Assessing the transformative potential of renewable energy cooperatives: lessons from a strategic dialogue in the Netherlands

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Short abstract:

Energy cooperatives envision and manifest an alternative way of organising within the energy system. Yet, it is uncertain whether they are able and willing to engage in a greater system transformation. This paper presents insights from a strategic dialogue between actors from the cooperative energy field in the Netherlands.

1. Introduction

Motivated by the wish to contribute to the wellbeing and health of the future generations and the (local) environment a number of renewable energy initiatives have been proliferating in the Netherlands. This growth is arguably further driven by a dissatisfaction with the state of the energy market, along with financial drives (Oteman et al., 2017; van der Schoor et al., 2016). In 2017 there were about 392 renewable energy cooperatives in the Netherlands, 20% more than the year before, and the number keeps rising. Undeniably, renewable energy cooperatives envision and manifest an alternative way of organizing within the energy system (and beyond) that is predominantly organized in a centralized, market-driven way based on large-scale fossil resource use. Characterised by a "Do-it-Yourself" culture, cooperatives self-organise and exhibit leadership for the establishment of renewable energy projects in their local environment, thereby contributing to the creation of a new sector. Cooperatives in this way present an interesting niche in the broader context of the ongoing energy transition.

A number of scholars tried to shed light from multiple perspectives on the role and significance of energy cooperatives in the transition to sustainable energy system and low-carbon societies (e.g. Walker and Cass, 2007; Walker and Devine-Wright, 2008, Rogers et al., 2008; Seyfang et al., 2013&2014; van der Schoor et al., 2015&2016; Smith and Raven, 2012; Smith et al., 2015). Yet, despite this wide interest on the topic, and while some scholars take a "*cautiously optimistic*" stance on their growth and development (e.g. Seyfang, et al., 2013), their *transformative potential* (impact) on the dominant institutions[1] remains unclear. This might relate to the inclination of the energy cooperatives towards self-organisation and direct action at their immediate environment and not necessarily having a broader societal mission. This in practice results in higher variety, but it may also be seen as contributing to fragmentation in energy domain. Previous research has shown that such initiatives besides a shared direction and coordination, also lack the capacity to interact in a strategic way with the dominant regime (Seyfang et al., 2014; Proka et al., forthcoming). And this lack of a shared vision and strategy may compromise the potential of the emerging sector to transform or replace the dominant energy regime.

So while the Dutch cooperative energy movement appears to have a significant role in mobilising local support for and developing local production of renewables, the question arises what role the cooperative energy movement plays or can play in the energy transition at the national level, and how this role could be maximized. The aim of this paper is thus *to understand how the cooperative movement, comprised by different dispersed initiatives, could become a significant source of transformative agency shaping the ongoing energy transition.*

To address this question we turn to the literature on sustainability transitions. The research field on sustainability transitions focuses on processes of fundamental systemic change, like the energy transition, and how they unfold (Loorbach et al., 2017; Markard et al, 2012). Transitions have been described as "*evolutionary revolutions*" that emerge over decades (Rotmans et al., 2001; Loorbach, 2010; Loorbach et al., 2017). According to the theory, transitions come about as the result of processes at multiple levels: external changes and trends at the *landscape level*, encompassing exogenous factors like demographic, political and economic change, put pressure on incumbent *regimes*, the dominant

[1] understood here as "*the formal and informal (explicit or implicit) rules of the game that shape the behaviour of actors in society*" (Hisschemöller and Bode, 2011, p.14).

functioning of the system, thereby causing internal tensions, which enable the increasingly competitive alternative configurations, emerging in *niches,* to gain momentum and break through (De Haan, 2010; Kemp et al., 1998). Innovations emerging in the niche, gain momentum by increasing their performance through processes of learning[2], but also by growing legitimacy and access to resources by articulating precise visions, crucial for acquiring the support of networks of (powerful) allies (Geels and Raven, 2006).

While transition theory does not exclude the possibility of a niche to outcompete the regime through direct confrontation and rupture, a transition typically happens when an incumbent regime destabilises, and more proactive actors from it start to collaborate or join forces with successful actors in the niche to work towards new norms, standards and routines (cf. Wright, 2010). Hypothetically this requires a type of agency that is not only able to work together beyond their existing networks and routines, but also a type of agency driven by the vision to contribute to change beyond one's own direct environment, community or sphere of influence. To that end, change management converges on the importance of an orchestrating vision for all agents interested in "divergent" change, i.e. change that diverges from existing institutions (Beer, Eisenstat, and Spector, 1990; Judson, 1991; Kotter, 1995; Rogers, 1962 cited in Battilana et al., 2009). And although different labels may be used by different scholars, the undertaken activities may be clustered in three main groups: a) the development of a vision that generates a sense of urgency, and presents a proposed change; b) the mobilisation of people for that vision; and c) the process of motivating people to achieve and sustain it; this process is not linear but intertwined (ibid).

In this paper we focus on what is needed from the perspective of the niche to be able to collaborate with the regime in a way that it has a transformative impact on it. Our starting hypothesis has been that the development of a shared collective vision and a strategy for attaining it, could help increase the initiatives' collective and individual impact. In fact, the coordination among the different initiatives is thought as a crucial step for enabling the initiatives to move out of the niche and accelerate the energy transition in the Netherlands. For this reason, we have organised together with the national interest group for local renewable energy "ODE Decentraal" a dialogue for the deployment of a medium-term strategy (2018-2025) with an extension to 2030. For this dialogue we follow a transition management approach, as a practical action research framework which helps analyse and stimulate transformative change (Loorbach, 2010). Specifically, to explore our overarching question on the transformative potential of the cooperatives, our overarching research question has been broken down in the following sub-research questions:

1. What vision does the cooperative energy movement have, regarding its contribution to the broader societal energy transition?
2. What barriers and opportunities do they face in realising this vision?
3. What governance interventions – at the sector, national, provincial and municipal levels – are necessary to realise the vision?

[2] With *social learning* we refer to a process in which people exchange and discuss knowledge and ideas about what they perceive as reality, and as a result, they get new insights, develop shared mental models, form new relationships, and develop the capacity for collective action (Beers et al., 2014).

