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News Media Framing of Grassroots Innovations in Denmark, the Netherlands and Sweden

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ABSTRACT

This paper explores how grassroots innovations are being framed in the news media in Denmark, the Netherlands and Sweden. By using framing analysis of newspaper items in the three countries, based on 30 cases, we identify that compared to literature on framing of renewable energy, the results show a prevalence of frames labeled as “social” as well as positive framing in the media when reporting about grassroots innovations. There are differences between the countries, as social frames are significantly more common in the Netherlands while innovation stands out in Denmark. We argue that this reflects the energy landscapes in the countries, as grades of centralization and to which extent the country has transformed the energy system impact on how the grassroots innovations are being reported. Aspects of energy democratization is reflected in the reporting’s as emphasis is often on local connection and benefits for communities and individuals. We finally argue that there is need for more studies on framing on grassroots innovations.

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Framing analysis; grassroots innovations; Denmark; Netherlands; Sweden

Introduction

There is little doubt about the importance and urgency of a transition towards more carbon-neutral energy production, and considerable work to develop suitable policies has been invested into this matter in recent years. The question is, however, whether the transition is proceeding fast enough: carbon emissions increased by two percent in 2018 after three years of non-growth (Global Carbon Project, 2018).

It has been suggested that innovation processes may be one way to speed up the transition, and work has mostly focused on market-driven development. An under-utilized potential for innovation, however, lies within community-based networks and organizations, through grassroots innovations (GIs) (Seyfang & Smith, 2007; Smith et al., 2016). Seyfang and Smith’s (2007, p. 585) definition of a GI is most commonly used, stating that a GI is: *a network of activists and organizations generating novel bottom-up solutions for sustainable development and sustainable consumption; solutions that respond to the local situation and the interests and values of the communities involved.*

Community energy initiatives as a main, yet highly diverse, form of GI have been appearing increasingly throughout most of Europe during the last 15 years – albeit with regional differences,

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not least due to varying institutional contexts (Bauwens et al., 2016; Gorroño-Albizu et al., 2019; Oteman et al., 2014). Recently, this kind of GIs has gained special attention due to its potential to generate social innovation that is not only limited to the energy sector (Berka & Creamer, 2018; Hewitt et al., 2019). Also, the EU is now acknowledging and promoting the participation of local citizens and authorities in renewable energy (RE) projects, as a crucial instrument for reaching EU energy targets and supporting energy democracy in general (European Commission [EC], 2015, 2016, 2018).

Several scholars have shown how successful cases of these GIs have triggered sustainable innovations in a broader context; Ornetzeder and Rohracher (2013), for example, describe projects within wind power, solar heating and car sharing. The most frequently covered sectors are community energy (Hargreaves et al., 2013; Klein & Coffey, 2016), community currencies (Smith et al., 2016), agriculture (Hermans et al., 2016) and cohousing (Boyer, 2018). The next steps here would be to take departure from the emerging field of energy democracy. Szulecki (2018, p. 35) developed a definition and:

... propose to understand energy democracy as an ideal political goal, in which the citizens are the recipients, stakeholders (as consumers/producers) and accountholders of the entire energy sector policy. Governance in energy democracy should be characterized by wide participation of informed, aware, and responsible political subjects, in an inclusive and transparent decision-making process relating to energy choices, with the public good as its goal.

The media can play an important role in relation to exploiting the full potential of GIs and contribute to energy democratization, being one of the important sources of information for the general public (Feola & Nunes, 2014). Public attitudes towards technologies, innovations and activities are affected by media coverage (Gamson & Modigliani, 1989; Krohn & Damborg, 1999) and thus, media framing of RE matters, although there is some literature questioning this (see Druckman, 2001; Matthes & Schemer, 2012). However, we take departure from the same perspective as Heidenreich (2016, p. 453):

Thus, the way in which we communicate about environmental issues, such as offshore wind energy, influences our perception of these issues. News media are important arenas where such communication and sense-making takes place—where elements of a story ‘are filtered, framed, communicated, and made available to society for construction and enactment’.

With GIs becoming a more widespread phenomenon, this also means that the way specific initiatives and innovations are depicted in the media has an important effect on how they are publicly (and politically) received (Stephens et al., 2008). This means that the framing of the role of GIs in the transformation towards a society based upon RE matters for fully utilizing the potential for a transition towards decarbonization of the energy sector. Previous studies on energy frames within news media have been conducted on bioenergy, nuclear energy, climate change (Shehata & Hopmann, 2012), and wind energy (Heidenreich, 2016; Holstead et al., 2017; Stephens et al., 2009). These studies, according to Cozen et al. (2018), have so far been concerned with contentious issues within specific RE sources, such as nuclear power, gas fracking or social activism. In these studies, conflict and ambivalent, and often negative, frames, would seem to dominate the results. Cozen et al. (2018) argue that the field of energy democracy, and the way, for instance, communities engage in and control local energy practices is a new field for studying energy communication, specifically, including framing studies. We argue that RE GIs often are encompassed by the concept of energy democracy with their focus on innovative practices for the benefit of local citizens and communities. In this paper, the new focus on RE GIs distinguishes itself from more general RE framing studies, studies on fossil energy framing or framing of social movements and activism, as it studies the (presumably) more inclusive, constructive and empowering side of energy transitions (Seyfang & Smith, 2007; Szulecki, 2018). It can therefore reveal the communicative issues that matter in RE projects that (at least on the surface) are designed by the people for the people, and thus, in a potentially less conflict-focused media terrain. A nuanced perspective is especially

important now that both centralized and decentralized approaches to renewable energy systems are emerging, involving very different project sizes, types and economies and leading to different kinds of public debates (see e.g. Hvelplund & Djørup, 2020). This paper is thus an explorative article and presents a first analysis of the media framing of GIs. This new direction sheds light on the differences and similarities with more general framing studies on renewable energy, and in particular, gives a first indication of a presumably more positive and/or practical-innovative character in GI media framing. We argue that the actual knowledge of these movements does in itself raise awareness of RE, climate change, and may arguably thus contribute to energy democracy.

To take a first step in this new direction, the focus of this paper is on the media framings of GIs in general, and a comparison of how they are framed in three countries: Denmark, the Netherlands and Sweden. The aim of this paper is thus to describe, compare and analyze how GIs are framed in the news media in Denmark, the Netherlands and Sweden. The central research questions are:

RQ1: How are GIs framed in the news media and, specifically, which frames are dominant in comparison to existing studies on energy framing over time?

RQ2: Which differences in media framing appear in Sweden, Denmark, and the Netherlands with reference to the differing national energy system structures and policies?

RQ3: How can the findings be understood in relation to energy democracy?

As pointed out by Djerf-Pierre et al. (2016), comparative framing studies of RE are few, and contribute to filling this research gap further by also adding a GI perspective. The three countries were chosen due to their distinct GI history and current GI-related developments in the energy sector (Kooij et al., 2018), hence giving a broad overview of framing of GIs development. They exhibit a rather wide spectrum of GI activities and surrounding institutional conditions that determine the type and scale of these activities – albeit within a purely European context. Denmark has a long history of successful GIs (Meyer, 2004), but in recent years the institutional conditions for these organizations have become poorer (Kooij et al., 2018). Meanwhile, the Netherlands have a short but intensive history with a majority of the GIs starting around the year 2010, despite less-supportive institutional settings (Oteman et al., 2017). Sweden has experienced a limited development of GIs but has a long history of RE production in a centralized electricity system with strong municipalities (Magnusson & Palm, 2019). Using these three countries for an explorative study of GI media framing makes it also possible to capture a wide spectrum of media responses. This way, the paper contributes to opening up the direction of research into framing studies on GIs.

Previous studies of framing analysis on renewable energy

In this section previous studies on framing analysis and framing of renewable energy is presented.

Framing analysis

This paper uses a methodological approach based on framing analysis of news media. The concept of “framing” has been applied by scholars from several social science disciplines and several theoretical conceptualizations have been developed. The fundamental understanding of the concept originates from the work done by Goffman (1974), who described social frameworks as something that allows us to *locate, perceive, identify and label* events and occurrences in the world, to make them more understandable and meaningful. In other words, the way events are perceived and described depends on the type of framework being employed. Other scholars (Entman, 1993; Gamson et al., 1992; Gamson & Modigliani, 1989; Gitlin, 1980) have adopted an analytical approach to news media. Entman (1993, p. 52) defines framing as *to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item*

described. Entman (1993) goes on to describe frames as entities that may be situated in different locations within a communication process: in text, in the culture, in the receiver, and in the communicator. For example, the frame of the communicator (whose belief system is, in turn, guided by frames) might or might not correlate with the frame of the receiver, who is attempting to make sense of the same policy issue (Entman, 1993; Gamson & Modigliani, 1989).

Framing renewable energy

Several studies have covered energy issues, but none of the articles published from these studies have examined the media coverage of GIs in energy production. Some studies, however, have discussed how media frames effect the discussion of RE. Generally, frames often exhibit an ambivalent attitude towards RE. Moreover, similar frames emerge, such as economic, technological, and environmental, in most studies. And finally, country specific and institutional settings can help explain differences in the results.

A general assessment of the literature shows that most studies focus on western countries. For example, in the US, Stephens et al. (2009) studied wind energy, Kim et al. (2014), and Wright and Reid (2011) biofuel, and Haigh (2010) alternative energy, and in recent years the studies on CCS (carbon capture and storage) (Feldpausch-Parker et al., 2013, 2015; Langheim et al., 2014) and smart grids have gained attention (Langheim et al., 2014; Mallett et al., 2018). European studies have focused on biomass in Norway and Sweden (Skjølsvold, 2012), and the Netherlands (Sengers et al., 2010), biogas in Finland (Lyytimäki, 2018), solar energy in Spain (Heras-Saizarbitoria et al., 2011), and deep geothermal energy in Switzerland (Stauffacher et al., 2015).

