University of Twente, The Netherlands

Master Environmental and Energy Management

MSc Thesis

Co-ownership in Renewables and the Endona Energy Cooperative

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August 2021

TABLE OF CONTENTS

LIST OF FIGURES **3**
LIST OF TABLES **3**
LIST OF ABBREVIATIONS **3**
ABSTRACT **4**
ACKNOWLEDGEMENTS **5**
1. INTRODUCTION **6**
2. METHODS **12**
CASE SELECTION 16
OPERATIONALISATION 16
DATA ANALYSIS 17
3. CURRENT STRUCTURE OF THE ENDONA COOPERATIVE **18**
4. RED II & RECS FOR THE ENDONA COOPERATIVE **21**
5. CSOP UNDER DUTCH LAW **26**
6. ALTERNATIVE STRUCTURES FOR THE ENDONA COOPERATIVE **32**
COOPERATIVE 32
STICHTING ADMINISTRATIEKANTOOR (STAK) 32
COOPERATIVE AND FOUNDATION 33
HYBRID STRUCTURE 34
7. CSOP FOR OTHER ENERGY COOPERATIVES IN THE NETHERLANDS **37**
8. CONCLUSION **40**
9. REFLECTION **43**
REFERENCES **45**
APPENDIX A. INTERVIEW QUESTIONS 47
INTERVIEW QUESTIONS FOR ENERGY COOPERATIVES 47
INTERVIEW QUESTIONS FOR THE MUNICIPALITY 47
INTERVIEW QUESTIONS FOR THE PROVINCE OF OVERIJSSEL 48
INTERVIEW QUESTIONS FOR THE NEIGHBOURHOOD TEAM OF ENDONA 48

List of Figures

Figure 1: Conceptual model of the research
Figure 2: Current structure of the Endona cooperative
Figure 3: Example of CSOP in Germany
Figure 4: Possible alternative structure for the Endona cooperative
Figure 5: CSOP example with heterogeneous partners

List of Tables

Table 1: Overview of interview respondents
Table 2: Overview of methods used per sub-question
Table 3: Differences between RECs and CECs
Table 4: Forms of financial participation in RES
Table 5: Matrix criteria of decision-making for stakeholders versus impact

List of Abbreviations

BBB	Boeren Burger Belangen
CDA	Christen-Democratisch Appèl
CECs	Citizen Energy Communities
CSOPs	Consumer Stock Ownership Plans
D66	Democraten 66
ETF	Endona Together Funds
EFO	EnergieFonds Overijssel
EU	European Union
IEMD	Internal Electricity Market Directive
IEMR	Internal Electricity Market Regulation
LLCs	Limited Liability Companies
RE	Renewable Energy
RECs	Renewable Energy Communities
RED II	Renewable Energy Directive II
RES	Renewable Energy Sources
SMEs	Small and Medium sized Enterprises
STAK	Stichting Administratiekantoor
VVD	Volkspartij voor vrijheid en Democratie

Abstract

This master thesis inquires the research question: *"How can the Endona cooperative include municipalities and/or commercial investors like SMEs, and advance to economies of scale while retaining the benefits of individual consumer participation and what can other energy cooperatives learn from this?"* The advancement of economies of scales of energy cooperatives could lead to an acceleration in the energy transition. As such it is also useful in the Netherlands given the transition targets set by the Regional Energy Strategies, as well as the goals set by the European Union. By assessing how the Dutch Endona energy cooperative can advance its economies of scale, implicitly both the viability of RECs in the Netherlands and the possible implementation of Consumer Stock Ownership Plans (CSOPs) in the Netherlands are investigated. Several relevant alternatives are developed for the organisational structures of the Endona cooperative, and several learning factors are included for other energy cooperatives. This is done based on academic literature, policy documents, news articles and interviews with relevant stakeholders. These stakeholders included the Endona cooperative, the neighbourhood team of Endona, other energy cooperatives in the region, the municipality of Raalte and the province of Overijssel. Overall, a hybrid structure is suggested, where the CSOP is adapted to Dutch law employing a contractual trusteeship arrangement, the "Stichting Administratiekantoor" (STAK). As a general recommendation, social support is advocated as being necessary for energy cooperatives to innovate, alongside the need to make steps need to be taken to further professionalisation of energy cooperatives.

Acknowledgements

First of all, I would like to thank my supervisor Prof. Dr. Michiel Heldeweg for helping me finalise my thesis and provide me with the proper feedback regarding my research. Without the guidance provided, the finalised product wouldn't look the same. The same goes for my second supervisor, dr. Gül Özerol. She also provided me with useful feedback which improved the final thesis.

I would like to especially thank Prof. Dr. Jens Lowitzsch for helping me create such a complete thesis in the end. Without the online lectures and meetings, as well as the continuous feedback, this thesis wouldn't be the way it is now.

Next to this, I would like to thank the board of the Endona cooperative and Escozon for giving me the opportunity to work on this project. It has been a challenging and interesting journey and hopefully this thesis will help them in the future.

Lastly, I would like to thank all the respondents who were kind enough to be interviewed by me. All of the input has been especially useful and provided fresh insights during the data collection period. So a special thanks to the energy cooperatives Noaber & Co, Goed veur Mekare, Duurzaam Luttenberg and Enschede Energie, the neighbourhood team of the Endona cooperative, the municipality of Raalte and the province of Overijssel.

1. Introduction

The Paris Agreement requires a cut of at least 40% in greenhouse gas emissions compared to 1990 levels by 2030 according to its 2030 Climate and Energy Framework (European Commission, 2021). To show global leadership on renewables, the European Union (EU) has set an ambitious, binding target of 32% for renewable energy sources in the EU's energy mix by 2030 (European Commission, 2021). The revised Renewable Energy Directive (2018/2001/EU), which contains this commitment, entered into force in December 2018.

To achieve this, an acceleration in the energy transition is necessary. Energy communities and consumer (co-)-ownership in renewable energy can play an essential role in the energy transition towards a society that is more focused on renewable energy sources (RES). According to Lowitzsch, Hoicka and van Tulder (2019), energy communities and consumer (co-)ownership in renewable energy are essential cornerstones to the overall success of the energy transition, in particular with regard to Renewable Energy (RE) clusters. When consumers acquire ownership within RE installations, such as in an energy cooperative, they can become *prosumers*, that is consumers that produce part of the RE they use. Prosumership is expected to be increasingly embedded into energy communities that entail a broad variety of actors (Lowitzsch, Hoicka, van Tulder, 2020). The recast of the Renewable Energy Directive (RED II) of the EU, which entered into force in December 2018 (European Commission, n.d.) provides a legal framework for prosumership. The rules of RED II are embedded in the Internal Electricity Market Directive (IEMD) and Internal Electricity Market Regulation (IEMR). This framework entails two parts as to how consumers / prosumers will acquire the right to consumer, store or sell renewable energy generated on their premises:

1. At the individual level, households and non-energy small and medium sized enterprises (SMEs) and at a collective level for example in tenant electricity projects (Art 21, RED II); or
2. as part of Renewable Energy Communities organised as independent legal entities. (Art. 22, RED II).

The RED II is part of the Clean Energy for All Europeans Package of the EU (European Commission, 2021), an instrument of the EU to facilitate the transition away from fossil fuels towards renewable energy to achieve the targets set by the Paris Agreement within the EU. Although the deadline for transposition into national law of the 27 Member States of the EU was 30 June 2021 (European Commission, n.d.), the transposition is complex and expected to last much longer. However, the Regional Energy Strategies of the Netherlands are being implemented from July 2021 onwards, and already provide a 'social dialogue' (not legally binding) perspective on promoting result (Regionale Energie Strategie, n.d.). Within the Netherlands, there are thirty different Regional Energy Strategy Regions, one of them being the Regional Energy Strategy of West-Overijssel (Regionale Energie

Strategie, n.d.). The Regional Energy Strategy states that 'the energy transition does not stop at the municipality borders. Public institutions, governments, citizens, entrepreneurs, network operators and societal organisations have to work together towards a Regional Energy Strategy. (Regionale Energie Strategie, n.d.). The Regional Energy Strategy of West-Overijssel even has the specific goal of strengthening local communities. This is where Renewable Energy Communities can come into place.

As part of the rules concerning Renewable Energy Communities (RECs) an enabling and legally binding framework for their development and support has to be adopted within national law of the Member States. The Endona cooperative which is the focus of this research could possibly receive support from the enabling framework conditional to qualifying as a REC under RED II. Next to that, it could help achieve the regional energy strategy goal of fifty per cent local ownership.

Endona is an energy cooperative located in Heeten (Endona, n.d.). Endona can be seen as an atypical cooperative, since it only has four members, namely the board of Endona. Financial participation by the broader public is offered through the Endona Together Funds (ETF) which issues financial bonds. This differs from conventional cooperatives, where participants become active members of the cooperative and participate in decision-making. According to the mission statement of Endona, it wants to generate renewable energy from a local, sustainable source and supply this primarily to inhabitants of Heeten and companies located in Heeten (Endona n.d.). Endona wants to be completely independent of national suppliers (Endona, n.d.) and strive for an energy neutral and sustainable Salland (Endona, n.d.). Their vision includes the achievement of profits for the community by using their own energy supply, creating a sense of community and pride. Benefits should be given back to the community. Due to the increase in support an energy neutral Salland can be achieved by 2030 (Endona, 2030).

Problem Statement

To achieve the vision of Endona, an energy neutral Salland by 2030, it is necessary for Endona to upscale. Endona wants to start up more and larger projects, which require more participants as well as the involvement of other stakeholders, such as the municipality and SMEs. In the light of the Regional Energy Strategy and the pending transposition of the RED II into Dutch legislation this is even more relevant since Endona – conditional on qualifying as REC pursuant to the new rules for energy communities – could benefit from support measures currently to be introduced. This would require some adaptations of Endona's business model to make it fit the anticipated new Dutch Energy Law, which is not yet completely aligned with RED II. The Dutch Energy law 1.0 will be the replacement of the current Electricity-, Gas- and Heating Act. It will be a modernised and updated version to support and stimulate the energy transition in the Netherlands, as well as contribute to a cleaner energy provision which should be safe, reliable, and spatially achievable (Rijksoverheid, n.d.). To tap into the potential of the new governance model of the RED II for RECs requires the development, implementation and

rolling out of business models that broaden the capital participation of consumers whilst permitting co-investments of different types of actors (Lowitzsch, 2019).

The upscaling process of the Endona cooperative will come with several challenges regarding the participation within the cooperative, the regulatory requirements of the implementation of the RED II in Dutch legislation and the challenge to include heterogeneous partners in the cooperative.

Professionalisation

Running an energy cooperative, especially when it's growing, is taking an increasing amount of time. As stated by the respondents, there is a lack of professionalism in current energy cooperatives. Just volunteers alone can't take the load anymore. When cooperatives are growing, there is an increasing need for technical knowledge, project management knowledge, financial knowledge, judicial knowledge, policy knowledge and some political sense. With the increase in need for knowledge within an energy cooperative, it also becomes more time consuming. The combination of knowledge and time necessary within a growing energy cooperative makes that professionalisation is a necessary step to take according to the interviews held with the energy cooperatives Noaber & Co, Duurzaam Luttenberg, Goed veur Mekare and Enschede Energie (2021)

Participation

Above all, to qualify as a REC the RED II requires genuine financial participation entailing also local control. But, more generally speaking, financial participation in RES can take place in two distinct forms, namely a) passive financial participation such as bonds, limited partners, or limited partnerships thus, in the broad sense and b) active financial participation involving real (co-)ownership with responsibilities and participation in decision-making, being the narrow sense (Lowitzsch, 2019). Other forms of entities entail various levels of participation in decision-making depending on the relevant legal framework. For instance, the extent of participation, both financial and in decision-making for participants is different for non-profit entities compared to business corporations. Within energy cooperatives, financial participation is always combined with participation in decision-making according to the seven core principles of cooperatives (International Cooperative Alliance, n.d.). Therefore, the Endona cooperative would require a legal vehicle that ensure active financial participation.

Regulatory requirements

There is the question as to how the cooperative can implement the regulatory requirements for RECs that come with the implementation of the RED II within the Dutch legislation. A related question is what type of trade-offs – if any – are required when looking at the upscaling process of Endona. It wants

a higher involvement of citizens and wants to engage in larger projects, whilst retaining the autonomy of the board of Endona.

Cooperation with heterogenous partners

Next to that, there is the matter of participation within the cooperative. How can municipalities and commercial investors, such as SMEs, be included in the upscaling process of the Endona cooperative, whilst retaining the benefits of individual consumers' participation? these challenges need to be considered within the Endona cooperative when advancing its economies of scale.

