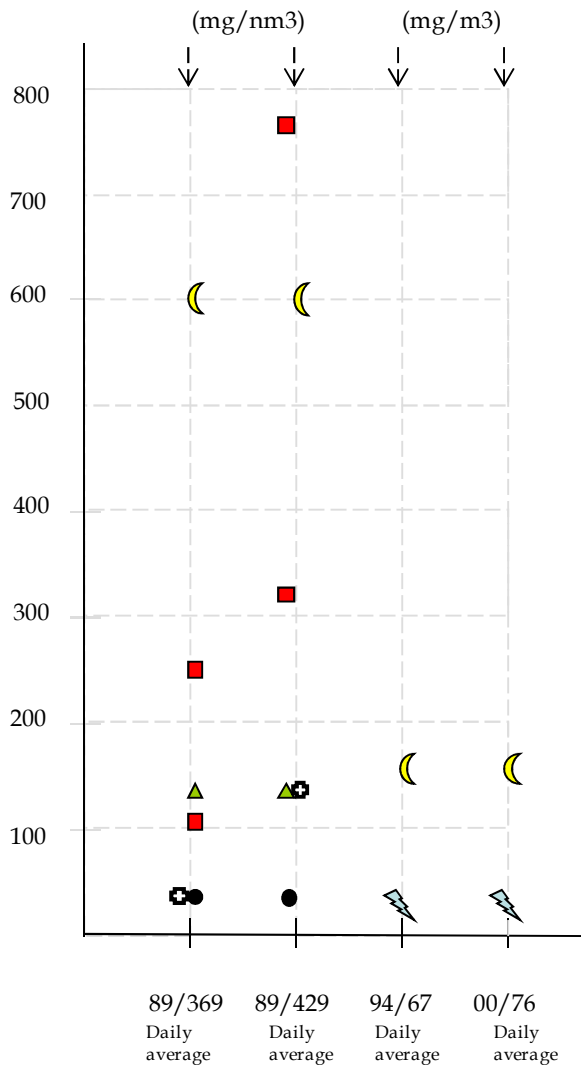
All four Directives provide ELVs for different parameters:

- Regulated since 1989 are hydrogen chloride, hydrogen fluoride, sulphur dioxide, carbon monoxide, particulate matter, total organic carbon and the heavy metals Pb, Cr, Cu, Mn, Ni, As, Hg and Cd.
- In 1994 five more heavy metals were legislated: Sn, V, Co, Sb and Tl.
- In 2000 dioxins and furans complemented the list of regulated pollutants.

From all these parameters, this PhD project concentrates in particulate matter (PM) and the heavy metal cadmium (Cd). The reasons for this is explained next: Most of the parameters follow a trend which is decreasing, that is, ELVs tend to get stricter through time (see Appendix 3 for details on the trends followed). However, the ELVs for PM and heavy metals follow different type of trend.

Throughout time, PM has been getting ELVs ranging from 10 to 600 mg/m³ (Figure 1). The values differ depending on whether the plant is a new or an existing incinerator, as well as other factors such as oxygen content and the incinerator's capacity, factors that will be explored further in the following sections of this chapter. It was thought then that these particularities would provide a good insight into the factors influencing the formulation of ELVs, therefore **PM was selected as one of the cases worth investigating** further through this project.

Total dust (PM)



- <1 ton/hour. Different O2 content
- ▲ 1-3 ton/hour
- ⊠ 3-6 ton/hour
- >6 ton/hour
- ☾ abnormal conditions
- ⚡ independent of capacity

The Directives are allocated in the x-axis in chronological order: 89/369 for the Directive on new municipal waste incinerators; 89/429 for the Directive on existing municipal waste incinerators; 94/67 for the Directive on hazardous waste incinerators and 00/76 for the Directive on all-types waste incinerators.

The values displayed in the y-axis and are given in milligrams per cubic meter (mg/m³) for the 1989 Directives and milligrams per normalized cubic meter (mg/nm³) for the 1994 and 2000 Directive.

The values here displayed relate to those applicable under normal conditions of operation, and should not be exceeded by the daily average.

Figure 1: Tendency followed by the ELVs for PM throughout the four EU Directives for waste incineration.

Heavy metals have been arranged in 4 different groups throughout the Directives and have been given a total value to be fulfilled for each one of the groups (Figure 2). The star no. 1 represents the grouping under 89/369 and 89/429; the star no. 2 represents the grouping under 94/67; and the star no. 3 represents the grouping under 00/76. Each of these groups receiving a total value to follow. There seems to have been a reduction on the ELVs on a factor of 10 through time (for example from 5,0 to 0,5 mg/m³; and from 0,2 to 0,05).

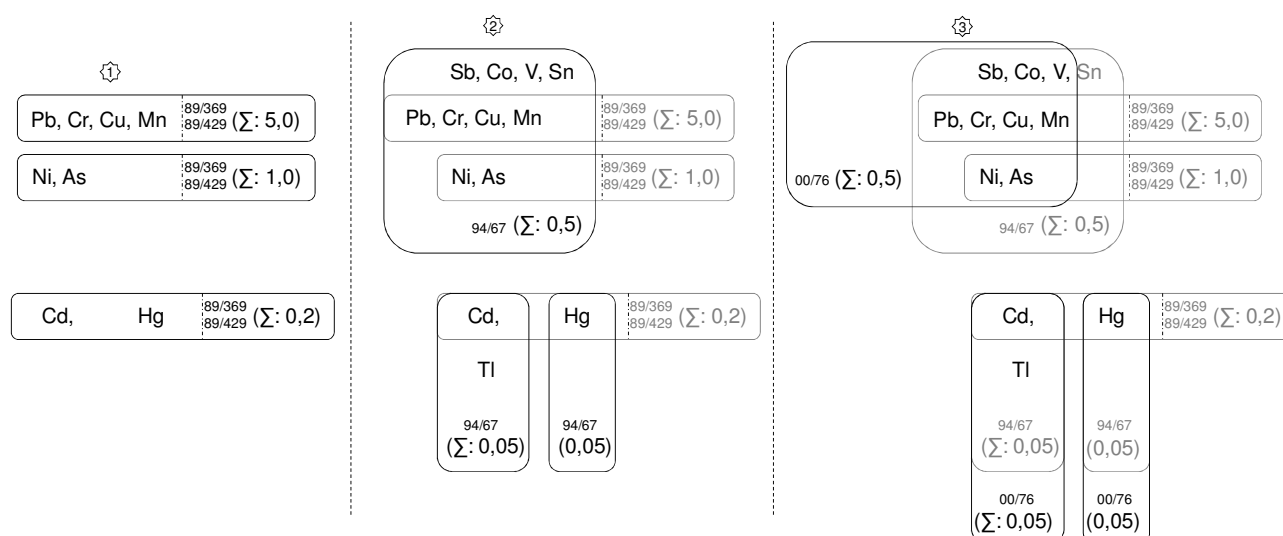


Figure 2: Tendency followed by the ELVs for heavy metals throughout the four EU Directives for waste incineration. the units for the 1989 Directives were in mg/nm³, while in the 1994 and 2000 Directive, the units were given in mg/m³.

Existing literature on emissions from waste incineration presents that the most common heavy metals associated to waste incineration are Cd, Hg, and Pb. Other metals do occur but their toxicities or emission levels are much lower (Williams, 2005, p. 279). While Hg is found mainly in the flue gas (around 70%), Cd and Pb are usually found in fly ash¹ (around 70 and 35% respectively) (Williams, 2005, p. 277). Heavy metals are associated with PM either as individual solid particles or adsorbed on the surface of the particles (Williams, 2005, p. 273). Cd and Pb is associated with PM (Williams, 2005, p. 277). **Cd was then selected as the heavy metal to study** due to its higher association with PM and the interesting trend it had been followed through the Directives: first combined with Hg, then combined with Tl.

Literature as the starting point

The point of departure for the development of this research question was to find what existing literature says of how ELVs are created. Specific information searched was on factors influencing the formulation of environmental standards. The idea of searching for *factors* came after reading (Sands, 2003) who presents that the feasibility of having specific environmental topics legislated at international level is dependent on something he referred to as scientific and economic factors.

The information from literature was categorized and arranged using the methods of *coding* and *content analysis* (Box 1). Some pre-determined categories were also used for assigning the raw material to categories. These categories corresponded to the labels of *technical*, *economic*, *political*, *social* and *scientific* factors.

¹ Fly ash refers to the fine particles that rise with the flue gas. Flue gas refers to the gases that exit the atmosphere by the stack.

Box 2: Key points from the process of *Coding* and *Content analysis* presented in chapter 2 (Methods)

- Process for coding: (1) *initial coding*: very detailed process where code is assigned to every line of text; it provides an initial impression of the data; many codes as necessary are generated to encapsulate the data. (2) *focused coding*: implies combining repeated codes and emphasizing the ones that are most revealing about the data; the data is re-explored and re-evaluated in terms of these selected codes. (3) *axial coding*: connections are made between the codes; done by linking codes to consequences, to patterns of interaction, and to causes. (4) *saturation* is seen as the last step where there is no point in reviewing or bringing new data since this one does not add anything new (Bryman, 2008).
- Content analysis: predetermined categories are used in a systematic and replicable manner; rules are clearly specified in advance for the assignment of the raw material to categories; the analyst's personal bias is introduced as little as possible; in theory, anyone could employ the rules and obtain the same results; categories used should not overlap, they should cover all possibilities found, and there should be no uncertainty on which category to apply, also there should be the possibility of allowing new categories to emerge during the study (Bryman, 2008).

Collecting the info from the Directives and their Working Documents

In this project, the empirical data is obtained from the official documents derived from the EU for the drafting of the four Directives on waste incineration. These documents -referred in this project as *working documents*- refer to the proposals for Directives written by the European Commission, the reports presented by the European Parliament and the Council of Ministers, and the opinions given by the Economic and Social Committee and the Committee of the Regions for the drafting of such Directives.

Inspired by the methods of *coding* and *content analysis*, a specific methodology was created to extract the information from the Directives and the Working Documents in a systematic and replicable manner, using pre-defined categories (categories which resulted from the literature review). The categories guided the collection of data but at the same time new ones emerged during the study as it will be documented later.

The process used for analyzing and extracting the information from the Directives and the working documents is explained next.

The **EU Directives** studied were the four regulating the process of WI: two on incineration of municipal waste (1989), one on the incineration of hazardous waste (1994), and one on the incineration of all-type of waste (2000) which replaced the previous three ones. The **working documents** analyzed were those used by the Commission, the Council, the Parliament, and the Economic and Social Committee for the elaboration of these four Directives. It is important to clarify that the existing WI Directive was based in most of the working documents used for the new WI Directive. That means that basically there were three sets of working documents to analyze.

These documents were analyzed in search of the factors influencing the formulation of ELVs for particular matter (PM) and cadmium (Cd). The analysis was done in a chronological order and in three phases. First, the search was made on the preambles of the Directives (initial text of the Directive in where it is included the background information of the Directive); then on the bodies of the Directives (contains the articles) and finally on the working documents.

Search in the preambles and the bodies of the Directives

The words *emissions* and *limit* were searched in the preambles and bodies of the Directives, and special attention was paid to the action associated with these words, that is, issues that could provide clues on how ELVs were created and which factors influenced its creation. Using the information obtained from the literature, these actions contained in the Directives were classified as scientific, technical, economic, political and social factors. Figure 3 present an example of this process from the preamble of the New WI Directive, and Table 1 an example of how the information was re-grouped in tables.

New municipal waste incineration plant: 89/369/EEC	
Preamble, §5	Whereas the abovementioned Directive 84/360/EEC stipulates that the Council, acting unanimously on a proposal from the Commission, shall, if necessary, fix <u>emission limit values based on the best available technology not entailing excessive costs and suitable measurement techniques and methods</u> ;
	Technical
	Economic
	Technical
Preamble, §7	Whereas the <u>techniques for reducing emissions of certain pollutants from municipal waste incineration plants are well established</u> ; whereas they can be applied reasonably economically in new incineration plants ; whereas they provide a means of attaining concentrations of pollutants in the combustion gases not exceeding certain <u>limit values</u> ;
	Technical
	Economic

Figure 3: Some of the factors found in the preamble of the Directive for New municipal incinerators (89/369/EEC).

Evidence from the Directive	Factor
Scientific	
none	
Technical	
ELVs will be based on the best available technology (§5)	The best available technology
ELVs will be based on suitable measurement techniques and methods (§5)	The available measuring techniques and methods
The techniques for reducing emissions of certain pollutants are well established; they provide a means for attaining concentrations of pollutants in the combustion gases not exceeding certain limit values (§7)	The available technique for reducing emissions
Economic	
ELVs will be based on the best available technique not entailing excessive costs (§5)	The costs of the best available technology
The techniques for reducing emissions of certain pollutants from municipal waste incineration plants (they provide a means for attaining concentrations of pollutants in the combustion gases not exceeding certain limit values) can be applied reasonably economically (§7)	The costs of the techniques for reducing emissions
Political	
none	
Social	
none	

Table 1 Example of the table containing the factors found in the body of the Directive for New municipal incinerators (89/369/EEC)

Following the same procedure as for the preambles, information was also extracted from the bodies of the Directives (see an example in Figure 4).

New municipal waste incineration plant: 89/369/EEC	
Article 3(4)	<p>4. The competent authorities shall lay down emission limit values for pollutants other than those mentioned in paragraph 1 when they consider this to be appropriate because of the composition of the waste to be incinerated and of the characteristics of the incineration plant. For the purposes of laying down these emission limit values, the authorities shall take account of the potential harmful effects of the pollutants in question on human health and the environment and of the best available technology not entailing excessive costs. In particular, the competent authorities may fix emission limit values for dioxins and furans until such time as a Community directive concerning this specific question is adopted.</p>
	<p>Scientific Technical</p> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <p>Scientific Technical</p> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <p>Economic</p>

Figure 4: Some of the factors found in the body of the Directive for New municipal incinerators (89/369/EEC).

Trends for PM and Cd

An additional type analysis was made in the bodies of the Directives and that is related to the trends followed by the ELVs for Particulate Matter (PM) and Cadmium (Cd) during the four Directives. This was done by making a comparative analysis, again in chronological order, between the Directives. The analysis was done by way of a comparison among the Directives, and also by the use of questions such as “*what, when, where, how, why*”. An example of the analysis can be seen in Figure 5.

5.1.1 Nominal capacity

What is it?: Nominal capacity is defined as the sum of the incineration capacities of the furnaces in the plant (specified by the constructor, confirmed by the operator) taking into account the calorific value of the waste. It is expressed as the quantity of waste incinerated per hour (Directives 89/369/EEC, art 1(6); 89/429/EEC art 1(6)). The factor seen is that the lower the nominal capacity of the incinerator, the laxer the ELVs assigned to them

When did it apply?: this factor applied between 1990² and 2005³ and it was seen in the two first Directives (regulating new and existing incinerators of municipal waste). It was also seen in the last Directive (all-type of waste) but only in the section regulating co-incineration. The Directive on hazardous waste did not have this factor of having different ELVs depending on the incineration capacity of the plant.

Where is it applicable?: Figure 1 presents the applicability of this factor. New and existing municipal waste incinerators of less than 1 ton/hour are allowed to discharge more PM than those of a capacity between 1 and 3. At the same time, these are allowed to discharge more than the ones between 3 and 6 - except for existing municipal waste incinerators for which the provisional ELV value of 100 is the same for incinerators between 1 and 6-. Finally, incinerators of more than 6 ton/hour are the ones which have to fulfil the stringent ELVs. Hazardous waste incinerators and all-waste type incinerators should fulfil the same ELV for PM independent of the capacity of the plant.

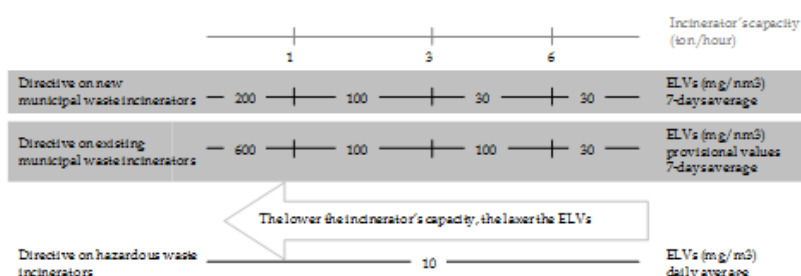


Figure 5 Example of the methodology used for analysing factors influencing the formulation of ELVs for PM and Cd

Search in the working documents of the Directives

Extracting the information from the working documents was done following another methodology. This methodology refers not only to how the text was analyzed, but how the documents were obtained (from the archives of the Commission, Parliament and Council).

- *Obtaining the documents:* The list of the working documents used in the drafting process of each one of the Directives was obtained from *PreLex*². The documents were obtained either through the direct link contained in *PreLex*, or by searching or requesting the documents in the Register of Documents of each one of the institutions (Parliament, Council, Commission).
- *Organizing the documents:* The documents were registered in an excel page in chronological order, and physically placed in such order in a folder. In the excel document it was registered information such as the reference, name, author, and date of the document (Figure 6).

² PreLex is the database which documents the decision-making process between the EU institutions. www source: <http://ec.europa.eu/prelex/apcnet.cfm?CL=en>

V/D #	reference	document number	title	author	date	comments
1	LUM(92)9 final	LUM(92)9 final - SYN 406	Proposal for a council directive on the incineration of hazardous waste	European Parliament Committee on the Environment, Public Health and Consumer Protection	16 octubre 1991	i guess they made a mistake and the date was 1992 otherwise it appeared the rapporteur before the commission presented the proposal? Right: in 1991 the committee had already appointed him rapporteur according to PD 03 p.04 source: P.D. 04
-	-	-	Adoption by Commission	Commission of the european communities	19 marzo 1992	source: prelex
-	-	-	the Commission submit the document to the Council, to the Parliament	-	20 marzo 1992	source: prelex
-	-	-	proposal for a council directive on the incineration of hazardous waste - letter from the Commission to the Council (addressed to Joao de Deus Pinheiro (president of the council))	Commission of the european communities, signed by Mr Carlo Ripa Di Meana,	23 marzo 1992	source: P.D. 02
2a	5761/92 ENV 88	5761/92 ENV 88 COM(92)9 final - SYN 406	consultation of the ESC	-	7 abril 1992	source: prelex
-	-	-	Publication in the Official Journal of the European Communities	-	7 abril 1992	source: prelex
2	OJ 92/C 130/01	C130, vol 35	Proposal for a Council Directive on the incineration of hazardous waste	European Parliament Committee on Economic and Monetary Affairs and Industrial policy	21 mayo 1992	source: P.D. 04
-	-	-	appointed Mrs Cramon Daiber draftsman	Mr Florenz	27 mayo 1992	source PD 03
-	-	-	he submitted a draft report to the committee	European Parliament Committee on Economic and Monetary Affairs and Industrial policy	19 agosto 1992	source: P.D. 04
-	-	-	it considered the Commission proposal and the draft report	European Parliament Committee on Economic and Monetary Affairs and Industrial policy	30 septiembre 1992 (and also on 7 oct. 4 nov, 24 nov)	source: P.D. 04
-	-	-	it considered the Commission proposal and the draft report	European Parliament Committee on the Environment, Public Health and Consumer Protection(?)	7 octubre 1992	source: P.D. 04
-	-	-	the ESC adopted its opinion	Economic and Social Committee	22 octubre 1992	source: prelex
-	-	-	-	European Parliament Committee on the Environment, Public	-	-

Figure 6: Example of how the working documents were registered in an excel database

- *Extracting the information from the working documents:* The text which was extracted from the working document was the one which presented a relatively clear clue on how the factor influenced the setting of the ELV. The text was afterwards compiled into a word document.

The way the information was compiled into word documents was by arranging it by topics (according to the factor), each topic containing in chronological order the content of what was discussed in the working document (Figure 7).

Factor (code and short description)

My coding for the working document

H20, H52: ELV applicable to the part of the volume of the exhaust gas...
H20: ELVs should apply to that part of the volume of exhaust gas resulting from the incineration of the hazardous waste (art 7(4)). How can this be done in real life?
H52: lo mismo que H20

Formal reference for the working document

Development of the paragraph of interest followed throughout the working documents

01- initial proposal from the Commission had in its art 8(4): Where hazardous wastes are additionally incinerated in plants which are not solely destined for the incineration or such wastes, the provisions of point 6 of article 7 and points 1, 2, and 3 of this article shall only apply to that part of the volume of exhaust gas resulting from the incineration of wastes. The part underlined is the one which will be followed (COM(92) 9 final, p: 39)

03- ESC (OJ 92/C 332/16, §); no comment made

04 - EP (PE 201 493/fin, amendment No.) no comment made

05- Second set of amendments from the EP: (OJ 93 / C 115 / 02, pg) no comment made

06- Response of the Commission to the Parliament's comments: (COM(93) 296 final, p:); no comment made

06a- The report which included the comments made by the delegations when they were reading the proposal (7482 / 93 ENV 195, p:); no comment made

06b- In the revised text of the enacting terms of the Directive presented from the General Secretariat to the Council's Delegations, it was changed to: Where hazardous wastes are additionally incinerated in plants which are not solely destined for the incineration or such wastes, the provisions of point 6 paragraph 5 of article 7 and points paragraphs 1, 2, and 3 of this article shall only apply according to the criteria laid down in Annex II to that part of the volume of exhaust gas resulting from the incineration of wastes. (7014/2/93 ENV 164 REV 2, p:14)

06c - Document containing the reached agreement by the Council on the enacting terms of the Directive (before it was re-send to the Parliament for reconsultation), the article is now art 7(4) and it remains as it is proposed in 06b: Where hazardous wastes are additionally incinerated in plants which are not solely destined for the incineration or such wastes, the provisions of paragraph 5 of article 6 and paragraphs 1, 2, and 3 of this article shall only apply according to the criteria laid down in Annex II to that part of the volume of exhaust gas resulting from the incineration of wastes. (7680 /03 ENV 711, p:13)

Extracted text from the working document

Figure 7: Example of how the text from the working documents was compiled into the word document

Initially there was the fear that one might escape classifying a text according to a specific topic, but because the content of the Directive was reviewed several times (first by reading it in the proposal from the Commission, then in the documents containing the opinions from the ESC, the Parliament and the Council), these extra readings provided the opportunity to make sure that nothing was being overlooked.

- *Analyzing the information from the working documents:* The combination of information grouped under the same topic allowed for some sort of explanation to be constructed on how that factor influenced the formulation of ELVs. The information from each one of the Directives was kept separate and it is presented as such in the section of Findings. To make it easier for the reader (and for myself), in parenthesis is written the Directive to which that working document is associated with. That is, (new) refers to a working document used for the formulation of the new WI Directive, (exi) for the existing WI Directive, (haz) for the hazardous WI Directive, and (all) for the all WI Directive.

5.2 Literature review

The point of departure is to present what different authors have mentioned about factors influencing the environmental policy-making process. The information presented in this section refers to factors influencing the process of regulating environmental matters, as well as factors influencing the process of making environmental standards or ELVs. The information is presented for the international and for the EU level.

Factors influencing the process of environmental policy-making

The fact that there are several factors influencing the environmental policy-making process has been mentioned and discussed by different actors. Thornton & Beckwith (2004) write that there are some elements such as *scientific evaluation of risk, public involvement, and economic analysis* which are part of the policy-making process (p. 24). Sands (2003) refer to factors which influence whether a subject is legislated or not in the environmental scene at the international level:

“International environmental law is influenced by a range of non-legal factors. The likelihood of achieving an agreement increases with: greater scientific consensus about the cause and seriousness of a problem; Increased public concern; a perception on the part of the negotiating states that other partners are doing their fair share to address the problem; an increase in short-term political benefits; and the existence of previous, related multilateral agreements” (Sands, 2003, pp. 5-6).

Sands also mention other two groups of factors. The first group are factors which diminish the probability of reaching an agreement; such factors are *elevated costs, and a large amount of negotiating partners* (p. 6). The second group consist of the *existence of a negotiating forum, and arrangements for non-compliance* which according to Sands are neither favouring nor diminishing the probability of reaching the agreement (p. 6). Finally, Sands says that out of all of the mentioned factors, *the impact of science, and the economic costs* are considered particularly influential (Sands, 2003, p. 6).

In the specific area of environmental standards, Smink (2002) quoting on (Baldwin & Cave, 1999) write that the way standards are stated may in practice be influenced inter alia by *law, historical, political, commercial and other factors* (p. 58). McEldowney & McEldowney (2001) also recognises the influence of factors when they write that *“the methodology of standard-setting provides an explanation of how science, law and economic instruments are combined in regulating the environment”* (p. 35); they also mention that the difficulty of identifying and clarifying standards is attributed to the cross-disciplinarity of the subject *“which range from the application of economic and fiscal instrument to legal and scientific mechanisms”* (p. viii). Later McEldowney & McEldowney

presents more clearly the influence of several types of factors when they refer to procedures for setting standards:

“a number of distinct elements are required to ensure consistency and objectivity: a) data must be carefully assessed after rigorous and full investigation, b) public opinion and value judgments must be taken into consideration in the question of whether a standard is appropriate or not, c) there should be an analysis of the best technical options, d) an assessment of risk and uncertainty should be carried out and, where appropriate, an economic appraisal, e) the systems of accountability must be open and sufficiently transparent to provide public assurance, e) quality testing of standards should be carried out to ensure that resources and implementation strategies are undertaken” (McEldowney & McEldowney, 2001, p. 197).

At the EU level, Peterson & Bomberg (1999) mention the influence of several factors in the process of decision making on environmental issues: the involvement of many actors in the process such as national and EU officials, scientific experts, business groups, and environmental NGOs, each one having their own interests (pp. 173,193); the input of technical aspects and the driving force of scientific expertise (p. 173); and the influence of the public which makes environmental issues of their concern to become politicised (p. 173).

In the area of EU environmental standards, the influence of factors could be seen for example in the case of setting the emission ceilings for NO_x and SO₂ in Directive 1988/609/EEC. According to Cofala & Amann (2001), these values were calculated using the RAINS³ model which takes into account, among other things, the level of industrial development, the emission trends, the types of fuel available, and the prevalent energy scenario in the different Member States (Cofala & Amann, 2001).

One could say that the strongest evidence which points to the influence of several factors for environmental policy-making at the EU level is the legal base included in the European Union Treaties. Article 130 r(3) from the Single European Act (SEA, 1986) writes that for making environmental legislation in the EU, the legislator should take into account several circumstances (or factors):

“In preparing its action relating to the environment, the Community shall take account of:
- *available scientific and technical data,*
- *environmental conditions in the various regions of the Community,*
- *the potential benefits and costs of action or of lack of action,*
- *the economic and social development of the Community as a whole and the balanced development of its regions”*

Except for some minor changes⁴, the content of this article remained the same throughout the subsequent Treaties that followed the Single European Act: Maastricht (1993), Amsterdam (1999), Nice (2003) and Lisbon (2009).

The *how* and the *why* of the factors influencing the process of policy making could be extracted from the descriptions made by researchers when addressing the topic. For example, Arp (2002) presents the story behind the regulation of car emissions in the EU. In this description one could distinguish what could be referred to as *social factors*: German public being upset for the damage of the forest and attributing this to car emissions and asking for high standards; *technical factors*: German industry knew how to achieve these strict emissions since they had been selling cars to USA where such emissions were required; *political factors*: German government pressing the EC for high car emission standards at the community level and the EC deciding to go for it so that there would not be market disadvantages (with strict standards applicable only in Germany, industries from other countries would not be able to sell cars in the German market); *economic factors*: high standards were desirable environmentally speaking, but they also implied higher costs for

³ Regional Air Pollution Information and Simulation.

⁴ Minor changes refer to the article numbers (from 130r to 174 in Amsterdam and finally to 191 in Lisbon) and the name of the “Community” changed to the “Union”

producers and consumers, so at the end consumers might decide not to buy a new car but to keep the old one, and this would affect the competitiveness of the industry (pp. 259-263).

Similar information could be extracted from the cases for packaging waste (Bomberg 1998)⁵; drinking water (Knill, 2006)⁶ and waste water treatment (Lieverink and Skou Andersen, 2005)⁷ (Jordan, 2005).

Summarizing: factors influencing the process of environmental policy-making

When one reads about environmental policy-making processes, one could see that the information provided by the authors points to the influence of several factors. Some of the factors mentioned are for example scientific knowledge, public involvement, economic analysis, and political instruments, among others. The description of these policy-making processes also allows one to see how the influence of these factors takes place (e.g. Zito, 2002) describing the process of setting ELVs for car emissions).

Organizing these mentioned factors in groups according to their affinity, five categories could be distinguished (Figure 8).

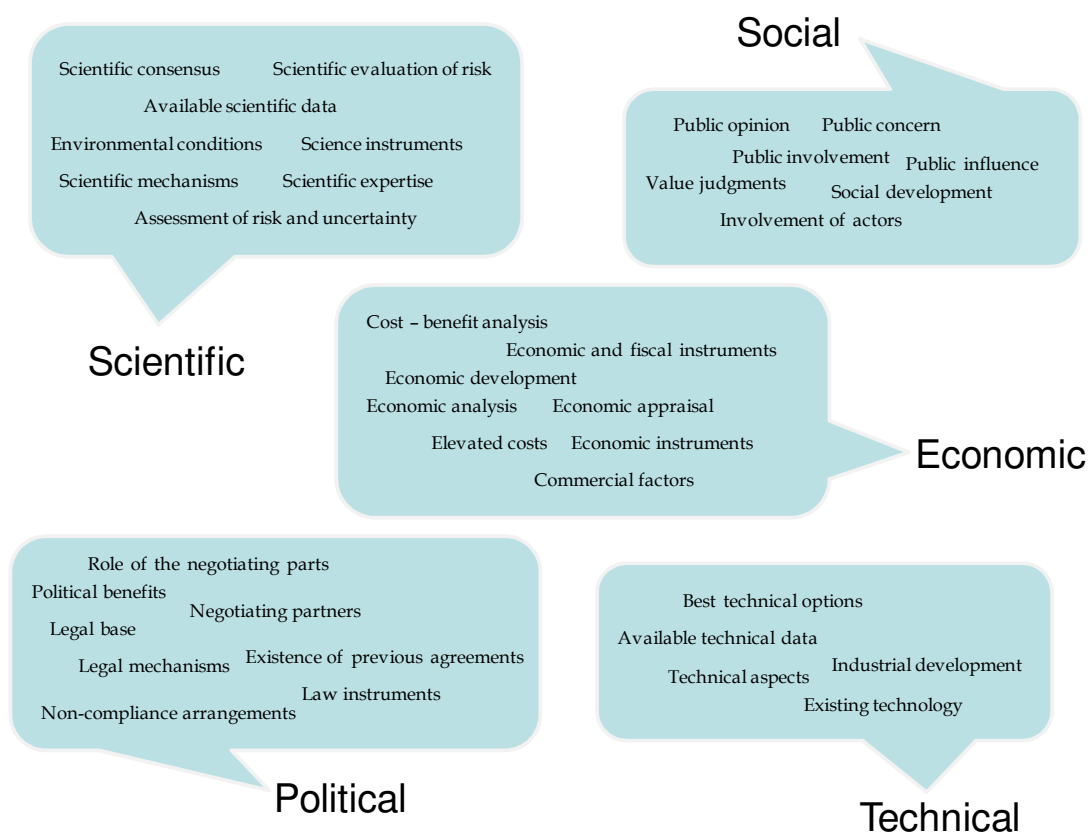


Figure 8: Grouping of the mentioned factors according to their affinity.

The categories presented in Figure 8 served as a framework to explore further the literature in search of information that would help clarify how these factors influence the environmental policy-making process, in particular, the process for setting environmental standards. That information is presented in the following sections.

⁵ Policy Networks in the EU: Explaining EU Environmental Policy, in D. Marsh (ed.) Policy Networks in Comparative Perspective, Milton Keynes: Open University Press

⁶ Richardson (2006): European Union, Power and Policy-making, Routledge.

⁷ Jordan (2005): Environmental Policy in the European Union: Actors, Institutions and Processes; Earthscan.

Influence of scientific factors

The role of science, as one of the bases of environmental policy, has been mentioned by Peterson & Bomberg (1999): *“By its very nature, decision-making on environmental issues is highly technical and driven by scientific expertise”* (p. 173).

In the case of environmental standards, when referring to the steps for setting them, McEldowney & McEldowney (2001) mentions the scientific factor as the first step: *“The first stage is to identify the environmental problem; the definition and formulation of harm is required based on scientific data”* (p. 37). The influence of scientific factors could be illustrated for example with the case of setting ELVs for Cd by the Working Group on Arsenic, Cadmium and Nickel compounds from the European Community:

“The general approach chosen is to look at non-cancer and cancer effects separately. First, a limit value proposal is derived for each element based on non-cancer effects. In a second step, the carcinogenic risk resulting from this concentration is estimated. If the proposal based on non-cancer effects also provides sufficient protection with respect to cancer, taking a risk of one-in-a-million as starting point, the proposed limit value remains unchanged. If this is not the case, the proposed limit value is adapted” (2001, p. 6)

Another case that could illustrate this relationship of science as the **provider of evidence** at the standard-setting process is the one on setting standards for PM10 presented by McEldowney & McEldowney (2001).

“Work to develop a new air quality standard for fine particles has been hindered by a lack of epidemiological evidence and PM10 may still be the most appropriate measure for particulate pollution, according to an official panel” (McEldowney & McEldowney, 2001, p. 180).

Another issue related to science and standard-setting, is that as time passes by, science makes new discoveries, and being science one of the bases of environmental policy, environmental policy needs to keep up with the pace of the discoveries, otherwise the policy will become obsolete). Lee (2005), when pointing to one of the criticism of standards as one of the direct regulations tools, shows this relationship between science and standards: *“fixed environmental standards are continually outpaced, both by [...] and by increasingly complex environmental problems. Much direct regulation provides the regulated with no incentive to [...], or to respond to these new problems, as long as they are in compliance with the (outdated) legislation”* (Lee, 2005, p. 187).

Finally, this relationship **progress of science and standard setting** can be summarized by two statements made by McEldowney & McEldowney (2001): *“Standards should be reviewed on a regular basis. Flexibility in standard-setting is required to take account of new developments and the latest scientific findings”* (p. 199) and *“All standards are under continual development. This may be related to improvements in scientific knowledge and data, or the risks of harm being more fully resolved”* (p. 12).

Key points

from the influence of scientific factors

Summarizing, once could say that the way science influences the process of setting environmental standards is in the form of:

- Science provides the **linkage** between the object of legislation and the adverse impacts that this creates.
- Standards need to keep the pace of the **progress** of science.

Influence of technical factors

As seen above, according to Peterson & Bomberg (1999), technical factors -besides the scientific ones, are also considered a foundation for environmental legislation (p. 173). Héritier (2002) also writes that debates on environmental policy are usually about what is technically possible and also at what costs (p. 185).

In the literature that talks about the process of setting standards, the topic of technical aspects moves around the issue of what is known as **Best Available Technology** (BAT). An example of this is what Steward (2007) writes: *“The limitations [on individual source emissions] imposed on various individual actors may be based on [referring to quality objectives] and on the control levels achievable by particular BAT or BEP [best environmental practices] measures”* (p. 150).

An example of this is the case of the ELVs set in the Annex III of the Heavy Metal Protocol where it is stated that BAT set the basis for setting ELVs:

“BAT means the most effective and advanced stage in the development of activities and their methods of operation which indicate the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where that is not practicable, generally to reduce emissions and their impact on the environment as a whole” (Heavy Metal Protocol, 1979, p. Annex III).

Similar is the case of the BAT Reference Documents (BREF)⁸, and the Integrated Pollution Prevention and Control (IPPC) Directive where the limits for discharges to all media described in the environmental permit are established based on BAT:

“In general, the emission limit values in the waste incineration directives are relatively close to the emissions that correspond to the application of the best available techniques identified in the BREF” (COM(2007) 843 final, p. 11).

Just as with science, the **progress of technology** also influences the process of setting standards in the sense that progress allows the possibility of improving the mechanism through which the emissions can be reduced or controlled, and also in the way that the possibility of obtaining more precise measurements increases through time. Majone (2006) presents an interesting perspective of this last mentioned aspect: *“The continuous progress of science and technology produces increasingly precise measurements of toxicity (e.g. parts per billion) so that the search for safety becomes ever more elusive”* (p. 57). Or as author points out:

“Twenty years ago, parts per million were generally the limits of detection for most chemicals. Anything below that amount was often reported as “zero” or “absent”, rather than more accurately as “undetected”. A decade ago, new machines and techniques were developed to measure parts per billion. Suddenly, chemicals were found where none had been suspected. Now we can detect parts per trillion or even parts per quadrillion in some cases. Our environment may be no more dangerous, we are just better at finding trace amounts” (source p. 193).

The influence of progress of technology in the process of setting standards can also be seen when McEldowney & McEldowney (2001) refer to the drawbacks of using standards for regulating the environment: *“standards involve a degree of rigidity that may be unable to take account of the rapidly changing needs of society and technological innovation”* (p. 5).

A particular aspect of the technology and standard setting is the one related to **measuring and monitoring**. In the process of setting the standards it is important to establish as well the monitoring program that will be used since this program will be able to determine whether the levels were achieved or not: *“Common to the setting of standards is the need to establish effective monitoring techniques and monitoring systems [...] the success of air quality standards depends on the efficacy of their monitoring [...] there are a number of crucial questions that go to the sitting of monitoring stations, which will substantially influence the levels of pollutants measured”* (McEldowney

⁸ Documents for waste incineration used by the EC for setting the ELVs

& McEldowney, 2001, p. 5). Some of the considerations presented by McEldowney & McEldowney (2001) are for example location of the monitors, frequency of the measurements, climatic conditions, and the pollutants as such given that the chemistry and longevity in the air will vary according to the pollutant (McEldowney & McEldowney, 2001, p. 183).

This relationship of increase of measuring potential with standard setting can be illustrated with a case about Germany documented by Hartenstein & Horvay (1996) where the development of sampling and analysis methods led to the discovery of pollutants in the flue gas from incineration, which resulted in a revision of their ELVs:

It was not until the early 1980s, when environmental awareness grew, that waste incinerators were recognized as potential sources of air pollution. At that time most waste incinerators were, if at all, equipped only with an ESP [electrostatic precipitators] for flue gas treatment. The development of more and more sophisticated methods of sampling and analysis for toxic and harmful air pollutants led to the discovery of many of these pollutants in the flue gas from waste incinerators. Especially significant concentrations of toxic heavy metals such as mercury and cadmium as well as highly toxic chlorinated organics created public concern about waste incineration. The result was a general revision of the emission standards in several steps starting from the late 1970s and proceeding till the early 1990s [...] Hand in hand with the possibilities to detect potential hazardous components in the emissions of MWI [municipal waste incinerator], revisions of the emission standards were set, like in Germany starting in 1974, which was documented in the Technical Guideline Air (Technische Anleitung Luft) 1986, TAL 86. The old 1974 standards were drastically tightened and additional new pollutants were regulated (Hartenstein & Horvay, 1996, pp. 22,23).

At the EU level in general, the relationship of measuring potential with standard setting is also documented by Petts (2000), when he explains that for the 2000 Waste Incineration Directive, ELVs for dioxins were being set based on their detection limits, and he writes: “these limits are technology forcing” (p. 825).

Pett’s statement, that limits are technology forcing, leads to an interesting discussion which was perceived in the literature, about a double relationship: so far it has been shown that the technology will set the ELVs since technology will say what it is possible to achieve or not. But literature also shows that there has been the inverse situation, where the law establishes the ELV and this pushes the industry to develop the technology to achieve it.

One of these inversed cases is presented by Hartenstein & Horvay (1996) when writing about the developments on the technology for flue gas treatment they say “the boost of new technologies was mainly created by the dramatic tightening of these emissions legislation” (p. 19). Howes (2005) also supports this statement when he says that “standards don’t require the regulator to have a detailed knowledge of the latest production technology. They only have to set the goals, based on the current knowledge of a specific environmental risk, while industry decides how best to comply” (p. 80).

At EU level one could see also this inverted relationship between the progress of technology and legislation, in the sense that the development of EC legislation is the one pushing for the progress of technology (Box 3).

Box 3: EC legislation is seen as one of the main motivating factors behind the innovation of technology

Why pushing for innovation? Because innovation leads –among other things, to the increase of jobs. In order to reach innovation, the EC aims to keep legislation up to date (COM(2007) 843 final). The way the Commission present this argument is:

- Installations need to have BAT: *“Notwithstanding minimum emission limit values set in the sectoral Directives, all industrial installations which are subject to the above pieces of legislation need to orient their permitting regimes towards the implementation of best available techniques”* (p.2).
- Innovative technologies (i.e BAT) can reduce cost of compliance: *“Innovative technologies can reduce the cost for compliance with legislation on industrial emissions”* (p.2).
- Innovative technologies relate to emergence of new markets (i.e environmental technologies) *“Innovation also provides opportunities for industry to benefit from the emergence of new markets in environmental technologies”* (p.2).
- Environmental technologies have employment potential: *“The Lisbon Strategy identifies sustainable development and environmental protection as an important pillar of current and future European policy and stresses the role of environmental technologies as having “significant economic, environmental and employment potential”* (p.2).
- Legislation stimulates development of technology: *“Industrial emissions legislation has an active role to play in stimulating the development and deployment of these types of technologies”* (p.3).
- Commission want to review the body of legislation to encourage technological innovation: *“the Commission launched in 2005 a review of the body of legislation on industrial emissions in order to ensure its environmental and cost-effectiveness and to encourage technological innovation”* (p.3).

A concrete case which actually shows both situations (**policy pushing technology development and technology pushing policy**) is the one presented by Hartenstein & Horvay (1996). The case describes how the standard for PCDD/F⁹, established around the end of the 80s in Austria, Germany, Holland and Sweden, was going to be regulated for the first time worldwide. The standard was set by NATO-CCMS¹⁰ to a level of 0.1 ng TE/m³. Industry had then to develop completely new techniques for flue gas treatment since the existing ones were only able to remove other type of pollutants. A positive side effect came after the new developed technologies since they were not only able to control the emissions of PCDD/F to the required levels but also managed to control the emission of other type of substances as low as their detection limit. The permitting agencies took advantage of this side effect and they tightened up the permitted levels for the other type of pollutants (Hartenstein & Horvay, 1996, p. 24).

Finally, Dolowitz&Marsh(1996) refer to technology as a fundamental factor in the process of policy transfer when they write that a desirable programme will not be transferred if implementation is beyond the technological abilities of the nation. A concrete example is given in relation to the emission standards:

“developed nation’s emission standards generally require the installation of high technology monitoring equipment and filters which are beyond the technological and monetary resources of most second and third world countries. Even developed countries might decide not to transfer policies because of the technological complexities involved. On several occasions Canada explicitly rejected particular American environmental protection policies because the technology used to implement them was too expensive and restrictive” (p. 354).

⁹ Commonly known as dioxins and furans

¹⁰ NATO Committee on the Challenges of Modern Society

Key points

from the influence of technical factors

Summarizing, one could say that the way technology influences the process of setting environmental standards is in the form of:

- Best available technique (cost effective, and according to the psycho-chemical properties of the pollutant).
- Progress of technology (for reducing, controlling, measuring emissions).
- Both cases seen: technology setting the ELVs, and ELVs setting the technology.

Influence of economic factors

Economic considerations are also part of the process of environmental policy making. The decision on the most appropriate policy to adopt will depend on the costs and benefits that such policy will bring (Thornton & Beckwith, 2004, p. 25).

In the EU context, economic aspects are not only seen during the decision process but also in the implementation phase, where temporary derogations are allowed to the Member States if the costs for implementation are disproportionate. For example, in the Directive which controls the emissions of VOCs¹¹, small and medium size, as well as new and existing installations were allowed to comply with less stringent requirements in order to maintain their competitiveness (Directive 1999/13/EC, preamble §19). A similar case was seen in the in the Large Combustion Plant Directive, where Spain was allowed to apply temporarily less stringent emission standards because it was argued that otherwise this would affect its industrial and energy growth (Gallego, 2001, p. 343).

According to Steward (2007), emission limits are based, among other factors, on a **balance between the costs and benefits** that the implementation of the standard will bring (Steward, 2007, p. 150). McEldowney & McEldowney (2001) support this argument when writing *“recession in many countries has forced changes in industrial policy and the cost of implementing standards has to be balanced in terms of jobs, employment opportunities and industrial success”* (McEldowney & McEldowney, 2001, p. 3).

Literature also presents that usually the stringent the environmental standards, the higher the costs of goods *“Environmental standards are likely to add to the costs of consumer goods, and the more stringent they become the higher the costs”* (McEldowney & McEldowney, 2001, p. 42). Schucht et.al. (2001) when writing about the implementation of the municipal waste incineration Directive, presents the situation of some EU countries where the authorities were not afraid of committing to strict standards because they knew that they would get the money for buying the equipment needed in order to reach the required levels and so, that they would not have to pass the extra costs into the community (Schucht, Bülmann, Eames, & Lulofs, 2001).

Considering the high costs that stringent environmental standards could imply, this could bring as a consequence the fear of setting strict values. For example, Healy (1991) writes about the different conditions existent in the Member States at the time the municipal Directives were being drafted and the economic implications they would have: *“plants which are currently equipped to meet the high emissions standards already prescribed by their individual member states will require fewer resources to meet the new standards”* (Healy, 1991, p. 338). However, that was not the situation in all of the Member States: *“only five member states have had any kind of waste incineration plant emissions regulations prior to the directives [...] the other seven member states will thus bear a greater financial burden incidental to installing completely new equipment. Raising the money to meet the directive’s standards will be difficult, even though the costs associated with waste incineration plants are usually born by member state governments or local authorities [...] moreover, it could take as long as twenty years to recoup the capital invested in larger plants”* (Healy, 1991, p. 338).

¹¹ Volatile organic compounds

Key points

from the influence of technical factors

Summarizing, once could say that the way economy influences the process of setting environmental standards is in the form of:

- The balance of the costs and benefits achieved with the standards.

Influence of political factors

Not much information was found on how political factors influence the setting of standards. Among the few things found is that Steward (2007) mentions *political compromise* as one of the bases on which the limitations on individual sources of emissions are imposed on actors (p. 150), and that there has been an increase in interest for alternative approaches to command and control “because of the declining efficacy of command systems in achieving increasingly ambitious environmental objectives” (p. 154).

Key points

from the influence of technical factors

Summarizing, once could say that the way political factors influences the process of setting environmental standards is in the form of:

- Political compromise.

Influence of social factors

Public can also shape the policies made for environmental protection. Environmental knowledge is not only on the hands of regulatory agencies, but thanks to the media, the internet and the processes which are open to transparency, the public is now more aware of environmental issues (Thornton & Beckwith, 2004, p. 24).

The power of public pressure can be seen in those cases in which even though scientific evidence says there is no risk, public managed to change a decision. An example of this is the discharge of the Shell platform, for which (McEldowney & McEldowney, 2001, p. 194) wrote: “*public belief and perception is capable of doubting even sound science*”.

The influence of society in the process of setting standards can be seen when there is an economic aspect involved. Environmental standards usually tend to increase the costs of goods (McEldowney & McEldowney, 2001), so the legislator might be in the need of reaching a balance between public satisfaction and environmental protection. An example of this dilemma is presented by McEldowney & McEldowney (2001) when writing about the process of setting the prices on fuel. The dilemma is that if priority is given to the environment (i.e: high prices to reduce consumption of fuel) then the public will resent this and might lose faith on the regulation; but if priority is given to the public (no increase of fuel prices) then environment will continue to be affected (McEldowney & McEldowney, 2001, p. 33).

In the specific case of waste incineration, public pressure is seen as one of the factors influencing its technology development. For example, Hartenstein & Horvay (1996) write how the location of waste incineration in the vicinity of populated areas is accepted only when the latest technological developments are applied (p. 20). The opposition of public to incineration also helped the development of more sustainable waste management practices (Petts, 2000, p. 825). For example, at the end of the 90s in Netherlands, public

concerned over the dioxins found in dairy products from cows grazing near a waste incinerator played a role in that the Dutch authorities hastened the introduction of stricter controls to incineration. The authorities also knew that only after public acceptance was enhanced, the construction of additional incinerations would not be viable (Schucht, Bültmann, Eames, & Lulofs, 2001, p. 270).

A similar case was seen in Germany in the early 80s when the discovery of new pollutants in the flue gas of waste incineration created public concern who pressed for tighter emission limits (Hartenstein & Horvay, 1996, p. 22). *"Citizens' groups and environmental organizations pressed for tighter emission limits for 'existing' incinerators and to prevent the building of additional plant [...]. By extensively using their right to object and take legal action against the authorization and construction of new incinerators, they literally blocked all authorization procedures. This strategy delayed the construction of new incinerators by several years and made politicians and plant operators take the concerns of citizens' and environmental organizations seriously"* (Schucht, Bültmann, Eames, & Lulofs, 2001, p. 269). The authors continues saying that German plants rarely exceed and are normally well within their emission limits, and that monitoring and enforcement alone cannot explain this result. Apparently, operators had a self-interest in emission reductions in order to lessen the citizens' and environmental groups' pressure (Schucht, Bültmann, Eames, & Lulofs, 2001, p. 270).

Another way of seeing the influence of the public is in what McEldowney & McEldowney (2001, p. 5) write when referring to the drawbacks of using standards for regulating the environmental: *"Environmental regulation based on the setting of standards involves a degree of rigidity that may be unable to take account of the rapidly changing needs of society"* (McEldowney & McEldowney, 2001, p. 5).

Finally, and similar to what was described before as a double relationship is that the passing of environmental laws can also shape the attitude of public: *"environmental protection measures [...] serve to heighten the public's awareness of environmental problems generally with the result that, over time, society becomes conditioned into accepting ever more stringent controls on the understanding that they are of benefit"* (Thornton & Beckwith, 2004, p. 25).

Key points

from the influence of social factors

Summarizing, once could say that the way social factors influences the process of setting environmental standards is in the form of:

- The knowledge that the public has.
- The pressure that the public can make.
- The needs of society.
- Both cases seen: Public influencing environmental policy and environmental policy influencing the public.

Summarizing: factors influencing the formulation of environmental standards

The information collected from literature helped clarify the role of the factors in the process of setting environmental standards. In few words, one could say that *science* provides the scientific data which helps to identify the environmental problem and to define the harm; ELVs will be set based on the available *technology* of the moment, technology referring to monitoring and measuring equipment, emission reduction and controlling techniques; ELVs will also be set based on the *economic* balance achieved between the costs and the benefits; the foundation on which ELVs are set is provided by the *political* factors; and the *public* could press for the tightening of the standards.

Criticisms on ELVs, as one of the *command and control* instruments, referred to when ELVs does not keep up with the progress of science, of technology or of political goals.

For some of the factors there was seen a double relationship where the factor influenced the setting of environmental legislation but also the legislation influenced the factor. That was the case of technology and social factors.

The information from Figure 8 and the one collected from this second round of literature was summarized into Table 2.

Factor	Influencing the process of making environmental policy	Influencing the process of making environmental standard
Scientific	<ul style="list-style-type: none"> - Evaluation of risk, assessment of uncertainties. - Scientific consensus. - Available scientific data. - Environmental conditions. 	<ul style="list-style-type: none"> - Science provides the linkage between object of legislation and the adverse impacts that this creates. - Standards need to keep the pace of the progress of science.
Technical	<ul style="list-style-type: none"> - Best technical options. - Available technical data. 	<ul style="list-style-type: none"> - Best available technique (cost effective, and according to the psycho-chemical properties of the pollutant). - Progress of technology (for reducing, controlling, measuring emissions). - Technology setting the ELVs and /or ELVs setting the technology.
Economic	<ul style="list-style-type: none"> - Cost - benefit analysis. - Commercial interests. - Economic and fiscal instruments. - Economic development. 	<ul style="list-style-type: none"> - Balance of the costs and benefits achieved with the standards.
Political	<ul style="list-style-type: none"> - Role of the negotiating parts. - Political benefits. - Negotiating forum. - Legal base. - Historical background. 	<ul style="list-style-type: none"> - As the foundation on which the standards are set. - Political compromise.
Social	<ul style="list-style-type: none"> - Public involvement. - Public concern. - Social development. 	<ul style="list-style-type: none"> - The knowledge that the public has. - The pressure that the public can make. - The needs of society. - Public influencing environmental law and/or environmental law influencing the public.

Table 2 Factors which according to the existing literature influence the process of making environmental law and environmental standards.

Different authors point to different factors as being the critical ones in this process. For example, Sands (2003) mentions scientific and economic factors as the most influential ones for the regulation of environmental matters at the international level. Peterson & Bomberg (1999) refer to technology and science as highly influential in the decision of environmental issues. Héritier (2002) complements this by saying that debates on the environmental policy area are usually on technical and economic aspects. The economic aspect is also emphasized by Steward (2007) when he writes that ELVs are based on a balance between costs and the benefits related to their implementation.

The information from Table 2 served as a framework used for the search of the factors influencing the formulation of ELVs for waste incinerators in the Directives and their working documents.

5.3 Findings

The findings for each one of the searches (in the preambles, in the body, and in the working documents) are presented in this section. The first two sub-sections contain the factors that were found in the preambles and bodies of the Directives, as well as the factors found while doing the specific analysis for the ELVs of PM and Cd. The last sub-section refers to the findings from the working documents.

Findings from the preambles and the bodies of the Directives

The factors seen as influential for the setting of ELVs were compiled according to the five categories determined after the literature review: scientific, technical, economic, political, and social (Table 2). The compilation of the findings is done in six tables which are presented next, and where the “x” indicates the presence of the factor in each one of the Directives.

Among the **scientific** factors found (Table 3) were *the composition of the waste* to be incinerated (ELVs to be laid down depending on the composition of the waste); the knowledge that legislators had *on the adverse effects from the pollutants*; the need to take into account the three media: air, water, soil at the moment of setting ELVs so that the strict ELV set in one of the media will not lead to transfer of pollution into another media (*integrated protection*); the new scientific knowledge gained (*scientific progress*); and the environmental requirements (at this point of the study it wasn't known what the legislators mean by *environmental requirements*).

Scientific factors	New (89/369)	Existing (89/429)	Hazardous (94/67)	All-waste (2000/76)
The composition of the waste	x	x		
The evidence of adverse effects from the pollutants	x	x		x
The integrated protection			x	
The scientific progress			x	x
The environmental requirements			x	x

Table 3: Scientific factors found in the preambles and bodies of the Directives.

In the **technical** category (Table 4) were included factors which made reference to the use of *best available technology* (BAT) in general; factors referencing specific types of technology such as the one used for *measuring, reducing/controlling* emissions; factors making reference to the *characteristics of existing incinerators*; and factors referring to the need of taking into account the *progress of emission reduction techniques* and the *development of technology*.

Technical factors	New (89/369)	Existing (89/429)	Hazardous (94/67)	All-waste (2000/76)
The best available technology	x	x		
The available measuring techniques and methods	x	x	x	
The available technique for reducing emissions	x	x		
The technical characteristics of the existing installations	x	x		
The progress of emission control techniques			x	x
The development of technology			x	x

Table 4: Technical factors found in the preambles and bodies of the Directives.

Economic factors refer basically to the *costs of BAT* in general, and specifically to the *costs of techniques for reducing emissions* (Table 5).

Economic factors	New (89/369)	Existing (89/429)	Hazardous (94/67)	All-waste (2000/76)
The costs of the best available technology	x	x		
The costs of the techniques for reducing emissions	x	x		

Table 5: Economic factors found in the preambles and bodies of the Directives.

As **political** factors (Table 6) were included those issues which seemed to be *especial considerations for existing facilities*; also issues which seemed to be *commitments* made by the legislators to protect the environment, to take into account the aim of integrated protection and to fulfil the environmental requirements. Another factor was the role of existing legislation from Member States, the international agreements signed and the internal EU plans (*existing obligations internal/external*).

Political factors	New (89/369)	Existing (89/429)	Hazardous (94/67)	All-waste (2000/76)
The especial considerations for existing facilities		x	x	
The commitment to environmental protection			x	x
The commitment to integrated protection			x	
The commitment to fulfil environmental requirements			x	x
The existing obligations (internal/external)				x

Table 6: Political factors found in the preambles and bodies of the Directives.

Social factors were not found in the preamble and bodies of the Directives. Still, literature mentioned they are present in the legislative process, so this category was not eliminated since there was the possibility that social factors might be evidenced in the working documents.

Social factors	New (89/369)	Existing (89/429)	Hazardous (94/67)	All-waste (2000/76)
-				

Table 7: Social factors found in the preambles and bodies of the Directives.

Additionally, while reading the preamble of the hazardous WI Directive, there were a group of factors that could not be categorized in any of the initial 5 categories proposed. It was seen that these factors could be arranged in a new category: **Know-how**, referring to human capacity as a resource (eg: experience of the legislator, experience of the plant operator), in contrast to Social factors which refer to the opinion and influence of the public (Table 8).

Know-how factors	New (89/369)	Existing (89/429)	Hazardous (94/67)	All-waste (2000/76)
The experience in the operation of incinerators			x	x
The experience in the application of the Directive			x	x
Experience in techniques for reducing emissions				x
Experience in waste management and operation of plants				x

Table 8: Know-how factors found in the preambles and bodies of the Directives.

Findings from the specific analysis of PM and Cd

The factors found after doing the specific analysis on the ELVs for PM and Cd can be seen in Table 9 and Table 10, where the “x” indicates the presence of the factor in each one of the Directives.

The factors found refer to the influence that some circumstances and characteristics have on the ELVs assigned to PM and Cd. These circumstances and characteristics refer to the capacity of the incinerator (*nominal capacity*); the amount of oxygen during the combustion process (*oxygen content*); the amount of time used to average the collected samples (*averaging conditions*); the location of the incinerator (*local conditions*); the *age of the incinerator*; the occurrence of abnormal operations in the incinerator (*abnormal conditions*); the *type of waste* incinerated; and the incineration of waste in other type of plants such as cement kilns or power plants (*co-incineration*).

Specific factors for PM	New (89/369)	Existing (89/429)	Hazardous (94/67)	All-waste (2000/76)
Nominal capacity	x	x		x
Oxygen content	x	x		
Averaging period	x	x	x	x
Local conditions	x	x		
Age of the incinerator		x		
Abnormal conditions	x	x	x	x
Type of waste	x	x	x	
Co-incineration	x		?	x

Table 9: Specific factors for PM found in the preambles and bodies of the Directives

Specific factors for Cd	New (89/369)	Existing (89/429)	Hazardous (94/67)	All-waste (2000/76)
Nominal capacity	x	x		
Averaging period	x	x		
Type of waste	x	x	x	
Age of the incinerator			x	x

Table 10: Specific factors for Cd found in the preambles and bodies of the Directives.

As a closing comment to this section it could be said that by means of the “x” in the tables, an initial idea of the influence of the factors throughout time could be obtained: which factors stop being used (e.g. *composition of waste, BAT, costs of techniques for reducing emissions*); which other ones remained (e.g. *measuring techniques, abnormal conditions*), and which new ones appeared (e.g. *scientific progress, human experience*).

A more clear idea on the influence of factors on the setting of ELVs was expected to be confirmed after doing the analysis in the working documents, where it was also expected to find the reasons for the disappearance, maintenance and appearance of these factors throughout the Directives.

Findings from the working documents of the Directives

The factors seen as influential for the setting of ELVs were compiled according to the six existent categories: scientific, technical, economic, political, social and know-how. Detail information of this process can be seen in Appendix 2.

The compilation of the findings according to the six categories is made in six tables for the general factors (Table 11 to Table 16) and in one table for the specific factors applicable to PM and Cd (Table 17).

New factors found in the working documents are indicated by an “N” in the column *type of factor*. Related to that column is also the sign “(-)” given when no information was found for that factor in the working documents.

In the column “*Source of the information and amount of it*” an “x” was placed when information for that factor was found in the working documents for the new WI Directive (n), existing WI Directive (e), hazardous WI Directive (h), and all WI (a) Directive. Important to remember is that for the drafting of the existing WI Directive, the legislators used most of the working documents that they had used for the new WI Directive, therefore the lack of “x” in the column “e” since basically, the applicable information was already included under column “n”.

In the same column, the “Q” is a rough estimate of how many pages of information were collected from the working documents. The parameter used was “1 page” and the options: more than 1 page (>1), 1 page (1), half a page (½) or less than half a page (<½).

Information was found for most of the **scientific** factors defined in the first stage (Table 11). There was one factor, however, for which information was not found and is the one on *environmental requirements* (this will be explained in more detail in one of the next sections of this chapter).

Type of factor	Factor	Source of the information and amount of it				Detail info. in
		n	e	h	a Q	
	Scientific					
	The composition of the waste	x	x	x	>1	Box 8
	The evidence of adverse effects from the pollutants	x	x	x	1	Box 25
	The integrated protection	x	x	x	½	Box 26
	The scientific progress			x	<½	Box 24
(-)	The environmental requirements					Box 4

Table 11: Scientific factors found in the working documents of the Directives.

Information was found for all of the factors defined as **technical** (Table 12) in the first stage.

Type of factor	Factor	Source of the information and amount of it				Detail info. in	
	Technical	n	e	h	a	Q	
	The best available technology (BAT)	x	x	x	x	>1	Box 17
	The available measuring techniques and methods		x	x		< ½	Box 21
	The available technique for reducing emissions (ERT)	x	x	x	x	>1	Box 18
	The progress of emission control techniques		x	x		½	Box 22
	The development of technology		x	x		½	Box 23
	The technical characteristics of the existing installations	x	x	x		½	Box 12

Table 12: Technical factors found in the working documents of the Directives.

Information for only one of the **economic** factors was found in the working documents: *the costs of the techniques for reducing emissions* (Table 13). A new factor was seen while analyzing the working documents and it was named *costs and benefits* (ELVs will be set up to the level where there is a balance between costs and benefits of implementing it).

Type of factor	Factor	Source of the information and amount of it				Detail info. in	
	Economic	n	e	h	a	Q	
(-)	The costs of the best available technology (BAT)						Box 6
	The costs of the techniques for reducing emissions	x	x	x	x	>1	Box 10
N	Costs and benefits, (new!)			x		>1	Box 13

Table 13: Economic factors found in the working documents of the Directives.

Information for only three the factors initially defined as **political** was found in the working documents (Table 14): *the especial considerations for existing facilities*, *the commitment to environmental protection*, and *the existing obligations internal/external*. No information was found for the other two factors named “commitment to”. Both of them were related to scientific factors, one being the *integrated protection*, and the other the *fulfilment of environmental requirements*. A new factor was seen at the working documents and that was named *legislation applicable to other sources* (the strictness of an ELV will be influences by whether the same pollutant has been legislated or not for other sources of emission).

Type of factor	Factor	Source of the information and amount of it				Detail info. in	
	Political	n	e	h	a	Q	
	The especial considerations for existing facilities						Box 11
	The commitment to environmental protection	x		x		1	Box 9
(-)	The commitment to integrated protection						Box 5
(-)	The commitment to fulfil environmental requirements						Box 4
	The existing obligations (internal/external)	x		x		1	Box 14
N	Legislation applicable to other sources (new!)			x		½	Box 16

Table 14: Political factors found in the working documents of the Directives.

As a difference to the findings from the Directives, information about **social** factors (Table 15) was found in all of the working documents, which means that even though there was no explicit representation of its influence in the Directives, the influence of the public was present during the drafting process of the Directives (public concern about the incinerators have had an influence on the ELVs becoming stricter).

Type of factor	Factor	Source of the information and amount of it				Detail info. in	
	Social	n	e	h	a	Q	
N	public influence / opinion (new!)	x	x	x		1	Box 15

Table 15: Social factors found in the working documents of the Directives.

The information found in the working documents was not as differentiated as it was expected for the four **know-how** factors initially defined (Table 16). For example, no particular information for *the experience in the application of the Directive* was found, neither for *the experience in the operation of incinerators*.

Type of factor	Factor	Source of the information and amount of it				Detail info. in	
	Know-how	n	e	h	a	Q	
(-)	The experience in the operation of incinerators						Box 7
(-)	The experience in the application of the Directive			x		<1/2	Box 7
	The experience in techniques for reducing emissions			x		<1/2	Box 19
	The experience in waste management and operation of plants			x		<1/2	Box 20

Table 16: Know-how factors found in the working documents of the Directives.

Regarding the findings from the **specific analysis of PM and Cd**, the information collected for the factor *type of waste* was the same as the one collected for the scientific factor of *composition of the waste*. For other two factors no information was found: *oxygen content* and *averaging period*.

Type of factor	Factor	Source of the information and amount of it				Detail info. in	
	Specific for PM and Cd	n	e	h	a	Q	
	local conditions	x		x		<1/2	Box 31
	type of waste						Box 28
(-)	averaging period						Box 29
	abnormal conditions			x	x	<1/2	Box 30
	co-incineration			x	x	>1	Box 34
(-)	oxygen content						Box 27
	nominal capacity	x			x	1	Box 32
	age of incinerator			x			Box 33

Table 17: Specific factors for PM and Cd found in the working documents of the Directives.

5.4 Analysis of the findings

Seven groups of factors emerge as a result of the analysis of the findings. These groups can be seen in Figure 9.

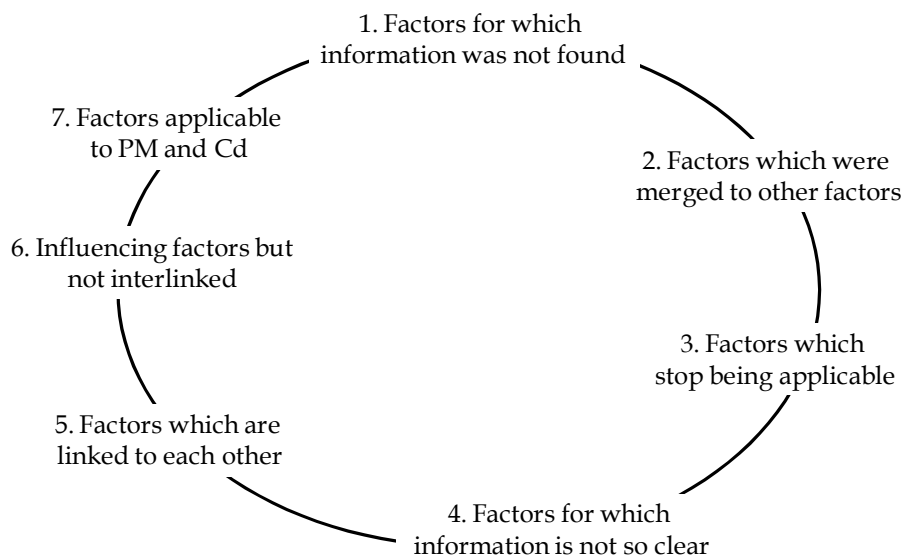


Figure 9: Categorization of the factors.

Categories 1 and 2: Factors which were not really factors

Categories 1 and 2 factors turned out to be more *along-the-way-considerations*, that is, they are factors related to the process followed in the analysis of the findings. Category 1 relates to three factors for which, after doing the analysis, it was seen they were not really factors but the result of an over-classification (e.g. environmental requirements; commitment to integrated protection). Category 2 are those factors which were merged with other factors because the issue was already being covered in another factor (e.g. the cost of the BAT; the experience in the operation of incinerators). More information about these two categories can be seen in Appendix 1). No more reflection is given to these two categories and the focus is set now into the other four categories found.

Category 3: Factors which stop being applicable

Only one factor is part of this category and it refers to **the composition of the waste**, referring to the fact that different ELVs were assigned depending on the type of waste incinerated. This factor was inspired after reading “ELVs...shall be lay down...because of the composition of the waste to be incinerated” (Directive 89/369/EEC, art 3(4)) (new).

Initially the legislator it was thought that more hazardous pollutants would come after incinerating certain type of wastes: “Depending on the waste burned, the contaminated flue gases arising in special waste incineration plants may contain noxious gases such as HCl, HF, and SO_x in the following concentrations [values]. The flue gases may also contain considerable amounts of vaporized mercury” (COM(92) 9 final, p: 61) (haz). But in the following Directive it was acknowledged that highly polluting substances were emitted as well after incinerating non-hazardous materials: “Non-hazardous wastes may contain components which give rise to hazardous air pollutants upon incineration and which can form many of the same pollutants as found in the incineration of hazardous wastes” (COM (1998) 558 final, p. 3) (all).

The legislators wrote that distinction between non-hazardous and hazardous waste should only be made based on their management, and not on the incineration process: *“The distinction between hazardous and non-hazardous waste is primarily based on considerations of waste management and handling rather than on incineration characteristics”* (COM (1998) 558 final, p. 3) (all). This differentiation of ELVs based on the type of waste was not used anymore: *“The same emission limit values should apply to the incineration or co-incineration of hazardous and non-hazardous waste”* (Directive 2000/76, §16) (all).

After such information, the factor *the composition of the waste* was removed from the list of factors. More information in Box 8 in Appendix 1.

Category 4: Factors for which information is not so clear

Only one factor is part of this category and it is the factor **commitment to environmental protection**. The factor was inspired after reading *“[...] a high level of environmental protection requires the setting and maintaining of appropriate operating conditions and emission limit values [...]”* (Directive 94/67/EC, §10) (haz). Not much information was seen in the working documents that could help explain this factor.

However, an example of commitment to environmental protection could be that which was written about the role of the Commission in reinforcing the legislation in order to reduce the impacts of incineration: *“To reduce the adverse effects of incineration and co-incineration of waste on the environment and human health, the Commission proposes reinforcing the existing Community legislation, notably the two 1989 directives, by extending their scope to non-hazardous municipal waste and hazardous waste excluded from Council Directive 94/67/EC. [...] it proposes updating the emission limits applicable to incineration plants, adding limits for discharges into water and setting emission limits for co-incineration of waste”* (Bulletin 1998 / 10 / 1.2.125) (all). More information in Box 9 in Appendix 1.

Category 5: Factors linked to each other

After reading the collected information one could see there was a series of interrelated factors, that is, factors which somehow were influence by each other. This linkage initiated when, after describing one the factors, there was the need to address a second factor in order to find an explanation for the first factor. The situation continued like that for a total of 16 factors (Figure 10).

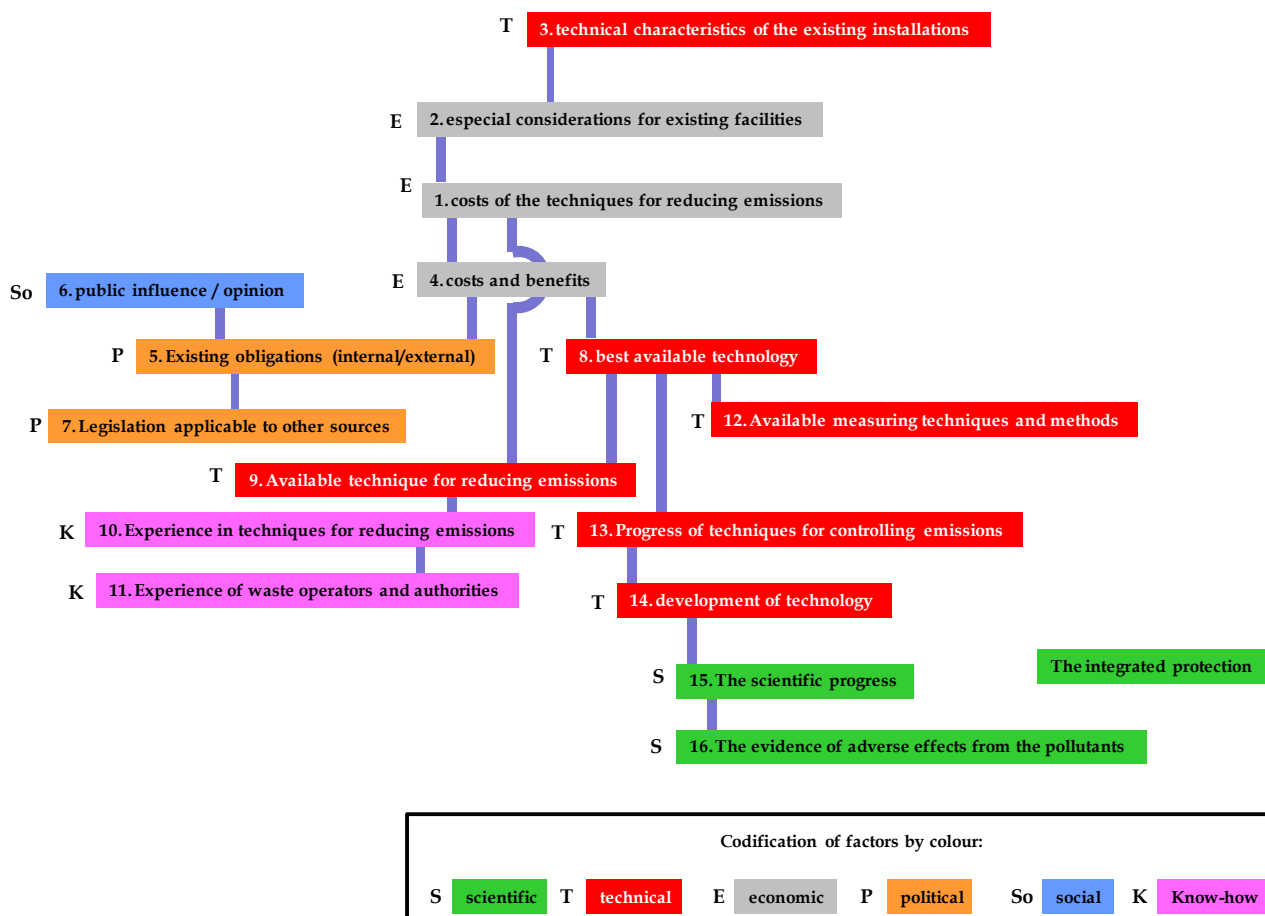


Figure 10: Factors which were linked with each other.

The point of departure is the factor **costs of the techniques for reducing emissions** (nr. 1 in Figure 10, Box 10 in Appendix 1). Based on the information from the working documents, the relation of the factor with the setting of ELVs is that, given that the efficiency of the pollution abatement equipment is dependent on the costs -that is, the more efficient, the higher the costs- in order to achieve strict ELVs, costly efficient equipment is required.

There are two types of plants which tend to have trouble acquiring efficient –and expensive- equipment for achieving stricter ELVs. One is the existing plants, the other are the small plants. In both cases the trouble relates to return in the invested capital: existing plants might not have a long remaining time as to recover the investment, and small plants might not earn enough as to recover the investment. In the particular case of existing plants, the gradual approach allowed for existing incinerators was not because of technical reasons, but because of economic ones: *“While the retrofitting of existing plants may not involve any major technical problem, the economic aspect may be particularly crucial in the case of incinerators which have a particularly short remaining useful life or which have to operate under special conditions”* (COM (88) 71 final , pg 15) (new). For small plants the problem is that they might not earn enough as to recover the investment in a profitable time: *“With regard to investment, the size of the plant influences the return on capital employed for emission control, particularly in the case of gas scrubbing equipment”*(COM(88) 71 final , p. 15)(new).

The issue of costs might make that a Member State could oppose the setting of stringent legislation on incineration: *“The construction of an incineration plant to meet the proposed standards easily requires a few hundred million ECU [...]. It cannot be ruled out that several Member States may, for the time being, have no intention of letting such a financial burden be placed on them”* (PE 201.493/fin, pp. 16, ame. 4.3) (haz).

The situation of plants which tend to have trouble acquiring efficient –and expensive- equipment for achieving stricter ELVs, has been addressed by allowing these types of plants –but for a limited period of time- to fulfil laxer ELVs. This situation leads to the factor nr.2: *especial conditions for existing facilities*. Another way of addressing the situation –and this applies for all types of plants independent of age or size- is that ELVs will be set up to the point where there is a balance between costs and benefits (factor nr. 4: *costs and benefits*).

Regarding the factor **especial considerations for existing facilities** (nr. 2 in Figure 10, Box 11 in Appendix 1), as it was just mentioned, the factor addresses the mechanisms used by legislators to approach this situation of plants which tend to have trouble acquiring efficient –and expensive- equipment for achieving stricter ELVs.

Based on the information from the working documents, it could be seen that in general, legislators have tried to approach this issue in three different ways: (1) ask for rapid adaptation: “[...] *rapid adaptation of existing incineration plants to the emission limit values laid down in this Directive is required*” (94/67/EC, §15) (haz); (2) ask for provisional ELVs in the Directive for existing incinerators: “*This Article lays down the emission limit values for total dust applying to plants of different capacity. The staggered values take account of the requirement to avoid entailing excessive costs and major technical problems*” (COM(88) 71 final , p. 22)(exi); and (3) exemption clauses: “*The Council, rather than changing the emission limit values put forward by the Commission [...], has, because of difficulties for a certain number of plants which are related to cost/benefit considerations, opted for a set of exemption clauses which are limited in time either for certain kinds of existing processes or for plants with a determined capacity*” (OJ C / 2000 / 25 / 17 , p. 44)(all).

The provisional measures given to existing plants would depend on the type of emissions resulting from them, something which is addressed with the factor **technical characteristics of the existing installations** (nr. 3 in Figure 10, Box 12 in Appendix 1). The type of emissions discharged from plants are directly related with the characteristics of their installations, so the provisional ELVs given to existing plants should be in accordance with what these installations discharge: “*The nature and quantities of pollutants emitted by incinerators generally depend both on the characteristics of the waste incinerated and those of the plant, including the combustion-gas treatment equipment*” (COM (88) 71 final, pg 8) (new).

As previously mentioned, another way of addressing the situation of plants which tend to have trouble acquiring efficient –and expensive- equipment for achieving stricter ELVs (factor nr. 1: *costs of the techniques for reducing emissions*), is something which is addressed with the factor **costs and benefits** (nr. 4 in Figure 10, Box 13 in Appendix 1). ELVs will be set up to the point where there is a balance between costs and benefits: costs of acquiring techniques for reducing emissions or of any other measure to fulfil the ELVs, and benefits achieved by the implementation of those ELVs. This applies for all types of plants independent of age or size.

Among the benefits documented by the Commission were: reduction in adverse effects on human and ecological health, and reduction in other effects of pollution, such as crop or building damage (COM (1998) 558 final, p. 19) (all). Among the costs documented by the Commission were: additional capital expenditure to install or upgrade pollution control equipment; additional running costs due to increased environmental monitoring or increased chemical usage in the flue gas treatment system (COM (1998) 558 final, p. 19) (all).

An example of the application of this factor was seen in one of the working documents for the all WI Directive “*According to the cost-benefit analyses carried out, tighter standards are not justified. Furthermore all Member States apart from the Netherlands and Austria do not see a justification for and therefore do not support more stringent requirements*” (COM (1998) 558 final, p. 18) (all).

Some of the legislative actors criticized this measure of cost-benefit analysis arguing that it was better to propose the ELVs which were being applied at the moment in the Member States (something which lead to

the factors nr. 5: *existing obligations (internal and external)*), or propose ELVs which were achievable throughout the Best Available Technology (BAT) (something which lead to the factor nr. 8: *the best available technology*). These factors are explained next:

The factor **existing obligations (internal/external)** (nr. 5 in Figure 10, Box 14 in Appendix 1), addresses the fact that there are three levels which influence the setting of ELVs: an international level (signed international agreements); an EU level (environmental action plans and goals); and a Member State level (existing national legislation).

An example of the external level is the signature by the Commission of the Protocol on Heavy Metals. This Protocol sets legally binding limit values for PM of 10 mg/m³, amount which is to be emitted from hazardous and medical waste incinerators (Directive 00/76/EC, §3) (all).

An example of the internal level is for example when the Parliament writes *“The emission limit values proposed by the Commission are based on cost-benefit analyses. Examining these cost-benefit analyses reveals, however, that they contain a number of significant imponderables and unjustifiable assumptions. It is better to look at what is already possible in various plants, existing plants being a good indicator of standards to be applied in future”* (PE 232.378, 2000, p. 30)(all).

In the concrete case of PM and Cd, the ELVs proposed by the Commission originated from the existing legislation at Member State (MS) level¹². Another example is that the proposal from the Commission on the ELVs for dioxins and furans originates from the ELVs given by Germany and Netherlands: *“It might be pointed out that Germany and the Netherlands have fixed this value [0,1 ng Toxic Equivalent/m³] as a legally binding emission limit value”* (COM (92) 9 final , p. 3)(haz). However, it is important to clarify that while the ELVs proposed by the Commission might originate from the MS, the final agreed ELV number results from the legislative process, something which will also be addressed in chapter 6).

Continuing along the lines of *existing obligations*, there is the factor **public influence/opinion** (nr. 6 in Figure 10, Box 15 in Appendix 1). Legislation is influenced by the pressure from the public opinion in two ways: directly and indirectly. Directly by requiring strict ELVs for the incinerators; indirectly in the sense that having strict ELVs makes the public more willing to accept incineration as one of the options for waste management.

Regarding the direct type of influence, if the public is really interested in an issue, and if it manages to get the attention of the media and of the politicians, they could push for the setting of stringent ELVs, or the regulation of areas not previously legislated: *“Co-incineration of non-hazardous waste is also increasingly frequent, although there are no Community rules covering it. This has been the cause of considerable disquiet, particularly amongst people living near incineration plant”* (PE 229.253 / fin, p. 28) (all).

Regarding the indirect type of influence, it is hoped that by setting strict ELVs, the public would have a higher acceptance of incineration: *“only if high standards apply to the incineration of hazardous waste, the justified fears of the public are likely to be allayed and greater acceptance for this method of disposal again achieved”* (PE 207.223/fin, p. 27) (haz).

Another factor which is also in the line of *existing obligations* is the one on **legislation applicable to other sources** (nr. 7 in Figure 10, Box 16 in Appendix 1), that is, the way the pollutant is legislated in areas different to waste incineration. Strict ELVs for a particular pollutant will not be allowed to be set by the representatives from incineration, if the pollutant is being regulated, in a less strict way, for other sources of the pollutant: *“Industry is now in a position to supply plants which could meet even more stringent requirements.*

¹² This is a topic which will be covered in more detail in chapter 6 *Influence of the donor's context*

However they would be extremely expensive and given that emissions from waste incineration plants are responsible for only a small part of total emissions, it would not be reasonable” (PE 201.493/fin, pp. 16, ame. 4.1) (haz).

The factor can be seen for example in the case of setting the ELV for dioxins: “As far as Germany is concerned, at present all incineration furnaces discharge 400 gms of dioxin a year [...] if the 17th regulation of the Federal Emissions Control Law (17BImSchVO) applies [...] then the total emissions in the Federal Republic will be limited to 4 gms a year [...], but it is pointless to set even higher requirements for incineration furnaces when action to deal with other sources of dioxins (e.g. furnaces, transport, incineration of hospital waste, the incomplete incineration of heavy fuel oil on ships at sea) would produce a far more dramatic reduction of dioxins”(PE 201.493/fin, pp. 17, ame. 1.1) (haz).

Until now, seven factors from Figure 10 have been addressed. They can be seen in Figure 11.