Positive and negative frames

In many of the studies it was concluded that RE is framed ambivalently. Economic frames did in most studies contain positive (e.g. economic opportunity for individuals, companies and countries) and negative aspects (e.g. economic burden, bioenergy not being economically competitive). Environmental frames appear in terms of RE being important for climate mitigation measures and reducing pollution, but also through skepticism (visual negative aspects and risks for birds from wind power, or deforestation for bioenergy) (Delshad & Raymond, 2013; Djerf-Pierre et al., 2016; Hindmarsh, 2014; Skjølsvold, 2012; Wright & Reid, 2011).

The tone of the reporting's has varied over time in most studies, some becoming more negative (Deignan & Hoffman-Goetz, 2015; Kim et al., 2014; Sengers et al., 2010). Delshad and Raymond (2013) found that even though positive frames regarding biofuels in the US existed over the whole time period studied, negative frames increased over time. Haigh (2010) found fluctuations over time in terms of positive and negative framing. One explanation relates to how events trigger reporting's. Stauffacher et al. (2015) found how reporting's on deep geothermal energy in Switzerland increased closely to events, such as public votes or seismic activities near projects. They further argued that negative events can be considered more newsworthy. Roehyadi-Reetz et al. (2019) found, surprisingly, in a comparative study between 11 different countries, that reporting's on RE became more negative after the Fukushima accident.

Media items on new technology have in some cases been optimistic early on, as a part of a hype cycle, but turning more negative when questions of risks and economic feasibility were raised (Mallett et al., 2018), or reporting's focus on technology might simply reduce with time as the technology becomes more mainstream (Feldpausch-Parker et al., 2013).

Prominent frames

As indicated above, frames regarding RE used in the media tend to focus on economic, technological, and environmental aspects. For example, Delshad and Raymond (2013) identified seven frames, and one subframe, when studying biofuels in the US, equally distributed among positive and negative frames; national security (fuel independence), environmental benefits and costs, fair and unfair,

and economic costs and benefits. Wright and Reid (2011) found similar frames in their studies, economic frames being the most frequently occurring, followed by environmental frames and national security frames.

Djerf-Pierre et al. (2016) applied a deductive quantitative approach to identifying how RE is framed in major Swedish and Australian newspapers. They considered economic frames, environmental frames, science and technology frames, political frames and civil society frames for all articles. Economic frames were the most prominent in both cases, although framed with quite some ambivalence. On the one hand, ecological modernization ideas were present in Sweden, through economic opportunity and technological progress along with stressing the importance of climate mitigation through clean energy, while on the other hand, some frames expressed direct skepticism of wind farms and alternative fuels. In Australia, economic frames dominated, while environmental frames were largely lacking. When present, environmental frames were mainly negative. The authors concluded that structural and institutional factors influence the degree and way RE is covered and framed.

Horsbøl (2013) investigated the media framing of a small-scale local initiative, “Energy Town Frederikshavn” in Denmark, which aims to become carbon-neutral and reliant only on RE. This study is more closely related to GIs than the other studies presented, and suggests that the initiative, which aimed to enable the transition towards RE consumption, was mainly framed by the local media. The frames differ from those in other studies and were (from the most to the least present): the environment, profiling of the project, business and job creation, technology, national political conditions, municipal or household finance, and communication with citizens. Environmental frames often related to other considerations and focused on the local aspects more than climate change, controversies or spectacular representation of climate change effects. The focus was instead on concrete local actions.

Importance of structures and institutional settings

A general observation that derives from studying literature is that framing can vary considerably between countries, regions, and over time. National and regional structures seem to matter, as RE policy is embedded in a broader political and social discourse. For example, Skjølsvold (2012) explored how bioenergy is described and domesticated in the Swedish and Norwegian media. The two countries differ in the prominence given to bioenergy: this may be a result of the technology being more widely used in Sweden than in Norway. Haigh (2010), found that reporting's on alternative energy were more positive in the Midwest than the coast of the US, arguably because of a closer relation to the RE business. Hindmarsh (2014) found that reporting's on wind power were more negative in closer proximity to wind farm projects (cf. Deignan & Hoffman-Goetz, 2015), while on the other hand, the reporting's on CCS from local newspapers close to potential sites were more positive, due to economic potential from job opportunities (Feldpausch-Parker et al., 2013).

As mentioned above, Djerf-Pierre et al. (2016) found differences between Australia and Sweden and argue that the fact that Australia has a more widespread climate denialism, strong coal lobby and dependence on coal affected the way RE was reported, while at the same time, policies supporting environmental actions, climate consensus and national energy mix with hydro power has led to a stronger support for RE in Sweden, which is reflected in the media reporting.

Stephens et al. (2009) conducted a comparative study, further developing the SPEED-framework (Socio-Political Evaluation of Energy Deployment) (see Stephens et al., 2008) exploring state-level (not country-level) differences in the media framing of wind energy in the US from a risk perspective. They found that the amount of reporting increased between the years studied (1990 and 2007), and that wind power reporting relating to climate change was rather low in all states. They concluded that differences in risk and benefit frames relates to contextual differences in wind energy discourses in the states.

To sum up the section, we could expect the majority of media frames to be ambivalent, but arguably more positive, as these projects are often more locally embedded. Many of the previous studies

have been on a national, industrial level and that feeling of distance seems to matter. In particular, social issues such as NIMBYism should be less dominant than for general RE framing, as GIs have a greater focus on e.g. energy democracy and participation. Second, due to their distinct GI history and context we expect to find notable differences in media frames between the three countries. For instance, the Netherlands has a history of RE conflicts, while in Denmark, GIs have a long history, their environmental value being a well-established fact, and finally Sweden, has a high RE share and supply security in the energy system. Short descriptions of the GI landscape in the three countries are included below.

Structures and settings in Denmark, the Netherlands and Sweden

The three countries studied are considerably different in terms of their history and the present configuration of energy systems. The differences are described below.

Denmark

Politically, the country is characterized by a division between state, regions and municipalities with strong self-governing rights that have been reinforced during the structural reform in 2007 merging 271 smaller municipalities into 98 larger ones. The energy sector has traditionally been characterized by high shares of consumer and municipal ownership in electricity and heating, which has been somewhat broken up by the liberalization processes of the last decades (Hvelplund & Djørup, 2019). From 1975 onwards, this ownership structure was partially transferred to the development of RE, resulting in comparably high shares of citizen and cooperative ownership models. Cooperative and consumer ownership has been relatively well consolidated politically and institutionally in the form of the (now abandoned) proximity rules for wind turbines shareholders as well as non-profit regulation in the electricity and district heating sectors.

In Denmark, around 54% of the total electricity production was provided by RE in 2016: of this, 37.5% came from wind power, 12.7% from biomass-based sources, and 3.7% from solar photovoltaic (PV) electricity production, biogas and hydro power. The remainder of the electricity production is based on coal (29%), natural gas (7%), oil (1.1%) and non-organic waste (2.3%). A large share of the heating market is district heating, of which 66.5% was co-produced with electricity at combined heat and power (CHP) plants. Around 52% of the total building area is connected to district heating, 18% to individual gas boilers, 14% to individual oil boilers, 9% to electric heating and heat pumps, and 6% to other heat sources (Statistics Denmark, 2017).

Denmark has 1093 GIs, the largest share of which are wind power cooperatives (628) (Gorroño-Albizu et al., 2019). Consumer-owned district heating projects are the second largest number, 408 systems. They cover roughly 36% of the total DH supply of the country. There are 28 biogas-centered farmer cooperatives, 21 local energy offices and other energy-related NGOs and folk high schools, and eight eco-villages with an explicit focus on RE or energy efficiency (Krog et al., 2018).

The Netherlands

A covenant between stakeholders, striving for consensus between all parties is and has been the culture of politics in the Netherlands. This is also visible in the multiparty system, in which several political parties form the government. Due to an ongoing process of decentralization, the municipalities have received more responsibilities, while the regional level is becoming less important. Concerning the energy transition, the “climate agreement” requires a greenhouse gas reduction of 49% in 2030 and is the result of negotiations of stakeholder at all levels. The municipalities have an important role in this agreement, e.g. through the RES (regional energy strategies).

In the Netherlands, the share of RE in electricity production was 9.7% in 2014, of which wind power contributed 5.6%, biofuels 3.0% and solar power 0.8%. Coal and gas contributed 31.3% and 49.8%, respectively. The pattern in the heating sector is similar, with gas contributing 70.2%, oil 14.5% and biofuels only 0.7% (Kooij et al., 2018).

In the Netherlands, the number of grassroots initiatives (GIs) grew from around 40 in 2009 to over 360 in 2016, but it has by no means been a steady growth. Nevertheless, although at first glance this history appears to be a great success story, in reality it is not as impressive. It must be remembered that GIs in the Netherlands contribute only about 2% of the Dutch RE (Oteman et al., 2017).

Sweden

The political structure is built on state, region, and municipal levels. Compared to the Netherlands, however, the regional level is weak, as the state has the regulatory power and has implemented several policies to support RE transition (e.g. carbon dioxide taxation in 1991, tax reductions on RE). The municipalities have self-governing, taxation rights, and planning monopoly and have historically been owners of energy companies, and thus a main part of the energy transition (Magnusson & Palm, 2019).