CSOP as a possible solution

To successfully upscale their undertaking, a relevant concept – amongst other possibilities – for Endona could be Consumer Stock Ownership Plans (CSOPs). CSOPs can be defined as follows: *"a financing technique that employs an intermediary corporate vehicle that facilitates the involvement of individual investors through a trusteeship and may use external financing, thereby achieving the benefit of financial leverage"* (Lowitzsch, 2020). Because of the use of an intermediary entity, the project financing is easy and scalable since it does not require a multitude of individual bank loans but can benefit of single source financing. Next to that, CSOPs allow a more heterogeneous partnership to participate in renewables, as decision-making processes are more streamlined when employing a trusteeship for individual consumers' participation. Decision-making is more professionalised because of the trustee representing the consumers on the board of directors. The trustee first consults with the consumers, then represents their opinion at decision-making processes (SCORE, n.d.) at the board level thus reducing necessary time as well as transaction costs.

CSOP implementation can contribute to reduce energy poverty, increase the acceptance of renewables as well as foster local development and incentivise demand-flexibility (Lowitzsch, 2019.). In particular, a CSOP can lower the threshold for access to RES due to lower initial investments costs for individuals. However, there are several challenges present when implementing CSOP financing in RECs and energy cooperatives. One of the main challenges is the framing of consistent policies to incorporate prosumers, both individuals, municipalities, and SMEs as central actors (Lowitzsch, 2019). To tackle this challenge, trade-offs are required, and, in several areas, tasks are posed. These areas would mainly be a) policy efficiency and simplicity, b) predictability and flexibility and c) the sharing of benefits and costs (Lowitzsch, 2019).

Research Questions & Research Objectives

To find whether CSOP might be a promising solution for the upscaling process of the Endona cooperative, several research objectives have been formulated to successfully complete this research. These are identified as follows:

a. To give structured advice to the Endona cooperative on how to advance to economies of scale whilst including municipalities and/or SMEs and retaining the benefits of individual consumer participation.

b. To assess whether the advice given to Endona could be relevant to other energy cooperatives and initiatives in the Netherlands.

To tackle the aforementioned challenges and fulfil the research objectives when looking at the Endona cooperative and its upscaling process, the following research question has been formulated:
How can the Endona cooperative include municipalities and/or commercial investors like SMEs and advance to economies of scale while retaining the benefits of individual consumer participation, and what can other energy cooperatives learn from this?"

The research question is of economic and regulatory as well as social relevance. Co-ownership could also be seen as a learning process, which could lead to improvements in energy consumption behaviour such as better energy efficiency and more sustainable behaviour regarding energy use due to the awareness that possibly comes with shared ownership. In the end, it is not only necessary to increase the number of renewables, but also to become more energy efficient and thus decrease the overall energy consumption.

At the end of this research, advice will be given to the Endona cooperative as to how to advance with their upscaling project. This will entail how to include municipalities and commercial investors, whilst retaining benefits of individual consumer participation. Next to that, it's assessed whether the implementation of CSOP could be relevant to other energy cooperatives in the Netherlands. To come to an answer with regards to this research question, the following sub-questions will be answered as well:

1. *What is the current structure of the Endona cooperative?*
2. *What does the recast of the Renewable Energy Directive (RED II) entail and what are the possible benefits and limitations of being an REC under RED II for the Endona cooperative?*
3. *What are the possibilities and constrains of the implementation of Consumer Stock Ownership Plans under Dutch law?*
4. *What are possible alternative structures to the Endona cooperative as a possible REC under RED II (by applying CSOP)?*
5. *How could the implementation of CSOP benefit other energy cooperatives?*

The scientific relevance of this study can mainly be found in the overarching topic of this research, which focuses more on CSOPs for RECs and their implementation in Dutch law. If the CSOP proves to be useful for the Endona cooperative after its restructuring, an overarching business model for the implementation of CSOPs within other energy cooperatives can be presented. This business model would be aligned with Dutch Energy Law and the implementation of RED II into Dutch legislation. In the end, this would mean that it would be easier for energy cooperatives to upscale, since a framework will be present in literature which can be followed when looking at a restructuring or upscaling process.

Next to that, the scientific relevance also follows from looking closer into the RED II. The RED II still has to be implemented into Dutch legislation, so currently there is a knowledge gap between CSOP implementation, RED II implementation and legislation and energy cooperatives within the Netherlands. Research has been done regarding CSOPs and energy cooperatives within other Member States under the SCORE project which is funded under the Horizon 2020 program (SCORE project, n.d.). However, implementation in the Netherlands has not yet been examined, so this research fills a knowledge gap between CSOP implementation and energy cooperatives in the Netherlands.

Thesis Outline

In the following chapters, a build-up to answer to the research question will be given. First, an overview of the methods that were used are explained and an overview is given of the stakeholders that were interviewed. Next to that, an overview per sub-question is given as to what data were used to answer each sub-question and the conceptual model used for this research is explained. In the subsequent chapters, answers to the sub-questions are given. First the context of the Endona case is explained on several aspects. Next to that, explanation regarding RECs and CSOP in general and specifically for the Netherlands is given. After these contexts have been presented, the alternative structures that are most relevant and possible for the Endona cooperative are discussed and compared to one another. Lastly, some generalisations that are relevant for other energy cooperatives in the Netherlands are explained with respect to scaling up an energy cooperative, possibly using CSOP in the Netherlands. After the answers to the sub-questions are given, a general conclusion and discussion to this research shall be given to give an answer to the main research question posed in this thesis as well as some observations regarding the process of writing the thesis and the reliability and validity.

2. Methods

To answer the explanatory main research question (*'How can the Endona cooperative include municipalities and/or commercial investors like SMEs and advance to economies of scale whilst retaining the benefits of individual consumer participation and what can other energy cooperatives learn from this?'*), *a* single case study was done into the Endona cooperative in Heeten. The sub-questions presented before made sure that there was enough information present to answer the main research question. The sub-questions cover the assessment of RECs in the Netherlands, the application of CSOP in the Netherlands, alternative structures to the Endona cooperatives and how the implementation could benefit other energy cooperatives.

To answer the main research question and complete the aforementioned research objectives, a combination was made of a literature review and semi-structured interviews with relevant stakeholders. Overall, ten interviews were held with different stakeholders. An overview of the interview questions can be found in appendix A.

Overall, ten interviews were held with different stakeholders, most of which are local or regional/provincial stakeholders. An overview of the respondents can be found in table 1 below. Interviews were semi-structured to create a well-rounded picture of the current situation regarding the energy transition in the region, the current situation regarding the Endona cooperative and as to what challenges and problems other energy cooperatives encounter and how their organisational structure looks like.

Interview number	**Stakeholder**	**Date**
1	Energy cooperative Hellendoorn Noaber & Co	02-06-2021
2	Energy cooperative Olst-Wijhe Goed veur Mekare	03-06-2021
3	Escozon	04-06-2021
4	Neighbourhood team Endona	07-06-2021
5	Municipality of Raalte 1	07-06-2021
6	Energy cooperative Luttenberg Duurzaam Luttenberg	08-06-2021
7	Endona	09-06-2021
8	Province of Overijssel	10-06-2021
9	Municipality of Raalte 2	14-06-2021

10	Energy cooperative Enschede Enschede Energie	15-06-2021

Table 1: Overview of interview respondents

To ensure informed consent, before the interviews with relevant stakeholders were held an explanation of the research was given as well as why the stakeholder was asked for this interview and their relevance to the interview. This was also done before the interview through phone contact or through email. Respondents were thus given an explanation of the research before agreeing to an interview. They were free to choose whether they wanted to participate. After the explanation, it was asked whether the respondents were okay with recording the interview. The respondents were anonymised. After transcribing, the recordings of the interviews were deleted. Ethical approval was given by the Ethics Committee of the University of Twente. Both the consent for the recording as well as for the transcribing of the interview were given before and during recording so the consent is on the recording as well.

Several methods were used to come to an answer to the aforementioned research question. Next to interviews, academic articles and legislation and policy papers were used to answer the research question. The main topics for these documents were CSOP, RED II, RECs and the Renewable Energy Strategies of West-Overijssel. The Renewable Energy Strategy was relevant because the new energy law was not implemented yet at the end of this research. However, the Renewable Energy Strategies also focus on local ownership and promote this actively. In table 2, an overview can be found regarding the used methods per sub-question

Sub-question	**Type of data**	**Access methods**
1 (Structure of Endona)	Interview 3, 5, 7, 8, 9 Secondary data including website of Endona, Regional Energy Strategy, policy papers, website of municipality of Raalte	Internet, Endona website, contacts through Endona
2 (RED II and RECs)	Interview 3, 4, 5, 6, 7, 9 Literature review based on legislation, government articles and scientific articles	Internet, websites of EU and Rijksoverheid, academic literature provided by supervisors
3 CSOP under Dutch law	Interview 1, 2, 4, 5, 6, 7, 9, 10 Literature review based on scientific articles, CSOP models, legislation	Internet, websites of EU, academic literature provided by supervisors

4 Alternative structures for Endona	Interview 1, 2, 5, 6, 7, 8, 9, 10 Literature review based on scientific articles, legislation, interviews	Internet, website of EU, interviews through contacts Endon, and academic literature provided by supervisors
5 Benefits for other energy cooperatives	Interview 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 Academic literature regarding RECs and CSOP	Interviews through contacts of Endona, Internet, academic literature provided by supervisors
Main RQ	Combined information of sub-questions	

Table 2: Overview of methods used per sub-question answered

The overall study regarding Endona was a prospective study where the future ambitions of the Endona cooperative were linked towards the possibilities of scaling up their project. Because of the prospective nature of this research, concrete advice could be given to the board of Endona in the end.

There were some limitations and threats to this research. First of all, generalisation of some of the findings might be difficult because Endona can be seen as an atypical case for energy cooperatives in the Netherlands. Normally, it is relatively easy to join an energy cooperative in the Netherlands for aspiring participants, without any entrance barriers present. This is however not the case at this moment at Endona, which currently only has four members. However, during the interviews with the energy cooperatives, it became clear that most energy cooperatives run into the same problems and have to reinvent the same wheel (Interview Noaber & Co, Goed veur Mekare, Duurzaam Luttenberg, Enschede Energie 2021). These problems are mainly regarding the professionalisation of energy cooperatives, so a lack of knowledge and the resistance present in the society where the energy cooperatives are active. So apart from the small number of participants the Endona cooperative has, it is quite a typical case regarding the problems that energy cooperatives run into.

In the end, the following conceptual model (figure 1) was used to come to a relevant answer to the research question posed in this research:

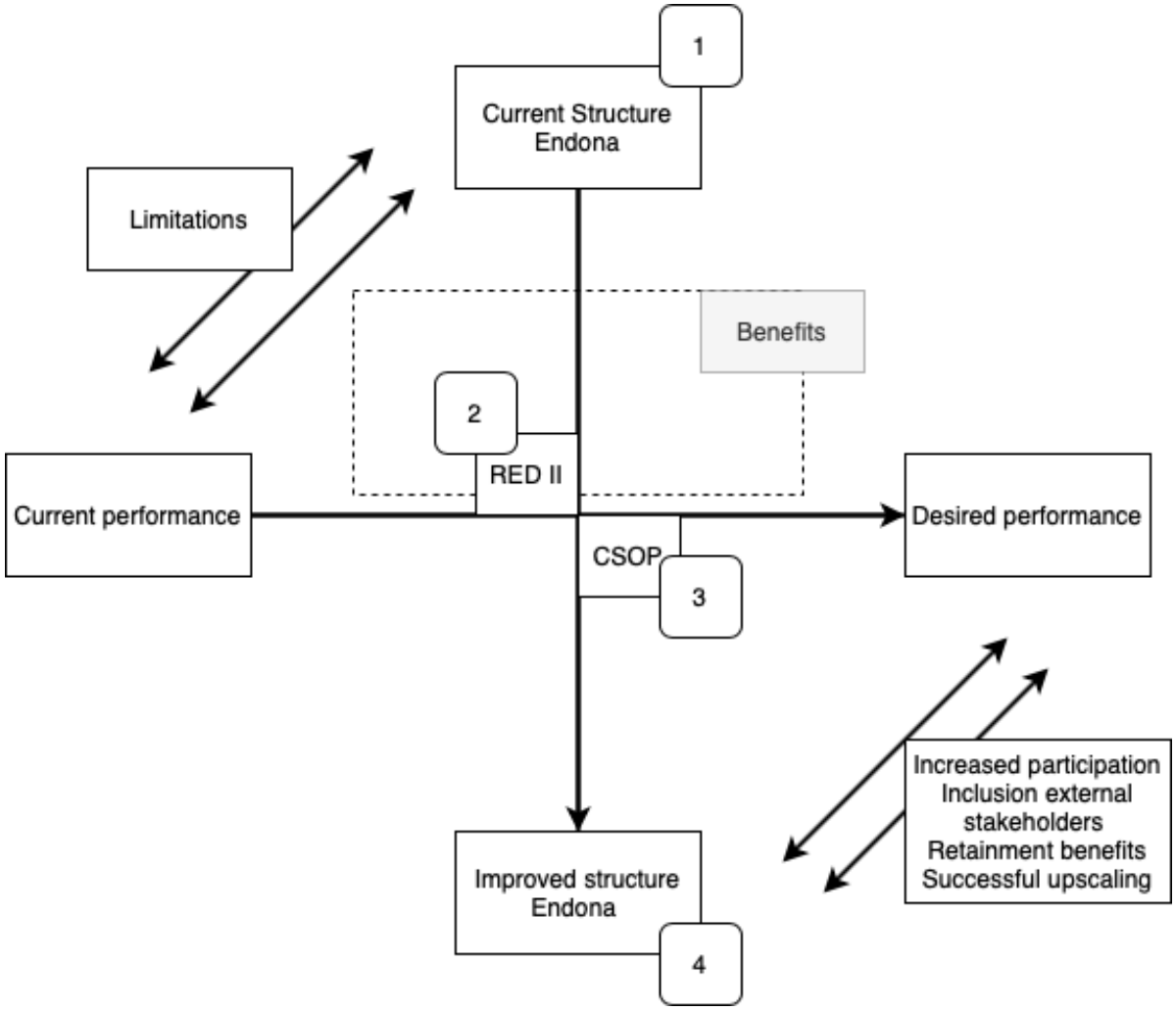

Figure 1: Conceptual Model of the Research

The research started at the top left, looking at the current state of play of Endona performance and its current structure, which brings limitations in terms of aspirations (regarding economies of scale and participation). The horizontal axis presents the substantive ambition of Endona to improve its economic/participatory performance. The vertical axis presents the research focus of changing Endona's legal governance to enable the aspired better performance. It represents the "function follows form" assumption that such legal governance may be regarded as an independent variable to the aspired performance as dependent variable – which is reflected in the bottom-right where we place the desired state of play, again in terms of relating Endona's performance and the structure that is assumed to best enable this. The key question, building upon the "function follows form" assumption, is what structural/legal governance changes are most promising as a matter of creating the desired legal governance space. More specifically, the question is if changes that mould that space by following REDII, subtyped as CSOP as implemented under Dutch law, can do so.

Case Selection

The Endona cooperative was used as a case for this project. Even though the Endona cooperative is an atypical case considering its structure, it's still a very relevant case for this research for several reasons. First of all, there is a need to scale up the energy cooperative within Endona. This made it more relevant to research this for Endona since there is a wish for concrete advice regarding their legal structure. Also, because of their low number of members it makes Endona an accessible case to possibly implement a CSOP construction. The little number of participants allows for a possible CSOP implementation to start with a clean slate, instead of existing participants needing to swift to a possible CSOP implementation.

Additionally, the Endona cooperative is an interesting case for this research because it is a follower city of the SCORE-project. The SCORE project is coordinated by the European University Viadrina and is funded by the Horizon 2020 project of the EU (SCORE, n.d.). The overall aim of the SCORE-project is to 'facilitate co-ownership of RE for consumers.' The SCORE project first researched this in three pilot cities and afterwards also in several follower cities in Europe.

The combination of the aforementioned factors shows the relevance of the Endona cooperative for this research question as well as to why the Endona cooperative was an interesting case study for this research. The necessity for scaling up the Endona cooperative as well as their role as a follower city in the SCORE-project made Endona a compelling case for the research question posed in this thesis.

Operationalisation

This research regarding Endona and the possible applicability of CSOP for the Endona cooperative is a research of the qualitative kind. Within this research, the most important concepts are CSOP, the newly introduced governance model of RED II and energy communities All three of these concepts have a clear definition, therefore it is not necessary to further operationalise them. CSOP was analysed through scientific articles, this was also the case for RED II and RECs. However, next to scientific articles, RED II and RECs can also be analysed through EU legislation.

To answer the main research question, two key factors are present to assess the success of a possible scale-up of the Endona cooperative. First, there is the *inclusion of commercial investors such as SMEs, and/or municipalities*. This is quite straightforward. The inclusion of commercial investors as well as municipalities can be seen through the stakeholders involved when looking at the scale-up of the Endona cooperative. The second factor is the *retainment of benefits of individual consumer participation.* To analyse this, it's important to further operationalise "benefits" of individual consumer participation, also because of the underlying ambition of the Endona cooperative regarding this. Benefits of consumer participation would include financial benefits that come with participating in an energy cooperative.

Next to that, it's also possible to include the benefits that come with actively participating in the energy transition.

Data Analysis

The data needed for this research was collected through the respondents that were chosen based on their fit with one or more of the sub-questions in this research or because the view of this stakeholder was of relevance to be included. Next to this, a snowballing method was used to gather relevant interviewees for this research.

Interview questions were made based upon the sub-questions and then tailored per interviewee. The interview questions could not be exactly the same due to the difference of the interviewed stakeholders and some stakeholders were not relevant for all the sub-questions, whilst others were relevant for more than one, or even all the sub-questions. However, the interviews were semi-structured of nature, so even though there were questions in place that were made before hand, some other questions were added in or left out during the interview because of added relevance or because a question was already answered. In this way, often extra information came into light that was not included in the questions made before the interviews.

After the interviews, all of them were transcribed and the interview questions were then grouped regarding the sub-questions related to that from all the different stakeholders. Since the interviews are mainly used for gathering different views and interests of the relevant stakeholders in this research coding was not necessary. After the grouping of the interview questions with the sub-questions there was enough information present to write the sub-questions and triangulate this data with the scientific literature, news articles and policy papers present.

In this chapter, the main methods were explained to come to an answer to the research question of this research. This included the approach to the relevance of this case to the research, the data collection, operationalisation for this research and how the data was analysed to answer the leading research question of this research.

3. Current Structure of the Endona Cooperative

In this chapter, sub-question 1 will be answered, thus '*What is the current structure of the Endona cooperative?'.* This is done by analysing the political situation within the municipality of Raalte and by analysing the interviews with the relevant stakeholders. These include the board of Endona, Escozon, the Province of Overijssel and the municipality of Raalte.

The Endona cooperative is located in Heeten within the municipality of Raalte. Raalte is a rural municipality in Overijssel. Within the municipality council of Raalte, Gemeentebelangen and CDA are the largest parties (Gemeente Raalte, n.d.). This shows that the municipality council of Raalte is not just Christian conservative, but locally based as well. When looking at the outcome of the national elections of 2021 both the Christian background as the rurality of Raalte can be seen. The five largest parties were VVD, CDA, D66, PVV and Boeren Burger Belangen (BBB) (NOS, 2021). Apart from D66, the other four parties can be seen as centre-to-right-wing parties which do not necessarily prioritise sustainability policies and legislation.

It is mentioned by the board of Endona that when they want new innovations to be implemented, it is hard to find support among the citizens of Heeten (Interview Endona & Escozon, 2021). An explanation for this is the political orientation of citizens. It is often the case that there is a lower support for sustainability and sustainability policies from right-wing, conservative parties. This is underlined by research from Eckberg and Blocker (1996) who found that support for a green society correlates with a rigid political background (van de Ven, 2003).

However, the implementation of more sustainable energy technologies and an increase in renewables is necessary looking at Raalte. This is due to the implementation of the Regional Energy Strategy West Overijssel, an explanation of the Regional Energy Strategy can be found in Chapter 1. Some key points relevant within the Regional Energy Strategy of West Overijssel that are also relevant for the Endona cooperative are 1) social costs should be lowered, 2) there must be an aim of 50% local ownership within the renewables, municipalities should guarantee this and 3) there should be an enforcement of regional participation structures with societal partner organisation (Hoofdlijnenakkoord, Regionale Energie Strategie West Overijssel, n.d.). Especially the last points relate to the wishes of the Endona cooperative to still include municipalities and (local) SMEs to their scale up process.

Raalte implements several measures to achieve the targets of the Regional Energy Strategy West Overijssel. First of all, the vision Duurzaam Raalte 2050 has been implemented from 2013 onwards. From 2019 onwards, the Regional Energy Strategy started a more local approach in municipality of Raalte (Interview municipality of Raalte 1, 2021). This started because of a resolution in the

municipality council where they agreed that a more bottom-up approach was necessary (Interview municipality of Raalte 2, 2021). Next to that, there are guidelines for the solar parks available and concrete targets have been set as well, 100 gigawatt hours of renewable energy by 2030 (Interview municipality of Raalte 1, 2021).

Alongside the measures taken on the municipal level, actions have also been taken on the regional level by the province of Overijssel. They have an implementation program with several clusters to boost the energy transition. These clusters include innovation, the built environment, the sustainability of buildings, mobility, generation, and the support for local energy initiatives. (Interview province of Overijssel, 2021). Together with Natuur & Milieu Overijssel (NMO) the province of Overijssel created a subsidy relationship for local energy initiatives as well as creating a central point where local energy initiatives can come for help regarding several subjects (Interview province of Overijssel, n.d.). Next to that, the Lokaal Energiefonds Overijssel has been put into place where local energy initiatives can loan money to start realising and exploit their projects to help the energy transition in Overijssel.

Currently, the structure of the Endona cooperative is quite straightforward. It's a cooperative with a board and below the cooperative there are two Limited Liability Companies (LLCs). These LLCs are the owners of the generation facilities and Endona is 100% the owner of the LLCs (Interview Endona, 2021). Endona also works together with 'Energie van Ons' who are an energy supplier who produce local, renewable energy. Energie van Ons handles the administrative handling (Endona, n.d.) Next to that, Endona has a framework agreement with Escozon, who can advise them whenever necessary. They are the main advisor of the Endona cooperative (Interview Escozon, 2021). The structure can be seen in figure 2 below.

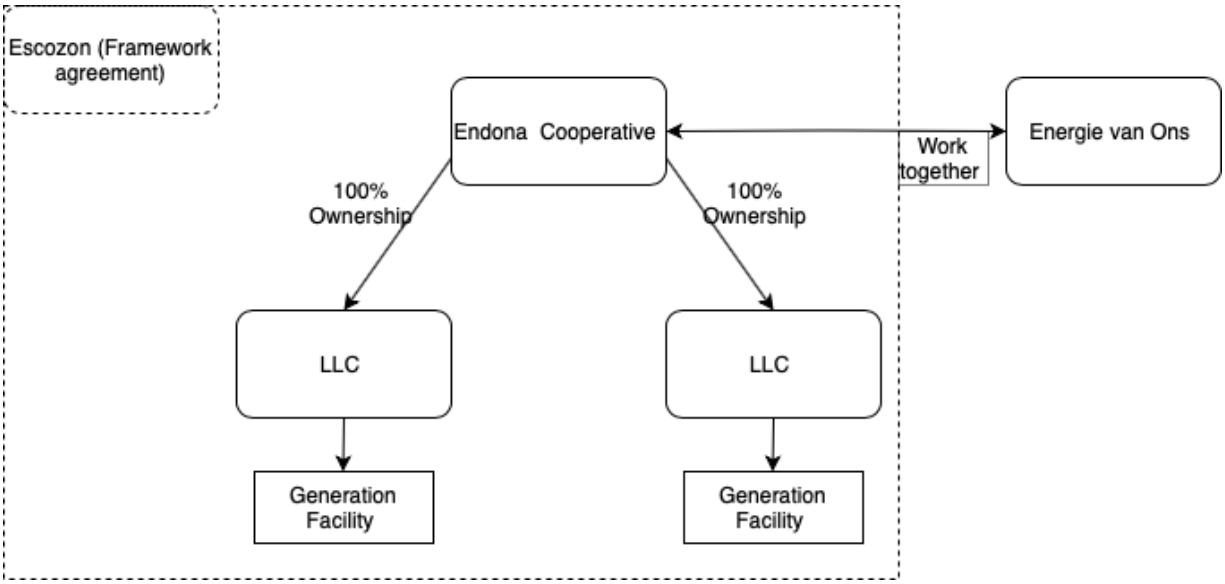

Figure 2: Current structure of the Endona cooperative Source: Endona, 2021

The idea for Endona started in a sustainability workgroup in 2014 (Interview Escozon, 2014). The Endona cooperative started out with only four members, being the board of the Endona cooperative. This was done because there was quite some resistance present within the village of Heeten (Interview Endona, 2021). Due to this resistance present, the board members of the Endona cooperative were afraid that the people that were against the Endona cooperative would become a member and then block every decision that must be made, or disband the cooperative (Interview Endona, 2021). To still enable participation in the cooperative, the ETF was created. As mentioned in Chapter 1, the ETF issues bonds to participants, but participants cannot actively participate in decision-making. Now that the Endona cooperative wants to grow to economies of scale and the Regional Energy Strategy is in place, their current structure is not sufficient anymore, both for their ambition to upscale and their overarching aim to share value with local residents, thus sharing both the joys and burdens with the participants of the Endona cooperative (Interview Endona & Escozon, 2021). However, the resistance within the society is still present, albeit to a lesser extent (Interview Endona, 2021), so there needs to be a balance in the extent to which participants can partake in decision-making in the Endona cooperative compared to the output they will receive from the Endona cooperative.