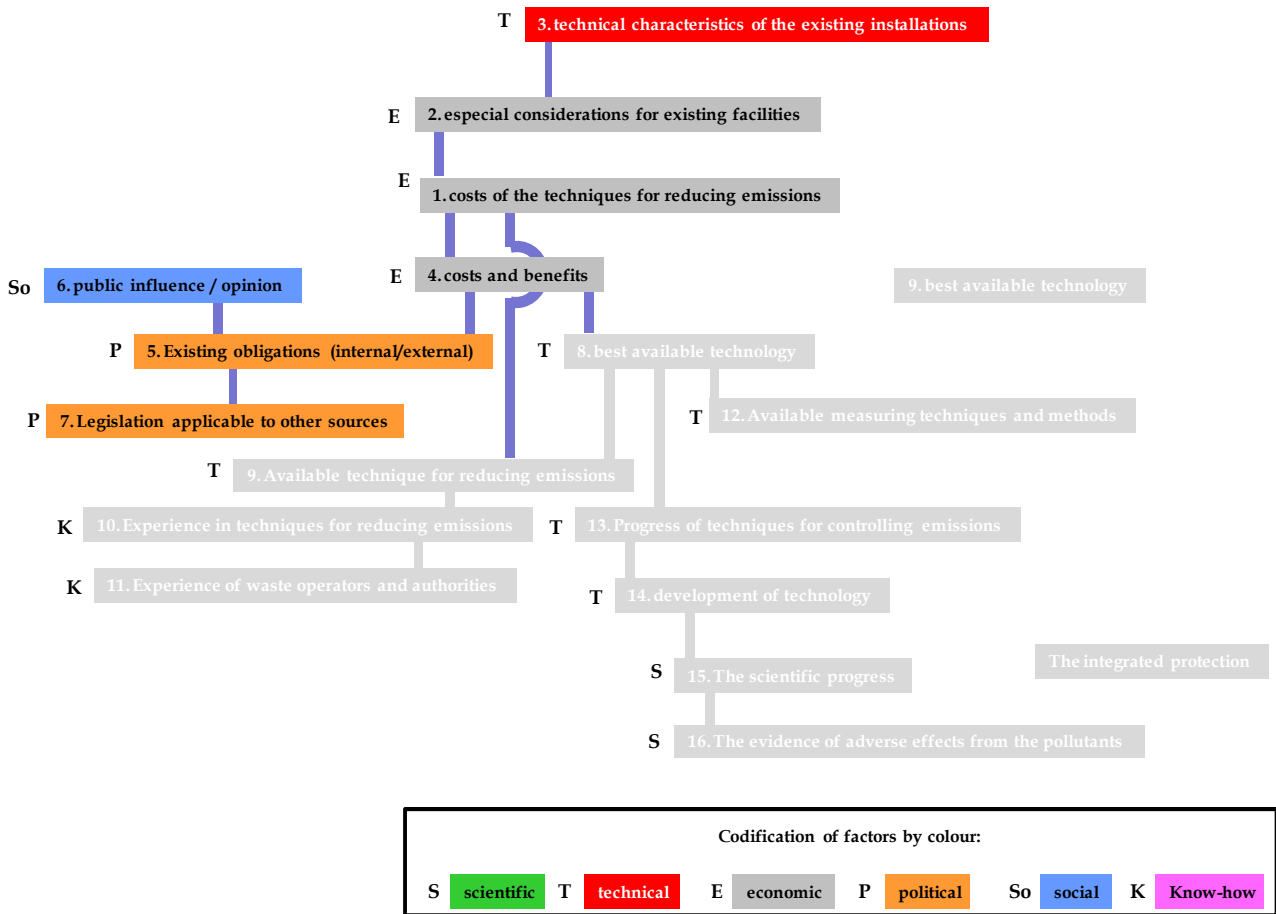


Figure 11: The seven factors so far addressed.

Continuing with the description of the linkage among factors, and as it was mentioned in the explanation of the factor about *costs and benefits* (nr. 4), one of the criticisms made to the Commission’s proposal on ELVs was that these ELVs were not made based on the BAT. For example, the ESC writes: “The emission limits in the draft directive appear to be based on a cost-benefit assessment rather than in best available technology” (ESC / 1999 / 200, p. 4) (all). This situation lead to the factor **best available technology** (nr. 8 in Figure 10, Box 17 in Appendix 1). The relation of the factor with the setting of ELVs is expressed in one of the Commission’s proposals: “The emission limit values specified in this article correspond to those achievable by the application of the best available techniques for emission reduction” (COM (92) 9 final , p. 13)(haz)

BAT is not only used by the Commission to base their ELVs' proposals. Other actors such as the Parliament, the Council and the ESC have also looked at the BAT when suggesting values for the ELVs. Most of the comments associated to BAT and found in the working documents were related to the fact that ELVs were not strict enough considering the BAT. For example, Parliament writes: *"Although the values proposed by the Commission are an improvement on the legislation and practice in a number of Member States, we feel they are too high. Given the state of the art and the limit values used in the Federal Republic, for example, 30 mg/Nm³ would be a realistic value"* (EP A2 1988/391, p. 27)(new). Comments included in the working documents also point to the fact that even though ELVs should be based on BAT, it is not advisable for the Commission to state what that BAT is.

Specific technology mentioned, and which is related to the setting of ELVs, are the techniques for reducing emissions (factor nr. 9), the measuring techniques and methods (factor nr. 12), and the techniques for controlling the emissions (factor nr. 13). These factors are described next.

The relation of the factor **available technique for reducing emissions** (nr. 9 in Figure 10, Box 18 in Appendix 1) with the setting of ELVs is that legislators will set the ELV based on how much pollution is discharged from the incinerators after the combustion air has passed through the techniques used to reduce the emissions. For example, in the proposal made by the Commission for the new WI Directive, the values before treatment for discharges of PM were between 1500 and 8000 mg/Nm³; the values after treatment with electrostatic precipitators, being this the most effective treatment at the time, ranged between 50 and 150 mg/Nm³ (100 as the mean value). The Commission proposal was of 50 mg/Nm³ (for plants of more than 5t/h) and 100 mg/Nm³ (for plants of less than 5 t/h) (the final ELVs in the Directive were in the ranged between 30 – 200).

The factor relates not only to the techniques for reducing emissions but also to what it is available. For example the Parliament suggested an ELV to be set for dioxins and furans because *"[...] industrial processes make it possible to go below those limit values"* (PE 201.493/fin, p. ame. 3) (haz). However, availability is not all what it counts, but there is also the issue of costs; the technology to meet stricter ELVs exists, but in some occasions this is too expensive. As the Parliament writes: *"Industry is now in a position to supply plants which could meet even more stringent requirements. However they would be extremely expensive [...]"* (PE 201.493/fin, pp. 16, ame. 4.1) (haz). This is something which relates to the already described factor nr. 4: *cost and benefit*.

The opinion of the people used to handle this type of techniques can help legislators confirm whether strict ELVs could be achieved or not. This aspect is covered in the factor **experience in techniques for reducing emissions** (nr. 10 in Figure 10, Box 19 in Appendix 1). The relation of the factor with the setting of ELVs is that the opinion of persons used to handle equipment for reducing emissions can help confirm the feasibility of a stricter ELV: *"important equipment manufacturers guarantee the technical feasibility to meet values even below the limit values set out in the Directive proposal"* (COM (92) 9 final , p. 4)(haz). An example of this factor can be seen with the ELV for dioxin and furans where the satisfactory experiences with the use of activated carbon filters to reducing emissions below the limit, enforces the setting of such number: *"Most experts consider that, at the present time, only activated carbon filters would be able to reduce dioxin and furan emissions below this limit [0,1 ng Toxic Equivalent/ m³]. Such filters are newly developed and the first one will most likely start operating in a hazardous waste incineration plant by early 1992; but experience with satisfactory results is already available from the treatment of smaller parts of the exhaust gas of waste incineration plants"* (COM (92) 9 final , p. 3)(haz).

The debate on the feasibility of an ELV is also complemented with the opinions from the operators of the plants meant to be regulated, being this something covered with the factor **experience of waste operators and authorities** (nr. 11 in Figure 10, Box 20 in Appendix 1). Operators and authorities dealing with waste provide, based on their experience, opinions not only about the techniques for reducing

emissions, but also on the general conditions of the plant, and on the possibility or not of achieving the proposed ELV, opinions which are an important feedback during the process of setting an ELV.

An example of the factor was seen in the way operators of waste management facilities participated in the legislative process for the all WI Directive. The initial proposal presented by the Commission for the all WI Directive (COM (1998) 558 final, p. 17) (all) includes the position of industry as one of the stakeholders. Among the industrial interests were the representatives from the waste industry, the cement industry, and the power generation industry. Among the topics discussed were the standards applicable for co-incineration, and waste industry pressing for equal standards; and the differences in the releases between the incinerators and the cement industry, were cement industry release NO_x and dust in higher proportions. These considerations were included in the draft proposal and taken into account in the final version of the Directive (e.g: cement kilns, given its operating conditions, are allowed to discharge higher amounts of dust and NO_x than incinerators¹³).

While it is possible that these two factors (nr. 10: *experience in techniques for reducing emissions* and nr. 11: *experience of waste operators and authorities*) would relate to the same person, it was thought important to leave them independent. For example, one could be the provider of the emission reduction techniques, and the other the operator of the waste facility.

As previously mentioned, another specific technology related to the setting of ELVs and BAT is the measuring techniques and methods, which is addressed as the factor **available measuring techniques and methods** (nr. 12 in Figure 10, Box 21 in Appendix 1). The relation of the factor with the setting of ELVs is in the sense that measuring techniques allow monitoring the ELVs, and when it is possible to monitor the pollutant, then ELVs can be set.

Example of this factor is the case of the ELVs for dioxins and furans. The initial proposal from the Commission presented guide values, and not ELVs, for dioxins and furans. The reason for this was: “[...] a guide value only should be set due to the lack of existing appropriate measurement methods (COM (92) 9 final, p. 28)(haz). However, the Parliament proposed setting and ELV instead of a guide value, this considering that “a number of Member States have laid down legally binding limit values for emissions of dioxins and furans [...] particularly since industrial processes make it possible to go below those limit values” (PE 201.493/fin, p. ame. 4) (haz). The Commission responded to this by adding the limit value and saying that would be binding as from a specific date.

The factor relates also to what it is available, for example, in the new WI Directive it was said that concentration of heavy metals should be only measured periodically because while “[...] appropriate measurement techniques are already well established and widely used for these substances [total dust] by contrast, continuous measurements is not conceivable in the case of heavy metals” (COM (88) 71 final, pg 19) (new).

The third technology factor related to BAT is the **progress of techniques for controlling emissions** (nr. 13 in Figure 10, Box 22 in Appendix 1). The relation with the setting of ELVs is that stringent ELVs will be possible to be set based on the progress on the techniques for controlling emissions, that is, emphasis is made here in the need to keep up to date with the progress of these types of techniques. In the same line, the factor **development of technology** (nr. 14 in Figure 10, Box 23 in Appendix 1) also relates to the need of keeping up to date with the developments, but in this case emphasis is made on the developments of technology in general, not only of the techniques for controlling emissions.

¹³ Cement kilns' ELVs → PM: 30 mg/m³ (50 under special conditions) NO_x: 500 mg/m³ for new plants, 800 mg/m³ for existing plants (1200 under special conditions). Incinerators' ELVs → PM: 10 mg/m³ (20 for existing incinerators under special conditions); NO_x: 200-400 mg/m³ for existing incinerators depending on plant's capacity (1200 under special conditions). Further information can be consulted in Annex II and Annex V of the 2000/76/EC Directive (all-waste).

An example of this is seen in the proposal from the Commission for the all WI Directive, where is written that the development of technology will help achieve stringent ELVs: *“Considerable technical progress has been made in the incineration sector. Substantially improved standards for emission control can be achieved more cost-effectively for incinerators in comparison to the 1980s”* (COM (1998) 558 final, p. 8) (all). The application of the factor can also be seen when actors criticize that the developments of technology were not taken into account to set ELVs. For example, the rapporteur from the Parliament writes: *“The Council imposes far less stringent requirements regarding the adaptation of the directive to technical progress, which would mean the state of the art in the late 1980s applying beyond the year 2000. The rapporteur therefore advocates the retention of the minimum limit values proposed by the Commission”* (PE 207.223/fin, p. 26) (haz).

Usually in the content of the Directives, the text related to this factor of *development of technology* was found associated with the factor named **the scientific progress** (nr. 15 in Figure 10, Box 24 in Appendix 1). The relation of the factor with the setting of ELVs is that ELVs will be adapted based on the new scientific knowledge gained, where *progress* refers to new findings related to the relationship between health and emission: *“The commission in accordance with the procedure [...] shall amend [...] and annexes I to V [ELVs] in order to adapt them to technical progress or new findings concerning the health benefits of emission reductions”* (COM (1998) 558 final, p. 50) (all). In the same line, the knowledge about a pollutant that a legislator had at the time the Directive was being drafted, was the one used as a basis for defining the stringency of the ELVs. This is expressed with the factor **the evidence of adverse effects from the pollutants** (nr. 16 in Figure 10, Box 25 in Appendix 1): *“The limit values stipulated for heavy metals are differentiated according to the risk they present to health and the environment. Very thigh control must be exercised regarding Cd, Hg, and, to a lesser extent, Ni and As”* (COM (88) 71 final, pg 17) (new). Another example is what the ESC writes *“Given that dust contains pollutants such as heavy metals and polychlorinated dioxins and furans, the limit value proposed by the Commission seems too high. The state-of-the art figure is 30mg/m³”* (OJ C /1988/318 , p. 4)(new). The Commission proposed values of 50 and 100.

Among the information on health effects from Cd is: *“High levels of Cd have been associated with lung cancer and a range of non-cancer effects”* (COM (1998) 558 final, p. 7) (all); *“[...] cadmium is already a problem [...] From the environmental point of view any level of cadmium emission is too high”* (EP A2 1988/391, p. 27)(new). Among the information on health effects from PM is: *“PM in the atmosphere has been associated with large-scale chronic adverse effects on human health”* (COM (1998) 558 final, p. 8) (all); *“Stringent controls on the emissions of PM will reduce the potential adverse impact on human health thought to be caused by exposure to fine particulates in the atmosphere”* (COM (1998) 558 final, p. 22) (all).

The factors which were just described are those which are shown in Figure 12.

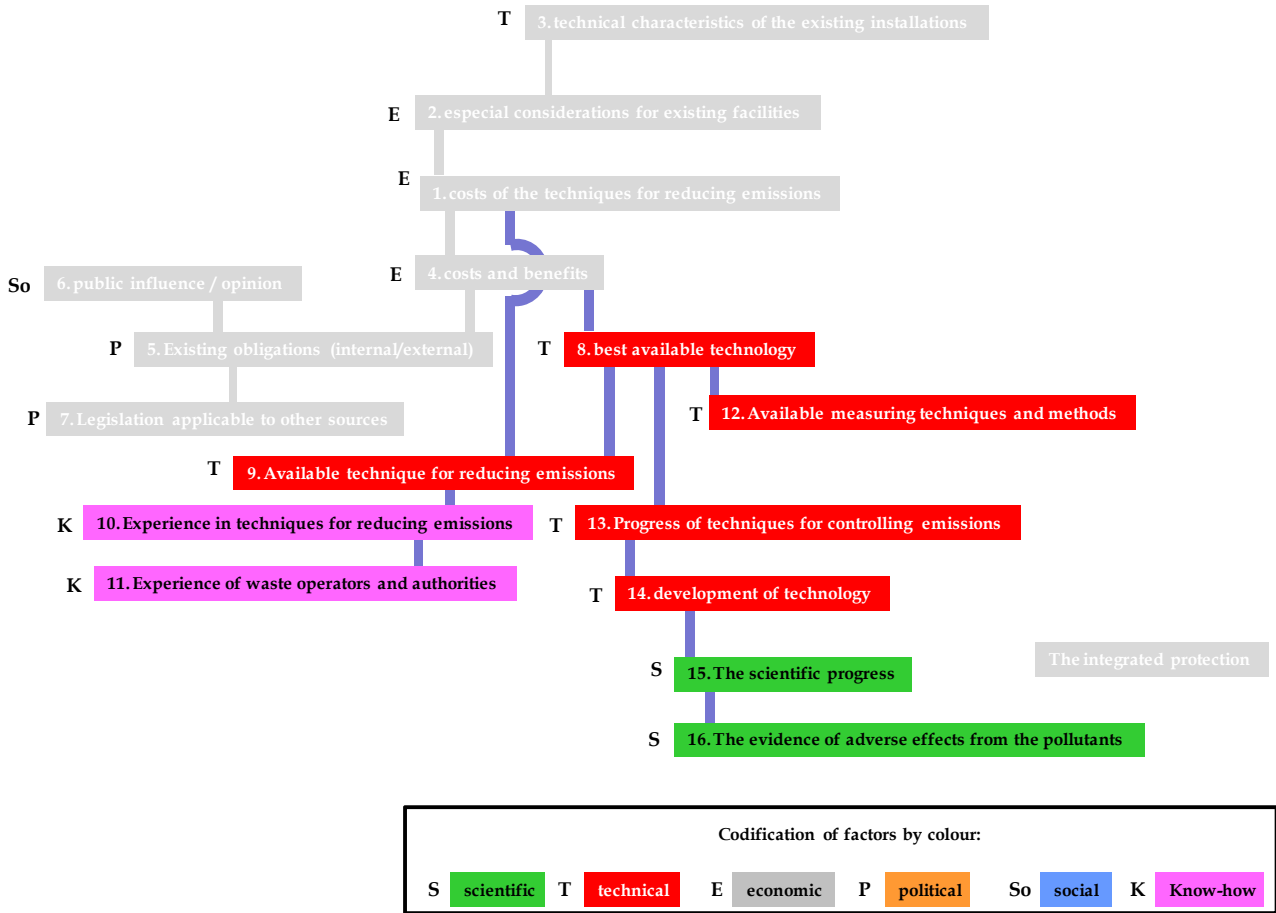


Figure 12: The other nine factors which were just addressed.

Category 6: Influencing factors but not interlinked

There was also one factor for which information was found on its influence in the process of setting ELVs but which could not be related to any of the previous factors depicted in the network (Figure 13). The factor is the one of **integrated protection** (Box 26 in appendix 1).

The relation of the factor with the setting of ELVs is that setting a too strict ELV for air might mean displacement of that pollution into other media like water: *“Imposition of more stringent controls on air emissions for incineration plants can lead to the transfer of pollutants from air to water”* (ESC / 1999 / 200, p. 2) (all). An example of this factor can be seen when discussing the ELV for NOx: *“This amendment also contains a new standard of 25 mg/l for total nitrogen. This is directed principally towards the pollutant nitrate. Establishing this new standard prevents NOx emissions into air being replaced by a nitrate emission into water”* (PE 229.253 / fin, pp. 32, ame. 36) (all).

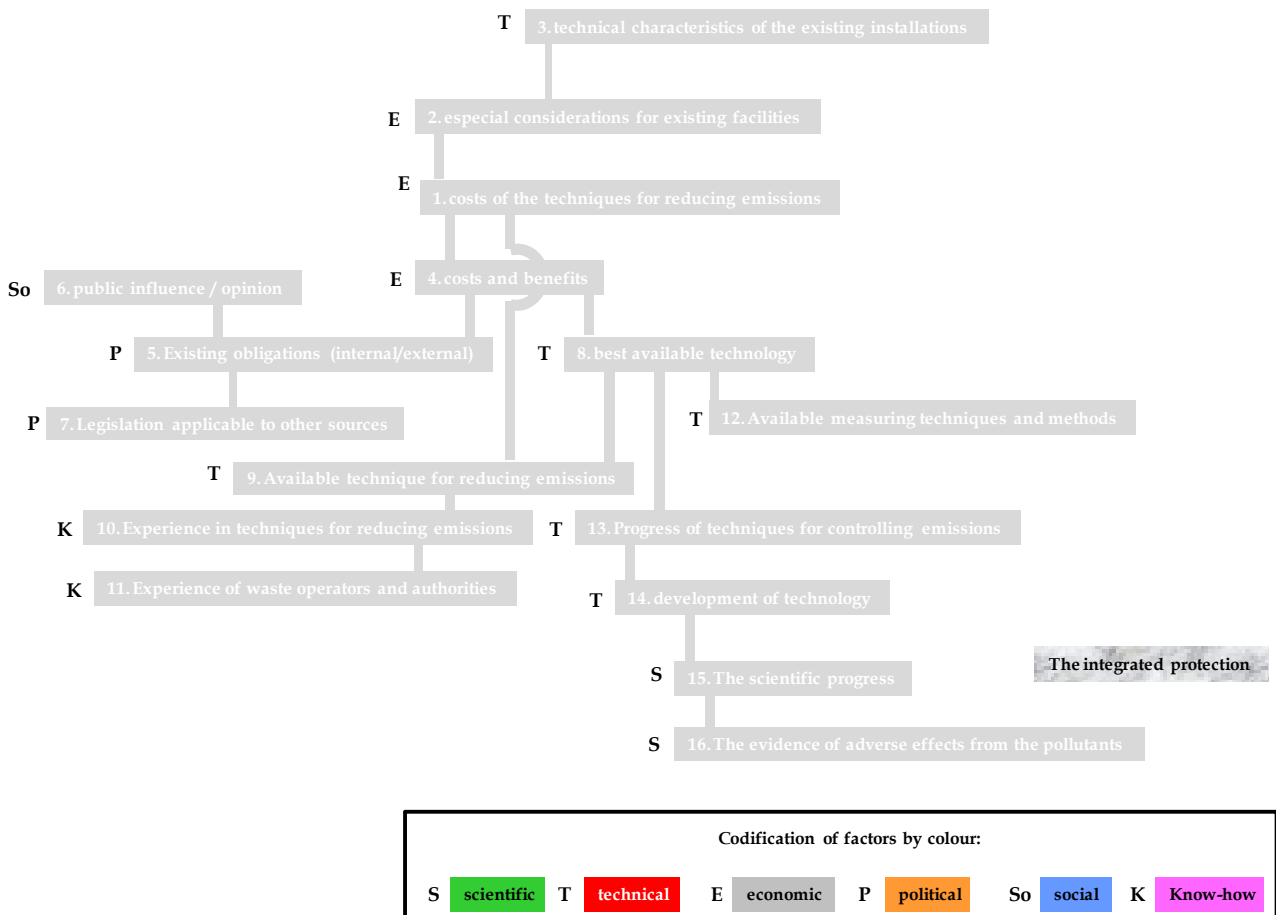


Figure 13: Relationship of *The Integrated Protection* with the network of factors.

Category 7: Factors applicable to PM and Cd

The factors applicable to PM and Cd (Table 17) can be related to the general factors, this relationship can be seen in Figure 14.

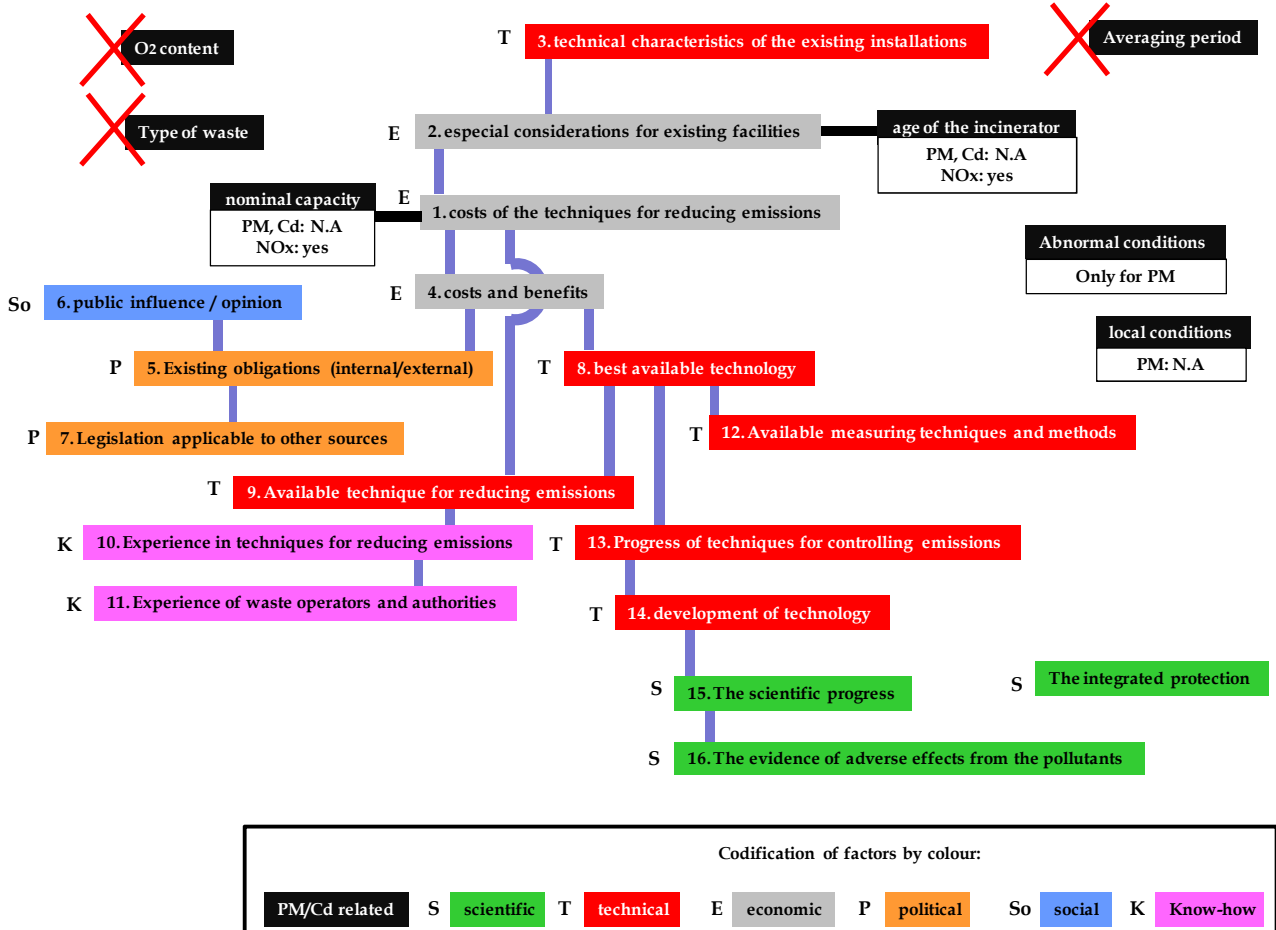
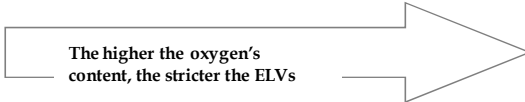


Figure 14: Relationship of the factors applicable to PM and Cd with the factors applicable to pollutants in general.

The explanation of the factors will start by addressing those which are no longer applicable: *oxygen content*, and *type of waste*, following by the one which later on was realized it was not a factor: *averaging period* (hence the red “X” in the figure).

The factor **oxygen content** (Box 27 in Appendix 1) addressing the fact that the higher the oxygen's content, the stricter the ELVs for PM (Figure 15), was seen applicable only for plants of less than 1 t/h of capacity in the first two Directives (new and existing municipal waste incineration). No information was seen in the working documents that could help explain how this factor influenced the setting of ELVs, or why did it stop being applicable. Still, given that this factor was not seen applicable in the latest Directives, it was decided to eliminate it from the list of influencing factors.




ELVs for PM
Applicable to plants of less than 1 ton/hour

	Oxygen content: 11%	Oxygen content: 17%	
Directive on new municipal waste incinerators	200	80	(mg/nm ³)
Directive on existing municipal waste incinerators	600	240	(mg/nm ³) (provisional values)
Directive on hazardous waste incinerators	10	n.a	(mg/m ³)
Directive on all-type of waste incinerators	10	n.a	(mg/m ³)

Figure 15: Relationship between the oxygen content and the ELVs assigned to PM

The factor **type of waste** (Box 28 in Appendix 1) addressed the fact that the hazardous the waste to incinerate, the stricter the ELVs (figure 16), but later on shown that this factor is no longer used in the formulation of ELVs. The information collected for this factor in the working documents was the same as the one collected for the general factor *the composition of the waste*, a factor which stops being applicable as previously explained (see *Category 3: Factors which stop being applicable*).

ELVs for PM			
Under normal conditions of operation 1-day average			
	Municipal waste (non-hazardous)	Hazardous waste	
Directive on new municipal waste incinerators	Range of values: 39 - 260	-	ELVs (mg/nm ³)
Directive on existing municipal waste incinerators	Range of values: 39 - 780	-	ELVs (mg/nm ³) provisional values
Directive on hazardous waste incinerators	-	10	ELVs (mg/m ³)
<div style="border: 1px solid black; padding: 5px; display: inline-block;">The hazardous the waste, the stricter the ELV</div> 			
Directive on all-type of waste incinerators	10	10	ELVs (mg/m ³)

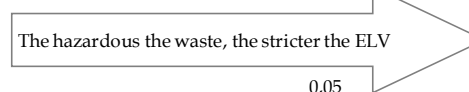
ELVs for Cd			
	Municipal waste (non-hazardous)	Hazardous waste	
Directive on new municipal waste incinerators	0 and 0,2	-	ELVs (mg/nm ³) 7-days aver.
Directive on existing municipal waste incinerators	0 and 0,2	-	ELVs (mg/nm ³) 7-days aver.
Directive on hazardous waste incinerators	-	0,05 (new plants) 0,1 (existing plants)	ELVs (mg/m ³) 30 min - 8 hour aver.
<div style="border: 1px solid black; padding: 5px; display: inline-block;">The hazardous the waste, the stricter the ELV</div> 			
Directive on all-type of waste incinerators	0,05 0,1 (provisional)	0,05 0,1 (provisional for existing plants)	ELVs (mg/m ³) 30 min - 8 hour aver.

figure 16: Relationship between the type of waste and the ELVs assigned to PM (upper figure) and Cd (lower figure).

The factor **averaging period** (Box 29 in Appendix 1) related to the fact that the values measured from the exhaust gas should be averaged before they can be compared with the ELVs given in the Directives. The relationship found was that the more period of time included in the average, the stricter the ELVs would be (Figure 17). It was not until the working document for the all WI Directive that it was clearly expressed why ELVs were stricter in relation to the averaging period: “The half hourly averages are higher than the daily averages to reflect variability in the emissions” (COM(1998) 558 final, p: 34)(all).

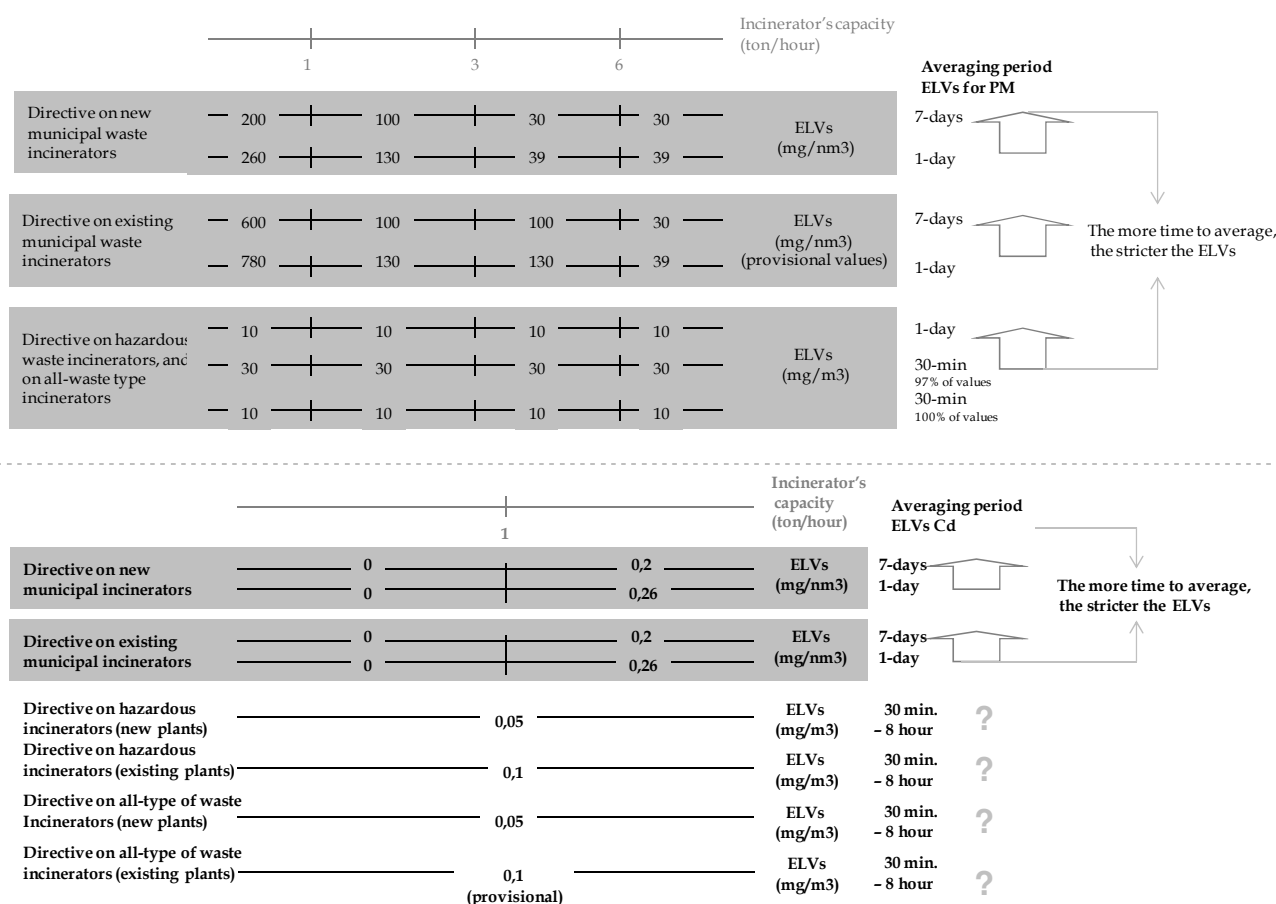
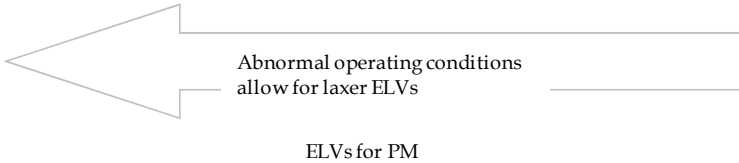


Figure 17: Relationship between the averaging periods and the ELVs assigned to PM (upper figure) and to Cd (lower figure).

The explanation of the specific factors moves now into those one which were not seen in the general factors: *abnormal conditions* –applicable only to PM-, and *local conditions* –applicable in principle only for PM but which evidence showed could also be applicable to Cd.

The factor **abnormal conditions** (Box 30 in appendix 1) address the fact that under abnormal conditions, laxer ELVs are allowed. Abnormal conditions are defined as “technically unavoidable stoppages, disturbances or failures of the purification devices or of the measurement devices during which the concentrations in the discharges into the air and the purified waste water of the regulated substances may exceed the prescribed emission limit values” (2000/76/EC, p. art. 13). Under these conditions, plants are allowed to discharge higher amounts of PM than what the usual ELV would allow (Figure 18). This is a factor that is applicable throughout the Directives, but for which no particular information could be seen in the working documents which could help explain its influence in the process of setting ELVs. The only comments found are related to the period of time allowed for such abnormal conditions, period which has been reduced throughout the Directives.

The reduction of this period is done mainly because of the risks to health: *“The maximum permissible period for an abnormal operation causing exceedances of the emission limit values of air pollutants is reduced to a fourth of the period permitted in the directives concerning the incineration of domestic waste due to the high potential risk to the environment and human health resulting from such pollutants”* (COM(92) 9 final, p: 17) (haz).



	Allowed ELVs for <u>abnormal</u> conditions	Maximum period of operation (hours)		ELVs for <u>normal</u> conditions	
Directive on new municipal waste incinerators	600	8	96	200, 100, 30	(mg/nm3)
Directive on existing municipal waste incinerators	600	16	200	600, 100, 30	(mg/nm3) (provisional values)
Directive on hazardous waste incinerators	150	4	60	10	(mg/m3)
Directive on all-type of waste incinerators	150	4	60	10	(mg/m3)
		Uninterrupted hours	Maximum cumulative over a year		


Figure 18: Relationship between the abnormal conditions and the ELVs assigned to PM. The different ELVs assigned to PM for the first two Directives (municipal waste incineration) are related to the different plant capacity and oxygen content. See Figure 1 (p:78) of this chapter for further information.

The factors **local conditions** (Box 31 in Appendix 1) relates to the fact that there seems to be a relationship between the location of an incinerator and the strictness of the ELVs, that is, incinerators located close to human settlements will have a stricter ELV than those located in isolated regions (Figure 19). The factor is applicable for plants of less than 1 ton/hour, and is only seen in the first Directives (new and existing municipal waste incineration). The Directives do not specify what is to be understood as *local conditions*, neither give examples of these, however, an examples of the relation location-ELVs was seen in the case of sandy soils, where the Parliament wanted to introduce a new article specifying that the construction of new incineration plants was not recommended in areas with sandy soils. The reason for this being that sandy soils were very susceptible to pollution from fallout of emissions. However, this article was not included in the final version of the Directive (EP A2 1988/391, p. 27)(new).

Another example of the relation location and ELVs was seen in a more recent document used in the legislative process for the all WI Directive where the Commission writes: “*There is a good case for setting high minimum standards for incinerators given that most are located in or near densely populated areas*” (COM (1998) 558 final, p. 20) (all). This fact might also relate to the previously discussed general factor nr. 4 of *cost and benefits*.

In addition, and even though it is out of the scope of this PhD project, there is also a text in the IPPC Directive (2008/1/EC) which reinforces the issue that location of the plant might be a factor at the moment of setting ELVs. The text of the Directive says “[...] *the emission limit values [...] shall be based on [referring about BAT] but taking into account the [referring about technical characteristics of plants] its geographical location and the local environmental conditions*” (Directive 2008/1/EC, article 9 (4)).

Even though this factor was seen applicable for PM, there is also some indication that it was applicable for Cd. For example, in the all WI Directive, there seems to be a connection between the ELVs for Cd and the location of the incinerators near sandy soils. The Commission proposes a value of 0,1 mg/Nm³ for Cd. Parliament agrees with the value since they consider that “[...] *cadmium is already a problem, particularly in areas with sandy soil*” (EP A2 1988/391, p. 27)(new).



Specific local conditions allow for laxer ELVs

ELVs for PM
Applicable to plants of less than 1 ton/hour

	ELV to discharge in case of specific local conditions	ELV to discharge under normal conditions	
Directive on new municipal waste incinerators	Max 500	200 (O ₂ :11%) 80 (O ₂ :11%)	(mg/nm ³)
Directive on existing municipal waste incinerators	Max 500	600 (1995-2000) 200 (as from 2000)	(mg/nm ³) (provisional values)
Directive on hazardous waste incinerators	-	10	(mg/m ³)
Directive on all-type of waste incinerators	-	10	(mg/m ³)

Figure 19: Relationship between the local conditions and the ELVs assigned to PM.

The explanation of the specific factors moves now to the last two factors which are directly related with two of the general factors previously discussed: *nominal capacity* (related to factor nr. 1: *costs of the techniques for reducing emissions*), and *age of the incinerator* (related to factor nr. 2: *especial considerations for existing facilities*).

The factor **nominal capacity** (Box 32 in Appendix 1) refers to the fact that the lower the incinerator's capacity, the laxer the ELVs assigned (Figure 20). Smaller plants have laxer ELVs because of two reasons: costs and impact. For small plants it would be too expensive to buy the equipment required to achieve strict ELVs, expensive in the sense that they cannot obtain a rentable return of the investment, and in a way it would be unnecessary to put such pressure on the small plants since small plants do not produce as much pollution as larger plants. The economic aspect of this factor is something which was already explained with the general factor nr. 1: *costs of the techniques for reducing emissions*.

This practice of allowing laxer ELVs to be discharged by smaller plants was not liked by some, because, as the Parliament expressed: “[...] *the incineration of these small quantities of waste can soon lead to hundredfold emissions*” (PE 229.253 / fin, p. 29) (all). A way to solve this dilemma of costs vs impact was, as expressed by the Council: “[...] *because of difficulties for a certain number of plants which are related to cost/benefit considerations, opted for a set of exemption clauses which are limited in time either for certain kinds of existing processes or for plants with a determined capacity*” (OJ C / 2000 / 25 / 17)(all).

The factor, applicable not only to PM and Cd but to HCl and Hf, was seen only in the first two Directives (new and existent municipal waste incineration). The hazardous directive do not provide any dispensation on ELVs based on plant's capacity, and the factor is seen again in the all-waste Directive for NO_x: a laxer ELV of 400 mg/m³ is given to existing incinerators of less than 6 t/h, while an ELV of 200 is given to plants of more than 6 t/h. The reasoning behind such dispensation was seen in the Commission's proposal: “*In order to meet the concern expressed by France that the requirements for NO_x control would be excessively burdensome for small scale plants and would not prove cost-effective, plants with a capacity under three tonnes per hour are allowed a higher emission limit value for NO_x*” (COM (1998) 558 final, p. 17) (all).

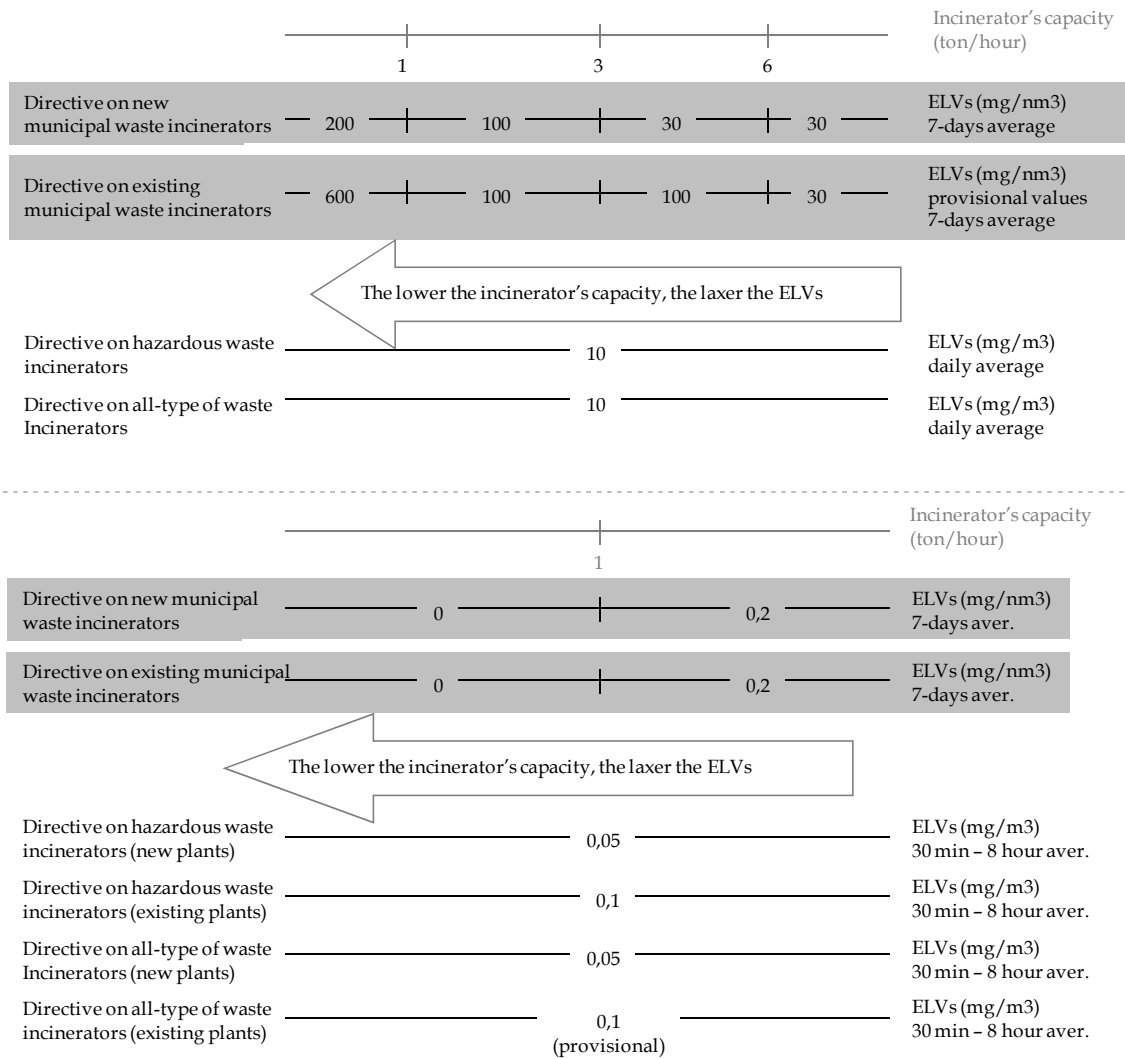


Figure 20: Relationship between the incinerator's capacity and the ELVs assigned to PM (upper figure) and to Cd (lower figure).

Related with two of the general factors previously discussed is also the factor of **age of the incinerator** (Box 33 in Appendix 1) addressing the fact that the older the incinerator, the laxer the provisional ELVs (Figure 21). The factor derives from the fact that existing incinerators, due to economic constrains, might have trouble acquiring the equipment or making the necessary adaptations to achieve strict ELVs (existing plants might not have a long remaining time as to recover the investment). The way legislators dealt with this issue was already explained in the factor nr. 2: *especial considerations for existing facilities*.

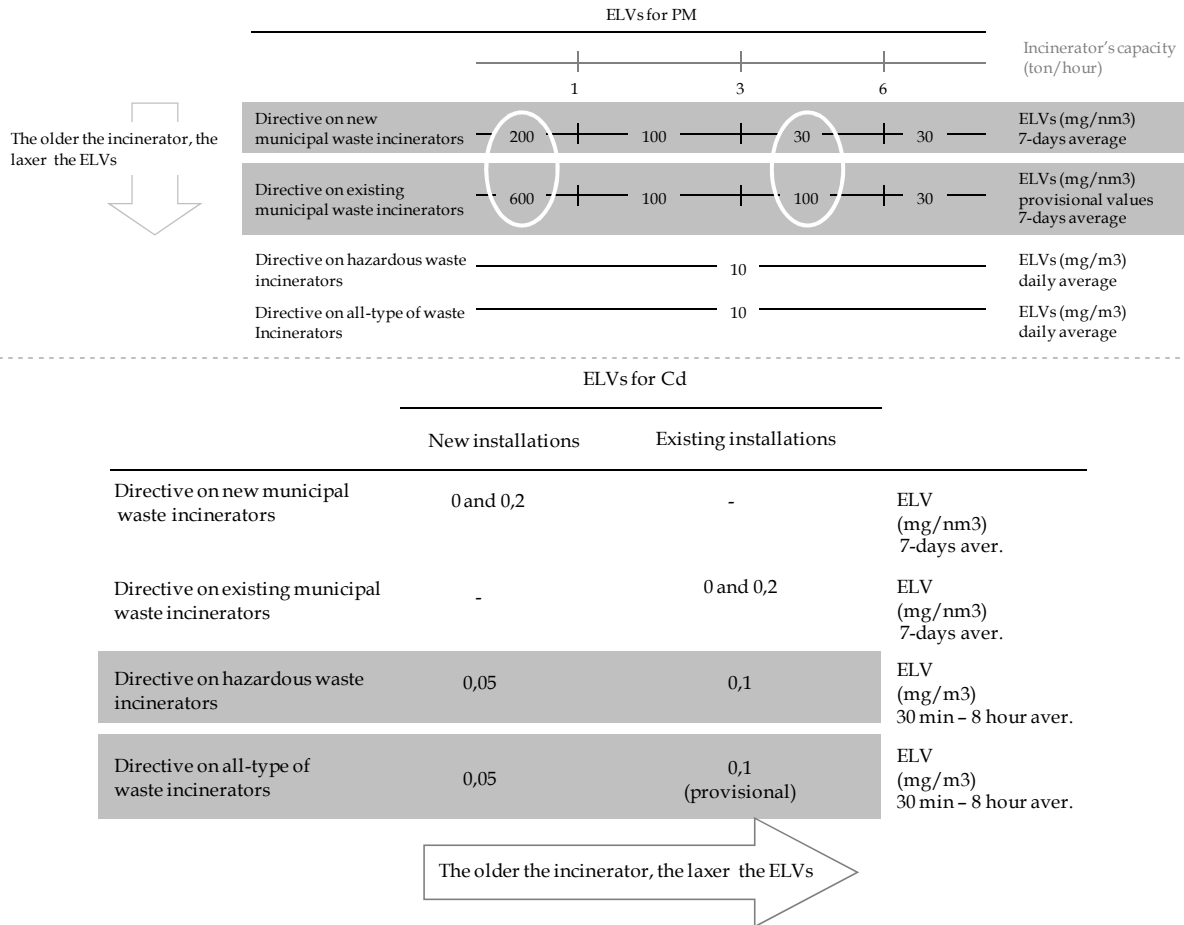


Figure 21: Relationship between the age of the incinerator and the ELVs assigned to PM (upper figure) and to Cd (lower figure).

There is yet another factor which was thought to influence the ELVs for PM: **co-incineration** (Box 34 in appendix 1), where co-incineration operations allow for laxer ELV (Figure 22). The new WI Directive included derogations for plants specifically designed to burn waste-derived fuels (it could be that the derogations covered ELVs even though this is just an assumption; the derogations were not specified in the Directive). The existing WI Directive had no article about this topic of co-incineration, but it could be that this issue would be part of the conditions that would have to be fulfilled by existing incinerators as from a specific date on time. In the hazardous WI Directive a formula is given for calculating ELV, and given the general tendency seen in this Directive of having less stringent requirements for co-incineration, it could be assumed that ELVs for co-incineration were less stringent. The all WI Directive gives ELVs as such for co-

incineration activities (cement kilns and combustion plants: 30 – 50 mg/m³) which are laxer than the ones given for incinerators (10 mg/m³).

In the working documents for all WI Directive it is recognized the difference between the requirements for co-incineration and incineration: *“The proposed directive seeks to address the existing regulatory gap and to ensure that co-incineration does not represent a loophole allowing lower standards of environmental protection”* (COM (1998) 558 final, p. 5) (all). However, based on the findings from the working documents, one could say that the laxer ELV given for dust emissions from the cement industry were because of the special conditions in which the plant operates: *“the emission limit value for dust takes into account the special nature of the cement process in which the raw material enriched atmosphere in the kiln contributes to the dust emissions”* (COM (1998) 558 final, p. 12) (all).

Still, some of the actors criticize the ELV given: *“co-incineration plants are subject to less stringent emission standards for pollutants. This can be seen in the higher emission limit values permitted as daily average. The Commission’s reasoning is that higher emissions occur because of the nature of the process. The committee would point out, however, that the normal fuels burned in such plants are far from being the cleanest, e.g. coal with a high sulphur content”* (PE 229.253, p:30) (all). Some of the Member States also manifested their opinion: *“For co-incineration in cement kilns DK is of the view that the ELVs are too weak; they should be more related to best available techniques”* (9300/99 ENV 228, p. 9)(all). The Commission responded to the amendments proposed for changing the ELV for co-incineration saying that *“They cannot be accepted since the proposed values of the Commission are justified by cost-benefit evaluations and take into consideration the specific nature of the different processes”* (COM (1999) 330 final, p. 5) (all).

ELVs for PM		
	Incineration	Co-incineration
Directive on new municipal waste incineration	Range of values: 39 – 260 (mg/nm ³) daily average	No specific ELVs given. Derogation (including ELVs?) of some of the Directive’s provisions
Directive on existing municipal waste incineration	Range of values: 39 – 780 (mg/nm ³) daily average provisional values	No specific ELVs given. Derogation (including ELVs?) of some of the Directive’s provisions
Directive on hazardous waste incineration	10 (mg/m ³) daily average	No specific ELVs given Formula for calculating ELVs
Directive on all-type of waste incineration	10 (mg/m ³) daily average	Cement kilns, combustion plants → 30/50 mg/m ³ ; “other” industrial sectors → formula

With co-incineration, less stringent ELVs are required compared to incinerators

Figure 22: Relationship between co-incineration and the ELVs assigned to PM.

5.5 Summarizing

The aim of this chapter was to identify the criteria that played a role in formulating the ELVs for waste incineration in the EU. Such criteria was explored by means of the *factors* influencing such process.

The point of departure was to find information of what different authors have mentioned on *factors* influencing the policy-making process, in particular for environmental standards. The idea of searching for factors came after reading Sands (2003) who presents that the feasibility of having specific environmental topics legislated at international level is dependent on something he referred to as *scientific* and *economic* factors. Sands was not the only ones referring to factors, Smink (2002) quoting on Boldwin & Cave (1999) also referred to *historical* and *political* factors influencing the standard-setting process. In the similar line, McEldowney & McEldowney (2001) refers to *elements* required for fixing standards. The European Communities (SEA, 1986) also presents a list of issues necessary to be taken into account at the moment of drafting environmental legislation.

Based on this information, the different influencing factors found in literature were organized into five categories: scientific, social, economic, political and technical. This categorization served as a framework for a second round of literature exploration in search of further information that would help clarify how environmental standards were formulated.

After this second stage of literature review, the influence of factors in the setting of ELVs could be summarized as: **science** provides the scientific data which helps identify the environmental problem and to define the harm; ELVs will be set based on the available **technology** of the moment, technology which refers to monitoring and measuring equipment, and to emission reduction and controlling techniques; ELVs will also be set based on the **economic** balance achieved between the costs of implementing such technology and the benefits to human health achieved from such reduction in emissions; the foundation on which ELVs are set is provided by the **political** goals, and the public could press for the tightening of standards (**social** factor).

The following step related to obtaining the particular information related to the ELV-making process for waste incinerators in the EU. The information was extracted from the four Directives used by the EU to regulate the process of incineration of waste, and from the working documents used by the legislators for the drafting of such Directives. For the extraction of this information, a method was developed which allowed for a systematic search through the text of the Directives and of the working documents.

The result of such process was a list of factors seen as influential for the setting of ELVs in general, and a list of factors for the specific pollutants of PM and Cd. These lists were developed in two stages: a first stage obtained from the text of the Directives, and a second stage where the information from the list was confirmed / corrected based on the findings from the working documents. Even though the information from the literature review served as a background tool for reviewing the Directives and working documents, the search was not limited to these factors. That is, evidence was found that the EU legislators used these categories of scientific, technical, economic, political and social, but also a new category was seen: **know-how**, referring to the knowledge that plant operators and waste-reduction-techniques operators provide to the ELV-making process.

The process showed a list of seventeen factors, applicable to the formulation of ELVs in general, and which could be classified into six categories: scientific, technical, economic, political, social and know-how. There were also four factors specifically related to the formulation of PM and Cd, two of which were associated with the general factors (Figure 23). An interesting finding is the interlinkage that was seen in between most of the factors.

This interlinkage of factors refers to the fact that one could not point to a single factor as being the most representative one, but to the mixture of them. It is the interlinkage of several factors working together which influence the setting of an ELV. In addition, and based on the information extracted from the working documents, one could say that the factors do not have all the same weight all the time. The importance of the factors depends on the moment. For example, the factor of public influence had a special weight during the time when the dioxin ELV was being fixed.

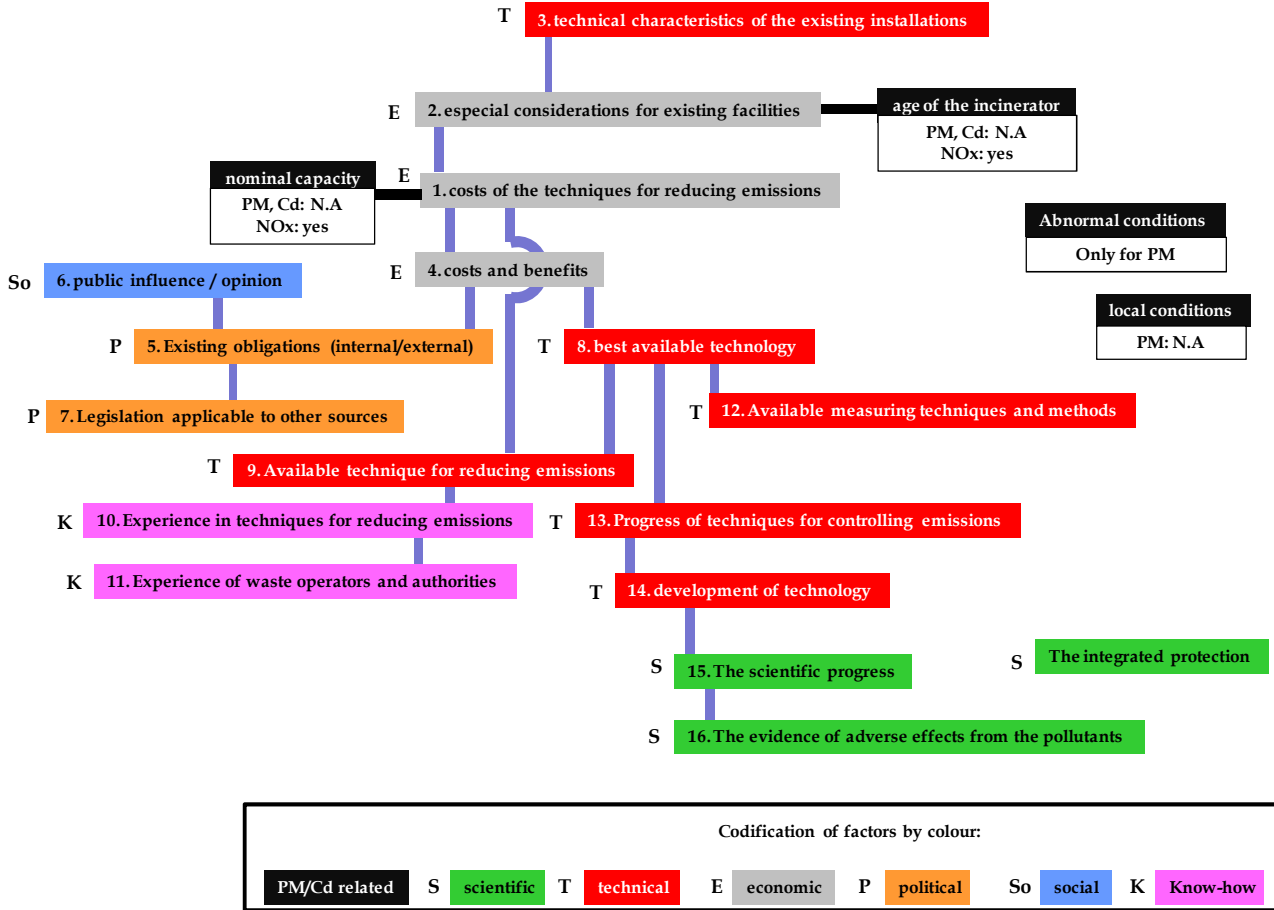


Figure 23: Factors influencing the formulation of ELVs for waste incineration in the EU Directives.

5.6 Concluding: returning to the research question

The question to answer in this chapter was: *Which criteria played a role in formulating the ELVs for waste incineration in the EU.* The expected knowledge to obtain being: Factors influencing the formulation of ELVs for waste incineration in the EU.

The criteria found to be used for the formulation of the ELVs for waste incineration in the EU is a list of seventeen factors. The factors are applicable to the formulation of ELVs in general, factors which can be classified into six categories: scientific, technical, economic, political, social and know-how; and a list of four additional factors specifically related to the formulation of PM and Cd, two of which are associated with the general factors (Figure 23).

The findings not only indicated the criteria used to formulate ELVs but also gave an indication of how the criteria was applied, and that there was an interlinkage among the factors in the sense that the change of one factor will influence the other. That is, there is not only one factor being the most influential in process of setting ELVs, but that it is the interlinkage of several factors working together which influence this process. This information allows now to have a better understanding of the program of interest meant to be transferred, that is, the ELVs.

Relation of the factors with the context-influencing criteria

The 1st researched area of this PhD project developed a set of criteria which could allow to determine how context exerts an influence. This criteria was developed having three components (Figure 24): (a) That, which influence, are the particular properties of context; (b) That, which is influenced, are the defining elements from the object of the study; (c) If there is an influence from another context, the particular properties of that context will change the way the elements from the object of study were defined in its original context.

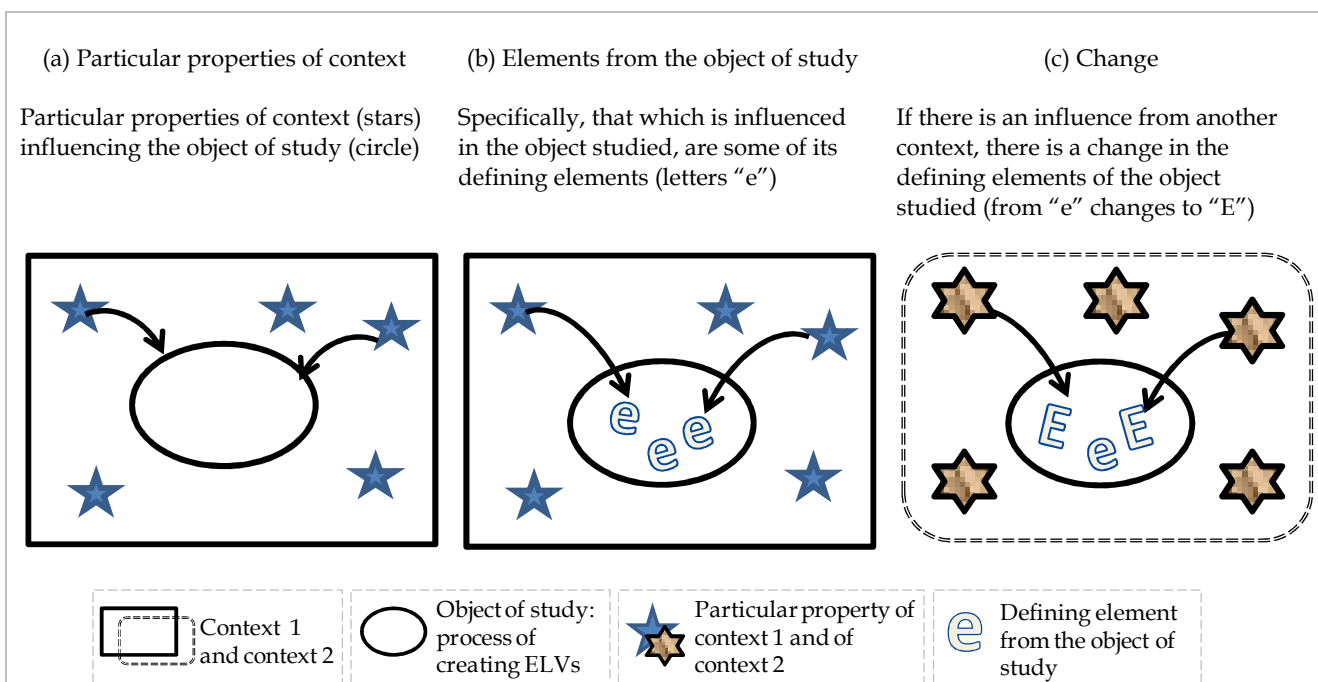


Figure 24: Components of the context-influencing criteria

This figure on the components of the context-influencing criteria was related to the other three researched areas of this PhD project. **Error! Reference source not found.** shows its relation to the area researched in this chapter which was on the *Factors influencing the formulation of ELVs for waste incineration in the EU*.

These factors relate to the context-influencing criteria in that they can be seen as the *letters e* in Figure 24b). That is, the factors can be seen as the defining elements from the object of study, object of study which is *the process of creating ELVs for waste incineration*), and defining elements which are the ones being influenced by the particular properties of context.

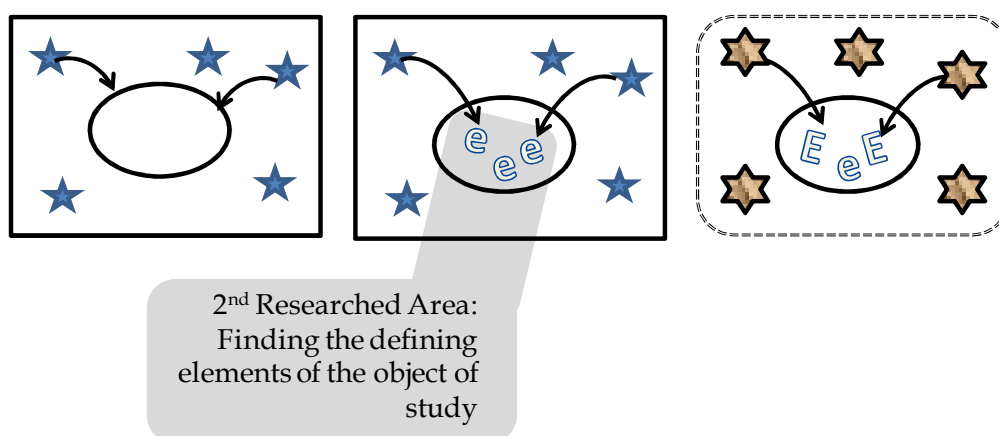


Figure 25: The second researched area explored in this PhD project and its relation to the context-influencing criteria

The next chapter addresses the 3rd research area explored in this PhD project, which is to find those particularities from the EU context (the stars Figure 24b) which influence the object of study (*the process of creating ELVs for waste incineration*).

5.7 Additional reflections

Reflection on the existing literature

In general it can be said that most of the factor documented in the existing literature were reflected in the factors found in the Directives and their working documents. Findings from the Directives and working documents would exemplify the role literature said the factors had.

Factors which were seen in both sources (literature and findings) were for example the need to take into account *the progress of science and technology* when setting/adapting ELVs; that science provides the *evidence of the adverse effects*; that ELVs should be done based on the *best available technology* and taking into account the existing technology (*characteristics of the existing installations*); that the existence of previous political agreements also plays a role (*existing obligations internal/external*); as well as the balance between *costs and benefits* resulting from implementing the ELVs; and the influence that elevated costs have on the setting of stringent ELVs (*nominal capacity, age of the incinerator*) among others.

Factors which were not seen in the literature relate mostly to those which are specifically associated to incinerators. For example, *the composition of the waste* (even though not applicable now a days, it was still a factor used); and *the physical location of the plant*.

There were also other factors which were not seen in literature and cannot be said as applicable only to incinerators. That was the case of *integrated protection* (setting of ELVs should be done in a way that the 3 media: air, water, soil should be equally protected).

Another point is related to the most influential factors. Authors such as Sands (2003), Peterson & Bomberg (1999), Héritier (2002), and Steward (2007), points to scientific, economic and technical as the most important factors in the process of setting environmental law. Findings from this project agree with this, but something to add would be the influence of know-how, social and political factors, and that one could not point to a single factor as being the most representative, but to the mixture of them. It is the interlinkage of several factors working together which influence the setting of an ELV and not just few of them.

A more detail discussion on the relation between the findings from the literature and from the empirical work of this chapter is discussed in Appendix 2 for each one of the six categories.

Reflection on the findings

Because it is usually said that science is the motor of environmental law, it was expected to find more information on the working documents about the scientific factors, such as the adverse effects created by the pollutants. The impression obtained from reading the working documents is that economic and technical factors were more discussed than the scientific ones. A possible explanation for this is that while economic and technical aspects tend to vary from country to country, scientific information is taken as a fix input that needs no discussion. In fact, the following text was included in the Commission proposal for the new WI Directive: “*While the problems in connection with the more classic pollutants (heavy metals, chlorine, etc) are well known and do not require specific comment, it is worth quoting from recent reflections by the World Health Organization concerning emissions of dioxins and furans from incinerators [...]*” (COM(88)71 final, p.11).

The factors that were categorized as know-how were seen in the last two Directives (haz and all), but most information was seen in the all WI Directive. During the analysis of the working documents, it was expected to see information pointing to the influence of know-how factors in the first two Directives (new and exi), however, this was not the case. The doubt remains now as to whether know-how factors were taken into account for the formulation of ELVs in these two initial Directives, or simply that this influence was not document. This is one of those things which point to the need of addressing the persons who participated in the legislative process in order to verify and/or complement the findings from this project.

The factor of *environmental requirements* was one of the factors classified as *factors for which information is not so clear*. The factor was seen in the last two Directives (haz and all) but no information was seen in their working documents. At this point is not known what the legislators meant specifically with that since they only write that proposals for adapting ELVs should be based *on the developments* or *on the light* of environmental requirements.

Interesting is that the legislators made a specific mention of *cost of the techniques used for reducing emissions* but that no mention is made for costs of the measuring and/or controlling emissions, being these also technologies mentioned in the Directives. Could it be that the costs of these last mentioned technologies are not as representative as the costs for reducing emissions?

The tables presenting the findings from the working documents have a column indicating the amount of pages that was found for each one of the factors. At some point it was thought that a relationship between the amount of information found and how critical the factor would be for the setting of ELVs could be established, but nothing conclusive could be said about this. Perhaps the amounts could be used more as an indicator of the topics which were considered more controversial given that got more comments about them were made by the Parliament, the Commission and the ESC.

It is important to have on mind that the last category of factors: Category 7: Factors applicable to PM and Cd are specific to those two pollutants. The question would be then how applicable are these factors for other pollutants? For example, in the case of ELVs for PM and Cd, *nominal capacity* is not an influential factor in the last Directives, that is, the ELVs for PM and Cd are the same for all incinerators independent of their capacity. In that case one could say that *nominal capacity* stops being a factor. However, in the all WI Directive, one could see that small incinerators got a dispensation for discharging more NOx. In this case *nominal capacity* would be a factor again. With this on mind one should be careful when trying to generalize the application of these factors to all of the pollutants from a waste incinerator. The factors found in this chapter could be used as a starting point for further studies on how other pollutants were regulated.

Finally, a comment is made on the association of PM with heavy metals. The point of departure is the fact that out of the most common heavy metals associated to waste incineration -Cd, Hg, and Pb-, Cd is said to be

the one having a higher association to PM (Williams, 2005). It was for this reason, and the fact that Cd had been presenting a special trend throughout the Directives -first combined with Hg, and then combined with Tl- that Cd was selected as one of the pollutants to follow in this chapter.

There was no specific finding at the working documents that related to the trend of combining Cd with Hg first, and then combining Cd with Tl. However, there were some comments made on the relationship that exist between the ELVs for PM and the ELVs given to heavy metals:

- The ESC writes “Given that dust contains pollutants such as heavy metals and polychlorinated dioxins and furans, the limit value proposed by the Commission seems too high. The state-of-the art figure is 30mg/m³” (OJ C /1988/318 , p. 4)(new). The Commission had proposed a value of 50 and 100.
- The UK and F delegation comment on the Council Chair’s proposal of having laxer ELVs for PM, that the limit values for heavy metals should be doubled in order to ensure consistency with the values proposed for dust by the Chair (7482/93 ENV 195)(haz).
- The Commission writes: “The limit values stipulated for heavy metals are differentiated according to the risk they present to health and the environment. Very thight control must be exercised regarding Cd, Hg, and, to a lesser extent, Ni and As “(COM (88) 71 final, pg 17) (new).

Reflection on the interlinkage of factors

The initial idea for the development of this 2nd explored area, on which criteria played a role in formulating the ELVs for waste incineration in the EU, was to select the most important factor and concentrate on it to show how that influence took place. But as information was collected from the working documents, it was realized there was not just one single important factor, but that it was the aggregation and the influence on each other that worked in influencing the formulation of ELVs.

Dazinger (2005) writes that there are many aspects from the environment that might influence political actions, and that most of the elements have an effect only under specific circumstances. He continues saying that it is the task of the analyst to identify those few environmental elements and explain how these effects occur. Besides, he suggests how the analyst should try to deal with the context of the particular political action: “Since the environmental context is, at least in theory, of enormous scope, it is helpful to consider different aspects of the way that the environment might affect political behaviour: political, social, cultural, economic, and physical [...] The analyst must be sensitive to possible environmental effects when attempting to provide an adequate explanation for a particular political behaviour” (Danziger, 2005, p. 82).

With that on mind, the focus was kept on all of the found factors and not on just one. Some people could argue a selection of only one factor should have been done, but it was thought that exploring that aggregation, that interlinkage of factors, was much more interesting to do than just looking at only one factor in more detail. Besides, it was thought that a much clearer picture of how ELVs were made could be obtained by working with all of them. There was also the impression that if the research would have continued with only one factor, then it would had been like a science experiment where one puts the object into a controlled environment and looks only at one thing, ignoring the influence of other factors.

Support for this line of thinking was also obtained from Honadle (1999) when he refers to *embeddedness*, being this the third aspect in his map of context (Box 3 in Chapter 1). *Embeddedness* relates to a *web of socio-economic relationships* (Honadle, 1999, p. 102), a connectedness among the dimensions of the social context: *How tightly glued together these elements are, how central they are to a social system, and how immutable they are* (Honadle, 1999, p. 96).

Some cases exemplifying the linkage of factors are:

- Social and economic: The tendency of strict ELVs set in incinerators near populated areas, this because people from the nearby area would press for it (social factor), and the balance achieved

- between the high costs of implementing strict ELV and the estimated benefits to human health (economic factor).
- Economic, technical and political: In order to achieve strict ELVs, efficient equipment is required. The more efficient, the higher the costs. Existing and small plants will have trouble acquiring efficient –and expensive– equipment. Therefore, politically it is decided to give laxer ELVs to these type of plants in the mean time that they would adapt.
 - Economic and technical: technically, incinerators are able to achieve low ELVs, however, the costs associated with this is quite high, and it could even be unnecessary considering that other sources of pollutants (transport, energy..) are not regulated so strictly.
 - Scientific and economic: the uncertainty in the adverse effects of certain pollutants does not allow for a proper estimation of the real impacts of incineration, and so, the costs of implementing stricter ELVs (of equipment, for example) will be higher than the benefits achieved (reduce health impacts): *“it is not possible at this stage to place a monetary value on these effects. To the extent that these effects are significant, they would result in an increased in estimated damage due to emissions of dioxins and furans and thus increase the benefit of tighter controls relative to the figures reported above”* (COM (1998) 558 final, p. 23).
 - Social and economic: strict ELVs will get the confidence of public for the setting of waste incinerators, but strict ELVs also mean higher costs for the operators of the incinerators (costs which usually are transferred to the public).
 - Technology and science: when science progress as to say that something has adverse effects, then the technology evolves to control it. For example, the Commission writes that *“[...] represent the Best Available Technology Not Entailing Excessive Cost (BATNEEC) of the time at which existing plants started operation many years ago. At that time the harmful effects to the environment in particular from dioxins and furans and mercury were not yet so obvious and the corresponding emission control techniques were not developed. Progressive techniques already being used in news and substantially altered plants which achieve the stringent provisions including the emission limit and guide values are listed in [...]”* (COM(92) 9 final, p: 19).

Finally, a comment is made on the fact that at some point, I thought I could make the following claim: *the added values given with this PhD project is to show that the setting of ELVs is the result of an interlinkage of factors.* However, during the revision process of the findings, the Directives were looked at again, and then it was realized that this interlinkage was known already. For example, the text of the hazardous WI Directive includes *“notably in the light of the expected development of the state of technology, of experience in the operation of the plants, and of environmental requirements, the Commission shall submit to the Council a report, based on experience of the application of the Directive and on the progress achieved in emission control techniques, accompanied by proposals for revision of the emission limit values and related provisions referred to in this Directive”* (94/67/EC art 14). In that case the claim that should be done is that the added value of this project is to show *how* that interlinkage took place.

Reflection on the methods

The attempts of explanations that were given here, on how the factors influence the ELV-making process, are based in documents only. There might be other things which were not documented but that were important as well. It would be relevant and interesting to verify/complement this information with information provided by people who participated in the process.

The list of factors found from the text of the Directives turned out to be a great tool since this was used as a pair of glasses to use while reading the working documents. It allowed to keep track of what exactly was the information that needed to be found.

The decision to concentrate on PM and Cd was because of the interesting trends they presented throughout the Directives. Much more documented information on them was expected to be found in the working documents, but this was not the case. Much more documented was the case of dioxins and furans, or the

case of NO_x. Such information was included in the project when it was relevant. It is wondered now whether it was necessary to focus from the beginning on those two parameters: PM and Cd, since enough information was obtained from keeping a general view. Another approach would have been to start the search keeping the eyes open for what information was interesting to collect.

About the process of collecting the info, it was seen that the documentation process done by the EU legislators improves with time. Throughout the Directives one can see that more information has been included in the working documents, also the explanation of why some factors are being used. Things which were not evident at the beginning were made so in writing in later stages. For example, it was easier to find information on the influence of the factors in the working documents of the hazardous WI Directive, compared to the working documents of the new and existing WI Directives.

Most of the working documents were directly available through the PreLex webpage. However, most of the documents from the Council, which would document the reasons behind the opinions / recommendations given by the MS, were obtained after requested to the documentation centre of the Council.

Finally, the documents from which more information could be extracted were those in which the Commission would explain the reasons behind the proposals they presented, and those in which the Parliament, the Committee of the Regions (CoR) or the Economic and Social Committee (ESC) would explain their opinions on such proposals. Rich are as well those documents in which the Commission would respond to the opinions made by the other bodies. Information from the meetings of the Council was also a good source of information, especially to see the opinions from the different Member States in the matter. One could see that countries like Germany, The Netherlands, United Kingdom, and Denmark were the ones who registered more comments. In the same way, that reports and information from those countries were used as reference in the COM and EP documents.

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5.9 Appendix 1: Detail on the found factors

It is important to remember the acronyms used to reference the source of the information:

Acronym	Refer to:
new	Council Directive of 8 June 1989 on the prevention of air pollution from new municipal waste incineration plants (89/369/EEC).
exi	Council Directive of 21 June 1989 on the reduction of air pollution from existing municipal waste-incineration plants (89/429/EEC).
haz	Council Directive 94/67/EC of 16 December 1994 on the incineration of hazardous waste (94/67/EC).
all	Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste (2000/76/EC).

Category 1: Factors for which information was not found

There were 3 factors for which no information was found at the working documents and so assumed later on that they wouldn't relate to factors as such but to a problem of over-classification.

Two of these factors refer to the same issue (*environmental requirements*). Inspiration for this factor appeared after reading: "Proposals for the revision of the ELV...should be submitted...in the light of...environmental requirement" (haz, §18) and "...present a report...based on...the development of environmental requirements...to adapt the related provisions of this Directive" (all, §32). This term of *environmental requirements* was then mentioned only in the last two Directives and no information was found in the Working Documents. Nowhere in the documents is written what is understood by *environmental requirements*. In addition, it was unclear what lied behind the factor: a scientific or a political reasoning, hence its initial classification in both. The decision was then to remove *environmental requirements* from the list of factors since there was no concrete evidence indicating that this played a particular role at the moment of setting ELVs. More info can be seen in Box 4.

Box 4: Scientific factor: The environmental requirements; Political factor: The commitment to fulfil environmental requirements	
Directive(s) source of the factor	This factor was seen during the analysis in the preambles and bodies of the hazardous and all WI Directives.
Example of the text which inspired the factor	"Whereas proposals for the revision of the emission limit values [...] should be submitted [...] in the light [...] of environmental requirements" (Directive 94/67/EC, §18) (haz)
Additional comments	<ul style="list-style-type: none"> - No mention of this factor was made in the first two Directives - No information of how the factor is related to the formulation of ELV was seen in the working documents - Nowhere is written what it is understood by "environmental requirements" - The reason why this factor was classified as scientific and political was that after doing the analysis of the Directives, it was not clear whether this factor had a scientific or a political background. However, no information was found in the working documents that could clarify this issue.

The other factor for which no information was found at the working documents is the political factor of *commitment to integrated protection*. Inspiration for the factor appeared after reading "...integrated protection of the environment against emissions from the incineration of hazardous waste is required...ELV for aqueous waste should be established" (haz, §12). This factor is related to the scientific factor of "*integrated protection*". The difference with such factor is that while the former refers to the scientific aspects of the integrated protection, the latter referred to the political commitment of the legislators to the issue. However, no specific information that could be related to this commitment was seen in the working documents of the Directives. The conclusion was then to remove it from the list of factors and leaving only one factor (*integrated protection*) covered as a scientific factor, there was no need of having it as an additional political factor. More info in Box 5.

Box 5: Political factor: The commitment to integrated protection	
Directive(s) source of the factor	This factor was seen during the analysis of the preamble of the hazardous WI Directive
Example of the text which inspired the factor	<i>"[...] integrated protection of the environment against emissions resulting from the incineration of hazardous waste is required [...]"</i> (Directive 94/67/EC, §12) (haz)
Additional comments	<ul style="list-style-type: none"> - This factor is related to the scientific factor of <i>"integrated protection"</i>. The difference is that while that factor refers to the scientific aspects of it, this political factor was thought to be referred as to how the legislators committed to the issue - No information that could be related to this commitment was seen in the working documents of the Directives

Category 2: Factors which were merged

In here reference is made to factors which initially were thought as being independent but the information collected showed that such factor was already cover by another factor. One of the merged factors was: *the costs of the best available technology* which was inspired after reading *"...fix ELV based on the BAT not entailing excessive costs"* (Directive 89/369/EEC, §5). Only one thing was found about this factor in the working documents: *"The ESC express their consent over BAT: "The Committee is pleased that the concept of BATNEEC (Best Available Technology Not Entailing Excessive Costs) is deemed inappropriate for the incineration of hazardous waste, and is to be replaced by BAT (Best Available Technology). This means technologies which are industrially feasible in technical and economic terms and reasonably accessible to the operator"* (OJ 92/C 332/16, p. §1.13)(haz). One could say that this factor could be covered by another factor: *"The costs of the techniques for reducing emissions"*, and so the decision was to merge the former with the latter. More in (Box 6).

Box 6: Economic factor: The costs of the best available technology	
Directive(s) source of the factor:	This factor resulted after doing the analysis in the preambles and bodies of the new and existing WI Directives
Example of the text which inspired the factor	<i>"ELVs will be based on the best available technique not entailing excessive costs"</i> (Directive 89/369/EEC, §5 and art 3(4)).
Additional comments:	<ul style="list-style-type: none"> - Only one thing was found about this factor in the working documents: <i>"The ESC express their consent over BAT: "The Committee is pleased that the concept of BATNEEC (Best Available Technology Not Entailing Excessive Costs) is deemed inappropriate for the incineration of hazardous waste, and is to be replaced by BAT (Best Available Technology). This means technologies which are industrially feasible in technical and economic terms and reasonably accessible to the operator"</i> (OJ 92/C 332/16, p. §1.13)(haz). - One could say that this factor could be considered a mixture of the factors <i>"The best available technology"</i> and <i>"The costs of the techniques for reducing emissions"</i>
Merged to:	The costs of the techniques for reducing emissions

The factors *the experience in the operation of incinerators* and *the experience in the application of the Directive* originated after reading *"...proposals for the revision of the ELV...should be submitted...in the light of...experience in the operation of incineration plants"* (haz, §18) *"...present a report...based on...the experience made in...operation of the plants with a view to ...adopt the related provisions of this Directive"* (all, §32) *"...submit...a report based on experience of the application of the Directive...accompanied by proposals for revision of ELV"* (haz, art 14). However, the information found in the working documents was related to the experience in general, and there were no distinction between experience in the operation of the incinerator, or the application of the Directive, or in the experience in the waste management and operation of the plants. The decision was therefore to merge these two factors with the factor *"Experience in waste management and operation of plants"* More in Box 7.

Box 7: Know-how factor: The experience in the operation of incinerators; Know-how factor: The experience in the application of the Directive	
Directive(s) source of the factor:	This factor was mainly seen during the analysis of the preambles and bodies of the all WI Directive
Example of the text which inspired the factor	<i>The Commission should present a report [...]based on the experience of applying this Directive [...] and operation of the plants [...] with a view to proposing, as appropriate, to adapt the related provisions of this Directive” (Directive 00/76/EC, §32).</i>
Additional comments:	- Information found in the working documents was related to the experience in general, there were no distinction between <i>experience in the operation of the incinerator or in the application of the Directive</i> and in the <i>experience in the waste management and operation of the plants</i>
Merged to:	Experience in waste management and operation of plants

Category 3: Factors which stop being applicable

Only one factor is seen as being not applicable anymore according to the legislators, and that is the fact of differencing ELVs based on the composition of the waste. More in Box 8.

Box 8: Scientific factor: The composition of the waste	
Directive(s) source of the factor:	This factor resulted after doing the analysis in the preambles and bodies of the new and existing WI Directives
Example of the text which inspired the factor	<i>“ELVs for other pollutants shall be lay down by competent authorities when they consider this to be appropriate because of the composition of the waste to be incinerated (Directive 89/369/EEC, art 3(4)).</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	Pollutants emitted from incineration are dependent on the composition of the waste that is incinerated: <i>“Since wastes may contain a wide range of heavy metals these can be emitted in the flue gases or in the waste waters and residues from incineration” (COM (1998) 558 final, p. 7) (all).</i>
Additional comments:	<ul style="list-style-type: none"> - Initially it was thought that more hazardous pollutants will come after incinerating hazardous wastes: <i>“Depending on the waste burned, the contaminated flue gases arising in special waste incineration plants may contain noxious gases such as HCl, HF, and SOx in the following concentrations [values]. The flue gases may also contain considerable amounts of vaporized mercury” (COM(92) 9 final, p: 61) (haz)</i> - But later on it was realized that highly polluting substances were emitted as well after incinerating non-hazardous materials: <i>“Non-hazardous wastes may contain components which give rise to hazardous air pollutants upon incineration and which can form many of the same pollutants as found in the incineration of hazardous wastes” (COM (1998) 558 final, p. 3) (all).</i> - Distinction between non-haz and haz waste is only on their management, not on the combustion: <i>“The distinction between hazardous and non-hazardous waste is primarily based on considerations of waste management and handling rather than on incineration characteristics” (COM (1998) 558 final, p. 3) (all).</i> - So the differentiation of ELVs based on the type of waste was dropped: <i>“The same emission limit values should apply to the incineration or co-incineration of hazardous and non-hazardous waste” (Directive 2000/76, §16) (all)</i>

Category 4: Factors for which information is not so clear

There was one factor for which not much information was obtained from the working documents that could help explain clearly how it influenced the setting of ELVs. This factor was *the commitment to environmental protection*: high level of environmental protection requires stricter ELVs. More in Box 9.