This paper presents and analyses our intervention and the resulting transformative agenda as developed by the actors in the established strategic arena. Facilitating such as dialogue, we aspired to empower the actors to become more strategic and collaborative. The time interval since the dialogue, also enables us to draw some lessons about the impact of our intervention on the processes of the energy cooperatives. In what follows, first comes a brief presentation of our research approach and methodology (Section 2), followed by the background of the cooperative movement in the Netherlands (Section 3). We proceed with our findings concerning a) the identity of the cooperative energy movement and its qualitative characteristics, b) the identified barriers and opportunities for pursuing its vision, and c) the concrete strategic vision of the movement for 2025-2030, along with the implications for governance interventions (Section 4). Section 5 discusses the overall results of the strategic dialogue, also considering the activities undertaken by the initiatives pursuing the drafted action plan (spin-offs). Section 6 draws conclusions and presents possible future research avenues.

2. Research approach and methodology

2.1. Transition management as a kind of action research

Action research is a kind of collaborative research which is anchored in a number of different traditions, such as political economy, pragmatic philosophy, community development, education, participatory rural development. It has been defined as "*the collaborative production of scientifically and socially relevant knowledge, transformative action and new social relations through a participatory process*" (Wittmayer and Schapke, 2014, p.484). Both the process and the outcomes of action research address pressing real-life problems by enabling empowerment, democracy and sustainability (ibid).

As an action research method, transition management does not imply controlling transitions in a top-down manner. Instead, transition management is a governance approach which aims at influencing a societal (sub)system through problem structuring, experimentation and (social) learning (Loorbach, 2010). The underlying hypothesis is that a shared understanding of the origin, nature and dynamics of transitions in certain societal domains will empower actors to prepare and better adapt to such dynamics in order to influence their speed and direction (Loorbach et al., 2015). Transition management involves multi-actor interactions at three levels: a) strategic (vision development and strategic goal-formulation), b) tactical (agenda building and networking) and c) operational (experimenting and implementing) levels (Loorbach, 2010). This practical research framework has led to multiple multi-actor governance experiments, which have provided scientific reflection and insight in transition dynamics, actor perceptions and strategies, simultaneously helping the actors themselves to develop visions, strategies and interventions in their contexts (ibid; Frantzeskaki et al., 2018).

A transition experiment may be understood as "*an innovation project with a societal challenge as a starting point for learning aimed at contributing to a transition"* (Van den Bosch and Rotmans, 2008, p.13). The broader aim of our experimental intervention with the strategic dialogue has been to support the transformative potential of the cooperative energy movement, by the means of helping to build the strategic capacity necessary to overcome the persistent societal problems caused by the unsustainability of our energy system. We explore how to increase the transformative potential of energy cooperatives, in a "*transition arena*" process, whereby we pay attention on the different dimensions of this social innovation as identified by Proka et al (2018). Hence, our focus goes on technological as well as broader institutional aspects, like policies and organisational logic.

A transition arena is designed with the aim to create a shared discourse, an ambition, and an agenda for moving towards the aspired direction. The creation of new coalitions and partnerships that will enable "*building up continuous pressure on the political and market arena to safeguard the long-term orientation and goals of the transition process*" is actually a central idea behind transition management (Loorbach et al., 2015, p.56). Thus, the actors invited to participate in such processes should share competences, like an open mind and the ability to communicate and 'anchor' the results at a strategic level (Loorbach, 2007).

Therefore, for designing the transition arena, the "*transition team*" comprised by the three authors, had elaborate strategic discussions on the problem, the context, whom to involve and what the learning goals should be. The specific goals of this transition arena have been the following: (1) a shared understanding of dynamics within the energy transition and the role of the cooperative movement therein; (2) a shared sense of direction, and (3) a sense of empowerment for transformative action. In the next section we present the specific research process that we have followed.

2.2. Action research process

The *transition team* started its process in September 2016. Following an official invitation, the people that expressed initial interest for the dialogue were interviewed in relation to the very idea of organising a strategic dialogue from and for the bottom-up and the development of a vision, an action plan and the exploration of a possible supporting coalition for the renewable energy movement. In this interview, the invited actors apart from their willingness and availability for the meetings, were also asked to suggest other potential participants. In that, the interviewees were asked whether the dialogue participants should strictly belong to the bottom-up, or whether other actors involved in the field could also be invited. Through such a snowball method, in total 22 people were identified. After the interviews and within group communication, 15 people committed to participation. This group consisted of representatives of energy cooperatives, cooperatively developed energy suppliers, as well as the national knowledge platform of the field. It should be mentioned that originally also commercial actors, i.e. start-ups and established project developers were invited, however, members from the energy cooperative field expressed the need to reflect among peers about the movement's strengths and weaknesses.

The participants of the dialogue committed to the "rules of the game", encompassing the roles and responsibilities of all parties involved, as drafted by the second author of this contribution. For instance, in terms of confidentiality, the process followed the so-called Chatham House Rule: participants are free to use the information obtained in the dialogue, but they may not disclose the specific source of the information, the affiliation of the source or that of other dialogue participants. Moreover, the rules made clear that full consensus was not sought; instead, diverging arguments are welcome as they may highlight additional insights.

The dialogue followed a Participatory Backcasting design. Participatory Backcasting is an intersubjective participatory scenario approach proposed for long-term complex change. In contrast to forecasting approaches, where predictions of a future state are conducted, backcasting first identifies a particular future end-point, and then works backward from it to the present (Hisschemöller and Cuppen, 2015). Encouraging reflection and 'out-of-the-box' thinking, makes the approach useful in investigating complex problems and addressing far reaching changes (Robinson, 1990; Dreborg, 1996). Backcasting may help better visualise long-term transformations, and identify the involved pathways of high uncertainty (Quist, 2007). Crucial for strategizing, this method allows for exploring the implications of

alternative pathways and the values that underlie them, as well as the feasibility of the alternative visions developed, along with the required interventions for reaching them (Robinson, 1990; Robinson 2003).

Four meetings took place between December 2016 and mid-March 2017. The first meeting focused on the development of an ambitious qualitative and quantitative vision. To facilitate reflection and smooth confrontation with the vision and its robustness, the meeting results were communicated to the participants for comments or revisions. The second meeting explored the opportunities and barriers for realising the cooperative vision through solar, wind (onshore and offshore), and sustainable heat projects. During the last meeting, the discussion focused on consolidating the strategic vision, and the development of a number of governance and policy interventions for strengthening the feasibility of attaining it. Due to time constrains, it has not been possible to develop a concrete time table for the action plan developed. Yet, between the second and the third meeting, an extra meeting was initiated by the participants, aimed at the "translation" of the identified opportunities and barriers into policy proposals for the (at that time to-be formed) new government. In fact, the entire process had been accelerated in order to take advantage of the "good timing" for the presentation of the dialogue outcomes.

