



“Duurzaam Dalfsen”

The development of local initiatives and the path towards a carbon neutral municipality in 2025

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This report is based on the scoping research undertaken in the municipality of Dalfsen related to the developments of local sustainability initiatives in Dalfsen. It includes an overview of the current context, the local initiatives currently underway and the various opportunities for further research. This research is taking place as part of the EU FP7 funded research project - COMPLEX: Knowledge Based Climate Mitigation Systems for a Low Carbon Economy. COMPLEX has a number of different work packages with various goals related to the achievement of a low carbon economy (<http://www.complex.ac.uk/>). The research being undertaken in Dalfsen is part of a Dutch-Spanish collaboration project designed to understand the land use impacts and relationships related to renewable energy development, local initiatives and other social factors. Through improved understanding of this dynamic relationship it should be able to develop better plans, policy and strategies to achieve a resilience energy supply in a societally and environmentally supportive manner.

The document content aims to portray the opinions and issues of the interviewees as expressed and not that of the author. This document also provides some suggestions for follow-up interactions that could support knowledge development regarding the spatial, social and economic trade-offs that are part of the transition to a low-carbon economy. The information included is based on a first round of interviews and brief document analysis related to the development and initiatives related to renewable energy in the municipality of Dalfsen. Please read and provide any additional feedback and comments. Any mistakes in interpretation of the interviews are solely that of the author. Thank you to everyone who has participated and donated their time for the sake of this research.

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1. Introduction

The Municipality of Dalfsen

Dalfsen is a town-municipality in the Salland region of the Dutch province of Overijssel. The settlement is approximately 700 years old, yet it has never received official city rights. It has many small population centres including: Ankum, Dalfsen, Dalfserveld, Dalmsholte, De Marshoek, De Meele, Emmen, Gerner, Hessum, Hoonhorst, Lemelerveld, Lenthe, Leusenerveld, Nieuwleusen, Oudleusen, Oudleusenerveld, Rechteren, Strenkhaar and Welsum. Below is a chart showing some of the larger populations of villages located within the municipality as of January 1, 2014.

Dalfsen centre	7.467
Dalfsen outer area	3,703
Nieuwleusen centre	5.919
Nieuwleusen outer area	3.453
Lemelerveld centre	3.115
Lemelerveld outer area	1.629
Hoonhorst centre	676
Hoonhorst outer area	494
Oudleusen centre	540
Oudleusen outer area	652

Total **27.587**
(this total includes additional very small settlements which are not included in the list above)



Figure 1: Dalfsen City Limits

While the population is relatively low, Dalfsen is one of the larger municipalities in the Netherlands in terms of surface area (165 hectares). It is relatively rural with a density of 160 people per square kilometer (the average for the Netherlands is 406 p/km²). The rural area is heavily agricultural and the city centers are largely populated by “imports” that travel to work in other larger areas. There is no main industry that supports economic activities in the area.

Sustainability and Dalfsen

In 2013 Dalfsen was crowned the “Greenest Village in the Netherlands” in a national competition held by Entente Florale. In addition to this they have one of the highest per capita production of solar energy in the country (7 MW of capacity), have 4 wind

turbines (with three additional ones in planning) and have a target of being carbon neutral by 2025, including both producing energy and saving energy/carbon actions.

Approximately 8 years ago, sustainability issues became an important topic of discussion at the municipal level. The municipal council developed a sustainability policy at that time. Issues that they faced in its development were generally related to how to measure progress.... should it be CO₂, should it be energy, should it be neutral? And if so, the right way to define each of these things was not clear. Do they include transportation? It was decided that the ambition was related to matching the amount of energy that was used in the municipality to how much energy they produced in a CO₂ friendly way (green energy). As a result there was a focus on both energy saving and energy production. Wind, solar and biogas were all considered possible sources of sustainable energy. What was clear to them was that at the very least, wind energy was necessary to reach their targets. All but two parties agreed to move forward with wind energy, however there was much disagreement about where to put the turbines. In the final decision however everyone would be able to contribute to the discussion about where to place them. Investments in reaching CO₂ neutral are not judged solely on pay-back times however, and some concerns were raised when suggestions for spending would be out of proportion to what was being gained.

Since that time a number of successful smaller initiatives have developed in the small towns, and this has recently been followed by the town center. One common thread through the interviews was the importance that is placed on the need to couple social and environmental sustainability (though some felt that social sustainability was sometimes given too much focus at the expense of the more urgent needs of environmental sustainability). Secondly, the direct line of communication between citizens and the municipal officials was frequently cited as extremely important in developing sustainability initiatives quickly and efficiently. Lastly, the preservation of spatial quality is acknowledged as an important variable to consider, yet there is not just one agreed upon “right” way to preserve it. Various opinions were expressed about the aesthetic impacts of wind and solar energy.

The municipal agenda puts a great deal of focus on stimulating and motivating local actions that benefit local inhabitants. Part of this support often comes in the form of provincial subsidies though there are also national regulations and programs that influence the related activities. A large majority of the interviewees supported the focus on local solutions in general, however there is variation in the perceptions of how well or appropriately this support is delivered. Concerns were also raised that local activities should not replace commitments and actions at a larger scale.

The energy system in the Netherlands is heavily integrated. This influences the ease of making changes in a bottom-up fashion. Some issues were raised in regards to the way that national and provincial programs influence the green energy (and other sustainable development) related actions, though some are also considered successful. The regulations related to how energy is sold back to the network operators were considered to be insufficient to make a real transition to a green energy economy.

Primarily the limitations for city dwellers being able to invest in solar panels on the roofs of rural farms was seen as limiting. The federal government's commitment to sustainability goals is seen as being limited due to their connections to the large energy interests. As well, the high risks and investments taken on by local volunteers and entrepreneurs was considered an issue since these people often break the mould so that others can profit based on their efforts. The old economy would have compensated them with a market advantage, but that model no longer fits if we want their efforts to lead to increased uptake by all (which is subsidized following the efforts of the pioneers). In order to do so they need to be able to share their knowledge/products not solely for profit.

The majority of interviewees felt that it is desirable for decisions to be made as close to the people as possible about how the available money from higher levels of government is spent and how the regulations are designed and implemented. There was however mixed opinions about the capacity/interest of the majority of normal citizens to undertake the level of initiatives required to make the complete transition to energy neutral. Those closer to the innovator side of the spectrum have been activated, and now the challenge will be to see how many of the critical mass follow.

A few factors perceived to be linked to the success of Dalfsen as compared to other municipalities are – the existence of at least one enthusiastic alderman, small communities that have a lot of communication, a basis level of encouragement from the municipality in terms of the workshops/sustainability cafes that enable local solutions, sustainability prizes, the high number of imports/proximity to Zwolle (a larger and also relatively progressive city), the entrepreneurial attitude of a number of local businesses, high level of natural green space in existence and the desire/ability to keep it. Additionally, the opportunity to work together with the province on wind energy was taken advantage of and they negotiated benefits for the people in the area as opposed to allowing the profits and efforts to be taken by outside companies. And finally, a strong support for social sustainability was mentioned frequently as a way to encourage efforts to develop past the early adopters and take a more permanent role in the communities. It is also important to note, that while Dalfsen was a fore-runner in this field a number of other municipalities are developing strong sustainability and energy initiatives of their own.