Box 9: Political factor: The commitment to environmental protection	
Directive(s) source of the factor:	The factor was seen while doing the analysis of the preamble and bodies of the hazardous and all WI Directive
Example of the text	<i>“[...] a high level of environmental protection requires the setting and maintaining of appropriate</i>

which inspired the factor	<i>operating conditions and emission limit values [...]"(Directive 94/67/EC, §10)</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	<i>Not much information was seen in the working documents that could help explain this factor, besides the fact that aiming for a high level of environmental protection requires the setting of stringent ELVs</i>
Additional comments:	<ul style="list-style-type: none"> - The relation between ELVs and commitment to environmental protection could be seen for example when, in the working documents for the new WI Directive, the Parliament criticized the lax ELV given to plants of 1 t/h because that might encourage the building of small incineration plants (EP A2 1988/391, p. 28)(new). In the same way, the Economic and Social Committee considers the limit values proposed by the Commission is too high "[...] given that dust contains pollutants such as heavy metals and polychlorinated dioxins and furans " (OJ C 1988/318, pg 4) (new) - Another example of commitment to environmental protection is the Commission reinforcing the legislation to reduce the impacts of incineration: "To reduce the adverse effects of incineration and co-incineration of waste on the environment and human health, the Commission proposes reinforcing the existing Community legislation, notably the two 1989 directives, by extending their scope to non-hazardous municipal waste and hazardous waste excluded from Council Directive 94/67/EC. [...] it proposes updating the emission limits applicable to incineration plants, adding limits for discharges into water and setting emission limits for co-incineration of waste" (Bulletin 1998 / 10 / 1.2.125) (all).

Category 5: Factors linked to each other

Next are presented the boxes containing more information from the factors and which were mentioned in section 5.4 Analysis of the findings.

Box 10: Economic factor: The costs of the techniques for reducing emissions	
Directive(s) source of the factor:	This factor was seen during the analysis of the preambles and bodies of the new and existing WI Directives
Example of the text which inspired the factor	<i>"The techniques for reducing emissions of certain pollutants from municipal waste incineration plants [...] can be applied reasonably economically [...] they provide a means for attaining concentrations of pollutants in the combustion gases not exceeding certain limit values" (Directive 89/369/EEC, §7)</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	The cost the techniques for reducing emissions influence the setting of ELVs in the sense that the costs are dependent on the efficiency of the pollution abatement equipment: the more efficient, the higher the costs. In order to achieve strict ELVs, costly efficient equipment is required
Additional comments:	<ul style="list-style-type: none"> - Initially it was thought that this factor was no longer present in the hazardous and all WI Directives, but there was information found in the working documents of these Directives as well - However, not much was found in the documents for the hazardous WI Directive, and in the working documents for the all WI Directive, the information pointed towards a new factor which was called "costs and benefits" - There are two types of plants which tend to have trouble acquiring efficient - and expensive- equipment. One is the existing plants, the other are the small plants. In both cases the trouble relates to return in the invested capital - For existing plants the problem is that they might not have a long enough remaining life as to recover the investment: "While the retrofitting of existing plants may not involve any major technical problem, the economic aspect may be particularly crucial in the case of incinerators which have a particularly short remaining useful life" (COM(88) 71 final , p. 15)(new). - For small plants the problem is that they might not earn enough as to recover the investment in a profitable time: "With regard to investment, the size of the plant influences the return on capital employed for emission control, particularly in the case of

	<p>gas scrubbing equipment" (COM(88) 71 final , p. 15)(new)</p> <ul style="list-style-type: none"> - The issue of costs might make that a Member State could oppose the setting of stringent legislation on incineration: <i>"The construction of an incineration plant to meet the proposed standards easily requires a few hundred million ECU [...]. It cannot be ruled out that several Member States may, for the time being, have no intention of letting such a financial burden be placed on them"</i> (PE 201.493/fin, pp. 16, ame. 4.3) (haz). - It is because of the costs of the techniques for reducing emissions that special considerations were given to existing incinerators (factor: The especial considerations for existing facilities)
Related to:	Especial considerations for existing facilities Costs and benefits

Box 11: Political factor: The especial considerations for existing facilities	
Directive(s) source of the factor:	This factor resulted after doing the analysis of the preambles and bodies of the existing and hazardous WI Directives
Example of the text which inspired the factor	<i>"[...] they [the techniques for reducing emissions of certain pollutants from municipal waste incineration plants] can be implemented in existing incineration plants on a gradual basis bearing in mind the technical features of the plants and the advisability of not entailing excessive costs [...](Directive 89/429/EEC, §7) (exi)</i>
Additional comments:	<ul style="list-style-type: none"> - The gradual approach to existing incinerators was not because of technical reasons, but because of economic ones: <i>"While the retrofitting of existing plants may not involve any major technical problem, the economic aspect may be particularly crucial in the case of incinerators which have a particularly short remaining useful life or which have to operate under special conditions"</i> (COM(88) 71 final , p. 15)(new) - Based on the information from the Directives and the working documents, one could see that legislators dealt with these issue of the need to have special consideration for existing incinerators in different ways: <ul style="list-style-type: none"> o asking existing incinerators to quickly adapt their technology: <i>"[...] rapid adaptation of existing incineration plants to the emission limit values laid down in this Directive is required"</i> (94/67/EC, §15) o in the mean time that incinerators are obliged to comply with the full ELV, they are request to fulfill a provisional ELVs: <i>"This Article lays down the emission limit values for total dust applying to plants of different capacity. The staggered values take account of the requirement to avoid entailing excessive costs and major technical problems"</i> (COM(88) 71 final , p. 22)(exi) o in the mean time that incinerators are obliged to comply with the full ELV, they are allowed not to fulfill anything: <i>"The Council, rather than changing the emission limit values put forward by the Commission [...], has, because of difficulties for a certain number of plants which are related to cost/benefit considerations, opted for a set of exemption clauses which are limited in time either for certain kinds of existing processes or for plants with a determined capacity (OJ C / 2000 / 25 / 17 , p. 44)(all).</i> - The provisional measures given to existing plants would depend on the type of emissions resulting from them, something which would be related to the characteristics of the existing plants (factor: technical characteristics of the existing installations Box 12).
Related to	Technical characteristics of the existing installations

Box 12: Technical factor: The technical characteristics of the existing installations	
Directive(s) source of the factor:	This factor was seen while doing the analysis of the preambles and bodies of the new and existing WI Directives
Example of the text which inspired the factor	<i>"[...] the techniques for reducing emission of certain pollutants from municipal waste incineration plants [...] can be implemented in existing incineration plants [...] bearing in mind the technical features of the plants [...];they [the techniques for reducing emissions] provide a means of attaining concentrations of pollutants in the combustion gases not exceeding certain limit values</i>

	(Directive 89/429/EEC, §7)
Relation of the factor with the setting of ELVs (based on info from the working documents)	The characteristics of the plant and its equipment influences the characteristics of the pollutants emitted (its nature and quantities). The setting of ELVs should take this into account.
Additional comments:	<ul style="list-style-type: none"> - The particular characteristics of existing incinerators will influence their type of emissions: <i>“The nature and quantities of pollutants emitted by incinerators generally depend both on the characteristics of the waste incinerated and those of the plant, including the combustion-gas treatment equipment”</i> (COM(88) 71 final , p. 8)(new) - The technical characteristics of the incinerators relate to the ELVs in the way that the characteristics of the plant and its equipment influences the characteristics of the pollutants emitted (its nature and quantities) <ul style="list-style-type: none"> o <i>“Incineration gives rise to emissions of PM [...] Poorly controlled incineration plants can emit high levels of particulate matter and contribute to local environmental problems. With modern plants low levels of particulate emissions can be achieved but the emitted particulate can be very fine. In many cases the emissions would be classified as PM10 and limited data suggests that much of it may be classified as PM2.5”</i> (COM (1998) 558 final, p. 8) (all). - The way legislators dealt with this issue was already explained in the <i>especial considerations of the existing installations</i>
Related to:	-

Box 13: Economic factor: The costs and benefits	
Directive(s) source of the factor:	This factor was not seen while analyzing the preambles and bodies of the Directives, neither in the specific analysis for PM and Cd, but information of costs and benefits influencing the setting of ELVs was seen in the working documents for all WI Directive
Example of the text which inspired the factor	<i>“According to the cost-benefit analyses carried out tighter standards are not justified. Furthermore all MS apart from the NL and Austria do not see a justification for and therefore do not support more stringent requirements”</i> (COM (1998) 558 final, p. 18) (all).
Relation of the factor with the setting of ELVs (based on info from the working documents)	The ELVs will be set up to the level where there is a balance between costs and benefits
Additional comments:	<ul style="list-style-type: none"> - Benefits documented by the Commission were: reduction in adverse effects on human and ecological health; reduction in other effects of pollution, such as crop or building damage (COM (1998) 558 final, p. 19) (all). - Costs documented by the Commission were: additional capital expenditure to install or upgrade pollution control equipment; additional running costs due to increased environmental monitoring or increased chemical usage in the flue gas treatment system (COM(1998) 558 final, p:19) (all) - Some of the legislative actors were not satisfied with the cost benefit analysis made by the Commission. For example the Parliament writes <i>“The emission limit values proposed b the Commission are based on cost-benefit analyses. Examining these cost-benefit analyses reveals, however, that they contain a number of significant imponderables and unjustifiable assumptions. It is better to look at what is already possible in various plants, existing plants being a good indicator of standards to be applied in future</i> (PE 232.378, 2000, p. 30)(all). - The ESC was also not very pleased: <i>“The emission limits in the draft directive appear to be based on a cost-benefit assessment rather than in BAT”</i> (ESC / 1999 / 200, p. 4) (all). - The issue of looking into current practices is related to the political factor of <i>“The existing obligations (internal/external)”</i> - The issue o looking at BAT is related to the technical factor: <i>“The best available technology (BAT)”</i>
Related to:	The existing obligations (internal/external) The best available technology (BAT)

Box 14: Political factor: The existing obligations (internal/external)	
Directive(s) source of the factor:	The factor was seen while doing the analysis of the preambles and bodies of the all WI Directive
Example of the text which inspired the factor	Existing obligations internal: <i>“The fifth Environment Action Programme [...] a European Community programme of policy and action in relation to the environment [...] sets as an objective that critical loads and levels of certain pollutants such as [...] heavy metals [...] should not be exceeded [...] That Programme further sets as an objective [...] at least 70% reduction from all pathways of cadmium (Cd) [...] emissions in 1995”</i> (Directive 00/76/EC, §1) Existing obligations external: <i>“The Protocol on Heavy Metals signed by the Community within the framework of the UN-ECE Convention on long-range transboundary air pollution sets legally binding limit values for the emissions of particulate of 10 mg/m³ or hazardous and medical waste incineration [...] (Directive 00/76/EC, §3)</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	There are three levels which influence the setting of ELVs: an international level (signed international agreements); an EU level (environmental action plans and goals); and a Member State level (existing national legislation)
Additional comments:	<ul style="list-style-type: none"> - Even though the factor was seen in the all WI Directive, information was collected from all of the working documents - In the case of elvs for PM and Cd, information shows that the values presented by the Commission in their proposals originates from the existing legislation at Member State (MS) level (this will be presented in more detail in chapter 6) - For example, it seems that the proposal the Commission makes on the ELVs for dioxins and furans originates from the ELVs given by Germany and Netherlands : <i>“It might be pointed out that Germany and the Netherlands have fixed this value [0,1 ng Toxic Equivalent/ m³] as a legally binding emission limit value (COM(92) 9 final, p: 3) (haz)</i> - While the ELVs proposed by the Commission originates from MS, the final agreed ELV number results from the legislative process - Related to this factor is also the way other areas different than waste incineration are being regulated (see the factor “legislation applicable to other sources) - The pressure from the public could influence the legislation of areas that were not previously regulated
Related to:	The political factor: <i>“The legislation applicable to other sources”</i> The social factor: <i>“The public influence”</i> The issue of the legislative process followed at the EU level to set ELVs is explained in chapter 5 when exploring the particularities of the context of the EU

Box 15: Social factor: The public influence	
Directive(s) source of the factor:	Social factors were not seen in the analysis of the Directives. However, information was found in the working documents
Example of the text which inspired the factor	Inspiration for this factor came from the literature review (Table 2) with social factors such as <i>public involvement, public concern and social development</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	The public influences the process of setting ELVs in two ways: directly and indirectly. Directly by requiring strict ELVs for the incinerators. Indirectly in the sense that having strict ELVs makes the public more willing to accept incineration as one of the options for waste management
Additional comments:	<ul style="list-style-type: none"> - Concern expressed by the public influences the setting of ELVs in areas which were not legislated: <i>“Co-incineration of non-hazardous waste is also increasingly frequent, although there are no Community rules covering it. This has been the cause of considerable disquiet, particularly amongst people living near incineration plant. In practice it appears that co-incineration plants generally emit far more dust, SO₂ and NO_x, which has a direct effect on people living in the vicinity”</i> (PE 229.253 / fin, p. 28) (all). - It is hoped that the setting of stricter ELV would help to increase the public acceptance of incineration: <i>“only if high standards apply to the incineration of hazardous waste, the justified fears of the public are likely to be allayed and greater acceptance for this method of disposal again achieved”</i> (PE 207.223/fin, p. 27) (haz).

Related to:	The political factor: “The existing obligations (internal/external)”
Box 16: Political factor: The legislation applicable to other sources	
Directive(s) source of the factor:	Information for this was not seen in the analysis of the preambles or bodies of the Directives, neither during the specific analysis for PM and Cd, but in the working documents for the hazardous WI Directive
Example of the text which inspired the factor	<i>“Industry is now in a position to supply plants which could meet even more stringent requirements. However they would be extremely expensive and given that emissions from waste incineration plants are responsible for only a small part of total emissions, it would not be reasonable. (PE 201.493/fin, pp. 16, ame. 4.1) (haz).</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	This relation is in the sense that incinerators would say there is no point setting stringent values for a specific type of industry (hence affecting it economically) if there are other sources emitting the same pollutants, being even more significant, and that are either not legislated or not so stringent legislated.
Additional comments:	<ul style="list-style-type: none"> - The factor can be seen in the case of setting the ELV for dioxins: <i>“As far as Germany is concerned, at present all incineration furnaces discharge 400 gms of dioxin a year [...]the 17th regulation of the Federal Emissions Control Law (17BImSchVO) applies [...] then the total emissions in the Federal Republic will be limited to 4 gms a year [...] but it is pointless to set even higher requirements for incineration furnaces when action to deal with other sources of dioxins (e.g. furnaces, transport, incineration of hospital waste, the incomplete incineration of heavy fuel oil on ships at sea) would produce a far more dramatic reduction of dioxins (PE 201.493/fin, pp. 17, ame. 1.1) (haz).</i>
Related to:	-

Box 17: Technical factor: The best available technology (BAT)	
Directive(s) source of the factor:	This factor resulted after doing the analysis in the preambles and bodies of the new and existing WI Directives
Example of the text which inspired the factor	<i>“[...] fix emission limit values based on the best available technology not entailing excessive costs [...]” (Directive 89/369/EEC, §5)</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	The ELVs proposed by the Commission are based on BAT: <i>“The emission limit values specified in this article correspond to those achievable by the application of the best available techniques for emission reduction” (COM(92) 9 final, p: 13) (haz)</i>
Additional comments:	<ul style="list-style-type: none"> - Even though the text of the Directives for hazardous and all-waste do not refer explicitly to the term BAT, some information in their working documents show that this was taken into account when setting ELVs - BAT is not only used by the Commission, but taken into account by other actors. For example, in a comment made by the ESC in response to the Commission proposal for the all WI Directive, it seems that it is obvious that ELVs should come from BAT: <i>“The emission limits in the draft directive appear to be based on a cost-benefit assessment rather than in BAT” (ESC / 1999 / 200, p. 4) (all).</i> - Most of the comments related to BAT found in the working documents, are that ELVs are not strict enough, considering the BAT. For example, Parliament writes: <i>“Although the values proposed by the Commission are an improvement on the legislation and practice in a number of Member States, we feel they are too high. Given the state of the art and the limit values used in the Federal Republic, for example, 30 mg/Nm³ would be a realistic value” (EP A2 1988/391, p. 27)(new).</i> - Comments included in the working documents point that even though ELVs should be based on BAT, it is no advisable for the Commission to state what that BAT is: <i>“The European Parliament proposes that it is clarified that it is European and that it does not represent the best available technology on the world market” (PE 201.493/fin, p. ame. 15) (haz).</i> - Specific technology mentioned and which is related to ELVs is the measuring techniques and methods, the techniques for reducing emissions, and the techniques for controlling the emissions
Related to:	The technical factor of “The available measuring techniques and methods”

The technical factor of “The available technique for reducing emissions”
 The technical factor of “The progress of techniques for controlling emissions”

Box 18: Technical factor: The available technique for reducing emissions	
Directive(s) source of the factor:	This factor was seen during the analysis in the preambles and bodies of the new and existing WI Directives
Example of the text which inspired the factor	<i>“[...] the techniques for reducing emissions of certain pollutants from municipal waste incineration plants are well established [...] provide the means of attaining concentrations of pollutants in the combustion gases not exceeding certain limit values”</i> (Directive 89/369/EEC, §5).
Relation of the factor with the setting of ELVs (based on info from the working documents)	Legislators will set the ELV based how much pollution is discharged from the incinerators after the combustion air has passed through the techniques used to reduce the emissions
Additional comments:	<ul style="list-style-type: none"> - Even though the factor was extracted from the first two Directives, the relationship between the techniques for reducing emissions and the ELVs was seen in all of the working documents. - The fact of the actors taking into account the techniques for reducing emissions for setting the ELVs could be seen for example in the proposal made by the Commission for the new WI Directive. In this document it was presented the typical concentrations of pollutants in the combustion gases before and after treatment. For example, for PM, the values before treatment were between 1500 and 8000 mg/Nm³, and that after treatment with electrostatic precipitators (most effective treatment), the values would range between 50 and 150 mg/Nm³ (100 as the mean value). The Commission proposal was of 50 mg/Nm³ for > 5t/h and 100 mg/Nm³ for < 5 t/h (COM(88) 71 final , p. 34)(new)). The final ELVs in the Directive were in the ranges between 30 – 200. - The factor relates not only to the techniques for reducing emissions but to what it is available. For example, the Parliament suggested an ELV to be set for dioxins and furans not only because it was possible to do the measurements (based on the experience of some Member States) but because <i>“[...] industrial processes make it possible to go below those limit values”</i> (PE 201.493/fin, p. ame. 3) (haz). - There is the technology to meet strict ELVs, but in some occasions this is too expensive. As the Parliament writes: <i>“Industry is now in a position to supply plants which could meet even more stringent requirements. However they would be extremely expensive [...]”</i> (PE 201.493/fin, pp. 16, ame. 4.1) (haz). This relates with the <i>cost-benefit</i> factor - The opinion of the experts used to deal with this type of techniques can help to confirm whether strict ELVs could be achieved or not.
Related to:	The economic factor: The costs of the techniques for reducing emissions The know-how factor: “The experience in techniques for reducing emissions”

Box 19: Know-how factor: The experience in techniques for reducing emissions	
Directive(s) source of the factor:	This factors was mainly seen during the analysis of the preambles and bodies of the all WI Directive
Example of the text which inspired the factor	<i>“Industrial experience in the implementation of techniques for the reduction of polluting emissions from incineration plants has been acquired over a period of ten years”</i> (Directive 00/76/EC, §14).
Relation of the factor with the setting of ELVs (based on info from the working documents)	The opinion of persons used to handle equipment for reducing emissions can help confirm the feasibility of a stricter ELV
Additional comments:	<ul style="list-style-type: none"> - <i>“important equipment manufacturers guarantee the technical feasibility to meet values even below the limit values set out in the Directive proposal”</i> (COM(92)9 final, p.4) (haz) - An example of this factor can be seen with the ELV for dioxin and furans where

	the satisfactory experiences with the use of activated carbon filters to reducing emissions below the limit, enforces the setting of such number: “Most experts consider that, at the present time, only activated carbon filters would be able to reduce dioxin and furan emissions below this limit [0,1 ng Toxic Equivalent/m ³]. Such filters are newly developed and the first one will most likely start operating in a hazardous waste incineration plant by early 1992; but experience with satisfactory results is already available from the treatment of smaller parts of the exhaust gas of waste incineration plants” COM(92) 9 final, p: 3) (haz)
Related to:	The Know-how factor: the experience of waste operators and authorities

Box 20: Know-how factor: The experience of waste operators and authorities	
Directive(s) source of the factor:	These factors were mainly seen during the analysis of the preambles and bodies of the all WI Directive
Example of the text which inspired the factor	“The Commission should present a report [...] based on the experience of applying this Directive, [...] and on the experience made in waste management and operation of the plants [...] with a view to proposing, as appropriate, to adapt the related provisions of this Directive” (Directive 00/76/EC, §32).
Relation of the factor with the setting of ELVs (based on info from the working documents)	Operators and authorities dealing with waste provide, based on their experience, feedback during the process of setting an ELV to whether it is possible or not to achieve the proposed ELV
Additional comments:	<ul style="list-style-type: none"> - These factors related basically to the experience of operators and authorities and it relates to the one achieved after <i>operating incinerators</i> and <i>managing waste</i> - Not much information was found for each one of these factors, therefore, they were merged into the one entitled “The experience of waste operators and authorities” - An example of the factor was seen in the way operators of waste management facilities participated in the legislative process for the all WI Directive. The initial proposal presented by the Commission for the all WI Directive (COM (1998) 558 final, p. 17) (all) includes the position of industry as one of the stakeholders. Among the industrial interests were the representatives from the waste industry, the cement industry, and the power generation industry. Among the topics discussed were the standards applicable for co-incineration, and waste industry pressing for equal standards; and the differences in the releases between the incinerators and the cement industry, were cement industry release NO_x and dust in higher proportions. These considerations were included in the draft proposal and taken into account in the final version of the Directive (e.g: cement kilns, given its operating conditions, are allowed to discharge higher amounts of dust and NO_x than incinerators¹⁴)
Related to:	-

Box 21: Technical factor: The available measuring techniques and methods	
Directive(s) source of the factor:	This factor resulted after doing the analysis in the preambles and bodies of the new, existing and hazardous WI Directives
Example of the text which inspired the factor	“[...] fix emission limit values based on [...] suitable measurement techniques and methods” (Directive 89/369/EEC, §5).
Relation of the factor with the setting of ELVs (based on info from the working documents)	The relationship between measuring techniques and the setting of ELVs is in two ways: measuring techniques allow to monitor the elvs, and when it is possible to monitor the pollutant, then ELVs can be set
Additional comments:	- A good example of this factor is the case of the ELVs for dioxins and furans. The

¹⁴ Cement kilns’ ELVs → PM: 30 mg/m³ (50 under special conditions) NO_x: 500 mg/m³ for new plants, 800 mg/m³ for existing plants (1200 under special conditions). Incinerators’ ELVs → PM: 10 mg/m³ (20 for existing incinerators under special conditions); NO_x: 200-400 mg/m³ for existing incinerators depending on plant’s capacity (1200 under special conditions). Further information can be consulted in Annex II and Annex V of the 2000/76/EC Directive (all-waste).

	<p>initial proposal from the Commission presented guide values, and not ELVs, for dioxins and furans. The reason for this was: “[...] a guide value only should be set due to the lack of existing appropriate measurement methods” (COM(92) 9 final, p:28) (haz). However, the Parliament proposed setting and ELV instead of a guide value, this considering that “a number of Member States have laid down legally binding limit values for emissions of dioxins and furans [...] particularly since industrial processes make it possible to go below those limit values” (PE 201.493/fin, p. ame. 4) (haz). The Commission responded to this by adding the limit value and saying that would be binding as from a specific date</p> <ul style="list-style-type: none"> - The factor relates not only to the measuring techniques and methods but to what it is available. The influence of the availability of measuring techniques was also seen in the case of ELVs for heavy metals. In the new WI Directive it was said that concentration of heavy metals should be only measured periodically because while “[...] appropriate measurement techniques are already well established and widely used for these substances [total dust] by contrast, continuous measurements is not conceivable in the case of heavy metals” (COM(88) 71 final , p. 19)(new)
Related to:	-

Box 22: Technical factor: The progress of techniques for controlling emissions	
Directive(s) source of the factor:	This factor was seen while doing the analysis of the preambles and bodies of the hazardous and all WI Directives
Example of the text which inspired the factor	“[...] a report [...] based on [...] the progress achieved in emission control techniques [...] with a view to proposing, as appropriate, to adapt the related provisions of this Directive” (Directive 00/76/EC, §32).
Relation of the factor with the setting of ELVs (based on info from the working documents)	The progress on the techniques for controlling emissions will allow to set stringent ELVs: In the proposal for the all WI Directive it is written: “The existing legislation is incomplete [...] Directive 94/67/EC includes up to date emission limit values corresponding to currently available techniques” (COM (1998) 558 final, p. 13) (all).
Additional comments:	<ul style="list-style-type: none"> - The factor relates not only to the techniques for controlling emissions but to the progress of them. - Some could argue this factor is the same as the <i>techniques for controlling emissions</i> but it was considered to leave it independent since it looks like the legislators realized it was important to make emphasis in it (it appears independent in the last two Directives, or perhaps the legislators were referring to the same thing?)
Related to:	The technical factor “The development of technology”

Box 23: Technical factor: The development of technology	
Directive(s) source of the factor:	The factor was seen while doing the analysis of the preambles and bodies of the hazardous and all WI Directives
Example of the text which inspired the factor	“[...] proposals for the revision of the emission limit values [...] should be submitted [...] in the light of the expected development of the state of technology [...]” (Directive 94/67/EC, §18)
Relation of the factor with the setting of ELVs (based on info from the working documents)	The relation is that the development of technology will help achieve stringent ELVs: “Considerable technical progress has been made in the incineration sector. Substantially improved standards for emission control can be achieved more cost-effectively for incinerators in comparison to the 1980s” (COM (1998) 558 final, p. 8) (all).
Additional comments:	<ul style="list-style-type: none"> - While the previously explained factor relates to the progress of the techniques for controlling emissions, this factor was associated with the development of technology in general - The factor can be seen when actors criticize that the developments of technology were not taken into account to set ELVs. For example, the rapporteur from the Parliament writes: “The Council imposes far less stringent requirements regarding the adaptation of the directive to technical progress, which would mean the state of the art in the late 1980s applying beyond the year 2000. The rapporteur therefore advocates the retention of the minimum limit values proposed by the Commission” (PE 207.223/fin, p. 26) (haz). - In the text of the Directives, the text related to this factor was always associated

	with the factor named The scientific progress
Related to:	The technical factor: The progress of techniques for <i>controlling</i> emissions The scientific factor: The scientific progress

Box 24: Scientific factor: The scientific progress	
Directive(s) source of the factor:	This factor was seen during the analysis of the preambles and bodies of the hazardous and all WI Directives
Example of the text which inspired the factor	<i>"[...] assist the Commission in implementing this Directive and adapting it to scientific and technical progress (94/67/EC, § 16)</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	ELVs will be adapted based on the new scientific knowledge gained (the knowledge seems to be referred to health impacts and emissions)
Additional comments:	<ul style="list-style-type: none"> - Not much information was seen in the working documents - The only text which was seen that had information on how scientific progress influence the making of elvs, is where <i>progress</i> refers to new findings related to the relationship between health and emission: <i>"The commission in accordance with the procedure [...] shall amend [...] and annexes I to V [ELVs] in order to adapt them to technical progress or new findings concerning the health benefits of emission reductions (COM(1998) 558 final, p.50) (all)</i>
Related to:	The scientific factor: The information of adverse effects from the pollutants

Box 25: Scientific factor: The evidence of adverse effects from the pollutants	
Directive(s) source of the factor:	This factor resulted after doing the analysis in the preambles and bodies of the existing and all WI Directives
Example of the text which inspired the factor	<i>"For the purpose of laying down these emission limit values, the authorities shall take account of the potential harmful effects of the pollutants in question on human health and the environment [...]" (Directive 89/429/EEC, art 3(3)).</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	The information that the legislators had about the pollutants at the time of drafting the Directive influenced the setting of ELV in the sense that the adverse the effects, the stricter the ELV <i>"The limit values stipulated for heavy metals are differentiated according to the risk they present to health and the environment. Very thigh control must be exercised regarding Cd, Hg, and, to a lesser extent, Ni and As"</i> (COM(88) 71 final , p. 17)(new)
Additional comments:	<ul style="list-style-type: none"> - Among the information on health effects from Cd is: <ul style="list-style-type: none"> o <i>"High levels of Cd have been associated with lung cancer and a range of non-cancer effects"</i> (COM (1998) 558 final, p. 7) (all). o <i>"[...] cadmium is already a problem [...] From the environmental point of view any level of cadmium emission is too high"</i> (EP A2 1988/391, p. 27)(new). - Among the information on health effects from PM is: <ul style="list-style-type: none"> o <i>"PM in the atmosphere has been associated with large-scale chronic adverse effects on human health"</i> (COM (1998) 558 final, p. 8) (all). o <i>"Stringent controls on the emissions of PM will reduce the potential adverse impact on human health thought to be caused by exposure to fine particulates in the atmosphere"</i> (COM (1998) 558 final, p. 22) (all). o The ESC comments: <i>"Given that dust contains pollutants such as heavy metals and polychlorinated dioxins and furans, the limit value proposed by the Commission seems too high. The state-of-the art figure is 30 mg/m³"</i> (OJ C 1988/318, pg 4) (new). The Commission proposed values of 50 and 100.

Category 6: Influencing factors but not interlinked

Box 26: Scientific factor: The integrated protection	
Integrated protection refers to the protection of the three media: air, water, and soil, so that the fact of trying to reduce pollution levels in one media will not increase the pollution media in the others.	
Directive(s) source of the factor:	This factor was seen during the analysis in the preambles and bodies of the hazardous WI Directive
Example of the text which inspired the factor	<i>integrated protection of the environment against emissions resulting from the incineration of hazardous waste is required [...] aqueous waste resulting from the cleaning of exhaust gases may be discharged after separate treatment only, in order to limit a transfer of pollution from one environmental medium to another [...]</i> (Directive 94/67/EC, §12)
Relation of the factor with the setting of ELVs (based on info from the working documents)	The relationship between integrated protection and the setting of ELV in the sense that setting a too strict ELV for air might mean displacement of that pollution into other media like water: <i>"Imposition of more stringent controls on air emissions for incineration plants can lead to the transfer of pollutants from air to water"</i> (ESC / 1999 / 200, p. 2) (all).
Additional comments:	<ul style="list-style-type: none"> - Even though the factor was seen in the hazardous WI Directive, its influence has been shown in all of the Directives. - One could see that the topic of integrated protection (I.P) had been evolving throughout the working documents. - In the working documents for the new WI Directive, IP is mentioned as part of the authorization process: <i>"Diverse aspects of environmental protection are being integrated in the authorization procedure (water, soil, air, noise [...]"</i> (COM(88) 71 final, p. 21)(new) - In the working documents for the hazardous WI Directive IP is made more explicit: <i>"A more integrated approach towards the protection of the environment has been put forward by provisions of this Directive proposal covering not only the air pollution but also the protection of the soil, the surface and the groundwater"</i> (COM(92) 9 final, p. 2)(haz) - In the working documents for all-waste the IP is reflected in the ELVs for water discharges: <i>"The existing legislation is incomplete [...] existing legislation covers only atmospheric emissions. This can lead to a transfer of pollution to the aquatic environment or to the waste residues"</i> (COM (1998) 558 final, p. 13) (all). - An example of this factor can be seen when discussing the ELV for NO_x: <i>"This amendment also contains a new standard of 25 mg/l for total nitrogen. This is directed principally towards the pollutant nitrate. Establishing this new standard prevents NO_x emissions into air being replaced by a nitrate emission into water"</i> (PE 229.253 / fin, pp. 32, ame. 36) (all).

Category 7: Factors applicable to PM and Cd

Box 27: Specific factor: Oxygen content	
Directive(s) source of the factor:	This factor was seen in the new and existing WI Directives while doing the specific analysis for PM. It was applicable only for incinerators of less than 1 ton/hour
Facts which inspired the factor	If a municipal waste incinerator of less than 1 ton/hour incinerates at an oxygen concentration of 17%, then it has to fulfil stricter ELVs for PM (80 mg/nm ³) than if it was incinerating at a concentration of 11% (200 mg/nm ³). (The ELVs for new incinerators of 1 - 3 tons/hour was 100 mg/nm ³ ; and for those of ≥ 3 tons/hour was 30 mg/nm ³). The rule applies also to existing incinerators of less than 1 ton per hour: for oxygen of 11% the ELV is 600 mg/nm ³ , for oxygen of 17% the ELV is 240 mg/nm ³ . (The ELVs for existing incinerators of 1 - 6 tons/hour was 100 mg/nm ³ ; and for those of ≥ 6 tons/hour was 30 mg/nm ³)
Factor expressed as	<i>the higher the oxygen's content, the stricter the ELVs</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	<i>The factor stops being applicable in the last two Directives. The working documents did not provide detail information on why this factor influenced the setting of ELVs, or why did it stop being applicable</i>
Additional comments:	<ul style="list-style-type: none"> - In the Directives and working documents one could see the roles played by the

<p>oxygen:</p> <ul style="list-style-type: none"> o oxygen as an indicator of good combustion conditions: Oxygen (availability of it) is one of the key parameters which are looked at in order to guarantee an effective combustion. The other parameters are: temperature, residence time and turbulence (COM(92) 9 final, p: 59)(haz) o oxygen as one of the standardizing parameters: If the volumes of any two gases are to be compared, they must be at the same set of conditions, that is, standardized conditions¹⁵. <i>“To verify compliance with the limit and guide values and to compare the measurement results within the Community the results must be standardized at uniform conditions”</i> (COM(92) 9 final, p: 16)(haz) <ul style="list-style-type: none"> - It is the role a indicator of combustion conditions the one of interest here since that is the one related to the different ELVs - Neither the hazardous or all WI Directive have ELVs for PM dependent on the oxygen content. In both cases it is mentioned an oxygen content of 11%
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Box 28: Specific factor: Type of waste	
Directive(s) source of the factor	This factor resulted after doing the analysis for ELVs of PM and Cd (see appendix 5 for details)
Facts which inspired the factor	The ELVs for PM given for municipal –new and existent- waste incinerators have a range of values going from 39 – 780 mg/nm ³ (This range is depends on the capacity of the plant, the oxygen content, the averaging period, and the age of the incinerator). The ELV for PM given for hazardous waste incineration is 10 mg/m ³ .
Factor expressed as:	<i>The hazardous the waste to incinerate, the stricter the ELVs</i>
Additional comments	<ul style="list-style-type: none"> - This factor stops being applicable in the fourth Directive (all-waste incineration) - The legislators write that there should be no differentiation on the emissions resulting from incineration of hazardous and non-hazardous waste - The information collected for this factor was the same as the one collected for “The composition of the waste”
Merged to	The scientific factor: The composition of the waste

Box 29: Specific factor: The averaging period	
Directive(s) source of the factor:	This factor was seen when doing the specific analysis for PM and Cd
Facts which inspired the factor	The values measured from the exhaust gas should be averaged before they can be compared with the ELVs given in the Directive. For the new and existing WI Directives the average was to be done for 7 moving days and for 1 day; for the hazardous and all WI Directive the average was to be done for 1 day and for 30 minutes. For example, the ELVs for PM related to an averaging of 7 days (200, 100, 30 mg/nm ³) were more stringent than the ones for 1 day (260, 130, 39 mg/nm ³), and the ELVs related to an averaging of 1 day (10 mg/m ³) are more stringent than the one of 30 minutes (10, 30 mg/m ³)
Factor expressed as	<i>the more period of time included in the average, the stricter the ELVs</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	
Additional comments:	<ul style="list-style-type: none"> - It wasn’t until the working document for the all WI Directive that it was clearly expressed why ELVs were stricter in relation to the averaging period: <i>“The half hourly averages are higher than the daily averages to reflect variability in the emissions”</i> COM(1998) 558 final, p: 34” - About variability in the emissions: - <i>The 95% confidence interval of Annex VI.4¹⁶ implies that, due to statistical reasons, there is a probability that the limit values are exceeded by a very small percentage of the</i>

¹⁵ Fundamentals of Chemistry, 3rd edition, Ralph A. Burns, Prentice Hall, 1999.

¹⁶ Maybe there was a typo mistake and it refers is to Annex III?

short-term values (half-hourly averages) over the year, and the 10-minuter averages over any 24-hour period (after having subtracted the confidence intervals from the measured average values). Therefore, only 97% of the short-term average values (95% in the case of CO) must meet the limit values. The true short-term values measured will follow a log-normal distribution". (COM(92) 9 final, p: 16) (haz) "As the daily averages are determined from a large number of short-term values, there will be an equal number of those values which is outside (above or below the 95% confidence interval of the limit value) and upon averaging the values above will be levelled off. Therefore it can be stipulated safely that all long-term limit values shall not exceed the corresponding limit values" (COM(92) 9 final, p: 17) (haz)

- In order to ensure greater flexibility it also provided for two series of values in connection with the half-hourly averages, one to be complied with in all instances and the other, stricter, to be complied with in 97% of instances (OJ 94/C232/02, p. 48)(haz).

Box 30: Specific factor: The abnormal conditions	
Directive(s) source of the factor:	This factor was seen after doing the specific analysis for ELVs for PM and Cd (see appendix 5 for details)
Facts which inspired the factor	Under abnormal conditions (technically unavoidable stoppages, disturbances or failures of the purification devices or of the measurement devices), the plants were allowed to discharge higher amounts of PM than what the usual ELVs allow. For example, while ELVs for PM during normal conditions were of 30, 100, 200 and 600 mg/nm ³ for new and existing incinerators, the ELVs during abnormal conditions were of 600 mg/nm ³ . In the hazardous and all WI Directive, the ELVs for PM during normal conditions were of 10 mg/m ³ and of 150 mg/m ³ during abnormal conditions.
Factor expressed as	<i>abnormal conditions allow for laxer ELV for PM</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	<i>There was no information on the working documents which could help explain the process of setting ELVs based on the abnormal conditions, so no new information could be added besides the fact that laxer ELVs are allowed under abnormal conditions</i>
Additional comments:	<ul style="list-style-type: none"> - Not much information is found in the working documents which helps explain this factor. The only comments found are related to the period of time allowed for such abnormal conditions - The amount of time in which it is allowed such abnormal conditions has been reduced throughout the Directives: existing (16 hours), new (8 hours), hazardous and all-waste (4 hours). - The reduction of this period is done because of the risks to health: "<i>The maximum permissible period for an abnormal operation causing exceedances of the emission limit values of air pollutants is reduced to a fourth of the period permitted in the directives concerning the incineration of domestic waste due to the high potential risk to the environment and human health resulting from such pollutants</i>" (COM(92) 9 final, p: 17) (haz)

Box 31: Specific factor: Local conditions	
Directive(s) source of the factor:	This factor resulted after doing the analysis of ELVs given to PM (see appendix 5 for details)
Facts which inspired the factor:	New municipal waste incinerators of less than 1 ton per hour could be authorized to discharge a different ELV for PM -but no higher than 500 mg/ nm ³ - in the case of specific local conditions. Usually, the ELVs for PM for this type of plants were 200 mg/ nm ³ (at an oxygen content of 11%) and 80 mg/ nm ³ (at an oxygen content of 17%).
Relation of the factor with the setting of ELVs (based on info from the working documents)	<i>Setting stricter or laxer ELVs depends on where the incinerator was located</i>
Additional comments:	<ul style="list-style-type: none"> - This factor was only applicable for plants of less than 1 ton/hour and it was seen in the new WI Directive. The Directive doesn't specify what is to be understood as local conditions neither give examples of these.

- Even though this factor was seen applicable for PM, there is also some indication that it was applicable for Cd. For example, in the all WI Directive, there seems to be a connection between the ELVs for Cd and the location of the incinerators near sandy soils. The Commission proposes a value of 0,1 mg/Nm³ for Cd. Parliament agrees with the value since they consider that “[...] cadmium is already a problem, particularly in areas with sandy soil (EP A2 1988/391, p. 27)(new).
- In addition, the Parliament wanted to introduce a new article where the construction of new incineration plants was not recommended in areas with sandy soils. The reason for this being that sandy soils were very susceptible to pollution from fallout of emissions. However, this article was not included in the final version of the Directive (EP A2 1988/391, p. 27)(new).
- Another relation between the ELVs and the location of the incinerators is also presented in another working document from the all WI Directive where it says that incinerators located near populated areas require strict ELVs: “There is a good case for setting high minimum standards for incinerators given that most are located in or near densely populated areas” (COM (1998) 558 final, p. 20) (all). Incinerators located in non-populated areas are allowed to have not such a strict ELVs because of the cost would be higher than the benefits
- There is also a text in the IPPC Directive where it is said: “[...] the emission limit values [...] shall be based on [referring about BAT] but taking into account the [referring about technical characteristics of plants] its geographical location and the local environmental conditions” (Directive 2008/1/EC, article 9 (4))

Box 32: Specific factor: The nominal capacity	
Defined as the sum of the incineration capacities of the furnaces in the plant. It is expressed as the quantity of waste incinerated per hour	
Directive(s) source of the factor:	This factor resulted after doing the specific analysis for ELVs of PM and Cd (see appendix 5 for details)
Facts which inspired the factor	New and existing municipal waste incinerators of less than 1 ton/hour were allowed to discharge more PM than those of a capacity between 1 and 3. At the same time, these were allowed to discharge more than the ones between 3 and 6. Incinerators of more than 6 ton/hour are the ones which have to fulfil the stringent ELVs
Factor expressed as	<i>The lower the nominal capacity of the incinerator, the laxer the ELVs assigned to them</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	Smaller plants have laxer ELVs because of two reasons: costs and impact. For small plants it would be too expensive to buy the equipment required to achieve strict ELVs, expensive in the sense that they cannot obtain a rentable return of the investment, and in a way it would be unnecessary to put such pressure on the small plants since small plants don't produce as much pollution as larger plants
Additional comments:	<ul style="list-style-type: none"> - The factor was present only on the first two Directives (new and existing WI) and not in the hazardous or all WI Directives - Initially it was thought to be a technical factor, but information from the working documents showed that the reason why laxer ELVs on PM and Cd were given to smaller plants had to do with economic aspects - Information from this factor was collected as well under the factor “The costs of the techniques for reducing emissions” - This practice of allowing laxer ELVs to be discharged by smaller plants was not liked by some, because, as the Parliament expressed: “[...] the incineration of these small quantities of waste can soon lead to hundredfold emissions” (PE 229.253 / fin, p. 29) (all). - A way to solve this dilemma of costs vs impact was, as expressed by the Council: [...] because of difficulties for a certain number of plants which are related to cost/benefit considerations, opted for a set of exemption clauses which are limited in time either for certain kinds of existing processes or for plants with a determined capacity” (OJ C / 2000 / 25 / 17)(all). - Even though the factor was no longer seen in the cases of PM and Cd, it was seen applicable for NO_x in the all WI Directive: smaller plants (<6 t/h) are allowed to discharge 400 mg/ m³, while larger plants (> 6t/h) were allowed to discharge 200 mg/m³: “In order to meet the concern expressed by France that the

	<i>requirements for NOx control would be excessively burdensome for small scale plants and would not prove cost-effective, plants with a capacity under three tonnes per hour are allowed a higher emission limit value for NOx” (COM (1998) 558 final, p. 17) (all).</i>
Related to:	The costs of the techniques for reducing emissions

Box 33: Specific factor: The age of the incinerator	
Directive(s) source of the factor:	This factor was seen after doing the specific analysis for ELVs PM and Cd (see appendix 5 for details)
Facts which inspired the factor	Laxer ELVs were given for existing incinerators to be fulfilled as a provisional measure in the mean time that they would do the adaptations to comply with the ELVs demanded for new incinerators. For example, while new incinerators of less than 1 ton/hour had an ELV of 200 mg/nm ³ , existing incinerators of the same capacity had an ELV of 600 mg/nm ³ . This period of time is given on a gradual basis: after the 5th year they should fulfill these provisional measures; after 10 years they should fulfill with the same conditions given to the new incinerators
Factor expressed as	<i>the older the incinerator, the laxer the provisional ELVs</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	Existing incinerators are given a period of time to fulfill the requirements imposed on new incinerators. This gradual approach was given because the retrofitting of existing plants (to better emission reduction techniques) represented a problem from the economic point of view
Additional comments:	<ul style="list-style-type: none"> - In the Directive for hazardous the legislators refer to a “<i>rapid adaptation</i>” instead of the “<i>gradual basis</i>” - The information collected for this factor from the working documents was the same as the one collected for “<i>especial considerations for existing facilities</i>” - During the analysis it was seen that this factor was applicable for existing incinerators of municipal waste of less than 1 ton/hour and between 3 and 6 tons/hour. Nothing like laxer provisional ELVs for PM is seen again in the Directives that follow. However, in the latest Directives one could see that a similar derogation was given for the emission of NOx
Related to:	The technical characteristics of the existing installations

Box 34: Specific factor: co-incineration	
Co-incineration refers to the use of waste as a source of energy at the same time that the waste is being disposed of	
Directive(s) source of the factor:	This factor was seen while doing the specific analysis for PM.
Facts which inspired the factor	<p>The new WI Directive included derogations of some of the provisions for plants specifically designed to burn waste-derived fuels (it could be that the derogations covered ELVs even though this is just an assumption; the derogations were not specified in the Directive).</p> <p>The existing WI Directive had no article about this but it could be that this issue would be part of the conditions that would have to be fulfilled by existing incinerators as from a specific date on time.</p> <p>In the hazardous WI Directive a formula is given for calculating ELV, and given the general tendency seen in this Directive of having less stringent requirements for co-incineration, it is assumed that ELVs for co-incineration was less stringent.</p> <p>The all WI Directive gives ELVs as such for co-incineration activities (cement kilns and combustion plants: 30 – 50 mg/m³) which are laxer than the ones given for incinerators (10 mg/m³)</p>
Factor expressed as	<i>with co-incineration, less stringent ELVs are required compared to incinerators</i>
Relation of the factor with the setting of ELVs (based on info from the working documents)	The special features of the plants used for co-incineration makes that the ELVs imposed get to be different from the ones given to incineration: “ <i>It is unlikely that it [the plant] could fulfil all conditions laid down for exclusive hazardous waste incineration plants</i> ” (COM(92) 9 final, p: 6) (haz)
Additional comments:	<ul style="list-style-type: none"> - The term <i>co-incineration</i> is only used in the last Directive, but in the first ones, even though the term is not expressly used, the Directives refer to plants which

use waste as fuel

- The conditions for incinerating waste in other type of plants become clearer throughout the Directives with the tendency of being equally strict as with incineration
- In the working documents for all WI Directive it is recognized there is a difference between the requirements for co-incineration and incineration: *"The proposed directive seeks to address the existing regulatory gap and to ensure that co-incineration does not represent a loophole allowing lower standards of environmental protection"* (COM (1998) 558 final, p. 5) (all).
- The ELVs assigned to cement kilns are related to the special features of their installations. For example, during the drafting process for the all WI Directive, the waste industry was pressing for equal standards to be applied by co-incineration. To this the cement industry responded: *"Although the cement industry agrees to high standards they underlined the need to take account of the special features of the cement process that lead to releases of certain pollutants – in particular NOx and dust and the particular difficulties in controlling these. While account has been taken of the technical circumstances, stringent controls have been maintained for the pollutants and a cost-benefit assessment of additional NOx controls was carried out"* (COM (1998) 558 final, p. 18) (all).
- Based on the findings, one could say that the laxer ELV given for dust emissions from the cement industry is because of the special conditions in which the plant operates: *"the emission limit value for dust takes into account the special nature of the cement process in which the raw material enriched atmosphere in the kiln contributes to the dust emissions"* (COM (1998) 558 final, p. 12) (all).
- Another way in which the special situation of the co-incineration is taking into account, is that ELVs are applicable not to the whole volume of emissions, but to the part of the exhaust gas that results from incineration of hazardous waste. The ELV is then calculated based on a formula *"[...] based on the percentage of exhaust gases produced from waste incineration and the percentage produced from fossil fuels"* (COR/1998/947, 1999, p. 4)(all).
- However, some actors criticize the ELV given: *"co-incineration plants are subject to less stringent emission standards for pollutants. This can be seen in the higher emission limit values permitted as daily average. The Commission's reasoning is that higher emissions occur because of the nature of the process. The committee would point out, however, that the normal fuels burned in such plants are far from being the cleanest, e.g. coal with a high sulphur content"*. (PE 229.253, p:30) (all). Member States also manifested their opinion: *"For co-incineration in cement kilns DK is of the view that the ELVs are too weak; they should be more related to best available techniques"* (9300/99 ENV 228, p. 9)(all).
- Commission responded to the amendments proposed for changing the ELV for co-incineration saying that *"They cannot be accepted since the proposed values of the Commission are justified by cost-benefit evaluations and take into consideration the specific nature of the different processes"* (COM (1999) 330 final, p. 5) (all)

5.10 Appendix 2: Detail on the reflection on the existing literature

Scientific factors

The scientific factors documented in literature were found as well through the empirical analysis: scientific data needed to present the link between the adverse effect and the pollutant (McEldowney & McEldowney, 2001); the need to keep up with the pace of the scientific progress (Lee, 2005); and the need to take into account the environmental conditions (physical location of the plant) (Cofala & Amann, 2001).

A factor not mentioned in literature but shown through the empirical analysis to have influence is the observance of an *integrated protection* in the sense that setting a too strict ELV for air might mean, for example, displacement of that pollution into other media like water.

Scientific factors from literature

Scientific consensus Scientific evaluation of risk
Available scientific data
Environmental conditions Science instruments
Scientific mechanisms Scientific expertise
Assessment of risk and uncertainty

-Science provides the linkage between object of legislation and the adverse impacts that this creates

-Standards need to keep the pace of the progress of science

Scientific factors from the findings

✗ Composition of the waste (ELVs set based on the type of waste incinerated)

✓ Evidence of a diverse effects (the worse the effect, the stricter the ELV)

✓ Integrated protection (aiming to protect the 3 media simultaneously)

N Scientific progress (new findings will help adapt ELVs)

? Physical location of the plant (stringency of ELVs will be based on the location of the incinerator)

Technical factors

Technical factors from literature

Best technical options
Available technical data
Technical aspects Industrial development
Existing technology

-Best available technique (cost effective, and according to the psycho-chemical properties of the pollutant)

-Progress of technology (for reducing, controlling, measuring emissions)

-Technology setting the ELVs and /or ELVs setting the technology

Technical factors from the findings

✓ Best Available Technology (ELVs should be based on BAT - says Parliament, ESC)

✓ Measuring techniques (available) (ELVs will be set when there is equipment to measure the pollutant)

✓ Reducing emissions techniques (available) (ELVs will be set based on what the cleaning mechanisms can clean)

N Progress of the controlling emissions techniques (development in the cleaning mechanisms will allow the setting of stringent ELVs)

✓ Characteristics of the existing installations (ELVs will be set based on what existing installations emit)

N Development of technology (development of technology will allow the setting of stringent ELVs)

The technical factors documented in the literature and found in the empirical analysis relate mainly to the *available technique* (for reducing, controlling and measuring emissions, and the ones that are cost effective) ((Steward, 2007); (Majone, 2006); (Petts, 2000)). Both sources also refer to the need of taking into account the development of technology (McEldowney & McEldowney, 2001); (Lee, 2005).

Technical factor being referenced only in the empirical analysis was the one of *abnormal conditions*; and the one on

technical characteristics of the existing incinerators.

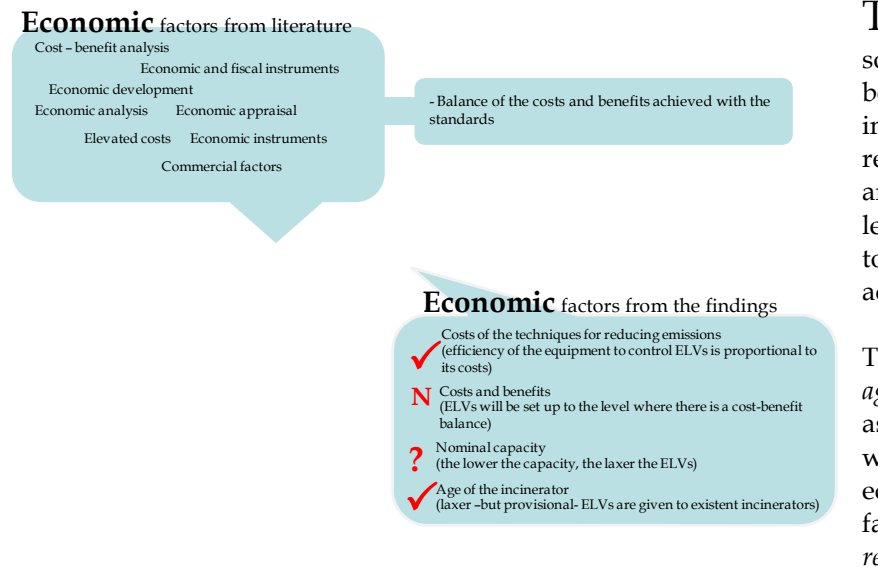
There was also some evidence of *endogeneity*¹⁷. The documented literature showed that since technology will say what it is possible to achieve, then the technology will set the ELVs (Petts, 2000). But other references

¹⁷ When providing cause-effect relationships for political explanations, causal effects may go in both directions and not in only one direction as initially assumed ((Héritier, 2008)

have shown the inverse situation, where the policy establishes the ELV to be achieved and this fact pushes the industry to develop the technology to achieve it (Howes, 2005).

Information from the working documents pointed more to the first case, where it is the technology dictating what ELV to apply: “In the last few years, the development of reduction techniques in the field of waste incineration have progressed so rapidly that more stringent emission limit values can and have to be fixed” (COM(92) 9 final, p: 4). (haz). Only one reference was seen at the working documents that would point to ELVs pushing the development of technology, the case being seen when referring to existing incinerators: “The Committee supports the objective of developing the technologies employed by older existing plants for the protection of air quality so that they meet the technical specifications of new plants as soon as possible” (ESC / 1999 / 200, p. 5) (all).

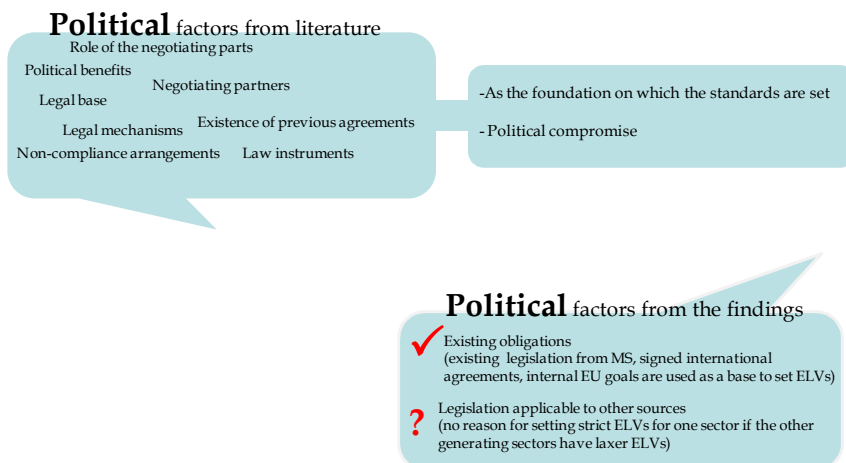
Economic factors



The economic factors from both sources refer basically to the balance between costs and benefits: costs of implementing the technology for reducing and controlling emissions, and the benefits of reducing the levels of pollutions. ELVs are set up to the point where the balance is achieved (Steward, 2007).

The factors of *nominal capacity* and *age of the incinerator* initially thought as technical, were, after reading the working documents, found to be of economic nature and related to the factor of *the cost of the techniques for reducing emissions*.

Political factors



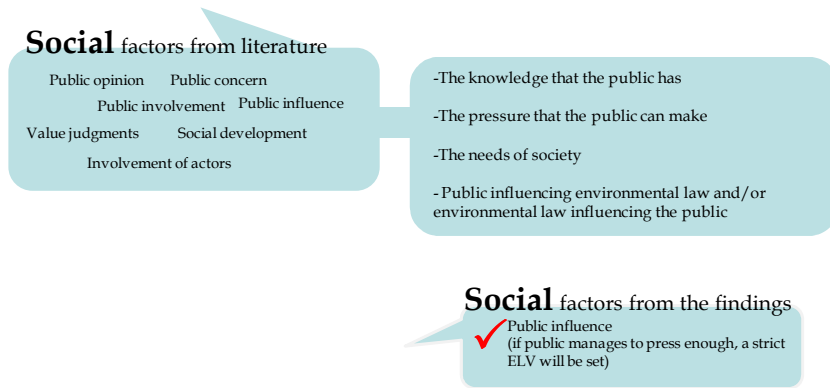
The political factors found in the empirical analysis could be seen as concrete examples of the political factors found at the literature. For example, literature refers to *existence of previous agreements* ((Steward, 2007); (Sands, 2003), and this factor was seen in the empirical analysis as *existing obligations* (at the international, EU, and/or member state (MS) level.

The other case was the factor from literature *the role of the*

negotiating parts relating to the found factor on the working documents of *legislation applicable to other sources*. The first one refers to what Sands (2003) says about the perception on the part of the negotiating states that other partners are doing their fair share to address the problem, and how this perception influences the fact of reaching an agreement or not on a specific environmental legislation. The second factor referring to the argument presented by some of the actors involved with the incineration process saying that there was no

point on setting stringent values for a specific type of industry (hence affecting it economically) if there were other sources emitting the same pollutants, being even more significant, and that are either not legislated or not so stringent legislated.

Social factors



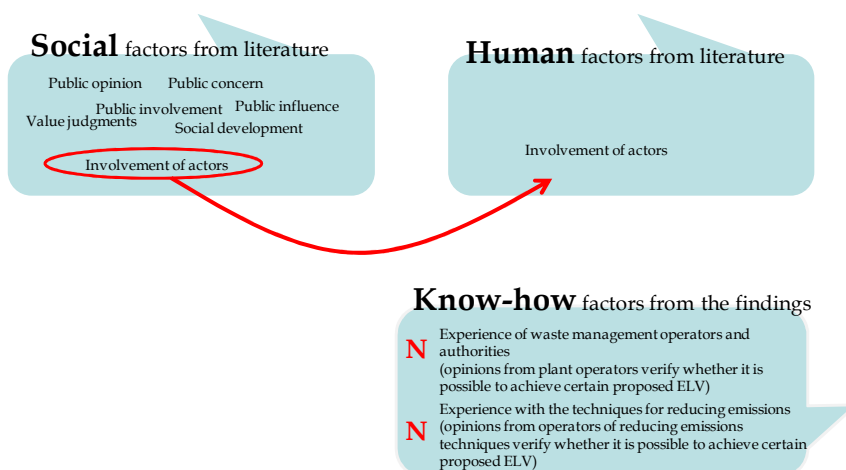
None of the social factors documented in literature were seen in the text of the Directives, however, information was seen in the working documents pointing to the influence of these factors in the process of setting ELVs.

Just as with the political factors, the social factors found in the empirical

analysis could be seen as concrete examples of the social factors found at literature. The public influences the process of setting ELVs in two ways: directly and indirectly. Directly by requiring strict ELVs for the incinerators (Schucht, Bültmann, Eames, & Lulofs, 2001). Indirectly in the sense that having strict ELVs makes the public more willing to accept incineration as one of the options for waste management (Hartenstein & Horvay, 1996).

This directly involvement relates to the issue of public influencing environmental law, and the indirect involvement could be seen as an example of how the environmental law influences the public (having strict legislation is one of the ways in which it is aimed that people would change the negative perceptions for incineration).

Know-how factors



Initially, the factors from literature were classified in five categories, and the sixth category of *Know-how* factors was seen only after information found in the Directives and their working documents. However, looking back at the literature, one could see the reference to what was mentioned by Peterson & Bomberg (1999) as the *involvement of many actors in the legislative process*. This was initially classified as part of the social factors. At this

point doubts could emerge as to whether social and know-how factors should be merged into one, and to

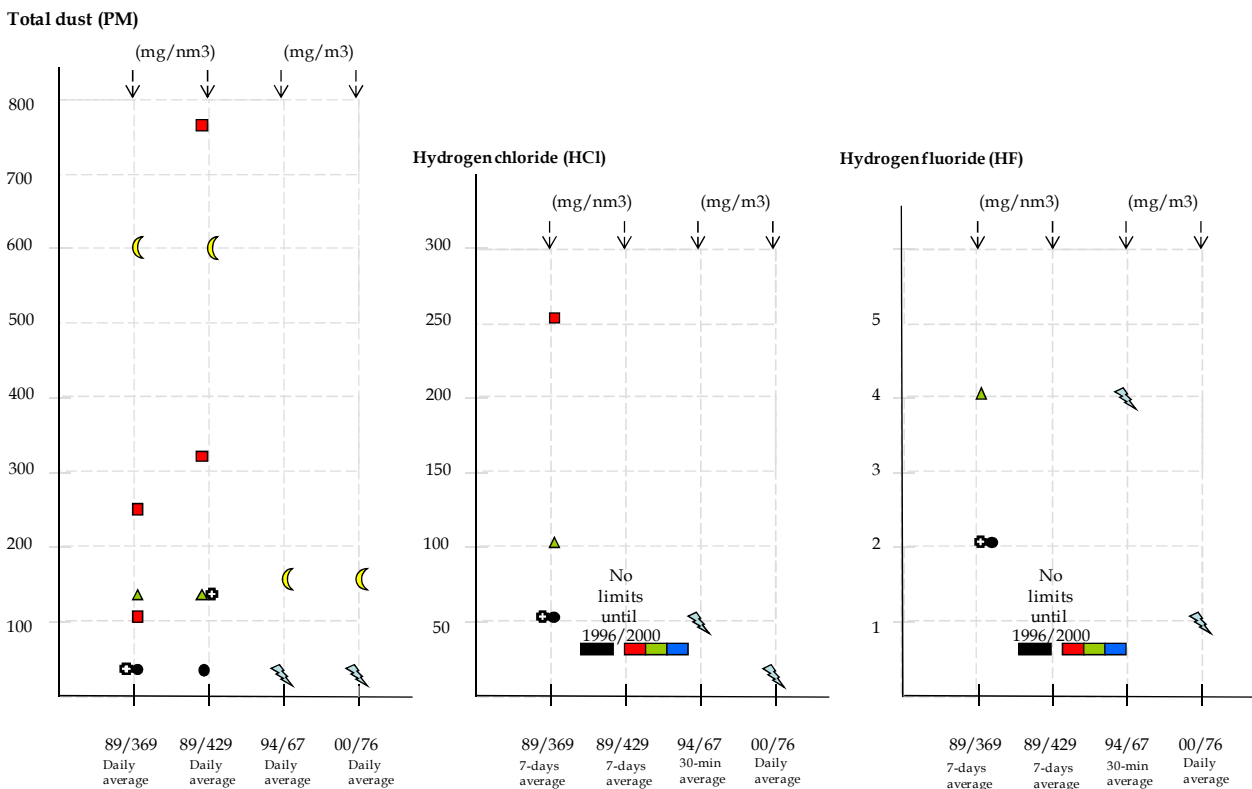
that I would say that both categories should continue to be independent given that they refer to two different groups of people: *know-how* refers to the knowledge from authorities and operators of waste facilities and providers of emission control technology, and *social* refers to the opinion and values from the public and the pressure they manage to impose and which could influence the setting of stricter ELVs.

5.11 Appendix 3: Trend of the ELVs in the EU directives on waste incineration

Figure 26 depicts the tendency of the pollutants total dust (PM), hydrogen chloride (HCl), hydrogen fluoride (HF), sulphur dioxide (SO₂), carbon monoxide (CO), total organic carbon(TOC), dioxins and furans, and nitrogen oxides (NO_x).

The x-axis of the figures: The Directives are allocated in the x-axis in chronological order: 89/369 for the Directive on new municipal waste incinerators; 89/429 for the Directive on existing municipal waste incinerators; 94/67 for the Directive on hazardous waste incinerators and 00/76 for the Directive on all-types waste incinerators.

The y-axis of the figures: The values displayed in the y-axis are given in milligrams per cubic meter (mg/m³) for the 1989 Directives and milligrams per normalized cubic meter (mg/nm³) for the 1994 and 2000 Directive, except for dioxins and furans for which the measures are given in nanograms per cubic meter (ng/m³), and nitrogen oxides for which the measures are given in mg/m³.



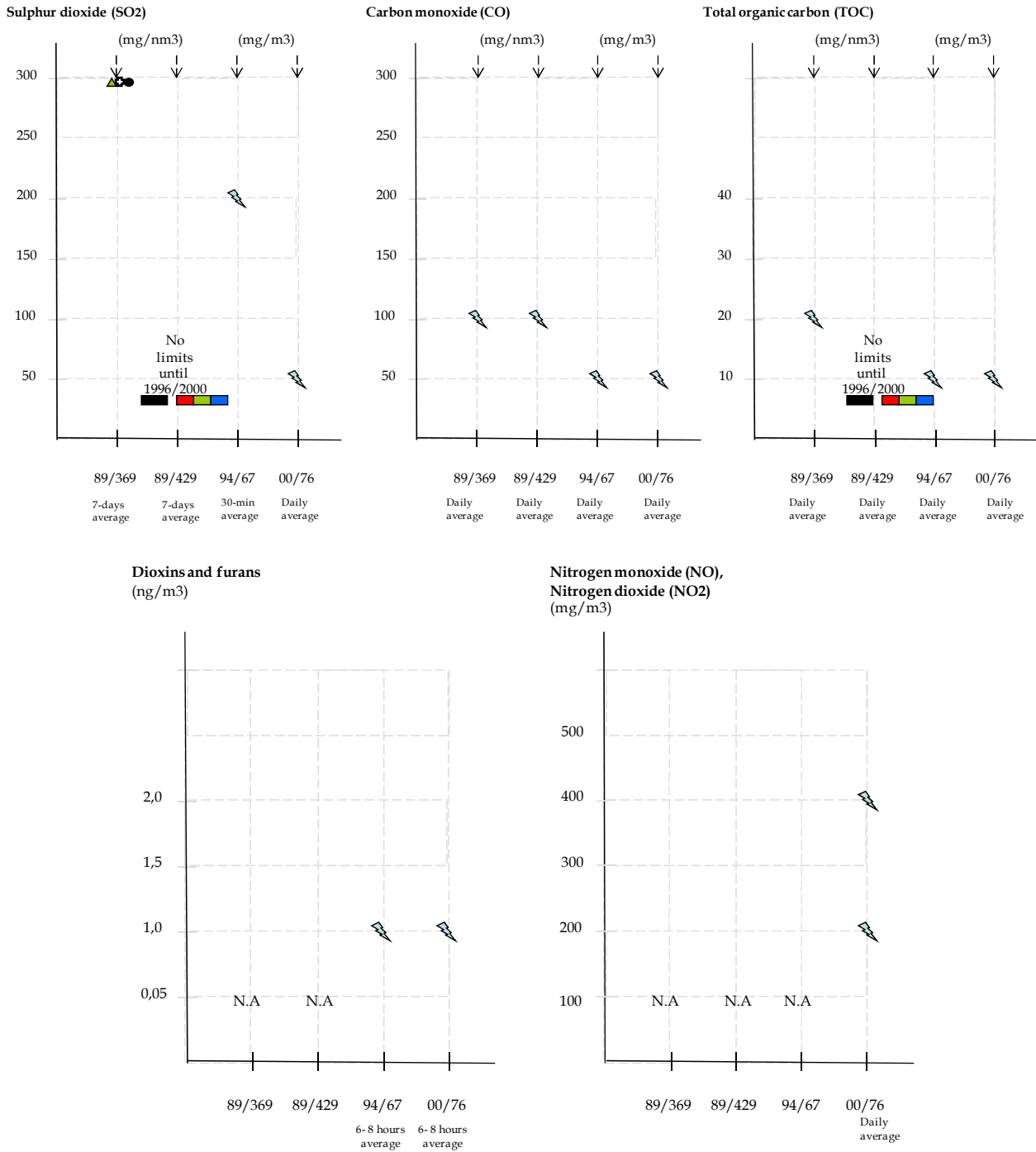


Figure 26: Trends in ELVs, for pollutants others than heavy metals, throughout the incineration Directives: 89/369, 89/429, 94/67 and 00/76.

ELVs given: The values here displayed relate to those applicable under normal conditions of operation, and they should not be exceeded by the 7-days, 1-day or 30 minutes average value.

ELVs for existing incinerators: The Directive for existing municipal waste incinerators (89/429) mentions that these installations should apply the same values as the ones for new municipal waste incinerators as from a specified date (hence the sign “No limits until” in the figure). Only two parameters have to be fulfilled in the mean time that such date is reached and that is PM and CO. ELVs –provisional ones- are provided for these two parameters.

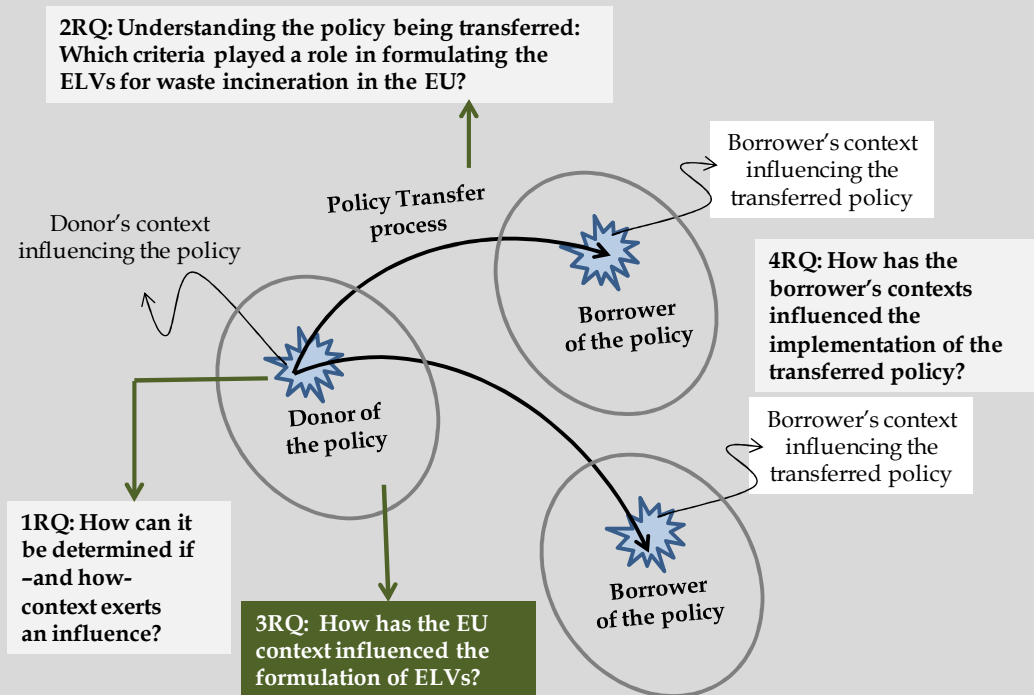
The latest regulated parameters: dioxins and furans started to receive specific ELVs as from the 1994 hazardous Directive (hence the “N.A” note for the 1989 Directives); these values remain the same throughout the 2000 all-waste Directive. In a similar way, nitrogen monoxide and nitrogen dioxide (NOx) start to be legislated as from the 2000 Directive. The ELVs for NOx values depend on the nominal capacity: the higher the plant’s capacity, the stringent the values); plants incinerating only hazardous waste were exempted to fulfil these values until 1st January 2007 and even 2010 in some cases.

General trend: Even though a direct comparison cannot be made due to the fact that the ELVs refer to different average values: 7-days, 1-day, 30 min, in general it can be said that the tendency follows a decreasing line, that is, ELVs tend to get stricter through time. This fact is also related with the type of waste incineration that is legislated: ELVs for municipal waste incineration tend to be more lax compared to the ELVs given for hazardous waste incineration. This situation changes with the last Directive where it could be seen that most of the ELVs given for the operation of incineration hazardous waste remain the same as for the operation of incinerating all-types of waste.

However, three parameters cannot be included in this generalization and they are PM, dioxins and furans, and NOx. The reasons for the last two groups of parameters were previously explained, that is, dioxins and furans are only regulated from 1994, and in the 2000 Directive they still have the same value; NOx starts to be regulated as from 2008.

PM has a particular tendency that can be seen by observing the several values given for the 1989 Directives. That is, the same operation of incinerating municipal waste is legislated; however, the values differ depending on whether the plant is a new or an existing incinerator, as well as other factors such as oxygen content and the incinerator’s capacity, factors that are to be explored further in the main body of this chapter 5. These particularities made of PM an interesting case worth investigating further through this report.

The aim of this PhD project is to present how context plays a role in the process of formulating and implementing policies. Four areas are explored in this PhD in order to reach this aim. The first area looked into the influence of context and presented a set of criteria that helped identify how context exerts an influence. The second area related to the understanding of the policy being transferred, which in this case are the ELVs for waste incineration in the EU. Out of this process, a list of seventeen factors were seen applicable to the formulation of ELVs in general, and a list of four additional factors were seen related in specific to PM and Cd



This chapter explores the third area of this PhD project, area which relates to the influence of the donor's context in the process of formulating policies. The influence of donor context has been said to be done through the particular set of circumstances, structures or systems -hereafter referred as *particularities*. In this case, the donor's context is the EU, and the particularities to identify are those which influenced the formulation of ELVs for waste incineration.

Second Part (iii)

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6. Third area explored: The influence of the donor's context

Introduction

In the process of policy transfer, Dolowitz (2000) refers to two settings: one corresponds to the donor of the policy, and the other corresponds to the borrower of the policy. Failures in the process of policy transfer occur when no attention is paid to these contexts and the influence they exert in the policy being transferred (Dolowitz, 2000), (Minogue, 2006).

The influence of context has been said to be done through the particular set of circumstances from each place (Honadle, 1999), through the very own country structures (Danziger, 2005), or through the particular systems (Dolowitz, 2000).

There is recognition that the donor's context exerts an influence when it is said that failure in the policy transfer process will occur when the project's characteristics –the project being the object transferred– are attempted to be replicated without understanding the interplay between those characteristics and the context (Honadle, 1999). The influence of the donor's context is also seen when it is being talked about elements crucial to the appropriate development of the programme of interest, elements which are inseparable from the donor's context and impossible to copy in the borrower's context (Robertson & Waltman, 1992), (Dolowitz, 2000).

As mentioned in the first part of this PhD report, the aim of this project is to try to identify how context plays a role in the processes of formulating and implementing policies. Four areas were seen as worth exploring in order to reach this aim. The previous two chapters addressed respectively the first and second areas, the first area relating to the influence of context, the second area relating to understanding the policy being transferred. This chapter addresses the third explored area which relates to the influence of the donor's context.

This chapter explores the circumstances, structures, systems, elements or *particularities* from the donor's context which influence the programme of interest. The donor's context in this case is the EU, and the programme of interests being the ELVs for waste incineration. The particularities of the EU context are exemplified with the information obtained from the working documents of the waste incineration Directives.

The research question was formulated as *how has the EU context influenced the formulation of ELVs for waste incineration*. Such aim was explored by means of finding the particularities from the EU context which influenced the numbers given as ELV.

6.1 Methods

For the 3rd researched area the methods required was one that would guide the process of extracting, in an orderly manner, extensive amount of information from different sources, and also by which the relevant aspects of it, pointing to a specific topic (*particularities of EU context*), could be distilled. For this process was obtained from methodologies such as *coding* and *content analysis*.

These methodologies were explained in section 2.1 *Methods*, but their key points can be seen in Box 1. The specific way in which such methodologies was used is explained in the following sub-sections.

Box 1: Key points from the process of *Coding* and *Content analysis* presented in chapter 2 (*Methods*)

- Process for coding: (1) *initial coding*: very detailed process where code is assigned to every line of text; it provides an initial impression of the data; many codes as necessary are generated to encapsulate the data. (2) *focused coding*: implies combining repeated codes and emphasizing the ones that are most revealing about the data; the data is re-explored and re-evaluated in terms of these selected codes. (3) *axial coding*: connections are made between the codes; done by linking codes to consequences, to patterns of interaction, and to causes. (4) *saturation* is seen as the last step where there is no point in reviewing or bringing new data since this one does not add anything new (Bryman, 2008).
- Content analysis: predetermined categories are used in a systematic and replicable manner; rules are clearly specified in advance for the assignment of the raw material to categories; the analyst's personal bias is introduced as little as possible; in theory, anyone could employ the rules and obtain the same results; categories used should not overlap, they should cover all possibilities found, and there should be no uncertainty on which category to apply, also there should be the possibility of allowing new categories to emerge during the study (Bryman, 2008).

Literature as the starting point

As previously mentioned, the aim is to find the particularities of the EU that would show the influence of context in the formulation of ELVs for waste incineration.

Many things could be used to describe the context of the EU, but the search was narrowed down to the topic of environmental policy making, in particular, things which played a role in the process of setting environmental standards.

This process of extracting the information from literature on EU environmental policy, which explained how ELVs were made, was done following the process of *coding* (codes were assigned to the text, then the repeated codes were combined, data was re-evaluated in terms of the fewer codes selected, and connections between the categories created in such a way that the data was put back in a new order).

Out of this process, one could see that three were the topics that kept on appearing and being mentioned in the reviewed literature. The information for each one of these topics was re-organized in the way that could help explain its relation with the formulation of ELVs in the EU context. These three topics –which are referred to as the *Particularities*- is what is presented in section 6.2 *Literature review*.

Those topics were then used as a guiding framework –or *predetermined categories*- for exploring the information presented in the Working Documents and in that way exemplify how the particularities of the EU context influenced the process of setting ELVs in particular in the case of the Municipal WI Directives.

6.2 Literature review

The point of departure is to present what different authors have mentioned about the particularities of the EU context which influenced the formulation of ELVs at EC level. The search was made on literature dealing with the topic of EU environmental policy making.¹

¹ Concrete information on the evolution of EU environmental policy, as well as the actors involved and the process followed in the EU policy-making process, can be seen in section 3.2 of chapter 3: *Background information*.

Out of this process, three topics –or particularities– could be distinguished, particularities which kept on appearing as having an influence in the setting of ELVs at the EU level. Such particularities are also explained next.

1st particularity: MARKET as the motivator for environmental protection

The point of departure for this statement is to say that the primary aims set in the Treaty of Rome (1957), treaty which established the European Economic Community, were the creation of a common market, and the harmonisation of the economic policies of the Member States (Bell & McGillivray, 2001, p. 122).

The common market refers basically to having a single market where there would be free movement of goods, persons, services and capital among the Member States (Bell & McGillivray, 2001, p. 122). Just as Bell & McGillivray write “*The fundamental basis of the EC has always been economic*” (p. 122).

Another objective of the EC is the protection of the environment (Thornton & Beckwith, 2004, p. 81). However, this idea of protecting the environment has not been there since the beginnings of the EC (Jordan, 2005, p. 1). Among the reasons for this is that priority at that time was on achieving economic prosperity, and improving the political relations after the war (Lee, 2005: 1); besides, there was not awareness on the environmental degradation that would come after the expected economic growth (Bell & McGillivray, 2001, p. 123).

However, environmental awareness started to be part of the EC's political agenda after the development of some circumstances and pressures. Some of these developments were for example the 1972 Stockholm conference (Jordan, 2005, p. 3); the creation of environmental agencies and political programmes in other countries (e.g. in United States, Germany, and France in 1970s (Hildebrand, 2005, p. 27)); the occurrence of industrial accidents and environmental disasters (e.g. the explosion of chemical plants in England and Italy, the forest destruction in Germany, the destruction of the ozone layer (Peterson & Bomberg, 1999, p. 173) (Hildebrand, 2005, p. 28)); the rising levels of public concern and pressure, of media attention and the appearance of environmentalists (e.g. in Germany, France, the Netherlands, and Denmark (Hildebrand, 2005, p. 27) (Jordan, 2005, p. 4)); and the environmental interests of some of the European actors (e.g. European Council considering the incorporation of non-material values to be crucial if the Community's economic objectives were to be meaningful (Lee, 2005, p. 1)), among others.

But even more than that, it is said that the main motivation for formalizing an environmental chapter in the Treaty originated after economic implications, implications which resulted from distortions in the market created by the different environmental laws in the Member States: “*much of community environmental regulation is motivated by the need to prevent trade barriers and distortion of competition in the first place*” (Arp, 2002, p. 271).

Distortions in the market resulted when some of the Member States had regulations in environmental matters (for example, national standards worked as non-tariff barriers), and also when other Member States had no environmental regulation at all (non-regulation would be a disguised form of subsidy).

In the first case, environmental regulations in Member States (for example, higher pollution standards) implied higher costs for the national industries. Industries would be in a competitive disadvantage in the EC market compared to the industries from non-regulated Member States (Richardson, 2006, p. 318). In addition, environmental regulations in a Member States would work as trade barriers, where a company from another country might not be able to sell their products in that Member State unless it fulfilled with the legal requirements (Krämer, 2007, p. 858). In the second case, when Member States had no environmental regulation at all, the non-regulation fact could be seen as a disguised form of subsidy: “*dirty states could profit economically by being slack*” (Hildebrand, 2005, p. 28).

These situations, of having differences in the environmental legislation of the countries, were going against the general objective of integrating Member States' economies and citizens into a closer union (Krämer, 2007, p. 858); (Lee, 2005, p. 16). They were also going against Article 30 of the Treaty of Rome –which is still valid today, which bans the restrictions on trade between Member States (Thornton & Beckwith, 2004, p. 81). In fact, the first Environmental Action Programme, covering the period 1973-1976, emphasized the need to address the disposal of waste since it was said that the different practices used by Member States for disposing its waste could distort competition (Haq & Artola, 1995, p. 5).

Arp (2002) summarizes and exemplifies this issue of environmental protection being derived from market protection:

[...] EC environmental policy is often less about the protection of the environment and more about economic objectives and interests [...] much of Community environmental regulation is motivated by the need to prevent trade barriers and distortion of competition in the first place [...] the car exhaust case is an example of legislation which grew out of this concern and only lately was turned to the achievement of environmental objectives" (p. 271).

These two objectives, of achieving common market and aiming for an environmental protection, sometimes get into conflict with each other: *"Both policy objectives are of equal weight, and, ideally, are to be achieved concurrently. In practice, however, there may be a conflict –the need to protect the environment may impede the free movement of goods, capital and services between Member States. Conflict between the two objectives is frequent, and its resolution seems to take place on a case-by-case basis" (Thornton & Beckwith, 2004, p. 81).*

One of the ways this environment-market conflict has been managed at the EC level is that whenever there is a product meant to be commercialized at the whole EC level, the EC will set an uniform standard for it (so that producers and traders will have the same rules (McEldowney & McEldowney, 2001, p. 42)); and in setting such standards it is required by the Treaty (art 95(3) –ex art 100a(3)-) that a high level of protection for those standards is taken concerning health, safety, environmental and consumer protection (Bell & McGillivray, 2001, p. 127).

