

Utopia Renewed

Transition to Renewable Energy in the Netherlands: a new solution, a new agent, a new pathway

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Sustainability Studies



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Abstract

In the face of climate change, a fast global switch from fossil fuels to renewable energy is imperative. In the Netherlands however, prospects for such a switch are bleak. With 6% renewables its progress is lagging, and vested interests hold back change. The transition is failing.

This thesis provides an alternative, by identifying a *new solution* to the sluggish transition, a *new agent* that could realise this solution and a *new pathway* to do so. I propose a system of flourishing energy co-operatives as alternative *solution*, which I explore as 'Real Utopia' in three steps: whether it is desirable, viable and achievable; in which achievability calls for an *agent* and *pathway*. I answer three Research Questions: 1) Under which conditions can the energy co-operatives be a feasible solution to the failing Dutch energy transition? 2) Under which conditions can the Dutch climate movement be the agent to shape the circumstances in which co-ops can flourish? 3) What pathways are plausible for the climate movement towards realising this solution?

Beside 'Real Utopias' as the overarching framework, I use social movement theory to explore the *opportunities* and *causal mechanisms for political change* available to the movement. The methods used are literature surveys of governmental and NGO reports and interviews with key figures in the Dutch climate movement.

Energy co-operatives are found to be a feasible solution to the lagging transition, but not under currently unfavourable policies. The climate movement is identified as the agent that could bring about the regulatory framework in which energy co-operatives can flourish. But thus far, co-ops remain a side topic for the movement. The climate movement perceives the issue as too technical to campaign on and they are unable to achieve success through the 'political access mechanism' on which they heavily depend. The movement needs a compelling narrative about energy democracy and independence from 'inert' large energy companies to open up new opportunities for mobilisation and increase their leverage in negotiations with politics. This new approach, combined with a set of interstitial, ruptural and symbiotic strategies, has the potential to improve the chances of overcoming the barriers to a prosperous Dutch energy transition.

Keywords: energy co-operatives, Real Utopia, energy transition, climate movement, strategy

Word count: 13 928

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The last two years have changed the way I think and live my life. I believe it has sharpened my ability to think critically, and it certainly has made me more committed to fight for the things, values and people in this world that deserve to be defended. It's been an amazing time, and I want to thank all of you who made it possible.

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1. Introduction

“If the temporality of climate change compels revolutionaries to be a little pragmatic, it obliges others to start pondering revolutionary measures”

Andreas Malm (2016)

In the face of climate change, a fast global switch from fossil fuels to renewable energy is imperative (IPCC, 2013). In the Netherlands however, prospects for such a transition are looking bleak. Contrary to their good name as a frontrunner in sustainability, it is in fact one of the worst performing countries of Europe (Burck et al., 2015). Renewable energy comprises less than 6% of primary energy use, and fossil fuels will remain the dominant source of energy for several decades to come (Schoots & Hamming, 2015).

This failing transition calls for a new approach, one that adequately deals with the barriers it faces. A transition from below is already on the way: communities are forming co-operatives all over the country (Schwencke, 2016), and more are popping up every month (Schoots & Hamming, 2015). This development has the potential to radically transform the energy sector from centralised fossil power to decentralised renewables under citizen-control (Bosman, 2013; Rotmans & Horsten, 2012).

Examples like Germany compellingly demonstrate that co-operatives *can* drive a fast and powerful transition (Yildiz, 2014). But the Dutch co-ops are unable to ‘let a thousand flowers bloom’ without help. They already face serious challenges, economic and non-economic (Elzenga & Schwencke, 2014). Under current conditions they cannot yet truly flourish, and their role would likely remain limited.

1.1 Research Aim

My general research aim is to provide a comprehensive contribution to the transition to renewable energy in the Netherlands, by identifying a *new solution* to the current lagging transition, a *new agent* that could accomplish this solution and a *new pathway* to do so. I thus first answer the Research Question: 1) *Under which conditions can energy co-operatives be a feasible **solution** to the failing Dutch energy transition?* This leads to the follow-up questions: 2) *Under which conditions can the Dutch climate movement be the **agent** of change that could shape the conditions in which the co-ops can flourish?* and 3) *Which **pathways** are plausible for the climate movement to realise these conditions?*

1.2 Structure

The structure of my thesis is inspired by the book *Envisioning Real Utopias* by Erik Olin Wright (2010). In this book he argues that any emancipatory social science has the task of formulating a *diagnosis* and critique of the current situation (the world in which we live), to envision a *feasible* ('Real') *alternative* ('Utopia') and explore the barriers and possibilities of a *transformation* to this alternative. This is how I see the role of Sustainability Science, in essence a normative science that balances the formulation of critique with problem-solving prescriptions (Kates, Clark, Corell, Hall, & Jaeger, 2001; Ziegler & Ott, 2011). In Chapter 3 I make my diagnosis of the failing transition to an energy system that could mitigate climate change adequately. I propose a transition from below through energy co-operatives as an alternative solution. In Chapter 4 of this thesis I will develop this alternative according to the three criteria suggested by Wright (2010): *Desirability*, *Viability* and *Achievability* (Figure 1).

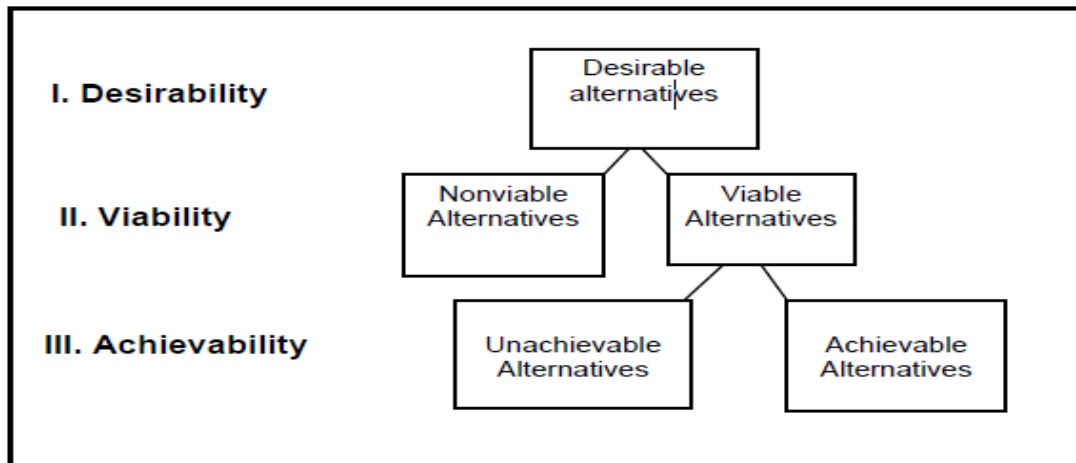


Figure 1: Three-step structure for identifying feasible social alternatives: desirability, viability and achievability (Wright, 2010)

The last component, Achievability, brings me to the question of *how* this alternative could be accomplished. I examine the climate movement as potential Agent of Change (Ch. 5). I look at their *level of influence*, *goals* and *strategies* as well as their *perception of co-operatives* as a solution. I use Social Movement Theory to analyse the *conditions* that are required for them to be the Agent of Change.

The final piece of the puzzle is the pathway, in other words: *if* it is a suitable agent, *how* could the climate movement then get us to the final destination of a transition driven by flourishing energy co-operatives? This will be the topic of the final chapter, Chapter 6.

