

Reflection on thesis project

Aspect 1 • the relationship between research and design

The research about the spatial component of the energy transition makes the project quite complex. During this research making designs without doing research about cost and benefits or social structures connected to certain systems makes no sense for the future users. Therefore a big part of the research is about strategy and the technological needs and dimensions for different energy neutral designs and the belonging energy techniques. Also strategy for making a design that will suit the wishes and needs for the local people takes a lot of time.

For example the many different stakeholders were all important to talk to. How to make clear what the spatial impact can be, and how they can be part of the design process. The design part is based upon the outcome of the input evening with the local stakeholders in which they could tell what specific chances they see for their own region. This gave me insight in the local attitude towards renewable energy. Also their perception of the spatial consequences has been discussed to see whether an energy neutral design fits into their perfect area. The design in this research is actually more based upon the acceptance of spatial impact rather than by the degree to which it can fit within the current spatial vision or appointed qualities. The local inhabitants discussed different spatial scenarios and reviewed them on their visual and non-visual consequences.

Aspect 2 • the relationship between the theme of the graduation lab and the subject/case study chosen within this framework

The energy transition can be seen as a new challenge for the 21st century in which we will have to cope with a lot of new urban topics like for example global warming, growing population in cities and new social structures. With the growing concern of climate change and atmospheric pollution, the use of the urban metabolism model has become an important element in determining and maintaining levels of sustainability (and health) in urban regions and cities. Urban metabolism provides a unified and integrated view of all activities of the city in one single model. Within Urban Metabolism the different flows within cities and regions like food, heat, waste and energy are investigated. In this field the energy transition is an interesting topic since designing with these new renewable energy sources brings new possibilities and chances but also challenges for the (mainly) well appreciated current built environment and landscape. "The changing relation between energy and space, in the context of energy transition, has not yet been extensively discussed" (Sijmons, 2014). The implementation of new energy sources needs a lot of new understanding of the flows in the current and future design of urban areas. Especially since the renewable energy will bring new spatial elements, land use and a new scale which has to be integrated in the existing landscape and built environment.

The case study of Trynwâlden was chosen to see how a region can look for regional opportunities. The aim was to see how this region could find good chances within their own area and landscape.

Aspect 3 • the relationship between the methodical line of approach of the graduation lab and the method chosen by the student in this framework

For making an energy neutral design for a region, a lot of different aspects come across while investigating the "problem". A lot of technologies, systems but also economic feasibility and so on all come along when discussing the wishes and needs for an area for renewable energy. When including the local people understanding these aspects becomes more important. People have many reasons and arguments to like or dislike a plan. For example projects for wind energy in a certain region in Friesland caused heavy resistance, because when things are designed and really drawn on a map, certainly everyone has an opinion about what is spatial quality or not. The "Not In My BackYard" effect is quite big. The opinions are also good in a way, but by showing one possibility, people cannot see why other possibilities might not be better. So therefore I choose to design scenarios, to show what the different chances can be for the region can be. Afterwards I could make up the balance between the different scenarios. In this way the most appreciated scenario for this region can be formed. Also by making a scenario for the far future it is less scary for people to say something about it, because in the end of course the whole scenario is never going to happen, (due to technological innovation in the future etc.). This makes it easier to choose and start with small steps. This back casting would eventually be a good way to see where to start, and give a direction or starting point. Not particularly a definite future.

Aspect 4 • the relationship between the project and the wider social context

The project aims to come to spatial solutions for the energy transition in Friesland. Questions to be answered are for example: what can de Province do to achieve the goals on renewable energy set by the European Union? By doing research on how the spatial impact of energy transition can look like, the product can be used as an example to show a possible future. To show possibilities, inspire or to make people think of even better ideas. By including the (interactive) process towards a growing percentage of renewable energy it is relevant for all the stakeholders, so including the inhabitants and so society. Speeding up the transition requires a smart combination of bottom-up and top-down control. This re-orientation of government policy is needed; guidance which connects to this phase of the transition in which we are still seeking for the best solutions to fit. Nowadays, for example, huge discussions about "horizon pollution" by wind turbines cause a lot of resistance. People are aware of this new sustainability projects but won't participate when there's nothing in it for them. Therefore this research aimed to get an understanding on how to include the different stakeholders in this process and to see what can be in it for them. Therefore two workshops have been organized, one for a brainstorm on possible futures and one on reviewing the different scenarios that have been designed from their own ideas (but made a bit more extreme). This collaboration with the stakeholders made them enthusiastic since the scenarios were based upon their own ideas and will probably be good for the awareness and attitude towards renewable energy. It helped the process for the local inhabitants to search for local opportunities and people were surprised by the many options and ideas that have been brought up, (mostly by themselves!), in de workshops.