REFLECTION

This chapter will cover a detailed reflection on the research subject, research design and methodology, the cases, the synthesis and the conclusion.

1.1 Research subject

As this research developed over a year, the topic of sustainable development, implementing energy efficient solutions in large areas is still a very current topic and still moving slowly towards more progress. What is noticeable is a larger stress on the subject of circular economy, which is the process of re-using materials. In some theories energy efficiency or re-using energy is also considered circular economy, where this thesis considered it as a different movement.

Still, little action is taken towards implementing energy efficient solutions on a large scale. It is visible that more and more individual projects on implementing energy efficient solutions are taking place and more implementations occur on the scale of one or a few buildings. This means that new information is created on implementing those solutions. If this information can be used on a larger scale is difficult to tell, because the process is far more complex compared to the individual scale.

Interesting would be further research on the idea of the creation of a company or partnership that is specifically founded with the purpose of accelerating the process of implementing energy efficient solutions. This could be the design of the partnership or the company and the tasks and positions of the actors. Also, one could research more the way of collaborating and how actors should act upon each other.

1.2 Research design and methodology

This research has been designed as a qualitative research because the subject is new and not well founded in literature. Eventually a qualitative research was best, as it becomes very complex, difficult and almost impossible to quantify topics such processes, actor involvement and bottlenecks in processes.

The methodology was mostly focused on urban (re-)development and process management. Eventually it led to a very broad elaborated research, but other methodologies needed to be used could be more detailed. Again this also refers to wanting to state something about different cities in Europe, and a more broad methodology focusing on policies for example is logical. Deepening the research by more coverage on transition management or energy management or systems, could contribute to the result of this research.

The research could have had more interviews, where more detailed information on each actor could be covered. This would have also meant more time in the thesis and processing all these interviews.

1.3 Cases

The research was designed to cover European cities, where the cases of the project "TRANSFORM" have been used.

Firstly, the cities that participated in the project and also cover the case study have been selected because of their innovative and sustainable character. This means that all cities have in some sort of way the objective to do something with sustainable development. This attitude was typical of these cities, but not for all the other cities of Europe. This means that found bottlenecks only apply on those cities in Europe that are far in sustainable development and find sustainable development important.

Secondly the case study only used information provided from the project. This means that maybe other actors could have had important information that could be used as input for the research.

Also, because I was involved with TRANSFORM it was very difficult to keep my own personal view on the matter out of sight. Difficulties had been found on keeping the case study as objective and professional as possible, while have been involved with all the processes.

Finally, a cut was made from the original cases from five cases to three. This cut was made, because of the amount of time in relation to the amount of information that was needed for this research. If there was more time, all five cases could have been used for this research. Information would have been more detailed, but because the cases were included in broad outline, no information was missed to give a full and well elaborated broad conclusion.

1.4 Synthesis

The synthesis was combining the concepts from the theoretical framework with the case study and find results.

Combining one and another was difficult because not much theory could be found on energy transition in the built environment. When theory was found, it was mostly written from the view of public actors.

The results from the synthesis are very broad and widely statements on the information found from the literature study and the case study. It was very difficult to be very specific, because the information used on the case study and literature review was also very broad not extremely specific. Eventually this does not mean a lack of quality of the result, but a lack of preciseness of the result.

1.5 Conclusion

This research was concluded by answering the main research question. At first, the main research question was specific and would tackle the problem of not enough movement towards energy transition. Now after the research one could say the research question is not as specific enough to really contribute to accelerating the process of implementing energy efficient solutions. Eventually the answer or solution is more a very thorough statement on the state of the art and describes the relation of the actors towards the state of the art. This means that no practical steps or models are provided by this research that can actually be used by actors. This is in contradiction with my personal interests, where I am more motivated by doing instead of elaborating a phenomenon. This means that more action towards implementing energy efficient solutions can be instigated by actively confronting the actors on the results of my research.

Again, also the conclusion reflects an interpretation of the theory from the perspective of the reader and analyst of the case studies. This means that to be more precise or revise these

conclusions one should conduct a research with more depth. This could be done by letting all actors make the actor analysis themselves and compare the results with one and another.

Finally, the field of implementing energy transition is changing, slowly, but this also means that the context has changed. Of course this changeable behaviour is taken into account in this research, but it does mean that some conclusion could be out-dated. For example, higher governmental bodies could already have established new laws on energy efficiency. Or partnerships have been already established.

1.6 Theory vs. Practice

Finding the right theory that matches the main research question was very difficult. The topic is quite novel and theories are not that well developed yet. Also the topic is very complex, because different fields are brought together in the problem. This means that many theories were found on the individual topics, but bringing fields like urban development management, transition management and process management together in literature is novel and not easy to find. I noticed this while working on the theoretical framework and found it very difficult to related one to another.

Gathering practical information was not difficult, but how to process that information was very difficult. It means you have to define, with theory and common sense, how to deal with all the information from the cases. To my opinion it was very difficult to define what information should and what information should not be part of this research.

It is difficult to compare theory with practice, because the bottlenecks found in practice reflect a state of the art of this decennium. Theory is broader and more timeless.

1.7 Further research

Research on the process of energy transition in the built environment is as described in this chapter very novel. Topics as sustainability are becoming more and more important, and also literature on sustainability is growing.

Further research should focus on the bottlenecks that are found in this research. What can actors do more specifically to overcome these bottlenecks and are there cases that provide solutions. During this research more development has taken place on implementing energy efficient solutions.

Most interesting and important bottleneck to research further is the business model of implementing energy efficient solutions. How can you make the business model sound or what do actors need to agree upon to make the business model sound?