2 Methodology

2.1 Philosophy of Science

I place myself in the scientific tradition of critical realism as developed by Roy Bhaskar (1975, 1979) and defended by Sayer (2000). I acknowledge the existence of a world independent of our knowledge or beliefs of the world, and accept the realist belief that this world is “*in principle knowable*” (Benton & Craib, 2010, p. 120). Taking an ‘epistemic relativist’ position I accept that knowledge is socially constructed through descriptions and discourse, but I reject the ‘judgemental relativist’ notion that we would be unable to judge between different descriptions of the world (Sayer, 2000, p. 47).

As the energy transition is inherently connected to open systems of social relations of individuals and institutions, I reject the positivist reductionism that presents objects/phenomena as no more than independent persons or atoms without emerging properties. I side with the critical realist understanding of the world as a set of structures, processes and causal powers (i.e. capacities to behave in certain ways) (Sayer, 2000, p. 12). From a critical realist viewpoint, causation between A and B depends on whether the causal powers/capacities in structure A are activated by certain (contingent) conditions such that event B occurs (Sayer, 2000, p. 14; Figure 2). This implies a non-deterministic view of the world, and consequently *of the future as open*. It is my attempt in this thesis, in the critical and emancipatory tradition of social science (Sayer, 2000, p. 18), to shine light on the conditions that correspond with the causal mechanisms that could and should be activated to change the world for the better.

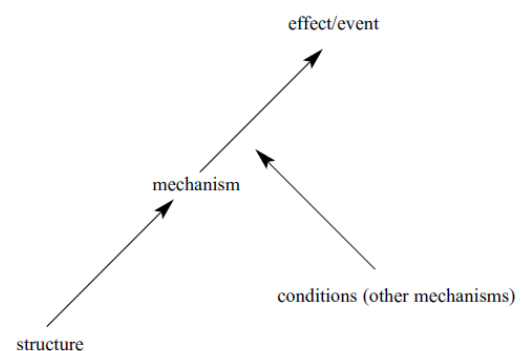


Figure 2 “Critical realist view of causation” – Adopted from Sayer (2000, p. 15)

2.2 Theoretical Frameworks

With this thesis I attempt to contribute to sustainability in the emancipatory social science tradition by following three steps, as suggested by Wright (2010): 1) formulating a certain diagnosis/critique of the world, 2) developing a feasible alternative, and 3) explore possibilities for transformation. The *diagnosis* I make is of the Dutch energy transition, and the barriers to its success. I propose a new way forward as *alternative* to the present situation, and I explore how this new solution, pursued by

a new agent via a new pathway, could *transform* the status quo into a successful transition to renewable energy in the Netherlands.

I use different theoretical frameworks for each section. I will mention them here, but introduce them more extensively at the moment that they become relevant.

- 1) The diagnosis draws inspiration from transition theory and political economic theory, but does not explicitly adapt to one specific theoretical framework.
- 2) For the development of a feasible alternative my aim is to make a comprehensive analysis by taking into account the political, economic as well as more technical dimensions. I draw on a variety of theories (social theory, post-growth, Polanyi's economic theory) which I introduce in due course. The overarching framework in developing the alternative is the concept of 'Real Utopias'.
- 3) In exploring the possibilities for transformation I examine the Dutch climate movement as potential agent of change and develop plausible pathways for the agent to take. I use Social Movement theory, in particular the work of Tilly, Tarrow and Kolb. In Section 5.2 I elaborate on the specifics of their theoretical framework.

2.3 Methods

- 1) For my diagnosis of the Dutch transition I make a **literature survey** of academic writings as well as Dutch governmental reports and IEA documents that bear relevance to the Dutch energy transition as well as energy transitions in general.
- 2) For the development of a feasible alternative I make a **literature survey** of academic articles as well as governmental and NGO reports.
- 3) With regards to transformation I examined the climate movement as agent and plausible pathways for them to take. After an initial study of the movement through academic literature I identified the movement's *goals*, and *object of claim* (i.e. the authorities they challenge) by doing a **content analysis** of statements they make on their websites and in their official documents. I also look at more subjective issues: i) the movement's analysis of barriers to the transition, ii) their strategy, iii) their view on energy co-ops and iv) their perception of 'opportunities', i.e. favourable circumstances in which they can achieve success. To gain knowledge of these issues I conducted 9 **semi-structured interviews** with

key figures in the climate movement (direct quotes and full names are used with permission). My sample is based on the *attempt* to get the individuals with a high coordinating and decision-making responsibility in relation to energy at each Environmental Movement Organisation. However, due to the fact that not everyone I approached had time for an interview, the final sample is as close as I could get to this, leaving out just one key player – an organisation called Urgenda. Luckily, Urgenda is very explicit in their views and demands in their documents, which made it possible to still include some of the organisation's perspectives. Appendix 1 and 2 show my interview guide and list of interviewees.

3 The Issue: A Failing Transition

The Dutch transition from fossil fuels to renewable energy is going extremely slowly, compared with other countries. The share of renewables in national energy use is currently about 6% (Schoots & Hamming, 2015; Figure 3) which makes them the worst performing country in Europe after Cyprus, Hungary and Italy (Eurostat, 2015; Figure 4). They are ranked second to last out of all EU members in their overall performance to address climate change, in last year's Climate Change Performance Index (Burck et al., 2015). The government aims to increase the share of renewables in primary energy up to 19% in 2030 (Schoots & Hamming, 2015), keeping fossil fuels the dominant source of energy until far after this point (Figure 3).

Critics worry that even the 19% target will not be met (Schootstra, 2016). In 2013, energy targets were agreed upon with a broad coalition of national and regional governments, labour unions and environmental organisations (Energy Agreement, 2013). One key target of this agreement was to reach 14% renewables in 2020, but recent projections based on current energy policies estimate that no more than 11.1% will be reached (Schoots & Hamming, 2015). Last January, the government launched a plan to realise the targets from the

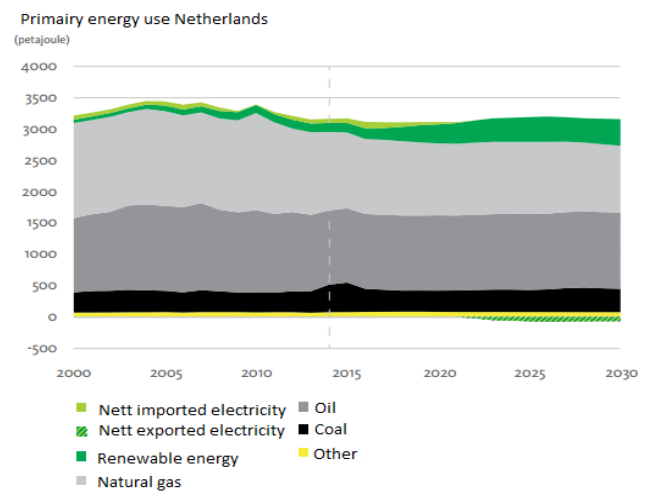
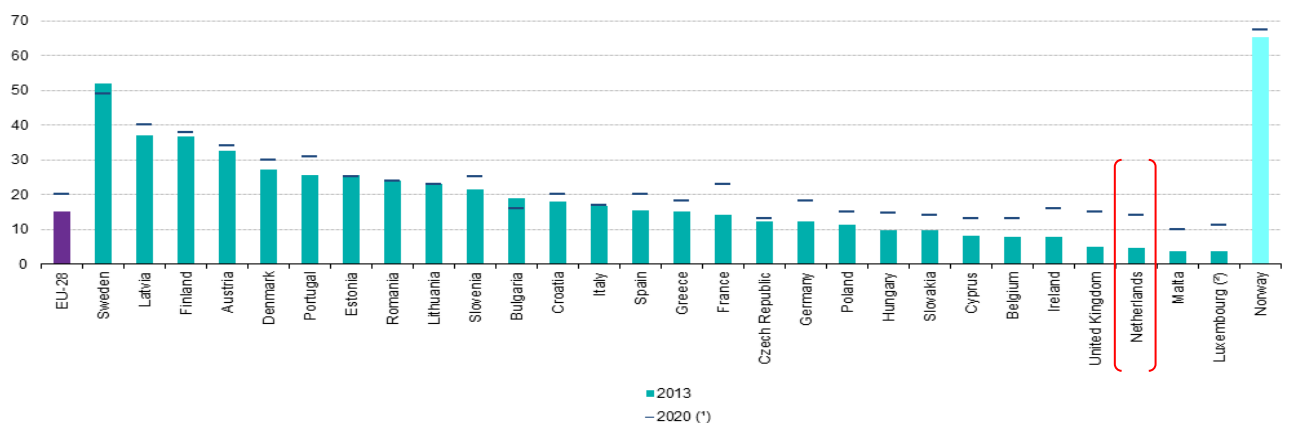