Endona has several ambitions for the future. First of all, the want to increase the amount of generation facilities in the municipality of Raalte, preferably 100% in ownership of Endona. Next to that, they want to look into the options of wind energy. Both of these ambitions are also underlined in the interview with Escozon (2021). They want to do this in a way where they create an added value for the inhabitants of Raalte. The proceeds should stay within the local community instead of flowing into external commercial project developers (Interview Endona, 2021). This should be done by supporting already existing other energy cooperatives and creating opportunities in villages where there are no real initiatives yet (Interview Endona, 2021). This would require an active role of inhabitants and the municipality.

In conclusion, the Endona cooperative is now a cooperative with a straightforward structure, albeit that they only have four members, being the board of the Endona cooperative. The ‘participants’ of the Endona cooperative can participate through the ETF. The Endona cooperative wants to grow and have a more active role for participants within the decision-making of the Endona cooperative without losing the autonomy of the board members. Next to this, they want to share the joys and burdens with the participants of the Endona cooperative, especially since they want to grow to economies of scale. This would require a different structure than the Endona cooperative has now. In the next chapters sub-questions 2, 3, 4 and 5 are discussed, which should provide a basis for suggesting which direction of re-shaping the Endona cooperative would be best to facilitate their ambitions.

4. RED II & RECs for the Endona Cooperative

In this chapter sub-question 2 will be answered, '*What does the recast of the Renewable Energy Directive (RED II) entail and what are the possible benefits and limitations of being an REC under RED II for the Endona cooperative?'* Being a REC can be relevant with respect to the challenges that the Endona cooperative faces since it could possibly receive support from the enabling framework conditional to qualifying as a REC under RED II.

RED II is the recast of the RED, which is part of the Clean Energy Package for all Europeans. This Directive (2018/2001/EU) sets out the overall policy for the production and promotion of energy from RES in the EU (European Commission, n.d.). Next to that, the EU also has the Internal Electricity Market Directive (EU, 2019/944), as well as the Internal Electricity Market Regulation (EU, 2019/943).

There are several differences between the RED and the RED II. First of all, the revision aims to fully ensure the contribution of renewable energy to the energy transition of the EU in line with the Climate Target Plan of 2030 (European Commission, n.d.) Next to that, it also shows the support of the integration and implementation of energy system integration and hydrogen strategies (European Commission, n.d.).

There are several targets present within RED II. First, the overall EU target for RES consumption has been raised to 32% by 2030 (European Commission, n.d.). Furthermore, the directive sets targets per member state, both considering the potential for RES within a member state, as well as the starting point of a member state. The outcome of both of these variables decides the target set for the member state regarding renewables. How these targets are to be achieved, must be decided upon within the national policy of the member states. Officially, this should be implemented in national law by June 2021.

The directive on common rules for the internal market for electricity and the new regulation on the internal market for electricity (IEMD & IEMR) serve several goals. (European Commission n.d.). One of the most relevant goals is that the consumer must be put at the centre of the clean energy transition (European Commission, n.d.), which relates to the goals that are in place by RED II.

There is an interesting relationship between the IEMD/R and RED II, with several similarities and differences between the two. According to Lowitzsch (2019), both directives put the consumer "at the heart of the energy market" either as an active consumer (IEMD) or a renewable self-consumer (RED II). The IEMD/R can be seen as a regulatory framework that is mostly active on the horizontal dimension. It enables a level playing field, with the same rules applying for everyone (Lowitzsch, 2019). On the other hand, the RED II is more focused on the vertical dimension, creating an equal footing for

RECs by taking into account for instance ownership structure and size of the organisation (Lowitzsch, 2019). Therefore, it's removing obstacles as well as improving the internal electricity market of the EU. With regards to energy communities, the IEMD states their rights and obligations towards electricity enterprises, consumers, and local authorities, as well as levels the playing field towards other market competitors (Lowitzsch, 2019). This differs in comparison to RED II. The main aim of RED II is to ensure that RECs can compete for support on a level playing field with other market participants. RED II also calls on member states to take the specific design of an REC into account when making support schemes (Lowitzsch, 2019). Therefore, it can be stated that RED II has a focus on the promotion and development of RECs. The implementation of RED II is thus mostly active on the vertical level.

Through the Clean Energy for all Europeans Package, the EU introduced the terms 'energy community' in its policy to next be enshrined into legislation, more specifically 'citizen energy communities' and 'renewable energy communities' (European Union, n.d.). The characteristics of these communities become clearer when looking at the IEMD. The new rules implemented in the IEMD promote active consumer participation, either by generating, consuming, sharing, or selling electricity, or by providing flexibility services through response in demand and storage (European Union, n.d.).

Legally, a REC is defined according to Article 2(16) of the RED II. According to this article, a 'renewable energy community' means a 'legal entity, which in accordance with the applicable national law is based on open and voluntary participation, is autonomous and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity. The shareholders or members are natural persons, SMEs or local authorities, including municipalities and the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits (Art. 2.16. 2018/2001/EU). However, in practice, a REC is harder to define. There is a wide range of activities, multiple objectives, and different kinds of members involved with Renewable Energy Communities (Verde & Rossetto, 2020). According to Interreg Europe (2018), renewable energy communities involve the generation of energy from renewable resources and technologies at the most basic level. REC is a flexible definition, allowing various legal and economic forms of organising renewable energy communities; as long as controlled by either shareholders or members. The main legal forms present within RECs are cooperatives, partnerships, trust and foundations, public utility companies and public-private partnerships (Interreg Europe, 2018).

There are several differences between citizen energy communities under the IEMD and Renewable Energy Communities under the RED II. These can be seen in table 3 below:

The new governance model for energy communities under RED II and IEMD.

Criteria	Renewable Energy Communities pursuant to RED II	Citizen Energy Communities as defined in IEMD
Eligibility	• natural persons, • Small and medium sized enterprises, • local authorities, incl. municipalities;	in principle open to all types of entities;
Primary Purpose	*"environmental, economic or social community benefits for its shareholders/members or for local areas where it operates, rather than financial profits";*	
Member-ship	voluntary participation open to all potential local members based on non-discriminatory criteria;	voluntary participation open to all potential members based on non-discriminatory criteria;
Ownership and control	• effectively controlled by shareholders or members that are located in the proximity of the RE project; • is autonomous (no individual shareholder may own more than 33% of the stock).	• effectively controlled by shareholders or members of the project; • limitation for firms included in shareholders controlling entity to those of small/micro size (not medium); • shareholders engaged in large scale commercial activity and for which energy constitutes primary area of activity excluded from control.

Source: Own elaboration.

Table 3: Differences between RECs and CECs Source: Lowitzsch et al. 2019

Next to the above table, a further distinction of different types of renewable energy communities has been made by Verde & Rossetto (2020). First of all, there are local RECs, characterised by the local operation level and the thick societal bonds that are in place (Verde & Rossetto, 2020). Next to that, there are the more dispersed RECs. They are active over a wider area and involve members that share a specific interest, rather than a geographical location. Thirdly, the economics-driven RECs focus on the possibility to achieve higher economies of scale by acting together instead of individually. Lastly, the relation-driven RECs focus on the development of relationships and interactions and thereby creating a community-driven approach (Verde & Rossetto, 2020).

In many countries, energy communities and community-owned RES are still an underappreciated instrument within the energy transition. This is underlined by Verde & Rossetto (2020), who state that "RES communities currently play a limited role in the EU energy market and their future is still largely unexplored." This implies that there still could be room for improvement for RECs within the EU and the Netherlands.

There are several benefits present when there's an increase in the number of RECs in a state. First of all, it involves a large number of citizens who would otherwise not play a central role in the energy transition (Interreg Europe, 2018). It thus increases citizen participation in a state. Next to that, RECs can help with the increase of acceptance of RES and overcome resistance for RES infrastructures (Interreg Europe, 2018).

As opposed to the benefits that come with the development of RECs, there are also several challenges that come with their development. The main challenges that occur are the coordination of a well-working and regulated, legal, administrative and management structure. With a well-working management structure also comes the importance of the availability of leadership, skills and finance, the active roles of regulation, the implementation of a REC within the current energy market and cultural issues (Interreg Europe, 2018). Another challenge that can be hard to overcome is that space must be kept open for

community action within RECs. This could be a challenge because of political shifts in the EU towards more consumer-focused individualism in energy policies, instead of focusing on the engagement of making RECs happen (Creamer, Aiken, van Veelen, Walker, Devine-Wright, 2019).

Next to internal challenges within the development of RECs, some external challenges might arise. These challenges would mainly concern regulatory issues such as the placement of a REC, the requirement of upfront investment and problems regarding permits and environmental impact assessment that might be overlooked (Interreg Europe, 2018). This is also underlined by Lowitzsch (2020), who states that several key questions remain when looking at the development of RECs. First of all, there is the question whether legislation sufficiently encourages complementarity between RES. Transposition of new rules should therefore encourage complementarity of a variety of RES (Lowitzsch, 2020). However, it's not sure whether this complementarity is sufficiently incentivised by transposition of new rules or that it may even be hindered by other rules (e.g., land-use planning) that impact the spatial organisation of RES complementary (Lowitzsch, 2020).

There are relevant opportunities as well as challenges for Endona when comparing it to the benefits and challenges that come with RECs. As mentioned during the interviews with Endona and the neighbourhood team of Endona (2021), there is a need for a high amount of social support in order to grow in respect of economies of scale. In general, RECs could create a more inclusive and just energy transition. The inclusion of these types of citizens could also increase the acceptance of RES. If Endona wants to look more into wind structures, as mentioned during the interview with Endona and Escozon (2021), then the development of a REC could help overcome major resistance. However, what is also stated in the interviews with the municipality of Raalte, Endona, Escozon and cooperative Duurzaam Luttenberg (2021) is that within the municipality of Raalte some people are against renewable energy as a matter of principle. According to Endona, Escozon and Duurzaam Luttenberg (2021), this is especially the case for wind energy. However, this is not acknowledged by interviewee 1 of the municipality of Raalte (2021). In any case, this seems to be a relevant concern for the Endona cooperative in achieving its ambitions.

Another relevant opportunity for RECs in the Netherlands is their fit with implementation of the Regional Energy Strategy of the Netherlands. As stated by Verde & Rossetto (2020), RECs are still underappreciated when looking at the EU energy market. If Endona grows more into the role of a REC, it could be a pioneer within the Renewable Energy Strategy of West-Overijssel and thus show to be an example of the integration of RECs in the energy market. However, this comes with an additional challenge. To achieve this, Endona must include a more active role of local/regional government. According to both the interviews with the municipality (2020) this is not necessarily something the municipality of Raalte wants to pursue at this moment, since it is of the opinion that it should not be

obligatory to use locally produced renewable energy. However, due to the task set by the Regional Energy Strategy West-Overijssel to the municipalities to have at least 50% local ownership of renewable energy, a more proactive role of the municipality might benefit both parties. On the one hand the municipality creates a pathway to achieve the target of at least 50% local ownership. Next to that, it's easier to work together with the local energy initiatives and make the energy transition smoother for the municipality. This is underlined by Elzenga & Schwenke (2015), who state that in general, municipalities think that there is an important role for energy cooperatives within the energy transition. However, there is a difference in acknowledging the importance of energy cooperatives and acting upon this. On the other hand, local energy initiatives such as Endona are more likely to enjoy larger social support when they have municipal support, at least according to Endona (2021). Next to that, it becomes easier for local initiatives to come to the municipality for help or knowledge that the energy initiatives do not necessarily have. To achieve this, the municipality should work hand-in-hand with the local energy initiatives as was stated in the interviews with Duurzaam Luttenberg, Escozon and Endona (2021).

