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Poulsen, Bo; Rüdiger, Mogens

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1950s syndrome and Danish energy consumption and production

Bo Poulsen

Mogens Rüdiger

Right now, atomic energy emerges as gifts from Heaven.

– (Berlingske Tidende, 1955)

What do we prefer? More clothes? Better food? Better furniture? Additional and longer holidays? Bigger cars? Colour TV? Or fresh air, clean water and less noise in our everyday lives?

– (Erling Olsen, 1969)

These two quotes frame much of the historical development in Danish energy production and consumption from post-war austerity to boundless material progress followed, towards the end, by voices of environmental concern around 1970. The first quote, an editorial from the Danish newspaper *Berlingske Tidende* echoes the deep-rooted desire to escape poverty and want in Denmark following World War II. As we will see in the following chapter, Denmark succeeded in modernizing society and industry at both the corporate and government level, and from the point of view of the private consumer, through the deployment of a fossil fuel-based economy. Indeed, during the 1950s, Denmark was among the Western countries which experienced an economic miracle and, at the same time, Denmark was arguably subjected to the full force of what has become known as the '1950s syndrome'.

The 1950s syndrome and Denmark

In 1945, Denmark was inhabited by approximately four million people and, the next year, the number of horses reached an all-time high of 653,000. Although close to one million people lived in the greater Copenhagen area, Denmark was largely a rural country. By international standards, the relatively well-educated and homogenous ethnic Lutheran population had fared extremely well through World War II. (Lund 2005). In 1945, the democratic political regime of the pre-war period was re-established, dominated by centrist – and, in economic terms, progressive – political parties such as the Social Democrats, the Liberal Party (Venstre), the Social Liberal Party (Det Radikale Venstre), and the Conservative People's Party.

Over the course of the next quarter of a century, Danish society experienced a rapid development towards prosperity, a *Wirtschaftswunder*, akin to developments in neighbouring Germany. Growth rates, especially during the early 1960s, soared, and the growing population spent their newfound affluence on automobiles, suburban housing, and holidays abroad. Meanwhile, the various governments sought to keep pace with a changing economy, where agriculture and manufacturing was supplemented by a modern service-based economy. Planning commissions tried to manage the urban sprawl, and the demands of a much more energy-intensive lifestyle was met by new power plants which relied on imported fossil fuels, mainly oil. Meanwhile, the promises of atomic energy fuelled the desire to create a Danish nuclear power plant: the research station Risø.

The newfound affluence came at a cost, though. As much as any other Western nation, Denmark was entangled in the energy-intensive lifestyle of post-1945 Western Europe, which has subsequently been described as '1950s Syndrome'.

The term 'syndrome' most often refers to a malady or outright disease, and this is exactly what the Swiss environmental historian Christian Pfister found when looking at post-World War II development in Western Europe. While the economies of the Western World used more and more fossil fuels from coal and oil during the first half of the 20th century, the development after WWII was dramatic, with a tripling of the use of oil during the 1950s and 1960s. By the end of the 1960s, the global consumption of oil surpassed the use of coal as the main source

of fossil fuel. By any historical standard, oil had become historically cheap following the discovery of huge oil reserves in the Middle East in the 1940s by the British and the Americans. The previous relationship between the relative price of labour and the price of energy was upset, in the sense that a rapid mechanization of the European farming and manufacturing sectors was now economically feasible (Pfister 2010, 90-118).

The US-driven European Recovery Programme (ERP), or the Marshall Plan as it is sometimes referred to, sent millions of US dollars into the economies of Western Europe. The ERP had the dual purpose of curbing European citizens' enthusiasm for communism through market-based economic development, while the self-interest of the United States was apparent in the American desire to export American goods and services to the markets of Europe. Cheap oil from the Middle East was an important American export commodity in its own right, while the use of oil was spurred on by the introduction of widespread mechanization. In some European countries, the ERP was turned into cheap loans for increasing the manufacturing sector while, in countries such as Austria, some of the money sponsored the infrastructure for modern Alpine tourism (Gross and Winiwarter 2015, 489-509).

In Denmark, the ERP funds were spent towards the mechanization of the Danish agricultural sector, which was already very sophisticated in terms of product diversification and quality. Thus, over the course of the 1950s, the hundreds of thousands of horses became superfluous in a rapidly-changing sector where tractors and harvesters powered evermore intense production. Tractors had been sold in Denmark since the 1920s, but the ERP funds really kicked off an intensification of mechanical propulsion in the farming sector. In the 1930s, a few hundred new tractors had been sold each year and, in 1946, a record 1,328 tractors supplied the needs of Danish farms. The following years, sales quintupled and, during the 1950s and 1960s, more than 10,000 tractors were sold every year, enabling a complete overhaul of the energy mix in the primary sector in Denmark (Ford Motor Company 2004).