Figure 3: Primary energy use in the Netherlands, 6% renewables in 2015, 19% in 2030. (Schoots & Hamming, 2015)



(*) Legally binding targets for 2020.
 (**) 2013: estimate.
 Source: Eurostat (online data code: t2020_31)

Figure 4: Share of renewable energy of EU member states in gross final energy consumption for 2013 and 2020, showing the relative poor performance of the Netherlands (Eurostat, 2015). Red marking by myself

energy agreement for 2030 and after, but upon release it instantly got discredited and ridiculed by opposition parties, environmental organisations and other civil society groups for its lack of ambition and concrete commitments (Schootstra, 2016).

3.1 Barrier to the Transition: Powerful Industry

Many scholars argue that renewable energy is already both technologically mature and economically viable (Armaroli & Balzani, 2011; Cengiz, & Mamiş, 2015; Jacobson & Delucchi, 2011). Delucchi & Jacobson (2011, p. 1170) extensively explored the feasibility of a global switch to 100% renewables and conclude that the barriers are “*primarily social and political, not technological or even economic*”.

Table 1 Revenues and Profits of the World's 50 largest corporations, by industry. Adopted from Sweeney (2015, p. 219)

Industry (number of companies)	Revenues		Profits	
	Billion dollars	Percent of Top 50	Billion dollars	Percent of Top 50
Fossil fuels/ utilities (19)	4.482	48.0	258	45.7
Finance and Insurance (11)	1.520	16.3	132	235
Motor Vehicles (7)	1.182	12.7	68	12.0
Retail (2)	592	6.3	21	3.7
Electronics (4)	588	6.3	53	9.4
Telecommunications (3)	372	4.0	15	2.6
Others (4)	603	6.5	18	3.2
Top 50 corporations	9.339	100.0	564	100.0

In line with this conclusion, scholars point to the role of vested interest as a major barrier to energy transitions. Sweeney (2015, p. 219) points out that the fossil fuel industry is by far the wealthiest industry on the planet (with 19 fossil companies in the top 50 richest companies, see Table 1), and argues that they use this wealth to “*oppose or delay efforts to address climate change and to create a more equitable, democratic, and sustainable energy system*”. Oreskes & Conway

(2010) and Klein (2014) compellingly demonstrate how the fossil fuel industry has used this wealth to fund climate denialism and cause doubt for decades. Not addressing these power relations is a recipe for disaster, according to Ciple, Timmons Roberts and Khan (2015). In their book *Power in a Warming World*, they argue that continuing on a path of market-based approaches and incremental steps will be fundamentally insufficient and inadequate because it will be incapable of challenging the power of vested interest.

The Dutch economy is one of the most fossil fuel intensive economies of Europe (IEA, 2015a). The energy sector makes up for 6% of GDP and about 20% of the annual government budget (Smink, 2015). The country has significant gas reserves, and currently makes up for 2.5% of the world's total natural gas production (IEA, 2014b). The availability of cheap electricity due to this gas has made energy intensive industry such as steel and concrete production and chemical industry a vital part of the economy (Smink, 2015). The country is home to oil company Shell as well as to one of the world's largest seaports (Rotterdam), with oil refineries located at the port; despite its size it is the world's 9th largest importer of crude oil (IEA, 2014b).

Magda Smink (2015) made headlines last year in the Netherlands with her dissertation that exposed the lobby of vested interest as major barrier to a Dutch transition towards sustainability. She compellingly shows how 'incumbents' (i.e. vested interests such as established large energy companies) deliberately use their influence on the government to hold back change and shape favourable conditions for themselves, and are very successful in doing so (Smink, 2015). She concludes that *"[i]n the absence of other powerful (societal) actors advocating institutional change supporting sustainable innovations, it is to be expected that sustainability transitions will evolve along the lines of solutions preferred by incumbents"* (Smink, 2015, p. 151).

If current energy policies fail to set the conditions for an effective energy transition, while vested interests effectively influence those policies in their favour, there seems to be little prospect for change. However, one recent development could help to break out of this impasse, a development that could both advance the shift to renewable energy and at the same time change the power structures that now form the main barrier. This new development is the emergence of energy co-operatives in the Netherlands, and whether this forms a feasible and achievable solution to the sluggish energy transition is what I aim to explore in this thesis.

4 Electric Spring – Flourishing Energy Co-operatives as Real Utopia

Large-Scale problems do not require large-scale solutions; they require small-scale solutions within a large-scale framework

David Fleming (2007)

Recent years have seen new developments in the Dutch energy system. The energy transition is taking a new direction: decentralised and bottom-up, as citizen and community initiatives are emerging in every region of the country (Schwencke, 2016). Scholars are becoming increasingly interested in this development (Boon & Dieperink, 2014; Bosman, 2013; Schwencke, 2016; Van Der Schoor & Scholtens, 2015) and some argue that it has the potential to radically transform the Dutch energy system (Bosman, 2013; Rotmans & Horsten, 2012).

Energy collectives, or citizen initiatives for renewable energy, are initiatives organised by groups of citizens and local communities to collectively buy, sell or produce renewable energy. There are currently more than 500 local energy initiatives in the Netherlands (www.hieropgewekt.nl), and around half of which organise themselves in the form of energy co-operatives (co-ops), a juridical form of organisation that is democratically controlled by its members. Between 2010 and 2015 the amount of energy co-operatives rose with a factor 11 from 20 to 220, with an additional 35 ‘project co-operatives’ which are organised around a specific temporary project. The 220 co-operatives represent 35 to 40 thousand members (Schwencke, 2016).