The setting of these standards at the EC level is referred to as *harmonization* where the idea is to harmonize those laws and administrative practices which directly affect the functioning of the common market, *"The normal methods of achieving this are to lay down uniform, common standards or to outlaw specified discriminatory practices" (Bell & McGillivray, 2001, p. 127).* The implication of this harmonization process in the environmental legislation has been expressed by Hildebrand (2001) *"harmonization measures designed to complete the internal market have an impact on environmental policy to the extent that most environmental protection standards that affect the functioning of the internal market will be set at EC level" (p. 34).*

Regarding the highest level of protection, some authors write that the standard set are quite high compared to the national standards: *"EC environmental legislation is, with respect to its substance and for numerous Member States, innovative and progressive" (p. 862),* but other authors refer to the issue of the least common denominator: *"As in federal systems, the EU is the scene of dilemmas associated with shared decision-making. It is thus prone to least common denominator solutions, which offend few policy stakeholders, or actors with an interest in EU decisions but may not solve policy problems very effectively" (Peterson & Bomberg, 1999, p. 17).*

Legislation for products affecting the common market is then passed under art 95 (ex 100a) (Krämer, 2007, p. 860), and legislation for products which are not related to the common market is passed under art 175 (ex 130s) (se Appendix 1 as a summary of the relation existent between market and environmental regulation).

The question would then be if Member States could set stricter standards than those set at EC level, and the answer is (a) yes, in theory, (b) but depending on the article base (art 95 for market, or art 175 for environment), and (c) only under certain conditions, but that yet such practice is not very common.

For those products legislated under article 95 (common-market products), Member States could maintain or introduce more stringent national standards after approval from the Commission and if some conditions are

fulfilled (art 95(4) – ex art 100a(4)): (1) it has to be demonstrated by the Member State that the stricter measure is necessary on grounds of, among others, morality, security and health and life protection (art 36) or protection of the environment or of the working environment; (2) it has to be demonstrated that such measures are not arbitrary or a disguised restriction on trade; (3) the measure should not discriminate between foreign and domestic producers (Golub, 2002, p. 219), (Kölliker, 2006, p. 192).

Some say such conditions are difficult to fulfill. For example, Thornton & Beckwith (2004) write that it is difficult to justify stricter measures because it is difficult to categorize them as necessary for the protection of health and life (e.g. measures concerned with environmental labelling, environmental taxes, waste prevention, and environmental liability) (p. 81). Krämer (2007) also writes that in practice, Member States use this power only exceptionally, and that some of the reasons for this include that Member States may fear that by adopting stricter environmental standards, they will get economical disadvantages (p. 862). Arp (2002) illustrates this situation with the case of legislation for car emissions: “market has been both the main driving force in the development of EC car emission regulation and a major constraint on national efforts in this field” (p. 256). Kölliker (2006) refers to a publication by Müller-Brandeck-Bocquet (1997:298-99) in which it is stated that there had been very few cases in which art 95(4) had been used as a safeguard clause:

“[...] the flexibility provided by the safeguard clauses in fact allows individual Member States to play the role of a vanguard of the whole Union. Yet individual Member States could only do so in areas in which competitive advantages for their domestic industries could be expected. [...] As an example, Müller-Brandeck-Bocquet cites the German restrictions on the use of dangerous substances, introduced in 1989, and argues that the tough German stance on the issue was also due to the fact that German industry had already developed alternative substances” (p. 192).

Under this article, Member States have only been able to maintain the high standards which existed in the country before its membership into the EC, and not being able to introduce new ones “*The enlargement highlighted the fact that incoming countries often have a political struggle to maintain their higher standards once they have become a Member State. Austria, Finland and Sweden, together with other traditional pusher countries, notably the Netherlands and Germany, find themselves restrained from initiating national environmental measures that affect trade and therefore, also, from leading EC environmental standards*” (Inglis, 2004, p. 150). Jordan (2002) presents this idea but also says that this interpretation is disputed (p. 56).

Another way in which Member States could also opt for stricter national regulation in common-market products (stricter than the harmonisation standard given at EC level) is by applying art 95(5) (ex art 100a(5)). As with art 95(4), this would be done subject to authorization and provided is not arbitrary discrimination or disguised restriction on trade. Besides, it would be a provisional measure, demonstrated based on scientific evidence, and relating to an environmental problem specific to that Member State (Kölliker, 2006, p. 192). Thornton & Beckwith (2004) also write that such provision was introduced to reassure the Member States which were concerned that the harmonisation measures adopted under art 95 would oblige them to lower their environmental standards (Thornton & Beckwith, 2004, p. 86).

For those products legislated under article 175 (ex art 130s) (not related to the common market), again Member States could maintain or introduce stricter standards as long as this would not affect the common market. In fact, the article states that Member States should not feel prevented from maintaining or introducing more stringent measures, as long as these measures are compatible with the rest of the Treaty (art 176 –ex art 130t). Examples of more detailed environmental provisions introduced at national level are in the areas of water, air, waste and noise (Krämer, 2007, p. 859). However, Kölliker (2006) also refers to this article not being use so much based on the reasons previously presented for article 95(4) (p. 192).

Literature also documents the case of disputes over the choice of the legal basis for a Directive. The disputes related to the fact that depending on the article base, Member States would be allowed to set stricter rules than the ones given at EC level, and also that depending on the article base, there are different approval processes and roles given to the Parliament and to the Council; differences are also related to the time it

would take a legislation to be approved (Krämer, 2007, p. 861), (Bell & McGillivray, 2001, p. 125), (Lee, 2005, p. 17).

Judge (2002) writes for example that when the Parliament acted under the co-operation role (Parliament had up to two opportunities to present amendments to the proposals, but the final decision was still on the hands of the Council), the Commission and the Parliament were aiming to have everything under art 100a given that the Commission would see the Parliament as an ally in environmental matters (p. 125). Wilkinson (2002) writes that when the role of the Parliament changed from co-operation to the co-decision role (the Council has to reach a common agreement together with the Parliament), the Commission and the Council were aiming to avoid art 100a given that the would find the process very time consuming: *“the co-decision is complicated and can in some cases run to 11 separate stages stretching over many months”* (p. 43).

It seems that now a days these disputes are no longer applicable since both articles have more or less the same legislative procedures: *“the decision-making procedures are now virtually identical for internal market harmonization and environmental directives [...] these legal base battles are less important when measures having both trade and environmental dimensions to them are proposed (and also because the ability of states to set higher standards is now broadly similar under both articles)* (Bell & McGillivray, 2001, p. 124).

Key points

on the 1st particularity: MARKET as the motivator for environmental protection

The following table presents the key points from the First particularity of the EU context. These points were organized in five topics.

A	- Priority of the EC is to set a common market where there would be no restrictions for trade. - The different environmental legislations in the Member States were creating obstacle to this free trade. - This became one of the main reasons why the EC decided to set the environmental rules at the EC level.
B	- The EC made a distinction: products directly related with the common market are legislated under art 95 (ex art 100a). - Environmental matters –not affecting the common market- are legislated under art 175 (ex art 130s).
C	- Only under certain conditions, standard set at EC level under art 95 can be made stricter by Member States. - However, authors have mentioned that such conditions are difficult to achieve and that Member States do not seek them anyway because of the competitive disadvantage that these stricter standards might bring.
D	- For the environment related products (art 175) the Member States are free to set stringent measures as long as these do not interfere with the objective of the free market. - It has been said that Member States use it only to maintain the high standards which existed before entering the EC.
E	- Literature also documents disputes over the choice of the legal basis. - These disputes are no longer applicable given that the decision-making process for environment and market related articles are very similar.

2nd particularity: MEMBER STATES' role in setting EC legislation

The starting point for this particularity is to say that even though the Commission is the only body who can formally present a legislative proposal, these initiatives can be traced back to other sources. Among the sources used by the Commission to present their policy initiatives are the environmental action programmes, the Council's memoranda, the Parliament's initiatives, the international treaties' obligations, or the EU Treaty's obligations (Héritier, 2002, p. 194) (McGiffen, 2005, p. 34). The precise origins of the proposals are usually unclear (Peterson & Bomberg, 1999, p. 189), but according to Héritier (2002), a large proportion of regulatory proposals may be traced back to initiatives of Member States (pp. 194, information from DG environment from 1993).

It is usually the countries which have a strong regulatory tradition the ones proposing a policy to be set at the Community level (Héritier, 2002, p. 182). According to Schucht et al (2001), Germany and the Netherlands were environmental leaders with strict pre-existing legislation on emissions from waste incinerators at the time that the existing WI Directive was being drafted, and while these two countries were about to impose even tighter and broader domestic limits, France and UK had poor pre-existing regulatory standards for municipal waste incineration.

Héritier continues saying that there is a tendency showing that countries with a lax regulatory tradition, usually do not push for laws at community level. For them, *“a complete absence of European regulation is considered to be the most favourable solution”*, the reason being that *“lower standards in their production processes constitute a competitive advantage”* (p. 185).

Héritier also write that when one of the Member States with a strong regulatory tradition sets the initiative for a topic to be legislated, it is usually because they believe there is a problem that needs to be solved at Community level, and usually the problem relates to market or environmental motives (p. 182).

As mentioned with the First Particularity, market motives are related to harmonization issues: *“One of the traditional ways that environmental policy has been brought to the EC agenda has been through individual Member State initiatives that raise harmonisation issues”* (Zito, 2002, p. 246). The strict standards that some states have in their countries, made them worry about the unequal competition of their industries. These countries want their standards to be adopted at EC level so that all the players would have the same economic costs for environmental protection. A concrete case of this situation is presented by Hildebrand (2005):

“The Federal Republic of Germany and The Netherlands were among the strongest supporters of a concerted Community environmental policy. Their actual and foreseen national environmental standards were relatively strict, causing some concern about the resulting economic burdens. The German and Dutch industrial lobbies therefore argued for equal economic costs of environmental protection throughout the EC via the adoption of their standards on a Community-wide basis (p. 28).

There are also environmental reasons, but it is said they would only be taken into account when articulated by powerful states: *“before the 80s environmental concerns were insufficiently articulated to challenge seriously the priority given to free trade. The latent tension between the free-trade and the pollution-abatement objectives could only materialize when the pollution issue was given higher prominence by one powerful actor: the West German government. The Federal Republic was followed in this by The Netherlands, Denmark and Greece. Together they questioned the free-trade priority on environmental grounds (Arp, 2002, p. 258).* However, Arp also continues saying that economic reasons were still more predominant: *“it is not the protection of the environment which is to the fore in many actors' minds but competitive advantage, R&D strategies or product image”* (Arp, 2002, p. 262).

One could say then that two main reasons are seen on why Member States would press for having their local legislation implemented at community level. The first one relates to market reasons, the other to environmental ones.

The first of the market-related reason relates to the **little national adaptation** required and the **competitive advantage** that derives from this. Having the national standards implemented at EC level will benefit the country in the sense that they will have lower implementation costs than the other EC states, in addition to the fact that they would be already familiar with the regulatory instruments, and their industries would be in a front position compared to the industries of the countries which still do not have such legislation: *“states may seek to promote adoption in international agreements of the regulatory instruments that they use domestically not only because they are familiar with them but also in order to secure competitive advantage”* (Steward, 2007, p. 164). Peterson & Bomberg (1999) present the case of the greener states who aimed at rising the European environmental standards to their own level and in this way not only establish favourable competitive conditions for their local industry but also avoid the cost of legal adjustment (Peterson & Bomberg, 1999, p. 180).

An example of how the fear of competitive disadvantage or barriers to trade mobilized the setting of standards at EC level is the case presented by Arp (2002) on the setting of emission standards for cars (pp. 259,260). For a range of domestic reasons (i.e forest damage attributed to car emissions), car pollution became a top political issue in Germany around early 1980s. Bonn started to press for tight car emission standards within the EC, but no other EC partner was interested on this and the initiative was not followed at the EC level. German public opinion supported the idea of setting standards nationally and German industry was ready since they had been selling cars in the USA market which had stricter standards -the ones that Germans wanted. Under this situation the other EC countries would had been in disadvantage since then they would not had been able to sell cars in the German market. This situation was, according to Arp, the trigger for accepting the idea of doing EC-wide standards for car emissions.

Jordan (2005) also mentions the cases in which some Member States pushes the adoption of standards which are higher than their own national standards. He attributes this to a competitive advantage: *"Having unilaterally adopted high standards in their own territories, these states had an obvious incentive to share the political and economic pain, as well as collect first mover advantages by exporting them to other, less environmentally progressive EU states"* (p. 6).

The second reason, of why Member States would press for having their local legislation implemented at community level, is of environmental nature, and that is to **stop the transboundary pollution** which is affecting them. Besides the competitive advantage for the national industries, and the little national adaptation required, countries would benefit from the reduction of transboundary pollution:

"pioneers are important forces behind the development of international and EU environmental policy, they promote the adoption of stringent environmental policies on the basis of their own domestic regulations, and this serves a dual goal, on the one hand strict international measures lead to the reduction of transboundary flows of pollution and thus contribute to achieving national environmental policy goal, on the other hand, competitive disadvantages for industry in the pioneer countries will diminish if others have to take similarly costly measure (Liefferink & Skou Andersen, 2005, p. 49).

However, according to Zito (2002), even though it is possible to place issues on the legislative agenda and to keep them there, the particular EU decision-making process makes it difficult to get a preferred solution accepted by all of the actors for subsequent implementation at EC level (p. 243). At the end, the policy which is implemented at community level is one that has been described as a *patchwork of policy styles*, and one which is the result of a compromise between the Member States.

Regarding the issue of a *patchwork of policy styles*, Héritier (2002) writes that the regulatory process of Europe develops in a context of diverse regulatory interests and traditions, and that for this reason, European regulation is seem sometimes as a policy patchwork where diverse regulatory approaches are linked under one legal document (p. 180). Héritier (2002) writes for example that in the field of air policy, some Directives are shaped according to the German tradition of technology-based emission control, while other Directives are shaped according to the UK model of regulating ambient air quality (p. 180). Krämer (2003) also presents how measures for controlling air emissions from industrial installations were based on the German concept of emission limit values (pp. 271-2).

Peterson & Bomberg (1999) write about the differences in the preferred approaches used by Germany, The Netherlands and the UK for meeting their environmental goals:

"Following a precautionary principle, Germany and the Netherlands have tended to favour standards which measure pollution levels at the point or source of emission. They also tend to favour the application of controls which are as stringent as available technology permits. By contrast, the UK favours ambient or quality standards which measure the pollution's sink (that is, the body of water, land or air where the pollution is absorbed) rather than levels of contamination at their source. According to the British view, emission standards

may vary from place to place, and need be no more stringent than required to meet agreed ambient standards" (p. 180).

Such views can be summarized in the following table

DE	UK	NL
Measurement of pollution levels at point sources.	Measurement of pollution levels at sink.	Measurement of pollution levels at point sources.
Controls given in terms of ELVs for industrial installations.	Controls given in terms of ambient air quality standards.	Controls as stringent as available technology permits.
Controls as stringent as available technology permits.	ELVs may vary from place to place and need be no more stringent than required to meet agreed ambient standards.	

Table 1: Differences in the national regulatory approaches used by some of the Member States in the field of air policy (after Héritier (2002), Krämer (2003), Peterson & Bomberg (1999)).

The final policy is also one which is the result of a compromise between the Member States. Tews (2009) refers for example to the environmental acquis as *"a result of a compromise between environmental leaders and laggards in the EU"* (p. 132). An example of this bargaining was the case of the environmental chapter in the Treaty during the SEA amendment. Peterson & Bomberg (1999) write that at that time, while the Northern States were aiming for higher environmental standards, the Southern States were aiming for more laid and less demanding environmental standards. The result of the bargain involved then the commitment to high environmental standards, at the same time than the commitment to economic aid to help the Southern States in achieving them (Peterson & Bomberg, 1999, p. 180).

However, it is also written how the resemble of the final piece of EU legislation to the original national standards is still visible in some cases *"More often than not, detailed case studies of individual EU environmental standards reveal them to be the aggregated and transformed standards of their original champions modified under the need to secure political accommodation from the powerful veto players. In other words, they bear some resemblance to pre-existing national standards, but are rarely totally similar to any national model, ie the overall picture resembles what it was referred to as a constantly evolving policy patchwork which cannot easily be absorbed into national systems without some prior adjustment"* (Jordan, 2005, p. 7).

Finally, it is also said that the decision process is not only between Member States:

"Environmental decision-making is not simply a process which reflects dominant coalitions of Member States (leader or laggard) pushing their own national system of regulation. National concerns are displaced onto a higher level, but in the process become mediated by institutional bargaining between the Council, Commission and, increasingly the European Parliament" (Peterson & Bomberg, 1999, p. 188).

It is precisely the influence of the Parliament and the Council in these decision-making processes the topic of the Third particularity of the EU context.

Key points

On the 2nd particularity: MEMBER STATES' role in setting EC legislation

The following table presents the key points from the Second particularity of the EU context. These points were organized in five topics.

A	- Even though it is the Commission the body in charge of drafting legislative proposals, it is said that most of the ideas behind the proposals originate from Member States.
B	- It is usually the Member States with the strong regulatory tradition the ones who would like to have their local regulation implemented at the EC level. - Germany and Netherlands were said to have strong regulation in waste incineration before the topic was legislated at EC level.
C	- Member States aim to have their legislation at EC level because of the little national adaptation required, the competitive advantage their industries would obtain, or for environmental reasons - Lower implementation costs for Member State translates in their industries having a competitive advantage. - There are also environmental benefits in that the Member State's internal environmental goals would be achieved easier because of neighboring states having the same set of regulations (meaning also a reduction in the transboundary pollution).
D	- While it is possible for Member States to place an issue on the agenda, it is difficult that such issue would be accepted by all of the actors in the policy-making process.
E	- At the end, the policy which is implemented at community level is one that has been described as a <i>patchwork of policy styles where the diverse regulatory approaches are linked under one legal document</i> , or one which is the result of a compromise between the Member States or one which resembles the pre-existing national standard.

3rd particularity: EUROPEAN PARLIAMENT AND COUNCIL'S negotiating role

While the emphasis of the previous particularity is that the regulatory proposals may be traced back to initiatives originated and inspired by the Member States, the emphasis in this third particularity is on the roles exerted by the different legislative actors in the process of agreeing on the policy to be placed at EC level, that is, what Peterson & Bomberg (1999, p. 188) called an *"institutional bargaining between the Council, Commission and, increasingly the European Parliament"*

The starting point is to say that all legislative proposals must push through the decision-making process and the competing interests of the Member States and the EU institutions. This last category includes the Commission and its Directorates, the European Parliament, and the Council. Each of these EU institutions has the potential to block or even stop the initiative (Zito, 2002, p. 243). According to Peterson & Bomberg (1999), three institutional factors are particularly important in determining how policies are set at the EC level: *"the increase in veto players, the growth in the European Parliament's power and the Commission's enduring role as agenda-setter"* (p. 188).

The legislative procedure could be summarized as follows: the Commission (COM) presents a proposal, then the Economic and Social Committee (ESC) and the Committee of the Regions (CoR) present an opinion on the proposal, opinion which is not legally binding; then the European Parliament (EP) and the Council present their respective opinions and approvals on the proposal. While for most of the EU policies it is required that the Parliament and the Council get to a common agreement (co-decision); for agriculture, taxation and competition matters, the Parliament is consulted (consultation / co-operation) but the final decision is on the Council (European Commission, 2007).

In the area of environmental policy, the Council and the Parliament are considered critical actors. According to the EC Treaties, their roles in this process have changed through time and are defined based on the legal basis of the legislation which is in process: art 100a for market-related matters, and art 175 (ex art 130s) for environmental-related topics (art 235 was used as legal base before the SEA introduced art 130s). These different roles, both from the Council (Box 2) and from the Parliament (Box 3) have had an influence on the setting of environmental policies at the EC level.

Box 2: Role of the Council throughout the different EC Treaties

The way the Council decides on environmental matters has not been the same throughout the history of the EC (see Table 2). The decisions taken by the Council in matters of setting environmental standards had been done first based on the processes of unanimity, and years later on the process of Quality Majority Voting (QMV), this last one meaning that each country gets a weight on their votes depending on the population of the country.

Rome (1957)		SEA (1986)		Maastricht (1993)		Amsterdam (1999)	
Market Art 100	Any-other-business Art 235	Market Art 100a	Environment Art 130s	Market Art 100a	Environment Art 130s	Market Art 95	Environment Art 175
Unanimity	Unanimity	QMV	Unanimity	QMV	QMV	QMV	QMV

Table 2: Evolution of the roles of the Council throughout the different EC Treaties, and based on the article base of the legislative proposal.

Initially, no environmental basis existed in the Treaty of Rome (1957), so whatever environmental law there was proposed, it had to be done under article 100 (market-related matters) or under article 235 (any-other-business). Both articles required unanimity of the states before a legislation was being accepted.

With the amendment made to the Treaty by the SEA (1986), market-related legislation was set under art 100a, and environmental matters, that is, issues which did not affect the common market, were set under art 130s. The figure of Quality Majority Voting (QMV) was introduced for art 100a, but unanimity of the states was still required for art 130s.

With the Maastricht Treaty (1993)-and up to today (2012) QMV was introduced for environmental matters decided under 130s. However, some environmental measures still required unanimity in the Council (Thornton & Beckwith, 2004, p. 88).

The Council has decided on environmental matters either by unanimity or by QMV, and these two processes have influenced the characteristics of the environmental matters in their own ways. Jordan (2005) describes the type of environmental decisions that were taken under unanimity: *"The early 70s is described as the dark ages of EU environmental policy, when unanimous voting meant standards developed at the pace of the most reluctant state or coalition of states"* (p. 5). With unanimity, all Member States had to agree before accepting a legislation, so it was the case that the negative from one Member State would, if not stop, delay the process: *"under the unanimity rule the regulatory wishes of other Member States can be fended off easily and the need to bargain is pronounced"* (Héritier, 2002, p. 183). The reasoning behind unanimity is explained by Thornton & Beckwith (2004): *"the requirement for unanimity gives each Member State a veto over Community decisions which might otherwise be thought an unjustifiable intrusion into national affairs"* (p. 88).

After 1986, when the rule of market-related issues was shifted from unanimity into QMV, Bell & McGillivray (2001) write how the Commission would like to introduce environmental proposals under article 100 in order to speed up the legislative process (p. 126).

In 1993, when the decision over environmental matters was shifted from unanimity into QMV, it was thought that this would speed up the development of environmental matters, mainly because there would not be veto on proposals: *"The use of QMV in the Council ensures that a Member States cannot on its own veto a*

proposal for legislation. This can speed up the Council's decision-making procedures and make higher environmental standards easier to agree" (Thornton & Beckwith, 2004, pp. 87-8).

This last sentence from Thornton & Beckwith (2004) relates to another expected benefit of QMS, being that QMV would bring higher environmental standards. Wilkinson (2002) and Jordan (2005) also writes that QMV *"makes higher environmental standards easier to agree"* (Wilkinson, 2002, p. 42). However, none of these authors provide an explanation of how this is to be achieved, and actually, there are discrepancies in this respect. Golub (2002) for example uses the case of the packaging waste Directive to show how QMV produces Council decisions which are at a level below the lowest-common denominator: *"development of the packaging directive confirms the fears expressed by "green" Member States during the SEA negotiations - that majority voting would remove their veto and allow European environmental standards to be dragged down to the lowest common denominator"* Golub continues saying that having QMV was not guarantee that stricter standards would be agreed on: *"in almost all cases the directive actually approximated recycling rates which already existed or were already planned throughout the Community [...] thus there is little evidence that the grubbier majority will under the directive have to come up with plans to do much more"* (pp. 229-30).

The fear of QMV lowering the standards was actually taken into account when the negotiation of the Treaty of Amsterdam (1999). Thornton & Beckwith (2004) write that art 95(5) was included *"to reassure those Member States which were concerned that the harmonization measures adopted under art. 95 would oblige them gradually to lower their environmental standards because of QMV"* (p. 86). Nevertheless, as mentioned in the 1st particularity, such stricter legislation could be introduced only under certain conditions and related to a specific problem of that Member State, and that it was a measure not used very much.

However, some authors claim there seems to be no correlation between the type of decision process used by the Council (unanimity, QMV) and the strictness of the rules agreed:

"Intergovernmental theorists have difficulty explaining why EU environmental policy sometimes creates standards well above lowest common denominators outcomes or pre-existing national environmental policies. For instance, the EU nitrate standards agreed in the 1970s (even before QMV) were significantly tougher than those in effect at the national level, including those in Germany or the Netherlands. Similarly Weale (environmental rules and rule-making in the European union, journal of European public policy 3, 4: 594-611) demonstrates how integrated pollution control, pushed initially by the UK, took a far more stringent, ambitious form than originally intended or desired by the UK". (source)

It was also said that QMV brought the formation of coalitions between leaders and laggards Member States (Peterson & Bomberg, 1999), and that just as the coalition could be to have stricter standards, it could also be to have laxer ones. Jordan & Jenny (2005) write about the smaller -and often greener states- being *"elbowed out of the way"* by the big states (UK, France and Germany) (p. 46). Inglis (2004) also writes about the Member States, such as Netherlands and Germany, who have traditionally taken the lead in environmental law at the EC level, finding considerable resistance to their pro-active environmental measures when subject to majority voting (Inglis, 2004, p. 146). This is the case because with QMV *"two large Member States jointly opposing action can be overruled by the other Member States"* (Wilkinson, 2002, p. 42).

However, Peterson & Bomberg (1999) also write that there is no such thing as coalitions in environmental policy since *"allies on issues of, say, water quality legislation often oppose one another on issues related to biotechnology or nuclear energy"* (p. 185). That is for example the case of Germany in the previous paragraph, were one author refers to the country as being one of the big blocking states, and another author refers to it as a state which receives resistance to its pro-active initiatives. Peterson & Bomberg (1999) also write about the role taken by some Member States as fence sitters: *"committed to neither camp, occupy an enviable bargaining position [...] their ability to deliver decisive votes under QMV gives them strength well beyond their size or voting weight"* (Peterson & Bomberg, 1999, p. 185).

Some authors also write about QMV bringing imposition of undesired rules, and implementation problems on the long run: *"voting in the council by QMV implies that individual Member States will be obliged to accept and*

implement EC environmental measures to which they are opposed; some of these measures can entail very large capital expenditure programmes which may seem prohibitive, particularly in the poorer Member States" (Wilkinson, 2002, p. 46).

A final point is made on the role of the Council: while some say that the final decision of a piece of law will always be on the hands of the Council: "[the EU's] *decision-making procedures are still prescribed by the final say of the Member States in the Council*"(Arp, 2002, p. 267), other authors claim that this is not the case "*EU policies are not simply the outcome of interstate bargaining, even if the policy process usually appears to culminate in this way in the Council of Ministers. It is a long and complex process involving many different types of actors most of whom are involved in nested games, in serial coalition building and a constant process of bargaining*" (Richardson, 2006, p. 9).

The second actor considered critical in the area of environmental policy making is the Parliament, where its role has also been changing throughout the EC Treaties (Box 3). Parliament's influence has been growing since the end of the 70s, starting from what Jordan (2005) defined as a "*very weakly represented Parliament's role*" (p. 7) until the point where it shares responsibilities with the Council in the setting of environmental standards.

Box 3: Role of the Parliament throughout the different EC Treaties

The role of the Parliament is also dependent on the legal basis of the legislation in process (market-related: art 100a; environmental-related art 130), role which also has been changing throughout time (Table 3).

Rome (1957)		SEA (1986)		Maastricht (1993)		Amsterdam (1999)	
Market Art 100	Any-other-business Art 235	Market Art 100a	Environment Art 130s	Market Art 100a	Environment Art 130s	Market Art 95	Environment Art 175
Consultation	Consultation	Co-operation	Consultation	Co-decision	Co-operation	Co-decision	Co-decision

Table 3: Evolution of the roles of the Parliament throughout the different EC Treaties, and based on the article base of the legislative proposal.

With the Treaty of Rome (1957), and independent of the article base (art 100 or art 235), the Parliament was referred to as the Assembly and was considered a consultative body (Judge, 2002, p. 123). The setting of environmental policy was concentrated between the Council and the Commission; third actors such as the Parliament or oppositional groups could not exert much influence (Peterson & Bomberg, 1999, p. 188).

With the SEA (1986), the influence of the Parliament was determined by the article used as a legislative base: for market-related legislations (art 100a) the influence of the Parliament extended as to be part of the co-operation procedure. Under the co-operation procedure the Parliament had up to two opportunities to propose amendments, but still it was up to the Council to take those amendments or not into account. It is said that the co-operation procedure added significant new powers, and "*elevate its role from that of a hopeless spectator to an important partner in the EC policy-making dialogue*" (Golub, 2002, p. 228). However, this elevated role was only applicable to the market-related articles because for environmentally-related legislation (art 130s) the influence of the Parliament remained at the consultative level.

Maastricht (1993) brought an increase in influence for the Parliament for market-related legislations (art 100a). Parliament's influence is extended by being part of the co-decision procedure. Under this procedure, the Council is obliged to reach an agreement with the Parliament before a legislation is being accepted. It is said the power of Parliament is greater with this process since it can amend or block the Council's common position (Golub, 2002, p. 228). For environment-related legislation (art 130s) the influence of the Parliament is increased since the role of the Parliament moves from being a consultative body, to a co-operation one. The Parliament has then two opportunities to propose amendments; however these are not binding and the final word remains with the Council.

The Treaty of Amsterdam (1999) brings much more influence for the Parliament in the sense that it acts under the co-decision process for both articles (art 100a and art 130s) meaning that Council and Parliament are to reach a common agreement with the Parliament for a legislation to be accepted (Thornton & Beckwith, 2004, p. 87).

The relation of the Parliament with the setting of environmental standards is that the Parliament acts like an environment-friendly actor: it likes to propose stricter standards, and it is open to green pressure groups from outside. This role has, as previously shown, been increasing through time.

According to Wilkinson (2002), the Parliament usually seeks to tighten up the environmental standards presented by the Commission in their proposals and also in the common positions made by the Council (p. 42). Peterson & Bomberg (1999) also write how the Parliament's Environment Committee has contributed to increased stringency in EU rules in areas such as bathing water, urban waste water treatment and air pollution (pp. 189, quoting on Judge, 1993; Judge&Earnshaw, 1994; Collins&Earnshaw, 1993).

Another environment-friendly role presented in literature is that of a proactive actor. According to Thornton & Beckwith (2004), the Parliament has had a dominant role since the early 70s in initiating and increasing environmental protection (p. 88). Jordan (2005) writes that the Parliament "*has fought to become a persistently powerful advocate of higher environmental standards in Europe*" (p. 7) An example of the role of the Parliament is

the case of the process for setting of car emissions' standards: *"The European Parliament's more robust role affected decision making on a range of legislation. The best known example is the 1989 auto emissions directive in which the Parliament was able to force the council to accept standards well above those preferred by most EU Member States"* (Peterson & Bomberg, 1999, p. 188). The proactive role also includes the fact of being open to actors such as environmental pressure groups, who would tend to be neglected or deliberately excluded (Jordan, 2005, p. 7).

Regarding the changes of the Parliament's role through time, Judge (2002) writes for example that after 1986, when the Parliament's role increased from consultation to co-operation, the Parliament was anxious to having article 100a (market) as the legal basis for as much legislation as possible. In these instances, the Commission was seeing the Parliament as an ally in environmental matters (Judge, 2002, p. 125). In addition, the way the Environment Committee of the Parliament reacted to this situation of remaining at a consultative level in environmental matters, was by engaging *"in a pro-active strategy of articulating its own policy concerns to the Commission, rather than simply waiting to react to formal Commission proposals as part of the consultation process"* (Judge, 2002, p. 122).

In 1999, with the change into co-decision process for environmental matters (for market-related took place in 1993) it was said that it *"may strengthen the possibility of more wide-ranging environmental legislation"* (Jordan, 2002, p. 56). However, it was also said that change of the Parliament into co-decision would produce delays in the legislative process (Wilkinson, 2002, p. 38).

Key points

on the 3rd particularity: EUROPEAN PARLIAMENT AND COUNCIL's negotiating role

The following table presents the key points from the Third particularity of the EU context. These points were organized in seven topics.

A	- The roles played by the Council and by the Parliament are considered the most critical ones in the process of regulating environmental matters at EC level.
B	- Both roles have been changing throughout the EC Treaties and are different depending on the article used as legal base for the legislative proposals.
C	- Council's role, with Unanimity it was said that standards were developed at the pace of the most reluctant state or coalition of states. - With the change towards Quality Majority Voting (QMV), it was expected that this would speed up the legislative process and that it would make stricter standards easier to agree. However, these expectations on QMV are disputed; some authors point to the issue of the <i>lowest common denominator</i> , and that despite Member States are in theory able to set stricter standards, this is a practice that is rarely done.
D	- Related to the topic of QMV, is also the one on formation of coalitions. It was said that smaller and greener states are usually <i>elbowed</i> out of the way with their environmental proposals by larger states. - It was also said that in environmental matters there are no permanent coalition groups: allies in one topic will later on oppose each other in another topic.
E	- It is said that the final decision of a piece of law will always be on the hands of the Council.
F	- Regarding the Parliament, it's role increased from being a consultative body to being the one with which the Council has to reach a common agreement before a policy is set at EC level. - During the consultative role, the Parliament's environment committee had a proactive role presenting their concerns to the Commission. - After 1986, when Parliament's role changed from consultation to co-operation for market-related matters, the Parliament was anxious to have the environmental proposals passed under art 100a; the Commission seeing Parliament as an ally in environmental matters. - After 1999, When Parliament's role changed from co-operation to co-decision in environmental related matters, it was expected that the Parliament would bring more wide ranging environmental legislation; however, it was also said that that the co-decision process would produce delays in the legislative process.
G	- For Parliament it is said that it is a proactive actor in environmental matters, that likes to tighten the environmental standards and that is open to external groups.

The information from the particularities, which was summarized in the tables presenting the key points, served as a framework for the search in the working documents of the waste incineration directives. The search was aimed to find the specific particularities of the EU context which influenced the process of formulating the ELVs for waste incineration. The findings from such search are presented in the next section

6.3 Findings

What is presented now is that which was found in the working document for the WI Directives about the particularities of the EU context influencing the process of setting the ELVs for waste incineration. The search was done having on mind the information from the three particularities found in literature.

The findings for each one of these particularities are presented by topics, and for each one of the topics a general conclusion is presented, followed by the concrete examples extracted from the working documents.

1st particularity: MARKET as the motivator for environmental protection

The following table presents the key points of that which was said on section 6.2 about the First particularity of the EU context. The key points were organized in five topics. The information served as guiding framework when reading the working documents to see what –and how– that which was found about the First particularity was reflected in the case of the WI Directives.

A	<ul style="list-style-type: none"> - Priority of the EC is to set a common market where there would be no restrictions for trade. - The different environmental legislations in the Member States were creating obstacle to this free trade. - This became one of the main reasons why the EC decided to set the environmental rules at the EC level.
B	<ul style="list-style-type: none"> - The EC made a distinction: products directly related with the common market are legislated under art 95 (ex art 100a). - Environmental matters –not affecting the common market– are legislated under art 175 (ex art 130s).
C	<ul style="list-style-type: none"> - Only under certain conditions, standard set at EC level under art 95 can be made stricter by Member States. - However, authors have mentioned that such conditions are difficult to achieve and that Member States do not seek them anyway because of the competitive disadvantage that these stricter standards might bring.
D	<ul style="list-style-type: none"> - For the environment related products (art 175) the Member States are free to set stringent measures as long as these do not interfere with the objective of the free market. - It has been said that Member States use it only to maintain the high standards which existed before entering the EC.
E	<ul style="list-style-type: none"> - Literature also documents disputes over the choice of the legal basis. - These disputes are no longer applicable given that the decision-making process for environment and market related articles are very similar.

Table 4: Findings from literature on what was defined as the first particularity of the EU context: MARKET as the motivator for environmental protection

A comment on each one of the topics associated with the First particularity (Table 4), and whether they were being reflected or not in the working documents is presented next.

Topic A: The need for harmonizing environmental regulations because of its implications in the common market.

The need for harmonizing standards at EC level resulted after seeing that national differences in environmental regulation were distorting the market competition (Lee, 2005, p. 16). This need, of harmonizing incineration standards at EC level because of the distortions in the common market that they were/could cause, was evidenced for the three WI Directives.

In the preamble of the Directive 84/360/EEC on “Combating of air pollution from industrial plants” which was the predecessor of the new and existing waste incineration Directives, one of the recitals refers to the need of harmonizing at EC level the conditions for combating air pollution because of the implication that this was having in the common market: “Whereas the disparities between the provisions concerning the combating of air pollution from industrial installations currently in force, or in the process of amendment, in the different Member States are liable to create unequal conditions of competition and thus have a direct effect on the functioning of the common market; whereas, therefore, approximation of the law in this field is required, as provided for by Article 100 of the Treaty;” (84/360/EEC, §7).

At the time the **new** and **existing** WI Directives were being drafted, Member States had different rules covering these two activities: from all the Member States who participated in the drafting of these Directives² only five had adopted specific provisions related to the prevention of air pollution resulting from incineration of waste. These Member States were France, The Federal Republic of Germany, Denmark, Italy and The Netherlands (COM(88) 71 final , pp. 3-7)(new). According to the Commission's proposal these provisions "*differ widely from country to country*" both in legal form and in content (COM(88) 71 final , p. 3)(new).

Table 5 presents the ELVs given in the legislation of those Member States, in particular for PM and Cd (which are the pollutants focus of this project).

Parameter	France	Germany (Fed. Rep.)	Denmark	Italy	The Netherlands
PM	Plants < 1 t/h → 600 mg/Nm ³ Plants 1 - 6 t/h → 150 mg/Nm ³ Plants > 6 t/h → 50 mg/Nm ³	30 mg/Nm ³	40 mg/Nm ³	Not specified	50 (no units given)
Cd	Plants > 6 t/h → 0,3 mg/Nm ³ (Cd + Hg)	0,2 mg/Nm ³	Cd: 0,1 mg/Nm ³ Hg: 0,1 mg/Nm ³	Not specified	Cd: 0,1 mg/Nm ³ Hg: 0,1 mg/Nm ³

Table 5: ELVs for PM and Cd given in national legislation of five Member States before the drafting of the Directives (after (COM(88) 71 final , pp. 3-7)(new).

The issue of the influence in the common market of the different national standards was not mentioned in the working documents for the new or existing WI Directives, but it is acknowledged by the Commission in its proposal for the **hazardous** WI Directive: "*The current differences in national provisions applicable to the incineration of hazardous waste, and in some cases the absence of such provisions, are consequently liable to distort competition, affect the free movement of goods in the internal market and give rise to differences in the protection of health and environment*" (COM (92) 9 final , p. 10)(haz).

At the time the hazardous WI Directive was drafted, legally binding ELVs for hazardous waste incineration plants were laid down in the regulations of four Member States: France, Germany (Fed. Rep.), the Netherlands and Spain (but from the working document one could only extract specific numeric ELVs for FRG and NL) (Table 6). Denmark, Ireland and the UK had guide values (not given in the working document). In the remaining Member States (Belgium, Italy, Luxembourg and Portugal), no ELV or guide values were fixed, and for Greece information was not available. It is said, however, that the competent authorities of Belgium and Luxembourg, in their negotiations with operators do take into account ELV applied in Dutch and FRG law (COM (92) 9 final , p. 20)(haz).

Parameter	Germany (Fed. Rep.) Hazardous/municipal waste (mg/m ³)	The Netherlands Hazardous/municipal waste (mg/m ³)
PM	10 Average time: 24 h	5 Average time: 1 h
Cd	Cd + Tl: 0,05 (mg/m ³) Average time: 0,5 - 2h	Cd: 0,05 Average time: 1 h

Table 6 ELVs for PM and Cd given in national legislation of two Member States before the drafting of the hazardous WI Directives (after (COM (92) 9 final , p. 24)(haz)).

For the drafting of the **all-waste** incineration Directive, the Commission did not specify on the ELVs existing at the Member States but mentioned that "*There is a wide disparity between existing legislation in*

² Member States at this point in time were the EU12 states: Germany (Fed. Rep.), France, Italy, Belgium, Netherlands, Luxemburg, United Kingdom, Denmark, Ireland, Greece, Spain and Portugal.

different Member States and between the best performing plants and those with the lowest performance”(COM (1998) 558 final, 1998, p. 13)(all). However, The ESC, in its opinion on the COM proposal for Directive, emphasized that uniform provisions are needed in order to prevent unfair competition in the European Economic Area (OJ C / 1999/116)(all).

Topic B: The choice of the article base used for the waste incineration Directives

Two options existed for using as a base in the drafting of the Directives: set the Directive under art 95 (ex art 100a) in the case of products directly related with the common market, or set the Directive under art 175 (ex art 130s) for environmental matters which were thought as not to interfere with the common market.

All of the WI Directives were set under what is now known as art 175 (ex article 130s), which means that for the legislators, the main aim of the measures proposed was to protect the environment rather than to guarantee the functioning of the internal market.

However, at some point of the drafting process of the **hazardous** WI Directive, the legislators considered art 95 (ex art 100a) as the base to use for the Directive. This is something which will be presented in more detail in Topic E: *The dispute over the legal basis of the Directive*.

Topic C: Possibility of Member States to set stricter national standards when the Directive was based under art 95 (ex art 100a)

Literature presented that when a Directive was set under art 95, then Member States could –only under certain conditions- be able to set stricter standards for their national legislation. Literature also mentioned that such conditions are difficult to achieve and so that Member States do not try to seek them anyway.

It was thought that the case of the WI Directives could exemplify this case of Member States trying to set stricter standards but that because of the strict conditions, they could not do so. However, it turned out that the case of the WI Directives was not a place to look for such information given that these Directives are not based on art 95 but on art 175.

Topic D: Possibility of Member States to set stricter national standards when the Directive was based under art 175 (ex art 130s)

Literature presented that when a Directive was set under art 175, then Member States could set stricter standards for their national legislation. The information found in the working documents points to the willingness of Member States to set stricter standards for WI in their national legislation.

For example, in one of the Council documents on the drafting of the **new** WI Directive is written that when commenting on the article which referred to the procedure to follow when a waste incineration plant would want to set stricter ELVs (art 8), the UK mentioned that it “*intends to set much more stringent national conditions, significantly reducing the periods during which plant may operate without the operation of the purification devices*” (5312/89 ENV 38)(new). However, it is to be seen if that was finally the case.

Another case of the willingness of the MS to set stricter national legislation on WI can be seen on the dispute over the legal base for the **hazardous** Directive. The COM’s decision was to base its proposal for the Directive on art 100a (COM (92) 9 final)(haz), but The Council’s report writes that the great majority of delegations considered that art 130s was the appropriate legal basis. The favor over this article was, among other reasons, because it would automatically allow Member States to maintain or introduce more stringent provisions than those laid down in the Directive in order to protect health and environment (7482/93 ENV 195)(haz). The Council agreed on the text of the draft Directive, and it decided to change the legal basis to art 130s on the grounds that the main aim of the measures proposed was to protect the environment rather than

to guarantee the functioning of the internal market (PE 207.223/fin)(haz). The COM decided afterwards to modify the legal basis of its proposal by adopting it under art 130s(1) (PE 207.223/fin)(haz).

No evidence of Member States mentioning their desire to set stringent national standards was found in the working documents for the **all-waste** incineration Directive. The only reference to the topic was mentioned by the CoR when they write, in its opinion on the COM's Directive proposal, that they welcome the fact that Member States can set more stringent national requirements (OJ C / 1999 / 198 /37)(all).

However, a report presented to the Commission in 2007 (Ökopol, 2007), writes that stricter ELVs have been imposed in a number of incinerators of different Member States for parameters such as PM, HCl, HF, SO₂, NO_x and Hg (p. 16). However, the report does not specify which countries are those, or the numbers assigned as ELVs.

Topic E: The dispute over the legal basis of the Directive:

Literature presents disputes over the choice of the legal basis of the Directive: depending on the article base it would –among other things- be easier for Member States to set stricter rules than the ones given at EC level.

No disputes over the choice of the legal basis were documented in the case of the new and existing WI Directives, neither in the case of the all-WI Directive.

However, the dispute over the legal basis is seen in the working documents for the **hazardous** WI Directive. The first proposal presented by the Commission for this hazardous WI Directive was based on article 100a (common market) (COM (92) 9 final , p. 10)(haz). But to this, the ESC commented: *“The Committee notes the proposed legal basis and recalls the comments made in earlier Opinions regarding the choice between Article 100a and 130s as the basis for legislation on waste”* (OJ 92/C 332/16, p. §1.2)(haz). In the minutes from the Council's meetings it was stated that while the Commission, supported by France, maintained the proposal under article 100a, the great majority of delegations considered article 130s to be the appropriate legal basis. The reasons for the delegations to favour this article were: *“since it would automatically allow Member States to maintain or introduce more stringent provisions than those laid down in the Directive in order to protect health and the environment”* (7482/93 ENV 195, p. 2)(haz).

At the end, the Commission decided to modify the legal basis. The only thing which was said about this statement is that: *“At its meeting of 23 February 1994 the Committee on the Environment, Public Health and Consumer Protection [Parliament's committee] adopted the report pursuant to article 130s(1) of the EC Treaty. The Commission has since decided to modify the legal basis of its proposal by adopting 130s(1) of the EC Treaty”* (PE 207.223/fin, p. 3)(haz). The document do explain why the Council decided to change the legal basis, and that was *“on the grounds that the main aim of the measures proposed was to protect the environment rather than to guarantee the functioning of the internal market”* (PE 207.223/fin, p. 24)(haz). The rapporteur of the EP was also of the opinion that the main aim of the draft Directive was to protect the environment, and so, that article 130s was the appropriate legal basis (PE 207.223/fin, p. 25)(haz).

NEW Topic: The need to harmonize environmental legislation because of adverse environmental consequences

A topic, not seen in the collected literature, was evidenced in the working documents. The topic relates to the fact that besides the adverse effects on the market competition, legislators fear that the different national standards would lead to issues of *waste tourism* and transboundary pollution.

Regarding waste tourism, it was feared that waste would be transported to regions where the disposal costs were lower. This was manifested in the Commission proposal for the **hazardous** WI Directive: *“The aim of this Directive proposal is to provide for harmonized measures and procedures in order to [...] and at the same time impeding the risk of a flow of waste towards lower cost incineration plants due to less strict environmental standards”* (COM (92) 9 final , p. 10)(haz). The same was mentioned by the EP during the drafting process for the **all-waste** incineration Directive: *“The same standards should apply throughout the EU as minimum conditions so that there is no cross-border transport of waste to regions where the rules are less stringent”* (PE 229.253 / fin, p. 28)(all). The ESC and CoR also emphasized that one of the objectives of the Directive should be to restrict unwelcome cross-border shipments (OJ C / 1999/116)(all), and that uniform waste incineration guidelines are needed to avoid unnecessary transport of waste between countries (OJ C / 1999 / 198 /37)(all).

Another type of environmental problem identified was related to the transboundary nature of waste management, where pollution resulting from a poorly controlled incineration process would migrate to other areas of the Community. Such concern was manifested by the Commission during the drafting of the **all-waste** incineration Directive: *“The pollution caused by incineration and co-incineration plants is of a transboundary nature [...] emissions of acidifying pollutants and ozone precursors generated in one Member States can contribute to environmental degradation in other Member States. Other emissions, such as dioxins, mainly cause local contamination. However, this contamination affects meat and milk products which are traded throughout the Community. It is therefore necessary to introduce legislation setting the same minimum requirements for the whole of the community”* (COM (1998) 558 final, 1998, p. 12)(all).

Nevertheless, it is interesting to see how in this case the justification on the need of harmonizing returns to the adverse effects on the common-market: how the pollution might affect the trading on products such as meat and milk.

2nd particularity: MEMBER STATES' role in setting EC legislation

That which was found on literature about the influencing role of Member States in the policy making process, and which was grouped as Second particularity of the EU context, is presented in the table below. Such key points were organized in five topics. The information served as guiding framework when reading the working documents to see what -and how- that which was found about the Second particularity was reflected in the case of the WI Directives.

A	- Even though it is the Commission the body in charge of drafting legislative proposals, it is said that most of the ideas behind the proposals originate from Member States.
B	- It is usually the Member States with the strong regulatory tradition the ones who would like to have their local regulation implemented at the EC level. - Germany and Netherlands were said to have strong regulation in waste incineration before the topic was legislated at EC level.
C	- Member States aim to have their legislation at EC level because of the little national adaptation required, the competitive advantage their industries would obtain, or for environmental reasons - Lower implementation costs for Member State translates in their industries having a competitive advantage. - There are also environmental benefits in that the Member State's internal environmental goals would be achieved easier because of neighboring states having the same set of regulations (meaning also a reduction in the transboundary pollution).
D	- While it is possible for Member States to place an issue on the agenda, it is difficult that such issue would be accepted by all of the actors in the policy-making process.
E	- At the end, the policy which is implemented at community level is one that has been described as a <i>patchwork of policy styles where the</i> diverse regulatory approaches are linked under one legal document, or one which is the result of a compromise between the Member States or one which resembles the pre-existing national standard

Table 7: Findings from literature on what was defined as the second particularity of the EU context: MEMBER STATES's role in setting EC legislation

A comment on each one of the topics associated with the Second particularity (Table 7), and whether they were being reflected or not in the working documents is presented next.

Topic A: Proposals can be traced back to initiatives from the Member States

Even though it is the Commission the body in charge of drafting legislative proposals, existing literature presents that most of the ideas behind the proposals originate from Member States.

A clear resemble between the pre-existing legislation and the values proposed by the Commission can be seen in the case of the ELVs for the directives on municipal and hazardous WI. However, for the last directive, the Commission did not make reference to the pre-existing legislation. Perhaps they were aiming to update the ELVs having as a base other type of criteria different than that which was in place at the moment?

The Commission proposals for the directives on **municipal** and **hazardous** waste made reference to the legislation in force in the Member States at the moment the Directives were being drafted. Table 8 and Table 9 respectively present the ELVs for PM and Cd which were in force in the Member States at the moment the WI Directives were being drafted. The tables also present the ELVs which were proposed by the Commission and the final value which was set in the Directives. While a resemblance between the ELVs in force at the Member States and those presented by the Commission can be seen in the case of the ELVs for PM in the Proposal for the Hazardous WI Directive (Table 8), a more clear resemble can be seen in the case of the ELVs for Cd for the first two Directives (Table 9).

PM			
Member State	ELVs in force at the MS (mg/Nm ³)	ELV Proposed by the Commission	Final ELV included in the Directive
<i>New and Existing WI Directive (municipal waste)</i>			
France	600, 150, 50 (depending on plant's capacity)	50 mg/Nm ³ (≥ 5 t/h) 100 mg/Nm ³ (< 5 t/h)	80 (plants < 1 t/h, O ₂ : 17%) 100 (plants 1 - 3 t/h, O ₂ : 11%) 200 (plants < 1 t/h, O ₂ : 11%) 30 (plants ≥ 3 t/h, O ₂ : 11%)
Germany (Fed. Rep.)	30		
Denmark	40		
The Netherlands	50		
	(COM(88) 71 final , pp. 3-7).	(COM(88) 71 final , p. 5)	(89/369/EEC, p. art 3)
<i>Hazardous WI Directive (hazardous waste)</i>			
Germany (Fed. Rep.)	10	5: daily average	10: daily
The Netherlands	5	10: half-hour average	30/10: daily (100%/97% of the measurement)
	(COM (92) 9 final , p. 24)	(COM (92) 9 final , pp. 37-8)	(94/67/EC, p. art 7(1))
<i>All WI Directive (municipal and hazardous waste)</i>			
Not documented	-	10: daily 30: half	10: daily 30/10: daily (100%/97% of the measurement)
	-	(COM (1999) 330 final , p. 35)	(2000/76/EC, p. annex V)

Table 8: Comparison between the ELVs for PM in force at the Member States at the moment of the drafting of the Directives, with the ELVs included in the Commission's proposals for Directives, and the final values adopted in the Directives.

Cd			
Member State	ELVs in force at the MS (mg/Nm ³)	ELV Proposed by the commission	Final ELV included in the Directive
<i>New and Existing WI Directive (municipal waste)</i>			
France	Cd+Hg: 0,3 (> 6 t/h)	0,1	Cd + Hg: 0,2 (plants > 1 t/h)
Germany (Fed. Rep.)	0,2		
Denmark	0,1		
The Netherlands	0,1		
	(COM(88) 71 final , pp. 3-7).	(COM(88) 71 final , p. 6)	(89/369/EEC, p. art 3)
<i>Hazardous WI Directive (hazardous waste)</i>			
Germany (Fed. Rep.)	Cd+ Tl: 0,05	Cd+Tl: 0,05	Cd+Tl: 0,05
The Netherlands	0,05		
	(COM (92) 9 final , p. 24)		(94/67/EC, p. art 7(1))
<i>All WI Directive (municipal and hazardous waste)</i>			
Not documented	-	Cd+Tl: 0,05	Cd+Tl: 0,05
	-	(COM (1999) 330 final , p. 35)	(2000/76/EC, p. annex V)

Table 9: Comparison between the ELVs for Cd in force at the Member States at the moment of the drafting of the Directives, with the ELVs included in the Commission's proposals for Directives, and the final values adopted in the Directives.

A concrete example of an ELV which can be traced back to the pre-existing legislation in a Member State is the one on the dioxins and furans. The proposal from the Commission on the guide value for dioxins and furans to be incorporated in the **hazardous** Directive originates from the ELVs given by Germany (Fed. Rep.) and Netherlands: "It might be pointed out that Germany and the Netherlands have fixed this value [0,1 ng Toxic Equivalent/m³] as a legally binding emission limit value (COM (92) 9 final , p. 3)(haz).

For the **all-waste** incineration Directive the Commission did not write any reference to the existing situation of Member States.

Topic B: Member States with strong regulatory tradition aim to see their national legislation at EC level

According to Schucht et al (2001), Germany and the Netherlands were environmental leaders with strict pre-existing legislation on emissions from waste incinerators at the time that the existing WI Directive was being drafted, and while these two countries were about to impose even tighter and broader domestic limits, France and UK had poor pre-existing regulatory standards for municipal waste incineration.

The information from Schucht et al (2001) was confirmed through the findings from the working documents: Germany (Fed. Rep.) and the Netherlands had strong pre-existing legislation on the process of incinerating municipal and hazardous waste, specifying ELVs for these processes. Denmark had also strong pre-existing legislation on the process of incinerating municipal waste, but only guides values for hazardous waste incineration. France also had ELVs for the incineration of municipal waste, but these can be considered laxer when compared to the cases of Germany (Fed. Rep.), the Netherlands and Denmark.

At the time the **municipal** WI Directives were being drafted, five Member States had adopted specific provisions related to the prevention of air pollution resulting from incineration of waste. These Member States were France, Germany (Fed. Rep.), Denmark, Italy, and The Netherlands (COM(88) 71 final , pp. 3-7)(new).

As Schucht et al (2001) write, Germany and the Netherlands had strong pre-existing legislation, with ELVs for PM of 30 and 50 mg/Nm³ respectively. Denmark and Greece could also be classified in this category since they had an ELV of 40 and 30 mg/Nm³ respectively (COM(88) 71 final , pp. 3-7)(new). France – presented by Schucht et al (2001) as having a weak pre-existing legislation- had ELVs for PM ranging between 50 and 600 mg/Nm³ according to the plant's capacity (further detail can be seen in Table 10) (COM(88) 71 final , pp. 3-7)(new). The Commission Proposal does not present any specific information about the situation of UK.

The same trend of strict/weak can be seen in the ELVs for Cd, where Germany (Fed. Rep.), Denmark and the Netherlands had ELVs between 0,1 and 0,2 mg/Nm³; France's ELV for Cd was of 0,3 mg/Nm³ and applicable only to incinerators of more than 6 t/h of capacity (COM(88) 71 final , pp. 3-7)(new).

At the time the **hazardous** WI Directive was being drafted, France, Germany (Fed. Rep.), the Netherlands and Spain had legally binding ELVs; Denmark, Ireland and the UK had guide values; in Belgium, Italy, Luxembourg and Portugal no ELVs or guide values were fixed; and information was not available for Greece (COM (92) 9 final , p. 20)(haz). It was also stated that the authorities of Belgium and Luxemburg, in their negotiations with the operators, they did take into account the ELVs applied in Dutch and German Law, and that most of the countries refer to the need of using best practicable means in order to control the emissions (COM (92) 9 final , p. 20)(haz).

Even though the Commission proposal mentioned the situation of these Member States, the proposal only documents the ELVs given in Germany (Fed. Rep.) and in the Netherlands. Their ELVs for PM are of 10 and 5 mg/Nm³ respectively, and their ELVs for Cd are of 0,05 for both countries (but in Germany the amount corresponds to Cd+Tl) (COM (92) 9 final , p. 24)(haz). The document also presents brief explanations of how the process is regulated in each of the Member States, but no specific information is provided on the strictness/weakness of such national regulations.

As previously mentioned, the Commission did not write any reference to the existing situation of Member States in their proposal for the **all-waste** incineration Directive.

Finally, whether these countries (Germany (Fed. Rep.), the Netherlands, Denmark and France) were aiming to have their national legislation implemented at EC level is something that will be presented in the next Topic: C

Topic C: Reasons behind MS aiming to have national legislation implemented at EC level

Three reasons are documented in literature on why Member States would like to have their national legislation implemented at EC level: (a) little national adaptation required; (b) competitive advantage that their industries would obtain; and (c) for environmental reasons, for example, to stop the transboundary pollution.

As previously seen, Germany (Fed. Rep), the Netherlands, Denmark, and France were the countries that, at the time of the drafting of the Directives, had the most developed body of national legislation on waste incineration. The working documents were explored to see if there was some evidence of these countries pushing to have their national legislation at EC level, and the reasons which would motivate such interest. Attention was placed on the minutes of the Council meeting, specifically into the parts documenting the issues which were subject to debate among the Member States.

Based on the findings, it cannot be said that the countries with the strong regulatory tradition were always aiming to have their legislation implemented at EC level. Some of these countries were willing to go for stricter regulations than the national ones (their industries needing then to invest in order to comply with the new regulations). However, it was also seen the cases of countries with laxer national regulation asking for specific dispensations (in interest of protecting their national industries).

One of the issues which was subject to debate among the Member States' delegations during the drafting of the **municipal** WI Directive was on the setting of ELVs for PM for plants of more than 3 t/h. The Council's chair was initially suggesting a value of 50 mg/Nm³ (4831/89 ENV 28, p. 3)(new), and while some of the Member States were in support of this value of 50 (France, Belgium, the UK and Greece), others were preferring stricter values of 30 (Germany, Italy, the Netherlands and Denmark) (see Table 10).

	Existing conditions on municipal WI at the Member States (after (COM(88) 71 final, pp. 4-7)(new)			Existing ELVs for PM at the MS (mg/Nm ³) (according to plant's capacities)			Preferred ELV suggested by the MS for PM for plants > 3t/h during negotiation at the Council (after (4831/89 ENV 28, p. 3) (mg/Nm ³)
	Legislation in force at the MS	Incineration rates of waste	% of waste which is disposed of in the WI	< 1 t/h	1 - 6 t/h	> 6 t/h	
DE	Dated Feb 86	> 30 %	89% in plants > 6 t/h		30	30	30
FR	Dated Jun 86	appr. 40%	83% in plants < 6 t/h	600	150	50	50
IT	Dated Nov 85						30
NL	Dated Feb 85		100% in plants > 6 t/h		50	50	30
UK							50
DK	Dated 1986				40	40	30 or 40
EL			One small plant		30	30	50 or lower

Table 10: Comparative summary of the provision on WI in force at the time the municipal WI Directives were being drafted.

One could hypothesize that the reasoning behind the preference of the MS could be related to the three previously mentioned reasons of why a MS would like to have their national legislation implemented at EC level.

For example, one could think of *little national adaptation required* in the case of Germany aiming for 30 given that their own incinerators were already complying with this value, or France, with their incinerators complying with 150 (plants of 1 - 6 t/h) and 50 (plants > 6 t/h), and favoring an ELV of 50. Greece is also another case, with only one small incinerator, complying with 30 but preferring 50 (4831/89 ENV 28, p. 3)(new).

One could also think of *environmental reasons* when the Netherlands and Denmark were willing to go for stricter ELVs than the ones they had at national level: the Netherlands, having their own incinerators complying with 50, were willing to go for a stricter ELV of 30, and Denmark's incinerators complying with 40 but willing to compromise for 30 (4831/89 ENV 28, p. 3)(new).

Thirty was finally the number set as an ELV for plants > 3 t/h; the number was decided by the Chair of the Council (4831/89 ENV 28, p. add 1)(new).

A second issue which was subject to debate among the delegations during the drafting of the **municipal** WI Directive, was on the allowance of small incinerators (< 1 t/h) to operate without the need to comply with ELVs. While the UK and Italy were advocating for strict standards independent of the plant's sizes, France, Greece and Spain were favouring laxer standards for small plants (4831/89 ENV 28)(new).

Again, one could hypothesize on *little national adaptation required* in the case of France when favouring laxer standards for small plants: 83% of France's incinerators were plants smaller than 6 t/h, and their plants of less than 1 t/h capacity had to comply with 600 mg/Nm³ as ELV for PM; and Greece favouring laxer standards for small plants given that they only had one small incinerator (COM(88) 71 final)(new).

Unfortunately, no additional information was found on the working documents that could help explain why the UK and Italy were advocating for strict standards independent of the plant's sizes, or why Spain was favouring laxer standards for small plants.

A compromise was agreed at the end which was that national authorities could authorize plants of < 1 t/h to operate without ELVs when (1) special local conditions so require it; (2) a max ELV of 500 mg/Nm³ for PM is complied with, and (3) the conditions from the 84/360/EEC³ Directive were complied with (art 3(3)).

The working documents of the **hazardous** WI Directive do not provide enough background information from each of the MS (for example, amount of incinerators, capacity of these, amount of waste incinerated) that would allow to hypothesize on the reasoning why a Member State's delegation was pushing for a specific piece of the legislation to be implemented at EC level.

The same could be said about the working documents of the **all-waste** incineration Directive. However, one of the topics which was subject to debate among the Member States during the drafting of the Directive could exemplify the desire of some Member States for having dispensations which would benefit their national industries.

The case is on the setting of ELVs for NO_x for incinerators (9300/99 ENV 228)(all). The Commission's proposal included a laxer ELV for NO_x for small existing incinerators: plants of less than 3 t/h were to comply with 400 mg/m³; existing plants of more than 3 t/h and new plants of all capacity had to comply with a value of 200 (COM (1998) 558 final)(all). The Council, after revising the Commission's proposal, not

³ On the combating of air pollution from industrial plants

only agreed with this ELV for NO_x for existing incinerators of less than 3 t/h, but also wanted incinerators between 3-6 t/h capacity to be granted such ELV of 400 mg/m³ (9300/99 ENV 228)(all).

In addition to the Council's proposal, France and Spain were asking for exemption clauses for NO_x and PM that would take account of their specific problems (it was reported that France had approx 225 incinerators at that time, most of them fairly small (PE 229.253 / fin)(all)). There were also other delegations like Denmark and the Netherlands mentioned that in general, the ELVs given to incinerators were not strict enough. The Council's presidency, aiming for a compromise, suggested some exemptions for plants depending on the plant's capacity, and proposing values ranging between 300 and 500 mg/m³, and to be attained at later dates.

At the end, despite COM and EP asking for those exemptions to be deleted, and the opposition of 2 Member States (the Netherlands and Denmark)⁴ the exemptions were included in the final version of the directive.

Topic D: Member states struggling for having their points accepted by all actors

In literature it was stated that while it is possible for Member States to place an issue on the agenda, it is difficult that such issue would be accepted by all of the actors in the policy-making process.

Discrepancies among the Member States on the topics to be implemented at EC level were documented in the minutes from the Council meetings. The examples collected concentrate on the main topic of this PhD project which is on the setting of ELVs.

Among the the topics which were subject to debate among the delegations were, for example, on the ELVs for PM for incinerators of more than 3 t/h; on the ELVs for dioxins and furans; on dispensations on ELVs for plants of less than t/h; and on the ELVs for NO_x. The way such discrepancies was solved was either by reaching a compromise (delegations would drop of their aspirations in the spirit of a compromise), or by being *elbowed* out of the way by bigger coalition of states.

In the case of the new **municipal** WI Directive, three issues were said to have been problematic when trying to reach a common agreement among the delegations. The three issues were related to ELVs: (a) ELVs for PM for plants of more than 3 t/h; (b) ELVs for dioxins and furans; and (c) allowance of small incinerators (< 1 t/h) to operate without the need to comply with ELVs (4831/89 ENV 28, p. add 1)(new).

In the first issue –which was already addressed in Topic C , while Member States such as France, Belgium, the UK and Greece were preferring values of 50 mg/Nm³, other Member States such as Germany, Italy, Netherlands and Denmark were advocating for stricter values of 30 mg/Nm³ (Table 10). Thirty was finally the number set as an ELV for plants > 3 t/h; the number was decided by the Chair of the Council.

In the second issue on the fixing of ELVs for dioxins and furans, while Italy, supported by Netherlands, was aiming to set ELVs for dioxin and furans at EC level, the other delegations and the Commission responded that at that point in time it was not possible to set specific values as ELVs (4831/89 ENV 28)(new). In specific, Germany was against the possibility of including the values suggested by Italy as reference values (4831/89 ENV 28_ADD 1)(new). A compromise was agreed at the end, which was to include in the final text of the Directive a paragraph stating that national authorities could set ELVs on their own discretion until the topic was addressed at EC level (art 3(4)).

In the third issue –which was also addressed in Topic C, on the allowance of small incinerators (< 1 t/h) to operate without the need to comply with ELVs, while the UK and Italy were against dispensation for these small plants, France, Greece and Spain were favouring laxer standards for small plants. A compromise was agreed at the end which was that national authorities could authorize plants of < 1 t/h to operate without

⁴ UK: maintains a substantive reservation on the suggested changes to the exemptions. Other delegations and the Commission presented a scrutiny reservation (9300/99 ENV 228)(all)

ELVs when (1) special local conditions so require it; (2) a max ELV of 500 mg/Nm³ for PM is complied with, and (3) the conditions from the 84/360/EEC⁵ Directive were complied with (art 3(3)).

In the case of the **hazardous** WI Directive, one of the discrepancies documented was on the setting of ELVs for dioxins and furans. Given the discrepancies, the Council's chair presented the compromise solution reached between the EP and the Commission consisting of a limit value of 0.1 ng/m³ to be effective as from 1 January 1997, and to be used as a guide value until then (7482/93 ENV 195, p. 7)(haz). The majority of delegations accepted this proposal. However, some delegations presented additional comments: while some of the Member States were in favour of a stringent solution: Luxembourg and the Netherlands preferring the limit value of 0,1 ng/m³ to be immediately applicable, other member States were in favour of a laxer solution: the UK considered that this proposal was neither scientifically sound nor enforceable, and given the present state of work as regards measurement techniques, proposed an initial limit value of 1.0 ng/m³. France shared the evaluation of the UK, and mentioned that it could accept a limit value of 0,1 ng/m³ as from 1997 on the condition that this figure be confirmed in due time by the Council on the basis of scientific progress and that no guide value is established in the meantime. Other countries commented then on France's position: Denmark, Spain and the Netherlands noted that it was very important to maintain the principle of a guide value, given the dangerous character of these substances.

At the end, the desire of the majority of delegations was followed since the compromise solution reached between the EP and the Commission was included in the final text of the Directive.

Regarding the **all-waste** incineration Directive, The report from the Council presenting their opinion on the Commission's second proposal, documents that the discussion on the annexes laying down the ELVs was long and difficult, and that the Presidency tried to incorporate the different opinions by means of a compromise text which was finally accepted by a substantial number of delegations (9300/99 ENV 228)(all). However, that there were still some difficulties in some issues.

One of these discrepancies, which was documented in a way that it was clear to see the position of the Member States, was on the case of ELVs for incinerators for NO_x (9300/99 ENV 228)(all). While Denmark, and the Netherlands were mentioning that in general, the ELVs given to incinerators were not strict enough, and that they should be more BAT-related, France and Spain were asking for exemption clauses for NO_x and PM that would take account of their specific problems. The Presidency, aiming for a compromise, suggested some exemptions for plants depending on the plant's capacity, and proposing values ranging between 300 and 500 mg/m³, and to be attained at later dates (2008, 2010). In addition to this, France asked for an extension of some of the deadlines until 2012 and Spain asked for a laxer ELV for some plants. The Netherlands and Denmark were actually suggesting stricter values (100 and 200) and to be applicable to all plants. At the end, despite the Commission and the EP asking for those exemptions to be deleted, and the opposition of two Member States (NL and DK)⁶ the exemptions were included in the final version of the directive.

Some of the discrepancies previously mentioned were solved by means of reaching a compromise (as it will be presented in the following Topic E), or by being *elbowed* out of the way by a bigger coalition of states (as it will be presented in Topic C of the 3rd particularity).

Topic E: Final piece of legislation: patchwork of policy styles, result of compromises, resemble with the pre-existing national standard

Literature presents that at the end, the policy which is implemented at community level is one that has been described as a *patchwork of policy styles* where diverse regulatory approaches are linked under one legal

⁵ On the combating of air pollution from industrial plants

⁶ UK: maintains a substantive reservation on the suggested changes to the exemptions. Other delegations and the Commission presented a scrutiny reservation (9300/99 ENV 228)(all)

document. It is also described as one which is the result of a compromise between the Member States, or one in which the final piece of legislation resembles the original national standard.

Regarding the **patchwork of policy styles**, one can see how the three WI Directives could classify – as Hérítier (2002) writes – as some of those Directives in the field of air policy which are shaped according to the German tradition, that is, they follow the characteristics of what was described by Peterson & Bomberg (1999) as the preferred approaches used by Germany and the Netherlands: Measurement of pollution levels at point sources; controls given in terms of ELVs for industrial installations; controls as stringent as available technology permits.

Maybe because as Krämer (2003) points out, the EC measures for controlling air emissions from industrial installations were based on the German concept of emission limit values (pp. 271-2), and such Directive 84/360/EEC on “*Combating of air pollution from industrial plants*” was the predecessor of the new and existing waste incineration Directives. The Directives that followed: the hazardous and the all-waste, could be seen as continuation of the task initiated with the municipal Directive, in particular the last Directive which is the result of the merge of two Commission proposals: one proposal from 1997 for amending the hazardous WI Directive by establishing ELVs for water discharges, and a second proposal from 1998 for reinforcing the municipal Directives by extending the scope to the waste excluded from the hazardous Directive.

Nevertheless, one can also see the UK delegation in one of the Council’s meetings, during the drafting of the hazardous Directive making some comments which relate to what Peterson & Bomberg (1999) was mentioning about the UK not being too much in favor of the ELV approach: “*according to the British view, emission standards may vary from place to place, and need be no more stringent than required to meet agreed ambient standards*” (p. 180). Some of these type of remarks found in the working documents are for example: “*UK expressed its general concern that the proposal comply with the subsidiarity principle and that the proposed ELVs are enforceable as well as technically achievable and environmentally justifiable*” (7482/93 ENV 195)(haz). There were also some comments made by the UK delegation which question the necessity of regulating issues as EC level instead of leaving them to be decided at national level:

- *UK maintains a general reservation on the possibility of co-incineration; it considers that the proposed modalities –too detailed and difficult to apply – could better be left to the Member States (7482/93 ENV 195)(haz).*
- *UK writes that the future setting of ELVs for waste water discharges should be up to national authorities (7482/93 ENV 195)(haz).*

The issue of reaching a **compromise** could be seen exemplified in the case of the ELVs for dioxin and furans during the drafting of the new municipal WI Directive. Two Member States were aiming to have ELVs at EC level (IT, NL), other Member States were against this, and so, what was agreed at the end was to include in the final text of the Directive a paragraph stating that national authorities could set ELVs on their own discretion until the topic is addressed at EC level. Another example of compromise also seen in the drafting of the municipal WI Directive was on the dispensation for small plants: while some Member States were against these dispensations (UK, IT), others were advocating for such dispensations (FR, EL, ES); a compromise was agreed at the end which was that national authorities could authorize plants of < 1 t/h to operate without ELVs when but only under certain conditions (4831/89 ENV 28)(new).

A similar case is seen during the drafting of the **all-waste** Directive when the measurements for dioxins and furans and heavy metals was being discussed. During the Council meeting, Finland and France suggested to reduce the frequency of measurement. A new paragraph was then inserted, providing certain criteria under which the frequency for measuring these parameters could be reduced until certain date. It was documented that most delegations accepted “*in spirit of compromise*” (9300/99 ENV 228)(all).

Finally, one can also see that the final piece of legislation resembles the original pre-existing national standard in the specific case of the hazardous directive and the German (Fed. Rep.) standards, particularly in ELVs for PM (Table 8, pg: 183), for Cd + Tl (Table 9, pg: 183) and for dioxins and furans.

One could say that, based on the findings, as a point of departure for a topic to be legislated for the first time at EC level, the Commission makes proposals based on the pre-existing legislation of the Member States, and that afterwards, other factors become much more important in the process of updating the legislation. For example, for the all-waste Directive, the Commission responded to the EP's suggestion of having ELVs based on BAT (COR/1998/947)(all), by saying that this was not possible since "*the proposed values of the Commission are justified by cost-benefit evaluations and take into consideration the specific nature of the different processes*" (COM (1999) 330 final)(all).

3rd particularity: EUROPEAN PARLIAMENT AND COUNCIL's negotiating role

The following table presents the key points of that which was said on section 6.2 about the Third particularity of the EU context. The key points were organized in seven topics. The information also served as guiding framework when reading the working documents to see what –and how- of that which was found about the Third particularity was reflected in the case of the WI Directives.

A	- The roles played by the Council and by the Parliament are considered the most critical ones in the process of regulating environmental matters at EC level.
B	- Both roles have been changing throughout the EC Treaties and are different depending on the article used as legal base for the legislative proposals.
C	- Council's role, with Unanimity it was said that standards were developed at the pace of the most reluctant state or coalition of states. - With the change towards Quality Majority Voting (QMV), it was expected that this would speed up the legislative process and that it would make stricter standards easier to agree. However, these expectations on QMV are disputed; some authors point to the issue of the <i>lowest common denominator</i> , and that despite Member States are in theory able to set stricter standards, this is a practice that is rarely done.
D	- Related to the topic of QMV, is also the one on formation of coalitions. It was said that smaller and greener states are usually <i>elbowed</i> out of the way with their environmental proposals by larger states. - It was also said that in environmental matters there are no permanent coalition groups: allies in one topic will later on oppose each other in another topic.
E	- It is said that the final decision of a piece of law will always be on the hands of the Council.
F	- Regarding the Parliament, it's role increased from being a consultative body to being the one with which the Council has to reach a common agreement before a policy is set at EC level. - During the consultative role, the Parliament's environment committee had a proactive role presenting their concerns to the Commission. - After 1986, when Parliament's role changed from consultation to co-operation for market-related matters, the Parliament was anxious to have the environmental proposals passed under art 100a; the Commission seeing Parliament as an ally in environmental matters. - After 1999, When Parliament's role changed from co-operation to co-decision in environmental related matters, it was expected that the Parliament would bring more wide ranging environmental legislation; however, it was also said that that the co-decision process would produce delays in the legislative process.
G	- For Parliament it is said that it is a proactive actor in environmental matters, that likes to tighten the environmental standards and that is open to external groups.

Table 11: Findings from literature on what was defined as the third particularity of the EU context: EUROPEAN PARLIAMENT AND COUNCIL's negotiating role

A comment on each one of the topics associated with the Third particularity (Table 11), and whether they were being reflected or not in the working documents is presented next.

Topic A: Roles of the Council and of the Parliament are the most critical

The point of departure was the fact that according to literature, the Council and the Parliament played the most critical roles in the process of regulating environmental matters.

However, the working documents also present the opinions given by the Economic and Social Council (ESC) and the Committee of the Regions (CoR). That which was explored here was whether these two actors played some role in the legislative process, even though their opinions are not-binding into the legislative process.

While the opinions of the ESC were presented for the legislative processes following the drafting of all of the four WI Directives, the opinions of the CoR were presented only for the last Directive (Table 12). Such situation was because the figure of the CoR only entered the legislative process after the Treaty of Amsterdam.

Based on the findings, one can say that the ESC presents a position which favors environmental protection. Some of the suggestions presented by the ESC were seen reflected in the final version of the Directives. However, there is not enough information in the working documents that could point to the ESC as being the original author of such suggestions given that most of them were also argued by the EP and the Member State's delegation, even though the ESC delivered its opinions before the EP and the Council did so. About the role of the CoR, it is difficult to establish its position towards environmental matters given its participation in only one of the Directives.

Directive		Article base	Start-end of the process	Treaty ruling	Decision process for Council	Decision process for Parliament	Other opinions presented
New (89/369)	Council Directive	130s	Feb 1988 Jun 1989	SEA (1987)	Unanimous	Consultation	ESC
Existing (89/429)	Council Directive	130s	Feb 1988 Jun 1989	SEA (1987)	Unanimous	Consultation	ESC
Hazardous (94/67)	Council Directive	130s(1)	Mar 1992 Dec 1994	Maastricht (1993)	QMV	Co-operation	ESC
All-waste (00/76)	Directive of the EP and of the Council	175(1)	Oct 1998 Dec 2000	Amsterdam (1999)	QMV	Co-decision	ESC, CoR

Table 12: Summary of legislative procedures used for the drafting of the EU WI Directives.

The opinion of the ESC for the drafting of the new **municipal** WI Directive presented suggestions and opinions which were in line with environmental protection. Among these comments are for example on the encouragement to use the waste hierarchy for waste management; on the need of having dumps subject to stringent environmental rules; on the use of waste heat for electricity generation; on the recycling of reusable materials in order to reduce operating costs of incinerators; and on the application of stringent rules on incinerators as a measure that will make public have a better acceptance on this method for disposal of waste (OJ C /1988/318)(new).

In the specific topic of ELVs, the ESC is somehow disappointed at the ELV for PM proposed by the Commission: "[...] the Committee would have expected the Commission to have based itself on the state of the art [...] at least as far as new plants are concerned" [...] given that dust contains pollutants such as heavy metals and polychlorinated dioxins and furans, the limit value proposed by the Commission seems too high. The state-of-the-art figure is 30 mg/m³" (OJ C /1988/318 , p. 4)(new).

Some of the comments provided by the ESC are also in line with those suggestions made by the Parliament. Among these common comments are for example that an ELV should also be given for the heavy metal

Cobalt, and that HF and SO₂ should be measured continuously. It is important to clarify that while the ESC delivered its opinion to the Council in September 1988, the Parliament delivered its opinion in February 1989.

In the same manner, some of the comments provided by the ESC are also in line with suggestions provided by the Member States' delegations during the Council meetings, for example, on the disagreement on dispensation to ELVs applicable to small plants (UK and IT are also against these dispensations, see findings from Second Particularity); or on the need to have an ELV for dioxins and furans to be set at EC level (as IT and NL delegations were promoting).

Some of the suggestions made by the ESC are seen reflected in the final version of the Directive, ie, the ELV for PM being 30, and the approval on dispensations to ELVs applicable to smaller plants under certain conditions. However, these are topics which were also being argued by the Member States' delegations during the negotiations (see findings from Second Particularity) and one cannot see, based on the information collected from the working documents, that such arguments had the point of departure the information provided by the ESC, even though the ESC delivered its report before the first Council meeting: the ESC gave its opinion in September 1988 and the minutes of the first Council meeting were dated February 1989.

Regarding the **hazardous** Directive, the opinions of the ESC are also in line with environmental protection. For example, the ESC hopes that after the rigorous points presented in the Directive's proposal, there will be an increase in public acceptability of incineration; at the same time, the ESC supports the introduction of public information measures aimed to address their concern about incineration of hazardous waste. The ESC also writes that the proposal did not make enough emphasis on waste prevention, and they are concerned with the attention that is given to the technologies for final disposal. They are also open to the idea of disposing hazardous at non-specialist plants as long as these plants respect the criteria given in the proposal; the ESC also suggests that the industrial processes which might be used for waste disposal (for example rotary cement kilns, steel furnaces) should be specified in the Directive (OJ 92/C 332/16)(haz).

Among the comments which were in line with the EP and the Council was the one on the change of the legal basis of the Directive. ESC writes in its opinion from October 1992 (OJ 92/C 332/16)(haz) "*the committee notes the proposed legal basis and recalls the comments made in earlier opinions regarding the choice between art 100a and 130s as the basis for legislation on waste*" The Council's report from June 1993 (7482/93 ENV 195)(haz) writes that the great majority of delegations considered that art 130s was the appropriate legal basis. The EP also writes in its report from November 1992 (PE 201.493/fin)(haz) on art 130s as being the appropriate legal base of the proposed Directive.

The article base was in effect changed, but this change, from art 100a to art 13s, did not bring any additional role to the ESC.

Just as with the previous two Directives, the opinions presented by the ESC during the drafting of the **all-waste** incineration Directive also reflects a position with favors environmental protection. For example, the ESC writes in its opinion from February 1999 (COR/1998/947)(all) that it agrees that the municipal Directives need to be replaced because the co-incineration requirements of the time may be less stringent than the requirements for incinerators; that the ELVs for dioxins and furans are only addressed in the hazardous Directive; that it is not satisfied that the ELVs appeared to be based on cost-benefit assessment rather than on BAT, and that the description of the assessment included in the explanatory memorandum does not clearly explain the criteria for such assessment.

Among the suggestions made by the ESC which are also in line with the suggestions from the EP, is the need to emphasize in the objectives of the Directive a restriction to the unwelcome cross-border of waste shipments (OJ C / 1999/116)(all). The EP in its 1st opinion from March 1999 also write about the need to

harmonize standards to avoid waste tourism (OJ C / 1999 / 219 / 264)(all). Another point in common is on the ESC's opinion that co-incinerators need to comply with same requirements as for incinerators (OJ C / 1999/116)(all). The EP also write about co-incineration not being covered by community rules (OJ C / 1999 / 219 / 264)(all). This last point was also supported by some of the Member State's delegations: Denmark and the Netherlands were supporters of the idea that co-incinerators need to comply with same requirements as for incinerators (9300/99 ENV 228)(all).

Regarding the role of the CoR, this one becomes part of the legislative process only after Amsterdam enters into force in 1st May 1999. In the particular case of the drafting of the waste incineration Directives, the CoR is consulted for its opinion in the **all-waste** Directive given that Amsterdam entered into force at the time such Directive was being negotiated.

It is difficult to establish the CoR's position towards environmental matters based on their comments. Among these ones, which were adopted in March 1999 (COR/1998/947)(all) were for example, the important of making a distinction between co-incineration as waste-recovery operation, and incineration as waste-disposal process; its disagreement with the use of incineration in plants where the waste components are incorporated into products, like in the cement industry; and that ELVs for co-incineration seem to be not as stringent as the ones applicable to incinerators.

Topic B: Different Roles of the Council and of the Parliament changing through the EC Treaties

The changes that the Council and the Parliament's roles have had through time, and which were brought by the amendments to the Treaty: SEA (1986), Maastricht (1993), and Amsterdam (1999), can be seen reflected in the EU Directives for waste incineration (Table 12, pg: 191).

The Council's decision process consisted of unanimity during the municipal WI Directives, and it changed to QMV for the hazardous and the all WI Directives.

The Parliament was seen as a consultative body offering non-binding opinions during the drafting of the municipal WI Directives; then during the drafting of the hazardous WI Directives it had up to two opportunities to propose amendments (co-operation) but the decision was still on the hands of the Council; and finally with the drafting of the all-waste incineration Directive, Parliament and Council had to reach a common agreement for the Directive to be accepted (co-decision).

The drafting process for the **municipal** WI Directives started in February 1988 and was carried under the Treaty establishing the European Economic Community (SEA, which entered into force in July 1987, was in place). The basis for the proposal was art 130s, where Council was acting under unanimity and the Parliament had a consultative role.

For the **hazardous** WI Directive, the drafting process started in March 1992 under the Treaty establishing the European Economic Community (SEA was still in place) and it was changed to the Treaty establishing the European Community (when Maastricht entered into effect in November 1993). The Directive was published in December 1994.