Solar

Solar policy in Dalfsen currently states that roofs should be used first (industrial/farms and then houses), and if this is not possible then close to the buildings, and only at last instance in larger parks in the natural area. There is an open sentiment that the current nature of the landscape should not be negatively affected and so wherever possible solar panels should be implemented in a way that fits the landscape (urban or rural). There are also municipal rules about solar panels and when they require a permit (building) and when not. It was noted that the speed of the transition has been negatively affected by the limitations enacted by the postal code policy (postcode roofs). This prevents people from the cities from investing on the roofs of farmers,

where there is much more space and less impact by shade and other constraints. It is however on the municipal agenda to be an open opponent to this regulation and to force change in this area, making it more likely that the solar panels will be placed in more efficient ways and in more appropriate places.

The Gemeente Dalfsen is now only stimulating farmers when it comes to solar panels. They have previously supported solar panels via subsidies in general. However without the subsidies, some important larger scale projects that were already begun with farmers and that could have a substantial impact were in danger of being stopped. As such, they are continuing to work with farmers in a few cases.

The City Hall has a number of solar panels installed, and a number of collective actions, advisors, educational projects, etc, exist within the municipality. The most recently available numbers show that there is a total of 7 MW of capacity installed in Dalfsen (2015). This is partially due to a large program sponsored by the province which specifically engaged businesses to invest in a collective action. The municipal goal is to achieve 60 MW of solar. This target is only achievable if every possible roof has solar panels installed and is as such an ambitious target.

A number of people were of the opinion that there are too many occasions within the municipality where the solar panels have been installed in a very unattractive manner on rooftops. Given the choice, they would prefer to look at windturbines rather than have their urban areas so greatly affected. Higher levels of aesthetic integration were desired, though not much protest has been done. The two most likely reasons for this is that they are considered not to be permanent changes and in general it is not in the culture of the people to protest. The reactions would more likely show up in changes of support for those who are responsible in the local discourse.

Energy Saving

Within the discourse of the municipality, the point is also made that saving energy is the first step that reduces the amount of energy that needs to be produced. As such there is a lot of emphasis put on reducing the energy usage of houses. This has even influenced the negotiations regarding social housing development where the municipality used its power as a land owner to persuade the housing companies to build nearly neutral houses (and not to charge higher costs for them). They have also developed a new neighbourhood where there is no gas hook-ups for the housing. This is seen to have reduced the costs of developing the land, and as encouragement to develop other more sustainable energy systems. It's success has been reduced due to its appearance during the economic crisis when it became more difficult for people to get mortgages. The solutions available to make up for this lack of gas service are more innovative and could be seen to add to the riskiness of these mortgages.

Wind

Spatial planning is done in accordance with the provincial policy and that has an impact on the potential for wind energy. An area within the municipality has been designated as an area where large scale wind energy is to be developed. The northern part of the municipality has been chosen to concentrate the development of wind energy (see map below). Four large wind turbines have already been installed and three more will come in the near future. There is some freedom in where and how within this area and this is being discussed at the local level. Attention is being given to allowing local people to invest, and that those most impacted receive additional compensation. There is thus an active policy for large wind turbines, though the municipality is also investigating the possibilities for more distributed smaller scale turbines. According to the zoning regulations, farmers are not allowed to build anything that is 2 meters higher than the buildings. This limits the ability to put up wind turbines themselves. Proposals for activities which the zoning plan does not permit, takes at least 1.5 years to get through the system. Few (if any) are willing to go through that process and so there is little efforts being put into wind energy other than those being implemented through the province. There are some discussions about opportunities for small scale wind but they are preliminary. The current high cost per kw is a main issue of concern.

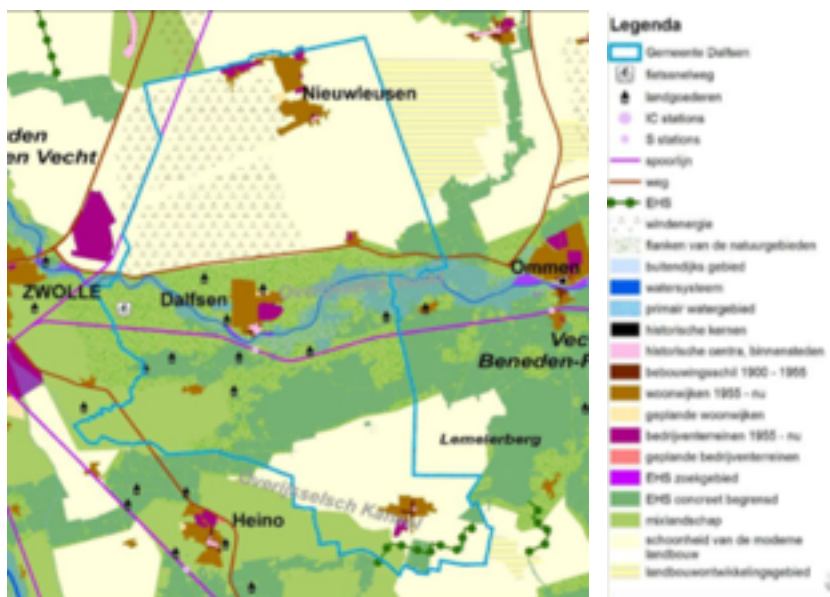


Figure 2: Land use Zoning in Dalfsen

Bio-energy

It is also important to note that in addition to wind and solar, there is a very progressive recycling and bio-energy system that is operated through a private business (Rova). The municipality will reduce the amount of waste to 30kg per person

by 2020. This will require efforts in separation and repurposing of waste. There is a recognition that food should not be used to burn for energy. As such, they are concerned about how much additional feedstock is needed to be grown to enable combustion and how this affects the production of edible crops. It is not clear exactly what they are doing (or can do) to prevent this. There is however a separate private venture for a bio-digester that aims to produce 60 MW of power. This project will use a combination of chicken and other manures as feed stock, as well as corn and other products. There are however currently no local initiatives being supported or subsidised that deal with bio-energy. In terms of heat, there is a success story in Hoonhorst where they have a local heating installation which runs on local biomass (wood).

Small versus “Big”

In general it was felt that the high feelings of connectivity and social cohesion frequently experienced in the smaller villages was supportive of increased sustainability and the efforts to become more self-sufficient (energy, food, health care, etc)¹. As well, the common practice of celebrating accomplishments has a positive spiral effect and leads to further ideas and willingness to take on new projects and ideas. The larger city centre of Dalfsen has comparably more “imports”² and thus less history between the residents that have a common interest in the care and development of the place (plaatselijk belang). This could also be related to the tendency to have more “do-ers” in the rural areas and more “thinkers” in the cities. As a result it can take more time to get initiatives off the ground. It was also noted that the co-creation process that was sponsored by the Municipality was more difficult in Dalfsen Centre. Finding the right form of organisation was difficult. It was estimated that centres larger than 60,000 tend to be too big and have too much distance between the citizens and the government to achieve such quick results. This is because at that size there is often another level in between the alderman and the citizens that filter too much information.

The most clearly influential regulations and policies that need to be addressed are the post code rose and the “saldering” rule for selling energy back to the grid (explained below). In general the regulations are behind the times and only address issues once they have been solved in practice. Increasing the clarity of the very complicated rules is important because most issues that are brought to the municipality come from people where miscommunication was the main cause of concern. A designated manager of a small area in terms of the landscape and living environment would be

¹ This does not preclude larger areas from undertaking similar processes, however it was generally found that the shorter lines of communication make this process easier to develop. There are examples of co-creation processes in larger areas.

² People who live in Dalfsen, yet were not born there and who often work elsewhere and commute.

valuable to help address the issues that develop when higher level policies and plans meet in the locality.