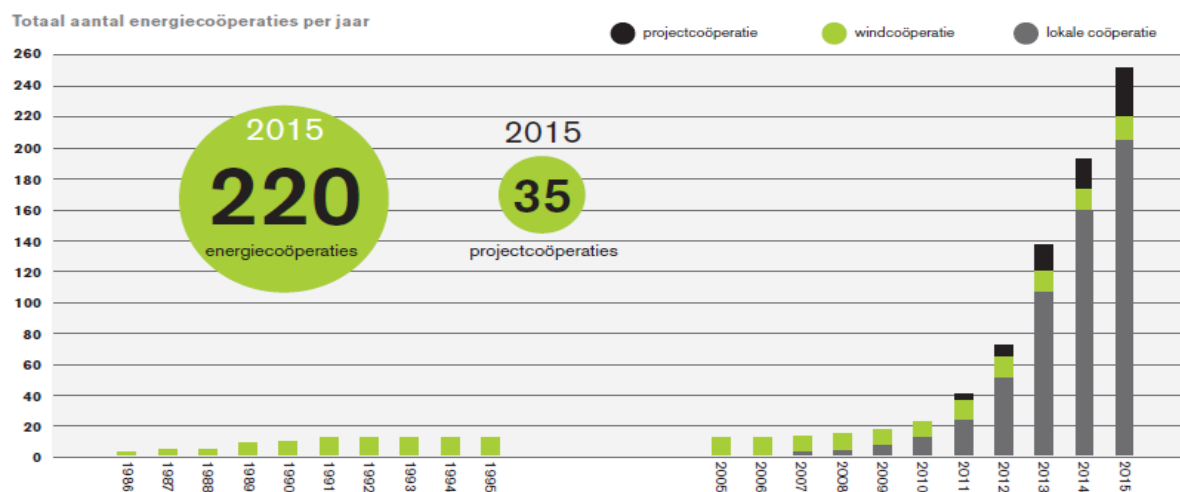


Figure 5: Total amount of energy co-operatives in the Netherlands per year, showing single-project co-operatives in black, wind co-operatives in green and local co-operatives in gray (Schwencke, 2016)

As Figure 5 shows, the development of co-ops has accelerated rapidly in the last five years. The first energy co-operatives emerged in the late 80s to develop and finance the instalment of wind turbines collectively, and many of these still exist. The second wave started in 2007 and these new co-ops usually have a broader aim than the older ones: in addition to wind they engage in solar projects as well as energy conservation, and are locally oriented (Schwencke, 2016). The current combined capacity of these co-ops is 88.2 MW (6.7 MW solar and 81,5 MW wind), with on-going projects pushing this to roughly 180 MW in 2017 (Schwencke, 2016). Currently this is no more than 1% of the national total electricity generation, and hardly 3 per cent of on-shore wind energy (Schoots & Hamming, 2015). In other words, in terms of capacity this development is not yet significant; but considering the rapid rise over the last years, it could well be in the future – under the right conditions.

This development is explored on its potential to be a *solution* to the failing energy transition. More precisely, I want to know which conditions are needed for the energy co-operatives to truly flourish and thus become a major driver of the energy transition. I will explore this as a ‘Real Utopia’ in three steps: whether it is desirable, viable and achievable.

Desirability (figure 6) is the question of what it is about the alternative that, based on the diagnosis of the current situation, makes it better and more preferable. It is the exploration of alternative futures “*without the constraints of viability and achievability*” (Wright, 2010, p. 14). Based on my diagnosis (Chapter 3) of the current transition, in the next section I will relate the proposed alternative to one desirable idea in particular: a successful and rapid energy transition to a fossil free future.

The **viability** (Figure 7) of the alternative determines whether it is possible ‘in principal’, i.e. that the theoretical alternative is coherent and credible without any internal logical contradictions. Erik Olin Wright (2010, p. 14) writes: “*The study of viable alternatives asks of proposals for transforming existing social structures and institutions whether, if implemented, they would actually generate in a sustainable, robust manner, the emancipatory consequences that motivated the proposal.*” In our case I do not only look at the viability of energy co-operatives in themselves, but also the full proposal of having ‘flourishing energy co-operatives as key driver of the energy transition’.

The alternative is **achievable** (Figure 9) only if the barriers to the realisation can be overcome. Wright (2010, p. 16) notes that exploring the achievability “*turns out to be a very difficult undertaking, both because views about achievability are vulnerable to ‘wishful thinking’, and because of the high levels of contingency of conditions in the future which will affect the prospects of success of any long-term*

strategy". Exploring the achievability of this alternative continues in Chapter 5, where I examine the climate movement as Agent of Change, and Chapter 6, where I map plausible pathways for the movement as agent to realise the proposed solution.

4.1 Desirability: why bother about energy co-operatives?

That an energy transition in itself is desirable is universally accepted. It is absolutely essential to change the energy system if we are to avoid climate catastrophe. To this end the world has committed, in Paris last year more determined than ever before, to set the world on a path to a zero-emission future (UNFCCC, 2015). For the lethargic transition in the Netherlands, as a logical result, *any alternative* that would be able to materialise those words of commitment is desirable over the status quo. But even if there might be other ways to increase the share of renewables in the Dutch energy system, there are many reasons why this alternative is desirable: transitioning from centralised, privatised fossil fuels to decentralised, collectively-owned renewables is about much more than technology. Advocates have argued for the desirability of community-owned energy for decades, and for a number of reasons.

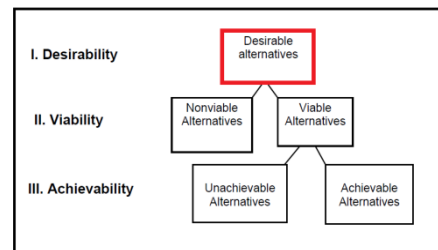


Figure 6: Desirability of the proposed alternative (Wright, 2010, p. 20). Red marking by myself.

4.1.1 Desirable for social reasons

In the spirit of Schumacher's (1973) *Small is Beautiful*, advocates have highlighted its small-scale and consider it 'technology with a human face', with potential for community empowerment, self-sufficiency and local control (Dunn, 1979; Lovins, 1978). Others have pointed to the benefits of strengthening local communities and creating local jobs (Koirala, Koliou, Friege, Hakvoort, & Herder, 2016; Vaze & Tindale, 2011; Walker, 2008), and recently there has been a consensus emerging in the literature that it is the most effective way to create public support for other energy systems, in particular to address issues with local acceptance of on-shore wind energy (Bauwens, 2013; Li & Yu, 2013; Viardot, 2013; Yildiz et al., 2015; Yu, Li, & Kuo, 2010)

4.1.2 Desirable for post-growth advocates in particular

On top of this, advocates of post-growth in particular have highlighted the potential that energy cooperatives have for long-term sustainability. Critical of growth as the main driver of CO2 emissions

(IPCC, 2014), post-growth scholars argue that co-ops could form the basis for an economy that is not based on GDP-growth (Johanisova et al., 2015). Johanisova et al (2015, p. 153) point out three characteristics that make co-operatives a more suited model for a post-growth economy than the mainstream for-profit enterprise:

1. Different share ownership rules: “*growth-for-growth’s-sake*” of the enterprise is not incentivised because the value of a member’s share remains the same when the co-op grows. A member’s share is typically non-transferable to others and cannot be speculated with, resulting in a more place-based and long-term membership which is more likely to consider community and environmental values.
2. Democratic governance structure: the democratic decision-making structure can help to bridge the distance between workers, managers, consumers and shareholders, creating a sphere of mutual aid and satisfying needs.
3. Different relation to money: free from fiduciary duty (the legal obligation to maximise return to shareholders) the co-operative is able to set its own priorities, leaving more space for job protection, environmental concerns and community benefits.

The result is that energy co-operatives show, for example, a strong tendency to promote local energy conservation (i.e. ‘degrowth’ energy use) rather than promoting energy as a commodity (Elzenga & Schwencke, 2014; Schwencke, 2016). In contrast, Klein (2014) highlights that a mainstream private energy company bound by fiduciary duty has a tendency to grow and can only switch to renewables if it is profitable; and even if it would voluntarily commit to efficiency or sustainability targets, potential gains are generally made undone by the increasing size of business - also known as Jevon’s Paradox (Alcott, 2015, 2005; Malm, 2016).

