

Warmtestad: towards a zero-energy city of Groningen

A case study report on the process of stakeholder participation

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10th July 2020

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Summary

Warmtestad Groningen is a sustainable company that is working towards a zero-energy city of Groningen. Its start has been problematic and this research tries to find some of the reasons for that. Stakeholder participation is a way of increasing the success rate of a building project because it will increase trust and often times improve the project because of different interests that are all taken into account. Warmtestad so far has operated quite top-down orientated, with plans being made by the municipality and Warmtestad, without proper say of other stakeholders. The power-relations are somewhat skewed and involved companies feel like Warmtestad imposes their will upon the other stakeholders. The inhabitants of areas that Warmtestad is building in have been neglected so far, there has been little to no information or say for the inhabitants as to how the projects should be handled. Warmtestad should make strides to work with multiple different stakeholders rather than sticking with the same ones, as this can lead to unfair advantages. Warmtestad has struggled with planning of their projects, expertise of the stakeholders has not been used to the fullest and doing so could improve their planning drastically. Inhabitants are not informed in the projects but research shows that they actually would want to be included in future Warmtestad projects. Warmtestad has been vague about their work so far, they offer zero-energy or gas-free building but the water is still being heated by off-site gas installations for the majority of their projects. This has to do with developments not solely of Warmtestad's doing, but the lack of clarity about their product is risky for a company already struggling with public perception and support.

Introduction

Interesting times are ahead of us in terms of sustainable development. Heat records are being broken every year and climate change is an issue that is regarded as a real threat by an ever growing group of people. In order to combat these changes, we as a people will have to make changes. The municipality of Groningen wants to be in on this development and thus decided to set some targets when it comes to sustainability. Warmtestad is a sustainable company founded by the municipality of Groningen and Waterbedrijf Groningen that aims to reduce the amount of gas we need in order to have access to hot water and sufficient heating in houses during the winter and give access to cold water during the summer (Warmtestad, 2020). This is being done with the use of geothermal energy, which is heat derived within the sub-surface of the earth. Important to note: this project is subsidised by the national government and it is subsidised solely to ultimately get rid of the need of gas, not to create a zero-energy city. However, a zero-energy city is still a goal for the local government (Gemeente Groningen, 2018).

Sustainable is a key word for Warmtestad, they call themselves a sustainable company and all projects are based around trying to reduce the use of fossil fuel in favour of more sustainable options. Luckily for Warmtestad there are different ways to use their knowledge but this first type of geothermal research costs them plenty of resources without any tangible results, before it got shut down by the state. This caused the focus to come onto something other than geothermal energy, namely building zero-energy housing and offices. In order to make a building zero-energy, the amount of energy it generates has to be equal to the amount of energy it uses. In case of a neighbourhood this idea gets scaled up to an entire neighbourhood. An example Groningen uses at the moment would be residual heat from data centers on the Zernike campus that are going to heat houses on and around the campus (Gemeente Groningen, 2019). This has not gone flawless however as the buildings are currently still heated with gas (Hospers, 2019).

The main stakeholders for Warmtestad are Waterbedrijf Groningen and the municipality of Groningen. These two stakeholders both own half of the company and are to be held accountable for Warmtestad projects the most. Other stakeholders involve construction companies van Wijnen, mainly construction companies that specialize in the building of houses. Energy companies like Vattenfall and Eneco. Housing cooperations like Nijestee and Lefier. The national and provincial government, when it comes to licenses to do drilling for instance. Another important group of stakeholders are the inhabitants. The inhabitants are a group that can be divided into two separate groups, the inhabitants already living in the area on one hand and the potential new inhabitants on the other. You could make the argument that everyone is a stakeholder but the stakeholders listed above seem to be the most relevant stakeholders when looking at research and information about the different Warmtestad projects. The final stakeholder is the media; Warmtestad is part of the so-called 'proeftuinen' which is a national project that tests becoming gas-free in certain areas or neighbourhoods in the Netherlands. Because it is a state-funded trial, the media report on the subject regularly. It puts the Warmtestad projects under a scope and media has the power to influence public opinion on subjects.