The bottleneck with a more active role for municipalities within RECs is that there is no clear vision yet for the role of municipalities within energy supply, and the role and importance of local initiatives (Elzenga & Schwenke, 2015). In order to create the possibilities of RECs, there should be more flexible requirements for the commissioning of local initiatives by municipalities (Elzenga & Schwenke 2015). This is because, in contrast to commercial investors, local energy initiatives combine entrepreneurship, profit and social objectives that are best for the local community (Elzenga & Schwenke, 2015).

Another challenge that comes with the development of RECs and is a challenge for energy cooperatives in the Netherlands as well is the professionalisation of initiatives. This is something that all of the energy cooperatives that were interviewed acknowledged, and so it comes as no surprise that this is something that the Endona cooperative struggles with as well. A more professional organisational structure might solve this. The next chapter will discuss one option for such professionalisation, the CSOP.

5. CSOP under Dutch Law

In this chapter, the sub-question '*What are the possibilities and constrains of the implementation of Consumer Stock Ownership Plans under Dutch law?'* is answered. The implementation of CSOP could possibly be a solution for the challenges that the Endona cooperative faces.

There are several important aspects related to financing consumer (co-)ownership within RES. First of all, it is operated in a highly regulated market (Holstenkamp, 2018). This means that there are legal frameworks in place which influence both the decisions of consumers and influence who governs the energy system (Holstenkamp, 2018). These regulatory frameworks may inter alia be relevant for two distinct aspects, namely: 1) ownership and its impact on the social acceptance of RES and 2) a heterogeneous field of actors may cause the sector to be more resilient (Holstenkamp, 2018). Both the element of social acceptance as well as that of expanding into various modes of energy generation and provision are relevant to the challenge of the Endona cooperative.

There are several different legal structures with regards to consumer (co-)ownership within RECs, as well as different forms of financial participation that may be applied to consumer (co-)ownership within RECs. In table 4, an overview of different financial participation forms according to Holstenkamp (2018). This table shows the financial participation attributes of different types of contractual arrangements. In the end, the comparison of these attributes helps finding the right possible structure for the Endona cooperative.

Form of financial participation	**Limited partnership**	**Intermediary entities**	**LLCs**	**Cooperatives**
Voting Rights	Direct, proportional shares	Conveyed through trustee/representative	Direct, proportional shares	Direct, one member, one vote
Rights of Information	Limited rights of LPs	Given/delegated?	Given	Given
Compatibility with strategic commercial investors	Given	Given	Less common	Unusual
Compatibility with municipal investments	Given	Given	Given	Limited
Personal liability	Limited to investment (GP: personal investment)	Limited to investment	Limited to investment	Usually limited to investment

Changes in participants	Limited/costly unless trustee relationship	Possible, easy	Limited/costly	Possibly, easy
Start-up costs	Medium	Medium	Medium	Medium

Table 4: Forms of financial citizen participation in RES Source: Holstenkamp,2018

One of the aforementioned structures of financial participation within consumer (co-)ownership is CSOP. According to Lowitzsch (2018), CSOP is based upon three main ideas: "The allocation of borrowed investment funds sequestered in a special vehicle with its own legal personality, that is, a trust or a similar intermediate company, invested in a business enterprise or equity interest on behalf of the individual plan participants, namely, consumers; The repayment of the loan from future earnings of the credit-financed shares - the essence of every profitable investment - instead of savings from foregone consumption; The securing of the loan by the investment entity, preferably backed by a state guarantee." By employing a trusteeship through a CSOP, there are additional benefits present. It streamlines decision-making processes through the trusteeship. This allows for a more heterogeneous partnership to participate in renewables. Next to this, decision-making is more professionalised because of a trustee representing the consumers on the board of directors. The option for a more heterogeneous partnership is relevant to the challenges of the Endona cooperative because of its wishes of a higher involvement of the municipality and/or commercial investors (Interview Endona, 2021).

To ensure the successful implementation of a CSOP within an energy cooperative, an active involvement of the beneficiary consumers is necessary (Lowitzsch, 2018). To realise this, the active participation of municipalities, communities or public institutions are recommended to act as a mediator between the CSOP investment and the participating consumers or their representative (Lowitzsch, 2018). Next to that, it is crucial that the consumers' rights are rightfully represented, in accordance with their number of shares, in the decision-making process, often through a representative.

The implementation of a CSOP comes with several challenges according to Lowitzsch (2018). First of all, there is the possible resistance by major energy companies due to the loss of control of the market. However, due to the implementation of the Regional Energy Strategy in the Netherlands and the requirement of 50% local ownership of RES production (Regionale Energiestrategie, n.d.) this could be tackled. Next to the opposition of energy companies, possible opposition could also come from the public opinion towards RES in a certain region. However, when the right informational- and educational campaigns take place, this problem could also be tackled.

There are several key elements to ensure the successful implementation of a CSOP. First and foremost, a CSOP should provide the ability to apply for a bank loan, as well as to limit the liability of individual

participants to maximize the value of their shares (Lowitzsch, 2018). An example of a CSOP in Germany can be found in figure 3:

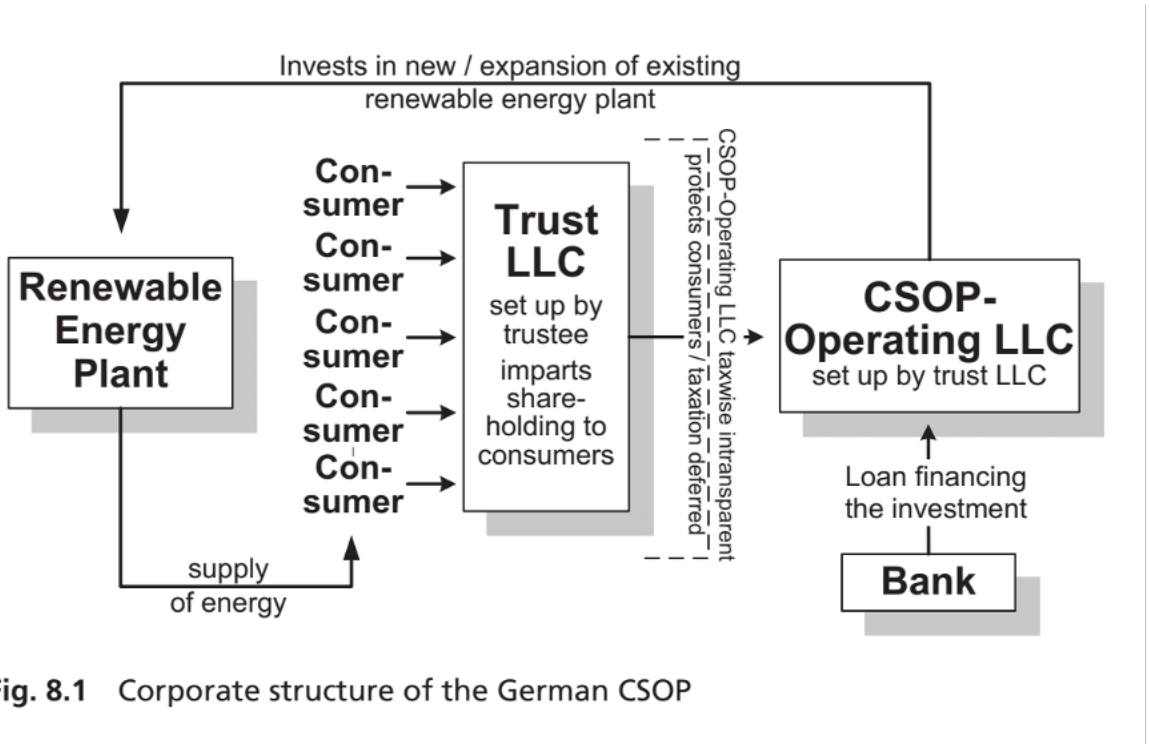

Figure 3: Example of CSOP in Germany Source: Lowitzsch, 2018

Overall, RECs embrace participation schemes that: i) confer ownership rights in RES projects to ii) "active" consumers (thus active financial participation) in iii) a local or regional area (Lowitzsch, 2020). However, a REC that is linked with CSOP implies active financial participation as well as participation in decision-making to some extent. This active financial participation as well as participation in decision-making is mainly concerning a legal entity located in the geographical area where the consumer lives and most of the time also where the REC is located. Often, this also involves the (co-)ownership of municipalities as the "pacemakers of the energy transition and commercial investors, both important in practice but difficult to combine" (Lowitzsch, 2020).

According to Lowitzsch (2020), three approaches can often be seen in various combination when looking at participation models throughout RECs across the EU:

1. *Citizen energy*, typically involving consumer ownership, not necessarily local/regional;
2. *Community energy/community power*, locality and common interest of resident consumers. May not always include ownership rights for individual citizens, especially regarding voting rights.
3. *Prosumership*, consumers (co-)produce the goods or services they consume. Involves both individuals and enterprises.

It's important to note that different types of investment are necessary depending on both the risk and participation preferences of participants when wanting to implement a CSOP. Each structure has a different profile of investment as well as the level and type of the participation of different type of participants (Holstenkamp, 2018). In conventional business models for consumer ownership, it may be difficult or not possible to combine different types of co-investors. For instance, the one-member, one-vote principle is often inclined to be an obstacle for the involvement of a municipality or an SME (Lowitzsch, 2020) since they are often more inclined to join when there are voting rights proportional to share-holding (Lowitzsch, 2020). A CSOP could make this, and a defined governance structure with direct involvement of municipalities and strategic partners possible (Lowitzsch, 2020). This governance structure would also safeguard the interests of local partners by having an intermediary vehicle.

The implementation of a CSOP is often done through a trustee representative on the board of a cooperative. The trusteeship is designed to protect the interests of consumer shareholders while rendering co-investments attractive to other partners. Representation by a trustee makes the voting behaviour of consumers more predictable whilst still ensuring meaningful participation in decision-making. It is decided through a fiduciary agreement what decisions must be made by the consumers and which decision can be delegated to the trustee or members' council (Lowitzsch, 2020). Rights and obligations of the consumer are also defined. In general, day-to-day decisions are left to the trustee together with the board of the cooperative. This provides stability to daily operations and management. Larger and/or strategic decisions are made by also including the consumer shareholders. The vote of the consumer shareholders is then represented by the trustee (Lowitzsch, 2020).

The implementation of a CSOP under Dutch law would most closely link to the Dutch structure of a Stichting Administratiekantoor (STAK). According to the Chamber of Commerce of the Netherlands, a STAK would manage your shares and therefore it would split the right of profit from the right of voting (Kamer van Koophandel, n.d.). The voting rights would stay within the foundation or the cooperative where the STAK is linked to. This would mean the profit is shared amongst participants, but the autonomy stays in the hands of the board (Kamer van Koophandel, n.d.).

There are several possibilities when wanting to implement a CSOP under Dutch law as a STAK. First of all, by implementing a STAK, the continuity of the local energy initiative is secured (Kamer van Koophandel. n.d.). This is convenient for energy cooperatives since they're mainly run by volunteers. Next to that, participants or shareholders of the STAK are given the profits through shares, whilst the board of the energy cooperative or initiative won't give away their autonomy as a board. This will prevent a 'hostile takeover', and thus secures the continuity of the energy cooperative whilst still rewarding the participants of the cooperative. The STAK is implemented in accordance with the legal rules that come with starting a foundation. The main goal of the cooperative should not be profit, but

just as a foundation it should have an objective that is relevant to society (Kamer van Koophandel, n.d.). This is also the same when looking at the fiscal rules that are in place when wanting to implement a STAK. According to the Chamber of Commerce (n.d.), the STAK won't have to deposit its yearly financial statements and it won't be taxed since it won't be making profit itself, but it will only have a temporary balance since that will be paid to the certificate holders. (Kamer van Koophandel, n.d.).

However, the prevention of a 'hostile takeover' also comes with one of the challenges of implementing a CSOP in the legal form of a STAK. When looking at participation in decision-making within energy cooperatives, it is often appreciated that participants get a voice during, for instance, a general members assembly. By implementing a STAK the participants do not get a direct voice anymore, they will be represented by the board of the STAK. Furthermore, a mistake that is often made when implementing a STAK is the way that they are represented in a general members assembly. It might be that the right on profit and the right of voting is split, but certificate holders of the STAK still have the right to be present at the general members assembly. This is decided by the way the certification took place (ABAB Legal, 2020).