The initial Commission's proposal (under SEA) was based under art 100a (market-related) with Council acting under quality majority voting (QMV) and in co-operation with the Parliament. In June 1993 this legal base was changed - as argued by the ESC, the EP and the Council- to art 130s⁷. SEA was still valid at this time, meaning that the roles of the Council and the Parliament would change: from QMV under art 100a to unanimity under art 130s for the Council, and from co-operation under art 100a to consultation under art 130s for the Parliament. However, no mention of these changes in roles was made in the working

⁷ This was explained in Topic E of the First particularity

documents: perhaps they were waiting for the five months in which Maastricht was to enter into force? Maastricht would bring, under art 130s, QMV to the Council and co-operation for the Parliament. This is how the drafting of the Directive continued and ended: QMV for the Council, and co-operation for the Parliament, under art 130s and with Maastricht in force.

For the **all-waste** incineration Directive, the drafting process started in November 1997 under the Treaty establishing the European Community (Maastricht was still in place), and it changed in May 1999 to the Treaty establishing the European Community when Amsterdam entered into force. The Directive was published in December 2000.

The initial article base was art 130s(1), Council acting under QMV and in accordance with procedure of article 189c (co-operation) with the EP. The change of Treaty brought a renumbering of the articles: art 175(1) instead of art 130s(1), and the EP working under co-decision (art 251, ex art 189b) and not under co-operation with the Council. This is how the drafting of the Directive continued and ended: QMV for the Council, and co-decision for the Parliament, under art 175(1) and with Amsterdam in force.

The following topics aim to explore the implications that the changes in the roles of the Council and of the EP had in the formulation of ELVs during the drafting of the WI Directives.

Topic C: Council's role: from unanimity to QMV, and the influence of this in the formulation of standards

According to literatures, with unanimity it was said that standards were developed at the pace of the most reluctant state or coalition of states, and that standards were not as high as they could be since, with only one Member States that were in disagreement, the whole process would stop.

No evidence was collected from the working documents that during unanimity the standards were not as high as they could be because with the opposition from one Member State, then the process would stop. On the contrary, one case presents an strict ELV being set despite the desire of some of the Member State's delegations. The other two documented cases present the delegations reaching a middle point by means of compromises.

In a similar way, no evidence was collected from the working documents that with QMV stricter standards were easier to agree. The information collected point to compromises being reached, sort of middle point between strict and lax ELVs. However, other documented cases present that despite the change to a new directive, the same ELVs from the pre-existing Directive were maintained, and also, that laxer ELVs were given to the a new parameter which was added to list of pollutants to control: NOx

Unanimity was the Council's decision process for the drafting of the **municipal** WI Directives. The working documents were explored to see if there were cases on which one could see that standards were developed at the pace of the most reluctant state or coalition of states, or that the standards were not as high as they could be because with the opposition from one Member State, then the process would stop. However, no evidence of this was seen in the working documents for the municipal Directive: one case presents an strict ELV being set despite the desire of some of the Member State's delegations (ELV for PM for plants of more than 3 t/h). The other two cases documented in the working documents point, more than the process stopping because of the opposition of a particular Member States, to the delegations reaching a middle point by means of compromises.

The only case which was documented in the working documents, in which it was clear the different positions of the Member States, was the debate on the setting of ELVs for PM for plants of more than 3 t/h capacity⁸: the Council's chair was initially suggesting a value of 50 mg/Nm³ (4831/89 ENV 28, p. 3)(new), and while some of the Member States were in support of this value of 50 (France, Belgium, the UK and

⁸ This case was already explained in the Second particularity, Topic C:

Greece), others were preferring stricter values of 30 (Germany, Italy, the Netherlands and Denmark) (see Table 10, pg: 185). Based on what literature said, that during unanimity lower standards were set, one could think that 50 would be the value which was finally decided, but no, it was actually 30. The number was decided by the Chair of the Council, at that time in the Spanish Presidency, who decided to present this value as a compromise solution for the divergences among the Member States (4831/89 ENV 28, p. 3)(new). According to the Parliament (EP A2 1988/391) and to the ESC (OJ C /1988/318)(new), this number of 30 was said to be the state-of-the art for the time.

The other two cases described in the working documents for the municipal Directive in which one could see the different positions of the Member States' delegations was on the setting ELVs for dioxins and furans, and on the allowance of small incinerators (< 1 t/h) to operate without the need to comply with ELVs (4831/89 ENV 28)(new)⁹. However, rather than seeing that the process would stop because of the desire of one Member State, the information collected presented that the delegations reached a compromise in both cases: for the case of dioxins and furans, a paragraph was inserted stating that national authorities could set ELVs on their own discretion until the topic was addressed at EC level; and for the case of dispensations to small plants, it was also agreed that national authorities could authorize plants of < 1 t/h to operate without ELVs when certain conditions would apply.

QMV was the Council's decision process for the drafting of the hazardous and of the all-waste incineration Directives. According to literature, the change from unanimity towards QMV created the expectation that the process would be speeded up, and that stricter standards would be easier to agree.

Findings from the drafting of the **hazardous** Directive did not evidence the fact that, according to existing literature, under QMV stricter standards were easier to agree. In the two cases documented in the working documents, which referred to debates among Member States on the setting of ELVs, and in which one could see clearly the position of the delegations, a compromise was reached, sort of middle point between strict and lax ELVs.

The first case was about setting ELVs for 30-min average for pollutants different than heavy metals, a compromise was reached, sort of middle point between lax and strict ELVs. The Council, in its draft¹⁰, proposed laxer ELVs than the ones suggested by the Commission in its proposal¹¹. The response of the delegations to the Chair's proposal was that the "*values are acceptable to the great majority of delegations in the context of a global compromise*" (7482/93 ENV 195)(haz). Some Member States' delegation (Italy, the Netherlands and the UK) suggest that some of the ELVs proposed by the Commission should be maintained. The final draft of the Directive which was approved by the Council included a compromise: two set of values for the 30-min average were presented: one set of laxer values which needed to be complied with by 100% (those which were proposed by the Chair), and another set of stricter values which were to be complied with by 97% (those which were proposed initially by the Commission and were supported by some of the delegations: I, NL and UK) (7689/93 ENV 211)(haz).

The second case –which has been discussed in previous sections, was about setting ELVs for dioxins. Again, the final decision was in terms of a compromise. However, the compromise was agreed between the Commission and the EP: the Commission was proposing to have a guide value for dioxins and furans, and the EP was aiming to have such number as an ELV and not as a guide value. The compromise reached included that such number would be seen as the ELV to comply with as from a specific date in the future, and until such date Member States were to look at such number as a guide value (PE 207.223/fin, p. 24)(haz). The role of the Council's delegation in this case was to approve or not such compromise (7482/93 ENV 195)(haz). Despite specific comments made by some the delegations¹², the majority of the delegations accepted this proposal(OJ 94/C232/02, 1994, p. 49)(haz).

⁹ This case was already explained in the Second particularity, Topic C:

¹⁰ (7014/2/93 ENV 164 REV 2)

¹¹ (COM (92) 9 final)(haz).

¹² See them in the findings from the 2nd particularity, topic D: *Member states struggling for having their points accepted by all actors*

QMV was also the Council's decision process for the drafting of the **all-waste** incineration Directive. Findings from the working documents did not evidence the fact that, according to existing literature, under QMV stricter standards were easier to agree. On the contrary, in this case it was shown that the same ELVs from the pre-existing Directive were maintained, and that laxer ELVs were given to the new parameter which was added to list of pollutants to control: NO_x

The proposed ELVs presented by the Commission corresponded to nearly the same ELVs which were included in the hazardous Directive: for the daily average it was the same ELVs; for the 30-min average it was the values which had to be complied with by 100% (to remember the hazardous Directive included another set of values for the 30-min average which were to be complied by 97%, the Commission removed this list of ELVs for the new Directive's proposal; and it was also the same ELVs for the heavy metals. A change, however, was that a new parameter was introduced in the list of pollutants to control: NO_x (Bulletin 1997 / 11 / 1.3.155)(all).

The Council, after revising the Commission's proposal, introduced some changes to these proposed ELVs:

- for the daily average: (a) it introduced a laxer ELV for PM applicable only for existing plants and until certain date; (b) it also made laxer the ELVs for NO_x for existing plants between 3-6 t/h capacity; (c) authorized even laxer ELVs for NO_x for existing plants until certain date
- for the 30-min average: (d) re-introduced the set of ELVs which were to be complied with by 97% (the ELVs were then the same as the ones included in the hazardous directive)
- for heavy metals (e) it added provisional ELVs to be complied for hazardous incinerators (9300/99 ENV 228)(all).

The Council's report from this meeting also documents that the discussion on the annexes laying down the ELVs were long and difficult, and that the Presidency tried to incorporate the different opinions by means of a compromise text which has been accepted by a substantial number of delegations (9300/99 ENV 228)(all). However, that there were still some difficulties in some issues.

One of these issues, in which one could see a clear position between the delegations -some Member States asking for stricter and others asking for laxer standards, was the case of ELVs for incinerators for NO_x (9300/99 ENV 228)(all). While Denmark and the Netherlands were advocating for stricter ELVs, France and Spain were asking for exemption clauses for NO_x that would take account of their specific problems. The Presidency, aiming for a compromise, suggested some exemptions for existing plants depending on the plant's capacity, and proposing laxer ELVs to be attained at later dates. Despite the opposition from Denmark and the Netherlands, the laxer ELVs were granted.

Topic D: Formation of coalitions at the Council

Literature presents that, related to the topic of QMV, was the issue of formation of coalitions. It was said that smaller and greener states are usually *elbowed* out of the way with their environmental proposals by larger states. It was also said that in environmental matters there are no permanent coalition groups: allies in one topic will later on oppose each other in another topic.

The working documents were explored in search of cases in which it was clear to see the position taken by the different delegations. A general trend can be seen with the three Directives, and that is: while Denmark and The Netherlands would tend to ask for stringent environmental requirements, Spain and France would be asking for laxer requirements or dispensations. Italy would also, in some occasions, be asking for stringent regulations. The position taken by Germany and the UK is not always the same: sometimes they would be asking for stringent requirements, and other times they would be asking for laxer ones.

Based on the findings, one could say that in the topic of waste incineration, Denmark and the Netherlands would tend to form a coalition bringing forward stringent environmental proposals. It cannot be said, based

on the findings, that they tended to be *elbowed* out of the way by larger states. As it can be seen in the tables (Table 13 to Table 15) most of the time the final decision would refer to a compromise involving a medium point, and just as there was one occasion in which their proposal was accepted (Stricter ELV for PM for plants > 3 t/h during the drafting of the municipal Directives), there was also one occasion in which they were *elbowed* out of the way (laxer ELV for NO_x during the drafting of the all-waste Directive).

Topic	Coalition 1	Coalition 2	Final decision
Stricter ELV for PM for plants > 3 t/h	DE, IT, NL, DK (aiming for 30)	FR, BE, UK, EL (aiming for 50)	30 Decided by the chair of the council
Set ELV for dioxins and furans at EC level	IT, NL: favouring this	Other delegations, COM, DE: rejecting this	Compromise: include in the final text of the Directive a paragraph stating that national authorities could set ELVs on their own discretion until the topic was addressed at EC level
Allowing small incinerators (< 1 t/h) to operate without the need to comply with ELVs	ES, FR, EL: favouring laxer standards for small plants	IT, UK: aiming for strict standards independent of plant's size	Compromise: national authorities could authorize plants of < 1 t/h to operate without ELVs but only under certain conditions

Table 13: Summary of the topics discussed during the drafting of the **municipal** directives which were documented in the working documents and in which the position taken by the different delegations could be clearly seen.

Topic	Coalition 1	Coalition 2	Final decision
Set ELVs for dioxins and furans at EC level as from a specific date in the future	L/NL: ELVs should be immediately applicable	UK: not possible to comply with an ELV	Compromise: ELV as from a specific date in the future, to be used as guide value until then
Laxer ELVs for 30-min average for pollutants different than heavy metals	Most of delegations: agree	I/NL, UK: prefer more stringent values	Compromise: two sets of values which need to be complied with by 100% (those which were proposed by the Chair), and others which were to be complied with by 97% (those which were proposed initially by the Commission and were supported by some of the delegations: I, NL and UK)

Table 14: Summary of the topics discussed during the drafting of the **hazardous** directive which were documented in the working documents and in which the position taken by the different delegations can be clearly seen.

Topic	Coalition 1	Coalition 2	Final decision
Laxer ELVs for NO _x for existing plants between 3-6 t/h capacity.	F, E: asking for exemption clauses for NO _x that would take account of their specific problems	DK, NL: the ELVs given to incinerators are not strict enough; suggested stricter values and applicable to all plants	Laxer the ELVs for NO _x for existing plants between 3-6 t/h capacity: granted
Even laxer ELVs for NO _x for existing plants until certain date	F, asked for a further extension of the dispensation; E asked for a laxer ELVs for some plants	DK, NL: suggested stricter values and applicable to all plants	Even laxer ELVs for NO _x for existing plants until certain date: granted

Table 15: Summary of the topics discussed during the drafting of the **all-waste** directive which were documented in the working documents and in which the position taken by the different delegations can be clearly seen.

Topic E: Final decision is on Council's hands

While some authors claim that the final decision of a piece of law will always be on the hands of the Council (Arp, 2002), others write that this is not the case (Richardson, 2006).

The working documents were explored to see which of the two positions was applicable in the case of the drafting of the WI Directives. The conclusion is that the two positions were seen given that the decision power that the Council has depends on the article base of the directive, and with the amendments of the Treaty, the decision power of the Council have been also changing.

The WI Directives were drafted under different Treaties and their article base have also been modified, so it is possible to see the two positions of the Council: Council having the final decision in their hands (for the municipal and the hazardous Directives); and Council sharing the final decision with the EP (for the all-waste Directive).

Table 16 summarizes the decision power that the Council had during the drafting of the WI Directives.

Municipal	
Art base	130s SEA: <i>"The Council, acting unanimously on a proposal from the Commission and after consulting the European Parliament and the Economic and Social Committee, shall decide what action is to be taken by the Community."</i> (SEA, 1986).
Decision power of the Council	The setting of environmental policy was concentrated between the Council and the Commission; EP could not exert much influence.
Role of EP	the EP only had a consultative role.
Hazardous	
Art base	Art 130s(1) Maastricht: <i>"The Council, acting in accordance with the procedure referred to in Article 189c and after consulting the Economic and Social Committee, shall decide what action is to be taken by the Community in order to achieve the objectives referred to in Article 130r"</i> (Maastricht, 1993).
Decision power of the Council	Under the co-operation process with the EP (art 189c).
Role of EP	Under the co-operation procedure the Parliament had up to two opportunities to propose amendments, however these were not binding and the final word remained with the Council.
All-waste	
Art base	Art 175(1) Amsterdam: <i>"The Council, acting in accordance with the procedure referred to in Article 251 and after consulting the Economic and Social Committee and the Committee of the Regions, shall decide what action is to be taken by the Community in order to achieve the objectives referred to in Article 174"</i> (Amsterdam, 1999).
Decision power of the Council	Under the co-decision process with the EP (art 251, ex art 189b) Under this procedure, the Council is obliged to reach an agreement with the Parliament before a legislation is being accepted.
Role of EP	the power of Parliament is greater with the co-decision process since it can amend or block the Council's common position.

Table 16: Decision power of the Council under the drafting of the WI Directives.

An example of the power of the Council under the co-operation procedure can be seen in the working documents for the **hazardous** Directive, when the EP in its 2nd reading rejected the Council's common position (OJ 94/C341/04)(haz), one of the points being the disagreement over the laxer ELVs proposed by the Council¹³. The Council maintained its position (ignoring the EP) and adopting the Directive by unanimity (11980/94 ENV 325)(haz).

An example of the shared power that the co-decision brought to the EP, is that during the drafting of the **all-waste** Directive, the EP and Council went to conciliation committee to reach an agreement between the amendments that had been proposed by the EP and the Council did not want to take into account. Among the results of this is that the EP reached its goals of having stricter ELVs for NO_x for new cement kilns: the Council was proposing an ELV of 800 mg/m³ applicable to all plants, and the EP wanted a distinction for ELVs based on antiquity, that is, they agreed with the 800 for existing plants, but suggested 500 for new plants. At the end the EP's position was accepted in this conciliation committee (PE 287.576)(all). However, the examined documents do not present the points which the EP had to give up during this conciliation procedure.

Topic F: Parliament's role (consultative – cooperation – codecision)

Literature documents the increase of the EP's role throughout the Treaties, going from being a consultative body, to be one with which the Council has to reach a common agreement before a policy is set at EC level. The EP had the three different roles during the drafting of the WI Directives: consultative during the municipal directive, co-operation during the hazardous directive and co-decision during the all-waste directive.

¹³ The case of the setting of ELVs for 30-min average for pollutants different than heavy metals which was presented in Topic C of the Third particularity

The drafting of the **municipal** Directives started in March 1988 and were carried out having art 130s as a base. SEA, which entered into force in July 1987, was in place. The EP had then a *consultative* role.

The drafting of the **hazardous** directive started in March 1992 under SEA and having art 100a (market-related) as base. This implied co-operation for the Parliament. However, the article base was changed later on to art130s¹⁴. This change of article base implied a change in the roles of the EP: from co-operation under art 100a to consultation under art 130s. However, no mention of these changes in roles was made in the working documents of the directive, perhaps they were waiting for the five months in which Maastricht would enter into force given that Maastricht would maintain the roles –also for the Council- which were initially given under art 100a, that is, Maastricht would bring back co-operation to the EP.

A question would be if the co-operation under art 100a SEA was different to co-operation under art 130s of Maastricht, and the answer is no, there is no difference in between the procedures.

One could wonder whether the EP tried to make pressure to maintain the Directive under art 100a, then with the change that brought Maastricht, the EP would have played a co-decision role (which gives it more power). But then again, the Council wanted art 130s as the base of the Directive because of the ability that Member States would have obtained for applying stringent national norms if they wanted to.

Such tactics were presented by Kaika & Page (2003) who write that the EP decided to use a number of delaying tactics to ensure that the Water Framework Directive (WFD) was not considered until the Amsterdam Treaty had come into force in May 1999: *“this would have the result that the WFD would be passed using the co-decision procedure, not the existing co-operative procedure. Under co-decision the Parliament has equal legislative powers with the Council of Ministers [...] this meant that the Parliament would have additional negotiating power and could force the Council of Ministers to make some concessions over the content of the WFD”* (p. 319)

The drafting of the **all-waste** directive started 1997 under Maastricht and having art 130s as a base. When Amsterdam entered into force in May 1999, art 130s was re-numbered to art 175(1) and at the same time modified. It now referred to following the procedure given in art 251 (ex art 189b) instead of following the procedure which was given in art 189c. Art 189b referred to co-decision, an art 189c to co-operation. This meant that for the drafting of the all-waste incineration Directive, the EP and the Council had to reach a common agreement before the Directive could be accepted.

Whether the EP brought wider ranging environmental legislation after having its role changed to co-decision, as Jordan (2002) writes, is something that will be explored in the following Topic G.

Topic G: Parliament: is a proactive actor in environmental matters (tight standards, open to external groups)

According to literature, it was expected that with the change into co-decision, the Parliament would bring more wide ranging environmental legislation. However, findings from the working documents point that in fact, the EP had been presenting wide range proposals even during the drafting of the other directives. Another issue is that given its low role at that time, such proposals were not being taken into account. However, during that time, the EP also managed to have some of their important points accepted despite its low influential role. For example, when the Commission accepted to include an ELV for dioxins and furans in the draft of the Directive, suggestion which was also accepted later on by the Council. Nevertheless, the new powers that the EP got with the co-decision procedure are considered much more influential, like the possibility of going into a conciliation committee with the Council. Such was the case during the drafting of the all-waste directive, even if in this case, it only meant the acceptance of one of the many suggestions presented regarding stricter ELVs.

¹⁴ This was explained in Topic E of the First particularity

Among the suggestions delivered by the EP on the draft of the **municipal** directive, was to have a more stringent the ELVs for PM (10 instead of 50 mg/Nm³ for plants > 5 t/h; and 60 instead of 100 mg/Nm³ for plants < 5 t/h); that cobalt should be included in the group of heavy metals for which an ELV was assigned, and that such ELV should be made 1 instead of 5 mg/Nm³); and that the maximum amount of PM to be discharged by plants < 1 t/h should not be 600 but 350 (OJ C / 1989/69)(new).

The suggestions on ELVs for PM between 10 and 60 could be considered of a *wide environmental ranging* given that the final values which were approved by the Council were between 50 and 200 mg/Nm³

However, from the list of amendments presented, only two were taken into account, both related to clarifying the meaning of a sentence (for example, delete the "*not entailing excessive costs*" from the paragraph referring to the making of ELVs based on best available technologies).

It is to wonder whether the fact that the Parliament delivered its opinion at a rather late stage was among the reasons for its amendments not to be taken into account. The Parliament was asked for its opinion in March 1988, and while the Council expected to receive it by July 1988, this was delivered in February 1989. The Council presented the comments on the directive's draft in February 1989 and in the minutes of such meeting it is stated that the EP's opinion was not yet available (4831/89 ENV 28)(new). Or maybe it was just the fact that the EP had a consultative role, their opinions considered non-binding.

Perhaps the most relevant of the suggestions delivered by the EP on the draft of the **hazardous** directive, was on the regulation of dioxins through an ELV and not just through a guide value as the Commission was proposing.

The Commission proposal mentions that it did not seem appropriate to fix an ELV for dioxins and furans. Their argument was that it was not possible to measure such emissions continuously with the measurement techniques of the time: "*it takes some weeks to obtain the results of each spot check measurement, and strictly speaking, this result gives evidence for the operation of the plant during the sampling time only. Extrapolating from this result the emission behaviour of a plant burning waste of possibly different composition, would not be a reliable method to ensure the respect of a legally binding limit value. Neither would it be appropriate to close down a waste incineration plant on the basis of an analytical result obtained some weeks only after having taken the sample*" (COM (92) 9 final)(haz). The EP, in its 1st reading of the proposal (November 1992), disagrees with the fact that a guide value is given for dioxins and furans and not an ELV (PE 201.493/fin, 1992)(haz). The EP argued that the standard could be applied properly, and provided the example of the Netherlands who had to apply such limit value after 1993. According to the EP, industrial process made it possible to go below those limits.

The report from the EP also writes that they knew that this point of the ELVs was not going to be accepted by the Commission, and that after several discussions, the EP rapporteur and the Commission agreed on some compromise amendments, one of which was on having an ELV for dioxins but as from 1st January 1997 (PE 207.223/fin)(haz).

The commission proceeded then to amend the proposal including this and other comments mentioned by the EP. They also write that the CEN was currently working on a measurement method which would allow to determine the concentration of dioxins and furans in the range of 0,1 ng/m³ with a sufficient certainty. However, that such method was not expected to be available before the end of 1995, and after having one year's experience with the method, then it could be expected that the ELV for dioxins and furans could be legally binding from 1 January 1997 (COM(93) 296 final)(haz).

This compromise solution was presented by the Council's chair to the delegations (7482/93 ENV 195, p. 7)(haz). Despite specific comments made by some the delegations¹⁵, the majority of the delegations accepted this proposal (OJ 94/C232/02, p. 49)(haz).

¹⁵ See them in the findings from the 2nd particularity, topic D: *Member states struggling for having their points accepted by all actors*)

Another example of EP tightening the standards could be seen during the drafting of the **all-waste** directive. The case is on the setting of ELVs for NO_x for incinerators. The Commission's proposal included a laxer ELV for NO_x for small existing incinerators: plants of less than 3 t/h were to comply with 400 mg/m³; existing plants of more than 3 t/h and new plants of all capacity had to comply with a value of 200 (COM (1998) 558 final)(all). The Council, after revising the Commission's proposal, not only agreed with this ELV for NO_x for existing incinerators of less than 3 t/h, but also wanted incinerators between 3-6 t/h capacity to be granted such ELV of 400 mg/m³ (9300/99 ENV 228)(all). In addition to the Council's proposal, France and Spain were asking for exemption clauses for NO_x that would take account of their specific problems¹⁶ (9300/99 ENV 228)(all). The EP supported the Commission proposal on its suggestion that lax ELVs for NO_x were to be granted only to existing incinerators of less than 3 t/h, and not to existing incinerators of less than 6 t/h as the Council was suggesting: *"incineration plants with a nominal capacity of 3 to 6 tonnes per hour cannot be regarded as small incineration plants, and should consequently comply with the normal emission limit value for NO_x"* (PE 232.378, p. 26)(all). At the end, despite COM and EP asking for the ELV for NO_x for plans between 3-6 t/h to be 200 and not 400 mg/m³, and to delete the exemptions from the text of the directive, also, despite the opposition of two Member States (NL and DK)¹⁷ the lax ELV was maintained for those incinerators and the exemptions included in the final version of the directive.

Yet another example of EP asking for stricter ELVs during the drafting of the all-waste directive is the case of ELVs for co-incineration. In general, the EP was concerned that co-incineration was not being covered by the same rules as incinerators. In its report for the 1st reading of the COM proposal, the EP suggested that the definition of co-incineration should be clarified; that the type of hazardous waste to be co-incinerated should be clarified; and in general, that stricter ELVs should be applicable to co-incinerators (OJ C / 1999 / 219 / 264)(all). EP suggests then stricter ELVs for cement kilns, combustion plants and other co-incinerating sectors (OJ C / 1999 / 219 / 264)(all).

The Commission responded to this such amendments could not be accepted since the ELVs proposed by the Commission *"are justified by cost-benefit evaluations and take into consideration the specific nature of the different processes"*. Besides, that asking other co-incinerating sectors to comply with the ELVs for incinerators –as being suggested by the EP, would *"prevent the co-incineration of waste in any other industrial sector"* (COM (1999) 330 final)(all).

In its report for the 2nd reading, the EP writes that it does not accept that some of the amendments presented by them in the 1st reading were not considered, among which are the ones related to ELVs for co-incinerators. Therefore, they proposed them again responding that the cost-benefit analysis made by the Commission to justify the ELVs contain *"a number of significant imponderables and unjustifiable assumptions"* and that it is better to look at what is already possible in the existing plants (PE 232.378)(all). The EP then writes that significant technical progress has been made with the cleaning of exhaust gases, and that at present (March 2000) much lower ELVs are already being achieved, even lower than the values proposed by the EP in the report of the 1st reading (March 1999) (PE 232.378)(all).

To the EP's list of amendments, the Council responded that it was unable to approve them, and so, a Conciliation Committee between the EP and the Council was formed. The committee reached an agreement in October 2000. However, from all of the changes suggested by the EP regarding stricter ELVs for co-incinerators, the only one which is reported as being accepted was the one on having stricter ELVs for NO_x for new cement kilns: the Council was proposing an ELV of 800 mg/m³ applicable to all plants, and the EP wanted a distinction for ELVs based on antiquity, that is, they agreed with the 800 for existing plants, but suggested 500 for new plants. At the end the EP's position was accepted in this conciliation committee (PE 287.576)(all).

¹⁶ Further information on the delegation's position on this case can be seen in topic C: *Reasons behind MS aiming to have national legislation implemented at EC level on the 2nd particularity*

¹⁷ UK: maintains a substantive reservation on the suggested changes to the exemptions. Other delegations and the Commission presented a scrutiny reservation (9300/99 ENV 228)(all)

6.4 Analysis of the findings

An analysis is presented for each one of the particularities:

1st particularity: MARKET as the motivator for environmental protection

In the case of the WI Directives it can be seen that the main motivator for harmonizing the waste incineration standards at EC level was because of the distortions that the different national standards could or would bring to the common market. The information from the working documents pointed to the different set of national standards existing in some of the Member States at the time. However, the working document did not present any concrete evidence that distortions in the market place were already taking place, nevertheless, the legislators kept on referring to the possibility of such situation taking place.

Despite this fear of distortions on the common market, all of the directives were set having art 175(ex art 130s) as the legal base. This could be interpreted that for the legislators, the incineration process was considered something which could create distortions to the common market, however not in a direct way. It seems then that for the legislators the main aim of the directives was to provide measures at EC level for protecting the environment, at the same time than allowing Member States to introduce more stringent measures if they desired to –as long as these measures would not affect the common market.

In fact, information found in the working documents points not only to the willingness of some of the Member States to set stricter standards for WI in their national legislation, but also to the opposition presented by some of the Member States to the Commission's proposal of having the hazardous Directive under art 100a. In addition, a report from 2007 writes that stricter ELVs have been imposed in a number of incinerators of different Member States for parameters such as PM, HCl, HF, SO₂, NO_x and Hg (Ökopol, 2007)

These findings go against that which was reported in literature, about Member States not wanting to set stricter national standards, even when the directive is set under art 175, because of the adverse competitive implications this would bring to their national industries.

The fear over the distortions that the different national standards could or would bring to the common market was not the only motivator for harmonizing the waste incineration standards at EC level. Information from the working documents also point at the fear over waste tourism and transboundary pollution which could result these different national standards. However, it was interesting to see how the justification on the need of harmonizing returned to the adverse effects on the common-market: how the pollution might affect the trading on products such as meat and milk.

2nd particularity: MEMBER STATES's role in setting EC legislation

In the case of the WI Directives it can be seen that the Commission based some of its proposed ELVs on the pre-existing legislation of some of the Member States, mainly those countries which had the most developed body of national legislation on waste incineration at the time that the directives were being drafted: Germany (Fed. Rep), the Netherlands, Denmark, and France. The ELVs of the first three countries being much more stringent than the ELVs of the last one.

The working documents also show how during the Council meetings, some delegations from these countries were aiming to have their national standards implemented at EC level. Information from existent literature allowed to hypothesis on the motives behind these Member States: either to benefit their own industries, or to gain competitive advantage, or to gain dispensations given the conditions of their own incinerators. However, collected finings also show how some of these countries were willing to compromise for stricter standards than the ones of their national legislation (perhaps because of environmental reasons or where there other reasons behind?). Independent of the motives, what is clear is that, according to the minutes of

the Council's meetings, it was the delegations from these countries the one who were most active in the process of deciding the standard to be set at EC level.

The working documents also showed the topics which were subject to debate among the delegations, being these for example on the ELVs for PM for incinerators of more than 3 t/h; on the ELVs for dioxins and furans; on dispensations on ELVs for plants of less than t/h; and on the ELVs for NO_x, among others.

The way such discrepancies was solved was either by reaching a compromise (delegations would drop of their aspirations in the spirit of a compromise), or by being *elbowed* out of the way by bigger coalition of states.

The three WI Directives could be classified –as Hérítier (2002) writes –as some of those Directives in the field of air policy which were shaped according to the German tradition, that is, they follow the characteristics of what was described by Peterson & Bomberg (1999) as the preferred approaches used by Germany and the Netherlands: measurement of pollution levels at point sources; controls given in terms of ELVs for industrial installations; and controls as stringent as available technology permits. The issue of the final piece of legislation resembling the original pre-existing national standard can be seen in the specific case of the hazardous directive and the German (Fed. Rep.) standards, particularly in the ELVs for PM, Cd + Tl and, dioxins and furans.

One could say that, based on the findings, as a point of departure for a topic to be legislated for the first time at EC level, the Commission makes proposals based on the pre-existing legislation of the Member States, and that afterwards, other factors become much more important in the process of updating the legislation (cost-benefit analysis, progress of technology) like it was the case with the last directive on all-waste incineration.

3rd particularity: EUROPEAN PARLIAMENT AND COUNCIL'S negotiating role

In the case of the WI Directives it can be seen that the ESC presented a position which favors environmental protection. Some of the suggestions presented by them were seen reflected in the final version of the Directives. However, there is not enough information in the working documents that could point to the ESC as being the original author of such suggestions given that most of the suggestions were also argued by the EP and by the Member State's delegation, even though the ESC delivered its opinions before the EP and the Council did so. About the role of the CoR, it is difficult to establish its position towards environmental matters given its participation in only one of the Directives.

The changes that the Council and the Parliament's role have had through time, and which were brought by the amendments to the Treaty: SEA (1986), Maastricht (1993), and Amsterdam (1999) can be seen reflected in the EU Directives for waste incineration. The drafting of the WI directives experienced a Council acting under unanimity as well as under QMV. It also experienced the EP having a consultative, a co-operation and a co-decision role.

The findings did not point to that which was said in literature about low standards being set when the Council was acting under unanimity. On the contrary, one case presents a strict ELV being set despite the desire of some of the Member State's delegations; and the other two documented cases present the delegations reaching a middle point by means of compromises.

In a similar way, the findings did not point to that which was said in literature about stricter standards being easier to agree when the Council was acting under QMV. The information collected point to compromises being reached, sort of middle point between strict and lax ELVs. However, other documented cases present that despite the change to a new directive, the same ELVs from the pre-existing Directive were maintained, and also, that laxer ELVs were given to the new parameter which was added to list of pollutants to control: NO_x.

Based on the findings, one could say that in the topic of waste incineration, Denmark and the Netherlands would tend to form a coalition bringing forward stringent environmental proposals. Spain and France –not always forming coalitions– would tend to ask for laxer requirements or dispensations. The position taken by Germany and the UK was not always the same: sometimes they would be asking for stringent requirements, and other times they would be asking for laxer ones.

It was only in one occasion which was documented that the *greener states* – Denmark and the Netherlands – *were elbowed out of the way with their environmental proposals*. In fact, most of the times, a topic subject to debate would be solved by means of a compromise. Compromises among the Member States' delegations have been seen documented even in the working documents for the municipal directives, when, according to the existing literature, the opposition of one member state could stop the process, something which was associated with *unanimity* as the process to be followed by the council.

The decision power that the Council has depends on the article base of the Directive. With the amendments of the Treaty, the decision power of the Council changed. It went from having the total decision on its hands (with the municipal, and hazardous directives), to having to share the decision power with the EP (all-waste directive).

According to literature, it was expected that with the change into co-decision, the Parliament would bring more wide ranging environmental legislation. However, findings from the working documents point that in fact, the EP had been presenting wide range proposals even during the drafting of the other directives (for example, ELVs for PM ranging between 10 and 60, when the Commission proposed values between 50 and 100, and the final values approved by the Council were between 50 and 200). Another issue is that given its low role at that time, such proposals were not being taken into account. However, during that time, the EP also managed to have some of their important points accepted despite its low influential role. For example, when the Commission accepted to include an ELV for dioxins and furans in the draft of the Directive, suggestion which was also accepted later on by the Council. Nevertheless, the new powers that the EP got with the co-decision procedure are considered much more influential, like the possibility of going into a conciliation committee with the Council. Such was the case during the drafting of the all-waste directive, even if in this case, it only meant the acceptance of one of the many suggestions presented regarding stricter ELVs.

6.5 Summarizing

The aim of this chapter was to identify how has the EU context influenced the formulation of ELVs for waste incineration. Such aim was explored by means of finding the particularities from the EU context which influenced the numbers given as ELV.

The point of departure was to present what different authors have mentioned about the particularities of the EU context which influenced the formulation of environmental standards. The search was made on literature dealing with the topic of EU environmental policy making.

Out of this process, three topics –or particularities– were distinguished, particularities which kept on appearing as having an influence in the setting of ELVs at the EU level. These particularities were codified as:

- 1st: Market as the motivator for environmental protection
- 2nd: Member States' role in setting EC legislation
- 3rd : European Parliament and the Council's negotiating role

This information found in literature served as a framework for the search of the specific particularities in the working documents of the waste incineration directives. *Working documents* refer to the official documents written by the EU institutions for the drafting of the four Directives on waste incineration. These documents

refer to the proposals for Directives written by the European Commission, the reports presented by the European Parliament and the Council of Ministers, and the opinions given by the Economic and Social Committee and the Committee of the Regions.

A summary of the main findings is presented in the tables below for each one of the three particularities

1st particularity: MARKET as the motivator for environmental protection	
A. The need for harmonizing because of distortions in the common market	
Municipal	<ul style="list-style-type: none"> - <i>“the disparities between the provisions concerning the combating of air pollution from industrial installations currently in force [...], in the different Member States are liable to create unequal conditions of competition and thus have a direct effect on the functioning of the common market”</i> preamble of the Directive 84/360/EEC on <i>“Combating of air pollution from industrial plants”</i> which was the predecessor of the new and existing waste incineration Directives - Five out of the EU12 MS had adopted specific provisions related to the prevention of air pollution resulting from incineration of waste: F, D (Fed) DK, I, NL. Their provisions <i>“differ widely from country to country”</i> both in legal form and in content.
Hazardous	<ul style="list-style-type: none"> - <i>“The current differences in national provisions applicable to the incineration of hazardous waste, and in some cases the absence of such provisions, are consequently liable to distort competition, affect the free movement of goods in the internal market and give rise to differences in the protection of health and environment”</i> - Four out of the EU12 MS had laid down legally binding ELVs for hazardous waste incineration plants: F, D (Fed), NL, E. Three had guide values: DK, IE, UK.
All-waste	<ul style="list-style-type: none"> - Commission did not specify on the ELVs existing at the Member States, but mentioned that <i>“There is a wide disparity between existing legislation in different Member States and between the best performing plants and those with the lowest performance”</i> - ESC: emphasized that uniform provisions are needed in order to prevent unfair competition in the European Economic Area.
GENERAL	The need of harmonizing incineration standards at EC level because of the distortions in the common market that they were/could cause was evidenced for the three WI Directives
B. Choice of article base: art 95(ex art 100a) for products related to the common market, or art 175(ex art 130s) for environmental matters not interfering with common market	
Municipal	130s (SEA)
Hazardous	130s(1) (Maastricht)
All-waste	130s(1) (Maastricht) renamed 175(1) (Amsterdam)
GENERAL	All of the WI Directives were set under what is now known as art 175 (ex article 130s), which means that the main aim of the measures proposed in the directive was to protect the environment, and that for the legislators, incineration processes was considered as something which is not directly related to the common market
C. Setting stricter national standards when the Directive is based under art 95(market)	
Municipal	Not applicable
Hazardous	Not applicable
All-waste	Not applicable.
GENERAL	It was thought that the case of the WI Directives could exemplify the case of Member States trying to set stricter standards but that because of the strict requirements, they could not do so. However, it turned out that the case of the WI Directives was not a place to look for such information given that these Directives are not based on art 95 but on art 175
D. Setting stricter national standards when the Directive is based under art 175(env)	
Municipal	UK mentioned that it <i>“intends to set much more stringent national conditions, significantly reducing the periods during which plant may operate without the operation of the purification devices”</i> . However, it is to be seen if that was finally the case
Hazardous	On the dispute over the legal base for the hazardous Directive, the great majority of delegations considered that art 130s was the appropriate legal basis and not art 100a as it was being proposed by the Commission. The favor over this article was, among other reasons, because it would automatically allow Member States to maintain or introduce more stringent provisions than those laid down in the Directive in order to protect health and environment
All-waste	No evidence of Member States mentioning their desire to set stringent national standards was found in

	the working documents for the all-waste incineration Directive. The only reference to the topic was mentioned by the CoR when they write, in its opinion on the COM's Directive proposal, that they welcome the fact that Member States can set more stringent national requirements
GENERAL	Information found in the working documents points to the willingness of Member States to set stricter standards for WI in their national legislation, and that despite what was reported in literature, about Member States not wanting to do so because of the adverse competitive implications this would bring to their national industries, a report from 2007 writes that stricter ELVs have been imposed in a number of incinerators of different Member States for parameters such as PM, HCl, HF, SO ₂ , NO _x and Hg (Ökopol, 2007)
E. Dispute over legal basis	
Municipal	Not mentioned
Hazardous	The ESC, EP and Council were in disagreement with the choice made by the Commission of having art 100a as the legal base for the hazardous Directive. the great majority of delegations considered article 130s to be the appropriate legal basis, among the reasons being that "it would automatically allow Member States to maintain or introduce more stringent provisions than those laid down in the Directive in order to protect health and the environment". The legal basis was then changed to art 130s by the Council "on the grounds that the main aim of the measures proposed was to protect the environment rather than to guarantee the functioning of the internal market"
All-waste	Not mentioned
GENERAL	No disputes over the choice of the legal basis were documented in the case of the new and existing WI Directives, neither in the case of the all-WI Directive. The case was seen in the drafting of the hazardous Directive, and at the end the article chose as legal basis was art 175 (ex art 130s)
NEW. The need to harmonize because of adverse environmental consequences	
Municipal	Not evidence seen
Hazardous	"The aim of this Directive proposal is to provide for harmonized measures and procedures in order to [...] and at the same time impeding the risk of a flow of waste towards lower cost incineration plants due to less strict environmental standards"
All-waste	<ul style="list-style-type: none"> - "The same standards should apply throughout the EU as minimum conditions so that there is no cross-border transport of waste to regions where the rules are less stringent". Comments made by the ESC and the COR were also on the same line - "The pollution caused by incineration and co-incineration plants is of a transboundary nature [...] emissions of acidifying pollutants and ozone precursors generated in one Member States can contribute to environmental degradation in other Member States. Other emissions, such as dioxins, mainly cause local contamination. However, this contamination affects meat and milk products which are traded throughout the Community. It is therefore necessary to introduce legislation setting the same minimum requirements for the whole of the community".
GENERAL	A topic, not seen in the collected literature, was evidenced in the working documents. The topic relates to the fact that besides the adverse effects on the market competition, legislators fear that the different national standards would lead to issues of <i>waste tourism</i> and transboundary pollution. Nevertheless, it is interesting to see how the justification on the need of harmonizing, returns to the adverse effects on the common-market: effect of pollution might affect the trading on products such as meat and milk

2nd particularity: MEMBER STATES' role in setting EC legislation

A. Proposals traced back to initiatives from MS

Municipal	The Commission proposals for the Directive made reference to the legislation in force in the Member States at the moment the Directive was being drafted <ul style="list-style-type: none"> - The ELVs for PM in the pre-existing national legislation ranged between 30 – 50 (DE, DK, NL) and between 50-150 (F). The ELVs proposed by the Commission were between 50-100 - The ELVs for Cd in the pre-existing national legislation ranged between 0,1-0,2 (DE, DK, NL) and 0,3 (F). The ELVs proposed by the Commission was of 0,1
Hazardous	The Commission proposals for the Directive made reference to the legislation in force in the Member States at the moment the Directive was being drafted <ul style="list-style-type: none"> - The ELVs for PM in the pre-existing national legislation were of 10 and 5 (DE and NL respectively). The ELVs proposed by the Commission was of 5 (daily average) and 10 (30 min average) - The ELVs for Cd in the pre-existing national legislation were of 0,05 (DE: Cd+TL; NL: Cd. The ELVs

	proposed by the Commission was of 0,05 for Cd+Tl
All-waste	The Commission proposals for the Directive <u>did not</u> made reference to the legislation in force in the Member States at the moment the Directive was being drafted.
GENERAL	A clear resemble between the pre-existing legislation and the values proposed by the Commission can be seen in the case of the ELVs for the directives on municipal and hazardous WI. However, for the last Directive, the Commission did not make reference to the pre-existing legislation. Perhaps they were aiming to update the ELVs having as a base other type of criteria different than that which was in place at the moment?
B. MS with strong regulatory tradition aim to see their national legislation at EC level	
Municipal	The Commission proposal presents that at the time the municipal Directives were going to be drafted, five Member States had adopted specific provisions related to the prevention of air pollution resulting from incineration of waste: France, Germany (Fed. Rep.), Denmark, Italy, and The Netherlands. The ELVs for WI given by Germany (Fed. Rep.), the Netherlands and Denmark were stricter than the ELVs given in France
Hazardous	The Commission proposal presents that at the time the Directive was being drafted, France, Germany (Fed. Rep.), the Netherlands and Spain had legally binding ELVs; Denmark, Ireland and the UK had guide values; in Belgium, Italy, Luxembourg and Portugal no ELVs or guide values are fixed; and for Greece information was not available. The proposal only documents the ELVs given in Germany (Fed. Rep.) and in the Netherlands. The ELVs of both countries are of similar magnitudes
All-waste	The Commission proposals for the Directive <u>did not</u> made reference to the legislation in force in the Member States at the moment the Directive was being drafted
GENERAL	Germany (Fed. Rep.), the Netherlands and Denmark had strong pre-existing legislation on the process of incinerating municipal and hazardous waste at the time these Directives were being drafted. France also had ELVs for the incineration of municipal waste, but these can be considered laxer when compared to the ones from these three countries. Whether these countries were aiming to have their national legislation implemented at EC level is something that will be presented in the next Topic: C
C. Reasons behind MS to see their national legislation at EC level	
Municipal	Examples seen on <i>little national adaptation required</i> during the agreement of the ELV for PM for incinerators of more than 3 t/h capacity (Germany aiming for 30 given that their own incinerators were already complying with this value, or France, with their incinerators complying with 150 (plants of 1 - 6 t/h) and 50 (plants > 6 t/h), and favoring an ELV of 50). Example seen on <i>environmental reasons</i> when Netherlands and Denmark were willing to go for stricter ELVs than the ones they had at national level (the Netherlands, having their own incinerators complying with 50, were willing to go for a stricter ELV of 30, and Denmark's incinerators complying with 40 but willing to compromise for 30).
Hazardous	The working documents of the hazardous WI Directive do not provide enough background information from each of the Member States (for example, amount of incinerators, capacity of these, amount of waste incinerated) that would allow to hypothesize on the reasoning why a Member State's delegation was pushing for a specific piece of the legislation to be implemented at EC level
All-waste	Example seen on <i>benefits for national industries</i> through dispensations regarding the compliance of ELVs for NOx (France and Spain asking for exemption clauses for NOx and PM that would take account of their specific problems; France had approx 225 incinerators at that time, most of them fairly small; exemption clauses were finally granted; Denmark and Netherlands against these dispensations and asking for stricter ELVs)
GENERAL	Germany (Fed. Rep), the Netherlands, Denmark, and France were the countries that, at the time of the drafting of the Directives, had the most developed body of national legislation on waste incineration. Based on the findings, it cannot be said that the countries with the strong regulatory tradition were always aiming to have their legislation implemented at EC level. Some of these countries were willing to go for stricter regulations than the national ones (their industries needing then to invest in order to comply with the new regulations). However, it was also seen the cases of countries with laxer national regulation asking for specific dispensations (in interest of protecting their national industries).
D. MS struggling to have their points accepted	
Municipal	Three issues were said to have been problematic when trying to reach a common agreement among the delegations. The three issues were related to ELVs: (a) ELVs for PM for plants of more than 3 t/h; (b) ELVs for dioxins and furans; and (c) allowance of small incinerators (< 1 t/h) to operate without the need to comply with ELVs
Hazardous	One of the discrepancies documented was on the setting of ELVs for dioxins and furans
All-waste	It is documented that the discussion on the annexes laying down the ELVs was long and difficult, and

	that the Council's presidency tried to incorporate the different opinions by means of a compromise text which was finally accepted by a substantial number of delegations. One of these discrepancies, which was documented in a way that it was clear to see the position of the Member States, was on the case of ELVs for incinerators for NOx
GENERAL	The examples collected concentrate on the main topic of this PhD project which is on the setting of ELVs. The topics which were subject to debate among the delegations, being these for example on the ELVs for PM for incinerators of more than 3 t/h; on the ELVs for dioxins and furans; on dispensations on ELVs for plants of less than t/h; and on the ELVs for NOx. The way such discrepancies was solved was either by reaching a compromise (delegations would drop of their aspirations in the spirit of a compromise), or by being <i>elbowed</i> out of the way by bigger coalition of states. Concrete examples of compromise are presented in the following Topic: E; concrete examples of being <i>elbowed</i> out are presented in Topic C of the third particularity
E. Patchwork of policy styles	
Municipal	Examples seen on Member States reaching a <i>compromise</i> (the case of setting ELVs for dioxin and furans; dispensations for small plants)
Hazardous	Several cases are documented in the minutes of the Council meetings during the drafting of the hazardous Directive. One can see that delegations often decided to accept a specific topic " <i>in spirit of a compromise</i> ".
All-waste	Examples seen on Member States reaching a <i>compromise</i> (the case of measuring dioxins, furans and heavy metals)
GENERAL	Based on the findings, it could be said that the WI Directives are shaped according to the German and Dutch tradition: measurement of pollution levels at point sources; controls given in terms of ELVs for industrial installations; and controls as stringent as available technology permits. Resemble of the final Directive with the pre-existing national legislation was seen mostly in the specific case of ELVs for PM, Cd and dioxins and furans given in the hazardous Directive

3rd particularity: EUROPEAN PARLIAMENT AND COUNCIL'S negotiating role

A. Role of EP and of Council are more critical - what about the ESC and EP?	
Municipal	Role of ESC: their opinions and suggestions tended towards environmental protection (f.e. on the possibility of having a stringent ELV for PM). Some of their comments are also in line with suggestions made by the EP (f.e adding an ELV for cobalt) and by the Member States' delegations during the Council meetings (f.e. on the need of an ELV for dioxins and furans). Some of the suggestions made by the ESC are seen reflected in the final version of the Directive, but one cannot see, based on the information collected from the working documents, that such changes were motivated by the ESC's opinion or if they are the result of the EP or the Council's reports. - Role of CoR: N.A (The CoR becomes part of the legislative process only after Amsterdam enters into force in 1 st May 1999)
Hazardous	- Role of ESC: their opinions are also in line with environmental protection (f.e concerned that the proposal did not make enough emphasis on waste prevention); also, some of their suggestions are in line with the EP and Council's ones (f.e on the change of the legal basis of the Directive from art 100a to art 130s). The change -which was accepted- did not bring any additional role to the ESC - Role of CoR: N.A (The CoR becomes part of the legislative process only after Amsterdam enters into force in 1 st May 1999)
All-waste	- Role of ESC: opinions also reflect a position with favors environmental protection (f.e not satisfied with how the Commission proposed the ELVs); some of the suggestions made by the ESC are also in line with the suggestions from the EP and with some of the Member State's delegations (f.e: co-incinerators need to comply with same requirements as for incinerators) - Role of CoR: also referred to ELVs for co-incineration need to be as stringent as for incinerators. Suggestions in line with the EP and Council: the merge of the two COM's proposals ¹⁸
GENERAL	- ESC: presents a position which favors environmental protection; Some of the suggestions

¹⁸ The **first** COM's proposal (Nov 1997) was for adding ELVs for waste water discharges into the hazardous Directive. The **second** COM's proposal (Oct 1998) was for creating a new Directive re-enforcing the municipal Directives. The **third** COM's proposal (July 1999) was to take account of the EP's suggestions (1st reading) related mainly to merging the hazardous and the municipal Directives into one

	<p>presented by the ESC were seen reflected in the final version of the Directives, however, there is not enough information in the working documents that could point to the ESC as being the original author of such suggestions given that most of them were also argued by the EP and the Member State's delegations.</p> <ul style="list-style-type: none"> - CoR: difficult to establish its position towards environmental matters given its participation in only one of the Directives
B. Changing roles of EP and Council	
Municipal	<ul style="list-style-type: none"> - Drafting process was carried under the Treaty establishing the European Economic Community (SEA, which entered into force in July 1987, was in place) - Base of the proposal was art 130s. - Council acted under unanimity and the Parliament had a consultative role
Hazardous	<ul style="list-style-type: none"> - The drafting process started under the Treaty establishing the European Economic Community (SEA was still in place), and ended with the Treaty establishing the European Community (when Maastricht entered into effect in November 1993). - The initial Commission's proposal (under SEA) was based under art 100a (market-related), and changed to art 130s (change took place in June 1993 under SEA , and then under Maastricht when this entered into force in November 1993) - The roles of the Council and of the EP did not change after all with the changes of article base and of the Treaty: Council acted under QMV and in co-operation with the EP
All-waste	<ul style="list-style-type: none"> - The drafting process started 1997 under the Treaty establishing the European Community (Maastricht was still in place), and ended with the Treaty establishing the European Community (when Amsterdam entered into force in May 1999). - The initial Commission's proposal (under Maastricht) was based under art 130s, and was re-numbered to art 175(1) when Amsterdam entered into force, - The role of the Council did not change with the change of Treaty: it remained as QMV. The role of the EP did change with the change of Treaty: from co-operation (art 189c) to co-decision (art 251, ex art 189b)
GENERAL	<ul style="list-style-type: none"> - The changes that the Council and the Parliament's role have had through time can be seen reflected in the EU Directives for waste incineration. Such changes were brought by the amendments to the Treaty: SEA (1986), Maastricht (1993), and Amsterdam (1999) - the Council's decision process consisted of unanimity during the municipal WI Directives, and it changed to QMV for the hazardous and the all WI Directives - The Parliament was seen as a consultative body offering non-binding opinions during the drafting of the municipal WI Directives; then during the drafting of the hazardous WI Directives it had up to two opportunities to propose amendments (co-operation) but the decision was still on the hands of the Council; and finally with the drafting of the all-waste incineration Directive, Parliament and Council had to reach a common agreement for the Directive to be accepted (co-decision).
C. Council's role: from unanimity to QMV, and the influence of this in the formulation of standards	
<u>Unanimity</u> : standards developed at the pace of the most reluctant state or coalition of states; standards were not as high as they could be: opposition from one MS would stop the process	
<u>QMV</u> : stricter standards easier to agree? ; speed up legislative process?	
Municipal	<u>Unanimity</u> was the Council's decision process for the drafting of the municipal WI Directives. The collected information did not evidence the fact that, according to literature, the standards were not as high as they could be because with the opposition from one Member State, then the process would stop. One case presents a strict ELV being set despite the desire of some of the Member State's delegations (ELV for PM for plants of more than 3 t/h). The other two cases documented in the working documents point, more than the process stopping because of the opposition of a particular Member States, to the delegations reaching a middle point by means of compromises
Hazardous	<u>QMV</u> was the Council's decision process for the drafting of the hazardous Directive. The collected information did not evidence the fact that, according to literature, stricter standards were easier to agree. The two documented cases present that a compromise was reached, sort of middle point between strict and lax ELVs. The first case was about setting ELVs for 30-min average for pollutants different than heavy metals. The second case was about setting ELVs for dioxins
All-waste	<u>QMV</u> was the Council's decision process for the drafting of the all-waste Directives. The collected information did not evidence the fact that, according to literature, stricter standards were easier to agree. On the contrary, in this case it was shown that the same ELVs from the pre-existing Directive were maintained, and that laxer ELVs were given to the new parameter which was added to list of pollutants to control: NOx

GENERAL	<ul style="list-style-type: none"> - No evidence collected that during <u>unanimity</u> the standards were not as high as they could be because with the opposition from one Member State, then the process would stop. On the contrary, one case presents a strict ELV being set despite the desire of some of the Member State's delegations. The other two documented cases present the delegations reaching a middle point by means of compromises - No evidence collected that with <u>QMV</u> stricter standards were easier to agree. The information collected point to compromises being reached, sort of middle point between strict and lax ELVs. However, other documented cases present that despite the change to a new directive, the same ELVs from the pre-existing Directive were maintained, and also, that laxer ELVs were given to the new parameter which was added to list of pollutants to control: NOx
D. Formation of coalitions at the Council	
Smaller and greener states usually <i>elbowed out of the way</i> with their environmental proposals by larger states; No permanent coalition groups in environmental matters	
Municipal	Three cases were seen in the working documents in which it was clear the position of the delegations regarding the topic being debated. Two of the cases were solved by means of a compromise, the other one could say that the coalition aiming for the stringent environmental requirement won (conformed by DK, NL and DE)
Hazardous	Two cases were seen in the working documents in which it was clear the position of the delegations regarding the topic being debated. The two of the cases were solved by means of a compromise
All-waste	Two cases were seen in the working documents in which it was clear the position of the delegations regarding the topic being debated. In both cases once could say that the <i>small and greener states were elbowed out of the way with their environmental proposals</i>
GENERAL	Based on the findings, one could say that in the topic of waste incineration, Denmark and the Netherlands would tend to form a coalition bringing forward stringent environmental proposals. Spain and France -not always forming coalitions- would tend to ask for laxer requirements or dispensations. The position taken by Germany and the UK was not always the same: sometimes they would be asking for stringent requirements, and other times they would be asking for laxer ones. Most of the times, a topic subject to debate would be solved by means of a compromise. It was only in one occasion which was documented that the <i>greener states</i> - Denmark and the Netherlands - <i>were elbowed out of the way with their environmental proposals</i>
E. Final decision on Council's hand	
Municipal	The article base of the Directive (art 130s, under SEA) gives Council the power to decide. The EP had only a consultative role
Hazardous	The article base of the Directive (art 130s(1), under Maastricht) gives Council the power to decide. The EP -under the co-operation procedure with the Council- had up to two opportunities to propose amendments, however these were not binding and the final decision remained with the Council
All-waste	The article base of the Directive (art 175(1), under Amsterdam) asks the Council to reach an agreement with the Parliament before a legislation is being accepted (under the co-decision procedure)
GENERAL	The decision power that the Council has depends on the article base of the Directive. With the amendments of the Treaty, the decision power of the Council changed. It went from having the total decision on its hands (with the municipal, and hazardous directives), to having to share the decision power with the EP (all-waste directive)
F. Parliament's role: from consultative to co-operation to co-decision	
Municipal	The EP had a consultative role
Hazardous	The EP acted under a co-operation role with the Council. This role was not changed even after the Directive changed its article base from 100a to 130s, and even after Maastricht entered into force replacing SEA.
All-waste	The fact that Amsterdam entered into force during the drafting of the directive, implied that the EP's role changed from co-operation to co-decision
GENERAL	The EP had the three different roles during the drafting of the WI Directives: consultative during the municipal directive, co-operation during the hazardous directive and co-decision during the all-waste directive.
G. Parliament's proactive role in environmental matters	
Municipal	Among the suggestions given are to have a more stringent ELV for PM and for heavy metals. However, only minor suggestions were taken into account by the Council. It is wondered if the delay in the EP delivering its report to the Council is related to the fact that other amendments were not taken into account, or if is just the fact that the EP's opinions at that time were non-binding.
Hazardous	The most relevant of the suggestions delivered by the EP on the draft of the directive was on the regulation of dioxins and furans through an ELV and not just through a guide value as the Commission was proposing. This achievement came as one of the compromise amendments which

	were the result of several discussions between the EP rapporteur and the Commission.
All-waste	Suggestions presented by the EP during the drafting of this directive were on the tightening of ELVs, for example, stricter ELVs for NO _x for incinerators; and stricter ELVs in general for co-incinerators. However, only the suggestion on stricter ELVs for NO _x for new cement kilns was accepted, and actually as one of the results from the Conciliation Committee which was formed between the EP and the Council.
GENERAL	According to literature, it was expected that with the change into co-decision, the Parliament would bring more wide ranging environmental legislation. However, findings from the working documents point that in fact, the EP had been presenting wide range proposals even during the drafting of the other directives (for example, ELVs for PM ranging between 10 and 60, when the Commission proposed values between 50 and 100, and the final values approved by the Council were between 50 and 200). Another issue is that given its low role at that time, such proposals were not being taken into account. However, during that time, the EP also managed to have some of their important points accepted despite its low influential role. For example, when the Commission accepted to include an ELV for dioxins and furans in the draft of the Directive, suggestion which was also accepted later on by the Council. Nevertheless, the new powers that the EP got with the co-decision procedure are considered much more influential, like the possibility of going into a conciliation committee with the Council. Such was the case during the drafting of the all-waste directive, even if in this case, it only meant the acceptance of one of the many suggestions presented regarding stricter ELVs.

6.6 Concluding: returning to the research question

The question to answer in this chapter was *how has the EU context influenced the formulation of ELVs for waste incineration*, and the expected knowledge to obtain being: *the particularities from the EU context which influenced the numbers given as ELVs*. The found particularities are summarized next

Market as the motivator for environmental protection. The particularities from the EU context which influenced the numbers given as ELV being:

- The fear of the distortions to the common market that would or could be brought by the different national standards → triggered the need to harmonize the waste incineration standards at EC level.
- Art 175 as the legal base of the Directives → allows Member States to set stricter national standards in an easier way than if the article base of the directive would have been article 95. Perhaps there is a correlation between how strict the standard is set at EC level and the article base of the directive?
- Fear over waste tourism and transboundary pollution → also a motivator for harmonizing the waste incineration standards at EC level.

The role of Member States in setting EC legislation: source of legislation to be implemented at EC level; reaching medium point compromises. The particularities from the EU context which influenced the numbers given as ELV being:

- Point of departure for the Commission to present their proposed ELVs → Pre-existing ELVs of some of the Member States, mainly those countries which had the most developed body of national legislation on waste incineration at the time that the directives were being drafted: Germany (Fed. Rep), the Netherlands, Denmark, and France
- Most active Member States in the process of deciding the standard to be set at EC level → delegations from these countries: Germany (Fed. Rep), the Netherlands, Denmark, and France
- Way of solving discrepancies among the delegations → either by reaching a compromise (delegations would drop of their aspirations in the spirit of a compromise), or by being *elbowed* out of the way by bigger coalition of states
- Shape of the final directives → follows the preferred approaches used by Germany and the Netherlands: measurement of pollution levels at point sources; controls given in terms of ELVs for industrial installations; and controls as stringent as available technology permits. It is to wonder what would have been the implications of having a waste incineration directive shaped according to the UK tradition with measurement of pollution levels at sink and controls given in terms of ambient air quality standards

The negotiating role between the European Parliament and the Council. The particularities from the EU context which influenced the numbers given as ELV being:

- The presence of actors in the legislative process –with binding and non-binding opinions- who tend to have a position which favors environmental protection → press for stricter ELVs to be set at EC level
- The Council conformed by Member State’s delegations, some of which tend to bringing forward stringent environmental proposals
- The increased power the EP –an environmental ally- have had throughout the years in the legislative process
- Most of the times, a topic subject to debate would be solved by means of a compromise, where some sort of middle point between strict and lax ELV would be reached

Relation of the particularities with the context-influencing criteria

The 1st researched area of this PhD area developed a set of criteria which could allow to determine how context exerts an influence. This criteria was developed having three components (Figure 1): (a) That, which influence, are the particular properties of context; (b) That, which is influenced, are the defining elements from the object of the study; (c) If there is an influence from another context, the particular properties of that context will change the way the elements from the object of study were defined in its original context.

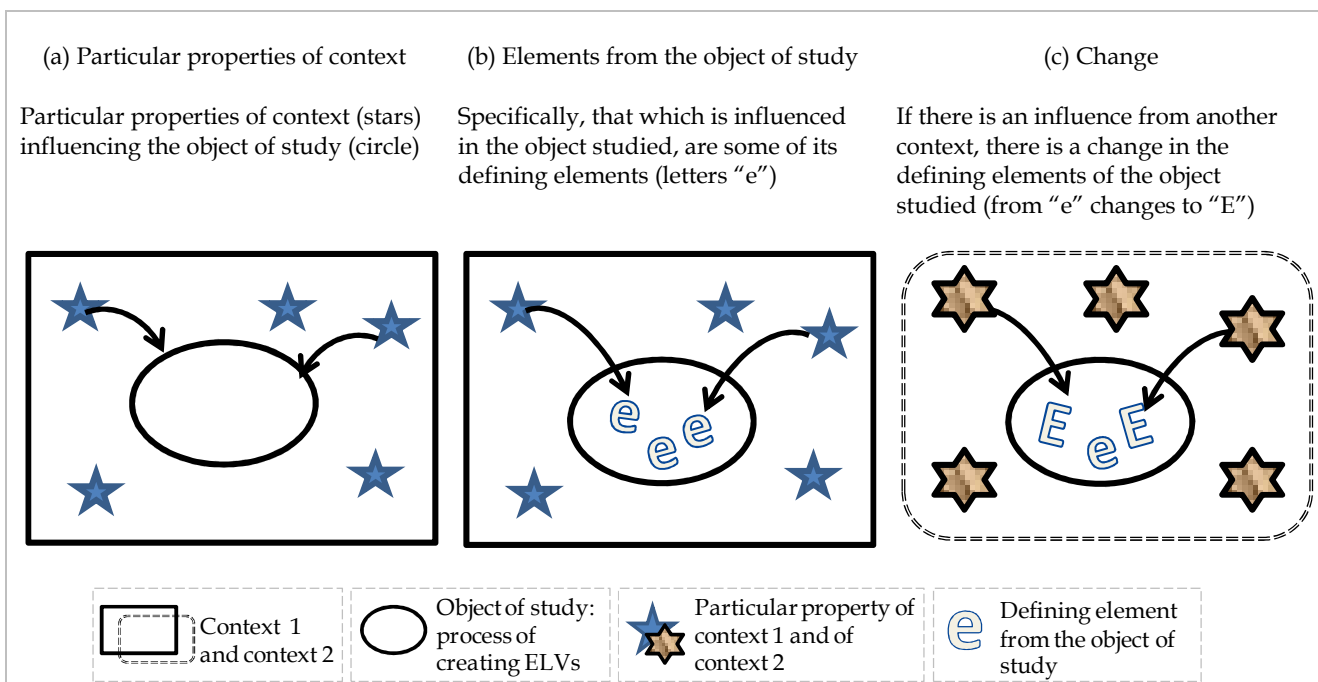


Figure 1: Components of the context-influencing criteria.

This figure on the components of the context-influencing criteria was related to the other three researched areas of this PhD project. Figure 2 shows its relation to the area researched in this chapter which was on the particularities from the EU context which influenced the numbers given as ELVs.

These particularities relate to the context-influencing criteria in that they can be seen as the stars in Figure 1b). That is, the particularities are those properties of context which influence the object of study, object of study which is *the process of creating ELV for waste incineration*).

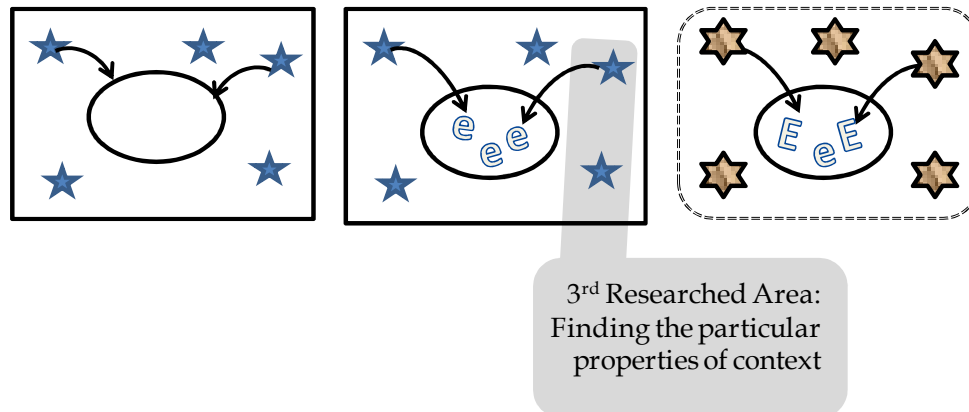


Figure 2: The second third researched area explored in this PhD project and its relation to the context-influencing criteria.

One of those particular properties of the EU context which influenced the numbers given as ELVs for waste incineration is for example the fact that *the article base chosen* for the directives was art 175 and not art 95. One could think that the way this influence the number given as ELV is that art 175 allows Member States to set stricter national regulations in an easier way than if the article base would have been article 95, so in theory, this would make it easier to set stricter standards given that the topic legislated (incineration) is something which is not directly related with economic interests, something on which Member States would be much more cautious when setting high standards.

Another of those particular properties of the EU context which influenced the numbers given as ELVs for waste incineration is for example the fact that the point of departure for the Commission to present their proposed ELVs was on the *pre-existing legislation* of the few countries which had legislated the topic at the time the directives were being drafted: Germany (Fed. Rep), the Netherlands, Denmark, and France. The way this influence the number given as ELV is that these pre-existing values provided the minimum base above which the ELVs meant to be implemented at EC level would be decided.

A final example on one of the particular properties of the EU context which influenced the numbers given as ELVs for waste incineration is the presence of actors in the legislative process –with binding and non-binding opinions- who tend to have a position which favors environmental protection. These actors press for stricter ELVs to be set at EC level and their opinions are taken into account depending on the legislative power they carry. For example, almost none power for the ESC but in the case of the EP, a power which has been increasing through time with the amendments made on the Treaty.

These were just some examples of the contextual elements from the EU which influenced the formulation of ELVs for waste incineration. A more detailed account of how the other particularities influenced this process would require further studies in the subject.

The next chapter , which addresses the 4th research area explored in this PhD project, investigates also the influence of context but seen from the borrower's point of view, that is, when a borrowing country decides to implement a policy for which it did not participate in its formulation. The aim of that chapter is to find those particular properties of the new context (the context of the borrower of the policy) which create a change in the object studied.

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6.8 Appendix 1: Relation market and environmental regulation

EC Environmental policy could be categorized as before and after the Single European Act (SEA, 1986). SEA was the modification to the Treaty which gave legal status to the environmental protection at EC level.

Before the SEA there was no explicit Treaty base for environmental action and environmental Directives had to be justified either under market protection (art 100) or under art 235 (any-other-business), or even under both cases. *“As a result of the uncertainty about the jurisdictional basis for Community environmental protection measures, the Community institutions had, at least until the SEA, to base their environmental policy primarily on Article 100 and to a lesser extent, on Article 235 of the Treaty of Rome”* (Hildebrand, 2005, p. 23).

In these cases environmental rules could be implemented because of the over-interpretation of the Treaty: *“the EC first ventured explicitly and systematically into environmental policy in the early 1970s, on the basis of a generous interpretation of the original objectives of the Treaty by the European Council”* (Lee, 2005, p. 1).

Article 100 had more a “common-market” spirit than a “let’s protect the environment” spirit: *“The ECJ confirmed the viability of article 100 as the legal base for environmental legislation, accepting that national differences in environmental regulation could distort competition”* (Lee, 2005, p. 16). Examples of Directives justified under article 100 were those relating to pollution control and common standards (Bell & McGillivray, 2001, p. 124); for example the Directive on the classification, labelling and packaging of dangerous substances (Jordan, 2005, p. 6).

Art 235 was used to regulate issues not related to the common market: *“This article was a catch-all provision and gave the Council power to legislate on matters necessary to achieve the operation of the common market even where the treaty did not explicitly provide for the legislation in question”* (Thornton & Beckwith, 2004, p. 87). Examples of Directives justified under article 235 were those where the content was almost purely environmental, such as Directive 79/409 on Wild Birds (Bell & McGillivray, 2001, p. 124).

Bell & McGillivray (2001, p. 124) write that at that time it was quite common to cite both articles: art 100 and art 235 *“just in case of a challenge”*. An example of this situation is the Directive on *“Combating of air pollution from industrial plants”* (84/360/EEC). This Directive was the predecessor of the new and existing waste incineration Directives. The legal base for such Directive was both art 100 (market-related) and art 235 (any-other-business).

After the SEA (1986) environmental rules could be implemented because now there was an environmental chapter on its own. Art 130 r,s,t are introduced in the SEA (Table 17) and it applies to aspects which will not interfere with the common market, or which will have a small impact on competition: *“In 1987 a specific legal provision (article 175 ex art 130s) was introduced in the EC Treaty which allowed for the adoption of EC environmental legislation. Environmental measures could then be adopted on the basis of this new provision. If the environmental provisions impacted the trade provisions, then the articles to be based on would be article 95”* (Krämer, 2007, p. 860). Example of Directives based on art 130 are on the trade in endangered species; on the trade in hazardous waste; on the trade in ozone-depleting substances; on decision to ratify the Cartagena Protocol on Biosafety *“ [...] in these areas, it was considered that the environmental elements of the subject matter prevailed over the trade aspects”* (Krämer, 2007, p. 861).

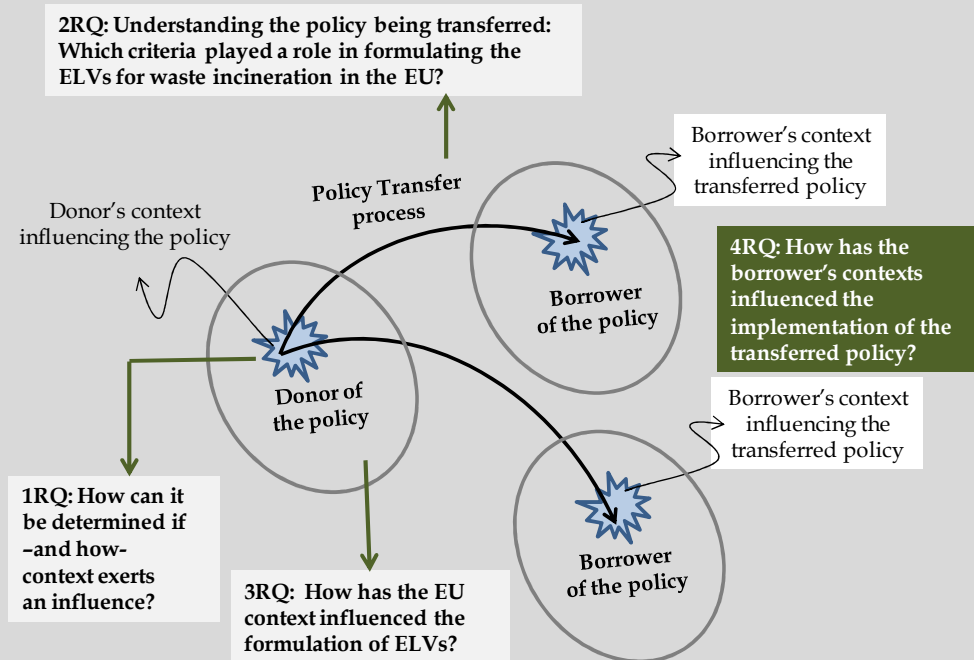
However, environmental rules which still had an influence on the common market, were still to be based on art 100a SEA (art 95 in Treaty of Amsterdam). This article applies for traded products, for completing the internal market, for harmonization of national laws, and for standards which affect the common market: *“Measures concerning the harmonization of environmental production standards as well as environmental measures that address the freedom of competition within the EU typically are adopted on the basis of Article 95”* (Krämer, 2007, p. 861).

Rome 1957	SEA 1986	Maastricht 1993	Amsterdam 1999
Articles on Market			
100 Common market	100	100	94
-	100a(1) procedure	100a(1) Procedure (modified)	95 Procedure (modified)
-	100a(2) Exception (fiscal...)	100a(2) Exception (fiscal...) (=)	
-	100a(3) High level of protection	100a(3) High level of protection (=)	
-	100a(4) Stringent env stand	100a(4) Stringent env stand (=)	
-	100a(5) Opt out harmonization	100a(5) Opt out harmonization (=)	
Articles on Environment			
235 Catch-all			308(?)
-	130r(1) objective	130r(1) objective	174(1)
	130r(2) principles	130r(2) principles	174(2)
	130r(3) factors	130r(3) factors	174(3)
-	130s Legislative process	130s(1) Legislative process	175(1) Legislative process
		130s(2) Legislative procedure	175(2) Legislative procedure
		130s(3) Legislative procedure	175(3) Legislative procedure
		130s(4) MS implement	175(4) MS implement
		130s(5) derogation	175(5) derogation
-	130t More stringent	130t More stringent	176

Table 17: Re-numbering of the market-related and environmental-related articles throughout the EC Treaties and its amendments.

The previous chapter explored the influence of the donor's context in the process of formulating policies. The influence was seen in terms of three particularities from the EU context influencing the process of setting ELVs at EU level.

The current chapter investigates also the influence of context but seen from the borrower's point of view, that is, when a borrowing country decides to implement a policy for which it did not participate in its formulation.



This chapter documents what are those elements from the borrower's context which must be taken into account before implementing a foreign policy, and what type of adaptations or strategies are necessary for the appropriate implementation of this policy. Three cases are looked at: implementation of the incineration Directives in the Member States; implementation of the environmental *acquis* in the Central Eastern European states; and implementation of the EU's ELVs in Colombia

This which is documented in this chapter corresponds to the last of the four areas explored in this PhD project.

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7. Fourth area explored: The influence of the borrower's context

Introduction

As mentioned in chapter 6, two settings can be identified in the process of Policy Transfer: one corresponds to the donor of the policy, and the other corresponds to the borrower of the policy (Dolowitz, 2000). Failures in the process of policy transfer occur when no attention is paid to these contexts and to the influence these contexts exert in the policy being transferred (Dolowitz, 2000), (Minogue, 2006).

The influence of context has been said to be done through the particular set of circumstances from each place (Honadle, 1999), through the very own country structures (Danziger, 2005), or through the particular systems of the country (Dolowitz, 2000). The particular properties of each context will then have different effects in the object of study. For example, Honadle (1999) writes that under different conditions or circumstances policies can produce different results (p. 134), and Danziger (2005) refers to country structures which influence the way a country developed, and that these development structures might not be compatible with the development structures from other countries (p. 269).

Specifically speaking about the influence from the borrower's context, this has been represented by the presence –or not– of particular contextual elements which will have repercussion in the effective operation of the transferred policy. These particular elements have been presented as the availability of political, bureaucratic and economic resources (Dolowitz & Marsh, 1996); as the availability of legal, administrative, political and economic structures (Minogue, 2006), and as historical, cultural and institutional elements from the borrower's context (Rose, 1991).

In addition to the presence –or not– of particular elements, in the process of transferring a policy in the borrower's context, Rose (1991) also refers to the need of making some adaptations or strategies for implementation.

As mentioned in the first part of this PhD report, the aim of this project is to try to identify how context plays a role in the processes of formulating and implementing policies. Four areas were seen as worth exploring in order to reach this aim. The previous three chapters addressed respectively the first, second, and third area, the first area relating to the influence of context, the second area relating to understanding the policy being transferred, and the third area relating to the influence of the donor's context. This chapter addresses the last explored area which relates to the influence of the borrower's context.

In particular, the question to address in this chapter is, *How has the borrower's context influenced the implementation of the transferred policy*. Such aim was explored by means of finding the contextual elements which have repercussion in the effective operation of the transferred policy, and the strategies used by the borrower's countries to secure the implementation of the transferred policy.

Three cases are looked at: the first one explores what is done by the EU so that that the same Directive can be implemented into the different sub-contexts of the Member States; in particular it is looked at what was done to secure implementation of the incineration Directives in the Member States. The second case relates to the process of EU enlargement, in which a candidate state must implement legislation for which it did not participate in its formulation; in particular it is looked at the strategies for implementing the environmental *acquis* in the Central and Eastern European states. The third case relates to the Colombian situation, where the ELVs for waste incineration from the EU 2000/76/EC Directive were implemented in the country's waste incineration legislation (case which was the motivator for the development of this PhD project); in

particular it is looked at the strategies followed by the Colombian legislators to secure implementation of these ELVs in the country.

7.1 Methods

Defining the borrower's context

From the study of the 1st researched area of this PhD project (*Influence of context*, chapter 4), it was seen how context has been seen or defined (Box 1).

Box 1: Context has been seen as:

- Having different meanings depending on the object of research: context has been seen as a person, as a geographical place, as a society, as a political arena.
- Having different meanings depending on the researchers' background (*when we get an education we get a particular pair of glasses to look out in the world*), intuition (*you try this, you tray that*), personal interests or previous experiences (*this is how I think it works, based on all these years of experience*), feelings (*researcher have the feeling context is this or that*).
- Context has been seen as a setting: that which surrounds any environmental, conservation or sustainable development policy; condition that accompanies or influences some event or activity.
- Context has been seen as a scenario: the background scenario where the object of study takes place;
- Context has been seen as that which is outside the object of study.
- Context has been seen as a set of factors or circumstances that surround a situation or event.
- Context has been seen as a collection of variables; a set of dimensions (i.e politics, society, environment, institutions, organizations and actors) for each of the dimensions it is given short descriptions or summaries of the most important aspects; these aspects were found from literature review, interviews, researcher's own observations.

This information was used as a guidance to help define the three borrower contexts which were explored in each one of the three cases. These contexts will be defined as a collection of variables (contextual elements), something which is explained in the following sub-section: *Criteria for selection of the influencing contextual elements*.

These borrower contexts are defined in general as the political arenas in which the transferred policy takes place: (a) the Member States, (b) the Central Eastern European States, and (c) Colombia. At the same time these contexts refers to specific geographical places.

The reasoning behind the selection of these cases is seen in Table 1.

(a) Member States	Explore a case in which the <i>borrower</i> states participated in the formulation of the transferred policy.
(b) Central Eastern European States	Explore a case in which the <i>borrower</i> states did not participated in the formulation of the transferred policy, but the <i>donor</i> of the policy helped the borrower states in the implementation process.
(c) Colombia	Explore a case in which the <i>borrower</i> states did not participated in the formulation of the transferred policy.

Table 1: Reasoning behind the selection of the three explored cases.

In the first case -(a) the Member States-, the transferred policy refers to the Waste Incineration Directives which are to be implemented at EC level, and the geographical area corresponds to the EU12 and EU15 Member States (Figure 2). In the second case -(b) the Central Eastern European States-, the transferred policy refers to the *environmental acquis* which are to be implemented as a pre-condition for accessing the EU, and

the geographical area refers to the Central Eastern European states which were aiming for the EU membership in 2004. In the third case -(c) Colombia-, the transferred policy are the ELVs from the 2000/76/EC Waste Incineration Directive which were included by the Colombian authorities into the Colombian Resoluciones regulating the process of incinerating waste in the country; the geographical area corresponds to the Colombian territory.

Source of the information

The source of information for the Member States case is that which was contained in the WI Directives and its working documents. The EU Directives studied were the four regulating the process of incinerating waste: two on incineration of municipal waste (1989), one on the incineration of hazardous waste (1994), and one on the incineration of all-type of waste (2000) which replaced the previous three ones. The working documents analyzed were those used by the Commission, the Council, the Parliament, and the Economic and Social Committee for the elaboration of these four Directives. It is important to clarify that the existing WI Directive was based in most of the working documents used for the new WI Directive. That means that basically there were three sets of working documents to analyze.

The source of information for the CEE case is that which was contained in several journal articles addressing the topic of CEE enlargement, specially, on transposition of environmental *acquis*.

The source of information for the Colombian case refers mainly to three sources. The first one is the reports presented by the National Comptroller's Office. Such office is the Colombian government entity in charge of monitoring and controlling the use of public resources¹. They have the Constitutional obligation of presenting to Congress an assessment of the environmental goals achieved in the year (Contraloría, 2009, p. 13). The evaluated reports were the ones covering the years 1998-2009 (except the ones for the years 2005, 2006, and 2007 which was not possible to access them).

The second source is interviews with two stakeholders. One was carried out with two technicians from the Ministry of Environment who participated in the drafting of the Resoluciones (Interview_at_Ministry, 2009). The second set refers to an interview carried out with an environmental engineer from a private industry who participated in the environmental committee of the National Association of Industries, and who took part on the revision of the Colombian Resolución 58 (Interview_Engineer, 2009).

The third source are newspaper articles from the main newspaper in Colombia, *El Tiempo*. The articles were searched -by means of an electronic database, between the years of 1990 and 2009, and containing the sentence "*incineracion de residuos*" (waste incineration).

Apart from the background document used for the Resolución 909 (MAVDT, 2008), the documentation centre of the Ministry could not provide any compiled sets of documents that served as background for the previous two Resoluciones.

All the collected information was translated from Spanish into English by the author of this PhD project.

Type of contextual elements

The contextual elements which create an influence in the policy being transferred have been presented in literature as:

- The availability of political, bureaucratic and economic resources (Dolowitz & Marsh, 1996)
- The availability of legal, administrative, political and economic structures (Minogue, 2006)

¹ <http://www.contraloriagen.gov.co/web/guest>

- The historical, cultural and institutional aspects from the borrower's context (Rose, 1991)
- The web of economic, institutional and psychological hurdles that must be overcome (Honadle, 1999)

These elements, which can be seen represented in Figure 1, served as a reference of what type of contextual elements were expected to be found in each one of the 3 explored contexts.

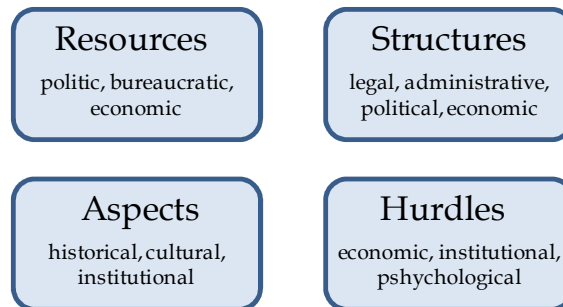


Figure 1: Different sets of elements from the borrower's context which might have repercussion in the effective operation of the transferred policy (after Dolowitz & Marsh (1996); Minogue (2006); Rose (1991); Honadle (1999)).

Criteria for selection of the influencing contextual elements

One of the objectives of this chapter is to identify the contextual elements which have repercussion in the effective operation of the transferred policy. The point of departure for doing this was the information obtained from the 1st researched area of this PhD project (*Influence of context*, chapter 4). In this chapter it was presented how other authors have tried to describe the way in which the influence of context takes place (Box 2).