Warmtestad as a concept sounds very promising but so far it has bumped into several issues and unexpected obstacles. The 26th of February 2020, RTV Noord (local news station of Groningen) reported

that there have been large delays in building of the project and bigger financial losses than first anticipated (RTVNoord, 2020). As seen in the introduction there is also different interests in different levels of government, implying that power-relations and stakeholder participation are very relevant concepts for this project. These different interests of the government and poor communication about these interests are best seen in the situation where the use of geothermal energy was stopped by the national mining monitor.

Geothermal energy is a sustainable option to generate heat but this has led to problems where geothermal energy requires drilling. Earthquakes and drilling are not a great combination so the Dutch state mining monitor (Staatstoezicht op de mijnen) actually made Warmtestad stop researching geothermal energy because of unstable drilling grounds. (van Sluis, 2017; Straver, 2018). The municipality of Groningen was forced by a unit of the more powerful state mining monitor to stop their research into geothermal energy. The municipality of Groningen received a letter informing them of this news but this news was at first kept away from the public. This letter also indicated that the state mining monitor had some doubts towards the expertise of the process, communication and project management by Warmtestad (Staatstoezicht op de mijnen, 2017). Keeping this news away made it so that the plans of Warmtestad were tolerated by the public for a short while longer because they were led by false expectations, being unaware of the existence of this letter and thus of this change of plans. Later on during the process this letter resurfaced and this led to even more criticism from the public towards the local government and Warmtestad. Another issue is that so far Warmtestad has functioned in a very top-down oriented fashion and it might be necessary to change that disposition in order to gain more support from the less powerful stakeholders such as the inhabitants. UN has advised to use stakeholder participation to the fullest in order to reach the sustainable development goals (UN, 2012). This was the result of Rio+20, where 106 countries made plans for the future on the subject of sustainable development, in order to combat global warming. Even though these plans are pretty well-known it seems that Warmtestad did not take all the advice to heart. There are a plethora of articles in local newspapers that find that inhabitants are not a part of the process at all. Some inhabitants did not want their houses to become gas-free or zero-energy, but the plans went ahead without their consent anyway. Public opinion is going as far as saying that it was money looking for a plan, rather than the other way around, meaning that public perception of the Warmtestad projects has been very negative because of a lack of perceived expertise (Hulzebos, DVHN, 2020).

From the media sources available on the Warmtestad projects, it seems that there is a lack of communication with stakeholders, and a very limited amount of stakeholder involvement in the developmental phase of these projects. This research will give an idea of what good stakeholder participation looks like, and compare this to how Warmtestad is working on their projects so far. This can find a reason for the shaky start the company has had, and might explain why it has not been the most successful thus far.

Research Question(s)

To research this this research will try to answer the following question:

How can stakeholder participation influence the process of sustainable developments led by Warmtestad in a positive way?

To answer this multiple sub-questions will be needed:

- What are the interests of the involved stakeholders?
- What are the power-relations between the involved stakeholders?
- What changes are necessary in order to optimally use the influence of stakeholder participation on future projects led by Warmtestad?

Relevance and importance of the research

I think this research can give a better insight to the importance of stakeholders in sustainable development. Research on the subject of Warmtestad so far is mainly geared towards the costs and possible regulatory obstacles. Looking at stakeholder participation might prove to be a useful insight.

Theoretical Framework

Key Concepts and Debates

The end result of the process of stakeholder participation will be sustainable development. Sustainability can be seen as a new paradigm that is also interested in the sustainable nature of developments (Edwards, 2005): “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”(Brundtland, 1987).