Another option within the Netherlands is the creation of a 'flex-bv'. As of 2012, it's possible for LLCs to pay out non-profit shares. This might be an easier way to split the right on profit from the right of voting (ABAB legal, 2020). Participants would then not have the right to attend the general member assemblies as well (ABAB legal, 2020). This is a decision that might not be ideal when looking at energy initiatives. When participants are not able to attend general member assemblies, the local character of energy initiatives might be lost. This is something that a lot of the energy cooperatives do not prefer, according to the interviews with the energy cooperatives. This is also not preferred by the municipalities (Interview 1 & 2 municipality of Raalte, 2021). According to the interviews with local stakeholders in the municipality of Raalte, the local character creates social support. This is especially shown by the interview with the neighbourhood team of Endona (2021), who stretched that local character creates an easier entrance for participants regarding both communication and the incentive to participate. This is also acknowledged by other stakeholders, such as in the interview with Enschede Energie (2021).

When looking at the possible implementation of CSOP, it's important to note the possible drivers for different stakeholders involved in a CSOP and the criteria of subject of decision-making to make a decision whether CSOP might be a solution for the Endona cooperative. This matrix can be found in table 5 below and is based upon both literature as well as interviews with stakeholders. This matrix also shows the differences in interests for different stakeholders and governance mechanisms to mitigate conflicts.

Decision-making criteria	Environmental impact	Financial impact	Social impact	Inclusion	Development of professionalisation
Drivers for stakeholders					
Founders	Intrinsic motivation	Initiative must not lose money. Benefits for participants	Cause of increase in social support	Cause of increase in social support	Initiative being less time-consuming for volunteers
Municipality	Help with reaching Regional Energy Strategy Goals	Return of investment, possible creation of local energy economy	Social support for sustainability policies	Energy equality, representing both sides of the coin regarding RES	Easier to work with energy initiative
Province	Help with reaching Regional Energy Strategy Goals	Provides subsidies for energy initiatives	Social support for sustainability policies	Energy equality, representing both sides of the coin	Easier to work with energy initiative
SMEs	Image, intrinsic motivation	Could give return on investment	Image, intrinsic motivation	-	Easier to work with energy initiative
(new) members	Intrinsic motivation	Return of investment	Accessible RES	Accessible RES	Could create more trustworthy image of energy initiative. Could also create lower social support because of loss local character
Trustee	Representative of members	Representative of members	Representative of members	Representative of members	Representative of members

Table 5: Matrix criteria of decision-making for stakeholders versus impact Source: own elaboration

There are several opportunities and challenges regarding the CSOP implementation. The opportunities include the streamlining of decision-making processes through the trusteeship. This allows for a more heterogeneous partnership to participate in renewables. Next to this, decision-making is more professionalised because of a trustee representing the consumers on the board of directors. This could be relevant for the Endona cooperative because of their wish to grow to economies of scale. However, there are also several challenges present. The main challenges are that major energy companies do not agree with the loss of their position in the market and the possible resistance of the public with regards to RES. One of the possible implementations of a CSOP in the Netherlands would be in the structure of a STAK. In the next chapter, other relevant alternatives are compared to one another.

6. Alternative Structures for the Endona Cooperative

In this chapter, the sub-question '*What are possible alternative structures to the Endona cooperative as a possible REC under RED II (by applying CSOP)?'* After analysing both the literature available as well as the interviews that were done with the respondents, a few alternatives came forward which could fit the ambitions of the Endona cooperative. These will be explained by including both the advantages and disadvantages in this chapter and compared to one another. The relevant alternatives to the current structure that will be explained are: 1) the standard cooperative model, 2) a STAK, 3) A combination between a foundation and a cooperative as seen in Luttenberg, 4) a cooperative with a council of members, as seen in Enschede.

Cooperative

First of all, there is the cooperative structure. This is a structure most energy cooperatives in the Netherlands use. This structure has participants who have active voting rights. This is done through general members assemblies. Every participant has a vote. There are several advantages to the cooperative structure. It's relatively easy to implement for the Endona cooperative, since the only action they would have to take is to integrate more participants in their current structure. However, every new participant would get a vote. This could be problematic when there are urgent or sensitive matters at hand. For instance, according to the board of Endona (2021), they want to look at wind energy. This is something that is not preferred by the inhabitants of the municipality of Raalte according to Duurzaam Luttenberg and the municipality (2021). If participation is open to all inhabitants of Raalte, there may not be enough votes to start using wind energy.

Continuing with the cooperative structure would take less time than some of the other structures also mentioned in this chapter, especially looking at the short-term. Next to that, it would fall in line with the structure that the majority of cooperatives in the Netherlands currently have. However, as mentioned by Escozon (2021), a cooperative structure would not fit the ambitions that Endona has. Also, there is an increasing problem, specifically with the professionalisation of energy cooperatives in the Netherlands. A cooperative structure might make it hard to sufficiently professionalise the Endona cooperative in the future.

Stichting Administratiekantoor (STAK)

Another option would be the implementation of a STAK. As explained in the chapter before, a STAK manages the shares of an organisation and would therefore split the rights of voting and rights of profit. The voting rights would stay within the Endona board. The profit is shared amongst all the participants of the cooperative through the STAK. The advantages to this structure are that a STAK would prevent a 'hostile takeover' by participants. However, as mentioned before, participants do not get a direct vote anymore at a general members assembly. Their vote would be represented by the board of the STAK.

On the other hand, participants could still be present at the general members assembly when implementing a STAK structure. This is not obligatory. Furthermore, the implementation of a STAK would secure the continuity of the Endona cooperative (Kamer van Koophandel, 2021) by not giving away the autonomy of the board of Endona.

Another challenge that may come with a STAK is based upon one of the main ideas of a CSOP according to Lowitzsch (2018), namely: 'the securing of the loan of the CSOP by the investment entity, preferably backed by a state guarantee'. The interviews with the municipality of Raalte (2021) showed that they do not pursue an active financial involvement with energy initiatives in the municipality. This is most likely because there are several energy initiatives active in the municipality of Raalte and it's not realistic for them to just be financially involved with one energy initiative. Secondly, there is the bottleneck for a more active role for municipalities within RECs as defined by Elzenga & Schwenke (2015). There is no clear vision yet for the role of municipalities and the importance of local energy initiatives. However, the Regional Energy Strategy makes this clearer and shows the growing importance of local energy initiatives and their added value for municipalities. Next to that, the Province of Overijssel could also be possible as a state guarantee due to their EnergieFonds Overijssel (EFO) (EnergieFonds Overijssel, n.d.). This could tackle the current unwillingness of the municipality of Raalte.

Cooperative and Foundation

As a third option, there is the option of setting up a separate foundation next to the cooperative. A cooperative that does something similar is Duurzaam Luttenberg. According to the interview with Duurzaam Luttenberg (2021), they decided to establish a foundation rather than a cooperative because the goal set in the bylaws of a foundation can be broader than for a cooperative. This means that the foundation Duurzaam Luttenberg is focused on sustainability initiatives and not solely on solar parks. For the focus on solar parks and solar panels on roofs of businesses a separate cooperative is put into place (Interview Duurzaam Luttenberg, 2021). This cooperative also has a different board than the board of the foundation, but they do work closely together. This structure is something that has been investigated by the board of Endona already, as mentioned in early conversations with them.

The option of a separate foundation and cooperative could still be an option for the Endona cooperative. However, it is not a preferred option by the board of Endona (Interview Endona, 2021). Next to that, the Energie Fonds Overijssel (EFO) does not prefer the organisational structure of a foundation as well (Interview Duurzaam Luttenberg, 2021) because EFO does not know where the money goes in a foundation, whereas that is clearer within a cooperative (Interview Duurzaam Luttenberg, 2021). There still are some benefits with respect to growing your organisation by using this organisational structure. For instance, it's possible to use the foundation to become broader than by just focusing on solar parks, and to widen the scope of the organisation. However, it's not necessary to have a foundation to do so.

With the combination of the factors of this organisational structure not being the preference of both the board of Endona nor of the Energie Fonds Overijssel, which provides subsidies for local energy initiatives, and with the lack of necessity of becoming a foundation since a cooperative structure works just as well, this might not be the ideal direction to move towards as well.

Hybrid Structure

Lastly, there is the option of a hybrid structure between some of the aforementioned structures. A cooperative that does something similar is the cooperative Enschede Energie. That structure is roughly pictured in figure 4:

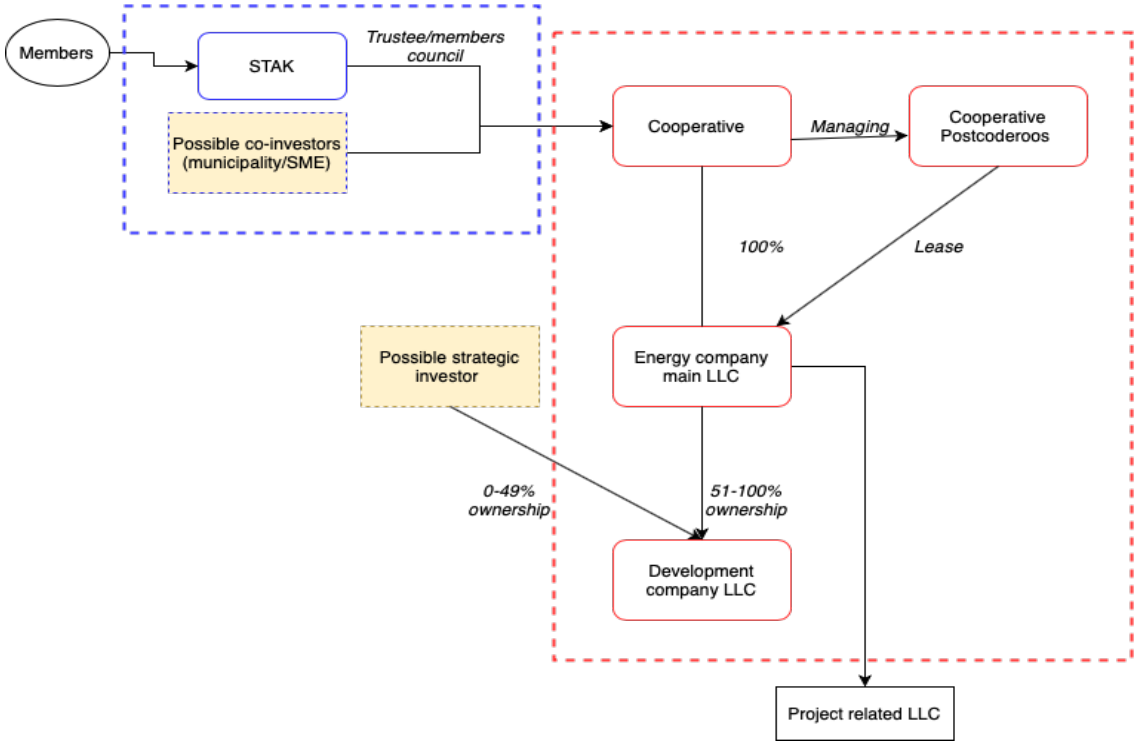

Figure 4: Possible alternative structure for Endona Inspired by Enschede Energie, 2021

The red squares represent the main organs of the cooperative, whereas the blue square represent the REC within the possible structure of the Endona cooperative. This structure is similar to the CSOP implementation for heterogeneous actors as mentioned by Lowitsch (2019), which can be seen in figure 5.