To facilitate the data analysis, the meetings were transcribed, and based on the transcriptions, reports were compiled and circulated among the participants for verification and additional input. Next, the findings were discussed between the authors, and analysed based on the research framework. Additionally, at the end of the dialogue process a report was compiled for advice to the movement for cooperative renewable energy.

3. Background

The section that follows shortly presents the history of the cooperative energy movement within its institutional context in the Netherlands.

The Dutch energy regime is deeply connected to the fossil fuels industry. Since the discovery of large gas reserves in Slochteren in 1959, gas revenues have, directly and indirectly, been an important factor in the national budget (Rijksoverheid Miljoenennota 2017). As a consequence of the discovery of the large gas field, the Dutch gas mining company NAM gained a central position in the discussions about how energy production develops in the Netherlands.

As pointed by Kooij et al. (2018), since the discovery of the gas field, energy was seen as an economic commodity to be exploited by the state. Yet, the national government had little to do with the energy system: electricity provision was taken care of by regional companies (often owned by municipalities or provinces), while the gas sector enjoyed the provision of the national gas grid by the state and was left independent. At that time, the government invested in nuclear power (ibid).

After the oil crisis, the Dutch society was faced with its strong dependence on foreign import of fossil fuels. The previous dominant discourse of economic growth and technological opportunities was challenged by voices of anarchism, feminism, and radical environmentalism. In the context of emerging concerns about the environment, the public discourse initially focused on the undesirability of nuclear energy (vis-à-vis nuclear waste, safety and radiation concerns), and slowly the debate shifted to green alternatives and energy saving, while the belief in economic growth begun to decline (ibid). Yet, despite

the public opposition, the Dutch government continued to invest in nuclear power to reduce its international energy dependence (ibid).

Driven from frustration about the unchanged energy system, a number of bottom-up initiatives begun to emerge. Specifically, the first cooperatives appeared in the late 1980s when people realised that a cooperative structure could enable the private ownership of wind turbines. The 1989 Electricity Act gave grid access to the cooperatives also guaranteeing a standard price. Consequently, the early 1990s noted a moderate increase in the number of local initiatives attributed to a mix of environmental concerns and the wish for local independence and income for the local community.

The liberalisation of the energy market in the Netherlands that followed (late 1990s and early 2000s), brought additional opportunities for the cooperatives, as energy suppliers could profile themselves as "green". The emerging initiatives were different from the previous wind cooperatives, as the new wave was very ambitious and dedicated to collectively saving, producing and supplying green energy; their motto appears to be "*energie van, voor en door ons zelf*", i.e. energy from, for and by ourselves (Oteman et al., 2017; Kooij et al., 2018).

While the government withdraws from the energy sector, and as major energy companies (Nuon and Essent) get fully privatized by multinationals, the new movement appears to comprise "*a reaction to scaling up, privatization and liberalization of the energy sector*" (Kooij et al., 2018). Their discourse focusing on energy-independence and the notion of the energy transition, may contrast with the dominant framing of the energy issue by the government that stresses energy security, the competitiveness of renewables and international trade. Yet, their rapid expansion may be suggest an increase of legitimacy for the idea of collaborative action and active citizenship for the issue of energy.

4. Towards a strategic vision and a transformative agenda

4.1. The cooperative energy movement in the Netherlands and its future

As the focus of the first meeting was on illuminating the vision of the initiatives about their collective future, naturally, the discussion touched upon the very identity of the movement and the principles characterising it.

The discussions showed that the cooperative energy movement can be best described with the concept of energy democracy. Energy democracy is a political, economic, social, and cultural concept that links the technical characteristics of the energy transition to citizen participation and democratic control. The cooperatives facilitate the transition to a sustainable system, in which the existing gap between producer and consumer declines, and end-users (e.g. citizens or companies) become (co-)owners of their energy supply; their role stops being passive. The cooperatives design projects for the deployment of renewable energy infrastructure, which is, then, managed, (partially) financed, operated and, at times, even maintained by the end-users themselves. Such initiatives aim to advance the transition to a system characterised by (decentralised) generation and attentive consumption of renewable energy, explicitly combined with local ownership and democratic control. Specifically, according to the dialogue participants, the cooperative energy movement in the Netherlands aims to make the energy system more (a) sustainable, (b) decentralised, and (c) transparent, while giving back to the end-users the (d) ownership and (e) control over the development and management of the energy infrastructure.

For the dialogue participants, the energy transition is more than *just* energy: it is about the egalitarian distribution of resources and power. The cooperative approach integrates environmental and social concerns by tackling urgent energy issues, while pursuing systemic change. Therefore, the energy transition involves a new type of economy where the financial resources for energy stay in the community and get re-invested according to the local needs. In this way, the renewable energy capacity installed in their environment strengthens the local communities and, in fact, the energy transition may become a vehicle for wider system change that may enable people to reclaim their power.

For this to happen, three levels for the involvement of people in a cooperative have been described. One level is the *transactional*, when one becomes a customer of a cooperative. Another level is the *relational*, when one gets a share or provides a loan to a cooperative for the development of a project. The third level, is the *goal-oriented*, when people actually share a vision and the aspiration to meet a specific goal. It has been argued that all levels are crucial for a "*deeper and longer-term connection with members*." Although some heated discussions took place, in general the cooperative energy movement in the Netherlands is oriented towards combining ownership of RES with prosumption yet this is not always possible (see the discussion on wind in the next section).

This ambition for greater structural change is the principal difference between the energy cooperatives and the other renewable energy initiatives. As put by one of the dialogue participants "*the cooperatives need money to make the transition, while they (i.e. commercial initiatives) need the transition to make money*". For the cooperatives money is important for having the systemic impact they aspire. As argued, when the cooperatives pursue profit, it is "*profit-for-purpose".*

Key element of this purpose is the development of renewable energy projects. In 2017 only 1 PJ (278,000 kWh) was cooperatively generated in the Netherlands; this almost entirely through wind. Nevertheless, the dialogue participants point that the energy transition has just started, and maybe the energy cooperatives still make "baby steps", yet, the acceleration is exponential and the transition unstoppable. In fact, during this first meeting the participants expressed their initial thoughts regarding the contribution of the movement in terms of renewable energy generation capacity.