SDE+ and the saldering rules (that the net difference between use and what is sold to the grid is what the home owner is charged) are also considered to be less effective than they could be. While the participation society is at the heart of these policies, they are not considered to be significantly different than business as usual governance and regulation. They are not considered to be designed to enable real change, since no urgency is felt by the government or society. There is however a recognition that a balance is needed between encouraging actions and regulating them. Based on the different political viewpoints there are limits to how far you can/should influence the decision making behaviour of citizens. For example, there are currently no rules based on the aesthetic requirements for the placement of solar panels (only with respect to changes to cultural/historic elements). However there are many historic rules about how one can and cannot alter the actual aesthetics of their house.

Potential Issues for Follow Up:

The following is a summarised list of potential issues to follow up on based on the comments received by the interviewees. A more elaborate list can be found in the appendix.

1) Some concerns exist about the development process of local initiatives and how they develop into larger less sustainable enterprises, and also how they continue to be supported by the local community (or not). At a certain scale the desire to increase well-being and cohesion can turn into the desire to increase profits. A number of initiatives have experienced the tension that comes along with the commercialising activities often associated with the development of renewable energy at the local level. Efficiencies are greater when the scale of development is increased, however this requires a business model and entrepreneurs that can develop and support it. At what point a local initiative becomes a commercial venture and where efficiency gains balance reductions of value from local embedding, is a point worth further investigating. Having a clear vision on this would increase the level of transparency for citizens interested in working towards the sustainability goals in Dalfsen.

2) In terms of spatial planning and its role in the development of local energy, it has not been looked at strategically to balance energy and other needs. There is a potential for doing so since much is happening now in more decentralised terms. There is no history of this at the neighbourhood level. The gas-free neighbourhood was an initial experiment in this direction and much can be learned for in the future. This needs to be done in collaboration or communication with the province since the municipality is also dependent on the the spatial planning that happens at the provincial level.

3) In terms of connecting demand and supply needs, there has been little progress. This is related to the irregularity of renewables and the way that demand is organised. Currently the grid is used as the mediator and non-renewables take up the slack. This is considered as unsustainable however no easy option exists so far for dealing with this at the local level. This also brings into question the role of the large energy companies and how and when a transition away from them should/could take place.

4) The activities related to increasing energy saving have a lot of room for improvement. This is true in general, not just in Dalfsen. It is considered to be due to the lack of visibility of these types of actions. One way to address this is to explicitly connect how much less energy will need to be developed if successful energy saving is done.

5) The level at which solar panels have entered the market and the reduction of cost and accessibility barriers has led to a point where the municipality/province can consider to no longer be needed to subsidise. How do we continue to increase the amount of solar energy development to reach the desired amount?

6) A general vision is to have continuous improvement. How far into the future the current actions need to consider is not clear, but an awareness for the long term consequences is in any case present by most parties.

The above statements were taken from the interviews as possible areas to focus on to help support efforts to reach the 2025 CO2 Neutral Dalfsen goals. Dalfsen will reassess their goals and progress as a municipality this year in order to determine the best course of action in the up-coming years. A number of interviewees suggested that they would be interested in how the University of Twente research could contribute to this process and increase the amount of stakeholder engagement and information dissemination therein. The next section gives an overview of each of the initiatives that have been studied to date in Dalfsen. The main actors, goals, processes, results and hurdles are identified.

2. Overview of Initiatives

In each of the below cases a sustainability cafe/workshop has played a role in the development of the local initiatives. With the exception of Duurzaam Hoonhorst, these cafes were implemented by the municipality to enable the development of a co-creation process between citizens and the municipality. Generally they involved an open invitation for citizens to come and brainstorm their ideas related to sustainability and to initiate the development of a local cooperative where these ideas could be translated into action. Direct contact with the municipality was enabled as a way to ensure that the people knew that the municipality stood behind their efforts. This process was led by an externally contracted consultant by the municipality. It is estimated that the cost of running these workshops was 15,000 Euros plus the

additional 10,000 Euros that was provided to each of the four resulting cooperatives. The results and opinions are mixed as is shown below in the various villages, however in general the cafes were seen as supportive of the development of more ambitious and timely local efforts.

Duurzaam Hoonhorst

One of the most active villages in the province is the village of Hoonhorst. They have a population of nearly 700 people and developed their local community organisation of Duurzaam Hoonhorst in 2009. At the meeting of the sustainability workshop nearly 100 people were present and in the resulting organisation they have 6 board members, 10 different working groups and over 75 volunteers. They have a very broad vision and inclusion of activities related to sustainability. Livability is a strong theme and helps keep the community committed to the efforts that they have. Their original concept was focused on 2025 as a target year in their vision, however now they are looking even more long term to 2050. Their motto is think broadly, work concretely. They have been very effective in developing a number of diverse projects and getting funding for their efforts. In the last 6 years they have been able to achieve 2000 solar panels on roofs, a community heat grid that runs on locally collected wood waste, energy saving and insulation actions, a community-shared car, community health care, glass fiber internet, community composting, garbage separation and re-use, etc. They are also interested in making a larger solar park but have not yet embarked on this. The small size of their community is also a limiting factor within which they work. They feel like they would need to extend their customer base to become more professional. There is the option of working with other villages but this could add to the level of complexity and reduce the sense of community. They are also aware that increases in size can also add new expertise from new stakeholders.

They chose for green energy as a large part of their efforts because 1) it is a closer to home option than the current system, 2) there is a solid financial basis which is expected to reduce the amount of money that flows out of the community to large energy corporations and 3) it is connected to a healthier environment. There are also people mainly focused on climate change as a reason for the actions. What is supportive is that the different motivations can be integrated with each other in the projects.

They were the first village in Dalfsen to really come into action and they received a lot of good publicity for it. Their sustainability agenda was influential to the developments in the entire municipality. They include in their reasons for success that they think broadly but implement it concretely, and keeping the related systems as close to home as possible. Keeping their vision simple (two A4s) enables them not to get too stuck on details and see opportunities that align with their overall goal. They put emphasis on learning and staying connected and communicating with a good network.



Figure 3: Hoonhorst

They have a central heating system that heats a number of public buildings like the gymnasium, school and soon the church. 90% of the village waste is re-used or recycled (in Dalfsen it is 73%).

The subsidy that they received from the province (1.5 million euros) as part of a competition for the most sustainable village plan, had to be spent within 3 years, which worked well with their pragmatic vision. It did however stop them from including wind energy in their plans because the process would take them outside of the 3 years. They are now done with the subsidy and are reconsidering wind energy as part of their system. They are not interested in investing in coastal wind energy because they want to keep the profits and negative impacts (considered mostly as landscape impacts) as close to home as possible. Future goals include becoming relatively self sufficient. They include aspects such as transport as well as food in their goals.

Nieuwleusen Synergie

There were already discussions taking place in the village of Nieuwleusen (population 6000) before the municipality started with the sustainability cafes. A number of people were already interested in elements of sustainability (gardening, buildings, etc) and had had discussions about what they could do together. The contribution of the workshops with the municipality were very helpful however in solidifying the developments. The first meeting took place in the local sports hall with 100 people. They organised the interests of the different people into different themes. Based on these they made a number of plans which were judged by everyone and resulted in a number of choices. The result was Nieuwleusen Synergie, inclusive of 8 different working groups. The groups focus on School Gardens, Community Car, Second Hand store, Fiber cable internet, Energy saving, Energy cooperative, Help and Care, Information Services. Some of them earn money and are more business oriented and others are more social.