Sweden's electricity market is to a large extent based on RE, and hydro power contributed 40% of the production in 2016, wind power 10%, and electricity from CHPs (mainly fuels from biomass and waste) approximately 9%. Nuclear power makes out around 40% of total yearly production (Swedish Energy Agency, 2017). The heating market is dominated by district heating, which had a market share of 58%, with electricity 24% and biomass in individual boilers (district heating excluded) 15% (Swedish Energy Agency, 2017). Sweden has fewer GIs than the other two countries. Magnusson and Palm (2019) identified around 140 initiatives, most of them (80) being wind cooperatives. Other GIs include eco-villages (approximately 30), solar PV cooperatives (approximately 10) and small-scale heating networks. A further 10 GIs have more than one focus, such as hydro and energy efficiency in rural communities.

Materials and methods

In this research a media analysis is carried out to gain a broad perspective on the frames within the energy transition connected to GIs. The data for the analysis were collected from print media in Denmark, the Netherlands and Sweden. Media items were accessed through databases of digitalized media items covering major national, regional, and local newspapers. In Denmark, we used the database Infomedia, in the Netherlands LexisNexis, and in Sweden Retriever. All database searches were completed by 1 April 2017.

We focused on ten cases in each country, for which we covered the whole time period during which they existed, meaning that the starting year for each case could differ. To improve the generalizability of the findings, a broad coverage of GI cases is chosen, selected on the basis of relevant variables likely to reveal the overall GI patterns in the countries. These variables are: the technology of the initiative (wind, solar, heat, and broader sustainability projects), location (different provinces in the Netherlands; rural and urban areas), date of establishment (e.g. older wind cooperatives as well as recently established initiatives). Also, only cases were considered that allowed for media coverage throughout the entire period of their existence, which for some cases is a rather long period, as is explained in more detail in the next section.

As a second step, all newspaper articles between 1989 (year of establishment of first case) and March 2017 that covered any of these projects were identified, using the initiatives' names as search terms, sometimes with alternative spellings (e.g. Økologisk Landsby Dyssekilde or Økosamfund Dyssekilde in Denmark, Dorpsmolen Tzum and Doarpsmûne Tzum in the Netherlands, or Kvarkenvind and Kvarkenvinden in Sweden). At least 5 newspaper articles had to be found in the initial search. We read all of the articles to determine their relevance, i.e. if they discussed the initiative, leading to a total of 516 usable newspaper articles in Denmark, 521 in the Netherlands and 190 in Sweden. This selection resulted in ten cases as shown in Table 1 below, including the final number of media items analyzed.

After identifying the relevant articles, a careful read-through of the media articles took place. Two main methodological approaches for framing are available: inductive (identification of frames

Table 1. Initiatives covered in the study, including year of establishment, number of media items (*n*), media items per year (*n/yr*) and main technology used in each initiative.

Initiative	Est.	(<i>n</i>)	<i>n/yr</i>	Technology	Initiative	Est.	(<i>n</i>)	<i>n/yr</i>	Technology
<i>Denmark</i>									
Slagslunde Fjernvarme	2013	33	6.6	District heating	Middelgrundens Vindmøllelaug	1997	56	2.7	Wind – large scale
Hvide Sande	2011	48	6.8	Wind – small scale	Vegger Biogas	1989	47	1.6	Bioenergy, biogas
Wind and Welfare	2014	19	4.8	Wind – large scale	Andelssamfundet Hjortshøj	1986	63	1.9	Energy efficiency
Dyssekilde	1987	45	1.4	Energy efficiency	Ærø Energi- og Miljøkontor	1986	64	1.9	Bioenergy, biogas
Bioenergi Vest A/S	2010	64	8	Bioenergy, biogas	Dronninglund Fjernvarme	1986	90	2.7	District heating
<i>Netherlands</i>									
De Windvogel	1991	117	4.3	Wind – large scale	LochemEnergie	2011	76	10.9	Solar PV
Deltawind	1989	74	2.4	Wind – large scale	DuurSaam Breda	2011	14	2.0	Solar PV
Doarpsmüne Reduzum	1992	42	1.6	Wind – small scale	Lomboxnet	2003*	28	2.8	Other
Dorpsmolen Tzum	1994	9	0.4	Wind – small scale	Windpark Nijmegen Betuwe	2013	64	12.8	Wind – large scale
Grunneger Power	2011	84	12.0	Solar PV	Thermobello	2008	22	2.2	District heating and CHP
<i>Sweden</i>									
Solel i Sala	2009	22	2.8	Solar PV	Solel i Lindesberg	2014	16	5.3	Solar PV
Slättens vind	2003	9	0.6	Wind – large scale	Solbyn	1988	26	0.9	Energy efficiency
Kvarkenviden	1998	35	1.8	Wind – large scale	Understenshöjden	1993	30	1.3	Energy efficiency
Trärike vind	1996	5	0.2	Wind – small scale	Suderbyn	2008	25	2.8	Energy efficiency
O2 el	2005	14	1.2	Wind – large scale	Grannäs	1997	8	0.4	Other

based on the analysis of the text) and deductive (identification based on predefined frames) (De Vreese, 2005; Djerf-Pierre et al., 2016). We decided to combine the approaches, as we were conducting exploratory work on the media framing of GIs, and yet we are building on the already established analytical dimensions in the relevant literature.

Using a *deductive approach*, we built on previous research that guided us in the identification of frames, and important characteristics thereof, with which futures are anticipated. Previous research identified thematic frames used within the energy transition, which could also help to guide our analysis: economic, social, environmental, conflict and political. Semetko and Valkenburg (2000) argue that frames often contain several subframes. For example, an economic frame may consist of subframes with an economic focus, but with different meanings. We identified subframes that could be combined into overarching frames, such as an economy frame and a social frame. Furthermore, we decided to identify a dominant frame, a secondary frame, and a tertiary frame, as suggested by Linström and Marais (2012), since many items contained more than one theme. It was, however, always possible to unambiguously identify one dominant frame in each item.

Next, we broadened the scope of our analysis by adding an *inductive approach* as will be outlined below. First, a pre-study was carried out on the Swedish material to identify relevant frames and subframes. The sample was based on 30 different initiatives. In the pre-study, the following frames (sub-frames in brackets) were inductively identified: economic (economic opportunity for individuals, economic position of village/city/region/country, economic: negative impact), environmental (problem emphasis, friendliness emphasis), social community (sustainability, cooperation/community, exclusion, NIMBY), conflict/resistance (internal, external), political (conflict, positive political influence), technological, (technological innovative, traditional technological). The second step in

the frame analysis was to elaborate upon the selected frames and subframes in the three countries in order to make adjustments that may be required to enable comparisons. Besides the frames gained so far, we inductively had to make two extra frames for those items that did not fit in one of the selected frames. These were local development, and innovation, including subframes. In order to see the whole code scheme, see [Table 2](#), in order to see example quotes for each subframe and country, see Appendix 1.

Variables in the code book consisted of descriptive variables (coder ID, article ID, article author, article headline, date, newspaper, and geographical distribution of newspaper) and variables (frames- and subframes) for identifying the primary and secondary frames, along with relevant quotes from the article that illustrates the coding decision. Each subframe was assigned the variable of being positive or negative, as they were polarized in this manner. A subframe regarding economic opportunity, for example, has positive connotations, and NIMBY-aspects negative (see [Table 2](#)).

Descriptive statistics were used to capture the occurrence of the various frames and subframes between the countries. With high versus low coverage, we can see how interest varies. The analysis was also based on chi-squared tests in order to find significant differences in occurrences based on factors such as the identity of the initiative, type of initiative, date of publication, the geographical span of the newspaper (national, regional, local), and the technology used. We also quantified the number of positive and negative frames identified for each initiative.

Intercoder reliability

As the research project was carried out in three different countries, no intercoder reliability test could be carried out between the countries, as no items were in English. We acknowledge that this is a weakness in the study, but the coding was carried out rigorously and with constant communication between the different research teams. The code scheme was, as mentioned above, developed in several steps. The results from the pre-study were presented to the research team in early April 2017 followed by a Skype-seminar, and the scheme, including the explanation for each frame and subframe, was tested and a new version was presented in late April 2017 followed by a Skype-seminar. In May 2017, following new tests, a new, and refined code scheme was presented and discussed in a Skype seminar, and in August the final version was presented and tested. The whole research met in Linköping in September 2017 and tested the scheme and coded ten English articles (that were not included in the source material) in order to discuss the code book and ensure consistent coding. The team reached a consensus on the coding at this time, and the final coding took place between October and December 2017 (including re-coding the 10 selected Swedish cases). Each month the team had Skype-discussions, but shorter skype-meetings and email-communications took place when a coder was insecure.

Previous studies, such as Djerf-Pierre et al. (2016), Kumpu and Kunelius (2012), and Rochyadi-Reetz et al. (2019) conducted international comparative framing studies and without conducting an intercoder reliability test between the countries. They have however developed code schemes collaboratively and with ongoing discussions, although Kumpu and Kunelius (2012) argue that detailed comparisons between countries should be done cautiously, which we agree with and try to avoid. In Denmark, one coder did the coding, in the Netherlands and Sweden two coders were involved in each country. In the Netherlands, the coders held workshops and coded samples of the items separately, discussing the potential differences in coding, until a complete consensus was reached, thus generating a high intercoder reliability. The coder then coded half of the items each, but simultaneously in joint sessions, allowing for constant discussions when in doubt. In Sweden, two coders analyzed 15 percent of the items separately, gaining an intercoder reliability of 81 percent in the initial coding and Krippendorff Alpha value of 0,76 (Krippendorff, 2004), based on the variables frames and subframes (these were the only variables containing components that could differ between coders, compared with for example geographical distribution for the newspapers). The differences were discussed, and one coder carried out the rest of the coding alone, with

Table 2. Identified frames and subframes, with explanations and examples.