Chemical fertilizers, themselves an energy intense industrial product, made grain crop yields increase at unprecedented rates. For many decades, the use of fertilizers grew, most rapidly from the 1950s and into the 1980s (Jensen, Kristine

Holm 2007, 87-100). In the 1970s, however, the downside of nutrient runoffs into the fjords and seas of Denmark became an increasing problem and, since the 1980s, government planning policies have led to a threefold decline in the amount of nitrogen, phosphorous, and potassium sold. (Clarke et al. 2006, 385-397)

Meanwhile, during the great transition of the 1950s, the changing structure of the economy led to a migration away from jobs in the farming sector to urban areas to man the expanding service sector and the increasing number of jobs in manufacturing. Here, the salary was often better, as were the working conditions, while Denmark became an ever more open economy dependent on imports and exports to other countries in Europe. For the vast majority of Danes, the 1950s and 1960s was a period of unprecedented optimism. The Social Democrats held power for most of this economic boom period and, tellingly, their 1960 slogan for the general election was: "Make Good Times Even Better" (Nissen 1991a).

Yet this promised land of widespread prosperity and social security in an ever-growing economy came at a price: the almost total Danish dependency on imported crude oil from the Middle East. The number of automobiles alone rose tenfold from 1955 to 1970, where more than one million cars roamed a rapidly-expanding transport system (Nielsen, Rasmussen, and Toft 2000). The Danish workforce moved into the suburbs, leaving behind the countryside as well as the congested inner cities. More than one million single-family dwellings, many of them mass-built houses, were constructed during this period, while government-supported initiatives and building societies helped to erect clusters of high-rise concrete apartment blocks (Rüdiger 2019).

But it all came with a side effect. The dependency of the new energy intense lifestyle became an economic hazard when the oil crisis hit Denmark in 1973 and, from an environmental standpoint, the modern lifestyle contained a number of issues that were difficult to tackle.

The environmental ethics of modernization

Following chapter 2 in this volume, this chapter argues from John Rawls' assumption that serious decision-making in the realm of, for instance, energy policies and related political choices, is informed by a certain justification. The

justification is reflective of the equilibrium of a set of well-considered values, principles, and moral experiences, and they are in coherence with a more general conception of the world (Rawls 2009) (Chapter 2). Moreover, in terms of analysing the different strands of Danish society in light of post-war energy intensification, it is useful to turn to Peter Wenz' idea of concentric circles of ethical reasoning and the principle of subsidiarity. The idea is that people, as a rule, feel obligations to people close to themselves such as family obligations, or obligations within a local area. The more distant or abstract the relations are, the more difficult it is to relate to them or feel obliged. However, in the case of, for instance, nepotism, most people would think that the obligation to society as a whole outweighs the close family obligation. In such a case, the obligation to a more general sense of fairness eclipses the tie of kinship (Chapter 2XX, (Wenz 1988).

That is the idea, anyway. In modern society, the complexity of obligations across the range from the individual to the global concern makes room for a multitude of justifiable actions.

Escaping poverty

At the national level, economic growth was already on the agenda before and during World War II. During the war, when Denmark was occupied by Germany, the small country – seen as a reservoir of food to the Nazi empire – continued to elect its own government and maintained a more or less intact infrastructure. Denmark should have its own highway infrastructure similar to the German Autobahn and the Italian Autostrada. From a Danish government point of view, motorways and automobility were both seen as ways to facilitate economic progress and human welfare. Plans were drawn up, but resources were scarce during the war. Thus, it was not until the 1950s that motorways were constructed in the Danish countryside (Jørgensen 2009, 77-152).

Using Pfister's idea of '1950s syndrome' as a departure point, the vast oil resources found in Saudi Arabia in the 1940s played a game-changing role in how fossil energy came to dominate Western society. However, in the Danish case, the dream of large motorways was rooted in the period before ERP funds: the time of Nazi occupation during World War II.

Energy transitions

In the 1950s, Denmark experienced four profound changes in the energy system: coal was replaced by oil as the most-preferred fuel; gas was substituted by electricity in new dwellings; power production was concentrated in fewer, more efficient regional power stations; and, finally, energy consumption increased.

The transition from coal to oil was due to the structure of the markets, as well as to financial considerations. The importing of coal was mostly based on bilateral agreements, very often following long and tiresome negotiations with the exporting country, especially if it was a communist country like Poland or the Soviet Union (Rüdiger 2019). In contrast to this, energy companies could easily buy oil on the global market which was dominated by the big multinational companies. In addition to this, oil prices were stable or even declining as they were not subject to market mechanisms. Consequently, the consumption of coal somewhat declined, while oil consumption more than tripled (Anonymous 1964-74).

During the inter-war period, gas and electricity were engaged in strong competition for a limited market. After World War II, the picture changed. Against the background of improved finances, more people were interested in energy instalments, and energy consumption very soon became a crucial ingredient in the modern – American-style – way of life.

Most of the consumers: the owners of a new single-family house, the tenants in refurbished or new apartments, and the architects and city planners opted for electricity as the energy form most suited to modern life. It was cleaner, easier, more wide-ranging, and applicable for more purposes. To cut it short, Danish homes underwent electrification in the 1950s and 1960s.

How was the electricity generated? In 1945, more than 400 power stations delivered electricity to the Danish population. They were all rather small and, in 1946, a spokesman for the electricity companies advocated for the concentration of the power sector to improve its efficiency and the supply security. This advice became the power sector's mantra until the wind turbine, for a short period, turned it upside down and, as a consequence, the national power supply was based on no more than nine power stations. As oil was cheaper than coal, power stations phased

out coal during the late 1950s and 1960s, a shift that increased the dependence on oil to a hazardous level.