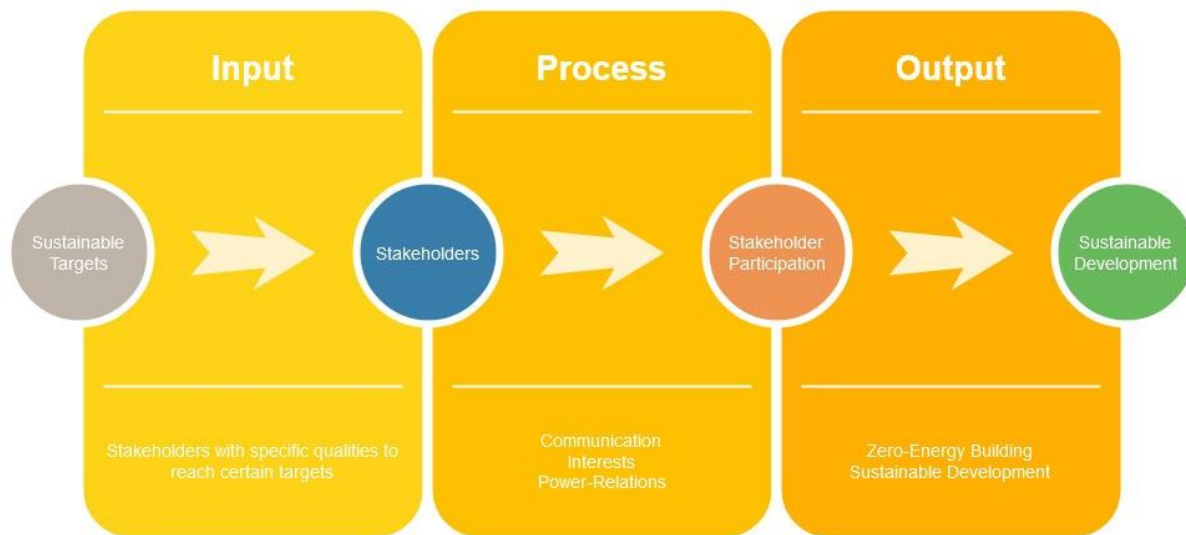
The main concept for this research will be stakeholder participation. Stakeholder participation is necessary to get desirable development for every stakeholder that is involved; it is especially relevant if the interests of the involved stakeholders clash (Stamsnijder, 2016). The processes of development led by Warmtestad definitely have stakeholders with different interests so good stakeholder participation should be a priority if these processes are ever to be successful. Downing et al. argue that good stakeholder participation is important to keep all stakeholders involved and challenge them enough to stay interested (Downing et al; 2003). Others found that good stakeholder participation is not simply listening to and involving stakeholders in the process, but also looking at the group process that forms when stakeholder discuss and negotiate with each other (Bell et al. 2012). Key to successful stakeholder participation according to Vincent (2015) is making sure that there is a combination of formal and informal interaction between the stakeholders. Good stakeholder participation is key in developments in this current day and age. Good stakeholder participation means that the interests of the different stakeholders are taken into consideration and that the interest of one stakeholder does not trump the interest of another (Stamsnijder). However, stakeholder participation brings risks as well. Stakeholder participation often leads to a ‘unique’ solution to a problem (Hermans et. al, 2011). Seeing as Warmtestad are part of the ‘proeftuinen’ they are looking for solutions that apply to every test location in the Netherlands.

This research will mainly use the definition used by Bell et al. and Vincent combined with Stamsnijder since the definition used by Downing in my opinion is not necessarily a positive disposition. Some stakeholders are more likely to participate than others and Downing’s theory might exclude stakeholders that are less willing or less powerful. Another reason why I feel Downing’s theory is too simple is a result of power-relations between the stakeholders, a government has more power than an individual but this should not mean that the will of the more powerful is always forced upon the less powerful group as debated by Stamsnijder. This view on power-relations is supported by van de Kerkhof & Wiczorek (2005). They argue that dominant powers must take into account the less dominant forces, because the outcome of your process might already be predefined without it. Thus power-relations in this research will be used as the different influence different stakeholders have according to their perceived power. With an uneven distribution of power, there is a risk of major problems within the process of stakeholder participation (van Tulder, 2018). The view of a powerful government and a powerless individual is not supported by all, meaning that power-relations are not a given fact but something to discuss. Foucault argued that power is diffused throughout all layers of society (Balan, 2010). In some developments this could be the case, however in the process of development Warmtestad has been leading so far, it has been very top-down oriented. In order for good stakeholder participation this way of using the power-relations will have to change. If the way power-relations are

currently used by the more powerful stakeholders does not change, the parameter set by Stamsnijder for good stakeholder participation will never be reached, making it impossible to allow for good stakeholder participation.