Movements calling for post-growth consider co-operatives as an important potential pathway to their goals (Johanisova et al., 2015). In addition, Kunze and Becker (2015, p. 425) argue that *energy co-operatives in particular are commonly regarded as “potential precursors for a sustainable degrowth society”*. They point out that the link between most important energy sources and disparate trajectories of societal and economic development has been shown many times by historians, and that fossil fuels have fuelled economic growth; and thus the shift to renewables opens a crucial window of opportunity to move beyond a growth paradigm (Kunze & Becker, 2015). One of such historical accounts, although not mentioning post-growth, is given by Timothy Mitchell’s (2011) insightful book *Carbon Democracy*. Mitchell (2011, p. 254) concludes that future societal arrangements, including the very fundamentals of our democracy, “*depend on the political tools with which we address the passing of the era of fossil fuels*”.

However, although energy cooperatives should be particularly appealing to post-growth advocates, it should not exclusively appeal to them. In fact, anyone who advocates for a faster energy transition in the Netherlands should consider this proposal, because by by-passing the incumbents that currently hold back the transition (Smink, 2015) it has the potential to address the most important barrier to the transition.

4.1.3 Desirable for its potential to transform power structures

As argued by Cipler, Timmons Roberts and Khan (2015) in *Power in a Warming World* and demonstrated by Smink (2015), without addressing the power structures and dominant position of vested interests, an energy transition will not be possible. This is precisely why Naomi Klein (2014) in *This Changes Everything* spends over 600 pages on convincing us that resistance to those interests is required and that building “people’s power” is imperative.

Taking this ‘call to arms’ literally, gaining citizen-control over the electric power system is one way to change the balance of political powers. It is important to realise that there is no clear divide in ‘fossil fuel interests’ on one side and ‘renewable energy interests’ on the other; established energy utilities are generally found to hold back transitions (Sarasini & Jacob, 2014; Smink, Hekkert, & Negro, 2015; Smink, 2015; Stenzel & Frenzel, 2008) because they are “*restricted by their existing assets, which reflect past investments*” (Hockerts & Wüstenhagen, 2010, p. 487).

In the current plans for increasing the share of renewables in the Netherlands, the majority of this shift is to be realised by the instalment of centralised off-shore wind energy (Energy Agreement, 2013). The companies that would invest in those wind farms are partially the same large energy companies (like Shell and Essent) that dominate the energy sector now (van Dijk, 2016). This way some renewables might be realised in the short term, but the power balance remains largely unchanged and in favour of those companies with no interest in the broader transition that is required; in particular phasing out the fossil fuels in which they still have heavily invested (Hockerts & Wüstenhagen, 2010).

A crucial part of the strategy behind the Real Utopia concept is to achieve certain (utopian) values or goals now, while by doing so ‘eroding’ the current dominant system so that chances for further expansion of the utopia are improved (Wright, 2010 p. 232). By gradually expanding the share of co-ops in the energy sector, large ‘inert’ incumbents lose that share and thus become less dominant and can form less of a barrier in the long run. It is thus the *decentralised* feature of energy cooperatives, and through its introduction of *new entrants* in the energy sector, that the power of incumbents

erodes. Through substantially increasing the share of energy co-operatives, prospects for a continued transition improve progressively.

4.2 Viability: Is the proposed alternative viable?

Many economists are sceptical that co-operatives would ever comprise a large share of the economy. It is argued that with increasing size of the co-operative, organisational complexity and member-heterogeneity increase, making democratic decision-making difficult and making the enterprise less effective than privately owned firms (Hansmann, 2009). External economic pressures in a capitalist, competitive environment can indeed form major challenges for co-operatives. In order to survive, co-ops sometimes need to reduce on staff or out-source production, and growing organisational structures can result in eroded identification and solidarity with the co-op among its members (Johanisova et al., 2015).

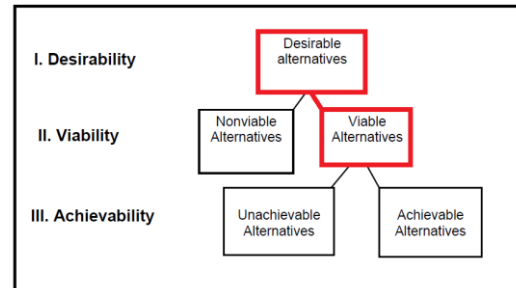


Figure 7: Viability of the proposed alternative (Wright, 2010, p. 20). Red marking by myself

In some circumstances, it can indeed be very tough for co-operatives to survive. Others argue however that there are inherent aspects of co-operatives that - under the right circumstances - can make them in fact *more* efficient and productive than mainstream firms. Wright (2010, p. 168) stresses that *“the collaborative processes within a co-operative can enhance its problem-solving capacities; the commitment of its worker-owners to the success of the enterprise can increase their willingness to work diligently and productively; the closer alignment of interests of workers and managers can reduce the ‘transaction costs’ of monitoring work effort”*. Whether co-operatives are *viable*, and more importantly whether the idea of co-operatives as the main component of an entire energy sector is viable, thus largely seems to depend on the ‘right circumstances’.

4.2.1 ‘Spontaneous Order’ or Intentional Planning?

If energy co-operatives require favourable circumstances to be viable, then what determines these circumstances? (Neo)-classical economists like Friedrich Hayek (1988) argue that the market economy is a ‘spontaneous order’, guided only by an ‘invisible hand’. According to them it should be market forces that determine the circumstances, and state interference would only lead to inefficiencies (Petsoulas, 2001). Hayek’s contemporary Karl Polanyi would firmly disagree. He argues that the idea of a self-adjusting market is impossible (Adaman, Devine, & Ozkaynak, 2003). According

to Polanyi (1944, p. 3), a ‘self-adjusting market’ implies fully ‘disembedding’ the economy from society and nature, and that “*such an institution could not exist for any length of time without annihilating the human and natural substance of society; it would have physically destroyed man and transformed his surroundings into a wilderness*”. The project of sternly trying to achieve such impossibility, he argues, is destructive to both society and nature and evokes a ‘counter-movement’, a response from society to protect itself and its natural environment (Adaman et al., 2003)

Polanyi would thus argue that it is a fantasy to believe that the full system of economic prices spontaneously emerge as though guided by an invisible hand and - instead of destructively attempting to achieve this fantasy - he “*argued for coordinated social intervention*” (Adaman et al., 2003, p. 359). Now, more than half a century later and on the brink of planetary boundaries and related ‘tipping points’ (Rockström et al., 2009), many agree with Polanyi that what we need is some form of intentional planning rather than letting market forces determine our direction (Malm, 2016). Malm (2016, p. 382) underscores the call from the more ‘radical’ Klein (2014) as well as very moderate scholars Jacobson and Delucchi (2010) and sociologist Anthony Giddins (quoted in: Malm, 2016) - all stating one way or the other that ‘economic incentives’ will not suffice and coordinated planning and regulation is ‘inevitable’. The point that I want to make is not that Polanyi is right and Hayek is wrong, but that they represent competing models of economic theory. But in the face of climate change, Polanyi seems to represent a much more appropriate model.

4.2.2 The proof of the pudding...

If we accept that the viability of co-operatives depends on the right circumstances, and that these circumstances should be determined by ‘coordinated social intervention’ rather than an ‘invisible hand’, does that mean that our proposal is viable? There are examples that suggest it is.