Various people with their different capacities are included in the different groups. The energy cooperative has a team investing time into the development of wind energy and the energy saving group has supported collective purchasing of solar panels (966 panels installed in the first round of collective action).



Figure 4: Leusenerveld

The wind turbine group responded to the request of the Municipality to take on the construction and management of the three new wind turbines that are planned to be developed within the municipality. They have suggested that they will do so in a way that benefits all of Dalfsen (this process is currently underway). In order to

successfully tackle this kind of project they have decided that they will make use of a project developer with experience. If the cooperative becomes owner of the wind turbines, then the profits will be filtered back into the community to support livability and infrastructure elements.

They have also experienced the tension of where a volunteer organisation develops more into a business. In general they see these projects start with support from the municipality and the people who are sincerely interested in doing something useful. They are then encouraged to develop a good business model (so that subsidies are not required by the municipality and they don't have to risk too much personal investment). Once this happens, they need to become more professional and then the municipality feels no longer as they are helping citizens but giving unfair support to a business.

Nieuweleuen Synergie is a cooperative, whereas the fiber cable and the energy business groups formed official corporations. The cooperative is a shareholder in the companies. Some of the initiatives require more energy and expertise, so they have chosen to have some positions that are paid. For example the implementation of fiber cable is a paid position, and this causes some issues since other tasks are not compensated. The second hand store also produces money for the group.

An important element is the sharing of information, which costs a lot of time and does not have a direct feedback into their efforts. They are aware that it is necessary for growth in the future. In general they have found that the province and the municipality are interested in working with them, but there is friction when they come across rules that prevent them from moving forward. There is a hesitancy to really divulge power, yet they are also relatively risk averse which slows down progress and adds to the challenges that local initiatives face. Good will (which definitely exists) is felt to only be able to take you so far.

One important lesson that they have learned is that the earlier that various people come together to discuss opportunities the more things that are possible. The right form of professionalisation can be more easily arranged and the potential barriers can be seen.

Duurzaam/Leefbaar Lemelerveld

In Lemelerveld they were the first in Dalfsen to have a Kulturhus - a concept that originated in Denmark. This is a house in the middle of the town where people can meet and discuss ideas (the buurthuis is a similar concept from the Netherlands but it was often in the cities and not in the rural areas). The Kulturhus is a place where a number of different social activities such as childcare, senior care and groups, volunteer work for youth, and library can be found and it is often a municipal service point.

There are two main local initiatives in Lemelerveld; Duurzaam Leefbaar Lemelerveld (DLL) and the Groene Muskietiers. DLL began first and developed through the municipally organised Sustainability cafes for people who felt connected to the topic of sustainability. At least one member was aware of the developments that had happened in Nieuweleusen and was also influenced by their progress.



Figure 5 Lemelerveld

There were approximately 80 people involved in the Sustainability Cafes and the included citizen and business interests. During this process they did some investigation about other initiatives and became involved with the national network of sustainable villages (Duurzaam Dorpen). Duurzaam Lemelerveld was set up as a cooperative at the end of the workshops. It officially started in August of 2013. There were two distinct groups of people within the cooperative, those that were more on the social sustainability side, and those who were more interested in energy and carbon, through more market based instruments. The social sustainability initiatives appeared to be more geared to volunteer work without a business model, and the others were primarily entrepreneurs of businesses using this as a platform for their own ideas and projects. This led to a name change - Sustainable/Liveable Lemelerveld, potentially enabling an easier split between the two groups in the future.

A number of tensions between differing visions, capacities and interests led to a difficult start for DLL. Concerns related to transparency, motivations, communication and whether or not efforts were really focused on sustainability led the chairperson to step down and develop a separate initiative - the Groene Muskietiers (discussed later). The Duurzaam Leefbaar Lemelerveld continues as an organisation without a chairperson.

One of the first projects for DLL was setting up the solar map, which helps people identify if their roofs are suited for solar panels. They have a number of other initiatives that followed including community maintained tree-gardens, and community project days. Despite a lack of attention paid to publicising their efforts, DLL have more recently developed many plans and activities that are under way. Notably they are working with the Gemeente Dalfsen on the potential for a small solar farm and community wood stove. Further they have activities related to sustainability enhancements for the sport park and swimming pool, a repair point, public flower gardens, repair cafes, sustainable community transport options, etc.

DLL, unlike the other initiatives, do not spend much energy advertising and communicating what they are doing. Their main challenge is figuring out how they will provide an income for the non-commercially viable initiatives and the

municipality is supporting them in this by providing them with the support of an advisor to help the projects move along.

Groene Musketers

A new spin-off emerged including the old chairperson of Duurzaam Leefbaar Lemelerveld - the Groene Musketers (Green Musketeers). This has developed into a consumer cooperative where they provide advice and support related to sustainable energy solutions directly to consumers. The cooperative members can receive price advantages on the various products that they have researched. They hope that similar cooperatives will start up in other areas and be able to join each other to offer wider options at better deals to the members. They had 34 members and 5 “friends” at the time of interview. The organisers have technical, practical and market strengths that they feel is necessary to be successful in furthering the sustainability initiative through these types of groups. They are active in engaging different groups in the community such as schools and children. They provide free education on the possibilities of renewable energy, cradle-to-cradle, and general awareness of sustainability issues. Increasing these efforts towards more systematic and long term programs is an interest for them, however they have not yet received substantial support from the municipality and they see their ability to continue to provide these services as uncertain.

They are also pursuing the development of a medium scale solar farm in the area. Significant efforts have been made in collaboration with a local landscape/architect bureau to design a multi-functional solar farm in a way that addresses a number of different values and interests of both local people and greater sustainability issues. The general desire is to combine education and research, with energy production and recreation and tourism. The desired scale is one hectare and no larger. Efforts have been hampered thus far by their ability to manoeuvre within the planning and zoning process, and difficulties in raising the necessary funding. There has been support by the Province by providing assistance and advice to the process, but this has not yet led to a successful project. Efforts are still on-going as it was recognised by those involved that the current processes have difficulty in supporting these medium sized projects in practice. Medium sized, or growing initiatives lack the capital to start these kinds of projects since the risks are deemed high due to the lack of experience and high uncertainty. If these types of solar initiatives are to be developed in the rural area, policy devoted to enabling favourable funding environments could be valuable. This particular group is quite politically active and petitioning for change to enable this sort of activities. It was recognised that the needed policy changes need to be done in collaboration with the various stakeholders. They have conceptualised their project as “solar farming” and the response was that the province is not against transferring agricultural land to solar farming, but the provincial farming association is against it. They have developed 4 different potential models for the farm to address different contextual elements of the area:

1. A solar farm that is aesthetically designed to fit with the area's landscape features and deliver a large amount of solar energy.
2. A design that is based around the provision of a double function - some type of agriculture (fish farm, low light vegetables, plants, etc) with the solar panels above.
3. To use the "set-aside land" of organic farms as a temporary area where they can also add value via solar panels.
4. Integrated green house - open frame - size is based on the needs of the local community, and how many vegetables/fruit they can get for a year of supply per person. This is where the local people can sell the vegetables and create more value for the community.

All are designed to fit in with the 1 hectare space. The response thus far is that solar farming is very promising and should be further developed. The next step would be to get a commitment of support from different parties before the province is able to actively support such an approach. So we are still at the stage where lobbying is required, public awareness campaigns needs to undertaken, etc.

To more forward with this, they are currently cooperating with other similar groups in the country who are facing similar problems to organise their issues and begin to lobby to have them addressed.