However, the energy transition beyond kWhs involves people. And despite the fact that the number of energy cooperatives keeps increasing (Schwencke (2017) counts 392 energy cooperatives in the Netherlands), the majority of people are not interested in the issue of energy. As pointed by one of the participants, a great number of people "*have never changed their energy provider*". Thus, mobilising these people either as members, co-workers or simply customers will be difficult.

The participants agreed that the cooperative energy movement will need to collaborate with all parties that may help to realize their high ambition. The movement in the Netherlands should professionalise to manage to mobilise enough people, able and willing to implement "difficult" projects, which may require significant resources. Yet, no distraction from the core values of energy democracy should be permitted: the focus should remain on bottom-up cooperation for the development of energy projects that benefit the local communities.

While the first seeds were place during this first meeting, the quantitative vision was consolidated at a later stage. In the next section, we present some highlights of the discussion on the barriers and opportunities identified by the dialogue participants. The discussion is grouped in two parts: the area of solar and wind energy, as well as the area of sustainable heat.

4.2. Barriers and Opportunities of the cooperative energy movement

4.2.1. Solar & wind energy

During the second meeting of the strategic dialogue, the participants discussed the possible barriers and opportunities for the cooperative deployment of renewable electricity (solar and wind) and heat in the Netherlands. We start with the findings on the former. The elaborate list of issues that emerged may be found in the Appendix.

The participants are rather confident about the prospects of solar energy deployment by the cooperative movement in the country (see Table 1 in the Appendix). In contrast, the smaller list of wind-related issues, possibly reflecting the limited experience of cooperatives in wind projects, may suggest a less optimistic stance towards wind project development (see Knowledge base in Table 2).

Apart from technological innovation, the dialogue participants mentioned several organisational concepts for the deployment of solar. For instance, regarding the need for roofs, one idea expressed involved reaching out to different companies, e.g. super markets, for them to make their roofs available for the installation of solar Photo-Voltaic (PV). The cooperatives could then mediate between electricity end-users and the companies, developing projects and, therefore receiving a financial return.

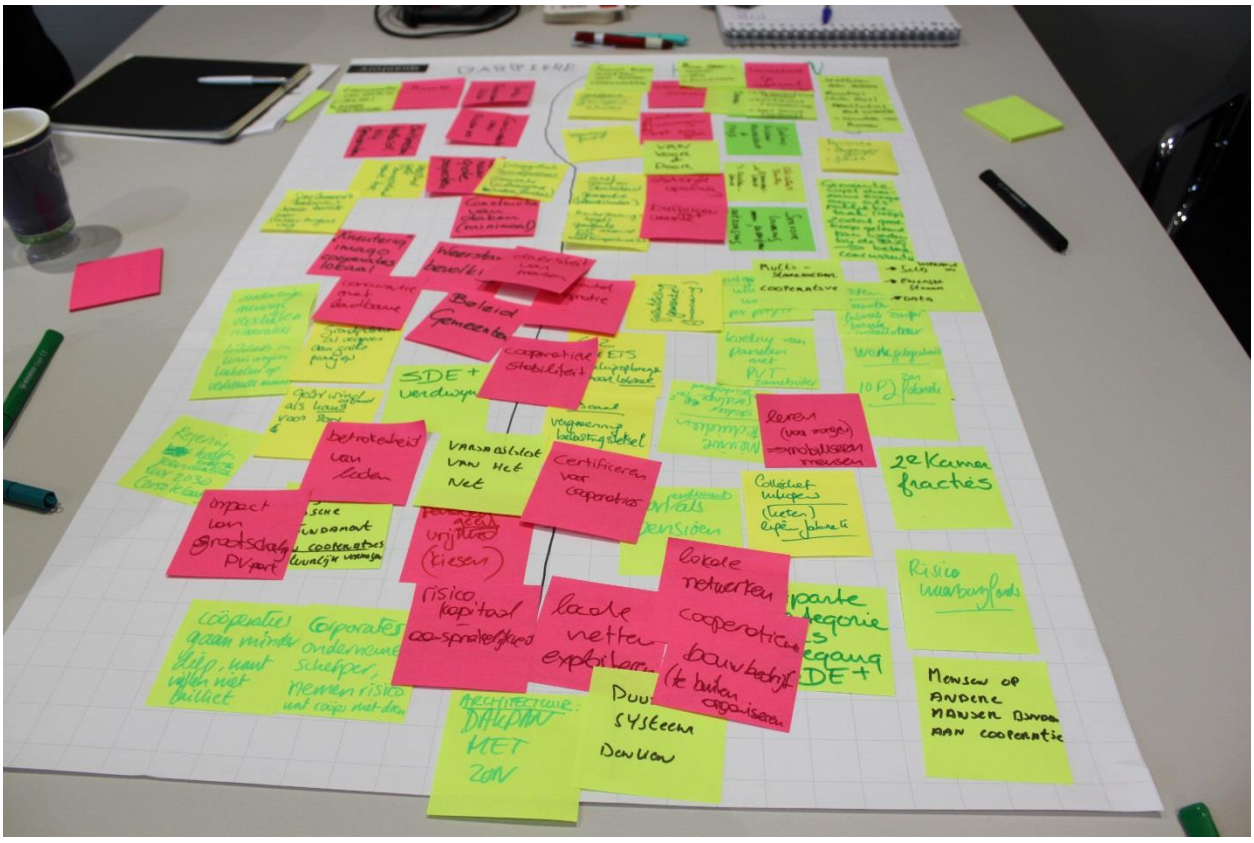

Figure 1: Barriers and opportunities for the cooperative development of solar projects

The discussion also focused on the (far) origin of the solar panels that the initiatives use in their projects. A number of people argued that instead of having a third supplier, usually from China for solar PV or from Denmark for wind turbines, the movement could also initiate its own factories in the Netherlands (see Sector structure in Table 1 and 2 in Appendix). In fact, it was argued that the initiatives should take

care of the production, financing as well as the installation of the renewable energy infrastructure; for this cooperation and coordination is necessary. As one of the dialogue participants notes:

"Deltawind is not going to set up a construction company on its own, nor will the Windvogel. That risk is too high, but if we share the risk together, we may ultimately have a construction company together, which may facilitate services for our members."

Yet, opposition to this point also emerged. Specifically, other participants pointed that the movement should not become a "*club*" that does everything alone. Instead it should seek for collaboration with other actors of the "big society". In relation to this collaboration, another tension that emerged involved the trade-offs regarding the possible support of local suppliers vs. taking advantage of economies of scale through partnerships with bigger suppliers. During the discussion it was suggested that "*the rollout (of the technology) should take place on a large scale, while its operation and management decentralized"*.