Another important concept is the concept of power-relations. Power-relations tell us how the perceived power of a stakeholder is used in the process of stakeholder participation. One stakeholder might be more powerful than the other, in turn causing the plans to take shape in a way that the powerful stakeholder prefers. Power can be defined in four different ways: Coercive power, Competent power, Legitimate power and Induced power (Wang et al. 2020). Coercive power is the power that Warmtestad and its stakeholders will deal with most. Coercive power is the ability of a powerful stakeholder to coerce other stakeholders into cooperating or agreeing with them. Competent power is the power of ability, if there is only one company that can do a certain procedure or process, their competent power will be high. Legitimate power is the power of stakeholders to set the playing field for other stakeholders to operate in using legitimate authority. Induced power is the power of using financial means to get a more powerful position (Saito & Ruhanen, 2017). Induced power does not really apply to Warmtestad as most of the plans are already financed by the state. All the other types of power are types of power that will be used during the process of stakeholder participation specific to Warmtestad.

Conceptual Framework:



The figure above is the conceptual framework that shows how I expect the connection between the stakeholders to be in the trajectory from sustainable targets/goals to actual sustainable development. In order for sustainable development to be possible, the involved stakeholders have to communicate and get an understanding of each other’s interests in order to reach sustainable development that can be supported by all stakeholders. This process will be influenced by the power-relations the stakeholders have.

Gaps in Existing Knowledge

What is missing in theories in knowledge is stakeholder participation. Stakeholder participation is a part of development that is becoming ever more relevant but somehow most research surrounding geothermal energy or warmtenetten (as they are called in Dutch) is more interested in how geothermal energy works and the cost of such projects. In order to see the impact of stakeholder participation in this type of sustainable energy this research can shine a light on the subject that has so far not been researched properly. Warmtestad is a project that feels very top-down oriented and that can prove to be a way of development from the past. This research hopes to prove that stakeholder participation and involvement can be beneficial for similar projects and should be part of every development that involves multiple different stakeholders.

Hypotheses and expectations

Starting this research I have two main expectations

Firstly I expect to find flaws in the power-relations between the stakeholders. That is why the second sub-question is included. If costs turn out higher than anticipated and the process of building takes longer than anticipated one might suspect that communication between the builders and the planners has been sub-optimal, which could have been a result of the power-relations.

Secondly I expect that good stakeholder participation can improve the Warmtestad projects significantly. There are plenty of mistakes and setbacks that I feel are easily fixed with proper communication and better use of the expertise of the involved stakeholders.

Methodology

This research consists of primary data gathered by qualitative interviews and secondary data gathered online. Primary data used will be multiple experts on stakeholder participation. The experts were selected based on papers and articles written by them. Some of the experts are more academical but there were also experts that are working on stakeholder participation on a daily basis, allowing an insight in the more practical side of stakeholder participation. The difficult part was finding relevant secondary data for my specific research questions, as the amount of research on Warmtestad is not much, although it is enough to still be used in this research. It also helps that Warmtestad has had plenty of media coverage, making it so that there are plenty of articles (both academical and in newspapers, as the media are an important stakeholder) on the subject and about their successes and failings so far.

With the corona limitations still intact, I opted for a list of questions for the experts to answer. This is not ideal, because it limits the interactions an interview would have, but some of the contacted stakeholders really did not want to conduct an interview digitally through skype or Microsoft teams so I chose to go for the same type of data collection for all of them. The experts provided different opinions on the relevance of stakeholder participation, which the research will come back to when the results are presented and discussed.

The secondary data was any relevant sources I could find on the processes at Warmtestad. Most research was geared towards the technological aspect but this research goes into the social aspects of Warmtestad and its stakeholders. Media coverage also turned out to be an excellent source for secondary data, as they would often refer to academical research on Warmtestad which I could in turn use for my own research.