Motivations for the efforts undertaken by this group include no longer being dependent on large energy companies and instead dealing with local people that they can trust. The fear that large companies and the government will not protect them against increasing energy prices was also mentioned. While they are willing to be a pioneer and take on certain risks, they would see it as inappropriate that the efforts of pioneers are used to make profits by large companies. The cost and profit models need to be developed in a way that shares risk and benefits of the projects.

**The Green Musketeers also see a role for local initiatives to be more involved in the decision making processes of the municipality and province. They have thus played an important role in supporting this research by providing time and ideas about future possibilities to increase the overall sustainability of Dalfsen and Overijssel. Their role in this research is described further in the concluding sections.*

Groen Gebogen

Until recently there has been little developments from the citizens in the town centre of Dalfsen. Most believed that it is easier to develop small projects and get people excited in the smaller centres. As a result of the co-creation process this group developed as an association at the end of 2014. The process started when the municipality placed an add in the paper and was seeking out people who were interested in sustainability issues. There were 80 people when they started (about 8 months before they finalised the group) and the final group is about 40. The vision is

related to sustainability in general and includes social and carbon-reduction sustainability elements. They want to increase the quality of life for people in Dalfsen, but have no concrete carbon reduction goals at the moment. They want to connect with the programs that are active in the schools and to make use of the knowledge created in the smaller villages outside the centre. They currently think that an initial focus will be on enabling older citizens to stay living in their houses longer. When this happens, it often requires building and renovating. As such they want to help these efforts also include elements of sustainability. That way they integrate and increase the efficiency of sustainability by overlapping goals and projects.



Figure 6: Dalfsen Kern

They have organised themselves into approximately 10 different workgroups. Their goal is to develop an inventory of different rules, possibilities, values, etc. with respect to different areas of sustainability. They expect that the rules in many cases will make things more complicated than necessary because in the Netherlands there are rules for everything and the high level of bureaucracy can make certain processes very inefficient.

The commitment of time for the volunteers varies, but is relatively low given that they are still building up their organisation. The average age is between 30-60, and a high number of young parents. The group consists of people who work for the government, entrepreneurs, and those with various other capacities.

They chose to organise themselves as an association because this was the form that had the least commitment and resistance to entry. This was chosen on purpose to enable as many people as were willing to participate fully from the start. If and when they begin with more economic-related activities they will enable a separate cooperative to start and go about it how they like. They discussed the format of Nieuwleusen Synergie, but felt that for them it was too complicated and not transparent enough. And they felt that what happened in Lemelerveld (where they have two separate groups that seem to be at odds with one another) was potentially the result of a too rigid expectation of the group.

They have a strong emphasis towards being pragmatic and effective. Meetings should not last very long, those who are doing things get to decide how they do them, and after they complete 10 projects they will assess future developments. They have a wide variety of competencies from water power, to waste management, to schools. A lot of their “intellectual baggage” comes from imports from Zwolle. The entire committee is made from people not born in Dalfsen. There is a mix of people from farmers, people from the small villages, from the city, though in general a quite conservative nature. Additionally, there is not a culture of protesting which influences how conflicts and issues are expressed in the public arena.

The sustainability clubs can be places where people from other areas can come together and make connections in the town. It helps them to create a sense of belonging and contribution to their new place of residency. While there is no direct connection made between general spatial goals and the implementation of large solar farms, there is an underlying belief that green space is less desirable to use than house roofs, but the most ideal is large industrial roofs. The idea of using a currently vacant piece of property for a solar farm was discussed but quickly turned down in favor of instead trying to use an industrial terrain for the same purpose. The general desire to increase solar energy is supported primarily on the economic investment value.

The initiation and offering of facilitation and meeting space from the municipality to discuss sustainability was the beginning of the development of Groen Gebogen. They appreciated the role of the municipality, found it to be well organised and appreciated that they gave them lunch and drinks, etc. This contributes to the feelings of camaraderie and appreciation. The provision of a 10,000 Euro subsidy was considered very helpful so that they didn't have to worry about the small costs when they were setting things up (post, website, etc). It was mentioned however that it is important that not everything is done for them because working towards something is an important part of building up shared trust and respect. At least one group member was aware of similar initiatives in England where the group comes together and first needs to fund raise for their initiatives. While less efficient, it can lead to higher success rates of projects that have started because they already have a moment to see how committed people are and to develop successful ways of working together. They can already celebrate a success when they are able to raise the funds necessary to achieve their first projects and build further good will and momentum.

They see the most likely opportunities for quick realization to be solar panels on schools. However they also want people to be encouraged to work on their own ideas (like lanterns powered by water power). In order to build interest they have developed a story about 1001 solar panels on roofs. As is seen in the other projects, they purposefully start small to build momentum and avoid large disappointments that will reduce trust in the long term. Groen Gebogen have currently set up their twitter account and on March 21, 2015 they presented their digital platform. They intend to distribute a magazine.

3. Main Actors and Relationships

Based on the interviews followed and a basic document search, a general overview of important actors has been made. This is designed to start discussions about the relationships that exist within the municipality and how to improve or change them to be in line with the municipal goals.

1. Government

- European Union
- Federal Government
- Provincial Government
- Municipal Government
 - Public Servants
 - Political Representatives

2. Networks and NGOs

- Duurzaam Dorpen
- Hier Opgewekt

3. Citizens groups

- Nieuweleusen Synergie
- Duurzaam Leefbaar Lemelerveld
- Groen Gebogen
- Duurzaam Hoonhorst
- Groen Muskietiers

4. Businesses

- Banks
- Energy Advisors
- Real Estate Agents
- Social Housing Corporations
- Large Energy Companies
- Entrepreneurs
- Small Energy Companies/Cooperatives
- Rova

5. Citizens

General Comments received about the roles and relationships between these various actor groups are provided in the following paragraphs.

Government

Municipality of Dalfsen:

The Municipal staff (both political and executive) are the main connectors between the provincial/national governments and the citizens (and their initiatives).

The municipality plays a key role in combining the goals of its citizens with those of upper government levels when communicating its vision and policies for implementing it. The municipality filters and distributes resources, and provides a common ground for different interests. They have a desire to be somewhat equal in their support of the local initiatives but it is a bit of a dynamic process from year to year – there is money available to support the various initiatives. Having a clear identity that unites people is helpful though they also have various subsidy and loan programs to stimulate different actions related to sustainability and achieving Energy Neutrality in 2025. The various local political party members have their own visions and influence on the sustainability goals of Dalfsen. For example the Christian Union has an interest in preserving the landscape for future generations in a responsible way. The municipality also has influence through lobbying the national government. One example is their efforts in communicating their stance against the post code roos and in favour for something which enables more investment by local people. Additionally, a number of programs exist to produce collaboration on renewable energy across various municipalities in Overijssel. There is no formal collaboration across the various local sustainability initiatives.

The municipality does lead by example in a few areas as well. They can steer efforts by making rules and policy, and by developing projects, but they note that that is only 20% of what needs to happen. In cases where social/business entrepreneurs are not present and/or not participating, the municipality can also stimulate action. In Dalfsen the municipality was able to work with the social housing groups to increase the requirements for energy saving, etc. This required a firm stance from the municipality and was possible since the municipality held the land required for their projects and thus had some power in the negotiations. It was however considered a bad idea for the municipality to get involved with large scale energy production. It is better for them to support inhabitants doing things that make themselves better off. The best option for the municipality to do this is to increase the options for energy neutral housing and in keeping property values from dropping. The benefits also include that people then have more money to spend in the municipality and not to large energy companies. New building areas should not be made too inexpensive because this also devalues the current housing market.