Another topic that was discussed in both solar and wind tables related to the fact that energy is a non-issue for the majority of people. Hence, it was argued that the cooperative approach may be crucial for getting people interested. To do so, strict control might be necessary. "*As with cars, if you want to drive a car through beautiful nature areas, you may get a lot of animals dead (…) that is all about. Similarly (on the topic of energy) you could also think that if you want to necessarily have all those devices that need 3000 kWh and then (you also want) an electric car, then you have to do something for that; this (energy) is not for free. For this reason, it is necessary to have (cooperatives as) a vehicle that people are involved in."*

The role of the local authorities are considered as quite important (see Policies and political power in Table 1 and 2 in Appendix). When it comes to wind energy, there seems to be an agreement that as one participant pointed "*government is an obstacle*"; often also at municipal and provincial level. The dialogue participants argue that cooperatives are not (yet) in the consciousness of aldermen or officials when it comes to wind project development. "*I was already three years ago talking to the municipality, about them taking our energy. Well, that was seen as a good idea, but it took another two years. It does not get through yet, it is not in the system…"* It is only in some places that it seems that the connection works; some municipalities have actually given priority to cooperatives for the development of wind in their area.

Overall, cooperatives need to professionalise and earn some money from their project development so that they can, in turn, hire project managers to develop new ones. Interestingly, wind development is considered as having a recursive relationship with the growth of the cooperatives. In fact, "*members' growth is important for us to be able to realize things (i.e. projects) and realize things is important to get those members growth"*. Therein the role of developing a wind project is crucial.

Nonetheless, during the meeting, different perspectives emerged as regards the cooperative development of offshore wind projects. While some participants argued that the deployment of offshore wind demands significant financial resources and expertise that the cooperative lack, others pointed that this area should not be left to (multinational) commercial developers, because in this way resources collected from every energy consumer (through the energy tax) will be channelled to powerful companies.

While one perspective argued that even the cooperatives with long experience in onshore wind development cannot cope in the offshore context, some others argued that more trust should be placed on the knowledge of the local community: "*I think those fishermen know exactly where the wind is… they know those places... I think your fishermen know a lot more about the North Sea than The Hague*."

In contrast to large-scale offshore wind, the past period small-scale "village" wind-turbines have been emerging. The participants discussed that despite the fact that they may seem as a "friendlier" alternative, they are inefficient, which raises again the question of space, which due to the inefficiency increases further. And while some argued that more locations may become available, others pointed that resistance to them may actually be higher due to the fact that they are coming closer to peoples' vicinity.

In fact, while the cooperatives can develop local support, they may also function as a vehicle for democratisation. As pointed, being active in a cooperative "*you determine yourself as a neighbourhood where a wind turbine does or does not come… That is beautiful; that there is a cooperative that says, we are going to decide where our limit is. That is energy democracy*!"

Furthermore, the discussion on the wind table, focused on whether the cooperative movement has succeeded in ensuring that generation and consumption of the cooperatively generated electricity are linked: has the movement succeeded in establishing prosumption or has it solely become a vehicle for project developers to go through the permit procedure?

It was suggested that wind cooperatives should ensure visibility, because wind has an enormous capacity to mobilize mass and capital for achieving substantial sustainable energy generation at sight distance. Hence, one perspective claimed that renewable energy production does not need to be directly connected to consumption; the crucial link should be between visibility and involvement. *"The interesting thing about what we are doing is that I have people (as members) who develop their roots in the region and derive pleasure from it. For me it is not about realizing production out of view, because then we become exactly the same as Shell, who are also in full production."* It was argued, that while an energy transition is wanted, "*everyone must take their own share on it*".

Yet, others pointed that visibility is not enough; for some participants it is crucial to link a project's financing with a concrete transaction. *"I have studied cooperatives all over the world for years. I have seen them flourish, I have seen them fall over. There is one reason why a cooperative succeeds, the same reason is why a cooperative fails: that is linking financing and transaction". Adding:* "*you do not invest because you receive money from the wind turbine, but because you receive power from the wind turbine*…. A*s soon as we start making it possible for people to become customers and not members, as long as one may invest without receiving electricity, then it goes wrong. It's just very simple.*"

In line with this someone else explains: "*you may be very much involved transaction-wise until you get a better offer, and then you will do your transaction there.*" It is argued that the involvement does not last long at a transactional level and renewing it requires high marketing budget, which local energy cooperatives lack. This is why the relational level is important, strengthened by a goal orientation. "*To have a cooperative structure that can tackle those 3 levels, the transactional, relational and goal-oriented level, makes it strong.*" This is seen as "*the real strongest unique selling point"* of the initiatives as long as "*we know how to manage it*" as pointed.

Nevertheless, not all energy cooperatives employ a business model where the investors or owners of the sustainable installations can actually use the self-generated energy. This relates to choices made in the (recent) past and the availability of certain support schemes. But the very principle of always pursuing such deep involvement of members was questioned by other dialogue participants. It was stressed that producers' cooperatives may also exist: "*I think that you do not have to separate it that strictly"*. This links back to the discussion about the purpose of the movement. "*What is bad about having double objective? Democratization and sustainability? Half of the movement is for sustainability; and I think that the goal of democratization is great, but not the most important thing."* In line with this it was argued that collaborating with an "impact investor" that consciously wants to put money on a cooperative project has nothing bad. "*You may say that the relationship is looser but he has consciously chosen to put his money in that; that also has its value. (..) I think that a threat for the movement is the strong focus on the ideal model*". While this tension has not been completely resolved, the working compromise was that even when the deep involvement of people appears to be the "ideal", not all cooperatives need to aim for it.

4.2.2.**Sustainable heat**

The discussion about heat focused mainly on the transition from gas to local sustainable heat sources (e.g. biomass), and, in their absence, to all electric options. There was an agreement that the responsibility and control over the heat networks to be formed should be taken locally. Yet, their arrangement was acknowledged as difficult to materialise through community initiatives; it is more difficult to mobilise the required expertise and knowledge for heat than for electricity. There is the need for learning from existing experiences.

During the discussion, the large differences between urban and rural areas were stressed, pointing that in the latter it is often not possible to build a heat network. In such contexts, while more opportunity may exist for energy saving measures, the financial cost also increases significantly, at times at a prohibiting level.