Frame	Subframe	Positive or negative	Explanation	Examples
Economic	Economic opportunity (individuals)	Positive	Economic opportunities or benefits for individual members or for the GI itself	<i>For individuals, it is economically advantageous to buy into a wind turbine because it does not have to pay both energy tax and VAT. (Västerbottens Folkblad (SWE), 27-08-2005)</i>
	Economic opportunity (village)	Positive	Economic opportunities or benefits for the village, city, region or country	<i>The profits from this are used for business development in the town. (Dagbladet Ringkøbing-Skjern (DK), 25-11-2013)</i>
	Negative economic impact	Negative	Negative economic effects of the GI/project	<i>One shareholder tells Di Agenda that he agreed with the description that his investment would provide a secure return of 8% per year. This has not happened. (Dagens Industri (SWE), 23-05-2014)</i>
	Economic hindrances	Negative	Economic circumstances that hinder the GI	<i>Building permits and land prices are too expensive nowadays. (Dagblad van het Noorden (NL), 26-01-2015)</i>
Environmental	Environmental friendliness emphasis	Positive	Emphasizes the positive impact of the GI	<i>The project helps reduce carbon dioxide emissions by 26.4 million kilos per year. (Västerbottens-kuriren (SWE), 03-07-2008)</i>
Social	Community	Positive	Focuses on togetherness, public support, non-material benefits for the community	<i>Few complaints and a goodwill among the local citizens to enter in a co-ownership are what characterizes the project behind the three wind turbines that now stand at Hvide Sande Harbour. (Jydske Vestkysten (DK), 20-04-2015)</i>
	Network	Positive	The importance of meaningful connections between GI and partners	<i>In the proposal, it is pointed out that Sala and Heby municipalities have started a solar cell park through an economic association called "Solel i Sala Heby", where you can buy shares. This is seen as a good example of how public, corporate and private people work together for sustainable development. (Nerikes Allehanda (SWE), 25-03-2012)</i>
	Not In My BackYard (NIMBY)	Negative	Protests from community against GI	<i>Gone is our beautiful horizon, gone is the beautiful setting sun. (De Weekkrant Goeree-Overflakkee (NL), 26-11-2015)</i>
Conflict	Internal	Negative	The GI has conflicts within its own organization.	<i>That decision violates the Association Act (Föreningslagen) and was not taken in a democratic way following the regulations of the association, which was also confirmed by legal expertise. (Västerbottens-kuriren (SWE), 25-11-2010)</i>
	External	Negative	GI has conflicts with other partners (non-political).	<i>Because of protests by various stakeholders, it can take forever to start the project. (Trouw (NL), 13-01-2011)</i>
Political	Conflict	Negative	Conflicts with (local/regional/national) politics	<i>Two wind power trusts have made a complaint regarding the Danish Energy Agency's financial requirements in the tenders for nearshore wind turbines. (Sjællands Nyheder (DK), 18-08-2015)</i>
	Support	Positive	GIs are enabled by (local/regional/national) politics.	<i>... the solar PV cooperative receives government subsidies of 40% of the</i>

(Continued)

Table 2. Continued.

Frame	Subframe	Positive or negative	Explanation	Examples
Local development	Sustainable	Positive	Profits from the GI are locally invested in sustainability.	<i>investment, and the board decided on Monday night to start building a plant of at least 1,500 square meters with a maximum limit of 2,500 square meters in early 2013. (Upsala Nya Tidning, (SWE), 29-08-2012)</i>
	Liveability	Positive	Profits from the GI are locally invested in order to make the community more liveable.	<i>All the members of the cooperation invest in RE by lending money in order to build wind and solar parks. (De Weekkrant Goeree-Overflakkee (NL), 10-02-2016)</i> <i>The profits have been used to refurbish the community center. (Leeuwarder Courant (NL), 19-02-2003)</i>
Innovation	Technological	Positive	Focus on innovation and “newness”	<i>The project is innovative because never before has such a big plant with a seasonal storage linked to a heat pump been planned. (Nyhedsbladet Dansk Energi (DK), 18-05-2009)</i>
	Social	Positive	New form of social organization	<i>The little eco-village can very well be a foretaste of a forward-thinking community. (Berlingkse Tidende (DK), 17-09-2000)</i>
Technology	Traditional	Positive	Focus on well-established technology, reliability, has been done before	<i>It is known technology, and we have the necessary resources. (Nyhedsbladet Dansk Energi (DK), 28-09-2009)</i>
	Problems	Negative	Focus on malfunctioning or doubts about the technology	<i>The reason for the high energy consumption is heat losses through windows and walls and losses in the heat distribution system (which is a culvert system). (Svenska Dagbladet (SWE), 14-05-2000)</i>

discussions with the other coder when in doubt. In Denmark, due to the research group composition, the sole researcher carried out the coding, but with continuous discussions with the colleagues in the Netherlands and Sweden.

Results and analysis

In this section the main findings from the empirical analysis are presented. We argue that the results reflect the importance of energy democracy and how the GIs give an opportunity for strengthening individual and community responsibility and opportunities from RE-projects.

Social aspects in focus

Figure 1 below presents the percentages of the dominant frames in all countries individually and combined. In our study, the most frequently used frames are the social, economic and political frames. Environmental matters are, surprisingly, only the fifth largest category, whereas it has often been one of the largest categories in previous studies, but it was the largest subframe (see Table 3). There is a significant difference between the countries ($\chi^2 = 0.00$, $\phi = 0.403$, Cramér's $V = 0.285$), meaning that different frames were given different importance in the countries, which will be analyzed in a later section.

Social frames emerge as an important category, which previous studies on framing of renewable energy have not identified in the same extent. The reporting's in our studied media items focused on

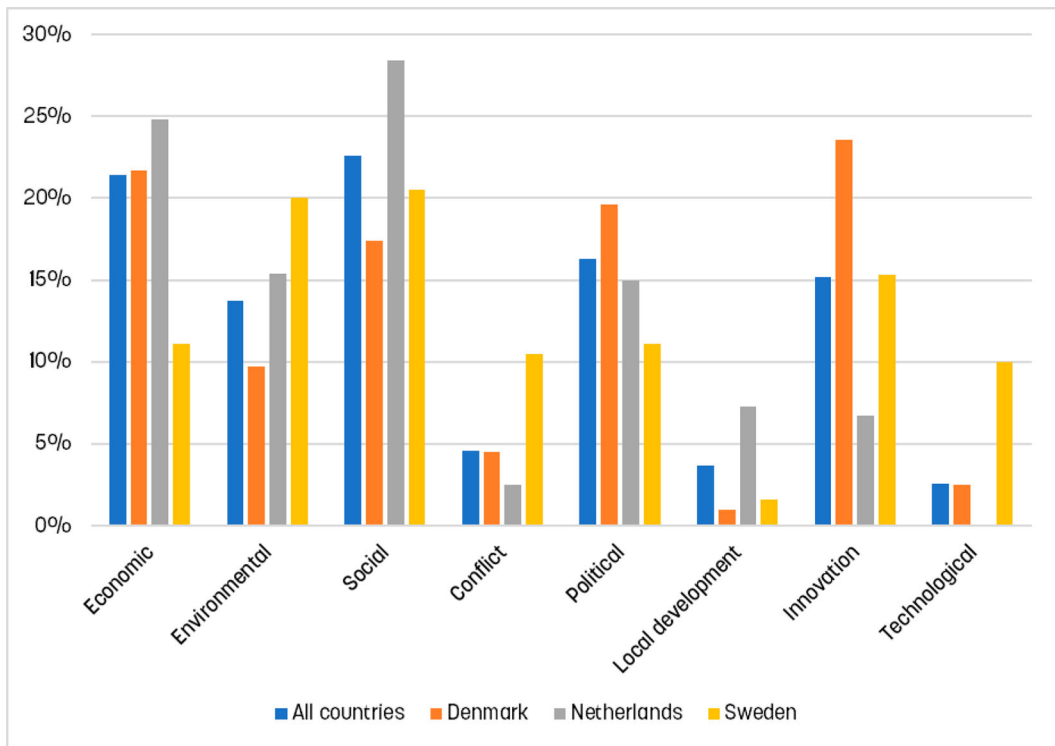


Figure 1. Percentages of dominant frames of all countries combined (n = 1227), Denmark (n = 516), the Netherlands (n = 521), and Sweden (n = 190).

Table 3. Dominant subframes.

Subframes	Positive or negative	All (n)	%	DK (n)	%	NL (n)	%	SWE (n)	%
Environmental friendliness emphasis	Positive	168	13.7%	50	9.7%	80	15.4%	38	20.0%
Economic opportunity (individuals)	Positive	156	12.7%	47	9.1%	94	18.0%	15	7.9%
Innovation – technological	Positive	155	12.6%	99	19.2%	29	5.6%	27	14.2%
Social – community	Positive	146	11.9%	48	9.3%	75	14.4%	23	12.1%
Political – conflict	Negative	107	8.7%	43	8.3%	45	8.6%	19	10.0%
Political – support	Positive	93	7.6%	58	11.2%	33	6.3%	2	1.1%
Social – network	Positive	68	5.5%	22	4.3%	32	6.1%	14	7.4%
Social – NIMBY	Negative	63	5.1%	20	3.9%	41	7.9%	2	1.1%
Economic opportunity (village)	Positive	49	4.0%	34	6.6%	15	2.9%	0	0.0%
Conflict – external	Negative	42	3.4%	21	4.1%	12	2.3%	9	4.7%
Innovation – social	Positive	31	2.5%	23	4.5%	6	1.2%	2	1.1%
Economic hindrances	Negative	30	2.4%	25	4.8%	3	0.6%	2	1.1%
Negative economic impact	Negative	27	2.2%	6	1.2%	17	3.3%	4	2.1%
Local development – liveability	Positive	27	2.2%	3	0.6%	21	4.0%	3	1.6%
Local development – sustainability	Positive	19	1.5%	2	0.4%	17	3.3%	0	0.0%
Technology – problems	Negative	19	1.5%	7	1.4%	0	0.0%	12	6.3%
Conflict – internal	Negative	14	1.1%	2	0.4%	1	0.2%	11	5.8%
Technology – traditional	Negative	13	1.1%	6	1.2%	0	0.0%	7	3.7%
Total		1227		516		521		190	

several components that were considered social, for example how cooperation between members and volunteering were key components within the organizations, and how that was a main difference compared to “normal” RE-projects and that these cooperative aspects were reasons for success. In other cases, the organization form, such as non-profit organizations or cooperative, was considered a novel component and that profits gained its members and communities. The shares are higher in the Netherlands, which correlates with an increase in GI-development in general in recent years.