What happened in the 1950s and 1960s was a combination of increased energy use and an increasing consumption of imported oil. In 1970, energy consumption nearly had tripled, and 90 % of it was based on oil. In hindsight, this obviously exposed the energy supply to the crises which lurked around the corner from 1973 onwards.

Housing and spatial planning

When Denmark was liberated in 1945, the most serious social problem was the housing problem and, related to this, spatial planning was launched in the late 1940s.

Experts estimated that there was a need for approximately 50,000 new dwellings and for the refurbishment of a substantial part of the existing housing stock. In 1946, in order to get things moving, Parliament adopted an act which supported the construction of small single-family houses with a grant, if the house complied with certain standards. Although only 150,000 new dwellings had been built when the act expired twelve years later, many families had improved their housing standards, for instance by moving from a dark and unhealthy apartment in one of the cities to a small semi-detached house in one of the emerging suburbs.

In addition to this, the act pushed forward the modernization of the Danish home. Several architectural competitions were held to present new ideas of how to design a modern mass-built house. The two most spectacular innovations were the introduction of central heating, followed by a '21 degrees culture' and the electrification of the home (Rüdiger 2019) (see below). The use of (more) energy was closely related to modern life and the well-being of residents.

The first spatial plan was published in 1947. It was nicknamed Fingerplanen (the Finger Plan). Its purpose was to avoid the unregulated growth of the suburbs around Copenhagen, which would result in tight rings encircling the old city. Instead, the plan suggested concentrated growth along five main traffic corridors – the 'fingers' – which were supposed to include highways and the electrified city trains (the S-train). In doing so, the green, open areas close to the inner city could

be preserved (Hansen, E. and Jespersen 2009). This idea of 'parkways' was inspired from American planning and transferred to the Danish situation. The Finger Plan laid down the principles which guided the growth of Copenhagen, and it has had a substantial impact on spatial planning in the rest of the country.

Planning was a catchword in the 1950s, and an indispensable element of the emerging welfare state. The Finger Plan was followed by a huge number of commissions and plans, many of them addressing the regulation of the growth of city, as well as agricultural zones and infrastructure.

Transportation

One of the unintended consequences of the regulated (and unregulated) restructuring of the distribution of dwellings was a growing need for transportation. As long as the bicycle was the preferred means of transportation, no further infrastructure was needed, but the growing popularity of cars and motorbikes prompted the construction of more and more highways and freeways. The planners were aware of the need for the modernization of the transportation infrastructure, i.e. roads, railways, city trains, and, eventually, airports.

In 1955, the Ministry of Public Works set up a commission of civil servants to do an analysis and propose a coordinated plan for traffic in the future (Hansen & Jespersen 2009, 471, 473). At the expense of the railways, they gave priority to the car and the construction of freeways. As its starting point, the commission relaunched a plan from the 1930s in which the three biggest engineering companies – inspired by the German *Autostrassen* – proposed the so-called H-model, i.e. a north-south line in both West and East Denmark, and an east-west line between them.

The first freeway was opened in 1956, twelve kilometres north of Copenhagen. The work began in 1938, but volatile finances postponed the completion of the work. Yet, in the mid-fifties, asphalt and cars signalled modernization and freedom, and the construction of the H-model could no longer be postponed.

The statistics tell us that the Danes concurred with this path of modernization. The number of cars rose from 151,000 in 1953 to almost 400,000 in

1960, and to 1.245.000 in 1973, while the number of railway passenger kilometre stagnated. In contrast, in the 1950s, the railway was still competitive in transporting freight. The mechanization of agricultural production is obvious, as the number of tractors went up from 43,316 in 1953 to 111,321 in 1960, and 190,000 in 1973. Agriculture experienced a crisis in the late 1960s, but it soon recovered with Denmark's membership of the EC in 1973.

Finally, airborne traffic also witnessed a substantial growth, from 612,400 to 1,763,100 passengers, of whom only 6-10 % flew domestically. The local carrier, Scandinavian Airlines System, SAS, almost tripled the number of passenger kilometres (Anonymous)(Anonymous 1964-1974). In that sense, the 1950s literally was a take-off point.

Atoms for peace and prosperity

Recovering from World War II, Denmark was, at first, highly dependent on coal imported from the United Kingdom and Poland. Denmark's route to nuclear insights was similar to that of many of other European countries. In 1953, American President Dwight D. Eisenhower launched a new avenue in US nuclear policy. In the so-called 'Atoms for Peace' speech, Eisenhower laid out a plan for the future use of atomic energy with a twofold purpose. In addition to strengthening the nuclear influence of the United States in the Cold War, the US found a business opportunity in exporting their vast know-how on atomic energy to their allies who would willingly use atomic energy for peaceful purposes, but more reluctantly so for military purposes. At any rate, Denmark was one of the countries which flirted with atomic energy in the mid-1950s (Ridder Christensen 2002, 87-106).