Reflection

At first I was looking to research Warmtestad stakeholders, to see what their interests were and how they were feeling about the projects they have been working on. I figured the stakeholders would be hesitant to help me, so I made an interview guide using Appreciative Inquiry. In other words: I was going to ask the stakeholders about positive experiences during their dealings with Warmtestad. During data collection it became apparent that most of the stakeholders still did not feel like talking about their work with Warmtestad. This might have had to do with Corona-virus but I think that most stakeholders would not have helped even without Corona-virus. E-mails I sent got instant replies informing me they had discussed it internally and were not going to do it and my phonecalls were being ignored, it was a difficult situation. With the Corona-virus and its limitations to free movement still in place, visiting the company to try and get to talk to someone was impossible. After trying for several weeks to get some response and continue with my initial research plans, I decided that I needed to look at my research differently. During data collection I found that the way stakeholder participation is looked at differs greatly between experts on the subject of stakeholder participation. This gave me the idea to look more at stakeholder participation and opinions on stakeholder participation, and compare this to how Warmtestad have been operating so far. It meant that I stayed true to the intention of my research but started looking at it from a different angle.

A big learning experience during this research was learning how dependent you are on people actually

wanting to help you, and even if they do, the answers are still not always as helpful as you would like. Even if your research design is near perfect and you know exactly how you want to go about it, you can still run into major difficulties because of a lack of response.

Results

Interests

The municipality, Warmtestad and Waterbedrijf Groningen all have the same interests. They want Warmtestad to be a company that is a front-runner when it comes to creating gas-free and in some cases zero-energy buildings. Realising this would give Groningen a boost nationally and maybe even internationally, when it comes to exporting this knowledge. Of course it would be better environmentally too, which will benefit the region and municipality in the long run.

The involved companies are in it for financial purposes, but can also gain knowledge and expertise on the subject to use to their advantage in other regions. Their motivation does not have to be entirely self-centered though; networking with other stakeholders can be a large motivation for companies to work on Warmtestad projects. Moreover, the sustainable nature of these projects could inspire these companies to do better, environmentally, in future projects they participate in, without Warmtestad's involvement.

The media is a stakeholder that is mainly there to inform the public about Warmtestad's dealings. Their attention was on Warmtestad already because of it being large projects that are state-funded. The lack of tangible results only increased the amount of articles discussing Warmtestad and media has played a major part in the public perception of Warmtestad.

Lastly there is the interest of inhabitants and housing cooperations, they want the projects to be done in areas of need and want to have proper housing to fulfil the ever-growing demand of housing in the city of Groningen. In the case of the inhabitants already living in a neighbourhood, they want to be sure that changes to their neighbourhood do not influence their daily patterns and expenses too much (Perlaviciute & Squintani, 2019). This clash of interests means that stakeholder participation is a necessity for positive results and eventually, sustainable development.

Power-relations

The municipality seems to be the most powerful stakeholder in usual Warmtestad projects. The municipality is very involved in the entire process as they have the authority to pinpoint where the projects will be within the municipality. This sole authority brings a number of risks with it, as it is quite easy to not involve important stakeholders at this stage. When a location is chosen Warmtestad will find (local) companies with enough expertise to make their plans a reality, this entire process is mainly done with energy and construction companies, and is often started as a task by housing companies to create better or more houses.

Janine van Oosten who works for Neerlands Diep (a company specialised in communication and cooperation for construction and infrastructure projects) and who has done some projects for Rijkswaterstaat:

"In the Netherlands it is quite normal to first make the entire construction plan and when that is all but built check out the surroundings. The result of this is that when others are involved, it is too late in the process to make major changes. Also known as the 'omgevingsparadox' (surroundings-paradox)"

This means that people that may be affected by the construction plans and the realisation of these plans might have very little influence to the outcome of the actual project. This is against the theory by

Stamsnijder (2017) that good stakeholder participation means that the wishes of one party do not trump those of other parties involved. Strides have been made to change this a bit with the new 'omgevingswet' (surroundings-law) (Nederlandse Overheid, 2016). This law is accepted to make the process of starting construction a bit easier, hopefully the effect of this change will be that more stakeholders will be involved from the start of the project. It is however by no means a holy grail and it could also lead to more projects being constructed without the support of other stakeholders.

However, the municipality is not always the most powerful stakeholder. When Warmtestad wanted to drill for geothermal sources, the Dutch state mining monitor (SODM) reported that it was not allowed because of a lack of expertise and also the risk of more earthquakes, which the province of Groningen has suffered from over the last couple of decades. This does not change the fact that the municipality is the sole authority when it comes to picking a location, but it does mean that not everything is allowed on any chosen location.