In order to further unpack this finding, [Table 3](#) gives some more insight into the social frame.

The social frame was in our study divided into three subframes (community, network, and NIMBYism). We could see how the togetherness and cooperation were in focus and considered novel enough to frame the reporting around. It was often framed as the factor that led to fewer protests, as the local ownership meant higher legitimacy for the project. The networking among the GIs, and how they cooperate and learn from others, were another focus, further strengthening the result that cooperation, non-profit and mutual learning was considered important and interesting enough for media to report on. It did not mean that these GIs were without negative reporting, as NIMBYism were an important factor, especially in the Netherlands.

The economic frames had high shares, especially in the Netherlands and Denmark. The second largest subframe of all subframes was economic opportunity for individuals, and economic opportunities for villages or regions had high frequencies. In the reporting’s we could see how economic aspects were often in the center and how individuals could gain from the GIs (i.e. from lower energy costs or revenue) or how villages could gain economic benefits. The focus on the return, rather than the economic costs or investments in itself, stood out as it often is in focus in reportings on RE-projects. We argue that this is another interesting factor relating to energy democracy, that the investments benefit the people rather than large corporations.

It was considered somewhat surprising that environmental aspects were the fifth largest category in total, but it should be noted that it was the second highest category in the Swedish material and environmental friendliness was the subframe with the highest share. This can be explained with a rather one-sided reporting, as it was seldom particularly nuanced. As mentioned above, social frames could focus on various aspects, while the environmental aspect was more “good” or “bad” with little elaboration. Investment in, for example, wind power is considered good for the environment, and that was seldom questioned or discussed further.

Only a few items deal with local development (3.7%), which is surprising given the local focus of many GIs, but it is a category not identified in previous research.

We can see in [Table 4](#) that social frames have increased in quantity over time and have since the mid-90’s been the largest category for most of the five-year periods. At the same time, innovation frames have decreased in quantity, as well as technological frames, although they make out a small share of the frames in quantity. Conflict makes out a larger share for a few time periods, for example through the internal conflict in Swedish wind cooperative Kvarkevinden around 2009–2010 or the price conflict surrounding the Danish DH-system in Slagslunde around the same time.

Table 4. Development of frames over time in all countries combined.

	<1990	1990–1994	1995–1999	2000–2004	2005–2009	2010–2014	2015–	Total
<i>Economic</i>	2 16.7%	9 21.4%	16 18.2%	15 16.9%	33 20.5%	116 21.7%	71 22.3%	262
<i>Environmental</i>	2 16.7%	8 19.0%	16 18.2%	15 16.9%	21 13.0%	60 11.2%	50 15.7%	172
<i>Social</i>	0 0.0%	6 14.3%	18 20.5%	16 18.0%	31 19.3%	129 24.2%	77 24.1%	277
<i>Conflict</i>	0 0.0%	2 4.8%	2 2.3%	0 0.0%	12 7.5%	28 5.2%	12 3.8%	56
<i>Political</i>	1 8.3%	6 14.3%	11 12.5%	11 12.4%	16 9.9%	98 18.4%	57 17.9%	200
<i>Local development</i>	0 0.0%	0 0.0%	2 2.3%	4 4.5%	6 3.7%	19 3.6%	20 6.3%	51
<i>Innovation</i>	6 50.0%	10 23.8%	19 21.6%	16 18.0%	38 23.6%	74 13.9%	32 10.0%	195
<i>Technological</i>	1 8.3%	1 2.4%	4 4.5%	12 13.5%	4 2.5%	10 1.9%	0 0.0%	32
	12	42	88	89	161	534	319	1245

Such conflicts are driven by specific events in the projects rather than an underlying conflict on a larger scale. The increase in social frames is visible in all countries, but the main increase is in the Dutch material, coinciding with a period of strong development of GI-initiatives. Innovation frames decreased after 2010, which has to do with the Danish reporting decreasing, as their share of the innovation frame is the highest.

Positive framing

An important finding in our material was that we identified a high share of positive subframes. The quantity of subframes, and whether they have a positive or negative meaning, are presented in [Table 3](#) above.

In total, the positive subframes dominate significantly (75.4% positive and 24.6% negative) and differences between the countries are small, although Sweden has a somewhat lower percentage (68.9% positive), due to the fact that the conflict frame and technological problems subframe were higher than in the other countries. The four largest subframes were all positive, and all of them were given much focus in the reportings and are all, arguably, main concerns for GIs to be successful. They were innovative, good for the environment and economy, while also being important for the community, and that is why they could get off the ground.

The development of positive versus negative reporting's over time was also analyzed, and although no statistically significant change could be concluded, meaning that it cannot be determined that reporting's became more or less positive over the years.

However, it is a clear majority of positive framing in all countries, especially compared to studies of for example wind energy (Deignan & Hoffman-Goetz, 2015; Hindmarsh, 2014; Stephens et al., 2009) or bioenergy (Skjølsvold, 2012; Wright & Reid, 2011).

Negative subframes often focused on conflicts, mostly external but in some cases internal. There were also frames identifying political conflicts, as the GIs did in certain cases challenge the "normal" energy structures and regulations, or conflicts with other stakeholders (e.g. contractors or interest groups). The GIs did not run the projects in the usual ways, and this meant obstacles that were often newsworthy.

Possible further explanations for this are related to the social aspects of GIs, as the GIs we studied were concrete projects, rooted in local communities and often with economically and environmentally positive impacts on the local communities. The projects help to democratize and decentralize energy production, keeping power (in both senses) and economic resources local. It is arguably unlikely that newspapers will frame such effects as negative. Other studies have stressed the importance of community acceptance of RE for projects to be successful (Wüstenhagen et al., 2007) and that community ownership tend to have a positive impact on attitudes (Cowell et al., 2011; Warren & McFadyen, 2010) and strengthens the energy democracy (Cozen et al., 2018). It is thus reasonable to believe that a project with local connectedness is more likely to be surrounded by a positive attitude and less local resistance. However, internal conflicts, which for example was the case in one of the Swedish projects, seem more likely to catch the eye of the media, as private citizens can reach out via the media in the case of conflict.

Differences between the countries

In this section the results of social and positive frames will be analyzed in more detail through a comparison of the countries, against the background of energy democracy.

Kooij et al. (2018) concluded that the institutional settings, such as economic development of GIs, differ between the countries, as the Netherlands and Sweden have historically been based more on industrialized economics, while Denmark has had a more decentralized economy, also leading to a more decentralized energy system.

One main factor that could help explaining differences between the countries lies in the fact that Sweden and Denmark have come further in the energy transition, and both have a substantially higher shares of RE production than the Netherlands, which thus affect the way in which newspapers write about these projects. Investment in RE might be considered “old news” in Sweden and Denmark, and the media in these countries will instead focus on the forms of organization and aspects of innovation, whereas the very aspect of RE investments is newsworthy in the Netherlands. GIs are not as common in the Netherlands as they are in for example Denmark, and they arise from active citizenship and a new cooperative culture. This may explain the dominance of the social frame (see [Figure 1](#)), the majority of the subframes link to community support and emphasize “togetherness”. Oteman et al. (2017) state that a large number of GIs were started after 2009, much thanks to support by subsidies from the national government, such as the Postcode Roos project, with focus on solar PV investments in neighborhoods, and the SDE+ subsidy for producers of RE. When the subsidy was withdrawn, social acceptance of GIs was high, and the development of new GIs continued.

The historical background concerning active citizenship in the energy sector is another important factor. In Denmark, some GIs have a long history (25 years or more) and/or are institutionally well established and socially accepted (e.g. consumer owned district heating) (see also Gorroño-Albizu et al., 2019; Veenman et al., 2019). Thus, economic, environmental, and social frames are simply less interesting to report on than elsewhere, hence the strong focus GIs’ and media’s focus on (technological) innovation (see [Table 3](#)) and “newness”. In addition, some of the GIs are comparably large and do have the capacity, experience and sometimes the obligation to innovate, in order to keep consumer prices low (see e.g. Hvelplund & Djørup, 2019). In Sweden, the existence of the welfare state and the understanding that the public are in charge of energy issues have led to a more passive stance from citizens, and a perception of the need for GI activities has not been generated as strongly. The centralized electricity market, and often lack of subsidies for GIs, lead to unfavorable conditions for GIs, despite a strong RE development in Sweden over the last decades (Magnusson & Palm, 2019). This is probably one of the reasons that fewer GIs have been established in Sweden, and thus the substantially lower number of news media items; the interest is not high among neither the public nor the media. However, when being reported on, the contrasting cases of innovative organizational practices (e.g. cooperation among citizens or a different organizational form) is what is considered interesting.