From a Danish point of view, the prominent Social Democratic intellectual and later Prime Minister Jens Otto Krag was quick to see the opportunities in nuclear power. Writing about it in 1954, Krag found that, within the area of technological development, the future would hold great promise if Denmark invested in technology to keep up with manufacturing in other countries. This would be a way of raising the living standard and general welfare of Danish society. Within the sciences, Denmark had a most promising sponsor of nuclear

energy in Nobel Laureate and nuclear physicist Niels Bohr, who was a prominent advocate for the peaceful use of atomic energy. Both groups – the leading politicians and the scientists – were afraid that Denmark would fall behind for lack of investments in atomic energy. Fuelled not least by an American information campaign, agitation in Denmark followed (Ridder Christensen 2002, 87-106).

At first, newspaper reports focused on the positive aspects of nuclear power as a replacement for fossil energy (Jensen, Bent 1996). The leading conservative paper, *Berlingske Tidende*, for instance, zoomed in on the 1955 establishment of a Danish atomic energy commission, a commission which was supported by all the political parties represented in Parliament except for the Stalinist Communist Party. The new report looked to the United Kingdom in a statement that "England has shortage of coal" which had led to the construction of nuclear power plants, which in turn would deliver one third of the electricity needed in England. "The English plans are marked by imagination and foresight. They are bold and ambitious, but they are founded upon reality" (Jensen, Bent 1996). *Berlingske* continued its praise of nuclear power, declaring it akin to a gift from heaven, while the new nuclear power stations rose like monuments testifying to a happy chapter in human history, and where nuclear power was to be used in the service of peace (Jensen, Bent 1996).

"Atomic power will make life easier and open up new perspectives for industrial advances", the *Politiken* newspaper stated in an article, which was soon echoed in the newspaper's editorial (Jensen, Bent 1996). The favourable public sentiments about the wonders of atomic energy were quickly seized upon by the Social Democratic government. Thus, in 1957, Finance Minister Viggo Kampmann addressed the issue at his party's annual congress. Kampmann praised the atomic advances, stating that, in spite of the costs of building up the capacity for nuclear energy, it would be of utmost importance for the economic well-being of the state of Denmark to engage in a full-scale scientific and technical development aimed at nuclear energy (Jensen, Bent 1996).

In the following year, 1958, the Danish atomic research station, Risø, was inaugurated. The Risø station was set up for scientific investigations into nuclear energy, not as a power plant for producing electricity. By international standards, this was a modest result of the American push for nuclear power among its allies.

Other North Atlantic Treaty Organization (NATO) allies such as the Netherlands, Belgium, West Germany, France, and Great Britain joined neutral Sweden on the road to nuclear power stations for electricity, while Denmark was left behind. Nonetheless, Danish historian Ridder Christensen hesitates to call it a failure from an American point of view. While the Suez Crisis in 1956 prompted a scare with regards to the promises of a steady future supply of cheap crude oil from the Middle East, the following years were much more peaceful, and the risk of becoming overly dependent on imported oil fell from the public agenda in Denmark. In addition, the Danish electricity companies were opposed to the prospect of future competition from nuclear power plants (Ridder Christensen 2002, 87-106).

In the public arena, newspaper debates are an often-cited source of public discourse. With regards to the coupling of energy challenges with public welfare and environmental concerns, not much was happening in Denmark during the period of the economic miracle, but energy did play a role. In the 1950s, for instance, the promises of nuclear power became a point of public debate. Some critics emerged in Denmark, such as Professor at the Carlsberg Laboratory and leading geneticist Øjvind Winge. As early as 1955, Winge pointed to the unknown genetic consequences for species – including humans – that were subjected to nuclear radiation (Jensen, Bent 1996).

At any rate, Denmark, to this day, has never implemented nuclear power in its energy mix. It was not until the 1970s that the Danish consumption of electricity reached a level where it would have been economically feasible to implement nuclear power. Implementing nuclear power would lead to a complete overhaul of the existing supply structures (Ridder Christensen 2002, 87-106). In 1973, when the oil crisis hit most of the developed world, nuclear energy received renewed interest.

Environmentalism, as a movement, was equally stimulated by the effect of the oil crisis. This, however, is a topic for the following chapter (Chapter 4).

Corporate levels

'A big business converting cereals to butter and bacon' would be a brief, but relatively precise, description of Danish farming (Nissen, 32). In 1950, three quarters of Denmark was agricultural land, and half of it was used for the production of cereals and a fourth was dedicated grass and other kinds of fodder. Income from crop production was 11-12 % in the 1950s and almost double in the following decade, while income from livestock production increased from 77-82 % of the gross domestic product (GDP) at factor cost.(Johansen 1985)

Compared to other countries, Danish agricultural production was intensive. However, amid tough competition on the European market, there was a strong focus on increasing effectiveness and productivity. First of all, production was subject to a comprehensive mechanization. Similarly, the number of employees at farms was reduced from around 130,000 in 1950 to approximately 60,000 in 1960. The workforce was replaced by the overall mechanization of production and, within a short span of time, Danish farms turned into family holdings (Anonymous 1964, 13-15; Nissen 1991b; Johansen and Herring 1991).

In livestock production, the increased productivity was connected with a stronger focus on the production of pigs and poultry, while the production of cattle remained at the same level during the 1950s (Anonymous 1964, 13-15). Crop production was especially challenged by strong competition, and production even increased throughout the decade. Therefore, farmers substantially increased the use of fertilizers; the use of nitrogen fertilizers almost doubled, while the amount of superphosphate went up by 20 % (Anonymous 1964, 13-15).