Most of the companies that are involved with Warmtestad are companies that Warmtestad works with on a regular basis. The companies benefit from the large amount of money made available for these 'sustainable' Warmtestad projects. They do not have a big say in the entire project, they are mainly there to do what is asked of them. Someone working at van Wijnen told me that the entire project had to be put on hold for a while without van Wijnen having knowledge about this happening: *"Depending on the pipelines, the entire building site has to be opened. This is very impactful for the construction companies' process and planning"*.

He also mentioned that Warmtestad was an imposed party for van Wijnen, and that they are not able to choose whether they want to work with them or not. This tells us that van Wijnen is definitely not that powerful in their relation, as the bulk of the practical work is done by van Wijnen, but they have little influence over if they even want to be building that specific project. However, he was positive about the cooperation, he mentioned good communication as the main reason for the project actually being somewhat enjoyable to work on, despite it not being van Wijnen's own choice. These claims tie in to the theory by Vincent that formal and informal communication are vital for good stakeholder participation.

Judging the unwillingness of most companies to cooperate with my initial research it is clear that there are interests for the stakeholders that they are not too willing to be interviewed about. Inhabitants were always going to be hard to contact but research has been done on the perception of inhabitants of Vinkhuizen to the participation in Warmtestad projects in that neighbourhood. Perlaviciute and Squintani (2019) found that the inhabitants' willingness to be included and their actual inclusion were quite far apart in most cases for Warmtestad projects in Vinkhuizen. This all links to the 'omgevingsparadox', and teaches us that there is work to be done for Warmtestad when it comes to public participation and the timing of certain major decisions in their projects. There is a lack of a group together and still very much groups fighting one another so Bell et al.'s theory of group forming is not taken into account by Warmtestad in their communication.

The way forward

All the interviewed experts agreed that for good stakeholder participation, a level of trust between the stakeholders is required. Warmtestad often works with the same partners so it is very possible that Warmtestad pick the stakeholders based on trust. Another reason the same partners are contacted for most projects could be a lack of expertise at other companies. This brings up a risk or even a result that

stakeholder participation can also bring with it: empowerment of an already powerful stakeholder (Luyet et al. 2012). If one company gets the opportunity to work with new technology like they would with Warmtestad projects, and another company is left out of most projects with such technology, it could lead to unfair advantages between these companies. It could also lead to the projects going exactly as the previous projects when less dominant stakeholders are not involved (van de Kerkhof & Wieczorek), and they have not been too successful. An argument could be made that with all the rough patches Warmtestad has already hit in their projects they prefer to work with stakeholders that they know and trust. If this is the best way to go about stakeholder participation in the long run can be questioned and based on my findings I would advise them to diversify their pool of partners for future projects. This could also mean a different stance from Warmtestad, so far they have been very focused on the technological aspect of gas-free housing, with very little attention to the social impact such changes could have. A change of perspective could mean a more diverse set of stakeholders, which could improve their plans on the long run.

Another problem for Warmtestad could be solved better planning. Warmtestad is really struggling to finish their projects on time. The losses they make annually are sometimes three times higher than anticipated (RTVNoord). Some of these delays are due to the fact that Warmtestad is no longer allowed to drill for sources. However the employee at van Wijnen that I interviewed admitted that there was a big delay in a specific project because the pipelines were not yet installed when they wanted to start building. This threw a wrench in the entire planning process of van Wijnen and they had not even truly started building yet. Van Wijnen would advise Warmtestad to lay the pipelines before asking van Wijnen to start building as the two things cannot be done at the same time. If they had proper communication and trusted van Wijnen as a stakeholder, this delay may have not happened or at least the planning would have been different. Of course van Wijnen is only one stakeholder, but it is the main constructor on some projects, it is to be expected that especially an important part of the process like van Wijnen would be informed correctly. This is just one example of poor planning from Warmtestad and it seems to be something that they can improve on rather easily if they would opt for better stakeholder participation.