The municipality is not “for” or “against” any particular type of energy or program. Their main interest is that it is done in a way that is supportive of/profitable for the citizens. They do feel that this is more easily apparent and accomplished with solar panels. Subsidies should help get important things started but they should not be used by businesses to make already possible/profitable enterprises even more so. This is now the case for wind turbines. Some of the recent subsidies have been aligned with efforts to help the economy out of the crisis. Project Sustainable Home (Duurzaam

thuis) which has its roots in Dalfsen was very successful and inspired a provincial rolling out of a similar program.

Most municipalities (including Dalfsen) have one full-time person dealing with sustainability. In Dalfsen, this task involves keeping in touch with the various initiatives about 2 times per year. Gemeente Dalfsen purchased a program from DHV that allows them to do their own energy scan every year, so they can track the progress (CO2 scanner). “Energie in Beeld” is the product that many other municipalities use. The CO2 scanner is used to get the information about the development of solar energy in the municipality. Every two years they track the progress of the different programs to see if they are reaching their goals (including the local initiatives)

The Municipality has an entrepreneurial attitude and is aware that when you are pioneering that sometimes things will go wrong. It was expressed that coming up against barriers teaches you how to handle them next time, or you have to find a way around them. Most interviewees confirmed experiencing a high level of support from the municipality. The main issue expressed was that they were generally disappointed that the Municipality would not be more flexible with the rules for those working to achieve sustainability related goals.

Province of Overijssel:

There is a strong relationship between the province and the municipality when it comes to renewable energy and wind energy in particular. This is because the province has a target that it needs to achieve and the municipality is required to cooperate in doing so. Dalfsen has been “assigned” a certain capacity for large scale wind turbines. While there is a strong public perception against wind turbines due to their negative impact on the landscape, this has been minimised in Dalfsen by incorporating local business interests into the plans. They have been implemented in such a way where the returns are invested back into the community and can enable other sustainability investments. There are some engagement opportunities organised by the province in order to allow the different municipalities to learn from each other about energy saving. Further, the province has a very pro bio-energy stance but this is not something that is directly tied to local initiatives or municipalities.

The role of the province is changing in terms of its role as a subsidiser of NGO’s. The switch to a more market oriented style of funding (where previously funded organisations are now more often required to compete for general funds) results in an unbalanced and volatile playing field. This has consequences for the ability of new organisations and citizens group to get available funding for their local initiatives. They have to compete with others who have greater networks but who are less connected to their specific issues. There is thus a commercialisation of the NGO sector and this needs to be addressed and taken into consideration for local groups looking to receive funding for more innovative and bigger projects.

Having the province as the connection point for the subsidies and regulations is seen as a hindrance to quicker uptake in some cases. The Province's level of commitment to a real sustainability transition was questioned by a number of interviewees. This is based on a perception that their programs are more aimed at procedures and less on results and that they have competing interests that limit their willingness to support real changes.

The complex nature of provincial programs is one area where there may be a stronger need for advisors (or others) to communicate and provide personal support to those not comfortable with web-based services and applications for subsidy.

Finally, there is recognition from the Province in general that creative solutions need to be found to increase the success and contribution of solar farms, however there is still a lack of experience and capacity at the Province to effectively support this. Thus, they are still in the learning phase of the this transition.

National Government:

The Energy Accord is one of the main lines of support from the national government. This says that insulation is the most important first step for houses, then solar panels. It also has provided the national association of municipalities (VNG) with support to help municipalities improve their efforts towards renewable energy. Though this program was considered to be more for capacity building for less progressive municipalities. Further, the new Energy Label requirements are considered to be a good first step but are very watered down and will have minimal short term impacts. The main benefit foreseen will be awareness raising and potentially leading to more aggressive labels in the future.

European Union:

The EU can play a role in determining what the price of carbon should be and other elements that influence prices and regulations across Europe. This can prevent a race to the bottom type of mentality in Europe.

Businesses

Combining economic development and sustainability is seen to be possible when local entrepreneurs are supported in contributing environmentally friendly market products and services to the economy. A number of different businesses have started to contribute such as energy advisors, waste management and energy company (Rova), and the small energy companies that have developed. The pioneers are in principle supported by government, but it is really the early adopters that reap the most rewards. There is a certain level of discomfort that comes from combining something that is good for society and that is profitable. It leads to a confusion of intentions and hence, trust. If you are not doing it for profit or a main source of income, then for most people it remains as a hobby... which limits the ability to

increase expertise. However often when someone decides to do it full time, there is a tendency to view them as less trustworthy or altruistic. New technologies may thus be slowed to reaching the market due to a lack of trustworthy systematic information and availability of advice to consumers in a way that meets their needs.

In that same vein, the companies with trusted names are enticed to charge unnecessarily high prices since people don't really know what things cost. This also reduces uptake. The market is developing so quickly that there is not much expertise by installers to know what is best. Trade-offs between new and trusted technologies must be made by installers and advisers.

There is a larger role to be played by the bank and real estate agents in incorporating the value of energy-smart houses and renovations into market prices and improved mortgage rates. This is a real opportunity for improving the role that market forces can play in putting value on sustainable housing options, but there is a gap in their knowledge and willingness to engage in these areas.

The real estate agents can play a key facilitator role in increasing the awareness of homeowners about low carbon housing, but they themselves often lack the knowledge, which is a bottleneck. The information can be quite technical and not lie within the expertise of this field. Integrated advisory groups that can work together to provide integrated housing solutions is developing, but it is currently not well organised to the needs of the homeowner. This is a similar situation to the banks, where they lack knowledge and experience with new innovations and are unable to adequately value and make use of them in their products. The role of the real estate agents has a number of opportunities and threats related to the role of renewable energy and energy saving measures. If they pick up on the new trends and use them as selling points, they can really help boost the market for low energy use houses.

There is much to be gained in terms of energy savings in the housing market in Dalfsen (and most others), but it is piecemeal and thus not as lucrative or easily up scalable as that with industries or new housing developments.

Large scale energy producers have a large advantage due to scale and do not have limits on production like homeowners. However they also are taxed in different ways and have other rules. This holds for bio-gas as well. For example using fireplaces to burn wood at the household level is not regulated in terms of air quality, but at the large scale it is. Further, making large investments in solar farms may also not be a good idea, since the technology is changing so rapidly. You may get locked in with less efficient technology. There is always a gamble when investing and without sufficient interest, new advancements do not get made.

It was noted by several interviewees that sustainable and responsible products and services have become quite common. It is no longer an advantage but just a requirement of a good business.

Citizens Initiatives/Villages

The role of the village-cafe, sports clubs, and church often play a role in linking people in smaller centres. This will be different in each group of people. In Dalfsen, the different towns are not really connected to each other or to the city centre, but they share common elements of their government, and thus support from the municipality.

The presence of business-people in Hoonhorst and Nieuweleusen has played an important role in working past issues and without subsidies. Their experience as entrepreneurs is important and valuable. The successful initiatives have a mix of capacities that make them resilient to the dynamic environment.

Starting small was a common theme found in the initiatives. This is thought to reduce the overloaded feeling that people may get when first beginning and seeing how much work really needs to be done to make change. There is commonly the perception that it will cost too much time and it is important to overcome these initial concerns and hesitations. Connecting the motivations of the people with support such as a community house (kultuurhuis) is a good way to use capacity at the municipality to support local actions.

The province would like to connect the economy and the environment in a mutually beneficial manner. This leads to the necessity of good business cases for environmentally supportive actions at the local level. Moving towards a more economic model for the local initiatives was an issue dealt with in all the cases. Commonly this was related to renewable energy production. In addition, in Hoonhorst they are beginning to export their success story and experiences to others who are interested.