The mechanization of agriculture reflected that an industrialization took place, maybe not as fast as in comparable countries, and definitely not as fast as the Social Democratic government wished. The fluctuating growth was primarily due to industry, but several factors curbed the growth. First of all, a monetary squeeze imposed a limit to the importing of necessary raw materials and machinery, but other types of domestic structural factors also restricted the growth.

According to a government report, there was a lack of industrial investments, the businesses were too small, and too much of the production was located in or around Copenhagen. Even worse, the domestic market was protected by taxes and

some quantitative restrictions resulting in low competitiveness, and thus the low export of industrial goods (Philip et al. 1956). Competitiveness, however, improved in the second half of the 1950s due to new production methods and rationalization. One consequence was that the electricity use per produced unit increased, but, still, compared to countries like Sweden, France, West Germany, and the United Kingdom, Danish industry used less energy.

From 1958, when the international monetary restrictions were lifted, industrial growth took off and, in 1960, industrial exports surpassed agricultural exports. In a sense, Danish industry could be characterized as a late-comer but, from 1958, its growth rates soared, partly due to substantial investments in labour-saving machinery.

Also, in 1958, the government addressed the asymmetrical location of industrial production. Two thirds of industries were located close to one of the four biggest cities, most of them close to Copenhagen. In opposition to the Liberals and the Conservatives, the centre-left government decided to support up to 90 % of the costs to move an industry to the countryside (Rasmussen and Rüdiger 1990).

The effort proved to be successful and, after ten years, factories were far more evenly distributed throughout the country, and many new suburbs were divided into industrial parks and residential areas. No doubt, regional development contributed to growth, but it also created longer distances between the production and financial and administrative centres in the main cities.

Furthermore, environmental considerations were rarely part of the local debates as to whether or not to have a new modern port or a new factory. In the 1960s, small Danish towns lobbied to attract industrial enterprises from the Copenhagen area. In addition to the government compensation for moving, the provincial areas offered cheaper labour and cheap land, while environmental concerns were lacking. In some cases, the local initiative came from the mayor's office, or local bureaucrats, while elsewhere local industrialists paved the way for attracting jobs and money to the Danish provinces (Wagner ed.; 2018). In line with the circles of Wenz, second-order impartiality with regards to the environment was not part of the agenda of securing energy, jobs, and industry when seen from the point of view of local politics.

Heating and power supply

The reconstruction after World War II was prompt. The 1939 level was reached within a couple of years but, over the decade which followed, the Danish economy was troubled by a number of barriers, of which the most challenging was the monetary straitjacket. Amid a lack of direct exchanges between different currencies, the monetary system obstructed the conversion of British pounds earned by the agricultural exports to the American dollars needed for the import of machinery, commodities, and energy. The consequence of this was that the economic policy was a stop-go policy, meaning that whenever the growth accelerated, the government had to reduce its speed because – as Denmark has no raw materials – its growth was dependent on imports, especially those from the USA. Thus, the annual growth rate oscillated between -3 and 6 %, with an average of below 3 % (Berner et al. 2001).

This straitjacket caused relatively slow industrialization and a continued strong support for agriculture. Therefore, and due to the fact that Denmark imported almost all its fuels, it followed that energy consumption was low compared to most other Western European countries. This system ended in 1958, when full convertibility was reached. Denmark was a late-comer to the use of electricity, partly because agricultural production dominated the economy, partly because of the lack of domestic fuels besides a small amount of lignite, and partly because the importing of coal and other fuels relied on complicated bilateral trade agreements in which Denmark, as a rule, found itself to be the party with less negotiating power.

The centre-left governments (1953-1969) had a strong focus on modernization and industrialization, and planning and rationalization were its preferred tools to accomplish the transformation of society. Also, the energy sector had to think along new lines. A ministerial committee set up in 1940 published a report in 1946 proposing that the centralization of power generation was a must, and that alternating current would be the future. Centralization was already well underway and continued stronger than before and, within a decade, the entirety of power generation was based on alternating current.

The overall picture of the energy supply changed in the 1950s and 1960s. Energy stopped being a scarce resource. It became to be so abundant that energy consumption increased and permeated into everyday life in all its aspects.

Two crucial reasons for this substantial change were the transition from coal to oil as the preferred fuel in power stations, and the substitution of oil-fired burners for coal-fired burners used for central heating in private homes and apartment buildings, as well as gas and paraffin stoves. The import of cheap and abundant oil became a determining factor in the modernization process. District heating also became more popular in the late 1950s and early 1960s. Closely connected to the emergence of a huge number of suburbs with the popular single-family or detached houses, but also to the expansion of cities and towns all over the country, district heating replaced more conventional ways of heating homes. Central and district heating initiated a new heating culture, a 21 degree culture, where radiator heat was replaced by an almost seamless indoor environment, i.e. without cold zones like the entrance and the 'best room' (Rüdiger 2019).

Energy was an indispensable requirement in Denmark's transition from an agricultural into a modern society. It provided the power that was essential to the development of agriculture and industry, to a more rational and efficient utilization of resources, to the production of consumer goods. And energy was crucial to the modernization of everyday life, to the improvement of welfare and well-being in day-to-day life.