In countries with favourable regulations co-operatives have been able to ‘flourish’ and realise a considerable share of the renewable energy capacity. The most well-known example is Germany, famous for its feed-in tariff (L. W. Li, Birmele, Schaich, & Konold, 2013). About half of the country’s renewables comes from energy co-operatives (Yildiz, 2014; Figure 8). Denmark has successfully stimulated the emergence of wind co-operatives with their energy policy, in

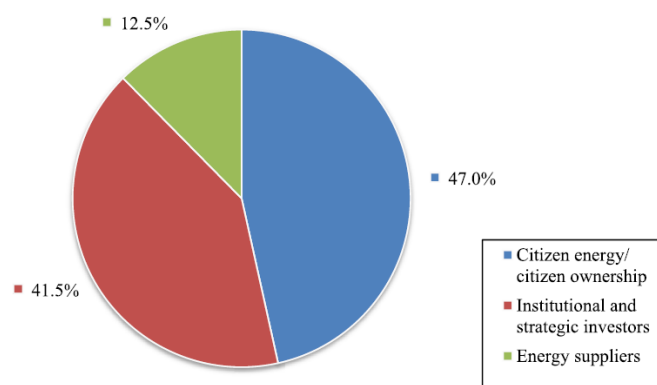


Figure 8: 2012 ownership shares of the total installed renewable energy capacity in Germany. Image adopted from Yildiz (2014, p. 678)

particular the obligatory consumer ownership (giving local residents the ‘right-to-invest’ in wind turbines) (Olsen & Skytte, 2002), and Dutch co-operatives point to recent developments in the UK, where the *Community Energy Strategy* (January 2014) and the *Localism Act 121* stimulate municipalities to prioritise co-operatives as project developers for local energy projects (Elzenga & Schwencke, 2014). However, scholars note that much depends on political, social and technical contexts, and that copying these best practices, “*regardless of national specific opportunities and barriers, will [...] not guarantee a similar outcome*” (van der Vleuten & Raven, 2006, p. 3739).

Adopting Polanyi’s (1944) economic model we accept that the viability of energy cooperatives is no matter of ‘spontaneous order’ but under influence of intentional political powers. Smink (2015) has compellingly demonstrated that energy policies are indeed under strong influence of political actors. This makes the regulatory framework (the conditions) in which energy cooperatives would be able to flourish and drive the energy transition a matter of political choice, which is demonstrated by countries like Germany (Yildiz, 2014). From this I conclude that my proposal is indeed viable. The question that is left is how to *achieve* a conducive regulatory framework in which co-ops can flourish.

4.3 Achievability: From Viability to Reality

Energy co-operatives have begun a promising ascent in recent years. However, there is also reason to believe that under current circumstances co-ops are likely to remain marginal in the overall transition (Elzenga & Schwencke, 2014). Despite their rapid rise across the country, their production comprises less than 1% of national renewable energy

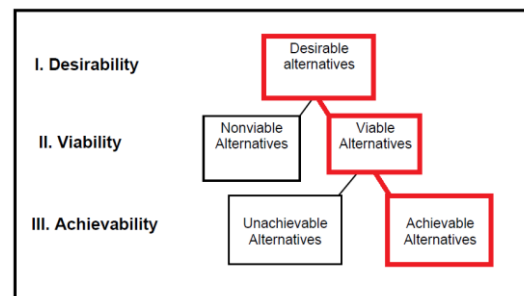


Figure 9: Achievability of the proposed alternative (Wright, 2010, p. 20). Red marking by myself

generation (Elzenga & Schwencke, 2014; Schoots &

Hamming, 2015), and they already face serious challenges. To let co-ops really flourish, there are economic as well as non-economic barriers that need to be addressed (Elzenga & Schwencke, 2014).

4.3.1 Barriers: Economic and non-economic

Most Dutch co-operatives have limited resources in terms of organisational capacity, capital and knowledge - in particular due to their predominantly volunteer-based organisational structure (Elzenga & Schwencke, 2014). Their resources generally grow organically by starting with small projects and increasingly pick up bigger projects (Elzenga & Schwencke, 2014). Once financial stability

increases, co-operatives can expand their organisational capacity by hiring one or two employees (Elzenga & Schwencke, 2014).

But along these steps there are many challenges. Small-scale solar projects are in many cases the stepping stone to bigger projects, because they do not require much technical expertise or other resources (Schwencke, 2016). The *margin of profit* for these projects, however, is very thin, so the resources available to the co-op do not increase much with these projects (Elzenga & Schwencke, 2014; Schoots & Hamming, 2015). Large-scale solar projects can get subsidies under a different regulation, but co-operatives indicate that they experience many institutional and bureaucratic barriers with this particular subsidy scheme, and here too the *margin of profit* is generally thin (Elzenga & Schwencke, 2014). Most co-operatives do not fulfil the requirements for a *permit* to sell their electricity to consumers directly, resulting in resale contracts with third parties and consequently even thinner *margins of profit* (Elzenga & Schwencke, 2014). Although wind projects are more profitable, these initial barriers result in many co-operatives not getting to the level of organisational capacity with the level of resources required to pick up wind projects, which involve complex procedures of applying for the *right permits* and *subsidies* and to get *local approval* (Elzenga & Schwencke, 2014). The main barrier for decentralised wind projects in general is local opposition (NIMBYism), but due to their participatory nature co-operatives can in fact be an effective ‘antidote’ to this opposition (see text box).

NIMBY: Barrier to Co-op or Co-op as Solution?

Last year’s national energy exploration point out there is one major barrier for decentralised wind energy: local community resistance, or NIMBY-ism (Not In My Back Yard). As a barrier to wind projects this can sometimes form a real barrier to the plans of a co-op.

At the same time, co-ops can bring about inclusive community participation, thus forming an important part of the solution to overcome this barrier (Viardot, 2013). Engaging communities from the start is recognized as the most effective way to address NIMBYism (Bauwens, 2013; Li & Yu, 2013; Viardot, 2013; Yildiz et al., 2015; Yu, Li, & Kuo, 2010). The phenomenon of NIMBYism is thus not so much a barrier to co-ops as it is an indication of their importance.

The above mentioned barriers are two sides of the same coin: the organisational capacity of a co-operative generally increases along with their available (financial) resources, especially once it has enough financial stability to hire employees and has the capacity to deal with more complex and profitable projects like wind projects. But under current conditions, it is projected that energy co-

operatives would be able to generate “*at most a few petajoules*” by 2020 and they would be unable to play a big role in the transition (Elzenga & Schwencke, 2014, p. 49).

Current fiscal and energy policies are “*far from conducive*” to small-scale energy producers like co-operatives (Van Der Schoor & Scholtens, 2015, p. 667). At the same time, fossil fuel industry is heavily subsidised (IEA, 2015b), while costs of environmental degradation and climate change are ‘externalised’ (Covert, Greenstone, & Knittel, 2016). To make this regulatory framework more conducive, one could think of a number of things: through different *pricing* schemes (e.g. by increasing subsidies and tax exemptions for co-ops or by pricing carbon), by providing *credit* under favourable conditions (e.g. by granting loans with low interest rates), by increasing *investments* (e.g. by prioritising energy cooperatives over private companies in the case of municipal plans for new wind turbines), or by *reducing administrative hurdles* (e.g. by easing the criteria for permits to become energy supplier and sell electricity directly to consumers) (Agnolucci, 2007; Elzenga & Schwencke, 2014; IEA, 2014a; van Rooijen & van Wees, 2006; Vaze & Tindale, 2011).

This entire framework of regulations is ultimately what determines the viability of co-operatives. The *achievability* of a favourable regulatory framework is thus what determines the achievability of the here proposed alternative: an energy transition in which the co-ops can truly flourish and lead the transition. The search, then, is for an Agent of Change to make the regulatory framework more favourable.

5 Moving to Change – The Dutch Environmental Movement as Agent of Change

As argued, the Dutch energy market is not leading towards a timely shift to 100% renewables: prognoses based on the most recent political targets will keep fossil fuels the dominant source of energy until far after 2030 (Figure 2). Incumbents seem to have no interest being an agent of change towards a fossil free future, and in fact use their influence successfully to hold back such a transition (Smink et al., 2015; Smink, 2015). Both market and politics are thus failing to deliver a timely energy transition. But social scientists point to three sources of social change: market, politics and civil society (Callinicos, 2007). Can civil society create the right conditions?