General perceptions were that people in the smaller towns and outer areas are often more prepared to take on initiatives that support themselves and their community (social element is very important). It is common that they want to protect what they have as a community. This smaller more local approach to sustainability is necessary particularly because people are becoming less trusting of larger organisations, including the government. Emotions are important to get people to change their behaviour and take actions. Connecting actions to what people care about is more effective than portraying their actions as efforts to save the world, this was a common theme among the initiatives. Additionally, it was mentioned that too much focus on doing things the best, can be a threat to doing things at all. Conflict over who is the greenest, can lead to unnecessary struggles that only reduces overall outputs.

Network Organisations

There are a few network organisations that play an indirect role. Hier Opgewekt (Produced Here) was mentioned by one interviewee as not really being helpful for social development but more for the industry of renewable energy. Concerns were raised about Hier Opgewekt because so much money is spent on advisors, businesses, lawyers, etc. and is not as effective as it could be. Duurzaam Dorpen is a network organisation that helps promote sustainable villages in the Netherlands. It was used by some of the initiatives to learn about others. One element that many people were interested in was an effective way to learn from each other. Databases of efforts and information were considered to be lacking.

Citizens Issues

What perceptions exist, what challenges are being faced, what are the major motivations by the inhabitants?

This section includes comments related to the perceptions, capacities and motivations of the citizens in Dalfsen and in general. This can serve as the basis for discussion in the following workshops.

1) There are different categories of people who undertake efforts to reduce energy consumption and produce their own electricity. A majority of people who are making upgrades to their houses are between 65-75. This is because they tend to have the older, less efficient houses and they have more time and resources. The problem is, that the subsidy system is designed in a way that is prohibitive for these people (it is computer based), and they have to fill out the paperwork themselves. This causes people not to participate in funding programs. However, the lack of a formal advisor role limits the integration of many actions at once since it is too much for a household to take on themselves. Hence when things do happen, they happen slowly. Most younger people who are interested in sustainability often buy newer efficient houses.

2) In the past creative solutions were developed given the resources available and based on innovative efforts that focused on solutions. There is a trend towards formalising and standardising actions that limits out of the box thinking and makes it more difficult to come up with tailored solutions. An example was given of people hesitating to use resources for anything other than their intended destination. Could be interpreted as using the excuse of not having the perfect conditions to develop solutions and waiting for them to be delivered. The subsidy culture was suggested as playing a role in this. There is a feeling of entitlement to support, otherwise there is a lack of motivation to work on something.

3) A previous strength of the rural areas was a very strong reliance upon each other. This has become less so in recent years, likely due to how well the government has organised and arranged things. Because things work so well in the Netherlands and most of the effects of the current unsustainable activities are felt in other places, it is difficult to make the urgency for changes palpable for people. The issues are elsewhere or in the future.

4) The smaller centers feel the need to be more independent and rely on each other, that is why for them the social side of sustainability is so important. They often, live, recreate and work in their town. So their sustainability actions must fit in with their other efforts. They can get things started quickly because they know who to talk to and what is (and what is not) possible. Not everything is possible, there are capacity issues and sometimes you come across these when efforts begin to formalise (development of cooperatives).

5) Only a small percentage of citizens are seriously considering moving towards energy neutrality in their household. The main reason for people to install solar panels is based on visibility and pay back time, and energy neutral efforts do not easily meet these criteria. Another motivation is to become less dependent on large energy companies, most people do not like the relationship that exists. The municipality however is preparing for the future when fossil fuels will become scarce and expensive.

6) The placement of decision making into the hands of the citizens is an interesting topic with pros and cons and variations in how and under what circumstances. The trade-offs that need to be made to achieve certain goals is something that most people would find an interesting discussion. Seeing the various consequences of choices could be very enlightening. The citizens can be involved in the discussions about where and how to develop renewable energy (and savings) though this would not be effective unless people all had sufficient information to make the necessary trade-offs in goals.

7) There is a lack of comparative information that helps people to decide on what actions to take, what tech to use, etc. The rampant use of the “pay-back period” is not helpful in moving past the status quo. Also, it is not real since the data is just not available about what future energy prices are going to be and what other options there are. We are now at a plateau where the people who were prepared to do something (and just waiting for the costs to be more reasonable) have made the shift, and the rest will be more difficult to convince.

8) The desire to be seen as being sustainable partially explains why solar panels are more popular than insulation actions. However few want to be the first in the neighbourhood, as there is too much uncertainty. Once someone else has done it, it decreases the perceived risk.

9) Due to the decreasing energy prices over the last few years, most people do not think that energy prices will increase in the future. Additionally, many people are still not aware of how much energy they are using.

10) While the main reason for those who have solar panels already is the economic benefits, there are other reasons that are contributing to and taking away from this growth. One important issue is the balance between the expected benefits, the hassle involved and the uncertainty about future rules with respect to ownership, taxes, and price of energy and selling price back to the grid. Collective purchasing is largely associated with the level of comfort and familiarity with the neighbours, particularly in lower income areas. An association can be made with the reason why people stick with their energy provider even when they can receive a better price and exactly the same service elsewhere. The additional expected benefit is not worth the potential risk and uncertainty of change (and effort).

11) Solar panels that are well set in the landscape can be nicer than on the rooftop. Many people think that there are both ugly and appealing versions of rooftop solar panels. In general there is support for a mix of both solar panels and wind turbines. Differences exist in terms of where they should be located and based on what criteria. One opinion was that wind turbines should be where the wind is, not evenly dispersed to those that want them for political or economic reasons. Others believed that wind turbines should be cited close to where the energy is used and profited from.

There are certainly other important perceptions and issues however the above outline those included in the interviews until now. Additional comments are very welcome.

4. Conclusions: Scale Issues and Levels of Engagement

The local initiatives in Dalfsen are well on their way to achieving a number of important social and environmental achievements and the co-creation based cafes and workshops, close lines of communication and supportive municipal staff and administration have been instrumental in achieving this. They enable the development of shared goals, plans and connections between people in their local environment. Having an external source of support at various stages for different projects has also been helpful in achieving their development. Based on the data collected related to local initiatives and the transition potential to a carbon neutral economy, one general issue seems to be important and difficult to address in achieving the next steps of a carbon neutral Dalfsen. This is related to the scaling up of local initiatives and how they can build on their understanding of the local context, spatial opportunities and constraints, trust between actors, desire to see a liveable and sustainable community, while also making substantial reductions in energy use, and substantial gains in energy production in the near term. While important social and

environmental gains are based in these local initiatives, they themselves will not likely achieve the level of change in the near term that will be required to meet ambitious carbon reduction goals. Additionally, they are often not able to (due to their small scale) take advantage of the economic, technical, capacity and efficiency benefits that some larger scale actions can. Thus, there is much to be learned about what the drivers for change are at the in-between (meso) scale and what can be achieved at this scale to reach the carbon reduction targets. Focusing on developing energy-related efforts at the meso scale could provide the best of both worlds - locally embedded multifunctional projects that take advantage of technical, economic and efficiency potential.

Meso scale projects do not fit into traditional cost and benefit models, and there is a lack of experience in supporting or regulating them by the different levels of government. They have sufficient land use impacts that spatial planning administration tools need to address, public input becomes a factor and a higher level of risk and investment is taken on by organisations that are “new” to the playing field. Some level of multi-functionality is seen as aiding the projects in meeting various competing or overlapping goals, however this adds to the innovative and risky nature of these projects, reducing the readiness level of support from traditional investment sources.