Consumer ethics

The consumption pattern of Danes after World War II was marked by the proximity of the harsh years of economic depression in the 1930s, as well as the shortage of both raw materials and finished products during the German occupation. Thus, in 1950, Danes spent close to 40 percent of their income on such basic items as food. Housing, on the other hand, only accounted for 5 % of household consumption. Over the next twenty years, expenditure on food fell to less than 30 % by 1970. The same year, housing accounted for 13 % of it (Berner et al. 2001). Times had changed, and one of the items that emerged high on the wish list of Danes in the 1950s and 1960s was electric appliances of all sorts.

Before the war, electricity was used mainly for lighting, while in the 1950s, retail organizations, housewife organizations, electric utility plants, as well as the Danish government all campaigned for the spread of electric irons, refrigerators, stoves, and washing machines. The availability of modern laundry machines changed the practice of washing clothes fundamentally. Instead of doing the laundry on a weekly basis or more seldom, it became common to wash whenever something needed washing. With the introduction of the refrigerator into Danish households, shopping was equally made easier, as purchases would keep for longer if refrigerated, yet a complete switch to only shopping once a week was not at play. Danish housewives still shopped on a more or less day-to-day basis, as they had been accustomed to since the advent of modern retail in the late 1800s (Gram-Hanssen 2011, 61-78). Frequent shopping went hand in hand with the new suburban lifestyle, supported by all the above-mentioned new automobiles.

The ethics behind it all were geared towards maximizing welfare from the point of view of the consumer. The Danish co-operative movement, FDB, has published their own widely-circulated monthly consumer magazine, *Samvirke*, from 1928 to the present day (Jensen, K. 2016). Analysing all its September issues from the mid-1960s onwards confirms the picture of welfare and comfort as the overarching guideline for introducing new electric appliances. Only in the mid-1970s, after the oil crisis, did actual energy saving measures take the forefront in the mind of the politically correct consumer. In the preceding decades, the Co-op marketed their own brands of electrical appliances with the promise of "easing the work of the housewife" by "saving time, labour and money", as one 1949 advertisement put it (Anonymous 1949). By 1965, the same magazine took pride in having found 42 electrical items for the household, although admitting that the electrical tin opener might be for a select few. The tone is optimistic. The more, the merrier (Anonymous 1965).

The same optimistic approach, when it came to the use of energy, electricity, and fossil fuels appears through a close reading of the magazine *TÆNK*, a monthly publication published by the Danish Consumers' Council from 1964 onwards. *TÆNK* typically ran tests of electrical appliances where the focus was on comfort, price, and quality, for instance in the new expensive washing machines. The outer world figures much more marginally in the pages of TÆNK although, in 1967, the

magazine published an eco-critical poem on its cover, where the famed Danish poet Klaus Rifbjerg lamented the poisonous outflow of toxic waste from the Cheminova chemical plant in north-western Denmark (Rifbjerg 1967).

Optimism was also the dominant discourse in the weekly magazine of Danish civil engineers, *Ingeniøren*, in the 1960s, judging from a close read of all the September issues in the 1960s and 1970s. In the 1969 article which deals with the promise of a future with fusion energy for peaceful purposes, the journalist stated that "perhaps in the future we will have cheaper hydrogen bombs" (Korsbech 1969, 21). At any rate, the tone was beginning to shift by the turn of the 1970s in a magazine like *Ingeniøren*, dominated by news items on science and technology in their societal context intersecting with the interests of both consumers and producers of energy.

Concerns arose from 1970 onwards about the side effects of fossil fuels. Oil spills at sea "spread quickly doing damage to sea birds, and they might flow towards land polluting the beaches", as one author stated in a piece on the possibilities of avoiding such oil spills in the future (Anonymous 1970, 16). The next year, another contributor Kurt Poulsen wrote a column in the paper where he stated that "We, whom if I may say so, have seen the writings on the wall, have now an obligation to promote the understanding that we need to minimize the complex pollution from lack of oxygen, radioactivity etc." (Poulsen, K. 1971, 11). The concerns continued in 1972, where an article dealt with the news that government regulations on smoke emissions had spurred on new technology to cleanse the smoke coming from smoke stacks (Anonymous 1972, 14).

Right before the 1973 oil crisis erupted in October, *Ingeniøren* ran an article about the innovative new jet plane, the DC 10. Among other delights, the DC 10 was presented as being more environmentally friendly – a necessity in the future, as the story ran (Travis 1973, 9-10). Thus, the times were changing around 1970, and this influenced thinking in the Danish political arena.

To savour or save energy

While in the previous sections we have charted the dominant discourse of societal modernization, opposition and alternative views did form gradually in the 1960s,

although Denmark was a late-comer compared to, for instance, neighbouring and equally-affluent Sweden. Commenting on the relative slow reception of environmental critique, Læssøe and Jamison emphasized the troublesome collective experience in Denmark stemming from the depression of the 1930s, World War II, as well as the political post-war focus on securing a place among the United Nations as well as in NATO (Jamison 2002, 31-46).