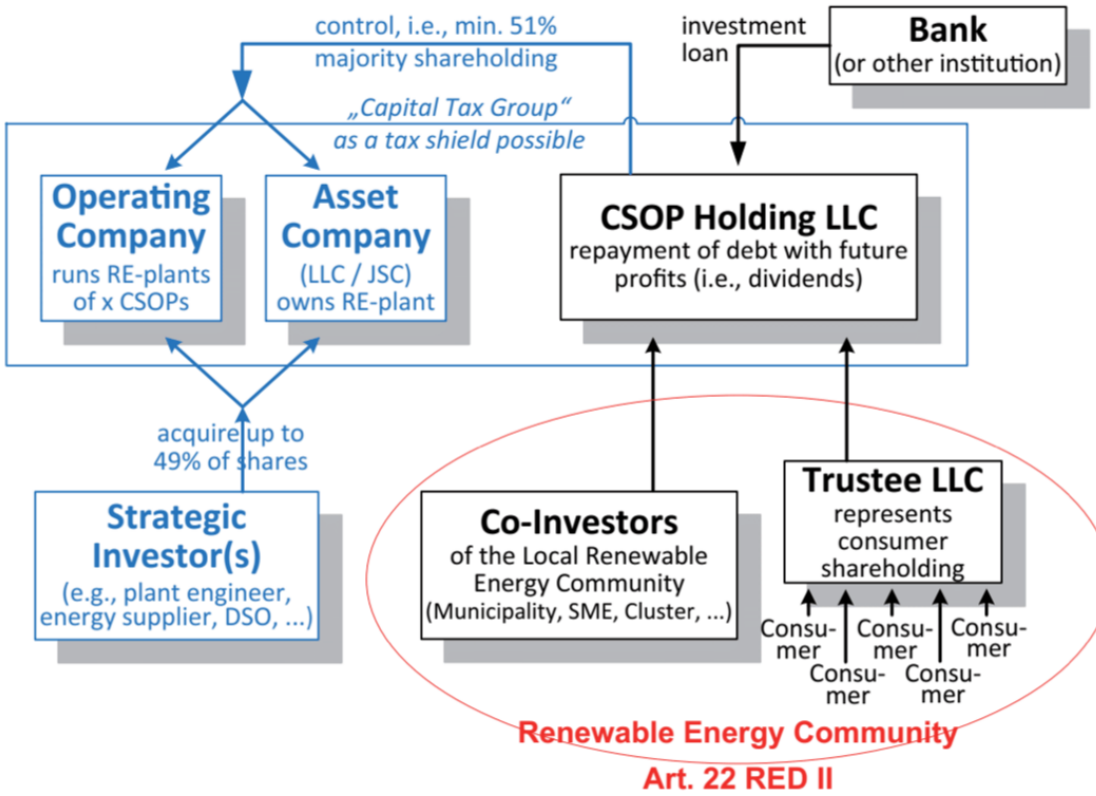

Figure 5: CSOP example with heterogeneous partners Source, Lowitsch,2019

Looking at this organisational structure, there are several benefits. First of all, as mentioned by Enschede Energie (2021), this is a convenient model to scale up your organisation as well as professionalise it in the later stages of growing to economies of scale. Therefore, this organisational structure makes sense in the light of the current Regional Energy Strategy where the importance of local energy initiatives is bigger than it used to be. In order to achieve the fifty percent local ownership as mentioned in the Regional Energy Strategy, it's necessary to further professionalise your organisation. Secondly it would allow a split in your executive tasks and your development or innovation branche. The financial risk of a cooperative is mainly present when developing a new project (Interview Enschede Energie, 2021), so the sector where most financial risks are present are separated from the executive tasks, which are not as risky.

Secondly, a trustee or member's council would prevent every member of the cooperative wanting to attend the general members assembly and choices can be made easier. Participants can get a say in the process of an energy cooperative, but by decreasing the number of members present at a general members assembly it also decreases the time necessary for approval for a new project. A member's council or trustee could realise this. For example, the statutes of the organisation can stipulate on board compositions or on financial assistance for acquisition of shares to specific groups. Next to this, the

trusteeship is designed to protect the interests of consumer shareholders while rendering co-investments attractive to other partners. Representation by a trustee makes the voting behaviour of consumers more predictable whilst still ensuring meaningful participation in decision-making. It is decided through a fiduciary agreement what decisions must be made by the consumers and which decision can be delegated to the trustee or members' council (Lowitzsch, 2020). Rights and obligations of the consumer are also defined. In general, day-to-day decisions are left to the trustee together with the board of the cooperative. This provides stability to daily operations and management. Larger, strategic decisions are made by also including the consumer shareholders. The vote of the consumer shareholders is then represented by the trustee or members' council (Lowitzsch, 2020).

However, setting up this kind of organisation might not be profitable from the very beginning. It would require time and effort from the board of Endona, which can be costly for a volunteering board. This would therefore be a structure that is relevant on the long-term and not immediately on the short-term. However, with the continuous updating of the Regional Energy Strategy as well as looking at the RED II and RECs, this might be a relevant structure for the Endona cooperative to consider.

According to the interviews with energy cooperatives, the municipality of Raalte and the province of Overijssel, two factors affect economies of scale. First, there is a growing need for initiatives that have local roots. Initiatives should stay local to create and maintain a higher level of social support, even when growing to economies of scale. Secondly, there is the problem of everyone being a volunteer in an energy cooperative. Running an energy cooperative, especially when it's growing, is taking an increasing amount of time. As stated by the respondents, there is a lack of professionalism in current energy cooperatives. Just volunteers alone can't take the load anymore. Therefore, when looking at growing to economies of scale the preferred organisational structure, it is important to look at the long-term and not necessarily what is best short-term wise. Eventually, there is a need to professionalise the organisations that are energy cooperatives to ensure that they can exist in the long-term and guarantee continuity for their participants or members.

Secondly, even though energy cooperatives are local organisations, rooted in local society, there is often distance between the board members and the inhabitants of villages of a municipality. Board members of a cooperative are often not as easy to approach as the neighbour (Interview Endona Neighbourhood Team, 2021). Adding an extra (unofficial) layer in the executive part of the organisation of Endona might decrease this distance between inhabitants and the boards. This has been done for the GridFlex pilot of Endona and there has been a noticeable difference according to the neighbourhood team. (Interview Endona Neighbourhood Team, 2021). This would not be that hard to implement, since these neighbourhood teams are acting solely as a communication doorway, but there might an increase in social support given by society. Therefore, these neighbourhood teams might be useful for more

sensitive subjects such as wind energy. This layer would mainly be interesting to decrease the distance between local energy initiatives and inhabitants and to bring in more members to the local energy initiative.

In conclusion, there are several interesting alternatives for the Endona cooperative to implement. Even though all of the aforementioned alternatives have their advantages and disadvantages, some are more preferable alternatives than others. An advice will be given in the conclusion.

7. CSOP for other Energy Cooperatives in the Netherlands

In this chapter the final sub-question '*How could the implementation of CSOP benefit other energy cooperatives?'* is answered. The possible implementation of CSOP in the Endona cooperative is analysed and looked at whether it is also relevant for other energy cooperatives in the Netherlands.

When looking at the possible implementation of CSOP and the general scaling up process for the Endona cooperative, there are several factors that are relevant to other energy cooperatives in the Netherlands as well. Overall, there are some generalisations that can be made according to both the literature as well as looking at the interviews that were held with relevant stakeholders. These generalisations can be found in this chapter.

First of all, all cooperatives that were interviewed coped with the problem of lack of professionalisation and access to technical expertise. When cooperatives are growing, there is an increasing need for additional knowledge and political sense. With the increase in need for knowledge running an energy initiative also becomes more time consuming. Therefore, professionalisation is a necessary step according to the interviews held with the energy cooperatives Noaber & Co, Duurzaam Luttenberg, Goed veur Mekare and Enschede Energie (2021). It is assumed that with the implementation of the Regional Energy Strategy there is a growing role for local initiatives and therefore this problem must be tackled by initiatives in order to innovate. Enschede Energie has paid employees to professionalise (Interview Enschede Energie, 2021), and Duurzaam Luttenberg stated that it's necessary to move to paid personnel as well (Interview Duurzaam Luttenberg, 2021). Next to that, the Province of Overijssel stated that the Provincie would also benefit from professionalised energy initiatives (Interview Province of Overijssel, 2021). So, when higher involvement of public institutions is wanted, professionalisation could be a necessary step. The province of Overijssel tried to stimulate professionalisation and collaboration a couple of years ago, but it wasn't appreciated by the initiatives then (Interview Province of Overijssel, 2021), also because of the high amount of involvement from the province (Interview Enschede Energie, 2021). Therefore, the step for professionalisation needs to come from the initiatives themselves to ensure a bottom-up approach.

If energy cooperatives are not willing to professionalise by hiring personnel, another option could be a connecting organisation on the background at the local or the regional level. This connecting organisation would do the necessary administrative work. The face of the cooperatives would still be the boards, but tasks such as member administration, marketing and communication would be done by the connecting paid organisation. The necessity of this idea is underlined by both Enschede Energie and Goed veur Mekare. This could be extended to the possibility of buying knowledge for energy cooperatives, so they don't have to reinvent the wheel themselves for every new subject. A similar thing is also done by both the municipality of Raalte and the Province of Overijssel. The municipality of Raalte wants to help and facilitate where possible, but due to a lack of capacity within the municipality it's not a high priority (Interview municipality of Raalte 1 & 2, 2021). The Province of Overijssel provides a more professional expert pool. However, as mentioned by Enschede Energie (2021) you don't want hierarchy involved for such an organisation since local energy initiatives are often bottom-up processes. This would be the case if the Province of Overijssel would implement such an organisation, which is why it's not a preferable situation (Interview Enschede Energie, 2021).

Additionally, there should be more connections between energy cooperatives, especially content-wise. In order for the Regional Energy Strategy and the local ownership of fifty percent to be achieved, it's necessary to share knowledge with one another, also because the Regional Energy Strategy must be governed sufficiently by all the different municipalities involved in the Regional Energy Strategy of West-Overijssel. This was acknowledged by several energy cooperatives that were interviewed as well as the province of Overijssel (2021). Innovations and processes would go faster if every energy cooperative doesn't need to find out regulatory and technological requirements themselves. Collaboration between energy cooperatives is key and could be done by themselves or through a connecting organisation as suggested by Goed veur Mekare and Enschede Energie (2021).

A third and other important factor necessary for energy cooperatives in order to grow to economies of scale is social support in the region the cooperative is located. When looking at inhabitants of local communities that are against solar or wind energy in their region, it's often out of principle that they object (Interview Escozon, 2021). Often these objectors go door-to-door to retrieve signatures against the windmill or solar parks in the region. However, the interview with Escozon showed the opinion that most people that sign those petitions do this because of the neighbour and out of empathy.To tackle this, a neighbourhood team such as the one implemented for Gridflex could be very relevant to gain more social support for new projects by energy cooperatives. A lower level of activism than the board of an energy cooperative could contribute to a higher amount of social support. This is underlined by the neighbourhood team of Endona, which states that such a level could be the connecting factor to create

more social support since renewable energy becomes more tangible for most inhabitants. If something similar to a neighbourhood team would be implemented by energy cooperatives the activities done by inhabitants that are against renewable energy could be switched around and used by the people that are happy to participate in energy initiatives.

Overall, the implementation of CSOP could be relevant for more energy cooperatives than just the Endona cooperative, for instance by implementing a STAK. This is especially because of two factors. First of all, there is the professionalisation factor. A hybrid structure as mentioned in the previous chapter with the implementation of a STAK could contribute to a more professional organisation of energy cooperatives, especially in the long-term. Secondly, there is the need for social support. The implementation of CSOP would make renewable energy more accessible to everyone, also the lower income households. The higher amount of accessibility this can lead to is underlined by Lowitsch (2019), who stated that 'CSOP can reduce energy poverty, increase the acceptance of renewables as well as foster local development and incentivise demand-flexibility'. The lower initial investment would lower the threshold to participate and increase the social support in a region. The increased amount of social support would also make an increased involvement of the municipality possible since they are hesitant at this moment because they want to be there for every citizen and be the neutral factor. Thus, some form of CSOP implementation would benefit other energy cooperatives in the Netherlands. Thirdly, the governance and decision-making processes can be more streamlined and optimised, so as to avoid conflicts between heterogeneous shareholders and stakeholders, which will be more involved when possibly implementing a CSOP construction.

In conclusion, it's important to note that RECs are the key to achieving the Regional Energy Strategy goals. CSOP could help with the realisation of RECs in the Netherlands. RECs would create more social support by having society actively involved in energy cooperatives. By having more participating citizens and thus more social support behind the energy initiatives in a region, there is no necessity anymore to rely on commercial project developers. So, RECs could create a local energy economy, where both the burdens and profits are shared within the community. By lowering the threshold of participating in an energy cooperative, a CSOP could contribute to this potential local energy economy: decentralised and democratic. If this would be implemented on a larger scale, the Regional Energy Strategy goals, especially the fifty percent local ownership would be easier to achieve. Next to that, the possible increase in acceptance of renewables could lead to a more accessible method of achieving the 100Gwh of renewable energy in the municipality of Raalte as well as 1.8Twh of solar and wind energy (Regionale Energie Strategie West-Overijssel, n.d.)

8. Conclusion

The main research question of this thesis was as follows: *"How can the Endona cooperative include municipalities and/or commercial investors like SMEs and advance to economies of scale while retaining the benefits of individual consumer participation and what can other energy cooperatives learn from this?"* In conclusion, there are several ways the Endona cooperative can advance to economies of scale whilst including the municipality and/or commercial investors and retaining the benefits of individual consumer participation. The realisation of a REC would be relevant when advancing to economies of scale because of the growing importance of the Regional Energy Strategy and therefore the importance of local ownership. Next to this, the development of a REC of the Endona cooperative could cause an increase of social support in the community since it involves a number of citizens that do not necessarily play a central role in the energy transition.