5.1 In search for the Agent of Change: If not market, not politics, then civil society?

Citizens are starting to organise themselves and take responsibility for the energy transition. But although the recent development of energy co-operatives looks promising at first, their current share in renewables is still low and their role is expected to remain marginal under current conditions (Elzenga & Schwencke, 2014). A variety of civil society groups has come to support the co-ops, but they fail to address the unfavourable regulatory framework.

5.1.1 Civil society as ‘intermediary’

Various for- and non-profit organisations have emerged in support of energy co-ops: social enterprise Vandebroen (www.vandebroen.nl) makes it financially attractive and easy to switch from your old energy supplier to a local co-op; DE unie (www.duurzameenergieunie.nl) is an attractive choice for resale constructions for co-ops without the right permits to sell directly; Hier Opgewekt (www.hier.nu) is a knowledge platform for co-ops; and energy company Greenchoice (www.greenchoice.nl) even facilitates setting up new co-ops. Scholars of Strategic Niche Management theory say that the role of such ‘intermediaries’ is crucial for the ‘nurturing of the niches’, i.e. the further development of co-ops (Hargreaves, Hielscher, Seyfang, & Smith, 2013). But although this facilitating role is likely to help overcoming the various economic and non-economic barriers “*there is a limit to how much civil society-led groups can achieve on their own*”; which calls for “*consistent policy support*” to develop the sector further (Seyfang, Park, & Smith, 2013, p. 988). In

other words, civil society groups that play an intermediary role can facilitate the development of co-ops, but without changing the regulatory framework the co-ops will still not reach their full potential.

5.1.2 Social movements as candidate: the labour movement and the environmental movement as candidate for agent

A new regulatory framework is needed that helps and continues to help bottom-up and citizen-owned renewable energy projects to flourish. This requires nothing less than challenging authorities to change current policies, raise their intended renewable energy targets and resist the agenda of powerful industries. The actors within civil society that do such a thing as their 'core-business' are – of course – social movements. Goodwin and Jasper (2004, p. 4) define social movements as a *“collective, organized, sustained, and non-institutional challenge to authorities, powerholders, or cultural beliefs and practices”*. This is what, according to Cohen and Arato (1995, p. 492) makes social movements the *quintessential force* that make civil society such an engine of social change: *“It is our thesis that social movements constitute the dynamic element in processes that might realize the positive potentials of modern civil societies”*.

Two Dutch movements seem relevant to consider in relation to the energy transition: the labour movement and the environmental movement. It is these movements that have their 'Social Movement Organisations' – the labour unions and environmental organisations - actively involved as stakeholders in the governance of the energy transition (SER, 2013).

In an essay called *Working Towards Energy Democracy*, Sean Sweeney (2015) voices high hopes for the labour movement to be the agent of change for the energy transition and argues for unions as driving force for mobilising other movements. Abramsky (2010, p. 631) notes that concerns for job security in the energy sector and concerns for the environment are often seen as opposing each other, but that there is indeed an emerging movement nonetheless around the concept of a *“Just Transition”*, where labour unions form the leading mobilising force in the transition to 'clean jobs', renewable energy and the end of fossil fuels. Others however, like Gouverneur and Netzer (2015), highlight the general reluctance of unions to engage in the issue of socio-ecological innovation. They conclude that for unions to become a driving force, this *“requires a convincing guiding concept with the potential to mobilize and build new alliances”* (2014, p. 237).

With working-conditions as the logical priority for the labour movement, sustainability would always come in the second place at best. The environmental movement, however, has shown to be a driving force for environmental policy in Western Europe since the '60s (Van der Heijden, 2000). For this reason I have chosen to focus on the Dutch environmental movement as potential Agent of Change

that can create a favourable regulatory framework in which energy co-operatives can become a key driver of the transition.

Whether the environmental movement could be the Agent of Change analytically depends on two questions: 1) *are they 'capable' of being the agent?* and 2) *are they interested in the proposed change?* For the first question I will look at their influence on the relevant actors. The most relevant actor in this regard is the government (policy makers), but the strong influence of vested interests on climate policy (Smink, 2015) suggests that industry is also an important actor. For the second question, I will examine how the movement's 'goals' match with the aim of the here proposed alternative.

5.2 Theoretical Framework: Social Movement Theory

In studying this movement I will be basing my research on historical analyses of the movement (Jamison, Eyerman, & Cramer, 1990; Van Der Heijden, 2004) as well as on social movement theory, in particular the work of Charles Tilly, Sidney Tarrow and Felix Kolb. A social movement is defined as a *"collective, organized, sustained, and non-institutional challenge to authorities, powerholders, or cultural beliefs and practices"* (Goodwin & Jasper, 2004). In other words, movements are a form of *collective action*, in which collectives make *claims* against *authorities*. They do this outside of the realm of established political institutions, through *contentious politics* (Tilly & Wood, 2009). It is defined by the interaction of three parties: the *claimant* (the actors with a certain claim, demand or goal– in this case the 'movement organisations'), the *object of claim* (the actors that are challenged by the claimant), and the *public* (Tilly & Wood, 2009).

I will make use of two concepts from social movement theory, which I will explain before moving on: Political Opportunity Structures and Causal Mechanisms for Political Change.

Political Opportunity Structure (POS)

Political Opportunity Structure Theory tells us that movements emerge or decrease and succeed or fail depending on the structure of political opportunities and threats (Tarrow, 2011). When a movement perceives a probability that taking action will lead to success (a *"desired outcome"*), this is called an opportunity (Tarrow, 2011, p. 160). A threat is defined as the *"costs that a social group will incur from protest, or that it expects to suffer if it does not take action"* (Goldstone, 2001, p. 183). The external environment, or the political context around the movement is called the 'structure of political opportunity' (Meyer & Minkoff, 2004). Tarrow (2011, p. 165) outlines four main dimensions

of this structure: “(1) opening of access to participation for new actors; (2) evidence of political realignment within the polity; (3) availability of influential allies; and (4) emerging splits within the elite”. He emphasizes that what is important is not so much the objectiveness of an opportunity (i.e. a real increase in probability of success) but whether something is *perceived* as such by the movement, in order to become a source of mobilization (Tarrow, 2011) (although the ultimate success/outcome of course does depend on the actual probabilities of success). Political Opportunity Structure (POS) theory helps us to understand *why* movements undertake campaigns and *which conditions* have incentivised it. In this case, it helps us to understand what is required for the climate movement to *be* the Agent of Change.

Causal mechanisms for political change

Kolb (2007) states that in order to achieve their goals social movements have to enable one of five causal mechanisms. 1) The disruption mechanism occurs when a movement disturbs societal order (such as the occupation of a building), and the restoration of such order becomes their leverage with authorities. 2) The public preference mechanism is enabled when a movement succeeds in shifting public opinion in their favour, and that leads to politicians adopting another opinion or standpoint as well. 3) The political access mechanism can be enabled when members of the movement are granted access to the political sphere, giving them a direct say in decision-making. 4) Through the judicial mechanism movements can bring about political change through the court, and 5) the international politics mechanism enables domestic change through international pressure.

5.3 The Potential of the Environmental Movement as Agent of Change

Jamison, Eyerman and Cramer (1990) and Van der Heijden (2004; 2000) extensively analysed the Dutch Environmental Movement in a comparative study with other European countries. I will build on their work to say something about the level of influence of the Environmental Movement in the Dutch energy transition. Afterwards I will scrutinise the Dutch Environmental movement and explain which Environmental Movement Organisations (EMOs) have potential as agent and what their goals are.