As we have seen above, most Danes lived in what was widely perceived of as the most happy and prosperous phase in all human history. They lived in a negotiated high modernity, to use the phrase of Daniel MacFarlane (MacFarlane, 2018). Nonetheless, critique of modern society did emerge gradually in the 1960s. As in most Western countries, the children born in the 1940s formed an exceptionally large demographic cohort and, as they came of age in the 1960s, the young generation became unusually influential in politics and popular culture. The Dutch Provo movement spread to Denmark from 1965 onwards, blending with dreams of alternative lifestyles and a general political upheaval in the spring and summer of 1968. The French student revolts spread to Denmark's university cities, Copenhagen and Aarhus, where many more young people were able to enjoy free tertiary education, even receiving a government stipend to support a modest livelihood while studying at university or teachers' college.

Alternative ways of approaching the environment and the consumption of energy also emerged in the 1960s, yet environmentalism as such was largely limited to distinct corners of society. By the 1960s, many Danes subscribed to the ideas of *Danmarks Naturfredningsforening*: the Danish Society for Nature Conservation (DN). DN was established in 1917 by groups of conservative-minded city dwellers and conservationists with the intent of preserving specific Danish landscapes from the onslaught of modern farming and urban developments. Pockets of particularly interesting landscapes where preserved through government lobbyism and, the in 1930s, the conservation society obtained a special right to be consulted whenever the government or a local administration wanted to expand the interest of a town or business into the countryside. Conservation was seen as a service to public recreational interests. In the 1960s, summer cottages, private cars, and boats made nature increasingly accessible, and nature was looked upon as a

cultural resource where the careful intervention of humans could preserve desirable landscapes (Læssøe and Jamison 1990, 66-120).

Over the past 100 years, the nature conservation society has succeeded in more than 5,000 cases of nature preservation (Hansen, K. 2017). Yet, in the 1960s when the times were changing, the DN only partly followed where the new winds were blowing when it came to dealing with the environment. As an NGO, the DN was a political insider, and the typical strategy of the society was to avoid confrontation on the larger planning issues, instead focusing on solving the conservation issues of specific cases of nature conservation. In 1961, a new chairman, Vagn Jensen, tried to take a more principled stand on this issue, highlighting the negative impacts of the rapid industrialization and changes in Danish landscapes where pollution was an ever more visible side effect of industry. Jensen, however, was sidelined quickly, and the conservation society reacted slowly in the late 1960s, focusing solely on specific cases (Læssøe and Jamison 1990, 66-120).

This left a wide open playing field for importing the international wave of environmentalism into Danish society. Internationally, the 1960s had marked the advent of a number of important developments with respect to human society's relationship with the planet Earth. Rachel Carson's book, *The Silent Spring*, is often referred to as a main kick off for environmental concerns in the Western World, as American marine biologist Rachel Carson had gone ashore to write about the perils of pesticides as they entered birds and other animals as poison when they ate from farmed lands where DDT was sprayed to kill insects (Poulsen, B. 2012, 180-200). Another significant development on the intellectual scene was the 1968 publication of Paul Ralph Ehrlich's *The Population Bomb*, where the author hoisted a flag of warning that the growth in the world population would eventually lead to overpopulation and a severe deficiency in natural resources. Along the same lines, the so-called Club of Rome group of scientists published the far-reaching account of the future of the Earth called *Limits to Growth* in 1972. Here, the authors prophesized that we would all run out of fossil fuels within half a century (Arler 2002, 9-28).

In 1969, the void of environmental concern in Denmark was filled by an NGO called NOAH, recruiting its leading members from the ranks of university

students from a diverse set of disciplinary backgrounds. A common denominator quickly evolved in the shape of a more wholesome ecological critique of modern society, drawing on Marxist ideas of the shortcomings of the capitalist society. Environmental critique of the consumption of energy thus came embedded in a wider critique of rational industrialized society within NOAH and, from the 1970s onward, this NGO was influential in the intellectual and science-based debate in Denmark (Læssøe and Jamison 1990, 66-120). Given that environmentalism arrived fairly late to Denmark compared to neighbouring Sweden, it may be less of a surprise that the dominant political parties in Denmark arrived at a junction of critique not long after.

Within the dominant political parties, environmental awareness only formed in the late 1960s. As the most frequent key holder of the office of government, the position of the Social Democrats is particularly important in understanding the megatrends on how views on energy were formed and presented in Denmark in the 1960s. In 1968, a new chord was strung when the Social Democrats were developing their policy in the so-called Landsplanudvalg, a government planning committee formed the previous year with the intent of proposing a grand-scale plan for how to further develop Danish society, not least within the costly sectors of urban and rural development. As a novelty, the Social Democrats Poul Lyager, Ejler Koch, and Preben Lassen introduced the concept of "miljøværn", which translates to something like "environmental guardiancy" (Engberg 1999).

When, in January 1968, the Social Democrats lost power to a centre-right coalition of the Social Liberals, the Liberal Party and the Conservative People's Party, the Social Democrats sought to rejuvenate their political appeal through the adoption of environmental awareness and environmental policy-making (Engberg 1999). The plans mimicked those of what eventually became the Ministry of Curbing Pollution – later the Ministry of Environmental Affairs – in the 1970s but, internally among the Social Democrats, an ethical dilemma emerged in 1969 when prominent MP and trained economist Erling Olsen asked: "What do we prefer? More clothes? Better food? Better furniture? Additional and longer holidays? Bigger cars? Colour TV? Or fresh air, clean water and less noise in our everyday lives?" (Engberg 1999).