The different scales of energy and environmental issues is another matter, considering where action could and should be taken. The share of environmental friendliness is comparably low in Denmark (see [Table 3](#)), which could be a consequence of the long tradition and experience with RE in Denmark. Some environmental issues, such as pollution and resource use were mainly dominant in the 1970s and 1980s and have been to some extent been addressed by past policies and (GI) activities, while climate issues have become relevant in recent years, but mostly in relation to the general public energy and RE debate (Arlér et al., 2020). Also, global environmental issues such as climate change, which are prominent in the current public debate, tend to be of lesser importance in local communities on a daily basis, where GIs have to prove their practical, local value (see e.g. Sperling, 2017). On the other hand, in Swedish reporting, the environmental issues, also on the global scale, is often in the center of the framing. Solar PVs and wind power do not solve local environmental issues directly, but they are a key factor in combating climate change, and they are framed that way also on a local level. Then the local level, i.e. the citizens, help combatting climate change and generates local rootedness and strengthen individuals’ position and thus strengthens energy democracy.

Concluding discussion

The interest in GIs, community energy and various forms of decentralized energy ownership and production has increased in recent years. Literature is pointing to their potential for social

innovation as well as contribution to the transition to a sustainable energy system (Bauwens et al., 2016; Berka & Creamer, 2018; Ornetzeder & Rohracher, 2013), increased policy recognition (EC, 2015; 2016), as well as importance for energy democracy (Cozen et al., 2018). Taking the position that media reporting can have an impact on citizen attitude, it is of interest to see how these rather new forms of initiatives are being framed.

The paper has explored how grassroots innovations in the energy sector have been framed in Denmark, the Netherlands, and Sweden. Our study shows that framing of GIs shares some similarities with previous studies on framing of RE. The same frames occur, being economic, environmental, technological, or various forms of political frames (Delshad & Raymond, 2013; Djerf-Pierre et al., 2016; Rochyadi-Reetz et al., 2019), and they are prominent in all countries. As there are no previous studies on framing of GIs, our study helps giving a broader perspective on the framing of RE, especially considering a major difference in our study is the high share of frames focusing on social frames. GIs are developed around community initiatives and citizens cooperation, and this is something the newspapers articles frame around to a large degree. In that sense, the democratic character of the GIs is well received in the energy transition, referring to the social and positive media reporting. The fact that innovative forms of energy production take place, around local initiatives, is considered newsworthy from media and that is generally reported on in positive terms. In a further, normative, perspective, it might have a positive effect on the energy transition, considering that action needs to be taken at all scales; global, national, and local.

Along with an increased overall interest, and the number of GIs having increased in all studied countries (Gorroño-Albizu et al., 2019; Magnusson & Palm, 2019; Oteman et al., 2017), we found that the amount of reporting's on GIs also has increased considerably in all three countries since 2006. Regarding the differences between the countries, we see that the frames refer to the national discourse, as well as to national energy system structure. While maturity of the GI in the national context seem to matter in how they are framed, which relates to the energy system configuration (highly centralized in the Netherlands and Sweden), means that the potential for further energy democratization is higher in these two countries, the results points in direction that could arguably be seen as encouragement from the media towards these initiatives. They are an interesting contrast towards the incumbent structure, and that is considered newsworthy.

Further research

There is more research to be done on media attention for GIs. The study has been exploratory, with aims to find some patterns. We can conclude that, like this study, most of the previous literature also on RE has been in western countries. A fruitful and interesting area of research would be to focus on countries outside of western Europe, north America, and Australia.

Our study focused on specific cases in three countries, meaning that comparisons over time and between countries could be carried out. Future studies could take a comprehensive look at GIs or community energy within specific countries, going broader than cases as in our study, could give a deeper insight into GI framing and discourses. Studies could also take the departure from possible differences between the technologies used or based on the different types of GIs.

The work done by GIs themselves to get the message across is worth further studies. Examples of such work are collective action frames (Benford & Snow, 2000) and self-frames, which focus on how GIs work to mobilize in order to try to have an impact and how they are expressing themselves with this purpose. This could potentially be combined with further studies of the actual impacts of the GIs and analysis of how these potentially contribute to energy democracy.

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References

- Arler, F., Rüdiger, M., Sperling, K., Toft, K. H., & Poulsen, B. (red.) (2020). *Ethics in Danish energy policy*. Routledge. Routledge studies in energy policy.
- Bauwens, T., Gotchev, B., & Holstenkamp, L. (2016). What drives the development of community energy in Europe? The case of wind power cooperatives. *Energy Research & Social Science*, 13, 136–147. <https://doi.org/10.1016/j.erss.2015.12.016>
- Benford, R. D., & Snow, D. A. (2000). Framing processes and social movements: An overview and assessment. *Annual Review of Sociology*, 26(1), 611–639. <https://doi.org/10.1146/annurev.soc.26.1.611>
- Berka, A. L., & Creamer, E. (2018). Taking stock of the local impacts of community owned renewable energy: A review and research agenda. *Renewable and Sustainable Energy Reviews*, 82, 3400–3419. <https://doi.org/10.1016/j.rser.2017.10.050>
- Boyer, R. H. W. (2018). Intermediacy and the diffusion of grassroots innovations: The case of cohousing in the United States. *Environmental Innovation and Societal Transitions*, 26, 32–43. <https://doi.org/10.1016/j.eist.2017.08.001>
- Cowell, R., Bristow, G., & Munday, M. (2011). Acceptance, acceptability and environmental justice: The role of community benefits in wind energy development. *Journal of Environmental Planning and Management*, 54(4), 539–557. <https://doi.org/10.1080/09640568.2010.521047>
- Cozen, B., Endres, D., Peterson, T. R., Horton, C., & Barnett, J. T. (2018). Energy communication: Theory and Praxis towards a sustainable energy future. *Environmental Communication*, 12(3), 289–294. <https://doi.org/10.1080/17524032.2017.1398176>
- De Vreese, C. H. (2005). News framing: Theory and typology. *Information Design Journal*, 13(1), 51–62. <https://doi.org/10.1075/idjdd.13.1.06vre>
- Deignan, B., & Hoffman-Goetz, L. (2015). *Emotional tone of Ontario newspaper articles on the health effects of industrial wind turbines before and after policy change* (p. 531). Taylor & Francis.
- Delshad, A., & Raymond, L. (2013). Media framing and public attitudes toward biofuels. *Review of Policy Research*, 30(2), 190–210. <https://doi.org/10.1111/ropr.12009>
- Djerf-Pierre, M., Cokley, J., & Kuchel, L. J. (2016). Framing renewable energy: A comparative study of newspapers in Australia and Sweden. *Environmental Communication*, 10(5), 634–655. <https://doi.org/10.1080/17524032.2015.1056542>
- Druckman, J. N. (2001). The Implications of framing effects for citizen competence. *Political Behavior*, 23(3), 225–256. <https://doi.org/10.1023/A:1015006907312>
- European Commission. (2015). *The European Union leading in renewable*. <https://ec.europa.eu/energy/sites/ener/files/documents/cop21-brochure-web.pdf>
- European Commission. (2016). *Clean energy for all Europeans*. <https://op.europa.eu/en/publication-detail/-/publication/b4e46873-7528-11e9-9f05-01aa75ed71a1>
- European Commission. (2018). *Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources*. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L2001&from=fr>
- Entman, R. M. (1993). Framing: Toward Clarification of a Fractured Paradigm. *Journal of Communication*, 43(4), 51–58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>
- Feldpausch-Parker, A. M., Ragland, C. J., Melnick, L. L., Chaudhry, R., Hall, D. M., Peterson, T. R., Stephens, J. C., & Wilson, E. J. (2013). Spreading the news on carbon capture and storage: A state-level comparison of US media. *Environmental Communication*, 7(3), 336–354. <https://doi.org/10.1080/17524032.2013.807859>
- Feldpausch-Parker, M. A., Burnham, M., Melnik, M., Callaghan, L. M., & Selfa, T. (2015). News media analysis of carbon capture and storage and biomass: Perceptions and possibilities. *Energies*, 8(4). <https://doi.org/10.3390/en8043058>