Box 2: Different ways in which authors have tried to find out how the influence of context takes place:

- As a top-down approach: by defining context as a collection of variables, and then trying to see how the variables exerts an influence in the object studied.
- As a bottom-up approach: by presenting (1) what it is said about the object of study (i.e which elements make a SEA effective), and then (2) seeing how those elements behave in the specific context being studied (i.e how is the element of public participation –as one of the elements which influences the effectiveness of SEA- in the context of China).

In doing these, the authors used concepts from the existing literature, interviews and researcher's observations.

These points served as inspiration for finding, in each of the three cases being explored, the influencing contextual elements which have repercussion in the effective operation of the transferred policy.

Member States: The list of contextual elements of the Member States (borrower context) derives from that which was said by the legislators on the *Explanatory Memorandum* of the Commission's proposals. In this explanatory memorandum, the legislators describe the current situation and explain the problematic to be solved. This description can be seen as a description of the context of the Member States, and it is from here that the list of contextual elements of the Member States was obtained from.

Finding the **influencing contextual elements** was done after inspiration of numeral (b) in Box 2, that is, by looking at the elements which define the object of study, and then seeing how those defining elements are in the specific context being studied. The object of study in this case are the ELV for waste incineration, and its defining elements were discovered after exploring the 2nd researched area of this PhD project which

produced the factors influencing the formulation of ELVs (Box 6). It is the list of these defining elements which was used as a criteria to find the influencing contextual elements.

Central Eastern European states: The list of contextual elements of the Central Eastern European States (borrower context) derives from journal articles (Soveroski, 2004; Kramer, 2004; Inglis, 2004) on the characteristics which might give problems for the adoption of the environmental *acquis*

The process of finding the **influencing contextual elements** was done by applying concepts already given in existing literature, that is, the contextual elements which influence the object of study are those presented by the articles' authors as the country's characteristics which might have a repercussion on the effective implementation of the transferred policy.

Colombia: The list of contextual elements of Colombia (borrower context) derives from that which was said by the interviewed authorities at the Ministry, and that which was manifested in the explanatory notes of the Resoluciones, as well as collected information describing the environmental situation of the country.

The process of finding the **influencing contextual elements** was done by taking as point of departure those influencing contextual elements identified in the previous two cases: Member States and Central Eastern European States.

The information on the process for identifying the contextual elements is summarized in Table 2.

Identification of strategies

The second objective of this chapter is to obtain the list of strategies used by the borrower's countries to secure the implementation of the transferred policy. Such list of strategies was obtained by extracting the relevant information from the different sources as for example the working documents and the Directives for the 1st case; the journal articles on CEE enlargement for the 2nd case; and information from the interviewed Colombian authorities and the Resoluciones for the 3rd case. The process by which the relevant information was extracted was inspiration from methodologies such as *coding* and *content analysis* (Box 3).

Box 3: Key points from the process of *Coding* and *Content analysis* presented in chapter 2 (*Methods*)

- Process for coding: (1) *initial coding*: very detailed process where code is assigned to every line of text; it provides an initial impression of the data; many codes as necessary are generated to encapsulate the data. (2) *focused coding*: implies combining repeated codes and emphasizing the ones that are most revealing about the data; the data is re-explored and re-evaluated in terms of these selected codes. (3) *axial coding*: connections are made between the codes; done by linking codes to consequences, to patterns of interaction, and to causes. (4) *saturation* is seen as the last step where there is no point in reviewing or bringing new data since this one does not add anything new (Bryman, 2008).
- Content analysis: predetermined categories are used in a systematic and replicable manner; rules are clearly specified in advance for the assignment of the raw material to categories; the analyst's personal bias is introduced as little as possible; in theory, anyone could employ the rules and obtain the same results; categories used should not overlap, they should cover all possibilities found, and there should be no uncertainty on which category to apply, also there should be the possibility of allowing new categories to emerge during the study (Bryman, 2008).

The information on the process for identifying the strategies is summarized in Table 2.

	Contextual elements	Strategies
Member States (MS)	<p><u>Source:</u> information from the explanatory memorandum of the Commission Proposal.</p> <p><u>Criteria for selection:</u> Factors influencing the formulation of ELVs (<i>2nd Researched Area of this PhD</i>).</p>	<p><u>Source:</u> working documents and Directives.</p> <p><u>Identification of Strategies:</u> mechanisms used by the EU to secure implementation of a legislation in the different Member States.</p>
Central Eastern European States (CEE)	<p><u>Source:</u> Journal articles on CEE enlargement, specially on environmental <i>acquis</i>.</p> <p><u>Criteria for selection:</u> characteristics, identified by the articles' authors, which might be problematic for adoption of environmental <i>acquis</i>.</p>	<p><u>Source:</u> Journal articles on CEE enlargement, specially on environmental <i>acquis</i>.</p> <p><u>Identification of Strategies:</u> strategies, identified by the articles' authors, which were designed by the EU to secure implementation of the environmental <i>acquis</i>.</p>
Colombia	<p><u>Source:</u> information from interviewed authorities, from introductory text of the Resoluciones, and from literature describing the environmental situation of Colombia.</p> <p><u>Criteria for selection:</u> inspired in categories of contextual elements found in the cases of MS and CEE.</p>	<p><u>Source:</u> information from interviewed authorities and from the Resoluciones.</p> <p><u>Identification of Strategies:</u> Those which were seen after analyzing the information presented during the interview with the authorities.</p>

Table 2: Information on the selection of the influencing contextual elements, and on the strategies used for the implementation of the transferred policy.

7.2 Findings

As it has been previously mentioned, three cases are explored for the development of this research area: (a) implementation of the incineration Directives in the Member States; (b) implementation of environmental *acquis* in the Central Eastern European states; and (c) implementation of the EU's ELVs in Colombia.

For each one of the cases a description of the context is given, pinpointing the contextual elements thought important in the implementation process of the transferred policy, followed by an account of the types of strategies or adaptations used to secure implementation of such foreign pieces (legislation/policy/ELVs) in the borrower contexts.

In addition to this information, for the case on Member States and Central European States, a recount is made on the outcome of the implementation strategies. This information is not presented for the Colombian case given that the writing of this report coincides with the deadlines for implementation of the ELVs in the incinerators for Colombia (June 2010). The outcome of those particular implementation strategies in Colombia is left as a question for future research.

Member States

Describing the case

The drafting of the four waste incineration Directives had the participation of a different set of Member States (Figure 2). For the first two Directives on **municipal** waste incineration, (89/369/EEC) and (89/429/EEC), the participating countries were Belgium, France, the Federal Republic of Germany, Italy, Luxemburg, the Netherlands, UK, Denmark, Ireland, Greece, Spain, and Portugal. According to the Commission's Proposal, only five of these Member States had adopted specific provisions related to the

prevention of air pollution resulting from incineration of waste. These Member States were France, The Federal Republic of Germany, Denmark, Italy and The Netherlands (COM(88) 71 final , pp. 3-7). The Commission also writes that these provisions “*differ widely from country to country*” both in legal form and in content (COM(88) 71 final , p. 3).

Regarding the **hazardous** waste incineration Directive (94/67/EC), the same set of countries that took part in the drafting of the municipal incineration Directives, also took part in the drafting of this third Directive with the addition of an unified Germany. At the time that this Directive was being drafted, legally binding ELVs for hazardous waste incineration plants had been laid down in the regulations of four Member States: France, Federal Republic of Germany, the Netherlands and Spain; Denmark, Ireland and the UK had guide values; in Belgium, Italy, Luxembourg and Portugal no ELV or guide values were fixed, but for Belgium and Luxembourg it was also said that in the negotiations with the operators, the competent authorities would take into account ELVs applied in Dutch and German law; and for Greece information was not available (COM(92) 9 final, p. 20)(haz).

For the fourth Directive on **all-waste** incineration (2000/76/EC), in addition to the previously mentioned countries, Austria, Sweden and Finland participated in the process. In the proposal presented, the Commission did not specified on the ELVs existing at the Member States but mentioned that “*There is a wide disparity between existing legislation in different Member States and between the best performing plants and those with the lowest performance*” (COM (1998) 558 final, p. 13)(all).

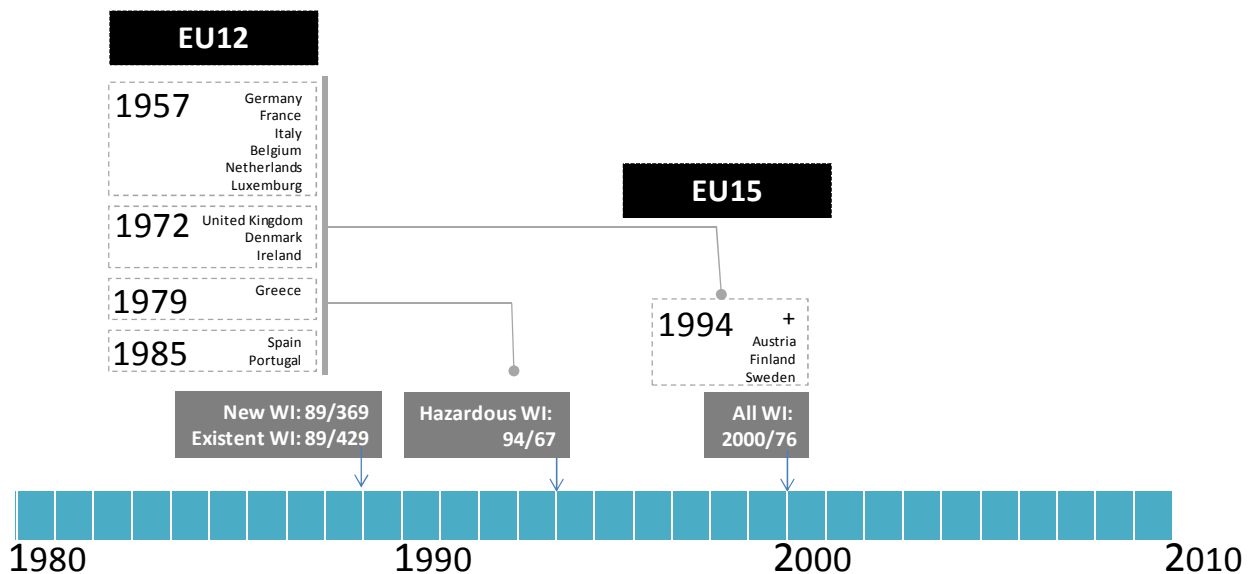


Figure 2: Graphic representation of the Member States who participated in the drafting of the four WI Directives

The start of the legislative process for the Waste Incineration Directives has been the proposals presented by the Commission. In these proposals, an introductory text (*explanatory memorandum*) is given in which the current situation is described and the problematic to be solved is explained. Table 3 provides a summary of some of the points addressed in these explanatory memorandums of the WI Directives.

New and Existent municipal WI Proposal: (COM(88) 71 final)	Hazardous WI Proposal: (COM(92) 9 final)	All WI Proposal (COM (1998) 558 final)
Impact of incineration Estimated amounts of municipal waste Average composition Preferred disposal method Percentage of municipal waste incinerated Plant capacities in the Community Amount of incineration plants Available technology Treatment for combustion gases Efficiency of removal Amount of emitted pollutants Situation of some Member States Current legal status Dioxins and furans Recommendations made by WHO Involved costs	View on incineration Impact of incineration Current disposal of waste Current legal status ELVs in Member States Technology development Adaptation of existing plants Public information Sharing of information among national authorities Integrated approach Proposal Legal basis Operating conditions Co-incineration Involved costs	Incineration as part of a management system Impacts of incineration Distinction between hazardous and non-hazardous waste Current legal status Current technological advances Currents amounts of waste Stock of incinerators Public concern Stakeholders position Regulating co-incineration ELVs for dioxins and furans Needs to be covered with the new Directive Unequal market competition Objectives of the proposed Directive Legal basis and principles Economic evaluation

Table 3: Topics included in the introductory section of the Commission proposals of the WI Directives.

For example, in the proposal presented by the Commission for the **municipal** waste Directives 89/369 and 89/429 (COM(88) 71 final) there was information about the **estimated amounts of municipal waste** generated in the Community (110 million tonnes per year, pg. 1); and the **average composition** of waste generated (even though they write that the composition varies greatly among and between countries, and among seasons, they provide as a guide, that the composition is: paper/board/wood: 30%; plastics: 5%; metals: 5%; putrescible matter: 35%; inert/fine-grained/miscellaneous materials: 25% (pg 1).

Information was also given about the most widely used **disposal method** in the Community (being that of landfills or *controlled tipping* as they referred to it at that time, where 75% of the annual volume of municipal waste is being disposed of (pg 1).

Regarding incineration, information is given on the **average percentage of municipal waste incinerated** (25% of the annual volume), and that the specific situation of certain Member States deviates from this mean, being that the case for example of Portugal and Ireland who do not incinerate waste; Greece who has only one small-scale incineration plant; Germany and Netherlands incinerating over 30% of its municipal waste; and France incinerating nearly 40% (pg 1). Information is also provided on the **type of plant** used to incinerate most of the waste: in average, 88% of the waste is incinerated in plants with a capacity greater than 6 tonnes/hour; and 1% of the waste is incinerated in plants of less than 1 tonne/hour capacity (pg 2).

The **amount of incineration plants** in the Community is also given: 525 plants, where 11% have a capacity of less than 1 tonne/hour; 51% have a capacity between 1 and 6 tonnes/hour; and 38% have a capacity greater than 6 tonnes/hour, pg 2). It is also stated that the **situation of some Member States** is different, for example most of France's installed capacity -83%- corresponds to small and medium-scale while in an opposite situation, most of Germans and Dutch plants -89 and 100% respectively- account for plants greater than 6 tonnes/hour).

Furthermore, information was provided on the existent type of **treatment for combustion gases** (22% of the plants have no equipment for treatment of combustion gases, the rest of the plants being equipped with electrostatic precipitators only (36%), gas scrubbing equipment and electrostatic precipitators (7%), and mechanical dust separators (35%) (pg 2). Information was also provided on the **efficiency of removal** depending of the equipment used (i.e. in the case of PM, electrostatic precipitators would reduce the emission of PM from 1500 – 8000 to 50 – 150 mg/Nm³ (pg 9) (more in Table 4).

	Before treatment			Cyclones			Electrostatic precipitators (EP)			EP + scrubbing	EP + dry treatment
	min	max	mean	min	max	mean	min	max	mean	mean	mean
PM	1500	8000	3000	3000	2000	500	50	150	100	50	50
Cd	0,3	1,1	0,5	0,1	1,1	0,5	0,1	1,1	0,5	0,3	0,05

Table 4: Typical concentration of the pollutants in the combustion gas of municipal waste incinerators (before and after treatment) (COM(88) 71 final , p. 9).

An estimation was also given on the **amount of emitted pollutants** from municipal waste incineration plants at the Community, estimation which took into account the quantity of waste incinerated, the operating characteristics of the plant, and the performance of the purification equipment from plants currently in service (e.g. dust → 28 ktonnes/year and Cd → 31 tonnes/year), where the highest percentage of emissions originate from the large incinerators compared with the emissions generated by the smaller incinerators (plants of >6 t/h generate 56% of the PM, and 73% of the Cd) (p 9-10).

It is also mentioned that the **available technology** of the time would allow for substantial reductions on the emissions of the pollutants (p. 15), and about existing installations it is said that the retrofitting of **existing plants** is technically possible, but economically it might be challenging, especially in the case of incinerators with a short remaining useful life (p.15).

Regarding the **current legal status** at EC level, at that point in time there was no specific legislation at community level addressing the topic of waste incineration, however, the explanatory memorandum referred to instruments of a general nature which were applicable to waste incineration. For example, the Directive 84/360 EEC on combating air pollution from industrial plants (on the permission procedure, on the application of BATNEEC, on the gradual adaptation of existing plants); Directive 75/442/EEC on waste (dispose of waste without endangering human health or the environment); and Directive 85/337/EEC on EIA (installations for the disposal of domestic waste shall be made subject to impact assessments, if the Member State considers this necessary) (p.3). At national level, incineration of waste was –in all EU12 Member States- subject to conditions designed to limit the impact on health and environment (p.3). However, only 5 Member States (France, Germany Fed. Rep., Denmark, Italy, and Netherlands) had adopted specific detailed provisions designed to prevent air pollution from municipal waste incinerators (p.4). The document stated that such provisions differed widely from country to country, both in their legal form and their content (p. 4-7).

The **costs of the abatement techniques** were said to depend on the separation efficiency required, and on the specific conditions encountered. The **size of the plant** was said to influences the investment in the sense of the return on the capital employed for emission control, particularly in the case of gas scrubbing equipment (p.15). About costs it was also said that it was not possible to make a detailed and exhaustive assessment of the costs involved in implementing the Directive given the many uncertainties (p.23). However, some information is provided on the costs for the emission abatement equipment. Specific costs are given in terms of investment for small (p.26) and medium-large size incinerators (p.25); costs were also given in terms of operating costs for small (p.29) an medium-large size incinerators (p.26).

The explanatory memorandum provided by the Commission in it proposal for a **hazardous WI Directive** (COM(92) 9 final), includes information on the **view the legislators had on incineration:**

incineration was seen as a way to reduce the volume of waste to be disposed of, but only if stringent emission control requirements were applied (p.2).

It refers also to the **current disposal of waste**, where appropriate sites for safe disposal of waste were less and less available, and so, other solutions were to be urgently found (p.2). Statistics on waste generation were difficult to compare due to the lack of harmonized nomenclature, but that nevertheless, it could be said that hazardous waste was generated in all Member States and that it may account for 2-20% of the total waste generated in each Member State (p.2)².

The **current legal status** at EU level is described by referring to a resolution from the Council of ministers from 1990 in which it is stated that waste which cannot be recycled or reused has to be disposed of in the most environmentally safe manner (p.2). It is also mentioned the adoption of the two Directives from 1989 on municipal waste incineration (p.2). In addition, it is stated that the Council asked the Commission to urgently complete the process of regulating incineration of industrial waste (p.2). Two pieces of existing community legislation which were related to the topic of waste incineration were also mentioned: on protection of soil and groundwater (p.2), and on the definition of hazardous waste (p.2).

The legal status at Member State level is presented in terms of the **ELVs set in the Member States**: The Netherlands and Germany having an ELV for dioxins and furans (p.3); and Germany's ELVs from 1986 being outperformed by progressive techniques so that already in 1990, a new regulation could enter into force with ELVs considerably more stringent than the 1986 ones (i.e ELV for HCl was lowered to a fifth of its previous level) (p.4). Having this and other factors on mind, it is written that very stringent ELVs are being presented in the proposal to protect the environment against pollution from waste incineration (p.4). Among the other factors presented is that equipment manufacturers guaranteed the technical feasibility to meet the proposed ELVs, even below the proposed values (p.4), that rapid progress in the developments of reduction techniques allow the setting of stringent ELVs (p.4), and that the use of progressive techniques would allow the meeting of high ELVs, for example, the one proposed on total organic carbon (TOC) (p.4).

In the lines of the **development of technology**, it is said that based on latest developments, it is insufficient to refer to BATNEEC for the purpose of preventing or minimizing emissions from Hg and dioxins and furans (the equipment was not developed yet for minimizing these) (p.3), and that the rapid progress in the development of reduction techniques allows the setting of stringent ELVs (p.4).

For the **adaptation of existing installations**, three years are suggested from the date of implementation of the Directive for existing plants to be brought to the standards of new plants (p.5) (at the end, 4,5 years were agreed). Small plants which planned to shut down in a period of 5 years, did not need to adapt to the Directive's requirements (p.5) (at the end, this was still the case but under certain pre-conditions –see article 13 of final Directive).

Additional elements presented in the explanatory memorandum are the **availability to the public** of information on hazardous waste incineration and on its emissions, process which is said to be ensured by procedures provided in Community law (e.g EIA) (p.6), and the desire of the legislators for having an **integrated approach**: covering not only air pollution but also soil, surface and groundwater protection (p.2).

Related to the **involved costs** needed to comply with the provisions of the Directive, the explanatory memorandum provides an example of the costs which might be incurred in, for example, the addition of a very efficient dust removal and scrubbing system, and of activated carbon filters (p.7, 8).

In the explanatory memorandum for the proposal of the **all-waste** WI Directive (COM (1998) 558 final) the **view on incineration** is that this process is considered part of a waste management system, where

² An estimated amount of hazardous waste is presented by Haq and Artola ((1995): "An estimated 24 million tonnes of hazardous waste are generated by OECD member countries in Europe; of this amount 70-75% is disposed of on land ((Haq & Artola, 1995, pp. 9 quoting after UNEP, 1993).

incineration is seen as the last stage in the waste hierarchy –when waste prevention and waste recycling measures have been already applied, and when the process takes place only under strict controls, and preferably with heat recovery (p. 3, 14).

The **legal status** of the time is framed, at EU level, by a Council Resolution from 1997 providing the strategy for waste management (p.3), by the existing Directives applicable to new and existing waste incinerators (p. 3-5), and by other legislative documents which relate to the proposed Directive: management of waste oils, prevention of groundwater pollution, combating acidification, energy efficiency, and the Integrated Pollution Prevention and Control Directive –this last on the permitting process, among other installations, for incinerators of more than 3 t/h capacity (p. 13-16).

The legal status at Member States level is marked by the disparities that exist between the legislation that is currently in force at national level. However, no details are provided in the explanatory memorandum on these differences (p.13), nevertheless, it is mentioned that some Member States have set strict ELVs due to legal requirements of installing effective pollution controls (p.8).

The **technological advances** of the time are said to make possible the achievement of improved standards in a cost-effective manner (p.4, 8), that there has been progress in the both continuous and periodic monitoring possibilities of pollutants, (p.8), that the developments on flue gas treatment technology makes it possible the effective control of PM, acid gases, heavy metal, and organic compounds (p.8) and that some of these systems are commercially available and in use in some of the Member States (p.9).

Regarding the **amounts of waste**, it is said that an increase in the amount of waste sent to incineration is expected (from 31 mill t/y in 1990 to 56,5 mill t/y in 2000) (p.9), the reason for this given the increase in the waste generated and also due to the implementation of other waste-related policies: the ban on landfilling, the ban on sea dumping, and the implementation of the urban waste water treatment plants Directive (p. 4,9). The **stock of incinerators** refers to a total of 437 municipal waste incinerators in the EU. Countries with the largest amount of incinerators are France (225), Germany (49), and Denmark and UK (each with 31 plants). Portugal, Ireland and Greece do not report incineration plants (p. 28). However, the data is from the early 1990s, given that according to the Commission, it was not possible to identify the current incineration capacity of the EU due to the rapid development of incinerators, were plants are being built up and closed down in many of the countries (p.27).

The explanatory memorandum also includes information on the recognition of the **public concerns** regarding the topic of waste incineration (p.3) and on a description of the **stakeholders** which were consulted for the drafting of the Commission proposal. Such stakeholders were environmental NGOs, and industry (paper and pulp, woodworking, power generation, waste industry and cement industry). Box 4 presents a summary of the topics presented by these stakeholders.

Other information included in the explanatory memorandum related to the **unequal market competition** derived from the different national standards in place in the Member States. A concrete case was the one on dioxin emissions where it was said that it *“mainly cause local contamination. However, this contamination affects meat and milk product which are traded throughout the Community. It is therefore necessary to introduce legislation setting the same minimum requirements for the whole of the Community”* (p.12).

An **economic evaluation** of the proposed Directive was also presented. Among the costs considered are to install or upgrade the pollution control equipment, the increase of the monitoring requirements, the increase in the chemical used for the flue gas system (p.19). Among the benefits are the reduction on adverse effects on human and ecological impacts, as well as on crop and building damages (p. 19). However, uncertainties were mentioned on the health effects of air pollution, and on the monetary values attached to the benefits (p.19).

Box 4: Topics discussed with the stakeholders during the drafting of the all-waste incinerators Directive (COM (1998) 558 final)

Among the topics presented by the eNGOs were:

- their support for the better regulation of co-incineration activities,
- the request for more stringent ELVs, and
- the banning of PVC from incineration (this last issue not being considered by the Commission since it is a topic outside the scope of the Directive) (p.18).

Among the topics presented by industry were:

- the exclusion of untreated biomass materials from the scope of the Directive,
- the possibility of reduced monitoring for clean waste streams, and
- waste industry pressing for equal standards to be applied for co-incineration (special features however need to be taken into account in the cement process: difficulties in controlling NO_x and PM) (p.18).

National experts from Member States were also consulted by the Commission. Among the topics presented were:

- the need to exclude clean biomass fuels from the scope of the Directive, and
- to exclude clean waste streams from the scope of the Directive (this last issue not considered by the Commission since it was not possible to exclude with sufficient confidence the possibility of contamination of these materials) (p.17).
- France presented its concern on excessive costs for the small scale plants when complying with the NO_x requirements (higher ELV on NO_x was allowed for plants < 3 t/h) (p.17),

Even though the scope of the present PhD project covers until the year 2000 when the fourth WI Directive entered into force, some information is presented here on the status of incineration at EC level in 2007. This information was obtained from a report published in 2007 (Ökopol, 2007) providing the Commission with an assessment of the implementation of the 2000/76/EC waste incineration Directive. (see Box 5).

Box 5: Current information about incinerators at the EU (2007)

(where otherwise specified, the information refers to (Ökopol, 2007))

- There are 595 plants dedicated to waste incineration (data from 21 Member States) and 849 plants for co-incineration (data from 13 Member States) (p. 15).
- The majority of incineration plants have been indicated for France (155) followed by the UK (85) and Germany (70) (p. 42).
- Over 60% of the incineration plants are municipal waste incineration; hazardous waste incineration account for 20%; and clinical waste incinerators account for about 10% (p. 65).
- More than 90% of the installations covered by the 2000/76/EC Directive also fall under the IPPC Directive (COM(2007) 843 final, p. 10), that is, incinerators exceeding 3 tonnes per hour.
- However, given that no information was received from all Member States, all aggregated values have to be considered as the lowest value and it has to be assumed that in reality the value is higher (p. 24)
- The overall compliance in terms of issued permits can be considered as good (COM(2007) 843 final, p. 10).
- As a general rule for the incineration and co-incineration of waste, stricter air ELVs have been imposed in a number of plants of different Member States. Parameters relate to PM, HCl, HF, SO₂, NO_x and Hg (p. 16). However, the report does not specify which countries are those or the new numbers assigned.

Summarizing: Contextual elements of the Member States

The list of contextual elements of the Member States (borrower context) derives from that which was said by the legislators on the explanatory memorandum of the Commission's proposals (Table 3)

The selection of these elements marked in bold in was done by looking at the elements which define the object of study, and then seeing how those defining elements are in the specific context being studied. The object of study in this case are the ELV for waste incineration, and its defining elements were discovered after exploring the 2nd researched area of this PhD project which produced the factors influencing the formulation of ELVs (Box 6). It is the list of these defining elements which was used as a criteria to find the influencing contextual elements. Such contextual elements are summarized in the Table 5.

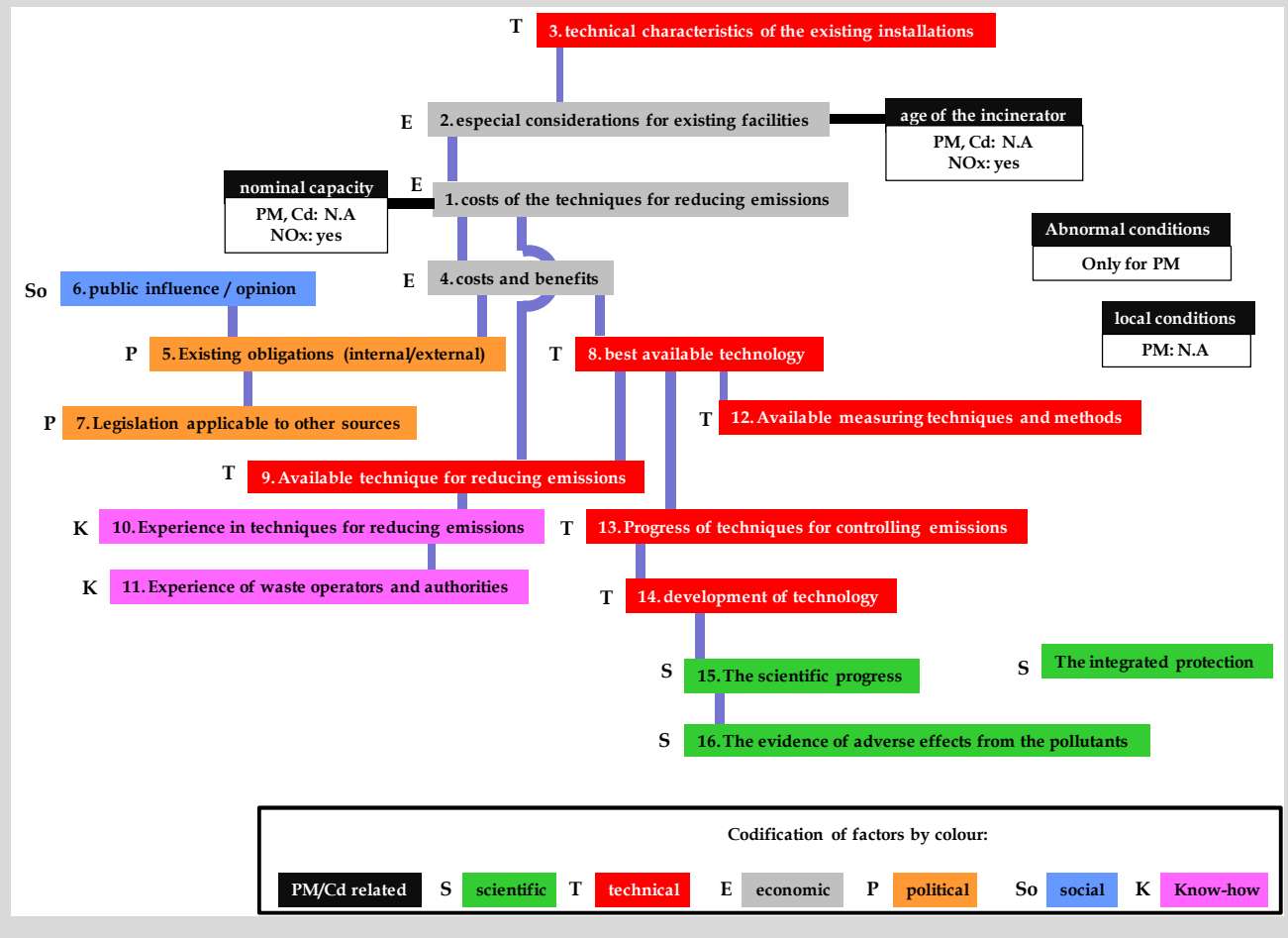
Contextual elements	New and Existent municipal WI	Hazardous WI	All WI
Waste			
Amounts	x	x	x
Composition	x		
Disposal			
		x	
% sent to landfill	x		
% sent to incineration	x		
Capacity			
Plant sizes (t/h)	x		
Amounts of plants	x		x
Legal status			
At EU level	x	x	x
At MS level	x	x	x
Economic evaluation			
Costs	x	x	x
Benefits			x
Current technology	x	x	x
Adaptation of existent plants		x	
Views on incineration		x	x
Integrated approach		x	
Public access		x	
Stakeholders' positions			x
Unequal market			x

Table 5: Contextual elements from Member States (detail on the description of the contextual elements can be seen at the beginning of this sub-section: *Describing the case*).

Box 6: Factors influencing the formulation of ELVs for waste incineration in the EU Directives

The second researched area of this PhD project dealt with the question of *Which criteria played a role in formulating the ELVs for waste incineration in the EU*. The expected knowledge obtained from it being the factors influencing the formulation of ELVs for waste incineration in the EU.

The findings relate to a list of seventeen factors, factors which are applicable to the formulation of ELVs in general, and which can be classified into six categories: scientific, technical, economic, political, social and know-how. The findings also relate to a list of four additional factors which are specifically related to the formulation of PM and Cd. Two of these factors are associated with the general factors.



Strategies to secure implementation of the Directives in the Member States

As mentioned, at the moment the waste incineration Directives were being drafted and implemented, the situation of the Member States differed among each other in terms of existing legislation, incinerating capacity of plants, treatment of combustion gases, and use of incineration as the method to dispose waste.

The situation set the question of how the EU manages to implement the same piece of legislation in Member States which had different conditions among each other. Based on literature research, one could conclude that the ability of the EU to perform this task is due to four types of -let's say- *mechanisms*. The information of these mechanisms allows the identification of the strategies used by the EU to secure the implementation of the Directives in the different sub-contexts of the Member States. The main points of these mechanisms are explained next, but further information of these mechanisms is described in Appendix 1.

The first one of the mechanism relates to the fact that when there is a strong economic motive behind, especial efforts are made to overcome the national differences. The second type of mechanism relates to the fact that EU laws cover the diversity of Member State, that is, the implemented laws do have a piece of every sub-context.

The third and fourth types of mechanisms were created to address the difficulties that were emerging from a growing Community where there was the challenge to make policies that would fit them all.

This third mechanism refers to derogations or financial support given to implement the specific piece of law. Regarding derogations, these are given because of the high implementation costs of a new policy. However, they are temporary, apply only for measures adopted under art 130s(1) (environmentally-related issues), and the costs in question are those incurred by public authorities and not from private industries. In respect to financial support, this is applicable only for those Member States with a per capita GNP of less than 90% of the average, and it is entitled to projects in the environmental and transport field (Wilkinson, 2002, pp. 46-7).

The fourth mechanism refers to the new types of instruments which move away from setting concrete and detailed environmental standards towards setting objectives which leaves considerable manoeuvrability to Member States, and in this way taking better accountability of the contextual conditions of Member States. In this sense the EU sets common goals at Community level, leaving then to the Member States the decision on how the goals are to be reached. Member States then tailor the policies to their particular circumstances (European Environment Agency, 2007, p. 18). One could also say this mechanism is in lines with the Subsidiarity Principle which, according to Wilkinson (2002, p. 40), states that “*action is taken at Community level only where that is more effective than national action, and only to the minimum extent necessary*”. Two examples have been cited as new instruments: the Water Framework Directive, and the Integrated Pollution Prevention and Control Directive. In the particular area of waste for example the Waste Framework Directive is the backbone of the policy, and according to the European Environment Agency (2007, p. 18) it combines different instruments in a tailored package that takes account of the differences in the Member States.

These mechanisms are evidenced in the particular case of the waste incineration Directives. The first mechanism of having a **strong economic drive** motivating Member States to overcome their national differences is related to the issue of harmonization, especially for products which influence the objective of achieving a common market. In the particular case of the waste incineration Directives, as it was presented in the 3rd Researched Area of this PhD report (First of the EU particularities), the motivation to harmonize at EC level the process of waste incineration was, among other things, due to the market distortions that were being created by the different rules on incineration from Member States. An example of this is found in the proposal presented by the Commission for the hazardous WI Directive: “*The current differences in national provisions applicable to the incineration of hazardous waste, and in some cases the absence of such provisions, are consequently liable to distort competition, affect the free movement of goods in the internal market and give rise to differences in the protection of health and environment*” (COM(92) 9 final, p. 10)(haz).

The second mechanism, of the EU law **covering the diversity** of the Member States, was also addressed in the 3rd Researched Area of this PhD project with the Second particularity of the EU context, where it was said that the point of departure for the drafting of legislation is the national legislation of the Member States, and also that the policy implemented at EC level could be described as a patchwork of policy styles from the Member States.

The third mechanism on the **derogation or financial support** is seen in the waste incineration Directives. For example, the Directives for municipal incineration plants gave small plants laxer ELVs: plants

of less than 1 tonne/hour had to comply only with two ELVs: PM and HCl (art 3-1), and the ELVs given to PM were less strict than the ELVs applicable to plants of > 1 t/h³.

In the case of existing incinerators, longer implementation times were given to them compared to the new plants (see Box 7), and in the particular case of hazardous waste incinerators, some of these plants were exempt of complying with the provisions of the Directive subject to some conditions: the plants were not meant to operate more than 20.000 hours in the five years following the implementation date of the Directive after which the plant would shut down (94/67/EC art 13-2).

Another example is the case of NO_x in the all-waste Directive: plants of less than 6 t/h were allowed to discharge 400 mg/m³, while larger plants (larger than 6t/h) were allowed to discharge 200 mg/m³: *“In order to meet the concern expressed by France that the requirements for NO_x control would be excessively burdensome for small scale plants and would not prove cost-effective, plants with a capacity under three tonnes per hour are allowed a higher emission limit value for NO_x”* (COM (1998) 558 final, p. 17)(all).

The reasoning behind these derogations was on the fact that these plants tended to have trouble acquiring efficient –and expensive– equipment for achieving stricter ELVs. In both cases the trouble related to the return of the invested capital: existing plants might not have a long remaining time as to recover the investment, and small plants might not earn enough as to recover the investment (this was something seen in 2nd Researched Area of this PhD project, with the factor of *costs of the techniques for reducing emissions*). The way the situation was managed by legislators in the case of the existing incinerators was described as well in the 2nd Researched Area of this PhD project with the factor *especial considerations for existing facilities*).

The fourth mechanism, of EU **allowing manoeuvrability** by setting the common goals at Community levels, and leaving Member States to tailor the policies based on their particular circumstances can be seen also in the case of the waste incineration Directives. For example in the new WI Directive the national authorities were allowed to exempt small plants of the need to comply with ELVs, because *“special local conditions so require”* but as long as some requirement were complied with (art 3-3). The other waste incineration Directives also allowed national authorities to consent to different operating conditions, or to incinerators not having to carry measurement of certain pollutants or waste characterisations, all under certain conditions established in the Directives and requiring that the Commission was previously informed and consulted.

Another example of how the fourth mechanism of new types of instruments is applied, is for example as Knill (2006, p. 359) writes, about instruments which mobilise society through more transparent process and participatory opportunities. In the waste incineration Directives, this could be seen for example in the ability that the Directives gives to the public to access information on incineration. For example, the all-waste Directive writes that the applications for permits, the decisions of the competent authorities, and the results of monitoring shall be made available to the public (2000/76/EC, p. art. 4). The ESC explains the advantages that this brings: *“Full information is the only way to meet public concerns about the incineration of hazardous waste and make this option acceptable when it offers the most appropriate solution”* (OJ 92/C 332/16, pp. 51, ame. 1.15)

³ For further information on this please see Figure 20: “Relationship between the incinerator’s capacity and the ELVs assigned to PM” in chapter 5, and the explanation on the factor of nominal capacity also in chapter 5.

Box 7: Implementation time of the Directives

Implementation time refers to the time that is given for incinerators to implement the requirements given in the Directives. Figure 3 depicts the implementation times for *existent* and for *new* waste incinerators for each one of the four Directives. The short arrows on the x-axis indicate the dates on which the Directives were published; the long arrows indicate the dates on which the Directives should be implemented in the Member States. The grey areas indicate the times given to the incinerators to implement the requirements given in the Directives. The inverted triangles mark the date which differentiates an *existent* from a *new* incinerator and it is the date on which the permit for operation was granted.

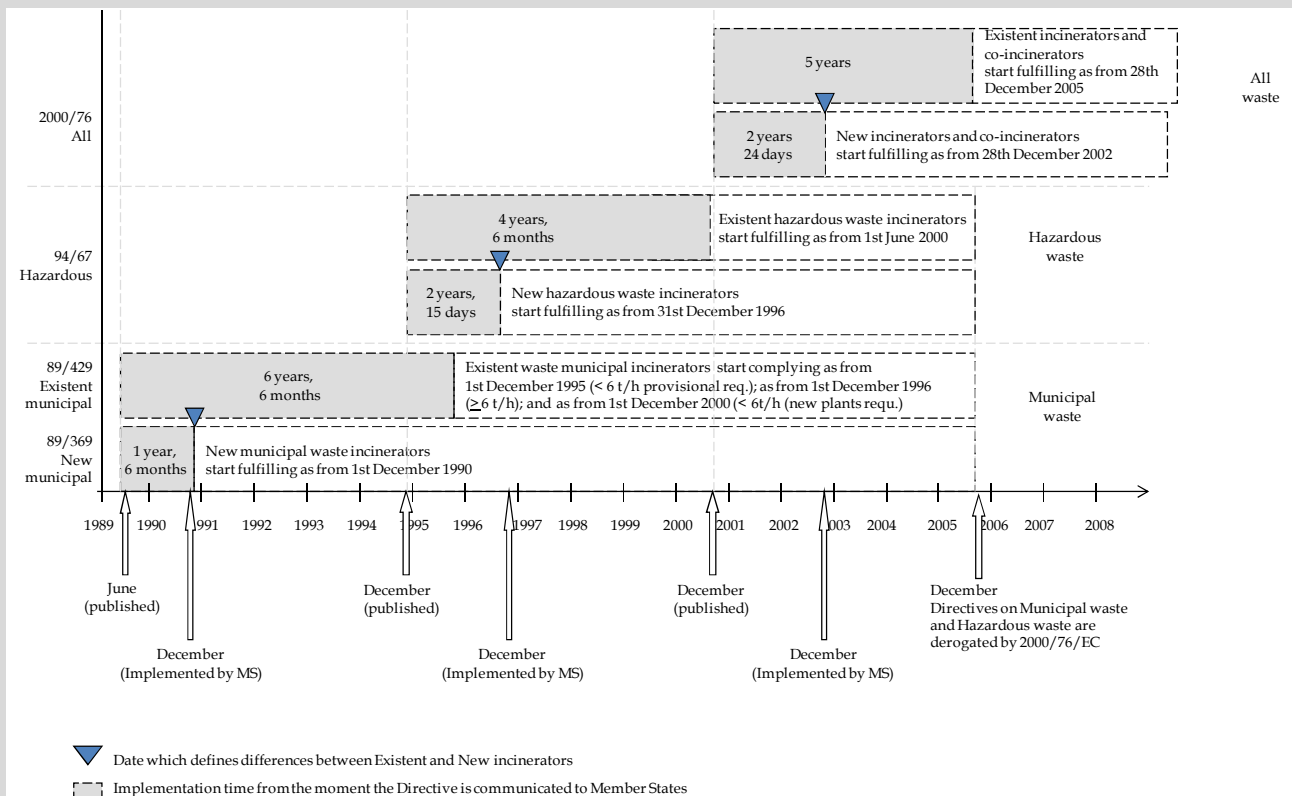


Figure 3: Implementation times and dates from which the Directives start to be applicable to Existent and New WI plants

In general, it can be said that more time is given for *existent* incinerators than for *new* incinerators for implementing the requirements contained in the Directives. This time is different to the time given for the ELVs to start being applicable as it presented in Appendix 2.

Based on the figure one could say that while preparation time for new incinerators average 2 years, the preparation time for *existent* incinerators averages 5 years. Additionally, over time, new incinerators were allocated more preparation time: one year and a half for municipal incinerators, then two years and some days for hazardous incinerators, then two years and almost a month for all-waste incinerators. In an opposite situation, over time existing incinerators were allocated less preparation time: six years and a half for municipal, four years and a half for hazardous, and then five years for all-waste type.

When comparing the type of waste incinerated, more time was given for new plants incinerating hazardous waste (2 years, 15 days) compared to new plants incinerating municipal waste (1 year, 6 months). The opposite situation occur for existing plants, that is, less preparation time is given for existing plants incinerating hazardous waste (4 years, 6 months) compared to existent municipal waste (6 years, 6 months).

Summarizing: Defined strategies for the Member States

The strategies used by the EU to secure implementation of the WI Directives in the Member States are summarized in the following table. The information was obtained from the working documents and the Directives, and using as framework the information found in literature on how the EU manages to implement the same piece of legislation in the different Member States.

Member States: Strategies to secure implementation of Directives in the different sub-contexts of the Member States
1 ^{er} mechanism: Strong economic drive motivating Member States to overcome their national difference: The motivation to harmonize at EC level the process of waste incineration was, among other things, due to the market distortions that were being created by the different rules on incineration from Member States.
2 nd mechanism: EU laws cover the diversity of Member States: The point of departure for the drafting of legislation is the national legislation of the Member States; The final policy implemented at EC level is a patchwork of policy styles from the Member States.
3 rd mechanism: Derogations or financial support: Derogations given for example to small incineration plants (laxer ELVs of PM for plants < 1 t/h incinerating municipal waste) and for existing plants (longer implementation times).
4 th mechanism: EU setting objectives that allow manoeuvrability: EU sets the goal and the Member States defines how to reach it based on their specific and local circumstances; national authorities have the autonomy to decide on certain matters; use of new instruments such as information available to public.

Table 6: EU's strategies to secure implementation of transferred Directives into the Member States.

Outcome of the implementation strategies

A question that arises is how effective has these implementation measures been. Some authors refer to general implementation problems of the environmental Directives in the Member States. Inglis (2004) for example, presents how by 2004, there was still a high level of poor application of the environmental *aquis*. The EU15 states were failing to comply with several areas of the environmental *aquis*, areas which needed to be fully complied with by the Central Eastern European states on their date of accession (p. 149). Kramer (2004) also reports implementation problems which are not unique to countries applying to EU membership, problems especially related to capacity, effective implementation, and enforcement of environmental legislation (p. 297).

The problem has been addressed by several mechanisms. For example, Inglis (2004), write about seminars held by the Commission on the topic of administrative capacity for the EU15 states in 2002, particularly in the implementation of complex environmental Directives (p. 149). She also writes that the implementation deficit in the EU15 inspired the development of governance initiatives, and the improvement of the infringement procedures (p. 150).

At the end of 2008, nearly 25% of all complaints and infringement on EU environmental legislation were related to the waste sector (26th_report, 2009, pp. 149, footnote 137). The complaints and petitions received were usually on illegal landfills in several Member States, illegal waste shipment on electronic waste, and the lack of adequate waste management infrastructure (26th_report, 2009, p. 149).

In the specific area of waste incineration, a study was carried out in 2007 on the implementation of the Directive 2000/76/EC (all WI Directive). The study found out an overall good compliance in terms of the issued permits for the incinerators, and that the incineration plants met the ELVs set in the Directive (26th_report, 2009, p. 183). In addition, it was found that stricter requirements were set in some of the Member States: *"In about 50% of the Member States either the permits contain even stricter limit values than those required by the Waste Incineration Directive, e.g. for air emissions of PM, CO, HCl, HF, NO_x, SO₂ and Hg or they included additional requirements, e.g. relating to energy efficiency, noise abatement and accident prevention. Only a small number of permits have been issued that include emission limit values for parameters other than the compulsory ones e.g. PAH, PCB, zinc"*(COM(2007) 843 final, p. 11).

Nevertheless, and based on the results of the study, the Commission manifested its desires to reinforce the implementation of industrial emissions legislation, this through an effective exchange of information between Member States, and the promotion of best practices. In addition, the Commission referred to other mechanisms that would help reinforce its support for Member States and competent authorities, this through “*guidance development, visits to authorities, and training*” (COM(2007) 843 final, p. 6).

Furthermore, the report presented some issues that required further action and proposals for change were submitted on those issues. One of the issues was on the “*possibilities for the competent authorities to grant exemptions for emission monitoring requirements*” and the other was on the “*alignment of an emission limit value for cement kilns co-incinerating waste with the BAT levels*” (26th_report, 2009, p. 183). Other problems reported in the Ökopol (2007) study can be seen in Box 8.

Box 8: Problems reported on the implementation of the Directive 2000/76/EC (all WI Directive)

The Ökopol (2007) report presented several problems experienced with the implementation of the Directive. Most of the problems reported referred mainly to issues of definition and scope; measurement requirements; and operating conditions (p. 41). One example is about the uncertainties in interpretation i.e. “*waste co-incinerated or waste as raw material*” (p. 30); another example is about technical difficulties on measuring requirements i.e. “*technical problems regarding emissions' monitoring, especially for metals and dioxins as state laboratories have not yet all relevant analysis*” (p. 30).

Among the areas suggested for amendment of the Directive is the one related to emission limit values for cement kilns, i.e. “*unclear justification for higher emission limit values for cement industry*” (p. 35); and “*calculation of emission limit value for co-incineration more precise*” (p. 35). Other issues suggested for amendment are the ones on coordinating the requirements from the Waste Incineration Directive and the Integrated Pollution Prevention and Control Directive; and issues raised by the stakeholders regarding the implementation of the Waste Incineration Directive and their day to day practice i.e: application of the requirements on specific type of installations (p. 143).

The Ökopol (2007) study served as input in the process of amendment of the Integrated Pollution Prevention and Control Directive (IPPC), process which ended with the development of a new Directive on Industrial Emissions Directive (2010/75/EU) which also covers waste incineration plants (Box 9).

Box 9: Industrial Emissions Directive (2010/75/EU)

The Directive on Industrial Emissions (IED) was adopted on 24 November 2010 and entered into force on 6 January 2011. It should be transposed into national legislation by Member States by 7 January 2013. The Directive replaces the IPPC Directive and the sectoral Directives –including waste incineration Directive 2000/76/EC– as of 7 January 2014. The scope of this IED is to coordinate the requirements that were given in the 2000/76/EC Waste Incineration Directive and in the 2008/01/EC IPPC Directive (DG ENV, 2011).

The ELVs for waste incineration presented in this IED Directive are the same values as in the 2000/76/EC Directive.

Central Eastern European (CEE) enlargement

Describing the case

A country that aims for membership at the EU needs to fully comply with the rules of the EU (Tews, 2009, p. 131). According to the Copenhagen criteria, adopted in 1993, the requirements that a new member has to meet refers to (a) a stable political and legal institutions; (b) a guarantee for democracy, the rule of law, and human rights; (c) a functioning market economy with the capacity to compete with the market forces within

the Union; and (d) to take the obligations of the *acquis communautaire* (the common body of EU legislation) (Tews, 2009, p. 131).

The requirement of the *acquis* relates to the body of legal acts in various policy fields, including the environment. It “encompasses the common rights and obligations that bind all the Member States together within the EU” (Inglis, 2004, p. 135). *Acquis* are binding for the Member States and also for those countries who wish to become part of the Union (Tews, 2009, p. 131). Before admission, the candidate country must adopt the *acquis*, meaning a 100% compliance with the requirements of the EU legislation (Kramer, 2004, p. 290).

Adoption of the *acquis* relates to three distinctive elements: transposition, where there is a complete alignment of national legislation with the EU legal acts; followed by implementation and enforcement which relates to building up the appropriate administrative capacity to be able to fully comply with the obligations (Kramer, 2004, p. 290), (Tews, 2009, p. 133), (Inglis, 2004, p. 136).

Approximation is the term is used “to denote how the Member State and third country partners, approximate to the EC law rather than replace their national laws” (Inglis, 2004, p. 135). Inglis continues saying that approximation relates to the amendment, adaptation of national law, or the adoption of supplementary laws (p. 135). However, other authors such as Tews (2009) refer to this process of transferring the *acquis* to the accession countries as a *coercive policy transfer* in the sense that aspirant countries are left with the take-it-or-leave-it option (p. 133) (this issue of *coercive policy transfer* will be presented at the end of this sub-section).

Another point to bring forward is that for some authors such as Soveroski (2004), the process of enlargement emphasizes the fact that there is a great diversity among the Member States of the EU:

“EC enlargement have served to highlight the geographic diversity of European States and the related environmental protection challenges that new Member States bring to the Community, for example, by highlighting the differences between northern versus southern perspectives. The entry of Greece, Spain and Portugal brought problems of arid agriculture [...] the entry of Finland, Sweden and Austria emphasized the problems of arctic/alpine agriculture” (p. 127).

Diversity is also seen, for example, in the different levels of importance given to the environment by the different Member States and the economic considerations implicated with this. For example Soveroski (2004, p. 128) writes about southern states being concerned that the emphasis in environmental policies on industrial pollution has caused constrains on their economic development. However, this north-south distinction has been challenged by Börzel (1999) where it is said that such distinction does not really exist.

Furthermore, environmental *acquis* are, according to Kramer (2004, p. 290), considered one of the most challenging components of the accession process, this due to its stringent deadlines, its costs of implementation, and the complexity of issues involved.

However, this challenge related to the environmental *acquis* has not been present throughout all of the enlargement processes. Environment was not addressed in the negotiations that lead up the accession of Denmark, Ireland and the UK in the 70s; neither was on the round involving Greece, Spain and Portugal in the 80s; at those times environment was not considered a major issue (Soveroski, 2004, p. 128). In the case of Austria, Finland, and Sweden (mid 90s), the situation was that these countries had a much better environmental performance than the EC (Box 10).

The Eastern Enlargement of 2004, on the other hand, was considered challenging “*The sixth enlargement of the EU undoubtedly presents its environmental law with greater challenges than any previous enlargement*” (Inglis, 2004, pp. 135, quoting on a Commission Communication from 1998). It was thought that the environment at EC level would be decreased due to the characteristics of these states.

Box 10: Environment in the enlargement involving Austria, Finland, and Sweden

The situation was that these applicant countries had legislation in areas not covered by Community legislation, and also had higher environmental protection standards than the ones set at the Member States of the time (Soveroski, 2004, p. 128).

Given the high environmental standards that these countries had, the expectation was that the general level of environment protection at EC level would be improved. However, according to Inglis (2004, p. 149), the end result was that the *status quo* of the lowest common denominator at Community level was maintained.

The situation was managed in the way that these Member States were given a period of grace over which they could maintain their strict legislation: "*The review clause [from the act of accession] gave the EC and the Member States 4 years to revise the community standard upwards to their level [...] The higher standards concerned 11 amendments to 9 directives [...] [However] it was not necessary to amend measures adopted under the legal basis for environment adopted under art 174 EC, which in any case allows for more stringent national measures*" (Inglis, 2004, p. 148).

Inglis continue writing that often, incoming countries struggle to maintain their higher standards once they become part of the EU: "*Austria, Finland and Sweden, together with other traditional pusher countries, notably the Netherlands and Germany, find themselves restrained from initiating national environmental measures that affect trade and therefore, also, from leading EC environmental standards*" (p. 150).

Eastern Enlargement refers to the accession of the CEE states of Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia in 2004 (Kramer, 2004). According to Inglis (2004, p. 136), this enlargement was particularly challenging because of the environmental chapter of the *acquis*.

Concerns about the possibility of these countries to adopt the environmental *acquis* were related to the low level of environmental protection practices; the heavy pollution levels registered in some parts of the region (Soveroski, 2004, p. 129); and the fact that the gaps in the level of environmental protection between the existent and the new Member States would lead to distortions in the single market (Inglis, 2004, pp. 138, quoting from a Commission Communition, 2000).

Concerns about this enlargement were also because CEE countries were, according to some authors, reasonably diverse compared to the fifteen Member States that were part of the EU at the time of this enlargement. Dissimilarities related to the different priorities that these countries had on environmental and socio-economic aspects, as well as on their financial resources (Inglis, 2004, p. 146) (Soveroski, 2004, p. 129).

Kramer (2004) also writes about the view that these countries had on environment, countries which were emerging from a situation where not much importance was given to environment, and that these new Member States might put more priority in trying to achieve other issues considered by them as more critical, and that maybe these new Member States might be allowed to not do some of the environmental requirements in compensation for the toughness in other areas (p. 291). Kramer also mentions that environmental ministries of these countries lacked administrative power, and that environmental protection was not always a priority (p. 299).

At the time of the enlargement, financial and capacity aspects were documented as the most challenging elements with which the candidate countries must cope if they were to comply with the environmental *acquis*. Related to the financial challenge, Inglis (2004) writes that "*the single most challenging task facing the new Member States in respect of the environment acquis, compared to other chapters, will be to secure the necessary investment*" (p. 136). Kramer (2004) comments that the challenge was especially severe given the high implementation costs related to the environmental *acquis*, and that the candidate countries must rely

primarily on their own financial resources to meet the *acquis*, resources which might be already compromised in meeting other demands in the overall accession process (p. 290).

Implementation costs of environmental *acquis* related to the need of setting an infrastructure upgrade in areas related to waste, water, energy and the Integrated Prevention and Pollution Control Directive (Inglis, 2004, p. 136). Inglis refers to a report containing the most expensive Directives to implement, and among the heaviest Directives in terms of investment were the New Municipal Waste Incineration Directive and the Hazardous Incineration Directive (p. 136). Inglis also writes how, some of the most costly and ambitious environmental legislation had been developed at the EC since the end of the 80s: *"For example, the rules on Large Combustion Plants, Integrated Pollution Prevention and Control, urban waste water treatment, air quality framework, and its daughter directives, hazardous waste incineration, municipal waste, packaging and packaging waste have all been enacted since that time"* (Inglis, 2004, p. 146).

Questions made at that time were on how those expenditures were to be funded, and whether the project costs could be reduced or stretched out through transitional periods (Kramer, 2004, p. 293). Kramer continues writing that EU officials had made it clear that the sums to spend on environmental compliance were to come primarily from the countries' own resources, but that this view was opposed by others who said that it was unrealistic to expect these countries to obtain such money given their *"heavily burdened domestic economies"*, economies which were *"already severely strained in the transition from communist rule"* (Kramer, 2004, p. 296). Kramer also writes about the EU estimating that candidate countries would need to spend between 2-3% of their GDP to ensure implementation of the environmental *acquis*. The figure is interesting given that, according to Kramer, in the EU itself the expenditures average 1% of the GDP (p. 295).

In addition to this, the challenge was also related to what would happen after enlargement. Inglis (2004) write *"the need to find financing and investment for infrastructure projects will continue for many years after enlargement"* (p. 135).

The second type of challenge with which the candidate countries were to cope in order to comply with the environmental *acquis* was the one related to maintaining the necessary administrative capacity to transpose, implement and enforce these *acquis* (Inglis, 2004, p. 150) (Kramer, 2004, p. 297).

These authors write how, at the time of the enlargement, the CEE countries were behind the EU15 in terms of the necessary administrative capacity to comply with the environmental *acquis* (Inglis, 2004, p. 135). For example, Inglis (2004) referred to a report published in 2003 and made by the Court of Auditors examining the years 1995 - 2001 in which it was *"pointed out that the future new Member States did not have sufficient institutional capacities to develop environmental and financing strategies at a sufficiently early stage"* (p. 138). Kramer (2004) also relates to an EU-sponsored study dated on 2001 in which it was specified that even though capacity problems were found in almost every candidate country, the most pressing capacity problems were in Bulgaria, Poland and Romania (p. 297).

In the case of Poland, the concerns related to administrative problems such as limited staff resources, the need to improve the awareness about the requirements of the EU environmental Directives, and the need of more training in EU environmental policy. Problems were also seen related to unclear responsibilities, mainly because of the division of tasks over numerous agencies, and the fact of having different bodies responsible for setting objectives, giving permits, and performing monitoring and inspections tasks. Such collection of problems were said to be found also in varying degrees in the other applicant countries (Kramer, 2004, pp. 298, quoting from a 2001 Commission report).

In the concrete case of the limited staff resources, the problem was related to the need of increasing the number of personnel engaged in environmental issues, as well as the need of providing them with appropriate training and resources so that their duties could be executed competently. Problems were also seen related to their appropriate payment, that is, the need of compensating them adequately so that the

qualified staff would remain in the public sector and would not leave for better employment in the private one (Kramer, 2004, p. 298).

Besides the financial and capacity aspects, two other areas were recognized as challenging for these candidate countries in their task of complying with environmental *acquis*: ensuring public participation, and achieving political support. Regarding the first one, the challenge was to overcome the so called *democratic deficit*, what Kramer (2004) referred to as the “*legacy of communism*” in the sense that civil society was not accustomed to participate in shaping public policy (p. 301). The importance of securing public participation for the process of complying with environmental *acquis* is explained by Kramer (2004): “*No public participation translates in difficulties for getting their support for costly environmental policies*” (p. 302).

Regarding the political support, according to Kramer (2004), that which was needed was the real support for implementing environmental law, law which was considered highly controversial, fiscally onerous, and which might be disadvantageous for some (p. 306). What Kramer (2004) seems to fear was that the motives for implementing environmental legislation were only related to becoming part of the EU, and not to improve environment per se. He wondered then if after accession the momentum on protection of environmental matters would get lost (p. 306).

Yet another challenge, which can almost be seen as a dilemma, is that which was presented by some authors, wondering two things: first, if the EU environmental *acquis* was really aiming for a sustainable development, and second, the fact of having to implement it in regions where they might not be really fitting.

Regarding the first point, Kramer (2004) has wondered whether the fulfilment of the environmental *acquis* is really the road to a sustainable development in Europe. He refers to mixed messages between environmental protection and economic development “*messages that in word typically say all the right things about environment and the need for sustainable development but in deed frequently entail policies such as the stress on large-scale intensive agricultural development that directly conflict with its rhetorical commitment to sustainability*” (p. 308).

Regarding the second point, what is being wondered is about the imposition of western EU priorities on the CEE countries. For example, Lee (2005) writes: “*The new Member States will follow western European priorities and approaches even if they are not the most appropriate response to the particular situation they face*” (p. 19). Tews (2009) also writes about how, after the association agreements were signed in the middle of the 90s, the societal order in the CEE countries were being remodelled and framed by legal rules from abroad (p. 133). The concern is specially related to the first point previously addressed, where it is said that the EU is imposing in the applicant countries its development model which, according to Kramer (2004) “*stresses the imperatives of large-scale economic development to the detriment of building a sustainable environment*” (p. 300).

However, independent of whether the environmental *acquis* was the route for sustainable development, or if the western EU model was appropriate for the CEE countries or not, the decision was that enlargement was the route to follow: “*whether or not the acquis is appropriate to the needs of the new Member States no longer seems to be a relevant question. The pre-accession strategy has been the route followed*” (Inglis, 2004, p. 151).

Summarizing: Contextual elements of the CEE

The list of contextual elements of the Central Eastern European States (borrower context) derives from that which was said by the authors of the journal articles on the characteristics which might give problems for the adoption of the environmental *acquis*. Such contextual elements are presented in the following figure:

Central Eastern European States Contextual elements
<p>Environmental awareness:</p> <ul style="list-style-type: none"> - Divergences on environmental aspects with the EU15. - Low level of environmental protection practices.
<p>Pollution</p> <ul style="list-style-type: none"> - Heavy pollution levels registered.
<p>Market</p> <ul style="list-style-type: none"> - Divergences with the EU15 states (could lead to the distortion of the single market).
<p>Financial matters</p> <ul style="list-style-type: none"> - Heavily burdened domestic economies (economies which were severely strained in the transition from communist rule). - High implementation costs of the environmental <i>acquis</i> (municipal WI and hazardous WI considered among the heaviest Directives in terms of investment). - Accessing states in need to spend 2-3% of their GDP to ensure implementation of the <i>acquis</i>. - Need to secure the necessary investment and to finance the infrastructure projects after enlargement. - Financial aspects is one of the most challenging issues for the enlargement process.
<p>Administrative capacity</p> <ul style="list-style-type: none"> - Behind the EU15 in terms of the needed capacity to comply with environmental <i>acquis</i> (not sufficient institutional capacities to develop environmental and financing strategies). - Limited awareness on the requirements of the EU Directives and on the knowledge of EU environmental policy. - Limited staff resources (in terms of the number of personnel engaged in environmental issues, and in terms of the appropriate training, resources to competently execute their duties, and appropriate payment). - Excessive division of tasks over numerous agencies (different bodies responsible for setting objectives, giving permits, performing monitoring and inspection tasks; unclear responsibilities).
<p>Public involvement</p> <ul style="list-style-type: none"> - Democratic deficit (civil society not accustomed to participate in shaping public policy).
<p>Political support</p> <ul style="list-style-type: none"> - Limited real political support for environmental matters (and support as a symbolic function to access the EU).

Table 7: Contextual elements Central Eastern European States.

Strategies to secure implementation of the environmental *acquis* in the CEE states

As previously presented, upon accession of the CEE countries to the EU, several challenges were recognized that would test these countries' task of complying with the environmental *acquis*. One of the challenges was related to financial resources, the other was related to the administrative capacity. These challenges were present in spite of the progress that, according to Inglis (2004) these countries had made in addressing the environmental problems which were the result of industrialization during the communist time, and despite of the progress made in approximating their own environmental policies and laws with the ones from the EU (p. 135).

In effect, much had been done before the accession negotiation opened. Soveroski (2004) write that by the time of the accession negotiations were opened in the environment chapter, much had been done in this

respect. He writes that after the fall of the *iron curtain*, environment was one of the policy areas jointly discussed by the EC and the countries of that region. Collective environmental measures were discussed in the beginning of the 90s by the ministries for environment of the EC Member States and of these countries, together with representatives from the Commission. As a result of this dialogue a strategy was prepared by the Commission for the CEE states. Other meetings followed in 1993, 1995, 1998 and 2003 (Soveroski, 2004, p. 129). (Soveroski, 2004) continues writing "*the meetings of environmental ministers were some of the most frequently held in such frameworks, and reflected the high level of attention this policy area received in the lead up to enlargement*".

In addition to this, and with the aim of assisting the responsible officials within the applicant states in their work on approximation of legislation in environmental policy, the Commission established forums for structured dialogues between the CEE countries and the EU Member States; programs for technical assistance and information support in the environmental area; a newsletter focusing on issues of EC environmental policy; a telephone help line; and a guide which presented a step-by-step road map to approximation of EU Environmental Legislation (Soveroski, 2004, p. 129).

In the particular case of financial matter, mentioned as one of the most challenging aspects for the CEE countries because of the implementation costs related to the environmental *acquis*, the question was basically where the funding should come from. EU officials had, according to Kramer (2004), made it clear that the sums to spend on environmental compliance were to come primarily from the countries' own resources, but this view was opposed by others who said that it was unrealistic to expect these countries to obtain such money given their "*heavily burdened domestic economies*" (p. 296).

An economic assistance programme was established by the Commission to assist the countries in bringing national environmental legislation in line with that of the Commission. This programme was initially established for Poland and Hungary (PHARE program) but later on extended to all countries in the region (Soveroski, 2004, p. 129), (Inglis, 2004, p. 137). Kramer (2004) also referred to the ISPA programme (Instrument for Structural Policies for Pre-Accession), considered as "*the principal vehicle for EU environmental aid to the CEE candidate countries*"; the aim of these funds was also to serve as channel through which external donors and private capital could be attracted (p. 296). However, Kramer (2004) also writes that such foreign assistance, including the ISPA funds, still accounted for "*a relatively limited share of environmental investments in the candidate countries*" (p. 296).

The second type of challenge mentioned as with which the candidate countries must cope if they were to comply with the environmental *acquis*, was the one related to maintaining the necessary administrative capacity to transpose, implement and enforce these *acquis* (Inglis, 2004, p. 150) (Kramer, 2004, p. 297). The weakness in capacity was not only related to the implementation of the environmental *acquis*, but that it might also reflect on the ability of the new Member States to absorb funding (Inglis, 2004, p. 137).

Inglis (2004) writes that considerable pre-accession efforts were particularly required in building the administrative and judicial capacity (p. 142), and that these acceding countries have had to build these capacities from scratch and in parallel with the adoption of the *acquis* (p. 137).

Assistance to build up such capacity had been provided to the CEE states since 1989 (Inglis, 2004, p. 137), and in the Act of Accession, the further the development of administrative capacity was secured through temporary financial assistance for the years 2004 to 2006 (Inglis, 2004, p. 138). The approach used during the pre-accession to build up and reinforce the administrative and judicial capacity of these accession countries, was basically to ensure that enough and qualified staff was employed, and that enough money was made available (Inglis, 2004, p. 139). Kramer (2004) writes that one of the ministers of environment of one of the candidate countries said it was all about money: "*if we had money, we would have administration too*" (p. 298).

However, Inglis (2004) also reported that staff and money was not enough to guarantee an appropriate capacity, and that capacity building was continue to be a priority after enlargement (Inglis, 2004, p. 138). She referred to Nicolaidis (2003)⁴ who pointed out that this approach was not enough guarantee of a reliable commitment to the compliance of the *acquis* once the candidate countries have become part of the EU:

“Nicolaidis (2003) points to the weakness in the eight methods the Union uses to ensure effective implementation of the acquis and advises the future new Members to adopt an institutional approach to building administrative capacity. Through the institutional approach that he describes, Nicolaidis maintains that the future new Member States will be able “to demonstrate to the EU a credible commitment to apply the acquis communautaire if they delegate that task to sufficiently empowered and accountable institutions which both have considerable decision-making independence and are subject to specific performance obligations” (Inglis, 2004, p. 139).

Kramer (2004) also reports another mechanism used under the PHARE programme to enhance the administrative capacity of the candidate countries. The mechanism in mention was the *twinning*, where there was the assistance of highly qualified civil servants from the EU Members states to their colleagues in the applicant countries (p. 298).

Other aspects mentioned by Kramer (2004) were for example actions to enhance public participation, such as conferences, and the European Parliament inviting NGOs to submit reports on deficiencies about the implementation of the environmental *acquis* (p. 303).

Despite the pre-accession strategies, accession negotiations in the environmental area were difficult given the financial challenges associated to the compliance of these *acquis* (Soveroski, 2004, p. 130). The accession negotiations examined whether the acceding countries were able to adopt the *acquis* immediately upon entry into the EC, or whether they would need more time to comply (Soveroski, 2004, p. 130). As a result of such examination, provisional derogations (or *transitional arrangements*) were allowed to the 11 countries (Soveroski, 2004, p. 130). These derogations were only applicable to some parts of the legislation, and they differed for each Member State (Inglis, 2004, p. 139).

As Inglis (2004) writes, *“transitional arrangements relate to those laws that require the heaviest investment”* (p. 137). The Directives for which derogations were usually granted were for example Urban Waste Water Treatment, Packaging and Packaging Waste, Large Combustion Plants, and Integrated Pollution Prevention and Control (Soveroski, 2004, p. 130).

In the specific case of the waste incineration Directives, transitional arrangements related to compliance of ELVs and pollution measurement requirements. However, these were only given to some incinerators of hazardous waste in Hungary until June 2005 (Treaty of Accession, Hungary, 2003), and in Slovakia until December 2006 (Treaty of Accession, Slovakia, 2003).

The objective of transitional arrangement was to give more time to the candidate Member State to attract the investment required to adapt or construct the infrastructure needed to comply with a Directive, or to introduce new institutional structures, or put into practice systems for the enforcement and monitoring of legislation (Inglis, 2004, p. 141). There were three general conditions for the granting of the transitional periods: (1) Member States should provide a persuasive rationale for the request, and that this should not be a disguise for protectionism for domestic industry; (2) The transitional periods should be short; and a timetable for complying was required. (3) The transitional periods were only for the compliance of regulations that needed substantial financial investment (Kramer, 2004, p. 294). In addition, these transitional arrangements were given only as part of the pre-accession process *“The transitional arrangements do not compensate for lacks in the capacity of the new Member States to maintain compliance and enforce the acquis once they have acceded to the Union”* (Inglis, 2004, p. 141).

⁴ P. Nicolaidis, 'Preparing for Accession to the EU: How to Establish Capacity for Effective and Credible Application of EU Rules', in M. Cremona (ed.), *The Enlargement of the European Union* (Oxford, 2003), 43–78.

Summarizing: Defined strategies for the CEE

The strategies used by the EU to secure the implementation of the environmental *acquis* in the CEE are summarized in the following table. The information was obtained from the journal articles which discussed the EU enlargement, in particular the environmental chapter, in the CEE countries.

Central Eastern European States: Strategies to secure implementation of environmental <i>acquis</i> in the new Member States
<p>On the level of environmental awareness:</p> <ul style="list-style-type: none"> - actions done before accession negotiation opened, actually, after the fall of the <i>iron curtain</i> (environmental policy and collective environmental measures jointly discussed by the EC and the countries of the region).
<p>On financial matters</p> <ul style="list-style-type: none"> - economic assistance programme established by Commission to assist countries in bringing national environmental legislation in line with the EC one. - establishment of a fund which served as a channel through which external donors and private capital could be attracted.
<p>On administrative capacity</p> <ul style="list-style-type: none"> - assistance provided since 1989 on the building of administrative and judicial capacity. - assistance to the responsible CEE officials in their work of approximating environmental policy (forums, technical assistance, newsletters, phone line, step-by-step guide, and twining with highly qualified civil servants from the EU Member States). - temporary financial assistance from 2004-2006 to secure enough and qualified staff was employed, and enough money available to carry out their tasks.
<p>On public involvement</p> <ul style="list-style-type: none"> - events to enhance public participation (conferences). - EP inviting NGOs to submit reports on deficiencies in implementation of environmental <i>acquis</i>.
<p>Others</p> <ul style="list-style-type: none"> - Provisional derogations on legal requirements: allowed to the 11 countries; applicable to some parts of the legislation; differed for each Member State (in the WI Directives, Hungary and Slovakia got dispensations on ELV compliance and measurement requirements until 2005 and 2006 respectively); derogations given so that the states would attract the required investment for the required infrastructure, or to introduce new institutional structures; derogations given only if 3 conditions were complied with.

Table 8: EU's strategies to secure implementation of transferred environmental *acquis* into CEE states.

Outcome of the implementation strategies

At the time of enlargement it was feared that given the differences, the new CEE states would bring more infringement problems. Inglis (2004) mentioned that the diversity of the CEE countries "*can be expected to exacerbate the implementation and enforcement deficit in the environment *acquis* of the enlarged Union*" (p. 135). In addition, Inglis writes that for the new Member States there was the safeguard clause, "*an additional measure to make sure the new Member States will keep on complying. Such measure doesn't exist for the existing Member States, and it seems that it would had been necessary since some are not fulfilling the obligations*" (p. 149).

Looking at the particular case of waste incineration Directives, as presented in the Ökopol (2007) report, there is an overall good compliance –also for the new Member States– in terms of the issued permits for the incinerators, and in terms of the ELVs for incineration plants set in the Directive (26th_report, 2009, p. 183).

Another way in which it could be seen whether the implementation strategies worked for the CEE countries, would be to look at the statistics on implementation infringements of Member States in relation to environmental Directives, to see if there were some differentiation between the older EU15 states and the new CEE Member States.

Infringements statistics are given for the Member States for the years 2008 and 2009 (DG ENV(b), 2011). Even though the number of cases for the older EU15 Member States are larger compared to the new 12 Member States, DG ENV warns against drawing conclusions based on these numbers. The reason for this being that cases for EU15 have been building up over time. However, as DG ENV says, *“the new Member States are already generating caseloads to rival those of the older Member States”*. Other reasons related to the amount of cases per Member States, which are related to the level of pro-activeness of the environmental groups and citizens, who would then approach the European Commission with their concern rather than turning to the national authorities.

Yet another way in which it could be seen whether the implementation strategies worked in the pre-accession process, is to briefly explore the case of the Southern Eastern Europe (SEE) countries who look for membership in the EU.

This case, of the SEE countries⁵ becoming part of the EU, is an interest case to look at because, according to Tews (2009) these countries will not obtain the support that EU provided in the case of the CEE enlargement. The EU is asking them to do everything on their own, and after they have done so, then it will be considered its membership into the EU. Tews (2009) describes the situation: *“enlargement strategy that has conditionality as a modus of operation [...] newer, even stricter elements of the conditionality mode applied by the EU”* (p. 130).

It seems then that the EU wants to make things different next time there is an enlargement. Tews (2009) describes the three main principles from the new Enlargement Strategy of the EU. The first principle is that the pace of enlargement must be ensured by the EU's capacity to function *“further enlargement will not, as in the past, comprise a larger group of countries but instead will be a step for step process”* (p. 132). Principle two relates to conditionality, that is, *“without fulfilling the obligations of a membership there is no accession possible”* (p. 132). Principle 3 relates to public involvement in the sense that they see public support and greater democratic legitimation as one of the factors of success for the enlargement process (p. 132).

Tews (2009) describes the characteristics of the SEE states as having environmental matters ranking low on the political agenda given the more pressing issues with which they are confronted with e.g. post-war and ethnic divergences in these countries, but that maybe the common goal of EU accession might help them get over these divergences (p. 133). Tews also writes about the process of drafting environmental legislation in the SEE region which seems to be made on an ad hoc basis, something which is done *“through political interference or the influence of donor organizations whose support for law drafting follows their own goals and perceptions of priorities [...] this also leads to a patchwork approach which may contribute to the existence of non-systematic and incoherent laws and sub-laws”* (Tews, 2009, p. 135).

In her article, Tews (2009) concentrates on the environmental area, and explores what could go wrong in leaving the SEE countries on their own in the process of EU enlargement, and that this situation might have adverse effects for the EU and also for the candidate countries (Box 11). She finalizes with what could be done to cope with these shortcomings and that approximation should not be of something of law-taking but of policy-making⁶.

⁵ Tews do not specify which countries are these, but it is known that potential candidate countries are Bosnia and Herzegovina, Serbia, and Kosovo, and that candidate countries are Croatia, Montenegro, The former Yugoslav Republic of Macedonia, and Turkey (DG ENL, 2010)

⁶ This discussion by Tews is something which I will return to in Chapter 8 of this PhD report

Box 11: SEE countries: coercive policy transfer and its impact in the quality of environmental policy

This case of the SEE candidate countries which will have to work on their own in their process of becoming a EU Member State, is presented by Tews (2009) as a case of *coercive* Policy Transfer given the “*unilateral obligation to transpose and implement a legislative environmental body*” (p. 133).

According to her, a process in which a foreign legislative body, in this case environmental one “*which has been developed over decades, and one which is a result and an expression of a struggle over ideas, environmental demands and feasibility considerations within the EU*” (p. 133), when implemented under what she calls *unilateral obligations*, will create shortcomings for both sides: the EU and the SEE countries if the enlargement is carried out under these circumstances.

Shortcoming in the SEE countries relate to an incomplete transfer “*the ideas underlying each policy cannot be transferred by the means of power* (p. 131); or impacts on the way legislation is adopted “*actors from these states did not take part in the genesis of the law. This has a certain impact on the manner of adoption of EU legislation* (p. 133); at the same time that overload “*implementation and enforcement of this legislation under circumstances of insufficient financial, administrative and know-how resources*” (p. 133); or lack of stimulation “*insufficient incentives provided to develop domestic environmental needs on a political level [...] solutions and priorities are externally defined*” (p. 134).

Shortcomings on the EU relate to the EU capacity to develop innovative environmental policy in the future (p. 131), and future enforcement problems.

She writes that shortcomings in the accessing countries will be the result of an environmental legislation that has been created with not enough resources assigned; with the aim of addressing externally-defined priorities; without the foundation of a local political policy; and without the support of the local public (pp. 133-5).

Such type of legislation is the outcome of aiming for a *law-taking* process, where environmental legislation is just seen as a tool to prepare for accession, and not as a tool to deal with local environmental problems (p. 135). The alternative which should be promoted instead is that these countries should go for a *policy-making* process.

Colombia

Describing the case

Three Resoluciones have been made in Colombia specifically to regulate the process of incinerating waste (Figure 4).. The first one in 2002: (Resolucion 0058); the second one in 2004 amending the 2002 Resolución: (Resolución 886); and a third one in 2008 regulating not only incineration of waste but all industrial process which emitted air pollutants: (Resolucion 0909).

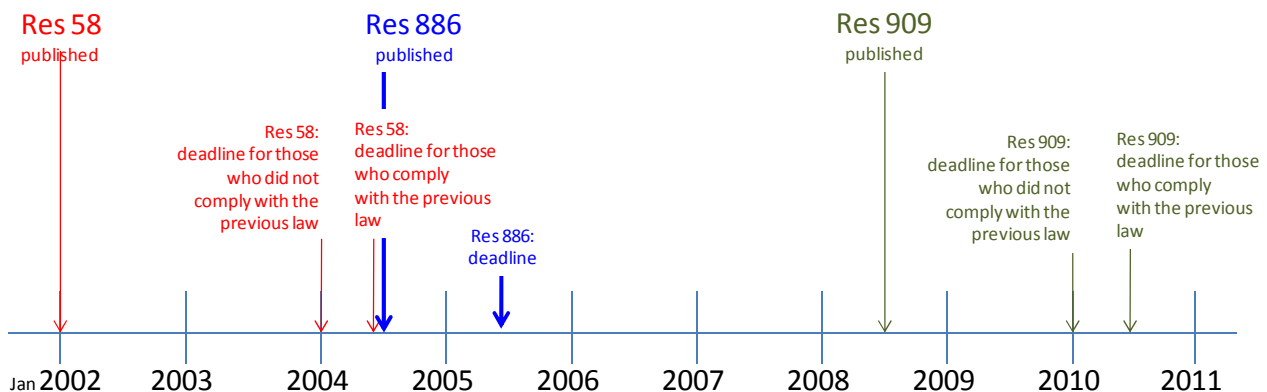


Figure 4: Resoluciones which regulate the process of incinerating waste in Colombia.

In January 2002 **Resolución 58** was published regulating the process of waste incineration and crematory ovens. The aim of the Resolución was to improve the incineration conditions of the time, and to move away from what the technicians at the Ministry considered a *“very rudimentary way of incinerating waste, without controlling conditions”*, to a more appropriate incineration process (Interview_at_Ministry, 2009). For example, the technician described how in some of the incinerators he had seen, the door to the oven was manually opened to deposit the waste, and by doing so, the equipments would be damaged at the same time that the optimal incineration temperatures would be reduced. The technician also reported that exceptions to this situation where the incinerators from international companies based in the country, given that they would have to comply with regulations from their headquarters and so, their incinerators and operating condition were much more appropriate than the local incinerators.

Another objective to reach with the Resolución was to optimize the way that some hazardous waste fractions were being disposed of, i.e. hospital waste. According to Ministry technician interviewed, it was worrisome the conditions on which hospital waste was being disposed of in the landfills, given that some of the landfills in the country did not have the appropriate containment conditions (e.g. geomembranes were not very resistant) (Interview_at_Ministry, 2009). Incineration was seen then as the appropriate disposal option for this type of waste given also the reduction in volume that could be achieved through this method.

The Resolución would also offer continuity to the ongoing process of regulating the incineration of hazardous waste. Some legislation had already been made allowing for the co-incineration in cement kilns of empty pesticide containers and of polluted soil (Resolución 970/01, and Resolución 458/02 respectively) (Interview_at_Ministry, 2009).

Regarding domestic waste, incineration of this type of fraction was not really seen as a feasible alternative given the low disposal costs of these in the landfills compared to the disposal cost at an incinerator (Interview_at_Ministry, 2009).

As mentioned at the beginning of this PhD report, the ELVs given in this Resolución were the same as the ones included in the Directive 2000/767. In the preamble of the Resolución was written that in order to set those ELVs, the authorities looked at the ELVs from countries with a similar or higher level of development, and that such values were adapted, by means of viability studies on the optimization of the existing incinerators of the country, to the specific conditions of the country (§5)⁸. During the interview, one of the technicians commented that a German advisor participated in most of the development of the Resolución, and that this advisor was very much inspired in German legislation. Another comment made by the technician was that *“the Resolución 58 was a fight because European norms were being imposed”*.

The deadlines for implementation of the Resolución 58 were given based on the level of compliance that incineration plants had on the previous existing legislation. Previous to this Resolución, the process of incinerating waste in Colombia was covered under the Decreto 02 from 1982. This Decreto presented the ELVs for the stationary sources of air pollution such as coal fired boilers, cement production, metallurgy, and asphalt production. Incinerators of more than 1 ton per day (0,04 t/h)⁹ were also regulated by this norm (art. 87, 88, 89). The only pollutant regulated for incinerators was PM and it had an ELV of 5 g/m³ (5000 mg/m³)¹⁰ (Decreto 02, 1982) art 87. In this sense, according to Resolución 58, plants which were complying with the Decreto 02 had 2,5 years -counted from the Resolución's publication date- to implement the requirements given in the Resolución (p. art 35(1)). Plants which were not compliant of the existing

⁷ See Box 1 in Introductory chapter of this PhD Project

⁸ When asked for these studies to the person in charge of managing the library of the Ministry, he replied that he had no knowledge of such studies. He actually asked me to write a formal letter asking for such documents, letter that he wanted to use as argument to ask the legislators to start documenting the legislative process. Such studies were asked again during the interview to the authorities but they did not have them. However, they did provide me with the study used for the drafting of the third Resolución: (MAVDT, 2008)

⁹ Assuming the incinerator worked 24 hours per day

¹⁰ As a comparison, the ELVs assigned to PM in the New and Existent WI Directives ranged between 39 and 780 mg/m³ (daily average). In the hazardous and all-waste WI Directives, the ELVs were of 10 mg/m³.

legislation had 2 years -counted from the Resolución's publication date- (p. art 35(2)) (see Figure 4). This meant incinerators had 2,5 years to move from complying with an ELV of 5000 to one of 10mg/m³ for PM, and to start complying with other ELVs which were not required in the Decreto 08/82¹¹.