With this set of what was to be understood as rhetorical questions for his own part, Olsen nailed a dilemma, which would influence mainstream Danish environmental policy-making for decades to come. Surfing the top of the wave of affluence in the late 1960s, the time had come to take stock of the environmental cost of the drastic increase in Modern Age living standards of the Danish welfare society. The scope of thinking when it came to fighting pollution was national and strictly anthropocentric. As Olsen stated: "For the individual human being this (cracking down on pollution) will results in higher retail prices, less opportunities for higher salaries in addition to higher taxes. In other words, there is a price to be paid for clean air, clean water and peace and quiet"(Engberg 1999).

There is no mention of safeguarding nature for its own sake or, as we will see more prominently in later decades, to protect nature for a common international or global good. Rather, clean air and water, and peace and quiet is looked upon as a bonus, obtainable when surfing on the wave of affluence. The idea of the wave breaking in a foreseeable future had yet to form in mainstream Danish politics.

Harsher critique certainly existed, but it was marginal still in the 1960s. One oppositional voice came from Erik Sigsgaard from the left-wing party Venstresocialisterne, a recent breakout group from the Communist Party. Sigsgaard argued from a Marxist point of view that industrialization was not the problem in itself. Rather, as he saw it, it was the capitalist organization of society which prompted a planless waste of natural resources that was the problem. A reorganization of society along socialist principles would minimize the "abuse of resources", as he saw it (Engberg 1999).

The Ministry for Environmental Affairs eventually came about in 1971, focusing mainly on offsetting the impact of pollution on humans and natural resources such as ground water supplies and soils. The production of energy as such received only minor concern, for instance in the case of the non-existent Danish nuclear power production (Engberg 1999).

Looking at Arthur Wenz' ethical framework of concentric circles, the dominant environmental concern of the first Danish Ministry of Environmental Affairs was purely national in scope. In 1971, Denmark was still two year away from joining the European Economic Council (EEC); thus, its international

obligations lay mainly within the realm of foreign trade and national security through NATO. Environmental affairs were localized, and could be handled at the national level.

From the point of view of environmental discourse, the Minister for the Environment, Jens Kampmann (Social Democrats), presented what the government had in mind when a bill to enact such a ministry was put forward at the Danish Parliament:

> "We cannot merely look at the concept of societal welfare from the point of view of how many goods and services are available. (…) We need to look at environmental damage caused by production, and we need to look at the damage for human life. I further believe that the need for a more equal distribution of societal goods will grow, not least in light of how the fight against pollution will limit the current economic growth" (Engberg 1999).

From a contemporary point of view, Kampmann's proposal is fairly simple: The objective of doing something for the environment is to assist in human development. Helping the natural environment for the sake of the environment itself was not a battle cry. The focus is thus strictly anthropocentric, and Kampmann continues: "The utmost purpose of fighting pollution is to ensure the management of the natural environment in such a way that it minimizes the environmental impact on the life of the people. These considerations shall have priority over any other consideration" (Engberg 1999).

The position of Kampmann on the issues pertaining to the realm of his new ministry thus only indirectly offers a view to where energy fitted in. Issues related to energy had environmental importance only in relation to air pollution and oil spills affecting the ground water, which was and still is the main source of drinking water for people and livestock alike. The more complex problems such as acid rain had not yet entered the realm of government politics in Denmark in the early 1970s. Indeed, at the time, the issue was still in a state of infancy from a scientific point of view.

Conclusion

The Danish way into the modern suburban lifestyle was marked by the primary considerations of increasing human and societal welfare and comforts. With regards to second-order impartiality, the consideration of how to produce energy and how to spend energy were contained within the limits of the nation state. The energy transitions towards a fossil fuel-based society were marked by a desire to secure the necessary supply of oil and coal to sustain and develop a modern society. The model based on the import of coal and, increasingly, supplies of relatively cheap oil from the Middle East, proved tremendously successful for the transformation from a society with lots of manual labour and an undeveloped infrastructure to what became an American-style way of life: motorways, shopping centres, single-family housing units, automobiles in every middle class household, and even summer holidays in Southern Europe with the new airplanes were all features that most Danes viewed as central to their well-being in the 1960s.

Worries about environmental problems associated with the new lifestyle were few and far between in the 1950s and 1960s. The first critique of possible environmental issues with the fossil fuel intensity of modern life came out of the anti-nuclear movement. Concerns were raised about the risks associated with leaking nuclear reactors, yet Denmark's investment in nuclear technology only went so far as to erect the nuclear test site of Risø.

A larger scale environmental critique emerged on a broader political scale in the late 1960s, which led to the formation of the 1971 Ministry for Environmental Affairs. Its focus was fighting pollution, not least air pollution. Progressive sections of society began to question if continued growth was possible without paying a price, not least for human health issues. This was formulated in the political arena, as well as in science-oriented fora. For the wider public, the central question coming into the 1970s was firmly embedded in the hope that further electrification and further implementation of fossil fuels would bring evermore prosperity and comfort to large sections of society.

The honey trap of a modern energy-intensive lifestyle was set. The 1973 oil crisis would become a shock and an eye-opener to the new reality.

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