When new meso-scale projects are being considered, a new method for guiding, supporting and regulating them is often being developed. It is generally adhoc and entails growing pains. It is suggested that we seek out further information and support related to this type of development in supporting Dalfsen in reaching their 2025 targets. In order to move forward we need to determine what is special about the meso-scale projects and what supports/hinders these different types of projects. The following questions show potential avenues for exploration:

What kind of support schemes and investments suit these types of developments?
What is the potential for medium scale solar/wind/biogas farms in Dalfsen/Overijssel?
Where are potential uses for buildings that are no longer in use? And what is an optimal use for un-used fields? How do we work towards a cumulative result for meso-scale actions? How do we account for multiple types of value-added for multifunctional projects? How do we connect the longer-term commitments necessary for meso-scale projects with smaller scale and sometimes volunteer organisations? These are the types of questions that are of interest for the University of Twente based on the research done to date.

5. Outlook: Potential Stakeholder Engagement Activities

Given the above overview of the sustainability and renewable energy related developments in Dalfsen, there are many possible opportunities for stakeholder engagement that will meet the interests of the various parties³.

Given the expertise at the University of Twente and our partners in the COMPLEX project we would like to suggest a possible avenues for further discussion which we think could be mutually beneficial.

Collaborative land use change modelling

There was a certain level of interest in the potential to increase the awareness of land uses within Dalfsen and the impacts that these have on the ability of Dalfsen to reach its 2025 Energy Neutral Goals. Currently there is no integrated strategic vision for land use in Dalfsen with respect to renewable energy. A possibility would be for the University of Twente to guide a workshop (in September) where people can participate in developing a model of land use in Dalfsen and the surrounding regions (likely at the Provincial scale). Determining the right scale for modelling land use change will be an element of the workshops. These models will take into account relevant policies, market forces, motivations, etc. The result will be a number of different scenarios for the future and a better understanding of the different trade-offs that are necessary to achieve them. As part of this discussion, the meso-scale developments and their particular needs will play a large role.

A similar process has been followed by or colleagues in Navarre, Spain. If this path is followed, information can be shared across the two cases.

It is also possible to undertake specific research related to the choice of insulating houses and the installation of solar panels. We are happy to discuss these options further.

³In the appendix there are a number of translated quotes from the interviewees that show interest in a number of topics for further discussion.

6. Final Notes and Special Thanks

This report is the result of an initial scoping exercise into the various activities and processes taking place in Dalfsen with respect to local initiatives and renewable energy development. The purpose is related to work that the University of Twente (UT) is undertaking on the bottom-up development of renewable energy development and its impact on spatial resources (landscape, land use, etc). Given the progressive nature of the local initiatives and developments taking place in Dalfsen, the UT has agreed with the municipality of Dalfsen and the Groene Muskietiers to seek out the underlying dynamics that are occurring in this field and provide additional research support based on the results. Given the results of this initial round of data collection, we can now determine what further actions can be both in the interest of Dalfsen, the Groene Muskietiers and the UT. This will be the next stage of efforts.

We would like to thank all those who have provided their time to share details of their activities and their opinions about the transition currently taking place. We would like to thank the Municipality of Dalfsen for agreeing “to be researched” and the Groene Muskietiers for their support in developing this collaboration and sharing their ideas for potential projects. We look forward to working with these groups as well as others in the upcoming stages of the project. The initial data collection period and report writing required additional time to complete due to staffing changes at the University and we apologize for any difficulties or uncertainties that this has caused. We look forward to working together in the next stages of this exciting project!

Appendix 1:

Translated quotes of Individuals with respect to potential improvements and discussions to be had in Dalfsen.

- Those who are aware and connected to the global issues need to be responsible for planning and helping move towards a more sustainable system. The spatial development of renewable energy is not being taken on seriously at the local level.
- The future is about sharing energy with your neighbours and using new technology and forms of organisation. This could be further developed, but there are so many rules against it. Addressing this would be valuable.
- Since there is no “best” option, we need to look strategically about the different forms of energy, energy saving and make a plan together that addresses different peoples needs and still meets the sustainability goals.
- There is a desire to learn from other efforts in the country, so they can get inspiration and come together in a meaningful way. A databank would be very useful so that people can decide for themselves what fits in their own town and what is applicable. Having the responsibility for progress at the town level is desirable, but how and where are the limits for motivating, stimulating and facilitating?
- Dalfsen is currently in the “low-hanging fruit” phase in their efforts to become CO2 neutral. Moving beyond this and towards a self-sufficient society is not currently on the radar. There is however much technology and many methods that have developed past the “innovations” stage and are becoming proven in practice. These things now need to be implemented. For example there about 10 hectares of space for solar panels on roofs in Dalfsen alone! The municipality of Twenterand has begun to have discussions related to the trade-offs in landscape related to renewable energy. This is primarily related to the limits of what is acceptable for trade-offs - how high, how much, how many... They have not yet reached this level of detail in Dalfsen.
- Currently the zoning plans need to be changed if you want to do something new. There is a desire to see if it is possible to make the plans by first inventorying what people want to do and then build that into the spatial plans (and in accordance with provincial regulations). This would require additional professional support. Perhaps the discussions with the stakeholders in this project could enable this kind of transformation. This would enable more clarity for the initiators and more strategic development of renewable energy. Since there is currently no permit required for solar panels specifically, this is an area where there is an opportunity to increase clarity. This is particularly important now because so many new opportunities related to new technologies are becoming available.

- The particular issue of the use of land for agriculture or renewable energy is particularly valid and that discussion has not yet been had. When the zoning plan does need to be changed all citizens are able to object and give their opinion. This process can be made more efficient if there is a higher level of communication and participation before the request for change.

- Due to the high prices of land, multifunctional use of land for renewable energy is the most likely outcome. Where and how this should happen can be a very important discussion. However, when left to the market, sometimes perverse results can occur (such as irrigated land turning into solar fields in Spain because they are also more easily connected to transmission and road lines).

- Opportunities where people can get together to talk about the possibilities and not the hurdles is very welcome. Where possible this should be connected to the role that public servants play in being flexible and a bit entrepreneurial. How accepting people are of making mistakes is also a related issue that enables this kind of work.

- Addressing the current issues through a reduction in consumerism is a touchy topic. Some people see this as a step back and some see it as a step forward. This tension needs to be addressed as it is connected to scale of operations and to the way we organise ourselves (the resurrection of the cooperative, for example).

- Trade-offs and social goals. Why can we move houses for a highway but not for wind energy?

- When should we change the rules to make sustainability actions more accessible? Currently it takes a lot of effort to do things that are not foreseen in the rules. Where is the balance between protecting tradition and transitioning to a new way of operating? How can we increase the flexibility of the rules to enable desirable actions and hinder undesirable ones? For example, placing a small solar panel field in your yard? How to translate the good intentions of administrators and citizens into support for sustainability? How can those willing to take on these hurdles be compensated correctly?

- Who owns the landscape? While the land belongs to the farmers mostly and they need to make their living with it, the rural area is a public good.

- It is unlikely that on the current path, Dalfsen will reach its CO2 neutral goal. They will need to look at new avenues such as the car, and this is difficult to change at the local level. It takes a complete system change but the national government has not been a reliable partner in the transition. As well, switching the electrical system to 12V would allow people to directly produce and store energy... but nothing has been accomplished along these lines. The conservative nature of Dutch people and the government will continue to prevent real change.