Overall, the role of the grid operator on the deployment of heating networks was seen as crucial, given its vast expertise. In fact, the network operators have, in part, already taken the lead in the transition away from natural gas. Yet, the lack of transparency regarding network costs, hinders the possibility of assessing as to whether other alternative heating solutions are cheaper.

What follows is the concrete vision and action agenda that has been discussed during the last dialogue meeting(s).

4.3. The strategic vision of the movement and the implications for governance interventions

The direct outcome of the dialogue process was a concrete consolidated vision and a transformative action agenda with a number of tactical measures for attaining it.

4.3.1.*The strategic vision of the cooperative energy movement*

The dialogue participants converged on an ambitious vision as regards the contribution of the cooperatives on the energy transition in the Netherlands. Specifically, the cooperatives pledge to realize 25 PJ (7 billion kWh) of sustainable energy production and savings in the Netherlands until 2025. This may be translated to about:

- sustainable heat for 200,000 households: this equals to energy savings of more than 5 PJ (1.5 billion kWh);

- generation of electricity through more than 10 million solar panels (of an average capacity of 300 Wp): this yields more than 10 PJ (3 billion kWh);
- generation of electricity through 250 wind turbines (of an average capacity of 5 MW): this also yields around 10 PJ (3 billion kWh), and,
- the involvement of 1 million households in a cooperative either as an investor or as a buyer of collectively generated electricity or heat.

The convergence of the cooperatives in this vision is important as it supports the creation of the feeling of collective agency for the contribution to the energy transition. In fact, such a strategic vision also gives the movement the feeling of legitimacy for engaging with the regime for its transformation. To materialise this strategic vision the participants also agreed on a number of actions, within and beyond their sector.

4.3.2.**Transformative action agenda**

Cooperative energy sector

To make a greater contribution to the sustainability of the Dutch energy supply, participants acknowledged that the energy cooperatives will have to get involved in much more and especially larger decentralized projects. At present, too little expert manpower is available for this. It is recognized that the organisational structure and management capacity of the cooperatives is far from ideal. Niche internal tactical measures for the short term involve:

- a Development Fund through which the preliminary phase of (large) projects can be (pre-) financed;
- a course for training and education for people who want to contribute to project development and management of cooperatives;
- a certification scheme for local energy cooperatives aimed to prevent proliferation and commercial misconduct.

When it comes to the policy recommendation to the authorities, the agreed action points may be located at three levels: national, provincial and municipal.

National government

At a national level, it has been agreed that the policy package should address the following:

1. The national government should facilitate an energy awareness campaign in which civil society organizations, citizens and businesses will come together to coordinate with the national government.

2. The national government should clarify that all the available options may be used for making the energy supply more sustainable. Therefore, cooperation should take place for wind energy development where it is socially acceptable.

3. Energy cooperatives are given the opportunity to (co-) exploit wind at sea.

4. From a citizen action perspective, (environmental) taxes help the energy transition. An action perspective means that those involved (citizens and businesses) can avoid or limit cost increase. The tax relief scheme (introduced by the previous cabinet) is an example of a scheme whereby the parties involved can decide on their own about how to use their money. This arrangement is still underutilized and can be improved in a number of ways: (1) increase of the energy tax range for private individuals (see point 6) may lead to (2) the use of the scheme by more consumers (companies) (3) widening the

postal code tax relief scheme (‘postcoderoos' in Dutch) to an 'area scheme', so that more local wind projects can be developed cooperatively. The energy commissioner[3] should ensure that the unnecessary restrictions are going to be removed. In the long term, the scheme could (possibly) replace the tax relief scheme, including parts of the net-metering grand (SDE+).

5. Special attention is given to (the consequences of) the heat transition. The cooperative movement participates in the Green Deal for Gas-free Districts and for this has designed a document to present its offer to the Netherlands (ODE Decentraal, 2017-b). The idea behind it is to set goals at regional level and to influence the so-called energy allocation plans (“*energiebestemmingsplannen*” in Dutch). The energy transition must be linked to the Environment Act: an integrated approach to energy on land and participatory development within the Environmental Vision (“*Omgevingsvisie”* in Dutch). Energy cooperatives must be regarded as a qualifying party to this.

6. For households, the heat transition means that they may consume more than 10,000 kWh per year. The increase in electric transport will also lead to an increase in electricity consumption. In order to stimulate the heat transition, an increase of the first energy tax bracket is necessary, coupled with a widening of the reduced rate scheme (under point 5). An investigation into the costs of heat transition for private home owners could be a reason for additional measures.

7. The need for a more decentralized sustainable energy supply and the application of energy storage options, calls for a national review of the energy transport cost structure, as well as the cost of local energy storage; therein network operators could play a major role.

8. The national government can stimulate the cooperative movement by contributing in a Development Mechanism that finances the risky development phase of larger cooperative projects for wind, solar, heat and energy saving. An allocation of only 10% of the 2.5 billion investment budget, for instance would mean 250 million euros for this fund.

9. Barriers to energy cooperatives to obtain innovation subsidies in the context of EU or TKI projects must be removed.

Provinces
Provinces can make an important contribution to the energy transition by facilitating the spatial application of decentralised energy generation. Instead of complicating the process for the cooperatives, by limiting, for instance, the possibilities for (replacing existing) wind turbines, the local provinces should create provincial investment funds for renewable energy, to (partially) cover the risks of investments undertaken by energy cooperatives.

Municipalities
Municipalities with their own land should (preferably) provide them for cooperative development. If they are not landowners themselves, municipalities should enforce co-operative development, for instance by stating that a developer should always work with 50% involvement of a local cooperative. By making municipal land and roofs available, the so-called “Active ground” policy, may give cooperatives a chance to participate in large projects. Moreover, municipalities may bring companies in contact with

[3] Grassroots actors in the field of renewable energy advocate for the creation of an energy committee, in analogy to the Delta Committee of the past century, for the transition of the Netherlands towards a sustainable energy system. See www.energiecommissie.nl (in Dutch).

local cooperatives in their area. In fact, discounts on municipal taxes for the companies that provide their land or roofs, could function as an encouragement for making more business roofs available for solar panels. Last, but not least, municipalities can also arrange that members of energy cooperatives can borrow money from the BNG (Dutch promotional bank of and for local authorities and public sector institutions) at the lowest possible interest to invest in sustainable energy generation.