- Feola, G., & Nunes, R. (2014). Success and failure of grassroots innovations for addressing climate change: The case of the transition movement. *Global Environmental Change*, 24, 232–250. <https://doi.org/10.1016/j.gloenvcha.2013.11.011>
- Gamson, W. A., Croteau, D., Hoynes, W., & Sasson, T. (1992). Media images and the social construction of reality. *Annual Review of Sociology*, 18(1), 373–393. <https://doi.org/10.1146/annurev.so.18.080192.002105>
- Gamson, W. A., & Modigliani, A. (1989). Media discourse and public opinion on nuclear power: A constructionist approach. *American Journal of Sociology*, 95(1), 1–37. <https://doi.org/10.1086/229213>.
- Gitlin, T. (1980). *The whole world is watching*. University of California Press.
- Global Climate Project. (2018). Carbon budget and trends 2018. Webpage: <https://www.globalcarbonproject.org/carbonbudget/>
- Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Harvard University Press.
- Gorroño-Albizu, L., Sperling, K., & Djørup, S. (2019). The past, present and uncertain future of community energy in Denmark: Critically reviewing and conceptualising citizen ownership. *Energy Research & Social Science*, 57, 101231. <https://doi.org/10.1016/j.erss.2019.101231>
- Haigh, M. M. (2010). Newspapers use three frames to cover alternative energy. *Newspaper Research Journal*, 31(2), 47–62. <https://doi.org/10.1177/073953291003100205>
- Hargreaves, T., Hielscher, S., Seyfang, G., & Smith, A. (2013). Grassroots innovations in community energy: The role of intermediaries in niche development. *Global Environmental Change-Human and Policy Dimensions*, 23(5), 868–880. <https://doi.org/10.1016/j.gloenvcha.2013.02.008>
- Heidenreich, S. (2016). *Out of sight, out of mind? Controversy over offshore wind energy in Norway's news media* (pp. 449–472).
- Heras-Saizarbitoria, I., Cilleruelo, E., & Zamanillo, I. (2011). Public acceptance of renewables and the media: An analysis of the Spanish PV solar experience. *Renewable and Sustainable Energy Reviews*, 15(9), 4685–4696. <https://doi.org/10.1016/j.rser.2011.07.083>
- Hermans, F., Roep, D., & Klerkx, L. (2016). Analysis: Scale dynamics of grassroots innovations through parallel pathways of transformative change. *Ecological Economics*, 130, 285–295. <https://doi.org/10.1016/j.ecolecon.2016.07.011>
- Hewitt, R. J., Bradley, N., Baggio Compagnucci, A., Barlagne, C., Ceglaz, A., Cremades, R., McKeen, M., Otto, I. M., & Slee, B. (2019). Social innovation in community energy in Europe: A review of the evidence. *Frontiers in Energy Research*, 7. <https://doi.org/10.3389/fenrg.2019.00031>
- Hindmarsh, R. (2014). Hot air ablowin! 'Media-speak', social conflict, and the Australian 'decoupled' wind farm controversy. *Social Studies of Science*, 44(2), 194–217. <https://doi.org/10.1177/0306312713504239>
- Holstead, K. L., Sutherland, L. A., & Galán-Díaz, C. (2017). Discourses of on-farm wind energy generation in the UK farming press. *Journal of Environmental Policy and Planning*, 19(4), 391–407. <https://doi.org/10.1080/1523908X.2016.1224157>
- Horsbøl, A. (2013). *Energy transition in and by the local media: The public emergence of an 'energy town'*.
- Hvelplund, F., & Djørup, S. (2019). Consumer ownership, natural monopolies and transition to 100% renewable energy systems. *Energy*, 181, 440–449. <https://doi.org/10.1016/j.energy.2019.05.058>
- Hvelplund, F., & Djørup, S. R. (2020). Denmark: Centralised versus decentralised renewable energy systems. In I. C. Burger, A. Froggatt, C. Mitchell, & J. Weinmann (red.), *Decentralised energy: A global game changer* (s. 63–81). Ubiquity Press.
- Kim, S.-H., Besley, J. C., Oh, S.-H., & Kim, S. Y. (2014). Talking about bio-fuel in the news. *Journalism Studies*, 15(2), 218–234. <https://doi.org/10.1080/1461670X.2013.809193>
- Klein, S. J., & Coffey, S. (2016). Building a sustainable energy future, one community at a time. *Renewable and Sustainable Energy Reviews*, 60, 867–880. <https://doi.org/10.1016/j.rser.2016.01.129>
- Kooij, H. J., Oteman, M., Veenman, S., Sperling, K., Magnusson, D., Palm, J., & Hvelplund, F. (2018). Between grassroots and treetops: Community power and institutional dependence in the renewable energy sector in Denmark, Sweden and the Netherlands. *Energy Research & Social Science*, 37, 52–64. <https://doi.org/10.1016/j.erss.2017.09.019>
- Krippendorff, K. (2004). Reliability in content analysis: Some common misconceptions and recommendations. *Human Communication Research*, 30(3), 411–433. <https://doi.org/10.1111/j.1468-2958.2004.tb00738.x>
- Krog, L., Sperling, K., & Lund, H. (2018). Barriers and Recommendations to innovative ownership models for wind power. *Energies*, 11(10), 1–16. <https://doi.org/10.3390/en11102602>
- Krohn, S., & Damborg, S. (1999). *On public attitudes towards wind power, 954*. Pergamon Press.
- Kumpu, V., & Kunelius, R. (2012). Attention, access, and dialogue in the global newspaper sample. In E. Eide & R. Kunelius (Eds.), *Media meets climate: The global challenge for journalism* (pp. 313–330). Nordicom.
- Langheim, R., Skubel, M., Chen, X., Maxwell, W., Peterson, T. R., Wilson, E., & Stephens, J. C. (2014). Smart grid coverage in U.S. newspapers: Characterizing public conversations. *The Electricity Journal*, 27(5), 77–87. <https://doi.org/10.1016/j.tej.2014.05.008>
- Linström, M., & Marais, W. (2012). Qualitative news frame analysis: A methodology. *Communitas*, 17, 21–38.
- Lyytimäki, J. (2018). Renewable energy in the news: Environmental, economic, policy and technology discussion of biogas. *Sustainable Production and Consumption*, 15, 65–73. <https://doi.org/10.1016/j.spc.2018.04.004>

- Magnusson, D., & Palm, J. (2019). Come together—the development of Swedish energy communities. *Sustainability* (2071-1050), 11(4), 1056. <https://doi.org/10.3390/su11041056>
- Mallett, A., Jegen, M., Phillion, X. D., Reiber, R., & Rosenbloom, D. (2018). Smart grid framing through coverage in the Canadian media: Technologies coupled with experiences. *Renewable and Sustainable Energy Reviews*, 82, 1952–1960. <https://doi.org/10.1016/j.rser.2017.06.013>
- Matthes, J., & Scherer, C. (2012). Diachronic framing effects in competitive opinion environments. *Political Communication*, 29(3), 319–339. <https://doi.org/10.1080/10584609.2012.694985>
- Meyer, N. I. (2004). Renewable energy policy in Denmark. *Energy for Sustainable Development*, 8(1), 25–35. [https://doi.org/10.1016/S0973-0826\(08\)60388-9](https://doi.org/10.1016/S0973-0826(08)60388-9)
- Ornetzeder, M., & Rohracher, H. (2013). Of solar collectors, wind power, and car sharing: Comparing and understanding successful cases of grassroots innovations. *Global Environmental Change-Human and Policy Dimensions*, 23(5), 856–867. <https://doi.org/10.1016/j.gloenvcha.2012.12.007>
- Oteman, M., Kooij, H.-J., & Wiering, M. A. (2017). Pioneering renewable energy in an economic energy policy system: The history and development of Dutch grassroots initiatives. *Sustainability*, 9(4), 550. <https://doi.org/10.3390/su9040550>
- Oteman, M., Wiering, M., & Helderma, J.-K. (2014). The institutional space of community initiatives for renewable energy: A comparative case study of the Netherlands, Germany and Denmark. *Energy, Sustainability and Society*, 4(1), 11. <https://doi.org/10.1186/2192-0567-4-11>
- Rochyadi-Reetz, M., Arlt, D., Wolling, J., & Bräuer, M. (2019). Explaining the media's framing of renewable energies: An international comparison. *Frontiers in Environmental Science*, 7. <https://doi.org/10.3389/fenvs.2019.00119>
- Semetko, H. A., & Valkenburg, P. M. (2000). Framing European politics: A content analysis of press and television news. *Journal of Communication*, 50(2), 93–109. <https://doi.org/10.1111/j.1460-2466.2000.tb02843.x>
- Sengers, F., Raven, R. P. J. M., & Van Venrooij, A. (2010). From riches to rags: Biofuels, media discourses, and resistance to sustainable energy technologies. *Energy Policy*, 38(9), 5013–5027. <https://doi.org/10.1016/j.enpol.2010.04.030>
- Seyfang, G., & Smith, A. (2007). Grassroots innovations for sustainable development: Towards a new research and policy agenda. *Environmental Politics*, 16(4), 584–603. <https://doi.org/10.1080/09644010701419121>
- Shehata, A., & Hopmann, D. N. (2012). Framing climate change: A study of US and Swedish press coverage of global warming. *Journalism Studies*, 13(2), 175–192. <https://doi.org/10.1080/1461670X.2011.646396>
- Skjølsvold, T. M. (2012). Curb your enthusiasm: On media communication of bioenergy and the role of the news media in technology diffusion. *Environmental Communication*, 6(4), 512–531. <https://doi.org/10.1080/17524032.2012.705309>
- Smith, A., Hargreaves, T., Hielscher, S., Martiskainen, M., & Seyfang, G. (2016). Making the most of community energies: Three perspectives on grassroots innovation. *Environment and Planning A: Economy and Space*, 48(2), 407–432. <https://doi.org/10.1177/0308518X15597908>
- Sperling, K. (2017). How does a pioneer community energy project succeed in practice? The case of the Samsø renewable energy Island. *Renewable & Sustainable Energy Reviews*, 71, 884–897. <https://doi.org/10.1016/j.rser.2016.12.116>
- Statistics Denmark. (2017). Flere bygninger opvarmes af varmepumper. In NYT Fra Danmarks statistik.
- Stauffacher, M., Muggli, N., Scolobig, A., & Moser, C. (2015). Framing deep geothermal energy in mass media: The case of Switzerland. *Technological Forecasting and Social Change*, 98, 60–70. <https://doi.org/10.1016/j.techfore.2015.05.018>
- Stephens, J. C., Wilson, E. J., & Peterson, T. R. (2008). Socio-political evaluation of energy deployment (SPEED): An integrated research framework analyzing energy technology deployment. *Technological Forecasting and Social Change*, 75(8), 1224–1246. <https://doi.org/10.1016/j.techfore.2007.12.003>
- Stephens, J., Rand, G., & Melnick, L. (2009). Wind energy in US media: A comparative state-level analysis of a critical climate change mitigation technology. *Environmental Communication*, 3(2), 168. <https://doi.org/10.1080/17524030902916640>
- Swedish Energy Agency. (2017). *Energiläget 2017*.
- Szulecki, K. (2018). Conceptualizing energy democracy. *Environmental Politics*, 27(1), 21–41. <https://doi.org/10.1080/09644016.2017.1387294>
- Veenman, S., Sperling, K., & Hvelplund, F. (2019). How future frames materialize and consolidate: The energy transition in Denmark. *Futures*, 114, 102473. <https://doi.org/10.1016/j.futures.2019.102473>
- Warren, C. R., & McFadyen, M. (2010). Does community ownership affect public attitudes to wind energy? A case study from south-west Scotland. *Land Use Policy*, 27(2), 204–213. <https://doi.org/10.1016/j.landusepol.2008.12.010>
- Wright, W., & Reid, T. (2011). Green dreams or pipe dreams?: Media framing of the U.S. Biofuels movement. *Biomass and Bioenergy*, 35(4), 1390–1399. <https://doi.org/10.1016/j.biombioe.2010.07.020>
- Wüstenhagen, R., Wolsink, M., & Bürer, M. J. (2007). Social acceptance of renewable energy innovation: An introduction to the concept. *Energy Policy*, 35(5), 2683–2691. <https://doi.org/10.1016/j.enpol.2006.12.001>

Appendix

Table A1. The table includes example quotes from newspaper items in all countries for all subframes. In a few instances in Netherlands, no items included one subframe, thus these areas are left empty below.