Other interesting aspect of this Resolución is that large emphasis was made on the need to have certifications for producers of incinerators and for measuring and calibration equipment (art 18). There is also quite large emphasis on how to determine the height of the stack of the incinerator (art 16, 17); and that the measuring methods specify the use of American standards (i.e: EPA, NIOSH, NDIR) (art 4, 5).

Two and a half years later, around the same time that the longest deadline for implementation of the Resolución 58 was due (July 2004), **Resolución 886** was published (Figure 4). This new Resolución was basically the response of the Ministry to the criticisms received on the technical, administrative and economic requirements established in Resolución 58 (§2). According to one of the interviewed technicians, after the Resolución 58 was published, a newly-form association took to the Congress the proposal of eliminating such Resolución. However, the political juncture of the moment allowed the norm to stay. The juncture was that, until the Resolución 58, the Ministry of Environment had not generated much legislation, then the Minister, when asked to remove the norm because of the complaints, responded something like "you criticize me because I do not generate legislation, and when I create legislation you want me to remove it, then what should I do" (Interview_at_Ministry, 2009).

The aim of the new Resolución was then to partially modify Resolución 58, being that actually the title of the new Resolución: "*By which Resolución 58 is partially amended and other provisions are dictated*" (Resolución 886, 2004).

In the preamble of the Resolución it is said that the Ministry responded the requests to review the technical, administrative and economic conditions of the Resolución 58 (§2), and that it evaluated the state of compliance of the Resolución 58/02 (§4). It also says that technical visits were performed (§4); that the visits were made to different types and sizes of incineration plants from the seven most important cities of the country (§8); that during the visits the persons responsible for the implementation of the requirements established in the Resolución were consulted, as well as the regional environmental authorities responsible for the monitoring and compliance of the Resolución (§8).

The preamble also writes that the results from the monitoring were looked at, taking into account the different existing technologies used for the treatment, control and monitoring of the atmospheric emissions from incinerators (§6); and that the characteristics of operation and costs of such technologies were evaluated (§7). It is also written that the ELVs which served as inspiration for the Resolución 58 were looked at again, and that its applicability in the country was again analyzed (§5), it also specifies which countries those foreign ELVs related to: USA, EU, Mexico, Japan, Chile, Venezuela, Brasil and Dominican Republic (§5).

After such visits, and the analysis of the monitoring results and of the existing technologies, an assessment of the status of compliance with the standards was made (§4), and it was concluded that some modifications were needed to be done to the Resolución so that the standards could be complied with (§9-1). Among the modifications was the need to give greater flexibility to the compliance of standards for dioxins and furans given the fact that the country did not have the technical capacity to monitor these pollutants (§9-3); the need to establish other operating controls which were less expensive (§9-3); and the need to give laxer requirements for certification of the operation systems of the incinerators given that such certifications processes had not been established at the country (§9-7). Regarding this last point, according to one of the interviewed technician, the problem was that there was no one in the country to do the certification, and the ones who would do it, sometimes would not understand what they were certifying (Interview_at_Ministry, 2009).

¹¹ In the case of the EC Directive regulating for first time the existing incinerators at EC level (89/429/EEC), the incinerators were given 6 years to start complying with the ELVs (more details can be seen in Appendix 2).

Regarding ELVs, the numbers given as ELVs in the initial Resolución were maintained, the modifications in the new Resolución related to an extension in its deadline of implementation. They write that the longer deadlines given “do not generate major impacts on the human health or the environment, or generates a breach on the compliance of international agreements (e.g. the Stockholm Convention)” (§9-4).

The requirement of an implementation plan to comply with the ELVs was included in the Resolución (art 12). The requirement specifies that three months after the publication of this second Resolución, the incinerators should have presented the authorities the results of the required monitoring, results that were to be used for the design of the emitted gases treatment systems, system which should be implemented within the following 9 months. That is, the monitoring results were to be submitted by October 2004, and the treatment system was to be in operation as from July 2005. In other words, the deadline for the implementation of the ELVs established in Resolución 58 was extended one more year. As a difference with the initial Resolución, this time there was no differentiation on the deadlines given to the compliers or not of the existent legislation.

It is also said that given the high investments required for the emission control and monitoring systems, longer deadlines for their implementation were required, otherwise, if longer deadlines were not given, nearly 90% of the incinerators of the country would have to stop its operation, something which would create an even larger environmental emergency and a larger impact on the environment and the natural resources (§9-6), that is, larger impacts than if the incinerators were allowed to continue discharging for another year without complying with those new standards.

Four years after the publication of the Resolución 886, **Resolución 909** is published (July 2008). This norm, in a similar way as the Decreto 02/82, sets the conditions and ELVs for stationary sources of air pollution. According to one of the interviewed technicians, the idea was to create a much more specific piece of legislation, where each sector had its own specifications, and to have the issue of atmospheric emissions covered in only one document. He also added that this Resolución is different from the previous approaches where the topics were being legislated according to the necessity. Besides, there was the need for a new norm given that “after 27 years, the technology has changed” (Interview_at_Ministry, 2009).

As a difference to the Decreto 02 where five industrial sectors were regulated, this new Resolución regulates 38 industrial activities. While parameters such as PM, SO₂ and NO_x varies depending on the age of the plant, parameters such as HF, HCl, HC, dioxins, furans, Pb, Cd, and Cu are independent of the age of the plant, that is, they are the same for all industries. PM is also dependent on the emission flux (kg/h).

In addition to these 38 industries, the norm regulates other 14 types of industries among which incinerators were included. Interesting is the fact that while the norm talks about incinerators for hazardous waste and for non-hazardous waste, the ELVs applied to each of these categories are the same. When asking the technician for the reason for such differentiation, he responded that the reason was that at the time that the norm was being drafted, each group of incinerators wanted to have their own norm. He also added that the same ELVs were set given that in many occasions, the non-hazardous incinerators would end up incinerating hazardous waste (Interview_at_Ministry, 2009).

This new Resolución replaces most of the elements contained in the previous two Resoluciones. In the specific area of waste incineration, one of these changes is on the threshold (incinerator's capacity) above which incinerators are obliged to implement legislation. In the previous two Resoluciones (58 and 886), incinerators above 100 kg/hr had to comply with the legislation. In the Resolución 909 it changes and it applies to all incinerators, with the situation that those with a capacity above 500 kg/hour have stricter ELVs to comply with than those of less than 500 kg/hour. To this change on capacity threshold, one of the interviewed technicians commented that the Ministry noticed that, with the previous threshold of 100 kg/hour, many incinerators would incinerate up to 99 kg/hour in order to avoid having to comply with the norm, and that therefore it was decided to set 500 as the limit.

Another change is the fact that laxer, or even non-applicable ELVs were given for hospitals of municipalities with less than 20.000 inhabitants and incinerating less than 600 kg/month¹². When the technician was asked about this type of dispensation, he commented that while commercial incinerators provide the service of incineration with the aim of earning money from it, hospitals have their own incinerators in order to dispose their waste and avoid sanitary problems. Hospitals have restricted budget, and they cannot afford to send their waste somewhere else. He continues saying that in addition, and compared to a commercial incinerator, hospital incinerators dispose fewer amount of waste and have lower atmospheric discharges. Furthermore, according to the technician, if too many restrictions are given to a hospital's incinerator, there is the risk of a sanitary problem due to storage and transport, that is, the environmental impact could be higher than if they continue incinerating with laxer restrictions (Interview_at_Ministry, 2009).

Regarding ELVs for heavy metals, in the new Resolución 909 these values remain the same as in the previous two Resoluciones, except for Hg, for which the Resolución 909 makes differentiation based on capacity and for hospitals as it was previously described.

Deadlines of implementation are given again based on the state of compliance of the incinerators with the legislation of the time. Those who have been complying had two years to implement, from the date on which the Resolución is published. Those who did not comply had 1.5 years (art 103).

In general, it can be said that the ELVs which were proposed in January 2002 with the Resolución 58 were, after several deadlines extensions, to be implemented latest by June 2010.

Summarizing: Contextual elements of Colombia

The list of contextual elements of Colombia (borrower context) derives from what was stated by the interviewed authorities at the Ministry, and that which was manifested in the explanatory notes of the Resoluciones. The information was organized following the categories of contextual elements found in the previously two described cases: Member States (Table 5, p: 236 of this report) and Central Eastern European States (**Error! Reference source not found.** p: 247 of this report).

Such contextual elements are presented in Table 9 and Table 10. To note is that the elements are presented according to the evidence of their use in the drafting of the three Resoluciones.

¹² Laxer ELVs: HF, SO₂, NO_x, CO, Hg, CH₄, and HCl. Non-applicable ELVs: PM (more detail on these can be consulted in the *Introduction* chapter of this PhD report, Box 1).

Colombia		
Contextual elements		
Resolución 58/02	Resolución 886/04	Resolución 909/08
<p>Waste disposal</p> <ul style="list-style-type: none"> - Rudimentary way of incinerating waste without controlling conditions. - Inappropriate disposal of hospital waste in landfills. <p>Legal Status (internal)</p> <ul style="list-style-type: none"> - Existing legislation regulating the on co-incineration of empty pesticide containers and polluted soil in cement kilns. - Existing legislation regulating the stationary sources of air pollution (incinerators of > 1t/d¹³ capacity) - PM was the only pollutant regulated for incinerator plant, the ELV being of 5000 mg/m³. <p>Legal Status (external)</p> <ul style="list-style-type: none"> - Authorities obtained inspiration from existing legislation on waste incineration from countries "<i>with a higher level of development</i>", Germany in particular. <p>View on incineration</p> <ul style="list-style-type: none"> - Appropriate way to dispose hospital waste. - Not appropriate method for disposal of domestic waste (due to lower disposal costs in landfills). 	<p>Incineration plant</p> <ul style="list-style-type: none"> - Visit by the authorities in charge of modifying the Res. 58 to existing incinerator plants in the 7 most important cities of the country. <p>Technology</p> <ul style="list-style-type: none"> - Analysis of the monitoring results from existing plants, taking into account the existent technologies used for treatment, control, and monitoring of the atmospheric emissions. - Evaluation of the characteristics of operation of such technologies. <p>Legal Status (internal)</p> <ul style="list-style-type: none"> - Evaluation of compliance of Res. 58. <p>Legal Status (external)</p> <ul style="list-style-type: none"> - Authorities obtained inspiration from existing legislation on waste incineration from countries such as USA, Mexico, Japan, Chile, Venezuela, Brasil, Dominican Republic and the EU. <p>View on incineration</p> <ul style="list-style-type: none"> - Larger environmental impact from not incinerating the waste (sanitary emergency due to storage of hospital waste) than from not controlling emissions from incineration. <p>Stakeholder</p> <ul style="list-style-type: none"> - Creation of an association who exerted pressure for Res. 58 to be removed - Authorities in charge of modifying the Res. 58 consulted the incinerators and regional authorities responsible for implementation of the Resolución <p>Economic evaluation</p> <ul style="list-style-type: none"> - Evaluation of the costs of technologies for treatment, control, and monitoring of atmospheric emissions from incinerators <p>Political support</p> <ul style="list-style-type: none"> - Environmental Minister maintaining her position on a Resolución for controlling incineration of waste 	<p>Legal Status (internal)</p> <ul style="list-style-type: none"> - Need to modernize the 1982 Resolución which regulated the stationary sources of air pollution (given the change in the technology in the last 27 years) - Evaluation of compliance of Resolución 886 <p>Technology</p> <ul style="list-style-type: none"> - Change in the technology in the last 27 years <p>Economic evaluation</p> <ul style="list-style-type: none"> - Analysis of the costs for hospitals if they were to comply with same ELVs given to commercial incinerators. <p>View on incineration</p> <ul style="list-style-type: none"> - Larger environmental impact from not incinerating the waste (sanitary emergency due to storage of hospital waste) than from not controlling emissions from incineration.

Table 9: Contextual elements Colombia (1st part).

¹³ This corresponds to a capacity of 0,04 t/h assuming the plant operates 24 hours a day.

However, some of the contextual elements seen in the cases of Member States and CEE were neither mentioned by the interviewed authorities nor mentioned at the explanatory text of the Resoluciones. Such elements were for example: waste amounts; market; administrative capacity; environmental awareness; and public involvement. The situation of such contextual elements in Colombia was explored further in different literature sources. Such information are summarized in **Error! Reference source not found.** and the detail of it explained in Appendix 3.

Colombia Contextual elements
<p>Waste: amounts</p> <ul style="list-style-type: none"> - Information gaps on emissions, inventories, and volumes of waste. - Estimated amount of waste produced in Bogotá per person: 1 kilo/day (1999); other figures report 6100 ton/day approx. (2001).
<p>Waste: disposal</p> <ul style="list-style-type: none"> - Preferred method for disposal of waste is landfills, open-sky dumps, surface water, or inappropriate burials of waste. - Reduction of the amount of municipalities having an inappropriate disposal method for waste had been reported since 1998 (81% municipalities in 1998, 38% municipalities reported in 2004). - Disposal of hazardous waste reported in 2010 as not being performed in a planned way. - Hospital waste reported in 2008 as being co-disposed together with ordinary waste in 77% of the landfills. - Mentality around landfill is that enough land is available in the country to deposit waste; however, cases related to inappropriate management of landfills (e.g. waste slide in Bogotá's landfill from 1997) started to raise awareness and complaints from citizens about landfills. - Inappropriate conditions of landfills have been reported since 2001 (landfills being inappropriately managed, or close to reaching its final use, or should better be referred to as <i>closed dumps</i>).
<p>Waste: management</p> <ul style="list-style-type: none"> - Reports from 2009 refer to the inappropriate management of solid waste in the country. - Inappropriate management of hospital waste was reported in 2008 (only 13% of the hospitals having a plan for management of the waste, 65% discharging untreated waste into sewer system, 58% not sorting the waste in an appropriate way).
<p>Incineration</p> <ul style="list-style-type: none"> - Not existence of public incinerators complying with specifications for appropriate disposal of hazardous waste reported in 1999. - Legislation regulating the process of waste incineration considered in 1999 as being disperse and with few real applicability. - 50% of the companies incinerating hospital waste reported in 2008 as not having permit for doing so. - Costs of disposing waste in incinerators estimated in 1999 as being four times higher than in landfills - Cases in 2003 of public opposition to the co-incineration of hazardous waste in cement kilns.
<p>Public involvement</p> <ul style="list-style-type: none"> - The role of public as a control mechanism inducing for better environmental performance is not highly present in the Andean region. - Colombian community reported in 2003 as not being very active and as having low levels of awareness in environmental matters. - Lack of interest for environmental problems from the Colombian society associated with the fact that Colombian environmental legislation resulted in a collection of technical requirements. - Development of environmental legislation in Colombia associated to the need to respond to requirements established by marginalized or social groups in poor economic conditions who see the environmental management as the door through which they could participate and propose vindications. - A shift in Colombia's public attitude towards environmental considerations can be seen exemplified in the case of a local community exerting pressure to avoid hazardous waste being co-incinerated in the cement company of their region.

Stakeholder's position

- Stakeholders reported in 1998 as not being an unity of actors and actions but a multiplicity of interests
- Conciliation process between state and stakeholders characterized in 1998 as being more of a dilatory character than or a results-oriented one; objectives and strategies of these actors focused on impeding a real and effective action from the state.

Market

- Studies made in 2003 reported the market forces -more than the regulatory framework and the public pressure, as being the main motivator for Colombian industries to improve its environmental condition.
- The level of environmental investment made by Colombian industries was reported in 2003 as to increase when the industry has an exporting orientation, and also when the industry is linked to industrial associations.
- In 2003 it was reported that companies that export to the European and United States market make an effort to obtain a green image.

Government's environmental awareness

- In 2010 it was reported a low political will from the state to make the environment a relevant sector.
- Several government's deficiencies have been reported since 2002 in several areas, deficiencies which have been associated to Colombia being far from reaching the Constitutional goals of environmental protection and sustainable development.
- First deficiency relates to the lack of a formulation of a National Environmental Policy at short, medium, and long-term (not a frame of priorities established; lack of harmonization between national and regional level; change of environmental priorities with every new government).
- Second deficiency relates to the low amount of monetary resources assigned to the environment (environmental dimension considered another sector and not fully integrated with others; unequal capacity of regional environmental authorities in generating their own resources; low contribution from the national budget to the environmental sector: 0,25% of the GDP¹⁴; most of the environmental expenditure allocated on sanitation; financial, human, logistical resources are lower than what is really needed).
- Third deficiency relates to the environmental legal framework (unclear and unstable rules which are not being complied with; focuses mainly on end-of-pipe; legislation is complex, unclear and not in accordance with the requirements of the country; constantly varied or modified; gaps in regulation; weak and inefficient institutional framework).
- Fourth deficiency relates to the poor conditions of the instruments used to support the environmental system of the country (lack of infrastructure and investment in environmental laboratories; network of monitoring stations above 20 years of service; documentation centers with considerable gaps in info).

Legal bases

- The commitment of the government to protect the environment is included in the Colombian National Constitution.

Table 10: Contextual elements Colombia (2nd part).**Strategies to secure implementation of the ELVs in Colombia**

Based on the interview with the technicians and on the Colombian Resoluciones, one could identify four strategies which were developed for implementing the ELVs.

The first strategy one sees a **strong conviction** by the legislators on having the EU's ELVs implemented in the country. That is, the legislators did not give up their aspiration of having those particular ELVs implemented. These ELVs were initially proposed in the Resolución 58 and were maintained throughout Resolución 886 and Resolución 909, and as it will be explained next, the legislators had a particular reasoning for having that aspiration of implementing those ELVs.

¹⁴ A range of 1.4-2.5% of GDP is suggested by the World Bank as the minimum levels recommended to develop appropriate environmental management in developing countries (Contraloría, 2002, p. 10).

As previously mentioned, in the preamble of the Resolución 58 it was written that in order to set those ELVs, the authorities looked at the ELVs from countries with a similar or higher level of development. The ELVs were said to be adapted to the specific conditions of the country. It was also said that the adaptation was made by means of viability studies on the optimization of the existing incinerators of the country, to the specific conditions of the country (§5). During the interview, one of the technicians commented that a German advisor participated in most of the development of the Resolución, and that this advisor was very much inspired in German legislation.

However, the reasoning behind the aspiration of having such ELVs was provided during the interview when one of the technicians commented *"by copying the European standards we were trying to avoid people bringing to the country the plants that become obsolete in Europe and that are brought here because here the legislation is laxer"* (Interview_at_Ministry, 2009).

One could understand this reasoning after knowing that Colombia have had experiences as being the receiver of materials considered obsolete in other parts of the world, in particular, receiving hazardous waste for disposal. Some news found in the newspaper *El Tiempo* addressed this issue, for example that some Latin America and Caribbean countries were receiving industrial waste from other parts of the world (El Tiempo, 1994); and that it seemed that it was cheaper to bring waste to Colombia than to dispose it in country of origin (El Tiempo, 1996). A particular news from 1994 documents the case of hazardous waste being imported into Colombia, having as a destination a waste-to-energy plant. The Ministries immediately ordered the waste to be returned to its origin, given basically because by Constitutional law, it is forbidden to introduce hazardous waste into the national territory (art 81) (Macias, 1998, p. 82), in addition to the fact that the plant was not even built at the time, and even though it was approved, it was authorized to use only national waste. Some even said it was only authorized to use natural gas and not waste (El Tiempo, 1994) (El Tiempo, 1995).

One of the newspaper articles also related to the causes for having this situation of Colombia being the receiver of hazardous waste for disposal. Among the mentioned causes were weak legislation, corruption, lack of information, necessity to provide employment, or even tricked under false recycling programmes or humanitarian aid (El Tiempo, 1995). Another article writes that according to a foreign advisor, in order to avoid having Colombia as dumping place, it is necessary to make legislation as strict as in the countries of origin, and that even though it was necessary to act fast, at the same time things needed to be done in gradual steps (El Tiempo, 1996).

Another possible reason behind the use of those particular ELVs into the Colombian Resolución was given during the interview to an environmental engineer from a private industry who participated in the revision of the Resolución 58. The engineer commented that most of the time the legislators do not have the time to do extensive investigations, or they are not really capacitated to do the adaptation of the norm to the local conditions (Interview_Engineer, 2009).

When the technicians from the Ministry were asked on the process followed to set the ELVs in the Resolución, one of them commented that initially they just copied the European norm, and that then they proceeded to do the corrections on the way after learning from the experience of the implementation of the Resolución (Interview_at_Ministry, 2009).

To this response it was asked whether there were some people who got hold of the argument that because the laws were made for developed countries then they could not be applied in developing countries, to what they replied that yes, there were some complaints, but at the end these persons could not use that argument anymore because some of the incinerators started to comply with the norms. The technician commented that when the first incinerator invested in improving its equipments, it managed to achieve the expected standards, and based on this, the authorities decided not to give up to their aspirations (Interview_at_Ministry, 2009). They also added that *"the only way the topic of incineration can be moved forward is through strict standards, if there is not threat, then there would be no need to improve"* (Interview_at_Ministry, 2009).

The second strategy which is seen as used for implementing the ELVs is the fact that the deadlines for implementation of the ELVs were extended, plus the fact that some dispensation was given to some sectors.

Regarding the **extension of the deadlines** for implementation, the Resolución 58 required that, counting from the moment the Resolución was published, incinerators had two years (or 2.5 years if the incinerator have been complying with previous legislation) to comply with the ELVs. In the particular case of PM, that required that incinerators would move from discharging 5 g/m³ (5000mg/m³) to discharging 10 mg/m³. One of the interviewed technicians from the Ministry reflected on this situation “*Resolución 58 had very strict standards, it did not really gave an implementation time*” (Interview_at_Ministry, 2009). They also commented on the condition of the incinerators, that they were not very well equipped and prepared to comply with the legislation “*we had all the right to close them*” (Interview_at_Ministry, 2009). However, the authorities did not want to close them down because otherwise this situation would create an even worse environmental condition in the country: “*it was worse to leave the waste without incinerating, than having them incinerated in an inappropriate condition*” (Interview_at_Ministry, 2009).

Around the same time that the longest deadline for implementing the Resolución 58 was due (July 2004), Resolución 886 was published amending some of the requirements given in the Resolución 58, but maintaining the numbers given as ELVs. Resolución 886 allowed one more year of extension to implement such ELVs.

Four years after the publication of Resolución 886, Resolución 909 was published, regulating all stationary sources of air pollution including incinerators. This Resolución gave further 1.5 years (or two years depending on the level of compliance to previous legislation) to implement the ELVs. The numbers given as ELVs remain the same, the difference being that now all incinerators were to comply with these ELVs and not only those incinerating more than 100 kg/hr –as said in Resolución 58, and that some dispensations were given to hospitals of certain type of municipalities.

In summary, it can be said, that incinerators were to implement by July 2010 ELVs which were informed about since January 2002, that is, they have had between 8 and 8,5 years to implement them.

Regarding the **dispensation given to some sectors**, initially the Resolución 58 said that only those incinerators operating more than 100 kg/hr were to comply with the ELVs. However, this dispensation was removed in the last Resolución 909 given that the Ministry noticed that many incinerators would incinerate up to 99 kg/hour in order to avoid having to comply with the norm (Interview_at_Ministry, 2009). Therefore, in the last Resolución all incinerators had to comply with the ELVs, with the situation that those with a capacity above 500 kg/hour would have stricter ELVs to comply with than those of less than 500 kg/hour¹⁵.

A dispensation for hospitals of municipalities with less than 20.000 inhabitants and incinerating less than 600 kg/month was also introduced in Resolución 909. These hospitals had laxer, or even non-applicable ELVs to comply with. As previously mentioned, the dispensations were given because hospital incinerators do not act as a business, as it is the case with the other incinerators; their budget is limited, and compared to a commercial incinerator, hospital incinerators dispose fewer amount of waste and have lower atmospheric discharges (Interview_at_Ministry, 2009).

During the interview it was also mentioned that the authorities have also been quite lax with exclusive industries. For example, in the country there is one of the three industries in the world that produces a raw material needed for the manufacture of nylon “*if this company was to fulfil with the standards then it would get into trouble*” (Interview_at_Ministry, 2009).

¹⁵ See Box 1 in the *Introduction* chapter of this PhD report.

More than a strategy, the third item refers to the development of a condition which seemed to have facilitated the process of implementing the ELVs. That condition relates to the **market response** to the legal requirement.

According to the interviewed technician, after the legal requirement was implemented, a market opportunity was seen by some persons who then started to offer the incinerators the equipment necessary to comply with the legislation. The owners of the incinerators became interested in the equipment offered, and they decided to invest, not only to comply with the legislation but to gain a competitive advantage in relation to the other incinerators (Interview_at_Ministry, 2009).

Given that some incinerators started to comply with the legislation, the authority was then in the position of being able to close the inappropriate ones, and continue its aspiration of having those ELVs implemented (Interview_at_Ministry, 2009).

The fourth strategy which seemed to have allowed the implementation of the ELVs is related to **improvement of the legal process** used by the authorities to draft the legislation.

For Resolución 58, much was inspired after foreign regulation, in part motivated by the emphasis set from the German advisor. One of the interviewed technicians commented that "*Resolución 58 was a fight because European norms were being imposed*". In the Resolución 886 one could say that this was a reactive norm, where the stakeholder participation comes as a result of the dissatisfaction with the previous norm; there is consultation with the persons responsible for the implementation of the Resolución as well as with the authorities responsible for monitoring; and it can be seen that the legislators took more considerations of the existing conditions of the country at that time. Resolución 909 seems much more structured and well based, among other things because of the report made as background of the norm: (MAVDT, 2008).

Regarding this report, some of the topics presented in it refer for example to information about current emissions discharged from some of the incineration plants in the country (data from 2006 related to five plants having a capacity of less than 100 kg/h); or to the national and international legislation looked at for determining the ELVs; or to the current operating conditions of the incineration and co-incineration plants of the country (MAVDT, 2008).

From the report one could see the analysis made by the legislators on the factors influencing the setting of ELVs in Colombia and other Latin American countries. For example they analysed legislation from Bolivia, Ecuador, Argentina, Brasil, Chile, and Mexico, examining in particular how the ELVs were set, and that such values varied depending on the type of fuel used, on the capacity of the plant, and on the process which is used (MAVDT, 2008, p. 78). Each one of the analyzed points includes some comments about the Colombian situation. For example, when talking about type of fuels, they write that in Colombia sugar cane bagasse is used also as a source of fuel, as well as the waste lubricant oils, both elements being regulated as sources of energy (MAVDT, 2008, p. 78).

In the case of plant capacity, they write that, besides noticing that the ELVs are developed based on the capacity of the equipment (Brasil, Chile, Mexico), they find interesting the fact that the location of the plant also influences the process of setting ELVs, in the sense that the higher the need to protect the environment, the stricter the ELV established (MAVDT, 2008, p. 78). Related to capacity they also notice the differentiation of ELVs based on the age of the plant, where legislation given to new plants is stricter than the one given for existing ones (Chile) (MAVDT, 2008, p. 78). In the case of Colombia, they continue writing, there is not a distinction made regarding the age of the plant, but a distinction is made regarding its capacity (MAVDT, 2008, p. 78).

Regarding the type of process, they present the type of process that has been regulated in the countries (Argentina, Chile, Ecuador). For Colombia they mention the Decreto 02/82 which includes ELVs for PM for cement kilns, metallurgic production, and asphalt production, among others (MAVDT, 2008, p. 78).

Finally they write that *"In Chile, the U.S and the E.U, methodologies have been created that allow the industry to comply with the requirements given by law, that is, the law has been developed in a progressive way"* (MAVDT, 2008, p. 78). No further mention or clarification is made on what they meant by this.

In addition to this, during the interview it was seen that other factors were identified by the legislators as being necessary for the development of the legislation, in particular the involvement of stakeholders and the public participation of public. Regarding stakeholders, one of the technicians commented: *"When drafting the norm, one of the issues is to present it to those who will have to comply it, who will then present their comments. Most of the comments were related to the high implementation costs, that it is not possible to comply with the norm, that the incineration costs would be increased"* (Interview_at_Ministry, 2009).

He presents a case, even though not related to the setting of ELVs, but which exemplifies the negotiation process between the two parts, in which there was some resistance from the incinerators given that to increase the temperature to more than 1000C –as requested in the draft- was not economically viable for the incinerators. The requirement was then re-evaluated, a middle point was agreed where implementation cost would not be so high at the same time that maintaining the required standards(Interview_at_Ministry, 2009). However, when doing surprise inspections to the incinerators, the Ministry personnel found that the temperatures were between 400-600C –below the required standards- The solution for this was to ask for an automatic control for the temperature, being this then the main parameter to control (Interview_at_Ministry, 2009).

The interviewed engineer also commented on this issue of stakeholder participation for the Resolución 58: *"when the legislators passed the info to the stakeholders to be reviewed, most of them did not had the technical capacity to give proper comments. In the case of the Resolución 58, the stakeholders who reviewed were a group of environmental engineers, working for different private industry sectors, who on a voluntary basis belonged to this environmental committee of the National Industrial Association. According to the engineer, the representatives of the incinerators were not in the technical capacity to provide any valuable comment to the proposal. Particular case was the one on the ELVs, the ministry made the proposal in the document, but none of the members of this environmental committee knew really whether to say yes or no to the numbers (Interview_Engineer, 2009).*

Regarding public involvement, the legislators recognized the importance of having them well informed and making them part of the process. When the technician was asked during the interview what would he have done then, that did not do, and that now he knows that it should have been done, the response was: *"inform more the community so that they would understand more, so that there would be an educated citizen and not a manipulated one. The case of the incineration in the cement kiln was a case that was not handled appropriately, there were issues outside the technical part that were not properly handled"* (case presented in Box 13 of Appendix 3).

An additional comment made by the Ministry technicians was that in the future when they get to draft new legislation, they would look more into the US' EPA rules given that Colombia has a major influence and relationship with USA, as well as taking into account the norms given by the World Bank, Japan, Mexico (Interview_at_Ministry, 2009).

In general, the authorities themselves recognized the advance they have made in this respect of drafting legislation: *"today there is a better scenario, that which is consigned in the 909 has a better applicability. With the 58 it was a struggle, now people understand more, there is an impulse, recently around 1000 persons were capacitated in this topic, and there was technical and juridical support"*. Besides, they commented that a better relationship exist with the incineration sector *"it is not an attack anymore"* (Interview_at_Ministry, 2009).

Summarizing: Defined strategies of Colombia

The strategies used by the Colombian authorities to secure the implementation of the transferred ELVs are summarized in the following table. The information was obtained from that which was said by the interviewed authorities at the Ministry, and that which was extracted from the text of the Resoluciones.

Colombia: Strategies to secure implementation of the transferred ELVs into Colombia
-Strong conviction on having the EU's ELVs implemented in the country (and by that avoiding obsolete plants brought into the country).
-Extension of deadlines (between 8 and 8,5 years) and dispensation to some incinerators (hospitals from certain type of municipalities and exclusive industries).
-Market response to the legal requirements (offering the necessary equipment) and incinerators acquiring them to gain competitive advantage over other incinerators.
-Improvement in the process of drafting legislation (recognition of the importance of working together with stakeholders, and keeping the public informed).

Table 11: Colombia's strategies to secure implementation of transferred ELVs.

7.3 Analysis of the findings

Failures in the process of Policy Transfer are said to occur when no attention is paid to the influencing elements of the borrower's context. In the case of Member States and the Central Eastern European states, one could see that these contextual elements were taken into account previous to implementation, and that the implementation strategies were designed to counteract such influencing elements (e.g. the case of small incinerators and of existing incinerators in the Member States, and the case of financial and capacity difficulties in the CEE case).

In the case of Colombia it seems like the contextual elements were not considered in the first round of legislation (e.g with Resolución 58), but that they were looked at more as a reactive measure for the complains received, leading to a second and a third round of legislation (Resolución 886 and Resolución 909).

Whether the strategies used to counteract those elements were effective or not, was something which was tried to evaluate by looking at the case of whether ELVs were being complied with or not in the Member States (and the latest report indicates so, but it would have been interesting to see the reports right after the first implementation deadlines of the first Directives). Effectiveness of the measures was also explored by looking at the amount of infringements of the new Member States (amount of infringements from previous EU Member States are higher, but they have been in the EU for longer period of time; still, it is said that new Member States are coming close to the old EU Member States level). Effectiveness was also seen reflected in the fact that for the SEE enlargement, the EU does not want to have the "parental" role it had for the previous CEE enlargement.

Regarding the Colombian case, effectiveness of the measures could not be evaluated because the deadlines for implementation of the ELVs coincide with the writing of this PhD report, but they are left to be explored in further studies.

Tews (2009) writes that in the case of the SEE enlargement, an ineffective environmental legislation will be created in these countries. This given that not enough resources might be assigned, where externally-defined priorities will be addressed, without the foundation of a local political policy, and without the support of the

local public (Tews, 2009, pp. 133-5). According to the information obtained from the Contraloria reports, all of these characteristics seem to fit the description of Colombian environmental legislation.

It is said that the influence of the donor's context is also seen when it is being talked about elements crucial to the appropriate development of the programme of interest, elements which are inseparable from the donor's context and impossible to copy in the borrower's context (Robertson & Waltman, 1992), (Dolowitz, 2000). At some point, the following question was among the ones to answer in this chapter: are those particularities inseparable from the original context, can they be replicated in the borrowers context. However, after reflecting on it, it was thought that things are not so black and white. It could be that those particularities are not replicated in the borrower context, and that in spite of this, the policy could still manage to work without them.

Relation found between ELVs in EU's contextual conditions

Looking at the information about the context of the Member States it is now understandable why in the municipal waste incineration Directives some differentiation was made on ELVs based on plant capacities. The ELVs given to new and existing municipal waste incineration plants are presented in Table 12. Figure 5 summarizes the information presented in the section describing the context of the Member States at the time the Directive was drafted.

PM10		
Incineration capacity of the plant	ELV (mg/nm3)	ELV(mg/nm3)
	New municipal waste incinerator (as from 1 st Dec/90) (89/369/EEC art articles 3(1,2) and 5(3))	Existing municipal waste incinerator Provisional values (1 st Dec/95 - 1 st Dec/00) (89/429/EEC art articles 2(a) and 2(b)(ii))
< 1 ton/hour, O2 level of 17%	80	240
< 1 ton/hour, O2 level of 11%	200	600
1 - 3 ton/hour O2 level of 11%	100	100
3 - 6 ton/hour O2 level of 11%	30	100
≥ 6 ton/hour O2 level of 11%	30	30

Table 12 ELVs for PM for new and existing municipal waste incinerators based on the incinerators capacity. ELVs not to be exceeded by the 7-days average. For incinerators of less than 1 ton/hour the ELV depends also on the oxygen content.

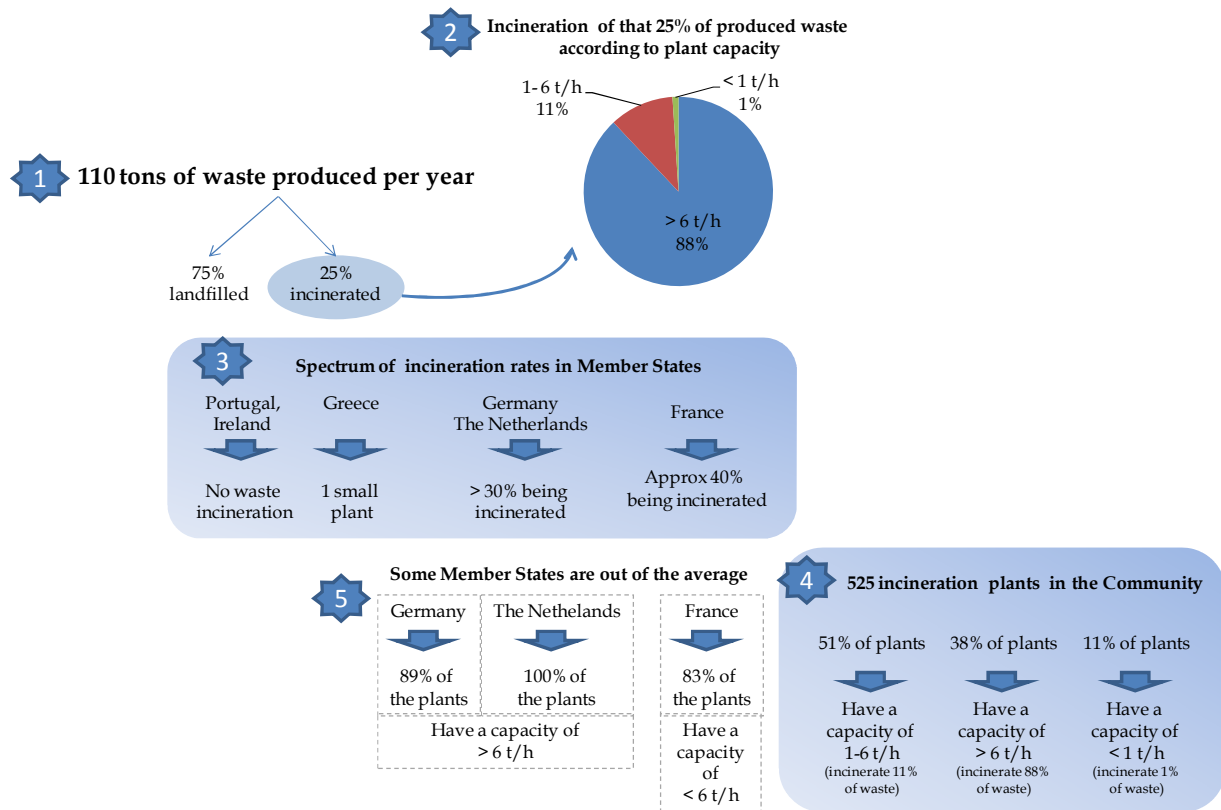


Figure 5: Graphical description of the situation of Member States at the time the first waste incineration was drafted (after (COM(88) 71 final , pp. 1-2) (To understand the figure, follow the numbers given at the upper left corners).

Based on the information presented in Table 12 and in Figure 5, one can see that stricter ELVs ($30\text{mg}/\text{nm}^3$) were given to plants with a capacity of more than 6 t/h given that they were incinerating 88% of the total waste being incinerated in the Community, and contrary to small plants, big plants had the economic viability to acquire the equipment to reach these ELVs. At the same time, no provisional ELV was given to these existing plants. That is, while existing incinerators of 6 or more t/h should start fulfilling as from 1st December 1996 with the ELVs given for *new* incinerators of the same capacity ($30\text{mg}/\text{nm}^3$) (article 2 (a)), existing incinerators of less than 6 tons per hour should start fulfilling as from 1st December 2000 with the same ELVs for PM given to new municipal waste incinerators of the same capacity (article 2 (b)(ii)). However, these smaller plants, in the mean time that they prepare for achieving this fulfilment, they did have to comply with some provisional ELV for PM between 1st December 1995 and 1st December 2000 (article 2 (b)(ii)).

In the same way, one can see that plants of less than 1 t/h –presenting economic difficulties to acquire the equipment to achieve with ELVs– could comply with laxer ELVs: these plants were incinerating only 1% of the total waste being incinerated in the Community.

The situation also explains why Germany and Netherlands had such input in the legislative process of drafting the Directives, as evidenced in the working documents. That is, both countries had good experience with the incineration process, Germany and Netherlands incinerating over 30% of its municipal waste (COM(88) 71 final , p. 1); 89% of the plants in Germany having a capacity greater than 6 tonnes/hour, and 100% of the plant in the Netherlands having a capacity greater than 6 tonnes/hour (COM(88) 71 final , p. 2).

During the drafting of the Directive, Germany was supporting the Council chair's proposal of having an ELV of 30 (German incinerators were already complying with 30. Netherlands was also supporting the chairs proposal of an ELV of 30, even though its incinerators were used to comply with 50 (4831/89 ENV 28, 1989).

Surprising was that given France's incineration capacity (nearly 40% of its municipal (COM(88) 71 final , p. 1) they did not have a more active participation in the process. But then again, in France, small and medium-scale plants account for 83% of the total installed capacity (COM(88) 71 final , p. 2).

During the drafting of the Directive, France was proposing an ELV of 50 (its small and medium scale plants were complying with an ELV of 150, so that change would imply high costs for the incinerators) (4831/89 ENV 28, 1989).

Reflections on the Colombian case¹⁶

One could say that yes, the authorities accepted the fact that they copied the EU's ELVs, mainly because of the influence of the German advisor in the first Resolución, but also because they did not want obsolete plants from Europe brought to Colombia (something one might question is whether this method -of copying legislation- was the appropriate way to avoid such obsolete plants being introduced into the country, and if the fact of having obsolete plants was really such a bad situation to have in the country).

Another thing is that the authorities were not sure that the use of foreign ELVs was going to work, but luckily and to their advantage, the situation at the end it turned up more or less fine because -according to authorities- the fact of putting very stringent legislation made some people look at it like a business opportunity: there were people who started importing better control equipment for sale, also better measuring methods and so on; incinerators started to acquire these and the ones who did not then faced the risk of going out of the market (because the neighbouring incinerator offers better service than mine) and at the end it seems that incinerators somehow managed to fulfil the law, not so much because of the need to do it but because of the fear of losing market.

In the Colombian case one could see reflected what was discussed in the delValle (2003) report, about having other forces -different to governmental ones- influencing industries to improve its environmental performance. The delValle (2003) report analyzed the factors -besides regulatory instruments- which induced private companies in some of the Andean region to invest in activities for reducing pollution. The hypothesis of the study was that the factors which control industrial pollution in a given country are not only of regulatory nature, but also the market forces and community pressure. The authors argue that mainly in the Andean region, an effective environmental policy where the authorities have limited resources and budgets, the environmental legislation should be supported by the two other factors: market and public influence in order to design an effective environmental policy (delValle, 2003, p. 1).

In this sense, one could see the importance of the role of the market in Colombia, which for example motivated the advance of the Cleaner Production programme, basically because of the desire of accessing international markets which have stricter environmental standard requirements. This program relates to the formulation of agreements with industry on competitiveness plans and use of sustainable and pollution prevention technologies (Contraloría, 2003, p. 20). According to the National Comptroller's Office, this programme was the one which registered advances of some concrete significance (Contraloría, 2000, p. 21); advances in the program were reported again in the 2003 report. However, one year later, the report presents that such advances are not so much because of the governmental policies on this aspect, but related to the desire of accessing international markets which have stricter environmental standards requirements (Contraloría, 2004, p. 9).

A second point to reflect on the Colombian case is that according to the reports from the National Comptroller's office, not much has changed in the relationship government-environment since the 70s.

¹⁶ The reader might need to have a look first at Appendix 3 to get a better understanding of the Colombian context before proceeding further with the Reading.

(Macias, 1998) and (Uribe, 2003) presented that the second stage in the development of the Colombian environmental law, marked by the revision of the National Constitution in 1991, and by the Ley 99/93, was aimed at correcting the deficiencies seen in the environmental management and that were not being controlled by the legal framework created in the. However, based on the reports from the National Comptroller's Office, one could see that many of the deficiencies identified at that time: high degree of centralization on the control, low compromise of the state with the environmental protection, weak environmental institutions, lack of resources and low capacity to administrate them, are still present now a days.

Parallels among the cases¹⁷

From the collected information one could also draw some parallels among the three explored cases, that is, reflecting on Colombia and the cases of the Member States, of the Central Eastern European (CEE) states, and of the Southern Eastern European (SEE) states.

Starting with the parallel between **Colombia and the Member States**, there are three aspects which took place in both scenarios. One is the case of **measuring dioxins**, where the setting of ELVs for dioxins was considered problematic because of the lack of existing appropriate measurement methods (EU case: chapter 5, technical factor *the available measuring techniques and methods*; Colombian case: chapter 7, explanation behind the Resolución 886). A difference could be, however, that while the EU legislators were reluctant to set the ELVs for dioxins in the legislation because of this, only doing so once it was shown that the techniques were being used already in several Member States, in Colombia the ELVs for dioxins were set in the legislation first and then conditions were made laxer afterwards once the authorities realized the lack of equipment to do the measurements in the country. In the EU case, the problem with the measuring of dioxins was still reported in recent year: *"technical problems regarding emissions' monitoring, especially for metals and dioxins as state laboratories have not yet all relevant analysis"* (Ökopol, 2007, p. 30).

The second similar aspect is the case of having a piece of legislation **covering all sources of industrial emissions**. In Colombia this took place in 2008 with the Resolución 886 –not to mention the Decreto 02 from 1982 which regulated some of the fixed sources of atmospheric pollution-, and in the EU in 2010 with the Industrial Emissions Directive (2010/75/EU).

The third similar aspect is on the mechanisms used to **avoid "waste tourism"**. In Colombia it was thought to be solved by implementing the ELVs from Europe and in that way avoid the obsolete plants from there being brought into the country. In the EC territory it was solved by harmonizing the legislation, just as it was presented in the Commission's proposal for the hazardous WI Directive: *"It is therefore the aim of this Directive proposal to provide for harmonized measures and procedures in order to [...] impede the risk of a flow of waste towards lowers cost incineration plants due to less strict environmental standards"* (COM(92) 9 final, p. 10).

Regarding the parallel between **Colombia and the CEE**, there are some aspects which make these two cases quite similar, that being the case of the capacity problems, the issue of public participation, and the level of political support.

Capacity problems were considered one of the challenges with which the CEE candidates countries were were to cope if they were to comply with the environmental *acquis*. In particular it related to maintaining the necessary administrative capacity to transpose, implement and enforce these *acquis* (Inglis, 2004, p. 150). Kramer (2004) presented some administrative problems found in Poland, problems which were found as well in varying degrees in the other applicant countries (pp. 298, quoting from a 2001 Commission report). Such problems were for example the limited staff resources, the need to improve the awareness about the

¹⁷ The reader might need to have a look first at Appendix 3 to get a better understanding of the Colombian context before proceeding further with the reading.

requirements of the EU environmental Directives, and the need of more training in EU environmental policy. Problems were also seen related to unclear responsibilities, mainly because of the division of tasks over numerous agencies, and the fact of having different bodies responsible for setting objectives, giving permits, and performing monitoring and inspections tasks.

These problems were also similar to some found in Colombia, where Colombia's environmental institutional framework has been characterized by the National Comptroller's Office as being weak, inefficient, and doing little to address the challenge of an environmentally degraded country (Contraloría, 1999, p. 10) (Contraloría, 2004, p. 192). Flaws in structure and operation have also been reported, as well as dispersion of functions, duplication and conflicts over competences, and lack of coordination among the national, regional and municipal planning systems (Contraloría, 2003, p. 18). Reports from latest year do not refer to this topic, but it is unclear if this is because there has been an improvement in the institutional framework, or because the reports concentrate on other topics. Regarding the staff, comments from the interviewed engineer from the private industry, pointed to the fact that most of the time the legislators do not have the time to do extensive investigations, or they are not really capacitated to do the adaptation of the norms to the local conditions (Interview_Engineer, 2009).

Capacity problems have also been detected in current EU Member States. For example, Inglis (2004) presented how by 2004, there were still high levels of poor application of the environmental *acquis*, in the EU15 Member States (p. 149). Kramer (2004) also reported that problems were not unique to the applicant countries, especially problems related to capacity and effective implementation and enforcement of environmental legislation (Kramer, 2004, p. 297).

The second similar aspect between the Colombian and the CEE cases is the issue of the **public participation**. For the CEE enlargement, it was said that besides the financial and capacity aspects, two other areas were recognized as challenging for these candidate countries in their task of complying with environmental *acquis*. One of them was ensuring public participation, in the sense that civil society was not accustomed to participate in shaping public policy (Kramer, 2004, p. 301). The importance of securing public participation in the process of complying with environmental *acquis* is explained by Kramer (2004): "*No public participation translates in difficulties for getting their support for costly environmental policies*" (p. 302). In the specific case of Colombia, reports from the National Comptroller's Office also mentions the low levels of awareness of Colombian society towards environmental aspects (Contraloría, 2003, p. 18), and Macias (1998) mentions as well the lack of interest for environmental problems from the Colombian society (p. 42). According to Macias, such situation influences the fact that the environmental legislation resulted in collection of technical requirements. Something else mentioned by Macias (1998) was what could be called the role of public in the development of Colombian environmental legislation, but this role is not so much marked by the desire to protect the environment, but as a way in which marginalized or social groups in poor economic conditions would see the environmental management as the door through which they could participate and propose vindications (p. 42). delValle (2003) concluded that the Colombian communities seem not to play an important role in pollution control, as it has been played by the regulatory authorities and by the market forces (p. 2). However, some evidence of the opposite case can be seen with the case of the hazardous waste being disposed of in the cement kiln (Box 13 in Appendix 3), but does this classify as public participation? or more as a Not In My Back Yard situation?

The third similar aspect is the **level of political support**. Kramer (2004) presented his concern regarding the political will of the EU accessing countries (p. 307). He wondered if the motivation for being part of the EU - motivation which was behind the improvement of the environment by implementation of the environmental *acquis*- would continue after accession, or if it would lose its momentum. According to Kramer, real political will was needed to implement the environmental law which was considered "*highly controversial, fiscally onerous, and means disadvantages to some*". In fact, Tews (2009) had the same concern about the lack of a real political support for the environmental law, and that it was just a ticket for the SEE countries to get accession to the EU (p. 135). In the case of Colombia, a similar situation exist, where even though it is said that there is political support for environmental topics, the reports from the National Comptroller's Office shows

otherwise. It is also questionable the role that market forces have on environmental aspects, among others because this is something which is applicable mainly to exporting companies.

A last reflection made when comparing the case of Colombia and the CEE countries is on the amount of **GDP invested in the environmental** area. While it was estimated that new Member States would need to spend between 2-3% of their GDP to ensure implementation of the environmental *acquis* (Kramer, 2004, p. 295), and that in the EU15 countries the expenditure averaged 1% (Kramer, 2004, p. 295), in Colombia the figure has accounted for 0,25% for the years 2002-2008 (Contraloría, 2009, p. 13). To remember that the World Bank recommends a range between 1.4-2.5% as the minimum level to develop appropriate environmental management in developing countries (Contraloría, 2002, p. 10).

Regarding the similarities between the case of **Colombia and the SEE**, there are basically three aspects in which these cases coincide. One aspect is the fact that for the implementation of the ELVs and the environmental *acquis* respectively, none of the countries received the “**parental**” support of the EU, support which was given for the CEE. The second aspect being that Tews (2009) in her article about SEE enlargement, also asks the question that was asked for this PhD project: **why do they copy?** At the introduction of the article, Tews writes about the parliamentarians from the SEE countries stating in a meeting in October 2007: “*We have adopted much of the environmental legislation required by the *acquis communautaire* of the EU [...] however, we cannot implement it so far*”. Then Tews asks herself the question of “*what makes parliamentarians from the SEE countries to adapt a law “knowing at the same time that it will not work?*” (Tews, 2009, p. 130).

The third aspect is the fact of policy making being referred as a *technocratic process*. In the case of the SEE enlargement, Tews (2009) refers to the adjustment process, being driven to a great extent by external experts, “*is more a sort of technical standardization, one that in particular is managed by legal experts, lawyers and the staff of the ministerial administration rather than by political or societal actors* (p. 134). In the case of Colombia, Macias (1998) argues that the main factors influencing the formulation of environmental legislation in Colombia have been technical (p. 49). He says that this is because there is an absence in the environmental legal discussions, of philosophical, political and conceptual themes (Macias, 1998, p. 49). According to Macias, this translates in the fact that the legal environmental acts relate to purely technical criteria (Macias, 1998, p. 49). This is also seen during the interviews at the ministry, for example by saying that the ELVs are set so that no obsolete technology is introduced into the country, and also by the comment made by one of the technicians while referring to the 3rd Resolución: “*after 27 years the technology has changed*” (Interview_at_Ministry, 2009). However, it could be seen that the need for changing this technocratic view has been recognized, for example with the second and third Resolución, where it looks like other factors are taken into account. Also in one of the final comments made during the interview, when the technician was asked, what would he have done then, that didn't do, and that now knows it should have done, the answer being that he recognized the fact that much emphasis was made on the technical aspect, and that other aspects were left outside: “*inform more the community so that they would understand more, so that there would be an educated citizen and not a manipulated one. The case of the incineration in the cement kiln was a case that was not handled appropriately, there were issues outside the technical part that were not properly handled*” (Interview_at_Ministry, 2009).

7.4 Summarizing

The aim of this chapter was to identify how has the borrower's context influenced the implementation of the transferred policy. Such aim was explored by means of finding the *contextual elements* which have repercussion in the effective operation of the transferred policy, and the *strategies* used by the borrower's countries to secure the implementation of the transferred policy.

The contextual elements and the strategies were explored in three cases: the first one explores what is done by the EU so that that the same Directive can be implemented into the different sub-contexts of the Member

States; in particular it is looked at what was done to secure implementation of the incineration Directives in the Member States. The second case related to the process of EU enlargement, in which a candidate state must implement legislation for which it did not participate in its formulation; in particular it is looked at the strategies for implementing the environmental *acquis* in the Central and Eastern European states. The third case relates to the Colombian situation, where the ELVs for waste incineration from the EU 2000/76/EC Directive were implemented in the country's waste incineration legislation (case which was the motivator for the development of this PhD project); in particular it is looked at the strategies followed by the Colombian legislators to secure implementation of these ELVs in the country.

The main findings from the cases are presented next, and the specific *contextual elements* and *strategies* are summarized in section 7.5 *Concluding: returning to the research question*.

Member States

The case was described in terms of the Member States which participated in the legislative process of the Waste Incineration Directives; the countries which had its own legislation in regards to the process of incinerating waste; and the fact that there was disparity between this existing legislation in the Member States.

The case was also described by referring to those elements which the Commission used to present the problematic to be addressed with the proposed legislation, information which was included in the Commission's proposals for each one of the Directives. Among these elements were the estimated amounts of waste (municipal and hazardous) produced by the Community in a year; the average composition of the waste; the preferred disposal method; the average amount of waste incinerated; the amount of incinerating plants at the Community; and the estimated amounts of emitted pollutants. The Commission also presented information related to the discrepancies among Member States in terms of amount of waste sent to incineration, type of plants, and treatment for combustion gases.

Based on literature, four mechanisms were found to be used by the EU in its task to secure implementation of the same piece of law given the different conditions of the Member States. These mechanisms were seen reflected in the waste incineration Directives. The first one (economic drive motivating Member States to overcome their national differences) is reflected in the case as such of the waste incineration Directives, where the route of harmonizing the legislation was sought as a way to avoid market distortion because of the different rules on incineration from the Member States. The second mechanism (EU law does cover the diversity of the Member States) was seen in the fact that the point of departure for the drafting of EU legislation is the national legislation of Member States, and that the final policy implemented at EU level is a patchwork of policy styles from the MS. The third mechanism (derogation and financial support for implementing the legislation) was seen in the case of small and existing incineration plants, where usually small plants would be allocated laxer ELVs to be complied with, and existing plants would be given longer adaptation periods (5 years in average in the four Directives) than the adaptation times given to new plants (2 years in average in the four Directives). The fourth mechanism (leaving Member States to decide how the goals given by the EU were to be achieved) was seen in the cases where national authorities were allowed to give dispensation of some of the Directive provisions under specific and local circumstances.

A way to examine the outcome of the implementation strategies was by looking at the report presented in 2007 on the implementation of the all WI Directive. The report writes that an overall good compliance in terms of the issued permits for incinerators, and in terms of compliance of the ELVs set in the Directive. In addition, that in about 50% of the Member States either the permit contain stricter ELVs than those required by the all-WI Directive, or they include additional requirements to those of the Directive.

Central Easter Europe Enlargement

The description of the case started with a short explanation on the requirements that a state must comply for EU membership, process that is known as *EU enlargement*. Among the requirements is the compliance of

the *acquis*, the body of legal acts of EU legislation, which includes an environmental chapter. Adoption of the *acquis* relates to its transposition into national legislation, implementation, and enforcement.. It was also mentioned that the process of EU enlargement emphasizes the diversity that exists among the states, diversity that is seen for example in terms of the challenges that the accessing countries bring to the Union, and in terms of the different levels of importance that the states give to the environment.

The case was also described by presenting that the adoption of the environmental *acquis* is now considered one of the most challenging components of the accession process, and that however, this challenge has not been present throughout the different EU enlargements, but recognized during the Central Easter European (CEE) enlargement in 2004. The challenge referred to the fact that the accession countries were considered different to the EU15 in terms of environmental protection practices, levels of pollution registered, socio-economic priorities and financial resources, among others. Two of the most challenging elements were related to financial and capacity aspects. Financial in terms of how the accessing countries would find the resources to implement the expensive environmental Directives; capacity in terms of how the CEE states would maintain the necessary capacity to transpose, implement and enforce the environmental *acquis*. Two additional challenges were recognized, one related to securing public participation, the other related to having a real political support for implementing environmental law. Yet another challenge was related to the questioning of the EU environmental *acquis* as such, whether they were really leading to a sustainable development, and whether they would really be applicable to the needs of the new Member States. However, independent of this, the decision was that enlargement was the route to follow.

The strategy followed by the EU to secure the implementation of the environmental *acquis* in the new Member States included some pre-accession preparations, as well as specific mechanisms to address the financial and capacity challenges, and some transitional arrangements regarding specific pieces of law. For the pre-accession preparations, which started at the end of the 80s, even before the accession negotiation opened, the Commission established –among others- forums for structured dialogue, programs for technical assistance, information support, and step-by-step guides, all related to the approximation of the EU environmental legislation. Regarding the financial challenges, economic assistance programmes were established to bring national legislation in line with the *acquis*, and to attract external donors and private capital. The capacity challenge was basically addressed through pre-accession strategies related to the building of administrative and judicial capacity; ensuring that enough qualified staff was employed and that enough money was made available; and twining programs, where highly qualified civil servants from the EU15 states would assist their colleagues in the applicant countries. Other aspects related to conferences to enhance public participation, and invitations extended to NGOs by the European Parliament to submit reports on the implementation process of the environmental *acquis*. Despite these strategies, it was also necessary to draw on transitional arrangements, were some parts of the legislation were provisionally derogated to the Member States on a case by case basis.

A way to examine the outcome of the implementation strategies was by looking at the report presented in 2007 on the implementation of the all WI Directive, where it was mentioned the overall good compliance in terms of permits and compliance of ELVs. Another way was by looking at the statistics on infringements of Member States in relation to environmental Directives to see if there was a trend in the infringements between the older EU15 states and the new Member States, however, no conclusive findings could be seen from this. Yet another way to examine the outcome of the implementation strategies was to explore the case of the Southern Eastern European countries that look for EU membership. It seems the EU learned from the previous CEE enlargement since it now has a different strategy, meaning that the EU will not provide such support as given during the CEE enlargement.

Colombia

The case of Colombia was described by presenting a short background behind each one of the three Resoluciones used to regulate the process of waste incineration in the country, where focus was made on the given ELVs throughout the Resoluciones. It was seen that basically, the ELVs remained unchanged throughout the Resoluciones; the only thing that varied was the implementation times, the capacity

threshold of the incinerator's capacity above which the ELVs were to be applied, and the dispensations made for certain type of hospitals.

The case was also described by presenting some information about the Colombian government and its relation to environment; the view of industries and community towards environment; and the situation of waste disposal and management in the country¹⁸.

Regarding the relationship government and environment, the National Comptroller's office¹⁹ reports that the government is not doing its task of protecting the environment and aiming for a sustainable development. Among the deficiencies reported are the lack of a National Environmental Policy; the fact that every new government changes the priorities of the environmental management program; the fact that the environmental dimension is considered yet another sector, not fully integrated with the other governmental sectors; the low investment made on the environmental sector, below the ranges of GDP suggested by the World Bank; and the fact that most of the environmental expenditure is done on environmental sanitation. Information was also presented on the legal environmental framework of the country, which is characterized as being a strict one, but one that is not being complied with; and one which is constantly varied or modified. Regarding environmental institutions, they have been characterized as being weak and inefficient, where there is a lack of coordination among the national, regional and municipal systems, and which cannot do much given the poor condition of the instruments used to support the environmental information system of the country.

Regarding the relationship industries and environment, it was said that Colombian industry has improved its environmental performance, and that despite the governmental policies on cleaner production initiatives, this improvement was the result mainly of the market forces, where the industries have made important environmental investments due to European and American requirements to comply with environmental standards. Concerning the relationship of community and environment, it was said that even though in some parts of the world the community has a strong role in inducing for better environmental performance, such public role is not very common in Colombia. The Comptroller's office reports write about the low levels of awareness of Colombian society towards environmental aspects, and other authors write about the involvement of civil society in the development of environmental legislation in the country not so much because of environmental consciousness but as a door through which marginalized groups could participate and propose vindications.

Regarding disposal of waste in the country, the statistics are not so clear in this respect but according to the latest reports from the Comptroller's office, around 60% of the municipalities have access to a site for final disposal of waste. What is not known from the report is the quality of such disposal places. Statistics from 2004 refer to a high percentage of municipalities disposing their waste in open sky dumps or in rivers. Given the amount of available land in the country, landfill is seen as the option to dispose municipal waste. However, this view has been questioned after the waste slide in Bogotá's landfill in 1997. Incineration is considered an expensive way to dispose of waste, and is left for treatment of hazardous fractions.

Four were the strategies that seemed to be followed by the authorities to secure implementation of the ELVs in Colombia. The first one relates to the fact of not giving up the aspiration of having those particular ELVs implemented. The reason being that by using the European standards, then it was thought that the obsolete plants would not be brought into the country. The second strategy related to the continuous extension of the deadlines for implementation - where at the end incinerators had between 8 and 8,5 years to implement them; as well as the dispensation given to some sectors for the compliance of such ELVs. A third strategy - which is more the development of a condition, is the market response to that legal requirement, where incinerators would then have access to the equipment needed to comply with the legislation and would acquire them with the goal of having a competitive advantage to the other incinerators. The fourth strategy

¹⁸ The reader might need to have a look first at Appendix 3 to get a better understanding of the Colombian context before proceeding further with the reading.

¹⁹ Governmental entity in charge of monitoring and controlling the use of public resources

was related to the improvement of the process followed by the authorities to draft the legislation, where it is recognized the importance of working together with stakeholders and keeping the public informed.

7.5 Concluding: returning to the research question

The question to answer in this chapter was *How has the borrower's context influenced the implementation of the transferred policy*. The expected knowledge to obtain being two things; one was the *contextual elements* which have repercussion in the effective operation of the transferred policy; the other was the *strategies* used by the borrower's countries to secure the implementation of the transferred policy.

Table 13 compiles the *contextual elements* from the context of the Member States, the Central and Eastern European states, and Colombia which seem to have repercussion in the effective operation of the transferred policy. In the case of Member States and CEE States, most of the contextual elements seemed to have been examined by the legislators before implementing the transferred policy. In the case of Colombia, most of the contextual elements were seen as being influential after the legislation was put in place.

Member States	Central Eastern European States	Colombia
<p><u>Included in the explanatory notes of the Commission Proposals:</u></p> <ul style="list-style-type: none"> - Waste-specific information (amounts, composition) - Disposal options (% sent to landfill, % sent to incineration). - Incineration capacity at the Community (by Member State: size of plants, systems for cleaning emissions). - Legal status (at EU level and at MS level) - Economic evaluation (costs, benefits) - Current technology - Views on incineration - Integrated approach - Public access; stakeholders' position - Unequal market 	<p><u>Mentioned by the articles' authors as challenging elements in the adoption of the <i>environmental acquis</i>:</u></p> <ul style="list-style-type: none"> - Environmental awareness (divergences with the EU15; low level of environmental protection) - Pollution (high levels registered) - Market (divergences with the EU15 s, which (could lead to distortion of the single market) - Financial matters (heavily burdened domestic economies; high implementation costs of the <i>environmental acquis</i>; need to secure investments) - Administrative capacity (not sufficient institutional capacities; limited awareness of EU environmental requirements; limited staff resources; excessive division of tasks over agencies) - Public involvement (civil society not accustomed to participate in shaping public policy) - Political support (low political support for implementing environmental matters) 	<p><u>Mentioned by the interviewed authorities; included in the explanatory notes of the Resoluciones:</u></p> <ul style="list-style-type: none"> - Waste disposal (municipal waste disposed of on landfills; incineration: rudimentary and expensive; inappropriate disposal of hospital waste in landfill; incinerators are mainly privately owned) - Legal status (existing legislation at national level; inspiration from other countries) - View on incineration (appropriate for hospital waste, not for municipal waste) - Current technology - Stakeholders' position - Economic evaluation (mainly for hospitals) <p><u>Not mentioned by the authorities nor referred to in the Resoluciones (but seen being used in the previous two cases):</u></p> <ul style="list-style-type: none"> - Waste amounts; waste management; public involvement; market; government's environmental awareness (<i>details of these can be seen in Error! Reference source not found.</i>)

Table 13: Contextual elements from the borrower's context which seem to have repercussion in the effective operation of the transferred policy.

Table 14 compiles the *strategies* that were used by the borrower countries to secure the appropriate implementation of the transferred policy.

Member States:	Central Eastern European States:	Colombia:
<p><u>Strategies used to secure the implementation of the Directives in the different sub-contexts of the Member States</u></p> <p>-Strong economic drive motivates Member States to work together and overcome their national differences (distortions to the common market were being created by the different rules on incineration from the Member States)</p> <p>-EU law does cover the diversity of Member States (e.g: point of departure was the existing legislation on incineration at the Member States)</p> <p>-Derogations and financial support for specific cases (small incinerators have laxer ELVs; existing incinerators have longer adaptation periods -5 years- compared to new plants -2 years.</p> <p>-EU setting objectives that allow manoeuvrability (e.g: . Member States defines how to reach it based on their specific and local circumstances; national authorities have the autonomy to decide on certain matters)</p>	<p><u>Strategies used to secure the implementation of environmental <i>acquis</i> in the new Member States</u></p> <p>-Pre-accession strategies started already at the end of the 80s (forums, technical assistance, guides).</p> <p>-Economic assistance programmes to cover the financial challenge.</p> <p>-EU programmes to help building administrative and financial capacity (twining programmes, ensuring enough qualified staff is employed).</p> <p>-Events to enhance public participation.</p> <p>-Transitional arrangements (parts of the legislation were provisionally derogated on a case-by-case basis)</p>	<p><u>Strategies used to secure implementation of EU's ELVs in Colombian context</u></p> <p>-Strong conviction on having the EU's ELVs implemented in the country (and by that avoiding obsolete plants brought into the country).</p> <p>-Extension of deadlines (between 8 and 8,5 years) and dispensation to some incinerators (hospitals from certain type of municipality).</p> <p>-Market response to the legal requirements (offering the necessary equipment) and incinerators acquiring them to gain competitive advantage over other incinerators.</p> <p>-Improvement in the process of drafting legislation (recognition of the importance of working together with stakeholders, and keeping the public informed).</p>

Table 14: strategies used by the borrower countries to secure the appropriate implementation of the foreign policy.

Relation with the context-influencing criteria

The 1st researched area of this PhD project developed a set of criteria which could allow to determine how context exerts an influence. This criteria was developed having three components (Figure 6): (a) That, which influence, are the particular properties of context; (b) That, which is influenced, are the defining elements from the object of the study; (c) If there is an influence from another context, the particular properties of that context will change the way the elements from the object of study were defined in its original context.

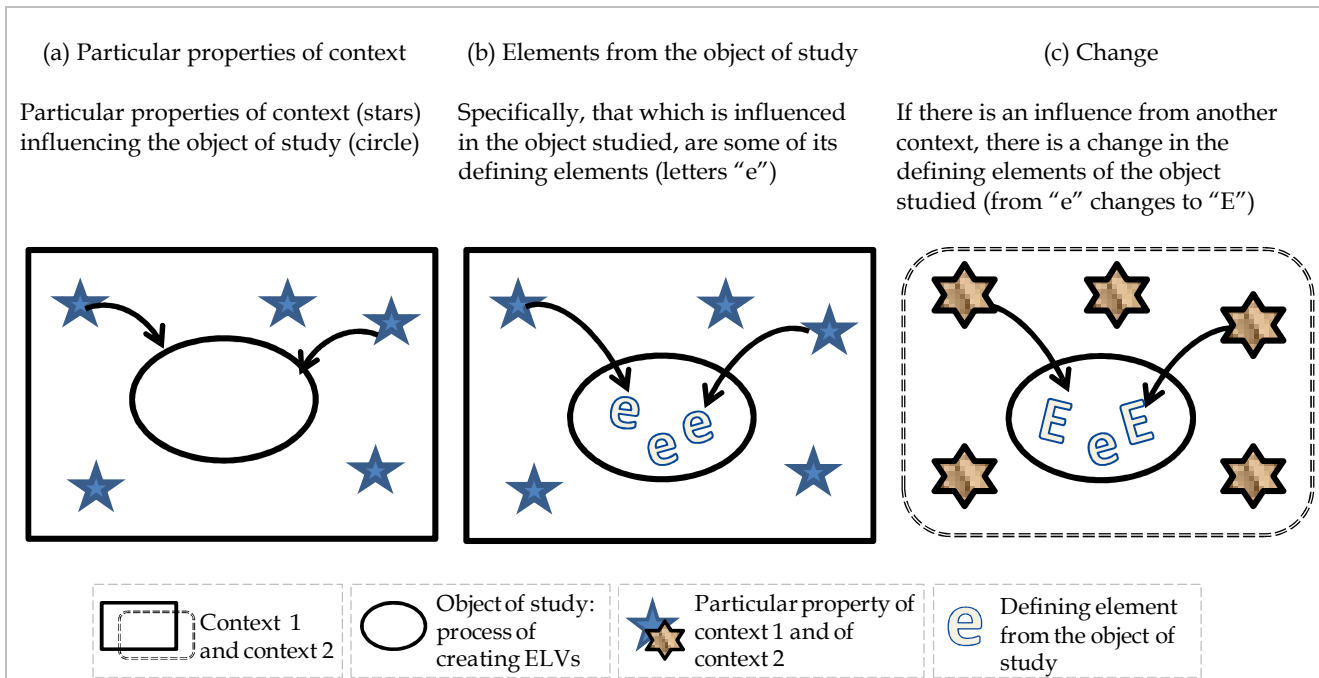


Figure 6: Components of the context-influencing criteria.

This figure on the components of the context-influencing criteria was related to the other three researched areas of this PhD project. Figure 7 shows its relation to the area researched in this chapter which was on the *contextual elements* which have repercussion in the effective operation of the transferred policy and the *strategies* used by the borrower's countries to secure the implementation of the transferred policy.

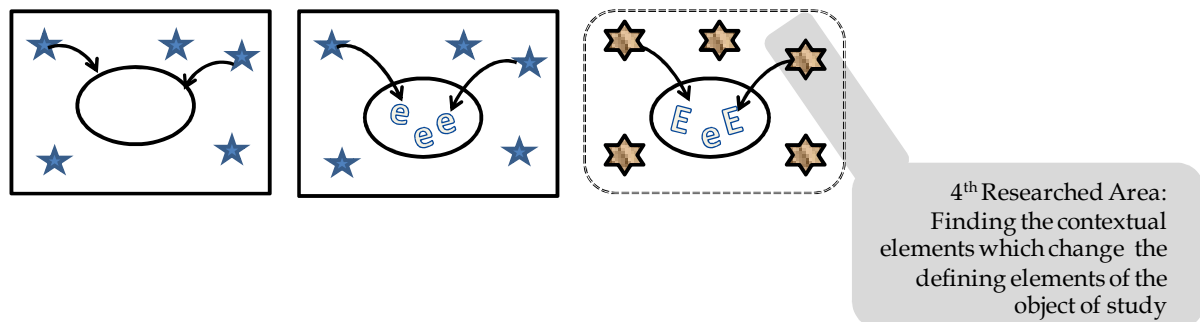


Figure 7: The fourth researched area explored in this PhD project and its relation to the context-influencing criteria.

These contextual elements relate to the context-influencing criteria in that they can be seen as the *modified stars* in Figure 6c). That is, they are the specific properties of the new context which create a change in the defining elements of the object of study. The object of study is *the process of creating ELV for waste incineration* and the defining elements -which were found in chapter 5 of this PhD project- are the *factors influencing the formulation of ELVs* (see Box 6).

In the specific case of Colombia, some of the defining elements of the object of study which were changed by the new context were for example the *implementation deadlines for ELVs*, and that *laxer ELVs were given to some sectors*.

Regarding the implementation deadlines for ELVs, while in the EU these have been given according to the age of the incinerator, in Colombia they have been given according to the level of compliance with previous legislation. In the EU, the deadlines for new plants range in between the 1,5 and the 2 years; the deadlines for existing plants range in between 5 and 11,5 years (see Table 15). In Colombia, the deadlines have been of 2

years for incinerators who have been complying with existing legislation and 1,5 years for those who have not.

	New incinerator	Existent incinerator
Municipal waste incineration	1,5	5,5 - 11,5
Hazardous waste incineration	2	6,5
All-waste incineration	2	5

Table 15: Implementation deadlines (years) for ELVs counted from the moment the Directive was published (details of this can be seen in the figure of Appendix 2)

Regarding the laxer ELVs given to some sectors, in the case of the EU Laxer ELVs of NOX given to some incinerators. In Colombia Laxer ELVs of CH₄, HCl, HF, SO₂, NOX, CO (and no PM) were given to incinerators of hospitals from municipalities with less than 20.000 inhabitants and incinerating ≤ 600 kg/month

One of the contextual elements from Colombia which could have created a change in the *implementation deadlines* were for example the *development of a market*: the providers of the cleaning equipment saw the market opportunity in the new legislation and reacted quickly to it; the incinerators, looking for a competitive advantage to other incinerators, acquired the equipment; the legislators saw that some of the incinerators started complying with the legislation and continued with their aspiration of having the ELVs implemented in short time).

One of the contextual elements from Colombia which could have created a change in the *laxer ELVs to some sectors* were for example the fact that this type of hospitals had a limited budget and the amount of waste disposed there is lower than the amount disposed in normal commercial incinerators.

These were just some examples of the defining elements which were changed because of the new context of Colombia. A more detailed account of other elements and contextual conditions would require further studies in the subject.

7.6 Additional reflections

Reflection on the findings

The end result of this chapter presented –for each one of the three cases- a list of the *contextual elements* which seemed to have repercussion in the effective operation of the transferred policy, and the *strategies* which seemed to be used by the borrower's countries to secure the implementation of the transferred policy. However, it is important to have on mind that these lists do not contain the totality of elements and strategies, and the reason for this was mentioned in chapter 1 when referring to the difficulties when studying context. These difficulties referred to the fact that there is no way to determine that the list contains all the important things, or that there is no agreed point at which the search for contextual ingredients stops, or that one can only give hints on the particularities of context which are influential ones, or that all the particularities can be observable, or the possibilities of misattributions of causalities.

Nevertheless, what I presented here can be considered as a first attempt that of course can be improved with time, not only by me but by other researchers.

Reflection on the method

While doing the final revision of this PhD project, it was realized that actually the first two cases related to strategies done by the donor's context (EU) to make sure that the transferred policy would work out in the borrowers countries (Member States and accessing Member States). The third case relates to strategies done

by the borrowers to secure implementation of that transferred policy. It was then wondered if the cases used were the appropriate ones to explore the influence of the borrower's context. Perhaps it would have been better to study how one of the Member States and accessing Member States coped to secure implementation of the waste incineration Directives, for example, countries which did not have own legislation on waste incineration at the time the Directive were being drafted.

In any case, that which can be concluded from the first two studied cases is that it is recognized that to secure appropriate implementation of a policy in a borrower's context, there needs to be some identification of critical contextual elements which might influence the process, and the formulation of implementation strategies.

About the Colombian information, that which is presented in this chapter is only one part of the story: the one said by two representatives from the Ministry, and the one I saw by reading some documents; still misses to be heard the side of the incinerators. However, it makes sense that I did not include the incinerator's point of view, and that is to keep consistency with the rest of this PhD report. That is, the point of view that I document is that from the legislator point of view (and very few from the industry, unless their points of view had been present in the working documents I read).

Other aspects related to the source of Colombian information is that I was positively surprised with the attitude from the interviewed technicians: they were very kind, open and honest about their work, and initially they had agreed to give me 30 min of their time but at the end it was 1,5 hours. About the reports from national Comptroller's Office, the reports are not always done on the same topic, so it was difficult to make a follow up on an issue which was detected as problematic one year, since the following year, the report will concentrate on reporting another issue. Also, that some of the literature (e.g Macias) is from the 90s and things might have changed since then, however, not much literature has been published on Colombian environmental law.

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7.8 Appendix 1: European Union: The same piece of legislation applied in different contexts

Being part of the EU requires Member States to implement the same piece of legislation. Having the same piece of legislation allows for no inequalities in the market competition. The question is, how can the EU manage this? To have one law fitting the different sub-contexts, sub-contexts made by the Member States which are part of the EU?

According to Sands (2003, p. 733), "*The EU has the experience of developing and applying rules into several countries with different contexts*. He continues saying that even though Member States are relatively homogenous, there are still differences, especially related to the adoption, implementation and interpretation of rules.

One of the ways EU manages the different contexts of the Member States is to use Directives instead of Regulations, and framework Directives are also preferred over detailed measures. This allows the Community to set the direction where to go at the same time that leaves the decisions to be done at the national level (Lee, 2005, p. 13). In other words, Member States would decide how to achieve those goals based on their particular contexts.

Based on literature, one could conclude that the same piece of legislation work in the different sub-contexts of the EU when there are some conditions: (a) when there is a strong economic motive behind; and (b) because laws cover the diversity of Member States. However, there could also be a third option: (c) no, it does not always work. For those cases where it does not work, the Commission has: (d) created derogation/financial mechanisms; and (e) developed new instruments. Such conditions are explained next

a) It works when there is a strong economic motive behind.

Chari & Kritzinger (2006) did a study of some specific EU laws (however none was environmental), and based on their results they came to the conclusions on what are the type of policies for which the differences in the contexts from Member States is not really an obstacle. They classified the studied policies into *first order policies* and *second order policies*.

First order policies are those in which efforts have been made to reach integration and where there has been a smooth transfer of power from the national to the supranational level (p. 3). These policies have been significantly developed at the EU level for the last 25 years and are related to the single market, competition, economic and monetary, and agricultural areas. In these areas the EU is seen as a centralized and strong actor in the global economy (p. 3). One of the reasons authors gave for arguing that one of the studied policies belongs to the first order was: "*it is a centralized policy at the EU level which gives subsidies for all European farmers, thereby resulting in a relatively minimal role for national administrations in the policy's implementation*" (p. 215).

Second order policies are those where national governments have maintained their sovereignty and wish to retain their own powers (p. 3). These are for example the areas of social policy, freedom, security and justice as well as external policies constitute (p. 3). Chari & Kritzinger write that what these policies have in common is that there is a lack of desire –sometimes an antipathy– to reach for Community-wide legislation, the reason for this being the high costs they would impose compared to the economic benefits obtained from this harmonisation process: "*social policy does not represent a policy that will allow for concomitant increase in profits or accumulation for capital actors operating in the global economy. Further, business has no interest in shaping developments that member states wish to maintain exclusive control over, such as immigration and common or foreign security policies*" (p. 18).

The authors conclude that the first order policies are those for which context is not significant: "*European wide policies are promoted and guaranteed because deepening integration in these issues [1st order policies] has been*

considered positive and absolutely necessary by the parties involved. National differences do not prevent common agreements. Supranational and domestic players regard themselves as winners when finding a European-wide solution, whereas they believe that adherence to independent national measures would result in a negative-sum game for all" (Chari and Kritzing, 2006: 3).

Based on this, one could say that laws which "break the barrier" of context are the first order ones: single market, competition, economic and monetary, and agricultural policies. The authors do not specify what order the environmental policy is, but, based on the reasons they give, one could think that environment is first order (EU speaks with a unified voice about it). One could also deduce that environment are not second order (Member States do not have total control over that topic, and the reason for this is maybe because environmental rules have economic origins). But it could also be that not all laws can be classified as first or second order, maybe there are some in grey areas, and that is the case of environmental laws. Another way to say whether environment is first or second is on determining the actors who were involved in the negotiation. Chari & Kritzing write that people who have been involved in the policy formulation process for the first order type have been mainly business (2006, p. 18).

b) It works because laws cover the diversity of the Member States

The context of the Member States is reflected in the final piece of law through various instances. The first instance is the fact that, for a variety of reasons, Member States aim at having their national legislation implemented at Community level. If they are successful, their context will be reflected in the final EU law. H eritier (2002) and Steward (2007) present some of the reasons, for example, that it would be a legislation with which Member States would be familiar with already, that their domestic industries would have the competitive advantage compared to industries from other Member States, and that it would be less effort to implement the Directives at national level –since a similar legislation is already in place.

The question is, if the Commission has the exclusive rights to submit proposals for new legislation, how could Member States influence this process and hence have their context reflected at community level?. There are several ways in which this is possible. One of them is that the Member State would need to be in good relations with the Commission (Liefferink & Skou Andersen, 2005, p. 59); other way being the participation in the formulation of policy proposals and position papers, being this, according to Liefferink & Skou Andersen (2005, p. 59) the most common way to have an influence in the Commission's policies. Regarding the allocation of national experts in Brussels, there are split views on this. Some authors claim that these experts will take their national context into their jobs (Liefferink & Skou Andersen, 2005, p. 59), (Zito, 2002, p. 247), (H eritier, 2002, p. 187); other authors claim that they will take a supranational European identity (Peterson & Bomberg, 1999, p. 17). There is also a similar dichotomy of views with the fact of holding the Presidency of the Council. Some sees it as a way in which Member State's context could be set at Community level: "*The country holding the presidency can influence the decision agenda, give specific issues priority over others and, by arranging the list of items to be discussed, prepare possible package deals*" (H eritier, 2002, p. 187). Others do not think this creates much influence, given that the Presidencies last only for 6 months, each 7 years, and much of the agenda is predetermined by proposals already in their way "*During the six month's term of a Presidency, in other words, a Member State is mainly able to affect the order rather than the content of the work of the Council*" (Liefferink & Skou Andersen, 2005, p. 53).

However, even though Member States try to push their context in the law-making process, there are other mechanisms or situations which make that the final piece be just a mixture of all Member States' contexts. H eritier (2002, p. 185) writes for example that after the problem has been defined, and a suggestion of how to deal with it is presented, a "denationalization" of policy occurs, where a debate on reaching a pragmatic problem-solving occurs between technical, scientific and legal experts. Richardson summarizes this idea "*The EU is faced with twenty-five different policy systems, each reflecting national power structures (and national policy networks). They bring to the Brussels table their own public policy traditions in terms of policy and regulatory styles. The EU is therefore a huge cauldron of policy proposals, ideas and traditions from which EU public policy must be distilled*" (2006, p. 14). However, other authors' view is that the final accepted law is not only the result of

the negotiation of several Member States, but that is the result of different struggles between the institutions and the Member States: *“environmental decision-making is not simply a process which reflects dominant coalitions of member states (leader or laggard) pushing their own national style of regulation. National concerns are displaced onto a higher level, but in the process become mediated by institutional bargaining between the Council, Commission and, increasingly, the European Parliament. In environmental policy the institutional balance of power is constantly shifting, and decisions rules are manipulated in the struggle”* (Peterson & Bomberg, 1999, p. 188).

c) Actually, it doesn't work to have the same law applicable in the sub-contexts of the EU

Just as it is said that the final piece of law is one that reflects the context of each Member State, some authors do not accept this idea completely. For example, Peterson & Bomberg (1999, p. 195) write that in environmental law making, there is no such thing as a pluralistic game where all interests have a similar access and influence. They then referred to an interview they had with a Commission official working in waste management policy who presented that 90% of the contacts made were with trade and industry. They also write that the legislative output reflects the bargaining between Member States, Institutions and a variety of public and private actors who often disagree about the nature of the problem and the type of solution, output which just presents incongruities and ambiguities (Peterson & Bomberg, 1999, p. 198). Knill (2006, p. 372) also write how European policy, because of the need to accommodate the diverse interests of the member states, is often *“watered down”* by the use of exception clauses or vague formulations, or enriched with specific elements which are of interest for particular Member States.