5. Analysis and Discussion

The purpose of this paper has been to investigate and possibly support the transformative potential of the cooperative sector to the energy transition. The specific question addressed has been "*how the cooperative movement, comprised by different dispersed initiatives, could become a significant source of transformative agency shaping the ongoing energy transition?"* To explore this this question we have organised a transition arena between actors from the cooperative energy field.

We start by analysing our findings on the vision of the cooperative energy movement regarding its contribution to the energy transition. This discussion has actually started with a focus on the very identity of the movement and its guiding principles. As such, the discussion also mapped in a dialectic manner (i.e. in contrast to these very principles) the structure of the problem and the transition challenge ahead. The identity of the cooperative energy movement integrates principles relating to the environmental aspects of sustainability (i.e. green energy) but also social aspects (active citizenship and self-determination).

While these values seem to be easily combined, certain tensions emerge when practically applying them. Specifically, while all actors aspire the transition to a "green" energy system, and may also cherish the possibilities for the democratisation of the energy system that the cooperative approach brings, no complete agreement exists about the idea of using the energy transition as a vehicle for reclaiming people's power and re-establishing a social economy that puts people at its centre. This tension also relates to the discussion about the movement's unique quality summarized in the words "Van, Voor, en Door" i.e. energy from and for the people. While some voices stressed the importance of aiming for deep involvement of membership at all three levels: the economic (transaction), social (relational) and environmental (sustainability-oriented), arguing that this unique value can offer an attractive perspective to Dutch consumers, no strict consensus about it was reached.

The discussion on the identified barriers and opportunities for realising this vision, directly relate to this vision. For instance, apart from issues that relate to external factors like the role of national or provincial policies, one of the issues that emerged involved the inward orientation of the sector. As one of the dialogue participants noted, the process was "*a lot about what we want and find important, rather than what people, who do not have that same drive".* And indeed, our findings indicate a rather strong inward orientation of the movement. This also links to the "petty" image of the cooperatives and the lack of professionalization of the sector, which hinder the sector's prospects of development. In fact, this lack of professionalization is clearly reflected on the partnerships that the sector is willing to develop (or not).

Specifically, a certain difficulty of the cooperatives to collaborate with other actors beyond the field has been registered. On this issue the field seems to be divided. On the one hand, some actors argue that "*the challenge is not further professionalising our project development power, but organising solidarity within the area we operate (and receiving pre-financing*)". This directly links to the very goal of the

movement: "a*n energy transition alone, is not enough: it must also lead to the democratisation: local for local, just cost-benefit distribution, and this is something that we can better organise on our own than an external party.*" At the same time, other voices call for "realism".

The following anecdote reflects it clearly: "*The former director of our cooperative was driven by a purist dream. Instead of organising projects, he was focused on chasing the idea of self-consumption. (…) For instance, our cooperative was in a talks with NUON (a commercial energy utility) for building 1 or 2 cooperative wind turbines. Our director thought that was too little, and that our cooperative must have ownership of the entire wind park. Now there are 0 cooperative wind turbines. Therefore, wonderful ideals, but nothing realised*". In fact, the cooperative movement with its unique qualities will need to address in the near future a broader group of people with various desires and interests. And this is something that will impose certain organization and management requirements. This gets us to the next issue regarding the necessary governance interventions.

Concerning the required governance interventions for realising the movement's vision, multiple possible measures emerged. The discussion explored what the movement needs to gain a legitimate position for the acceleration of the energy transition, and this went beyond the provision of funds by the national and local authorities. In fact, the wants of the movement, may range from having a say in the development of Environmental plans by the local authorities, to the establishment of strategic partnerships with local municipalities for the development of projects in their grounds or roofs. Among the within the sector measures, the ideas discussed covered the development of a special course for cooperatives, a certification scheme for improving their image and a development fund for supporting the cooperatives at their early stages. All these exhibit some signs of a maturing sector that seeks to control and increase its impact.

At this stage we wish to also discuss, the overall outcome of the strategic dialogue on the development of the cooperative sector, going back to our strategic arena goals, which may function as an evaluation framework. Overall, the dialogue resulted in a shared understanding about the past, present and future of the cooperative movement in the context of the energy transition. In fact, the dialogue process concluded with the co-organising and participating umbrella organisation ODE Decentraal publishing a statement about the cooperative contribution to the heat transition (ODE Decentraal, 2017-a), as well as the movement's ambition accompanied by a list of specific measures necessary for attaining it (ODE Decentraal, 2017-b). The latter document consolidates the problem framing, with ideas for short- and long-term actions for the transition to a sustainable energy system democratically operated and managed.

When asked about the results of the dialogue process, some of the participants pointed that the narrative gives them a sense of direction and helps them to orient their actions and choices regarding the fundamental changes needed to reach a sustainable future. Unfortunately, due to the preference of the majority of the invited actors of the cooperative energy field to hold the dialogue only among peers, the emergence of new connections was limited. In fact, by avoiding broadening the meetings to additional participants, an opportunity was lost for the creation of new networks beyond the niche. Instead, the existing networks were deepened through the creation of trust between the various participants active in the field. Besides this, the process enabled the actors to feel legitimate and empowered to contribute to the energy transition.

This empowering effect of our intervention also enabled the actors involved to take new roles. This resulted in several spin-off activities. Specifically, the activities that have already taken place include the establishment of a local solidarity fund, the creation of an administrative program for the cooperatives, the establishment of an association for the participation of cooperatives in offshore wind, the bundling of the different lobby and knowledge development organisations of the field, as well as the development of wind maps and the first steps to include them in local Environmental Plans.

6. Conclusion

Our contribution has facilitated the cooperative energy movement to develop an overarching orientation towards the cooperative ownership and control of renewable energy infrastructure and the shift to conscious energy prosumption. The challenges are many, but so are the different opportunities present for the movement to take advantage of. While functioning under absolute unity contradicts with the very nature of direct action initiatives, such as the energy cooperatives, coordination among them has been acknowledged by all as valuable. In fact, the detailed action plan appears to have already enabled the initiatives to operate in certain alignment with their collective strategic vision.

It becomes clear that there is both a need for this type of interventions to get people out of their niche, as well as an added value of doing it through a strategic dialogue process, like the one presented here. The added value has been the creation of a narrative, the deepening of the network and a sense of direction, also empowering towards more transformative action. In fact, our process resulted in a number of measures to develop the niche through niche internal actions, and ideas on how to lobby for policy change. At the same time, while a certain convergence has been reached, the process does not claim to have resulted in absolute alignment on the concrete ways to reach the strategic vision. In fact, this process can also be seen as a way to mediate and surface tensions, acknowledging diversity and a certain difference in position.