When looking at the organisational structure of the Endona cooperative to move to economies of scale, CSOP could be an asset, especially for looking at the long-term. Within the Netherlands, the most probable implementation would be in the form of a STAK. The implementation of a STAK could prevent a 'hostile takeover' of the cooperative. Next to that, it would split the right of voting from the right of profit, but participants can be allowed to visit the general members assembly. This way, they can participate in a transparent process and give input, but the choice is to be made by the board of Endona. The implementation of CSOP can also lead to an increase in social support by reducing energy poverty in the region and making renewables accessible to lower-income households and non-target-group households and fostering local development in a region (Lowitzsch, 2019). The Regional Energy Strategy tackles the main problems of resistance by major energy companies because there is a target of at least fifty percent local ownership of renewable energy. Secondly, consistent policies are being put in place to incorporate several layers of stakeholders. However, it must be stated that there is still work to be done on the part of consistent policies in order to create a clear role for both local energy initiatives as well as the municipality.

Looking at the alternative organisation structures that would fit both the ambitions on the short-term and long-term of the Endona cooperative the best fitting would be the hybrid structure as can be seen below.

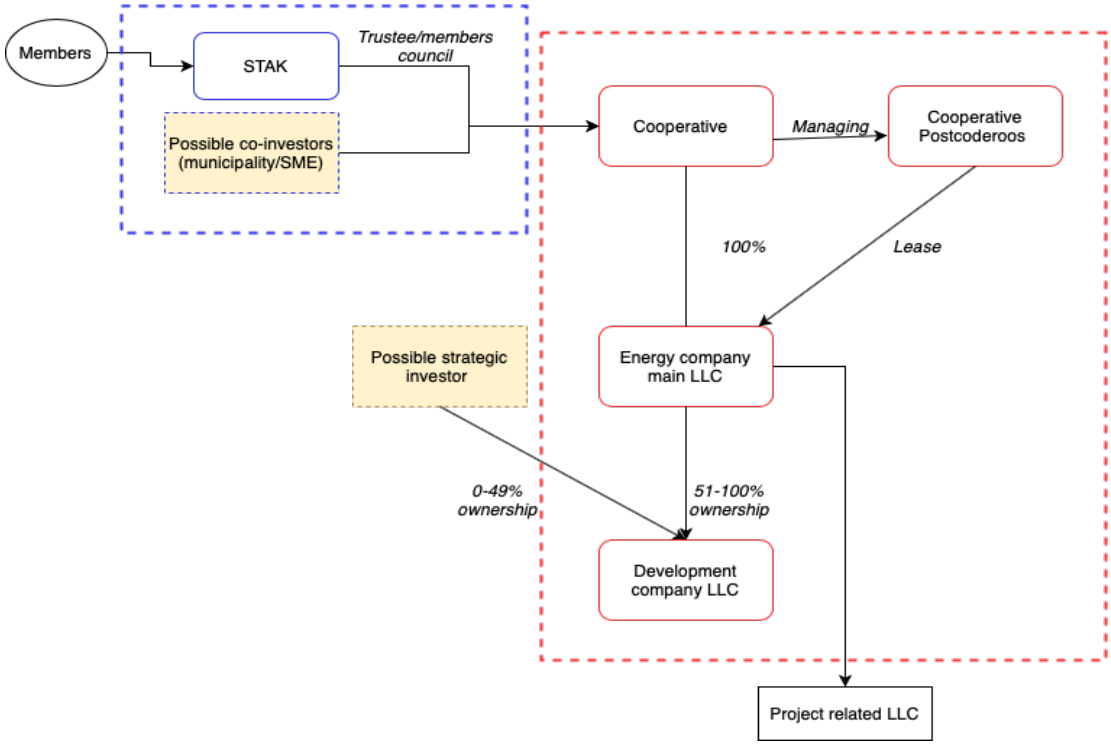

Figure 4: Possible alternative structure Endona Inspired by Enschede Energie, 2021

There are several reasons why the researcher of this study deems this the best fitting model for the Endona cooperative. First of all, this organisational structure seems more sustainable in the long-term, especially when looking at the professionalisation of energy cooperatives in the Netherlands. Also, this organisational structure is convenient for scaling up your organisation since it can grow organically without instrumentally changing the structure of the organisation. A structure that is in accordance with professionalisation and scale-up goals is fitting with the Regional Energy Strategy goals. Next to this, the split of a development company LLC and energy company LLC would make it more accessible for public institutions to financially participate and be actively involved with the Endona cooperative, as also mentioned during the interview with Enschede Energie (2021). The split of the development branch and the executive branch would also split the financial risks of the Endona cooperative. The addition of a member's council will also ensure that active participants will join the general members assembly. Through this means a transparent process can be guaranteed.

It must be stated that a 'regular' cooperative set-up would also work for the Endona cooperative. However, this would be most fitting on the short-term rather than the long-term. As mentioned by Escozon (2021), the long-term ambitions of the Endona cooperative are too large for a 'regular' cooperative structure. Therefore, it is advised to invest some more time into a change of the structure of Endona into a hybrid structure as mentioned above or something similar.

This structure is thus also fitting with several problems encountered by more energy cooperatives in the Netherlands. First of all, the need for professionalisation within the energy cooperatives. This is also acknowledged by the Province of Overijssel (2021). A structure as mentioned above could solve this in the future for energy cooperatives. Otherwise, a possible solution for energy cooperatives would be the initiation of a connecting organisation that can do general administrative tasks. In this way the board of the energy cooperative stays the face of the local initiative but the administrative tasks that happen behind the scenes can be outsourced to that connecting organisation. This could be organised locally or regionally. By implementing such a measure, the hundred percent reliability on volunteering stays achievable for energy cooperatives.

Next to this, social support is necessary for energy cooperatives to innovate and continue the energy transition in their region. The implementation of CSOP can help with this since it creates a more accessible access into the energy transition on a local level. Social support could also be done through implementing another layer between the board and the inhabitants of a municipality, for instance like a neighbourhood team to decrease the distance between the board of an energy cooperative and the society within a municipality.

Overall, there are several ways the Endona cooperative can advance to economies of scale. However, it is advised to implement some form of CSOP as a hybrid structure. This structure allows the realisation of a REC and fits the ambitions of the Endona cooperative better in the long-term, also looking at the possible future professionalisation of energy cooperatives. Therefore, this could also be a relevant structure for other energy cooperatives in the Netherlands since most energy cooperatives have to tackle the same problems. If this would be implemented, it allows easier access for public institutions to be more involved as well as commercial investors if there is a will and need for that. In the end, all the burdens and profit could be shared within the community, which would be a good move forward for the energy transition in the Netherlands.

9. Reflection

During this research, a couple of factors can be improved when wanting to increase the reliability and validity of this research. First of all, due to the COVID-19 pandemic, one important group of stakeholders was left out of this research, namely the inhabitants of the municipality of Raalte. This was done because of three reasons. The first reason was the COVID-19 pandemic. It was not responsible to travel to Raalte and interview inhabitants. Secondly, there was no easy access to the inhabitants of the municipality digitally. Lastly, there was a time constraint. Therefore, it was not achievable to organise short interviews or a survey among citizens of the municipality of Raalte. Therefore, a bias might be present in this research with regards to the energy transition and the stance regarding local initiatives. This issue was partially tackled by interviewing a member of the neighbourhood team of Endona, who is closer towards the rest of the citizens of Heeten than the board of Endona is. However, there is still a bias since the neighbourhood team does not cover all views regarding renewable energy and the Endona cooperative. A more inclusive image of the view of society regarding the Endona cooperative is necessary for this research to be more reliable.

Another part that could be included in this research is to research other regions outside of the municipality of Raalte to ensure that the generalisations for other energy cooperatives are also relevant for energy initiatives and cooperatives outside of the region of Overijssel. However, the scope of this research was too small to include this as well as there was a time constraint present. Further research can be done regarding this. However, to create an as inclusive image as possible not only energy cooperatives have been interviewed. To generate an inclusive picture of the energy transition in the municipality of Raalte, both the board of Endona as well as the municipality have been interviewed to make sure both views on the participation of local initiatives have been included in this research. To add to this, also the province of Overijssel has been interviewed since they can also be considered an important stakeholder due to the Regional Energy Strategy. Lastly, other energy cooperatives were interviewed to partly make sure that other energy cooperatives run into the same problems as the Endona cooperative does.

Next to including as many stakeholders as possible, as many sources as possible were also included. So, this included primary sources such as the energy cooperatives, the neighbourhood team, the municipality of Raalte and the province of Overijssel, but also secondary sources such as policy documents, news articles, the website of energy cooperatives and the regional energy strategy website. Lastly academic literature was used as well to create a full picture and to create an academic report.

The last problem that occurred during this research is that de Dutch implementation of the RED II has not entered into force yet at the time of writing this thesis. Therefore, it was hard to assess both RECs

and CSOP under Dutch law. However, it was possible to include general regulatory requirements as well as more policy related papers. One of these papers that is relatively often used in this research is the Regional Energy Strategy which also focuses on local ownership and the creation of local energy communities. The Regional Energy Strategy must be achieved in order to achieve the goals set in the Paris Agreement as well as the goals set by the RED II. The Regional Energy Strategies will contribute to a large part of the policy related to the energy transition towards renewables in the Netherlands. Therefore, it seems very relevant to include in a research focused on RECs.

Apart from the challenges mentioned, it is still believed a relevant result is presented for the board of Endona. The two research objectives, namely a) To give structured advice to the Endona cooperative on how to advance to economies of scale whilst including municipalities and/or SMEs and retaining the benefits of individual consumer participation and b) To assess whether the advice given to Endona could be relevant to other energy cooperatives and initiatives in the Netherlands have been achieved during this research. With this research, alternative structures have been presented to the board of Endona with both advantages and disadvantages mentioned and advice has been given as to which structure is deemed best by the researcher. Next to this, general observations were given as to what is relevant for other energy cooperatives to be picked up from this research. So even though there might be a slight bias and there were some hurdles present during the process, the end advice is still deemed to be relevant and interesting to the board of Endona since the advice provides a structure that is useful on the long-term and includes interesting opportunities for the future, such as professionalisation.

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Appendix A. Interview Questions

Interview Questions for Energy Cooperatives

1. How did your energy cooperative come about?
2. What does your current organisational structure look like?
3. How is the municipality involved within your cooperative? How do you do this?
    1. How do you ensure the participation of the municipality?
4. How are SMEs involved in your cooperative? How do you carry this out/through?
    1. How do you ensure the participation of SMEs?
5. How are participants involved within your cooperative? With regards to financial participation and decision-making within cooperative
6. How do you ensure that the municipality/SMEs not have too much influence on your cooperative?
7. To what extent must your cooperative comply with European energy legislation?
    1. To what extent are you actively working on this?
8. What about support/counter effectiveness from the municipality?
9. What about support from residents?

Interview Questions for the Municipality

1. Wat does the municipality of Raalte do with regards to the Regional Energy Strategy?
2. What is the relationship between the municipality of Raalte and energy cooperatives?
3. What is the ambition of the municipality of Raalte with regards to sustainability?
4. Is the generation of local energy stimulated?
5. Are local energy cooperatives stimulated?
6. To what extent is the municipality of Raalte involved with local energy cooperatives?
7. Does the municipality of Raalte have the ambition to become more involved with energy cooperatives?
8. Are there ambitions from the Municipality of Raalte to focus more on local energy and to generate it locally from energy?
9. Is village approach ‘dorpsaanpak’ encouraged that each core village has its own initiative or is it also possible that villages without initiatives collaborate with villages that do have existing initiatives?

Interview Questions for the Province of Overijssel

1. To what extent is the province involved in policy making regarding the Regional Energy Strategy?
    a. Energy Fund Overijssel (EFO)?
2. To what extent is the province involved in local energy initiatives? Is the province also doing something to stimulate local renewable energy within the community?
3. To what extent does the province ensure that the energy transition goes somewhat similar within the different municipalities?
4. Does the province also do something to stimulate local renewable energy at the municipality instead of commercial developers?
5. To what extent does the province determine where, for example, solar farms will be located?
6. What about subsidies from the municipality for local energy initiatives?
7. What about the collaboration between the municipalities and the province?
8. To what extent does European Regulations affect the Regional Energy Strategy?

Interview Questions for the neighbourhood team of Endona

1. How did you get involved with the Endona cooperative?
2. Wat does the neighborhood team entail?
3. How can you participate for the neighbourhood team?
4. What about activism within Heeten?
5. Do you also see an increase in interest in participation in the Endona cooperative?
6. To what extent do you think it is important that residents can participate in decision-making within Endona?
7. Do you think that residents of Heeten/Raalte/Salland would be more easily involved in an energy cooperative such as Endona if getting sustainable energy were more accessible?