A third improvement would be to include inhabitants, both the inhabitants already living in the neighbourhood and the potential new inhabitants, earlier on in the process. Not all inhabitants want to be involved as much as the other; it is not a homogenous group (Perlaviciute & Squintani). In general the public wants to be more involved in Warmtestad projects and it would be supported better if this was made possible in future projects. Wim Elving (Lector Sustainable Communication) stated that: *“The Netherlands are doing quite well when it comes to support and public participation”*. However, it has to be noted that inhabitants’ participation in the Netherlands differs pretty wildly based on what type of energy it is. Ronny Reshef, research assistant of Rob van Tulder (Professor in International Business-Society Management who worked for multiple international organizations like UN, EU and IMF):

“In the Netherlands, I think some of the initiatives are involving the citizens enough, others could involve them more. If I am not mistaken, sustainable development initiatives that have to do with energy - wind energy in particular - can involve the citizens more. However, in other initiatives - such as sun energy [also small scale] you can see more inclusion and involvement of citizens.”

Geothermal energy, being quite a new development for the Netherlands, could still just be trying to find a way to involve the public better. Strides have to be made in order to do this sooner rather than later or public acceptance of the development might falter.

The final thing that Warmtestad has to improve on is clarity and honesty about their projects. The employee I interviewed at van Wijnen told me that: *“they cannot deliver on their promises”*. The houses and parcels of those houses might not have any gas-installation on them, but for most of the projects the hot water still comes from gas installations on a different location that heats the water for those houses. This has to do with the impossibility of drilling for a reservoir because of the SODM report but lying about your product seems like another mistake that is quite easy to rectify or improve upon. They have already stayed quiet about the SODM report and that was not great for the public perception of Warmtestad. Warmtestad should probably just come clean and make it clear that the technology is there, but at the moment it is just not possible to deliver on these promises yet, because of governmental limitations. Keeping something like this away from the public might affect them even more negatively if Warmtestad is not the one releasing this information. It is the same mistake they made with the SODM report and the absence of change displays that they did not learn from their previous mistake.

Discussion

The results indicate that power-relations are indeed a very important factor to stakeholder participation. Especially in projects like the projects of Warmtestad, those with many different interests, stakeholder participation is necessary for good results. In line with the hypothesis, Warmtestad has not done a good job of creating an even playing field for the involved stakeholders and this seems to be a big reason for their shaky start so far. Warmtestad could have been way better off with proper stakeholder participation from the beginning. The research findings confirm that mismanagement of interests and power-relations can lead to projects failing. This mismanagement has influenced the process of stakeholder participation negatively. Proper stakeholder participation as I see it, as stated in the theoretical framework, would have fixed some of the problems that Warmtestad now faces. A thing to note is that this research is limited in the sense that there was not much positive secondary data to find about Warmtestad. Most research on Warmtestad is from a negative point of view so the positives of their dealings are hard to find, as this research relies heavily on secondary data for information on Warmtestad. For future research on the subject I would advise to try and get some positives for Warmtestad. While the negatives are quite clear and are many; the whole story including positives might change the results of a similar research.

Conclusion

Based on all the findings, it seems that stakeholder participation has mainly a positive effect on sustainable development. There are some risks that have to be taken into account (Luyet et al.) but the positives stand out over the negatives. Stakeholder participation leads to more trust in the decisions. The decisions are often better for a bigger group of stakeholders if these stakeholders are involved in the decision-making early on. This is something Warmtestad has struggled with and seems to be a partial fix to their shaky start so far. Another effect of proper stakeholder participation can be a better public acceptance of the project, something that Warmtestad might need more than anything after being slated by the local media and inhabitants alike. If the changes proposed in this research are taken into account, Warmtestad can still be a success, but going on like they have so far will not result in sustainable development. There is a willingness to change and get people involved from the province and municipality of Groningen. This can be used to their advantage but so far has mainly been used to push projects through that cannot count on much support from the public. The public is not on Warmtestad's side but they can be more inclined to support them if the projects are a result of discussions and cooperation between the public and Warmtestad. If Warmtestad manages their stakeholders better and allows for more participation of those stakeholders, we will be living in gas-free cities in no time!

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