Frame	Subframe	Example quote Denmark	Example quote the Netherlands	Example quote Sweden
Economic	Economic opportunity (individuals)	<i>District heating consumers in Slagslunde save 29 DKK every day. (Dansk Fjernvarme (DK), 5-8-2015)</i>	The profit for the citizens [the members] is higher than the yearly interest one can get at the local bank. (Nederlands Dagblad (NL), 5-8-2009)	<i>For individuals, it is economically advantageous to buy into a wind turbine because it does not have to pay both energy tax and VAT. (Västerbottens Folkblad (SWE), 27-08-2005)</i>
	Economic opportunity (village)	<i>The profits from this are used for business development in the town. (Dagbladet Ringkøbing-Skjern (DK), 25-11-2013)</i>	The village is building up a considerable pot of money for themselves. (Leeuwarder Courant (NL), 19-2-2003)	<i>The hydro power plant generates revenue that can be used for development of the area. For example, a new community center has been built for using the money. (Lokaltidningen (SWE) 25-1-2012)</i>
	Negative economic impact	<i>The 24 neighbors of the planned wind turbines at Hvide Sande Nordstrand who have applied for compensation of loss of property value will soon receive a letter regarding a visit from the Danish Evaluation Authority, (Viborg Folkeblad (DK), 07-01-2011)</i>	One has to pay taxes for energy that is produced somewhere else. (de Stentor (NL) 29-9-2011)	<i>One shareholder tells Di Agenda that he agreed with the description that his investment would provide a secure return of 8% per year. This has not happened. (Dagens Industri (SWE), 23-5-2014)</i>
	Economic hindrances	<i>They were rejected on account of not fulfilling the requirement of a an annual turnover of at least four billion DKK. (Energiwatch (DK), 9-6-2015)</i>	<i>Building permits and land prices are too expensive nowadays. (Dagblad van het Noorden (NL), 26-1-2015)</i>	<i>With decreasing market prices on electricity, the budgets for wind cooperatives will not be as attractive anymore (Västerbottens-Kuriren (SWE) 6-8-2011)</i>
Environmental	Environmental friendliness emphasis	<i>Because houses without corners magically save 10-20% energy annually. (Dinby.dk (DK), 8-10-2012)</i>	The corporation stands for stimulating sustainable energy. (Leeuwarder courant (NL), 29-9-2011)	<i>The project helps reduce carbon dioxide emissions by 26.4 million kilos per year. (Västerbottens-kuriren (SWE), 3-7-2008)</i>
Social	Community	<i>Few complaints and a goodwill among the local citizens to enter in a co-ownership are what characterizes the project behind the three wind turbines that now stand at Hvide Sande Harbour. (Jydske Vestkysten (DK), 20-4-2015)</i>	Nobody is bothered by the windmill of Tzum, because it is owned by the inhabitants of Tzum. (De Volkskrant (NL), 11-5-2015)	<i>To spread the ownership is a way to increase acceptance for wind power (Nerikes Allehanda (SWE), 7-5-2014)</i>
	Network	<i>Vegger is now extending its district heating pipes towards the neighbors in the southeast (Nordjyske Stiftstidende (DK), 3-6-2016)</i>	Together with the board of the school's arrangements have been made to install solar panels at ten schools within the coming months (Almere	<i>In the proposal, it is pointed out that Sala and Heby municipalities have started a solar cell park through an economic association called "Solel i Sala Heby," where you can buy shares. This is seen as a good</i>

(Continued)

Table A1. Continued.

Frame	Subframe	Example quote Denmark	Example quote the Netherlands	Example quote Sweden
			Vandaag (NL) 4-10-2012)	<i>example of how public, corporate and private people work together for sustainable development. (Nerikes Allehanda (SWE), 25-03-2012)</i>
	Not In My BackYard (NIMBY)	<i>"Rape" of Denmark's visual environment (Berlingske Tidende (DK), 16-10-1997)</i>	<i>Gone is our beautiful horizon, gone is the beautiful setting sun. (De Weekkrant Goeree-Overflakkee (NL), 26-11-2015)</i>	<i>- Wind power is good, but not here, says Håkan. -What about the noise? And the TV-reception and bird life? Wonders Greta. (Västerbottens-kuriren (SWE), 8-3-2003)</i>
Conflict	Internal	<i>In this patronizing community filled with restrictions. (Weekendavisen (DK), 19-8-1994)</i>	<i>During the general meeting of the member last night, there were many objections against the plan to build a second windmill in Zutphen. (De Stentor (NL), 2-6-2017)</i>	<i>That decision violates the Association Act (Föreningslagen) and was not taken in a democratic way following the regulations of the association, which was also confirmed by legal expertise. (Västerbottens-kuriren (SWE), 25-11-2010)</i>
	External	<i>Now the shareholders demand a compensation of more than 17 million DKK. (Herning Folkeblad (DK), 14-3-2005)</i>	<i>Because of protests by various stakeholders, it can take forever to start the project. (Trouw (NL), 13-1-2011)</i>	<i>On several occasions, the neighbor has turned to the municipal environmental administration to stop the wood firing in the eco-village Solbyn. (Sydsvenskan (SWE), 23-1-2011).</i>
Political	Conflict	<i>Two wind power trusts have made a complaint regarding the Danish Energy Agency's financial requirements in the tenders for nearshore wind turbines. (Sjællands Nyheder (DK), 18-08-2015)</i>	<i>Not only citizens' initiatives, but also small, sustainable energy companies are complaining that the existing rules are counteracting. (Nederlands Dagblad (NL), 9-7-2011)</i>	<i>Gertsbäcks Kraft AB need more time to overrule the decision from the Land and Environment Court of Appeal. The court has declined permits to rebuild the power plant in Gertsbäcken. (Lokaltidningen (SWE), 15-2-2012)</i>
	Support	<i>We can state that there is a great support for the project from the side of the municipality. (Nordjyske.dk (DK), 11-01-2012)</i>	<i>The Municipal council loves it all. (BN DeStem (NL) 22-3-2012)</i>	<i>... the solar PV cooperative receives government subsidies of 40% of the investment, and the board decided on Monday night to start building a plant of at least 1,500 square meters with a maximum limit of 2,500 square meters in early 2013. (Upsala Nya Tidning, (SWE), 29-08-2012)</i>
Local development	Sustainable	<i>Sustainability and ecology have become important concepts for the citizens in Vegger. (Nordjyske.dk (DK), 11-07-2009)</i>	<i>All the members of the cooperation invest in RE by lending money in order to build wind and solar parks. (De Weekkrant Goeree-Overflakkee (NL), 10-02-2016)</i>	-

(Continued)

Table A1. Continued.

Frame	Subframe	Example quote Denmark	Example quote the Netherlands	Example quote Sweden
	Liveability	<i>The small community has almost merged with the town of Torup and has prevented Torup from wasting away since construction of the first house commenced in 1990. (Berlingske Tidende (DK), 11-02-2007)</i>	<i>The profits have been used to refurbish the community center. (Leeuwarder Courant (NL), 19-02-2003)</i>	<i>Grannäs intresseförening was founded in order to take stimulate local interests and to support viable enterprises and a vibrant countryside in the villages Grannäs, Karlslund, Karlsgård and Risnäs. (Västerbottens Folkblad (SWE), 25-2-2009)</i>
Innovation	Technological	<i>The project is innovative because never before has such a big plant with a seasonal storage linked to a heat pump been planned. (Nyhedsbladet Dansk Energi (DK), 18-05-2009)</i>	<i>This village is one of the 12 testing grounds of smart grids. (Dé Weekkrant (NL), 23-11-2016)</i>	<i>Add to that solar heating on the roofs, environmentally friendly building material, urine separating toilets, and green electricity, and you understand that this area neither was or is like other areas. (Enköpings-Posten (SWE), 29-10-2008)</i>
	Social	<i>The little eco-village can very well be a foretaste of a forward-thinking community. (Berlingkse Tidende (DK), 17-09-2000)</i>	<i>We now use all knowledge and experience – technical, social, communicative, fiscal and legal – for similar projects. (Dagblad van het Noorden (NL), 12-2-2016)</i>	<i>In November last year a car pool was started as a demo project in Understenshöjden in Stockholm. The project was a success and now HSB want more housing cooperatives try the same concept. (TT (SWE), 12-3-1998)</i>
Technology	Traditional	<i>It is known technology, and we have the necessary resources. (Nyhedsbladet Dansk Energi (DK), 28-09-2009)</i>	–	<i>Since the tower is only 55 meter high, and thus half the height compared to others in the land, it is both more stable and can be used despite the cold weather. (Sundsvalls Tidning (SWE), 29-1-2010)</i>
	Problems	<i>Defects at, so far, two coupling units cause operational problems at the country's biggest wind farm. (Ingeniøren (DK), 10-08-2011)</i>	–	<i>The reason for the high energy consumption is heat losses through windows and walls and losses in the heat distribution system (which is a culvert system). (Svenska Dagbladet (SWE), 14-05-2000)</i>