Future research could expand the focus of this intervention by pursuing a broader stakeholder dialogue, this time also involving other actors, and possible partners of the cooperative energy field. Further research could also assessing the prospects and value of establishing a collaborative business model between cooperatives and hybrid actors like the network operators.

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8. Appendix

Table 1: Identified barriers and opportunities for solar

Barriers	Opportunities
Policies and political power - Premium tariff scheme disappears (in Dutch: Stimulating Renewable Energy production (SDE+)) - SDE+ scheme limited to large projects - lack of ambition by government for 2030 - lack of supportive municipal policies - municipal procurement rules (focus on price) - lack of flexibility of tariffs	**Policies and political power** National/international: - separate category in SDE + for cooperatives - tax system permits - alignment with political parties - link to European Union Emission Trading Scheme for CO_2 - sustainable energy as a public task Municipality: - guarantees - cheap loans from BNG (i.e. local govt. funding agency) - procurement rules: balance between prices and quality for citizens - active ground ("*Actief grondbeleid"* in Dutch) and roof - revenue through local obligations - guarantees fund - risk fund
Technology and infrastructure Physical environment: - space (availability of roofs) - network stability	**Technology and infrastructure** Physical environment: - focus on roofs - no wind on land as an opportunity for sun Technological development and innovation: - stronger, cheaper, integrated: e.g. solar roof tiles, solar window glasses, floating solar panels, solar boilers for cooling, etc. - energy storage, local energy system management
Sector structure Competition: - competition from larger commercial players (professional trusts) - risk capital & liability (avoidance) - venture capital (avoidance) - increase cost due to focus on quality - lack of portfolio - competition with agricultural land and other functions	**Sector structure** Alliances: - Multi-stakeholder organization - Domestic alliances (technical, F.S.N., etc.) - Internationalization Integration of a sustainable system: (1) Horizontal integration: - wind, sun connection with heat for "buffering" i.e. countering peaks - linking to other functions (car, house) - services delivery to companies (2) Vertical integration: - expansion of activities across value chain: solar panel manufacturing, installer, construction, bank, collective purchase, etc. - employment opportunities Certification of cooperatives

Organisational logic - difficulty to engage members and involve new Image: - petty image (petite-bourgeois) - internal disagreements - low diversity of people Opposition: - Not-in-my-back-yard (NIMBY) attitude - resistance to large-scale projects	**Organisational logic** People mobilisation (engagement & involvement): - (1) Transactional; (2) Relational; (3) Goal oriented - Learning through local networks - Strategy: (1) community more than energy, (2) ownership claim to Energy infrastructure, Data and Money - communication through social media - "*Sun yield*" as a pension
	Landscape level Urgency due to Groningen situation

Table 2: Identified barriers and opportunities for wind

Barriers	Opportunities
Policies and political power - government as an obstacle - long waiting list for locations	**Policies and political power:** - daring decision making - exclusive support from municipalities - local energy projects for regional (spatial) development (link to environmental law)
Technology and Infrastructure High costs	**Technology and Infrastructure** - technological development and innovation: e.g. large-scale sun in combination with wind - smaller wind turbines (closer to urban context)
	Sector structure - expansion of activities across value chain - quota in offshore wind deployment (e.g. 50% cooperative)
Organisational logic Internal resources - low expertise, (few) volunteers - difficult mobilisation of people Business case - too heavy to involve membership - insufficient capital among residents Role – image - Seen as an investment group only - Governance under financial interest	**Organisational logic** Professionalization Legitimacy - tipping point when above 1000 members - exemplar projects for more status - municipalities as customers people mobilisation via focus on low energy costs: social return influence of the image of wind
Knowledge base - lack of knowledge on offshore wind - lack of public awareness and knowledge - low priority and attention from civil society - lack of belief in technological feasibility - feeling of abundance of wind turbines on land (already)	**Landscape level** Urgency due to Groningen situation

Table 1: Barriers and opportunities for sustainable heat

Barriers	Opportunities
Policy and political power Priority given to top-down planned economy instead of a bottom-up democratic process Requirement of a heat supply permit from ACM (for more than 10 users/ 10.000gigajoules) Lack of protection against the heat law	**Policy and political power** Municipalities: - Energy plan, Energy zoning plan - Environmental/ ambient plan (omgevingsplan) - Allowing customization per neighbourhood/ postal code Small-scale installations and/or installations belonging to (housing) owners association do not require heat supply permit from the Authority for Consumers and Markets (ACM)
Technology and Infrastructure Difficulty of energy saving	**Technology and Infrastructure** Technical development and innovation: - change sewage system - variation local sources: pallets, manure, residual heat (also fossil), green gas through current gas infrastructure - national availability of non-food-competitive biomass, like sewage and sewage sludge - thermal heating energy storage - possibility for very small-scale heat networks - possible use excess electricity for heating Collective heat solutions are easier than individual
Sector structure Dubious role of network operator - lack of clarity about the installation of heating networks across the country	**Sector structure** Alliances: - Cooperation with network operators who have experience - Co-operation of cooperatives and fund for early phase development - Partnership with Ecopower, co-shareholder of pellet factory
Organisational logic - Priority given to top-down planned economy instead of bottom-up democratic process - Unclear business model - Little choice: package approach (monopoly) - Lack of people: impossibility of fast increase of membership Image: - seen as small and "petty" ("*kneuterig*" in Dutch)	**Organisational logic** Business model - offer more control to tenants - collective arrangement is easier than individual - improved financial return for difficult task of energy saving Idleness of building/construction industry opens space for action for cooperatives. Learning from housing corporations' experience: renovation in 2 weeks, offering people holidays

	(cooperative holiday destinations?)
Knowledge base Awareness - low awareness about necessity and feasibility of transition - luck of awareness about the issue of heat and the potential of its cooperative management *Impediment in thinking*: - Priority given to top-down planned economy instead of bottom-up democratic process - public fear of the "unknown" Trias energetica[4] as a barrier	
Landscape level Great majority of people are not in line with the bottom-up development of heating solutions	**Landscape level** - Van het gas af discourse - Urgency due to Groningen situation - International dependency to Russia Putin

[4] Three steps for sustainable energy use: a) reduce energy loss; b) maximise use of sustainable sources; make efficient use of fossil-fuel based energy sources.