Something else which has not helped the issue of accommodating to the different contexts is the fact of having command-and-control type of regulation. Knill (2006, p. 359) write for example how the reliance of EU environmental law on this type of regulation, allowed for the formulation of highly detailed rules such as standards (emissions or quality) which regarded little of the differing environmental conditions and problems at Member States level.

But this problem of having to accommodate to different context is something more or less recent, since in the initial years of the European Community, when there were fewer Member States, there were also fewer diversity of contexts to accommodate to. For example, economically speaking, McCormick (2005, p. 70) writes that as accessions started to take place, the gaps were wider between the richest and the poorest regions: *“With the accession of Britain (in 1973), Greece (in 1981) and Ireland (in 1973) the gap grew to the point where the richest regions were five times richer than the poorest”*. He continues writing that in spite of focus on promoting cohesion, regional disparities still remain (2005, p. 71).

This increasing diversity within the EU raises debates about the suitability of aiming for uniformed environmental matters (Lee, 2005, p. 23), debate which was enhanced with the eastern enlargement of 2004, were as Peterson & Bomberg (1999, p. 185) write, the ability of the EU to accommodate diversity was be severely tested.

So far it had been discussed the ability of the EU to accommodate to the different contexts of the Member States, first by presenting that different context does not matter when there is an economic motive behind, and that the implemented laws do have a piece of every context. It was also shown that this was not always the case and that the decided laws might not reflect those differences in context and that as the Community grew, the more difficult was to make a law that would fit them all. Therefore, some mechanisms were created to try to address this issue. One of the mechanisms being derogations or financial support; the other being new type of instruments. These two types are described next.

d) Managing mechanisms: derogations and financial assistance

Temporary derogations and/or financial assistance are offered for those Member States for which there would be high costs related to the implementation of a new piece of law (Wilkinson, 2002, p. 46). Derogations are temporary and applicable not only to the poorer states. The issue of time has been discussed by Wilkinson (2002, p. 46) when he writes that it is not clear what "temporary" means, and he presents the case of Spain of Portugal, who got a 10 year delay in the implementation of some of the provisions from the large combustion plant Directive. The application of derogations applies only under certain conditions: (1) derogations are only for those measures adopted under art 130s(1), (environmentally-related issues), no derogation is applicable for measures adopted under art 100a (common-market); (2) the costs which are disproportionate are incurred only by the public authorities, the ones from private industry cannot be taken into account (Wilkinson, 2002, p. 46).

Regarding financial support, this is applicable only for those Member States with a per capita GNP of less than 90% of the average, and it is entitled to projects in the environmental and transport field (Wilkinson, 2002, p. 47).

e) Managing mechanism: new instruments

Command-and-control regulation was one of the main instruments used during the first decades of environmental regulation in the Community. Emphasis was also on harmonization of regulatory techniques among Member States (Steward, 2007, p. 177). However, since the beginning of the 90s, the Commission went into using other types of instruments. These instruments were developed mainly to improve the effectiveness of the implementation of environmental policies (Knill, 2006, p. 359). Lee (2005, p. 163) also presents that another reason behind the new instruments was that centralized standard-setting responds poorly to the varying environmental and economic conditions, and Krämer (2007, p. 859) also writes that changes in the approaches used for environmental legislation were driven by the accession of new Member States.

These new instruments take better account of the contextual conditions of Member States. They are designed to provide the flexibility needed to accommodate the diverse environmental conditions that are present in each of the Member States (Thornton & Beckwith, 2004, p. 209). Just as Knill (2006, p. 359) writes: *"In contrast to the detailed and substantive, standard-oriented "old" instruments that were to be uniformly implemented regardless of the physical, economic or political context, new instruments focus on establishing basic procedures for improving environmental awareness and behaviour and set no concrete environmental targets"*.

These new instruments also moved the focus away from setting concrete and detailed environmental standards and targets, towards improving environmental awareness and behaviour and setting objectives that leave considerable flexibility to Member States (Knill, 2006, p. 359), (Lee, 2005, p. 163): *"There has been increasing pressure to move away from detailed legislative measures that leave little room for national manoeuvre. The need to take into account the financial and physical conditions existing throughout the EU is also required by the acquis"* (Soveroski, 2004, p. 130). According to Krämer (2007, p. 859), the EC legislation has become more flexible and general, setting the framework for action but leaving details of implementation to the Member States themselves. There is a greater use of framework Directives (Lee, 2005, p. 13), where the principles are laid down in these framework Directives and details are elaborated in more technically oriented daughter Directives (Krämer, 2007, p. 863).

An example of how Directives are changing to take better account of the context of the Member States is the Water Framework Directive (WFD). According to Thornton & Beckwith (2004, p. 209) the difference of the WFD with the previous water-related Directives, is that the WFD does not set ELVs which have to be fulfilled at all Member States levels. The WFD sets common objectives for water quality at Community level, leaving Member States the establishment of measures at national and local level in order to achieve such

objectives. *In acknowledgment of both the diversity within the Member States and the principle of subsidiarity, the directive makes a reference to the diverse conditions and needs of Member States, and includes a statement that decisions on water should be taken as close as possible to where the water is affected and used* (Soveroski, 2004, p. 134).

Another example of how Directives are changing to take better account of the context of the Member States is the Integrated Pollution Prevention and Control Directive (IPPC). According to McCormick (2005, p. 70) the IPPC Directive changed the trend of giving ELV applicable to the whole community, and instead, the ELVs should be made taking into consideration “1) the technical characteristics of the installation; 2) the geographical location of the installation; 3) the local environmental conditions”. Soveroski (2004, p. 134) also adds that the IPPC gives greater responsibility to the Member States by “*setting the standards to be met themselves*” McCormick (2005, p. 70) continues saying that due to the IPPC Directive, a proposal from 1990 to regulate 15 additional substances for water discharges was withdrawn in 1993.

New instruments are also for example instruments that emphasise cooperation, voluntary action, demonstration projects, good practice (Richardson, 2006, p. 7), and more willingness to explore voluntary agreements (Lee, 2005, p. 13); instruments that mobilise society through more transparent process and participatory opportunities (Knill, 2006, p. 359); and instruments that stipulate economic incentives for industrial self-regulation (Knill, 2006, p. 359) . In general, new instruments relate to the search of alternatives to traditional command and control legislation (Lee, 2005, p. 13).

However, Lee writes that not all of the EU environmental law is moving away from de-centralization, “*there is still very significant legislation setting detailed centralized substantive standards*” (Lee, 2005, p. 163), and that waste is one of those areas. In a similar line, Richardson (2006, p. 5) also writes that: “*the greater emphasis on softer policy instruments may actually disguise the continuation and extension of old-style regulation*”. Another interesting aspect is that, according to (Knill, 2006, p. 359), the new instruments also aim at changing contextual factors in order to facilitate the implementation of environmental policy in general.

7.9 Appendix 2: Implementation time for the ELVs

The regulated parameters for the activity of incineration are legislated in the Directives since 1989, but its starting date of application differs depending on the type of incinerator. (see Figure 8).

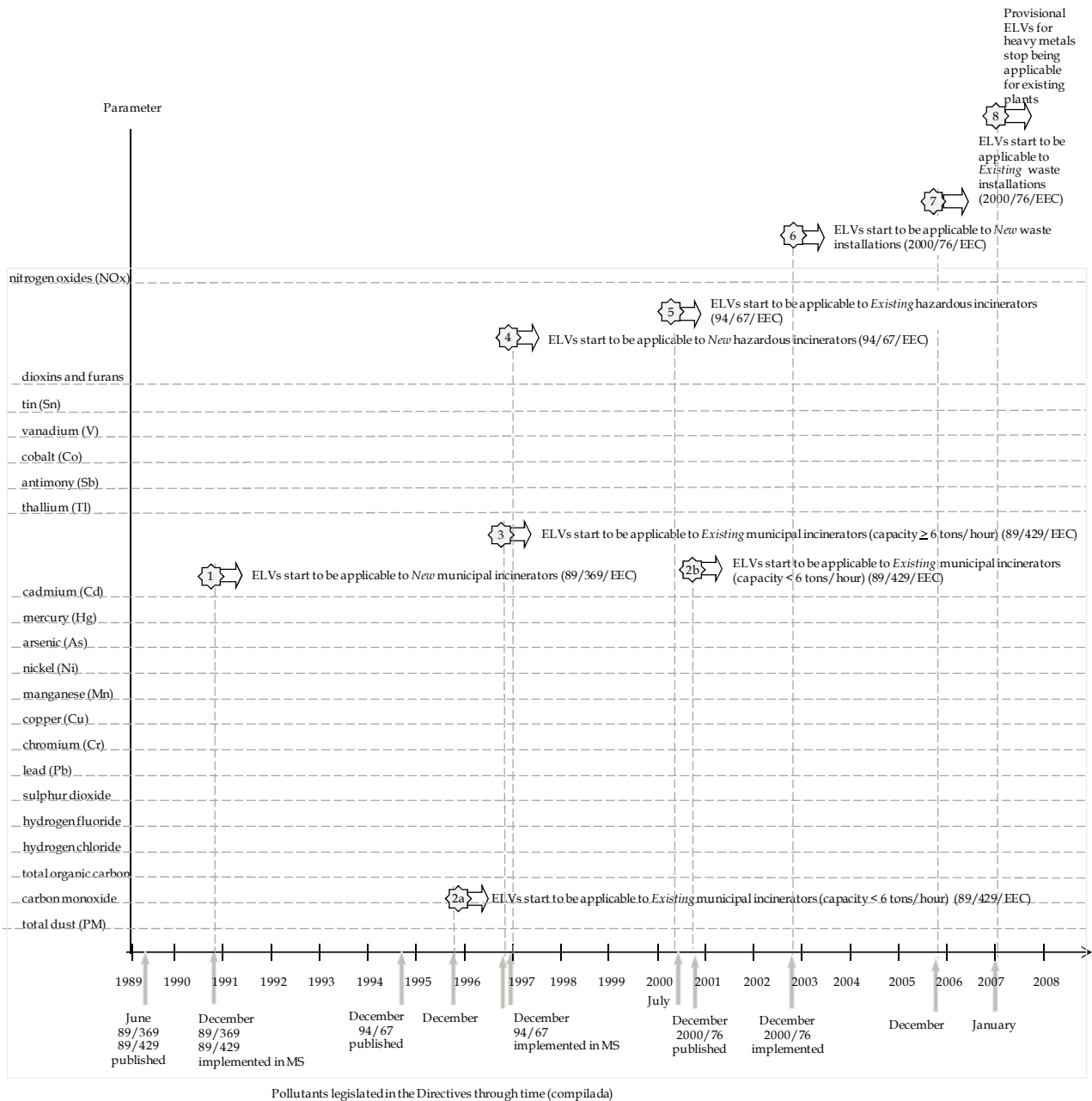


Figure 8: Starting date of application for the different parameters legislated in the EU incinerators Directives.

The **new municipal incinerators** Directive legislated ELVs for total dust (PM), hydrochloric acid (HCl), hydrofluoric acid (HF), sulphur dioxide (SO₂), carbon monoxide (CO), total carbon (TOC), and the heavy metals: lead (Pb), chromium (Cr), copper (Cu), manganese (Mn), nickel (Ni), arsenic (As), cadmium (Cd) and mercury (Hg) (art 3-1 and 4-2(a,b)). These ELVs were applicable from their first moment of operation of the plant, that is, any time after 1st December 1990 (article 12) (see star 1 in Figure 8).

The same parameters given for new incinerators were to be complied for **existent municipal incinerators**. The difference lied on the amounts given as ELVs for existing plants, and the moment in time when they should start being complied with. The type of parameters to be complied with and the dates from which they start to be applicable, were dependent on the incinerator's capacity: Existing incinerators of less than 6 tons per hour should start complying with, as from 1st December 1995, with PM and CO (art 2-b(ii)) (star 2a in Figure 8); and as from 1st December 2000, with the rest of the parameters assigned to new incinerators of the same capacity (art 2-b(ii)) (see star 2 in Figure 8). Existing incinerators of 6 or more tons per hour should start complying as from 1st December 1996 with the ELVs given for new incinerators of the same capacity (art 2-a) (see star 3 in Figure 8).

The same parameters regulated for municipal waste incineration were regulated for **hazardous waste incinerators** (art 6-5, and 7-1). There were, however, some changes in the name of some of the parameters. *Hydrochloric* and *hydrofluoric acid*, were referred then as *hydrogen chloride* and *hydrogen fluoride* respectively. An additional change is that total carbon was then referred as *total organic carbon including gaseous and vaporous organic substances*. New parameters are also added in the list of regulated heavy metals thallium (Tl), antimony (Sb), cobalt (Co), vanadium (V) and tin (Sn), as well as dioxins and furans (art 7-1 and art 7-2).

New hazardous waste installations needed to comply with the ELVs as from the first moment of operation, that is, as from 31st December 1996 (art 3-1, and art 18) (see star 4 in Figure 8). Existing hazardous waste incinerators needed to start complying with the ELVs as from 1st of July 2000 (art 13-1) (see star 5 in Figure 8).

The same parameters regulated in the previous Directives for municipal as well as for hazardous waste incineration were regulated in the **all-waste** incineration Directive. However, tin (Sn) is no longer included in the list of heavy metals to regulate. Two additional parameters were included in the list of regulated substances: Nitrogen monoxide (NO) and nitrogen dioxide (NO₂).

New waste incinerators installations needed to comply with the ELVs from the first moment of operation, that is, as from 28th December 2002 (art 20-2)) (see star 6 in Figure 8). Existing installations needed to start complying with the ELVs as from 28st December 2005 (art 20-1) (see star 7 in Figure 8).

This is also the date from when the previous three Directives were replaced, hence being the date until when the ELVs given in those Directives were applicable.

Other relevant date for heavy metals is the 1st January 2007, which is the date until provisional ELVs –which were given in the 2000/76 Directive- were applicable. These provisional values applied to existing plants for which the permit to operate had been granted before 31st December 1996 and which incinerated hazardous waste only (Annex V(c)) (star 8 in Figure 8).

7.10 Appendix 3: Exploring further the contextual elements of Colombia

The contextual elements of Colombia derived from that which was said by the interviewed authorities at the Ministry, and that which was manifested in the explanatory notes of the Resoluciones. However, some of the contextual elements seen in the cases of Member States and CEE were neither mentioned by the interviewed authorities nor mentioned at the explanatory text of the Resoluciones. The situation of such contextual elements in Colombia was explored further in different literature sources and is presented next.

Waste: amounts and disposal

The 2010 report from the National Comptroller's Office²⁰ refers to information gaps related to the knowledge on emissions, inventories, volumes, registration, characterization and research on waste (Contraloría, 2010, p. 45). According to data from 1999, the estimated amount of waste produced per inhabitant in Bogotá was of 1 kilo/day²¹ (El Tiempo, 1999). Other figures report 6117 ton/day of waste being produced in Bogotá (El Tiempo, 2001b).

Disposal of **municipal waste** is reported as being improved since the end of the 90s (Figure 9) with the reduction on the amount of municipalities having an inappropriate disposal methods for waste (e.g dispose in open-sky dumps, on surface water or inappropriate burials of waste).

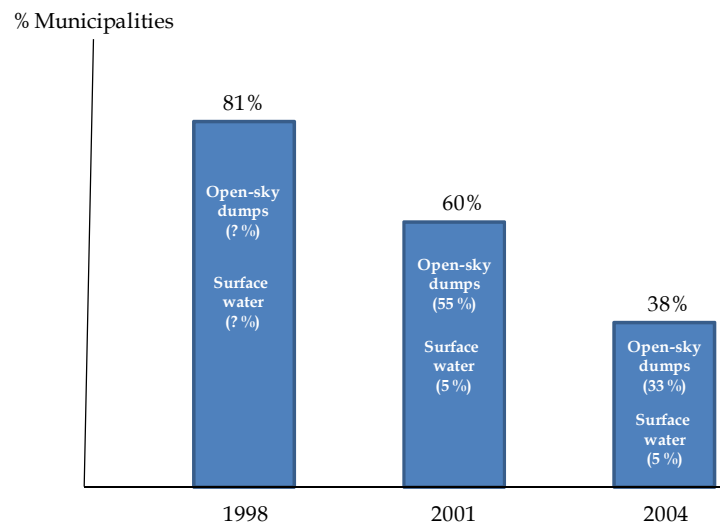


Figure 9: Disposal of municipal waste in the municipalities of Colombia (El Tiempo, 1998) (El Tiempo, 2001c) (El Tiempo, 2004). The data from 1998 does not specify the distribution according to the disposal method.

The report from 2009 from the National Comptroller's Office reports that in average, 61,5% of the municipalities have access to a site for final disposal of solid waste, but what is not mentioned is the specifications of such disposal places (Contraloría, 2009, p. 85). However, the reports also relates to the inappropriate management of solid waste in the country, being this a problem identified in all of the regional jurisdictions (Contraloría, 2009, p. 16). The report from 2009-2010 also presents that only 39% of the compromises acquired in the Plan for Integrated Management of Solid Waste are being complied with (Contraloría, 2010, p. 10).

²⁰ Governmental entity in charge of monitoring and controlling the use of public resources.

²¹ Population of Bogotá in 2000 was of 6.302.881 inhabitants. Source: DANE. Indicadores demográficos y tablas abreviadas de mortalidad nacionales y departamentales 1985 - 2005. [www source]: http://www.dane.gov.co/index.php?option=com_content&view=article&id=238&Itemid=121

Inappropriate management of **hazardous waste** in the country is also presented in the 2010 report from the National Comptroller's Office. Handling, treatment and final disposal were said to not being performed in a planned way. The report also referred to the ignorance on the subject from generators, managers and receivers, authorities and the general community (Contraloría, 2010, p. 45). After a survey conducted in November 2009, the Ministry reported 57 companies authorized to conduct activities related to the use and recovery of hazardous waste (Contraloría, 2010, p. 45).

Regarding **hospital waste**, it is reported that in Bogotá most of the health centres do not do any pre-treatment to it, and just deliver their waste to the waste trucks (El Tiempo, 1997b). In 2008 the Procuraduría presented a report on the situation of hospital waste in Colombia. The 32 departments from the country were evaluated. Among the findings were that only 13% of the hospitals had a plan for management of hospital waste. Out of the health institutions inspected, 65% of them did not perform a pre-treatment of hazardous waste before discharging them to the sewer system; more than half of them, 58%, did not use the colour-code used to store the waste in an appropriate way (El Tiempo, 2008).

Views on landfilling

The mentality that seems to be surrounding the case of landfills is that enough land is available in the country to deposit waste (El Tiempo, 2001). However, cases as the waste slide in 1997 of the landfill of Bogotá, *Doña Juana* (Box 12), started to raise awareness and complaints from citizens about the landfills (El Tiempo, 2001c).

On the conditions of the sanitary landfills, in 2001 is reported that 99% of the country's sanitary landfills were either inappropriately managed or close to reaching its final use (El Tiempo, 2001c). In 2004 serious deficiencies are reported in the landfills' technical designs and operation, and even some should be better referred to as *closed dumps* (El Tiempo, 2004). A report from 2008 from the Procuraduría presented that 77% of the landfills did not have a security cell, meaning that hospital waste was being co-disposed of together with the ordinary waste (El Tiempo, 2008).

Box 12: Waste slide in Bogotá's landfill *Doña Juana*

In September 1997 a waste slide took place in Bogotá's landfill. The landfill had been in operation for eight years, and problems had been previously reported on the management of the lixiviates which were being discharged without treatment into the near-by river (El Tiempo, 1997). The estimated amount of produced lixiviates was of 10 liters per second (El Tiempo, 1997b).

According to data from 1999, the estimated amount of waste produced per inhabitant in Bogotá was of 1 kilo/day (El Tiempo, 1999). Other figures report 6117 ton/day of waste being produced in Bogotá, out of which 3.581 were taken to *Doña Juana* (El Tiempo, 2001b). Other reports talk about estimated amounts of waste received in *Doña Juana* of 4.500 ton/day (El Tiempo, 1999). In 1996 the life span of the landfill was estimated in 20 years, and the goal was to buy more land nearby to increase its span life up to 60 years (El Tiempo, 1996b).

In 1999 a study was made to determine the causes of the waste slide. According to the study, the type of waste produced in Bogotá is different to the one produced in developed countries because of its high contents of organic material which generate more gas and humidity. The study also explained that the model used in Bogotá for its management of waste, was designed in other countries in which the type of waste do not have such large amounts of organic components, and in which the winter conditions of those countries also influence the behavior of waste in a landfill, conditions which are not the same in Bogotá. The study concluded that it was necessary to build a local model with the technical bases from other countries, but adapting it to the local conditions of Bogotá (El Tiempo, 1999).

Views on incineration

In 1999 is written about the non-existence of public incinerators which would comply with the technical specifications for an appropriate disposal of hazardous waste. It is also written about the non-existence of national legislation which would regulate this process; and the few legislation that there was, was considered disperse and with few real applicability, mainly due to the economic, technical and research conditions in this matter at that time (El Tiempo, 1999b). A report from 2008 from the Procuraduría presented that half of the companies incinerating hospital waste did not have a permit for doing so (El Tiempo, 2008)

Opinions around the topic of incineration are also expressed in terms of costs. For example, while the costs of managing waste in landfill were reported of being 20 US dollars per ton, the costs of managing waste in an incinerator were of 80 US dollars per ton²² (El Tiempo, 1999). If waste was incinerated instead of landfilled, the expenses for the citizens would increase 50% (El Tiempo, 2001c). An interesting note is the article presented in 1992, about a waste burner for reduced spaces, as big as a home-water-tank, incinerating waste at temperatures between 800-1000C, which was common in USA, and presented as a novelty for Colombia, but because of its considerate prices (500.000 COL) it was not very feasible for the country (El Tiempo, 1992).

However, opinion on incineration are not only related to price but to environmental considerations, as it was the case of incinerating hazardous waste in a cement company in the department of Boyacá (Box 13).

Box 13: Co-incinerating hazardous waste in a cement company

The case started at the end of the 90s when some containers of hazardous waste were found buried in two municipalities of the Cesar, a department localized north-west of Colombia. The hazardous waste related to 146 tons of methyl parathion and 14 tons of toxopheno, substances which seemed to be used during the 70s for the cultivation of cotton in the region (El Tiempo, 1999b)(El Tiempo, 2003). Part of the waste was found in plastic containers buried at 1.5 meters from the surface, and the other part was found stored in a warehouse, in none of the cases under the appropriate security measures (El Tiempo, 1999b).

The correspondent authorities were notified of the case, including delegates from the FAO (Food and Agriculture Organization of the United Nations) and officials from the Ministries of Health, of Environment and of Agriculture (El Tiempo, 1999b) Initially it was thought the waste could be sent to Finland for its disposal, but the idea was abandoned given the high costs this would imply (El Tiempo, 1999b).

Six years after the discovery of the waste, it was decided that the waste could be safely disposed of in a cement kiln located in the Department of Boyacá (1600 km distance from the Department of Cesar) (El Tiempo, 2003b). The Ministry of Environment had taken the case in its hands and presented the best alternative for disposing of the waste: 16 tons of methyl parathion and 1,5 tons of toxopheno would be incinerated in a pilot test at the cement kiln, and samples of the air emission would be collected and sent to Germany for its analysis (given that in Colombia there were no laboratories who could perform such tests). If the results of the test were positive, the rest of the waste would be disposed of in the plant as well (El Tiempo, 2003) (El Tiempo, 2003b). At this point in time it was still being considered whether the waste should be stored in Cesar or in Boyacá, but in any case, it was reported that the waste was already -or planned to be repacked in appropriate containers and stored under security measures (El Tiempo, 2003).

The cement kiln plant had been testing previously with other hazardous waste, mainly contaminated soil and packaging waste contaminated with pesticides, as well with used tires. Such tests provided positive results and were approved by the local authorities (El Tiempo, 2003). The co-incineration process was to be carried out under 1800-2000 C, which according to the Ministry would allow the destruction of 99,9% of the substances (El Tiempo, 2003). The emissions would be discharged to the atmosphere after passing through a special filter considered to be the only one in Colombia. The emissions were expected to be well below the American standards for emissions given the high combustion temperatures (El Tiempo, 2003b).

²² Curious that the news reported the costs in US dollars and not in Colombian pesos.

The process was planned also to be carried out under the technical inspection of an expert from the German Society for International Cooperation (GIZ) GmbH (*Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH*) entity which supported the project, and by a Norwegian expert from Holcim, which was the company to which the cement kiln belonged to (El Tiempo, 2003). If the tests were proven positive, not only the 143 tons of waste would be disposed of but the idea was that the plant could be authorized to continue providing the services for disposal of hazardous waste in the country. The Ministry had information on other 400 tons of obsolete pesticides and approximately 4,500 tons of contaminated soil and buried pesticides in the country (El Tiempo, 2003).

The representative from the cement company manifested that their core business is cement production, and if they knew that the co-incineration of hazardous waste could affect their production and image, this would be something that they would not carry out. The representative also manifested that the company was approved under ISO 14000 standards and were complying as well with other international certifications (El Tiempo, 2003). She continued saying that co-incineration of hazardous waste is a process which they considered was an efficient solution to a national problematic, and that it was safe to be carried out under a technical, environmental and economic point of view. Such co-incineration process had been carried out in other countries of the world, including Pakistan, Poland, Vietnam, Malaysia, Brasil, Argentina, Mexico, Costa Rica, and even in developed countries as France and United States (El Tiempo, 2003b).

However, the decision of incinerating hazardous waste caused alarm among the inhabitants of the Boyacá region (El Tiempo, 2003). The local community opposed the measure, opposition which reached the local authorities and made that the Minister of Environment decided to suspend the process until an agreement was reached with the local community (El Tiempo, 2003b).

An agreement was never reached, and the Supreme Court of Justice dictated that the decision of incinerating hazardous waste in the cement plant was to be suspended. This decision came after a citizen from the region presented a *tutela*. A *tutela* is a mechanism provided in Article 86 of the Constitution of Colombia which seeks to protect fundamental constitutional rights of individuals. Delaney (2008, p. 50) describes it as a “*legal mechanism for the protection of equality in Colombia [...] an easily-accessible and quickly-resolved writ for the satisfaction of fundamental rights [...] it has become a popular mechanism for ordinary Colombian citizens to claim their constitutionally protected rights*”. This citizen manifested that “*his fundamental rights to life, health and a clean environment were threatened by the intention of waste incinerated in the ovens of Holcim*” (El Tiempo, 2004b).

During the interview for this PhD project with the Ministry's technicians, they manifested that this case of co-incinerating hazardous in the cement kiln was a case which was not properly handled. According to one of them, the process was heavily influenced by the ignorance of the community, and by the political handling of the subject (local public elections were close to happen at that time and some of the candidates took the subject as *workhorse* for wanting to be elected); also, those who supported the decision taken by the Ministry did not have the enough weight behind (Interview_at_Ministry, 2009).

The technicians manifested that finally the 160 tons of hazardous waste were taken to France, where they were disposed of -according to him- with less technical conditions than those offered at the cement kiln in Boyacá: less retention times and less combustion time (Interview_at_Ministry, 2009).

Public involvement

The role of public community as a control mechanism inducing for a better environmental performance is, according to Panayotou & Faris (2003), not a common role in the Andean region (p. 9). In the specific case of Colombia Panayotou & Faris (2003) write that there is very few evidence of the role of the public, and that it seems that the community is not very active (p. 10).

Reports from the National Comptroller's Office also mentions the low levels of awareness of Colombian society towards environmental aspects (Contraloría, 2003, p. 18). Ignorance from the general community on the topic of hazardous waste management has been reported by the National Comptroller's Office (Contraloría, 2010, p. 45).

Macias (1998) mentions as well the lack of interest for environmental problems from the Colombian society (p. 42), and according to him, such situation influences the fact that the Colombian environmental legislation resulted in collection of technical requirements. delValle (2003) concludes that the Colombian communities seem not to play an important role in pollution control, as it has been played by the regulatory authorities and the market forces (p. 2).

Macias writes about the main motivator behind the development of environmental legislation in Colombia. He refers to the role that the mechanisms for public participation established in the Constitution, in particular the *Tutelas*, had in this development. The Constitutional Court establishes that the environment is a juridical good, which requires a special protection, and which can be *tutelable* (Macias, 1998, p. 42). *Tutela* is a mechanism provided for in Article 86 of the current Constitution of Colombia which seeks to protect fundamental constitutional rights of individuals. Delaney (2008, p. 50) describes it as a “*legal mechanism for the protection of equality in Colombia [...] an easily-accessible and quickly-resolved writ for the satisfaction of fundamental rights [...] it has become a popular mechanism for ordinary Colombian citizens to claim their constitutionally protected rights*”.

Macias continues saying that the development of environmental legislation in Colombia is marked by the need to respond to all type of requirements established by marginalized or social groups in poor economic conditions who see the environmental management as the door through which they could participate and propose vindications.

However, perhaps a shift in Colombia's public attitude towards environmental considerations can be seen exemplified in the case when the local community exerted pressure to avoid hazardous waste being co-incinerated in the cement company located in their region (Box 13). Indirect influence of the is public seen when prestigious companies, in order to avoid being labeled as “dirty”, tend to invest more in pollution abatement (Panayotou & Faris, 2003, p. 9).

Stakeholders' position

Macias (1998) discusses about the involvement of stakeholders in the law making process. According to him, there is not an unity of actors and actions but a multiplicity of interests. Specifically about the state-society relationship in Colombia he writes that the process by which there is a conciliation between state and stakeholders turns out to be more a dilatory mechanism than a results-oriented mechanism. The objectives and strategies of these actors focuses on impeding a real and effective action from the state (Macias, 1998, p. 70). That is, involvement of stakeholders in the law-making process tends to be more of a hindering nature.

Market

An increase in the environmental performance of Colombian industries was reported by Uribe (2003). The situation was evidenced by the monitoring data collected by the regional and urban environmental authorities²³, where the activities of monitoring and pollution control were intensified in the second half of the 90. The dumping loads of industrial pollutants declined in the previous five years in some of the major industrial areas of the country (Uribe, 2003, p. 28).

Some studies have been made on what motivates Colombian industries to improve its environmental condition. Results indicate that it is due to the regulatory framework (delValle, 2003), but also mainly due to the market forces –mainly exporting markets (Panayotou & Faris, 2003, p. 11).

²³ Dama en Bogota; Cornare en el corredore industrial del Oriente Antioqueno; CVC en Cali

Regarding regulation, according to a study made in 2001 to 70 Colombian industries (Steiner y Salazar 2001²⁴), the companies considered that Colombian environmental regulation was strict (Uribe, 2003, p. 29), and the delValle (2003) report presents that in Colombia the normative pressure from the government is the most important influence for industries to invest in environmental aspects.

However, Garcia (2003) presents how some companies in the Andean region have made important environmental investments mainly due to the market forces, that is, due to requirements from the European and American market to comply with environmental standards. One of the conclusions from the delValle (2003) study is that the level of environmental investment made by a Colombian industry increases when the industry has an exporting orientation, and also when the industry is linked to industrial associations (p. 2).

In a similar line, the Comptroller's office report write that the improvement of the productive sectors in its industrial practices (Cleaner Production Program²⁵) is not so much due to the coordination of the governmental policies on this area, but to the need of compliance to the environmental standards required and which would allow them to access foreign markets (Contraloría, 2004, p. 9).

Related to the market component is also the element of the public image. Panayotou & Faris (2003) write how, in order to avoid being labelled as "dirty", prestigious companies tend to invest more in pollution abatement (p. 9). The authors continue writing that companies that export to the European and United States market make an effort to obtain a green image, being this the main factor influencing the fact that companies in Perú and Ecuador have introduced measures aimed at pollution control (Panayotou & Faris, 2003, p. 10).

However, while the market forces seem to be effective –with little or no governmental intervention, according to Panayotou & Faris (2003) its scope is limited, given that its influence is only applicable to those companies engaged in exporting activities (p. 10).

Environmental awareness of government

The 2010 report from the National Comptroller's Office concludes that the environmental deterioration of the country continues; that the economic growth of the country is not a sustainable one; and also that there is low political will from the state to make the environment a relevant sector (Contraloría, 2010, pp. 9,13).

According to the Colombian National Constitution (art 7, art 80), the government has the commitment to protect the environment (Macias, 1998, pp. 82-3). However, the National Comptroller's Office, has been reporting since 2002 that Colombia is far from reaching these goals of environmental protection and sustainable development contained in the Constitution given the deficiency of the government in several areas.

One of these areas refers to the lack of a long-term **National Environmental Policy**, something which has been reported since the end of the 1990s. It is said that the country's Environmental Policy has not established a frame of priorities in relation to the problems, nor the actions that should be executed, neither a set of environmental or budgetary goals, and neither the resources that should be assigned to them (Contraloría, 2000, p. 6) (Contraloría, 2001, p. 58). Besides the lack of a long-term plan, it is also reported the lack in the formulation of truly environmental policies at short and medium term (Contraloría, 2004, p. 11). Lack in the planning and management of the renewable natural resources was also presented in one of the latest reports (Contraloría, 2009, p. 13).

²⁴ Steiner R y N Salazar 2001, Inversion extranjera en Colombia, proyecto andino de competitividad, Bogota Universidad de los Andes

²⁵ This program relates to the formulation of agreements on competitiveness plans and use of sustainable and pollution prevention technologies (Contraloría, 2003, p. 20)

It is also written about the need of improving the harmonization between national and regional plans (Contraloría, 2002, p. 15?) and that there is a dispersion of efforts about different topics, efforts which go on different rhythms and, in different directions (Contraloría, 2004, p. 23).

An issue related to the Environmental Policy is the situation that usually every new government changes the priorities of the environmental management program (Contraloría, 2001, p. 15) and that it is not possible to see significant progress on those environmental programmes which were taken from previous governments (Contraloría, 2004, p. 25). The programme which according to the National Comptroller's Office registered advances of some concrete significance was the Cleaner Production Programme, (Contraloría, 2000, p. 21). Advances in the Cleaner Production Program were reported again in the 2003 report. This program relates to the formulation of agreements on competitiveness plans and use of sustainable and pollution prevention technologies (Contraloría, 2003, p. 20). However, one year later, the report presents that such advances are not so much because of the governmental policies on this aspect, but related to the desire of accessing international markets which have stricter environmental standards requirements (Contraloría, 2004, p. 9).

A lack of coordination has also been reported among the diverse governmental entities or the different economic, social and political sectors and the National Environmental Policy (Contraloría, 2002, p. 105). Possible reasons for this being the fact that the environmental dimension is considered yet another sector, not fully integrated with the other ones (Contraloría, 2000, p. 14), or that the environmental topic is seen as a secondary one and in most of the cases as an obstacle (Contraloría, 2004, p. 192). In the specific case of waste, it is reported that the few information that existed was scattered in different offices due to the lack of institutional coordination and the lack of a national information system (Contraloría, 2010, p. 45).

Regarding the aspect of environment being yet another sector, it has been reported about the different governmental agencies: mining, energy, transport, agriculture, defence, and justice giving a marginal treatment to the topic of environmental protection (Contraloría, 2000, p. 6). This is evidenced in the fact that the environmental component in the budgets of the ministries and agencies does not reach the 3%, being this participation even less in those areas in which the environmental obligations are even more pressing: mining, energy, agriculture, and transport (Contraloría, 2003, p. 10). The ignorance of authorities in the topic of waste management has also been reported (Contraloría, 2010, p. 45).

A consequence of this situation is that considerations for environmental impacts are not appropriately incorporated into the formulation and implementation of plans and projects of public and private investment (Contraloría, 1999, p. 10). Reports from 2009 and 2010 continue referring on the lack of integration of the environmental management in other governmental sectors (Contraloría, 2009, p. 15).

A second area in which the action of the government's task towards the environment has been considered deficient is the **low investment on the environmental sector** (Contraloría, 2004, p. 11). Since 2000 the National Comptroller's Office has been writing about the fact that not enough monetary resources have been assigned to the environment. The share of the national environmental expenditure in the GDP between the years 2002 and 2008 was in average 0,25% (Contraloría, 2009, p. 13), an amount which is below the range of 1.4 - 2.5% of GDP suggested by the World Bank as the minimum levels recommended to develop appropriate environmental management in developing countries (Contraloría, 2002, p. 10).

According to the National Comptroller's Office, one of the reasons why resource allocation into environmental matters does not correspond to its importance and necessity, is due that fact that environment is considered a sectoral aspect (Contraloría, 2000, p. 18), and that increasingly, there is a greater sacrifice of the environmental sector resources to favour other areas (Contraloría, 2003, p. 24).

The uncertainties about the financing of the National Environmental Policy set in doubt the success of the environmental management of the country. The uncertainties on the financing situation are related to three aspects. One aspect relates to the unequal capacity that regional environmental authorities have to generate their own resources, something which is done though property taxes, transfer from the electric sector and

tasas retributivas(Contraloría, 2002, p. 10). A second aspect relates to the low contribution from the national budget to environmental sector, which as previously presented, had been of 0,25% of the GDP when the expected amount ranges between 1.4 and 2.5% (Contraloría, 2002, p. 10) (Contraloría, 2009, p. 13). A third aspect is related to the high dependency on resources from international cooperation, where the continuity of the programs become questionable once the resources are no longer available (Contraloría, 2004, p. 25).

Another issue relates to the way resources are allocated. In the report from 2000 it was presented that most of the environmental expenditure was done on environmental sanitation (Contraloría, 2000, p. 6). Water is also the area which has received major investments, for example, for the construction of waste water treatment plants, or the recovery of watersheds (Contraloría, 2002, p. 27). This situation is reflected as well in the report from 2008-2009 when it is said that the regional authorities invested most of its resources in the water sector (Contraloría, 2009, pp. 14, 19), and that resources were devoted to a lesser extent in activities such as reforestation, solid waste management and irrigation management (Contraloría, 2009, p. 22).

The latest reports from the Comptroller's Office present that despite the levels of growth experienced by the economy during the recent years, the provision of resources to attend environmental challenges have decreased (Contraloría, 2009, p. 21). The report from 2009-2010 even writes that as usual, the conclusion the Comptroller's Office arrive to is that the budgetary and financial resources, as well as the human and logistical ones, are lower than what is really needed (Contraloría, 2010, p. 9).

A third area in which the action of the government's task towards the environment has been considered deficient is related to the **legal environmental framework of the country**, where the rules have been described as being unclear and unstable (Contraloría, 2004, p. 192), characteristics which have been present since the environmental legal framework was established in the 70s.

According to Macias (1998) and Uribe (2003), Colombian environmental legislation in the 70s and 80s was characterized as having an anthropogenic conception towards environment, where natural resources were protected for the sake of the inhabitants of the national territory, and environmental legislation was seen as a tool for addressing sanitary problems (Macias, 1998, pp. 35, 62). The environmental legislation of this time is characterized as having a lack of legitimacy, where rules were being implemented without adaptation, and where the rules were not being complied with, allowing for a growth of corruption (Uribe, 2003, p. 26).

The environmental legislation of the 90s is characterized for the introduction of concepts such as Precautionary Principle and Sustainable Development, where the State has the Constitutional duty of protecting the environment, and the citizens have the right to a healthy environment. Environment is perceived as more than just being related to human impacts but related to ecosystems and social components (Macias, 1998, p. 61), (Uribe, 2003, p. 26). It is also mentioned that the environmental legislation is related to purely technical criteria (Macias, 1998, p. 49).

In the 2000s it's been said that when compared to other Andean countries such as Ecuador and Peru, Colombian environmental law is characterized as being a strict one, with Colombia's regulatory system being the strongest and more developed one of the three countries (Panayotou & Faris, 2003, p. 10). However, just as it is said that is a strict legal system, it is also a system that is not being complied with (Panayotou & Faris, 2003, p. 5). Uribe (2003) also presents Colombian environmental legislation as one which is mainly focused on the end of pipe (p. 17), and the National Comptroller's Office writes that the legislation is complex, unclear and not in accordance with the requirements of the country (Contraloría, 2001, p. 58). They also characterise it as a legislation that despite its length and complexity in some areas, has not been fulfilled in practice because of a chronic institutional weakness (Contraloría, 2003, p. 18).

The Comptroller's Office also characterises Colombian environmental legislation as being a comprehensive regulatory framework, but one which is constantly varied or modified, without having sensible and objective studies being done on the actual implementation/application of these legal frameworks, which

brings as a consequence that there are no clear rules and it encourages instability and lack of credibility by the productive sectors on the institutions and with the decisions taken by these (Contraloría, 2004, p. 192).

In the latest reports, the National Comptroller's Office continues writing about the gaps in the environmental regulation, and that these are one of the identified weaknesses of the state in its task of guaranteeing a sustainable use of the environmental heritage (Contraloría, 2009, p. 23).

Regarding Colombia's environmental institutional framework, this has been characterized by the National Comptroller's Office as being weak, inefficient, and doing little to address the challenge of an environmentally degraded country (Contraloría, 1999, p. 10) (Contraloría, 2004, p. 192). Flaws in structure and operation have also been reported, as well as dispersion of functions, duplication and conflicts over competences, and lack of coordination among the national, regional and municipal planning systems (Contraloría, 2003, p. 18). Reports from latest year do not refer to this topic, but it is unclear if this is because there has been an improvement in the institutional framework, or because the reports concentrate on other topics.

Another area in which the government's task has been considered deficient in relation to the environment, is the one related to the **instruments used** to support the environmental information system of the country. The report from 2003 refers to the poor conditions of these instruments: environmental laboratories which lack infrastructure and investment; a network of monitoring stations above the 20 years of service; a documentation centre with considerable gaps in information and a not so confident database, including a basic environmental cartography of the country considered as inadequate (Contraloría, 2003, p. 9). This situation makes it difficult the achievement of an effective design, planning, follow up, and evaluation of the national management programs (Contraloría, 2002, p. 7).

The reports from latest years continue to refer to the irregular availability of environmental information (Contraloría, 2009, p. 13), to the restrictions in the scientific investigation (Contraloría, 2009, p. 13), and to environmental authorities that cannot evaluate the progress of their activities among other reasons because of the a lack of comparable information, that would allow for an evaluation of the quantity and quality of the natural resources which are available in the country (Contraloría, 2009, p. 13), (Contraloría, 2010, p. 9).

Third Part

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8. Final discussion

8.1 Introduction

The influence of context in environmental policy has been recognized in the sense that policies are not universally applicable *“a policy that is appropriate in one locale may lead to disastrous results in another”* (Honadle, 1999, p. 2); it also has been recognized that an effective policy is related to a high awareness of the context where the policy is applied (Honadle, 1999).

This recognition of the influence of context is important if policies made in one place are to be used in another place. The area which studies this issue of using policies from different place is called Policy Transfer.

When trying to do an effective policy transfer process, one of the critical aspects is to recognize the influence that the donor’s and borrower’s context has on the policy being transferred. Such influence of these contexts is said to be done by identifying the critical elements from the context which influence the formulation and implementation of the transferred policy (Honadle, 1999)(Dolowitz, 2000)(Minogue & Cariño, 2006). However, it has been reported that not many have managed to identify these elements *“Both literature and experience suggest a major weakness in the prevailing perspectives on policy formulation and implementation –no one is able to identify the key elements of context that affect implementation strategy and impact. [...] Even those who agree that for policies to work “it all depends” cannot point to what it depends upon”* (Honadle, 1999, p. 9).

The current project aims at covering this deficit and identifying some of those critical elements from context which influence the formulation and implementation of the transferred policy, and by this, aims at finding the influence context has in policy.

By presenting how context influences the process of formulating and implementing policy, it is expected that authorities from the borrowing countries would become aware of this influence and would not expect that the process of copying a foreign piece of law will solve their problems. This awareness will help them not to waste time and resources implementing something for which they will not obtain the expected results, something which might just turn into an unenforceable and confusing piece of law, with the further consequences that this can bring.

The point of departure for this PhD project was the situation seen in 2002 in Colombia, where the emission limit value presented in the Colombian Resolución that was regulating the process of incinerating waste in the country, were the same values as the ones contained in the EU Directive 2000/76/EC regulating the incineration of waste in the Member States. During an interview carried out with some of the authorities from the Colombian Ministry who participated in the development of the Resolución, it was confirmed that the ELVs were copied from the European norm: *“by copying the European standards we were trying to avoid people bringing into the country the plants that become obsolete in Europe and that are brought here because here the legislation is laxer”*¹ (Interview_at_Ministry, 2009).

This situation, of applying the ELVs from the EU into the Colombian scenario is what motivated the development of this PhD project. In particular, the research aims to answers the question of whether *it is appropriate to use the Emission Limit Values made in one context and apply them to a different context without modifying them?* The particular case investigated is how the context of the EU (the donor context) influenced the formulation of ELVs for waste incineration (the transferred policy), and how countries such as new EU Member States and Colombia (the borrower contexts) prepare for the implementation of the transferred policy

¹ My translation

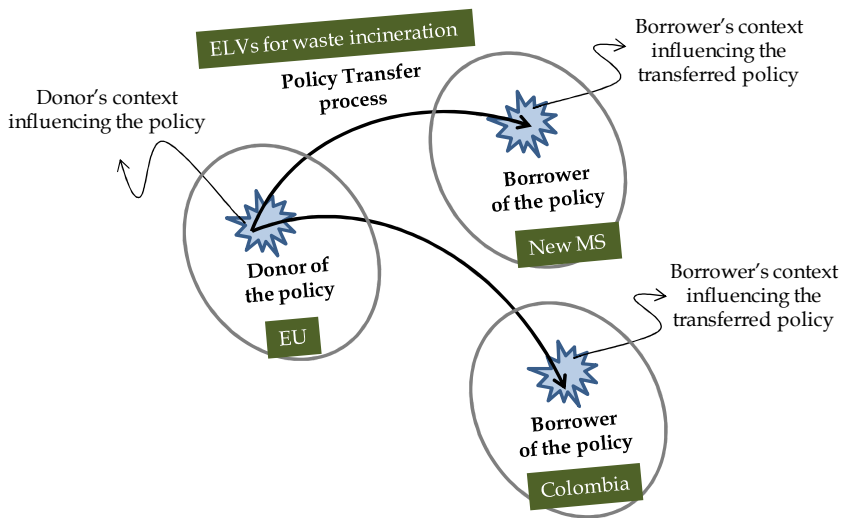
This study takes concepts from literature to create a *context-influencing criteria* which will help identify how context exerts an influence (chapter 4). It also studies the policy being transferred (the ELVs) by making a historical compilation on how such ELVs had been set throughout the four EU Directives on waste incineration (chapter 5). It also presents the particularities of the EU context which influence the formulation of ELVs (chapter 6) and it looks into the strategies developed by the borrower countries when implementing the transferred policy, in particular, the strategies developed by the EU when implementing the waste incineration Directives into the Member States, as well as those strategies developed in the process of implementing the environmental *acquis* in the Central Eastern European states, and those strategies developed by the Colombian authorities for implementing the foreign ELVs (chapter 7). Each of these four chapters documents what it was referred to as the four Researched Areas of the PhD project

The present chapter closes this study by summarizing the main findings from each of the four Researched Areas and it returns to the main question to be answered with this PhD project. The chapter finalizes with some additional reflections on the literature used as a base for the development of this project; on the task of trying to study *context*; and some questions to be explored in further research.

Box 1 summarizes the main elements of this PhD project

Box 1: Main elements of this PhD project	
Central topic	The influence context has on environmental policy.
Aim	To explore and present how context plays a role in the process of formulating and implementing a policy (aims at identifying the critical elements from context influencing policy formulation and implementation)
Main research question	<i>Is it appropriate to use the Emission Limit Values made in one context and apply them to a different context without modifying them?</i>
Particular case investigated	How the context of the EU (the donor context) influenced the formulation of ELVs for waste incineration (the transferred policy). How countries such as new EU Member States and Colombia (the borrower contexts) prepare for the implementation of the transferred policy
Theoretical bases	<p>(1) The role of context in environmental policy, and (2) The process for transferring policies among different contexts</p> <p>The relationship between these two theoretical bases can be summarized as: <i>the discipline of policy transfer is concerned with the transfer of policies among places. This discipline recognises two types of contexts: the context of the donor of the law, and the context of the borrower of the law. An effective policy transfer should be aware of these contexts, and how they influence the law being created and implemented.</i> Such relationship was represented by means of the following figure</p>

Box 1: Main elements of this PhD project (cont.)

<p>Four researched areas</p>	<p>(a) The influence of context (b) The understanding of the policy being transferred (c) The influence of the donor's context (d) The influence of the borrower's context</p> <p>The relationship between the four researched areas and the framework built from the two theoretical bases was represented by means of the following figure</p>  <p>The policy being transferred is the ELVs for waste incineration; The donor of the policy is the EU; The borrowers of the policy are the new Member States and Colombia</p>
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8.2. Main findings from the four Researched Areas

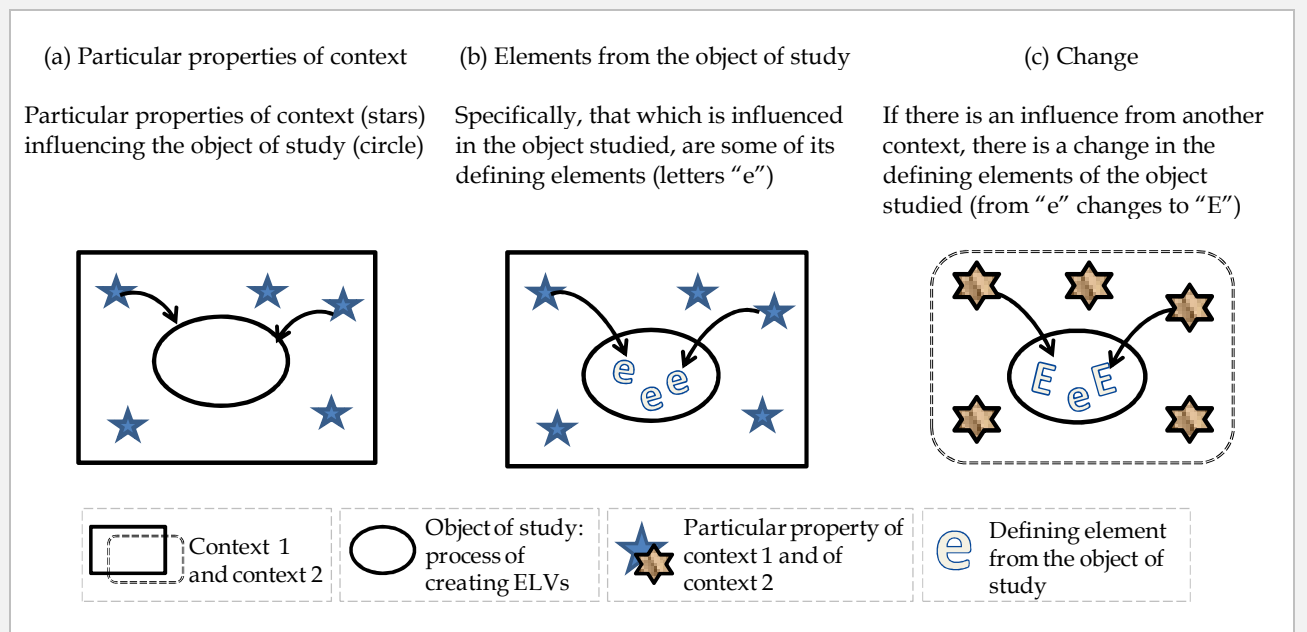
1st Area: The influence of context

Question: *How can it be determined if –and how– context exerts an influence?*

Expected knowledge to obtain: *A set of criteria for defining the influence of context:*

The criteria has three components: (a) That, which influence, are the particular properties of context; (b) That, which is influenced, are the defining elements from the object of the study; (c) If there is an influence from another context, the particular properties of that context will change the way the elements from the object of study were defined in its original context

The criteria can be seen represented in the following figure:



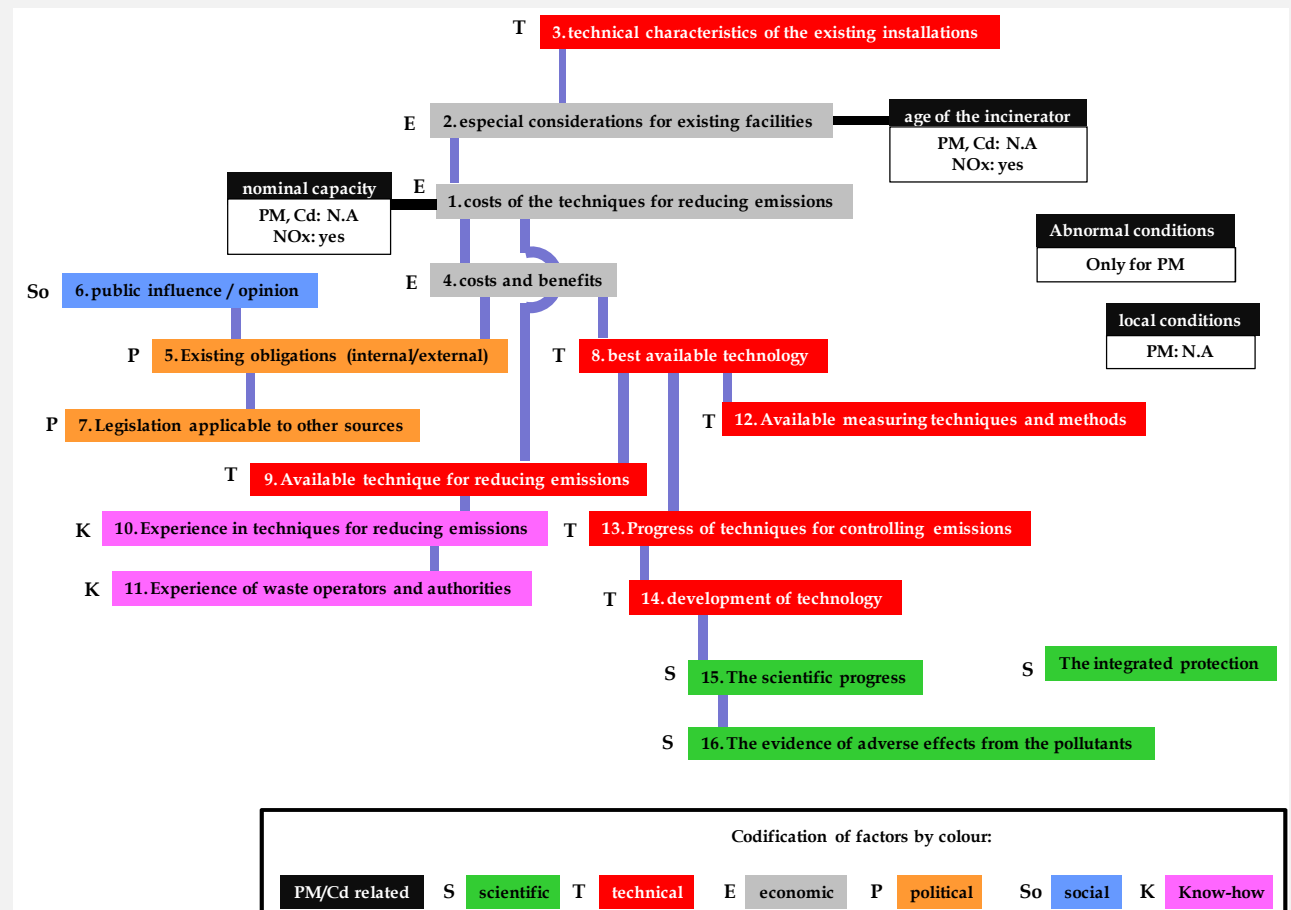
2nd Area: The understanding of the policy being transferred

Question: Which criteria played a role in formulating the ELVs for waste incineration in the EU?

Expected knowledge to obtain: Factors influencing the formulation of ELVs for waste incineration in the EU

A list of seventeen factors were seen as influencing the formulation of ELVs in general. The factors can be classified into six categories: scientific, technical, economic, political, social and know-how. A list of four additional factors were seen specifically related to the formulation of PM and Cd, two of which are associated with the general factors

These factors can be seen in the following figure:



An interlinkage among the factors was also seen, in the sense that the change of one factor will influence others, that is, there is not only one factor being the most influential in process of setting ELVs, but it is the interlinkage of several factors working together which influence this process.

In addition, one could say that the factors do not have all the same weight all the time. The importance of the factors depends on the moment. For example, the factor of public influence had a special weight during the time when the dioxin ELV was in process of being fixed

3rd Area: The influence of the donor's context

Question: *How has the EU context influenced the formulation of ELVs for waste incineration?*

Expected knowledge to obtain: *The particularities from the EU context which influenced the numbers given as ELV*

Three particularities were seen:

- (a) Market as the motivator for environmental protection. The particularities from the EU context which influenced the numbers given as ELV being:
 - The fear of the distortions to the common market that would or could be brought by the different national standards → triggered the need to harmonize the waste incineration standards at EC level.
 - Art 175 as the legal base of the Directives → allows Member States to set stricter national standards in an easier way than if the article base of the directive would have been article 95. Perhaps there is a correlation between how strict the standard is set at EC level and the article base of the directive?
 - Fear over waste tourism and transboundary pollution → also a motivator for harmonizing the waste incineration standards at EC level

- (b) The role of Member States in setting EC legislation: source of legislation to be implemented at EC level; reaching medium point compromises. The particularities from the EU context which influenced the numbers given as ELV being:
 - Point of departure for the Commission to present their proposed ELVs → Pre-existing ELVs of some of the Member States, mainly those countries which had the most developed body of national legislation on waste incineration at the time that the directives were being drafted: Germany (Fed. Rep), the Netherlands, Denmark, and France
 - Most active Member States in the process of deciding the standard to be set at EC level → delegations from these countries: Germany (Fed. Rep), the Netherlands, Denmark, and France
 - Way of solving discrepancies among the delegations → either by reaching a compromise (delegations would drop of their aspirations in the spirit of a compromise), or by being *elbowed* out of the way by bigger coalition of states
 - Shape of the final directives → follows the preferred approaches used by Germany and the Netherlands: measurement of pollution levels at point sources; controls given in terms of ELVs for industrial installations; and controls as stringent as available technology permits. It is to wonder what would have been the implications of having a waste incineration directive shaped according to the UK tradition with measurement of pollution levels at sink and controls given in terms of ambient air quality standards

- (c) The negotiating role between the European Parliament and the Council. The particularities from the EU context which influenced the numbers given as ELV being:
 - The presence of actors in the legislative process -with binding and non-binding opinions- who tend to have a position which favors environmental protection → press for stricter ELVs to be set at EC level
 - The Council conformed by Member State's delegations, some of which tend to bringing forward stringent environmental proposals
 - The increased power the EP -an environmental ally- have had throughout the years in the legislative process
 - Most of the times, a topic subject to debate would be solved by means of a compromise, where some sort of middle point between strict and lax ELV would be reached

4th Area: The influence of the borrower's context

Question: *How has the borrower's contexts influenced the implementation of the transferred policy?*

Expected knowledge to obtain: (1) The contextual elements which have repercussion in the effective operation of the transferred policy, and (2) The strategies used by the borrowers' countries to secure the implementation of the transferred policy

Table 1 compiles the *contextual elements* from the context of the Member States, the Central and Eastern European states, and Colombia which seem to have repercussion in the effective operation of the transferred policy. In the case of Member States and CEE States, most of the contextual elements seemed to have been examined by the legislators before implementing the transferred policy. In the case of Colombia, most of the contextual elements were seen as being influential after the legislation was put in place.

Member States	Central Eastern European States	Colombia
<p><u>Included in the explanatory notes of the Commission Proposals:</u></p> <ul style="list-style-type: none"> - Waste-specific information (amounts, composition) - Disposal options (% sent to landfill, % sent to incineration). - Incineration capacity at the Community (by Member State: size of plants, systems for cleaning emissions). - Legal status (at EU level and at MS level) - Economic evaluation (costs, benefits) - Current technology - Views on incineration - Integrated approach - Public access; stakeholders' position - Unequal market 	<p><u>Identified in literature review as challenging elements in the adoption of the <i>environmental acquis</i>:</u></p> <ul style="list-style-type: none"> - Environmental awareness (divergences with the EU15; low level of environmental protection) - Pollution (high levels registered) - Market (divergences with the EU15 s, which (could lead to distortion of the single market) - Financial matters (heavily burdened domestic economies; high implementation costs of the <i>environmental acquis</i>; need to secure investments) - Administrative capacity (not sufficient institutional capacities; limited awareness of EU environmental requirements; limited staff resources; excessive division of tasks over agencies) - Public involvement (civil society not accustomed to participate in shaping public policy) - Political support (low political support for implementing environmental matters) 	<p><u>Stated by the interviewed authorities; included in the explanatory notes of the Resoluciones:</u></p> <ul style="list-style-type: none"> - Waste disposal (municipal waste disposed of on landfills; incineration: rudimentary and expensive; inappropriate disposal of hospital waste in landfill; incinerators are mainly privately owned) - Legal status (existing legislation at national level; inspiration from other countries) - View on incineration (appropriate for hospital waste, not for municipal waste) - Current technology - Stakeholders' position - Economic evaluation (mainly for hospitals) <p><u>Not mentioned by the authorities nor referred to in the Resoluciones (but seen being used in the previous two cases):</u></p> <ul style="list-style-type: none"> - Waste amounts; waste management; public involvement; market; government's environmental awareness (<i>details of these can be seen in Error! Reference source not found.</i>)

Table 1: Contextual elements from the borrower's context which seem to to have repercussion in the effective operation of the transferred policy

Table 2 compiles the *strategies* that were used by the borrower countries to secure the appropriate implementation of the transferred policy.

Member States:	Central Eastern European States:	Colombia:
<p><u>Strategies used to secure the implementation of the Directives in the different sub-contexts of the Member States</u></p> <ul style="list-style-type: none"> -Strong economic drive motivates Member States to work together and overcome their national differences (distortions to the common market were being created by the different rules on incineration from the Member States) -EU law does cover the diversity of Member States (e.g: point of departure was the existing legislation on incineration at the Member States) -Derogations and financial support for specific cases (small incinerators have laxer ELVs; existing incinerators have longer adaptation periods -5 years- compared to new plants -2 years. -EU setting objectives that allow manoeuvrability (e.g: . Member States defines how to reach it based on their specific and local circumstances; national authorities have the autonomy to decide on certain matters) 	<p><u>Strategies used to secure the implementation of environmental <i>acquis</i> in the new Member States</u></p> <ul style="list-style-type: none"> -Pre-accession strategies started already at the end of the 80s (forums, technical assistance, guides). -Economic assistance programmes to cover the financial challenge. -EU programmes to help building administrative and financial capacity (twining programmes, ensuring enough qualified staff is employed). -Events to enhance public participation. -Transitional arrangements (parts of the legislation were provisionally derogated on a case-by-case basis) 	<p><u>Strategies used to secure implementation of EU's ELVs in Colombian context</u></p> <ul style="list-style-type: none"> -Strong conviction on having the EU's ELVs implemented in the country (and by that avoiding obsolete plants brought into the country). -Extension of deadlines (between 8 and 8,5 years) and dispensation to some incinerators (hospitals from certain type of municipality). -Market response to the legal requirements (offering the necessary equipment) and incinerators acquiring them to gain competitive advantage over other incinerators. -Improvement in the process of drafting legislation (recognition of the importance of working together with stakeholders, and keeping the public informed).

Table 2: strategies used by the borrower countries to secure the appropriate implementation of the foreign policy

The findings from these researched area helped construct the answer for the main research question of this PhD project. This is presented in the next section

8.3. Answering the main research question

The research aimed to answer the question of whether *it is appropriate to use the Emission Limit Values made in one context and apply them to a different context without modifying them?*. The answer is given in three levels:

If it was answered only based on the information found in literature

Literature comments on *copying* as one type of policy transfer process, but one which is placed at the lowest level on the spectrum or degrees of transfer. Copying, sometimes referred to as *imitation*, has been defined as a direct and complete transfer, where a programme already in effect in another place is adopted intact and without any changes (Rose, 1991) (Dolowitz & Marsh, 1996) (Majone, 2006).

Copying has also been associated with unsuccessful cases of policy transfer, that given that copying assumes that contextual variables remain constant: *"copying assumes that a great many different institutional and contextual variables remain constant"* (Rose, 1991, p. 21), and as it has been mentioned by some authors [(Rose, 1991), (Dolowitz, 2000), (Minogue, 2006)], an effective case of policy transfer recognizes the influences made by each one of the contexts. Just as Honadle (1999) writes, that sometimes poor decisions and recommendations are made because the professionals do not look at the borrower's context, and that there is a tendency to *"generalize from one type of setting to another and to act as if context makes no difference"* (Honadle, 1999, p. 90).

The easiest way to prove that copying has occurred is to examine the wording of the documents (Dolowitz & Marsh, 1996, p. 351). When comparing the numbers given as ELVs in the Colombian Resolución and in the European Directive one could assume this as a case of copying (see Box 1 in *Introduction* chapter of this PhD report). The confirmation that the ELVs were copied from the European norm was manifested during the interview carried out with some of the authorities from the Colombian Ministry who participated in the development of the Resolución: *"by copying the European standards we were trying to avoid people bringing into the country the plants that become obsolete in Europe and that are brought here because here the legislation is laxer"*² (Interview_at_Ministry, 2009).

Up to this point the main research question could be answered by saying that **it is inappropriate** to do this (to use ELVs made in one context and applying them into a different one, without modifying those ELVs), given that the characteristics of the process associates it with a case of *copying* which according to literature, is one of those policy transfer process which does not guarantee success [(Rose, 1991), (Dolowitz & Marsh, 2000)] *"what works under one set of circumstances may not work under others"* (Honadle, 1999, p. x) and as Honadle continues writing *"A sure recipe for failure is to replicate project characteristics without understanding the interplay between those characteristics and context"* (p. 94)

If it was answered only based on the theoretical bases

Two theoretical bases were used for exploring the main aim of this PhD (see **Box 1** in pg 306). The first theoretical base is about context and the recognition of its influence in environmental policy; the second theoretical base is on the process of transferring policies among different contexts, and the importance of recognizing the influence that the donor's and the borrower's context have on the policy being transferred.

From these bases it could be concluded that (1) there are two distinct contexts: the context where the policy is formulated, and the context where the policy is implemented, and (2) that it is important to be aware of the influence exerted by both of these contexts if a process of policy transfer wants to be successful

² My translation

In order to see how this influence of context (in the formulation and implementation of policies) took place, four areas were explored in which:

- (1) a context influencing criteria was developed
- (2) the policy of interest was studied in detail in order to have a better understanding of it
- (3) the influence of context in the process of formulating the policy was explored
- (4) the influence of context in the implementation of a transferred policy was explored

The policy of interest in this case is the ELVs for waste incineration; the context where the policy was formulated is the European Union; the contexts where the transferred policy was implemented referred to the Member States and Colombia

The results from the exploration of these areas are summarized in Table 3. These results exemplify how context exerts an influence (a) at the moment of formulating a policy, and (b) at the moment of implementing (transferring) into a different context³

(a) Context exerts an influence at the moment of formulating a policy	Influence of donor's context seen with how the particularities of the EU context influence the numbers set as ELVs.	
	Particularity	How they influence the number given as ELV
	Market as the motivator for environmental protection	For example, the fact that <i>the article base chosen for the directives was art 175 and not art 95</i> . Art 175 allows Member States to set stricter national regulations in an easier way than if the article base would have been article 95, so in theory, this would make it easier to set stricter standards given that the topic legislated (incineration) is something which is not directly related with economic interests, something on which Member States would be much more cautious when setting high standards.
	The role of Member States in setting EC legislation	For example, the fact that the point of departure for the Commission to present their proposed ELVs was on the <i>pre-existing legislation</i> of the few countries which had legislated the topic at the time the directives were being drafted: Germany (Fed. Rep), the Netherlands, Denmark, and France. The way this influence the number given as ELV is that these pre-existing values provided the minimum base above which the ELVs meant to be implemented at EC level would be decided
	The negotiating role between the European Parliament and the Council	For example, the presence of actors in the legislative process -with binding and non-binding opinions- who tend to have a position which favors environmental protection. These actors press for stricter ELVs to be set at EC level and their opinions are taken into account depending on the legislative power they carry. For example, almost none power for the ESC but in the case of the EP, a power which has been increasing through time with the amendments made on the Treaty

³ Further information on this can be seen in the chapters 5, 6, and 7 under the sub-section *Relation with the context-influencing criteria*.

(b) Context exerts an influence at the moment of implementing (transferring) into a different context	Influence of the borrower's context seen with how the particularities of the Colombian context influence the numbers set as ELVs.	
	Particularity	How they influence the number
	<u>Market as a motivator</u> : the providers of the flue gas purification equipment saw the market opportunity in the new legislation and reacted quickly to it. The incinerators, looking for a competitive advantage to other incinerators, acquired the equipment. The legislators saw that some of the incinerators started complying with the legislation and continued with their aspiration of having the EU's ELVs implemented.	The EU's ELVs were maintained (the numbers were not changed)
	<u>Situation of some of the hospitals</u> (from municipalities with less than 20.000 inhabitants and incinerating \leq 600 kg/month): this type of hospitals had a limited budget and the amount of waste disposed there is lower than the amount disposed in normal commercial incinerators.	Laxer ELVs of CH ₄ , HCl, HF, SO ₂ , NOX, CO. No ELV for PM

Table 3: Influence of context during formulation and implementation of a policy

Up to this point the main research question could be answered by saying that **it was proven inappropriate** to do this (use ELVs made in one context and applying them into a different one, without modifying those ELVs) given that in fact, the ELVs had to be eventually modified by the Colombian authorities so that they would fit the Colombian context (it was only after the complains received on the first Resolución that the authorities seemed to start taking the Colombian particularities into account for modifying that initial Resolución and proposing a second one⁴).

If it was answered based on the lessons learned from the cases from MS and new MS

The case of using ELVs made in one context and apply them in another context is also seen in the case of Member States when they had to implement the Directive, Directive which is different from the local legislation. The situation is also seen in the case of accessing Member States under the enlargement process where laws made under one context (i.e EU15) are implemented into another context (i.e CEE countries).

Usually policy transfer would mean an adaptation or modification of the policy which is to be transferred, but in the EU case, there is not really a construction of a hybrid. The same piece of law has to be implemented in the Member States. What is adapted, though, is the receiving context. For example, under the CEE enlargement process, among the things that were done by the EU to ensure implementation of the transferred policies was to build capacity and provide technical and financial assistance.

In any case, in the EU scenario the solution seemed to have been working in 2 fronts: from the donor's context (the EU), and from the borrower's context (the accessing Member State). The donor's context (the EU) seems to be moving away from drafting detailed legislation which leaves little room for national manoeuvre, towards the development of framework legislation which allows to take account of the different political, social and economic interests of the Member States (Soveroski, 2004, p. 130), (Inglis, 2004, p. 150). This is reflected in the environmental article of the Treaty, art 174 (ex-art 130r) which "*states that environmental policy must take into account economic, social and other considerations, as well as environmental conditions, in the various regions of the Community*" (Soveroski, 2004, p. 132). From the borrower's context, the mechanism followed has been to adapt the receiving context and build the capacity necessary not only to

⁴ Further information on this can be seen in chapter 7 under the sub-section *Colombia, Describing the case*, specifically when explaining the second Resolución: Resolución 886/2004.

transpose legislation but to administrate it after the enlargement process has taken place. Technical and financial assistance had also been provided, even before the negotiation process started (Inglis, 2004)

Up to this point the main research question could be answered by saying that **it is inappropriate** to do this (to use ELVs made in one context and applying them into a different one, without modifying those ELVs), because based on that which can be learned from these cases is that if the same policy wants to be effectively implemented in a different context, then a modification needs to take place, in this case, the borrower context had to be modified or adapted to receive the policy.

8.4. General reflection on the methodology

Each chapter documenting the four researched areas presented a reflection on the method used. Such information is supplemented in here with some final reflections. A first reflection is made on the method used for most chapters in this PhD, which was on having **literature as point of departure**: that which was said in literature was used as an outline which served as guiding framework for exploring the empirical data.

The drawback of this process is that one might get too centred in trying to find those things which were already said in literature, but for this I tried to keep my eyes open to any new topic emerging from the empirical data collected. For example, there was the finding of a new category: know-how, not previously seen in the reviewed literature (chapter 5), or the new topics seen in the working documents⁵ and which helped complement the information on the influence of the particularities of the EU context (chapter 6). The advantage of the method is that allows one to keep track of what one is looking for, otherwise one might end with loads of interesting but unrelated topics.

Another issue is on the use of **written documents as the source of empirical data**. I decided to concentrate on the written material since I thought this would be a good starting point for the research in this topic. Nevertheless, I'm aware that more knowledge exist on the way ELVs are formulated and influenced by the context of the EU, and that this knowledge might not be written down but exist as tacit knowledge in the head of those who participated in the process, and that accessing this knowledge will be important to clarify the gaps and verify the findings from this project (e.g., the know-how factor was seen evidenced only in the working document of the last two Directives, was this type of factor not used in the drafting of the first two Directives?).

Another point is related to the **main aim of this project**, which was on covering this deficit manifested by Honadle (1999) that not so many persons have managed to identify those critical elements from context which influence policy formulation and implementation⁶, and by this, finding the influence context has in policy. In this respect I can say that the information which I present here, is an approximation of what those critical elements could be, since as what was presented in chapter 4, among the identified difficulties when studying context is to be able to identify the appropriate set of particularities which create the influence. As Sayer (1992) writes, probably not all of the particularities were observable and that there might have been some which happened regardless of whether they could be observed or not . This is particularly applicable to the fact that the source of such particularities was the written material found in the

⁵ *Working documents* refer to the official documents written by the EU institutions for the drafting of the four Directives on waste incineration. These documents refer to the proposals for Directives written by the European Commission, the reports presented by the European Parliament and the Council of Ministers, and the opinions given by the Economic and Social Committee and the Committee of the Regions.

⁶ *"Both literature and experience suggest a major weakness in the prevailing perspectives on policy formulation and implementation –no one is able to identify the key elements of context that affect implementation strategy and impact. [...] Even those who agree that for policies to work "it all depends" cannot point to what it depends upon"* (Honadle, 1999, p. 9)

existing literature as well as in the working documents. In addition, there could have been some misattributions of causality, attributing to one particularity that which was actually caused by another not-identified one. In addition, there could have been some misunderstandings, causalities and consequences that were not properly understood by me as the author of this PhD.

8.5. Additional reflection

Studying context

This PhD report presented the points of view of some researchers on the issue of trying to study context. Some authors relate to the importance of studying context. For example, Honadle (1999) presents that looking into contextual considerations is a tool that would “*help us to reinterpret prior experience and shed new light on reasons for success or failure; b) to help us analyze specific circumstances and devise improved strategies for future policy reform*”). Others researches refer to when the study of context is not relevant, and that is when the aim is to find explanations by the use of generalizations across many contexts, in which cases it is assumed that the context does not exert an influence on the object of study

Personally, I decided to go into this issue of trying to study context since I think the awareness of context is something that should be bare on mind by the persons who try to learn lessons from successful projects abroad and implement those projects in their home countries. I agree with Honadle (1999) who says that “*what works under one set of circumstances may not work under others*”, and the reason for that is because of the particular contextual conditions of that place.

I must admit that I started this PhD project having Honadle’s sentence on mind, and that is why I tried to present those elements from the European context which made the ELVs applicable to that context, and I also tried to present how the Colombian contextual elements were different from those of Europe, and so, that the transferred ELVs might not work out.

The conclusions obtained from the existing literature on *copying*, and from the two theoretical bases on Policy Transfer and on Influence of Context in environmental policy supported that pre-conditional thought that I had on mind, that is, that using those transferred ELVs into the Colombian scenario was something wrong, and that it would not bring the results that the Colombian authorities were aiming for. Unfortunately, I could not include into this PhD project the evaluation of the implementation of those ELVs (that is, is it working in Colombia?) but according to the interviewed authorities from the Ministry, the transferred ELVs were working out, basically because the contextual conditions of Colombia changed, that is, a new market was created providing the equipment to comply with the ELVs and also because the fear of losing competitive advantage which made incinerators acquire such equipment.

So in conclusion one can say that yes, contextual conditions do matter, but the interesting part is that while in the EU case the EU takes care of making sure that those contextual conditions fit the transferred policy (e.g the preparations made during the Eastern Enlargement), in the Colombian case it does not seem that the authorities did anything special to prepare the context for the transferred policy. It seems –on my own view– that it was more of a lucky coincidence that the adaptation of context happened (e.g the development of the market).

Factors applicable to other areas

This study relates to regulation of air emissions from industrial processes, but it is specific to the case of emissions from waste incineration. It presents which factors should be taken into account when trying to determine the ELVs for incinerators. Such list of factors could be used as a guideline or some sort of checking

list of things for the authorities to look at before they can decide on which number they should apply as ELV.

Regulating sources of industrial pollution in Colombia and in the EU

Colombia started creating legislation for WI mainly because they wanted to control the incineration of haz (the focus of res 58/02 was to regulate incineration of hospital waste). In 2008 (6 years later) Colombian authorities decided to modernized the existing legislation for non-haz waste incineration. In the case of the EU, they start regulating in 1989 at EC level, the incineration of municipal waste (because of less availability of landfill space and market distortions, among others). In 1996 (cuando empezo la proposal for haz WI Directive?), 7 years later, they move into regulating at EC level the incineration of haz waste, and 4 years after (cuando empezo la proposal for all WI Directive?) in 2002, decided to combine both regulations, and in 200? Created a document regulating all sources of atmospheric pollution

8.6. Questions for further research

During the development of this PhD project, several questions came to my mind as being possible topics for further research. Some these ones are for example:

Outcome of the Colombian strategies

Information was presented on the outcome of the implementation strategies for the case on Member States and Central European States. This information is not presented for the Colombian case given that the writing of this report coincide with the deadlines for implementation of the ELVs in the incinerators for Colombia (June 2010).

The question to answer further would be: *what was the outcome of those particular implementation strategies used by the Colombian authorities?*

The other side of the coin

This project focused mainly in one side of the story: that of the legislators. It would be interesting to complement the findings with the other point of view: the one from the incinerators, specially the Colombian ones. In particular, verify that which was said by the Colombian legislators, that incinerators acquired the required equipment not only in order to comply with the legislation, but to gain a competitive advantage in relation to other incinerators.

Did Member States set stricter ELVs at national legislation?

Literature presented that when a Directive is set under art 175, then Member States could set stricter standards for their national legislation as long as this would not affect the common market. Examples of more detailed environmental provisions introduced at national level are in the areas of water, air, waste and noise (Krämer, 2007, p. 859). However, Kölliker (2006) also refers to Member States not aiming to set stricter national legislation since this might bring competitive disadvantages for their domestic industries (p. 192).

Still, a report presented to the Commission in 2007 (Ökopol, 2007), writes that stricter ELVs have been imposed in a number of incinerators of different Member States, and that the parameters relate to PM, HCl, HF, SO₂, NO_x and Hg (p. 16). However, the report does not specify which countries are those, or the numbers assigned as ELVs.

It would be interesting to investigate the reasons behind these Member States setting stricter ELVs for their incinerators and the not-fear over the competitive disadvantages that this might bring for their domestic industries.

On the impact from hospitals' incinerators

One of the changes introduced by Resolución 909 was the fact that laxer, or even non-applicable ELVs were given for hospitals of municipalities with less than 20.000 inhabitants and incinerating less than 600

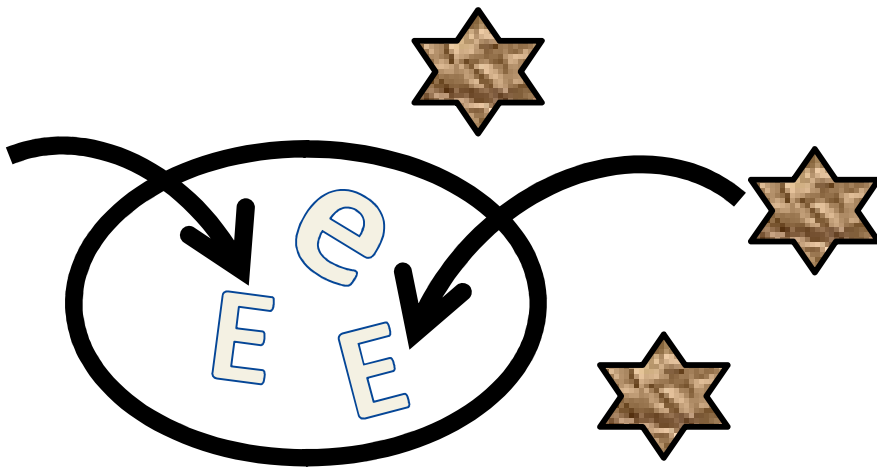
kg/month. When the technician was asked about this type of dispensation, he commented that while commercial incinerators provide the service of incineration with the aim of earning money from it, hospitals have their own incinerators in order to dispose their waste and avoid sanitary problems. Hospitals have restricted budget, and they cannot afford to send their waste somewhere else. He continues saying that in addition, and compared to a commercial incinerator, hospital incinerators dispose fewer amount of waste and have lower atmospheric discharges. Furthermore, according to the technician, if too many restrictions are given to a hospital's incinerator, there is the risk of a sanitary problem (storage , transport, ...), that is, the environmental impact could be higher than if they continue incinerating with laxer restrictions (Interview_at_Ministry, 2009).

The question to answer further would be: *Is this really that the case? That the impact from hospital's waste incineration is lower than the impact from traditional incinerators? And so, that this justifies the laxer ELVs given to them?*

Securing a post-accession political commitment to environmental protection

It was said that besides the financial and capacity aspects, two other areas were recognized as challenging for the CEE candidate countries in their task of complying with environmental *acquis*. One of these was on the real political support, needed to implementing environmental law considered highly controversial, fiscally onerous, and which might be disadvantageous for some. Kramer (2004, p. 306) seemed to fear that the motives for implementing environmental legislation were only related to becoming part of the EU, and not to improve environment per se. He wondered then if after accession the momentum would get lost.

The question to answer further would be: *what was done to secure the real political assurance that secured the commitment to environmental protection after enlargement?*



The influence of context in environmental policy has been recognized in the sense that policies are not universally applicable “a policy that is appropriate in one locale may lead to disastrous results in another” (Honadle, 1999, p. 2); it also has been recognized that an effective policy is related to a high awareness of the context where the policy is applied (Honadle, 1999). This recognition of the influence of context is important if policies made in one place are to be used in another place. The field of research, which is concerned with these issues, is called Policy Transfer.

When trying to do an effective policy transfer process, one of the critical aspects is to recognize the influence that the donor’s and borrower’s context has on the policy being transferred. Such influence of these contexts is said to be done by identifying the critical elements from the context which influence the formulation and implementation of the transferred policy (Honadle, 1999)(Dolowitz, 2000)(Minogue & Cariño, 2006). However, it has been reported that not many have managed to identify these elements (Honadle, 1999).

The current project aims at covering this deficit and identifying some of those critical elements from context, which influence the formulation and implementation of the transferred policy, and by this, aims at finding the influence context has in policy.

By presenting how context influences the process of formulating and implementing policy, it is expected that authorities from the borrowing countries would become aware of this influence and would not expect that the process of copying a foreign piece of law will solve their problems. This awareness will help them not to waste time and resources implementing something for which they will not obtain the expected results, something which might just turn into an unenforceable and confusing piece of law, with the further consequences that this can bring.

The point of departure for this PhD project was the situation seen in 2002 in Colombia, where the emission limit value (ELV) presented in the Colombian Resolución that was regulating the process of incinerating waste in the country, were the same values as the ones contained in the EU Directive 2000/76/EC regulating the incineration of waste in the Member States. During an interview carried out with some of the authorities from the Colombian Ministry who participated in the development of the Resolución, it was confirmed that the ELVs were copied from the European norm: “by copying the European standards we were trying to avoid people bringing into the country the plants that become obsolete in Europe and that are brought here because here the legislation is laxer” (Interview_at_Ministry, 2009) My translation.

This situation, of applying the ELVs from the EU into the Colombian scenario is what motivated the development of this PhD project. In particular, the research aims to answer the question of whether *it is appropriate to use the Emission Limit Values made in one context and apply them to a different context without modifying them?* The particular case investigated is how the context of the EU (the donor context) influenced the formulation of ELVs for waste incineration (the transferred policy), and how countries such as new EU Member States and Colombia (the borrower contexts) prepare for the implementation of the transferred policy.