5.3.1 The Dutch Environmental Movement: Institutionalised & Influential

In many western countries, the environmental movement has played a crucial role in putting the environment on the political agenda since the '60s (Van der Heijden, 2000). The Dutch environmental movement emerged in the late '60s and has been very successful in gaining influence on policy-

making in comparison with nearby countries (Van der Heijden, 2000). More than any other national movement it acquired influential positions in a number of Dutch advisory and consultative bodies, and key figures from the movement later fulfilled high positions within governmental bodies (Van der Heijden, 2002). This led to a strong institutionalisation of the movement, more so than in most Western - European countries (Jamison et al., 1990; Van der Heijden, 2000). The movement has professionalised, the amount of paid employees expanded, and it has become an important negotiating partner in environmental policy making (Jamison et al., 1990; Van der Heijden, 2000).

Since the '80s the movement has de-politicised in a shift from pressure groups to interest groups and from society-oriented 'action' to environmental organisation and government 'interaction' (Jamison et al., 1990; Van der Heijden, 2000). According to Van der Heijden (2002), the movement has resigned itself to an ecological modernisation approach as 'the best that could be achieved' - an approach characterised by techno-optimism and criticised for negligence of a need for structural political change (Fisher & Freudenburg, 2001). However, as agent for achieving this thesis' proposed solution (changing the regulatory framework so that co-ops can flourish) this is not necessarily a bad thing. Institutionalisation and de-radicalisation go hand in hand (Tarrow, 2011), along with increased influence on mainstream political bodies (Kolb, 2007). An institutionalised environmental movement might thus be very suitable, because it is in a good position to influence the regulatory framework.

Jumping to 2016, the main environmental organisations that were founded in the 70s (like Greenpeace and Friends of the Earth) are still around and the total number of members of the movements remained constant on a relatively high level. Over the last decade environmental organisations have consistently had about 3.6 million members (CBS, PBL, & WUR, 2015), which entails more than 20% of the Dutch population (17 million: CBS, 2016b), almost 30% of the adult (>20y) population (13 million: CBS, 2016a). It is more than twice the amount of members that labour unions have (1.7 million: CBS, 2015) and more than 10 times the members of all political parties combined (about 300.000: DNPP, 2016) - see Figure 10.

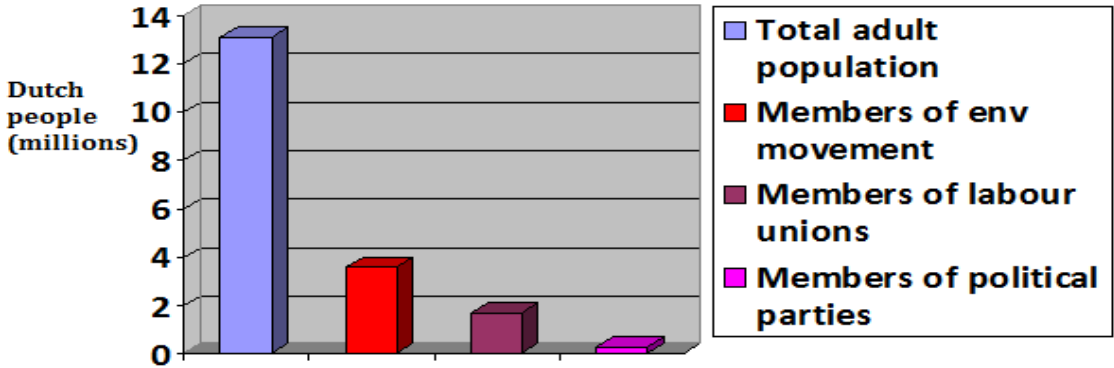


Figure 10: Number of Dutch people (millions) in total adult population and membership of EMOs, labour unions and political parties

Today the movement still seems to be an influential stakeholder in the in realisation of climate policy, as demonstrated by their prominent role in the commissions that monitor the progress in achieving the targets that were formulated in the Energy Agreement (SER, 2013). With strong influence on the government, it seems to be in an ideal position as potential agent challenge the current regulatory framework and make it more favourable for energy co-ops.

However, the climate movement is not one homogenous entity that speaks with one voice and acts with one fist. Each Environmental Movement Organisation (EMO) has a different approach and thus not every organisation might be interested in or capable of supporting energy co-operatives in a meaningful way. I will therefore briefly identify the relevant Movement Organisations (the 'claimants') and afterwards I will look at their goals ('claims').

5.3.2 Groups in the movement: identifying the claimants

This thesis is focused on energy, so I will focus on the segments of the (environmental) movement that has a relevance to the topics energy, fossil fuels, and climate change. In other words, I focus on the *climate* movement as part of the environmental movement. This criterion **includes** all four main 'broad' national EMOs of today, *Greenpeace*, *Friends of the Earth (Milieudefensie)*, *Nature and Environment (Natuur en Milieu, N&M)* and *Urgenda*, as well as the regional *Nature and Environment Federations (NMF)*, as they are all actively engaged in the themes climate and energy. It also includes *GroenFront!* (the Dutch brand of *Earth First!*) and *Fossil Free NL* (the Dutch brand of global EMO 350.org).

I will thus **exclude** organisations like the Dutch World Wildlife Fund (despite it being the largest environmental organisation with 800.000 members: CBS et al., 2015) and other nature conservation organisations because they do not focus on energy. The branch organisation of the co-ops, *ODE Decentraal*, has a special role in the energy transition. Although it is a lobby group with certain 'claims' (translating the interests of the co-ops) against an 'object of claim' (the government), it involves in no way the general public and only represents their branch. It thus falls out of the definition of the movement and will be excluded from my analysis of the movement as agent.

5.3.3 Goals and object of claim

Having identified the relevant claimants, I will now look at their *goals* to analyse whether their goals fit with the in this thesis proposed alternative; i.e. do they contribute to their goals by realising the regulatory framework in which co-ops can flourish? I will also look at their *object of claim* to see which organisation has influence on which actors in the energy transition.

GREENPEACE

www.greenpeace.nl

Greenpeace has developed a detailed scenario (*Energy [R]evolution*) for how they envision the global energy transition to 100% renewables (Greenpeace International, Global Wind Energy Council, & SolarPowerEurope, 2015). The scenario is predominantly focused on technology, and seems to fit with the observation of other scholars (Carter, 2007; Mol, 2001) that Greenpeace's (contemporary) perspective resonates with an ecological modernisation (ecomodernist) approach. Their objects of claim are the government as well as companies (www.greenpeace.nl).


milieudefensie
anders kijken, anders kiezen

www.milieudefensie.nl

Founded as the Dutch brand of Friends of the Earth in 1971, Milieudefensie is the main mobilising group in the Dutch environmental movement (Jamison et al., 1990). They explicitly voice a demand for social justice and fairness, along with their goals for an environmentally sustainable future (Milieudefensie, 2014a, 2014b). In personal conversation (22-03-2016) with Donald Pols, director of Milieudefensie, he saw their organisation's goal as achieving a "*democratic energy transition*", where "*benefits and burdens are equally shared*". Their objects of claim are governments as well as companies (www.milieudefensie.nl).

**NATUUR
& MILIEU**

www.natuurenmilieu.nl

Natuur & Milieu (N&M) is the main lobby organisation for the movement (Van der Heijden, 2000). Their goal is to achieve a "*healthy, clean and sustainable*" world (www.natuurenmilieu.nl). Besides lobbying government and industry (their object of claim) they try to achieve this through projects addressing green consumers or collaborating with companies, in order to make "*sustainable choices cheap, enjoyable and easy*" (www.natuurenmilieu.nl). This again suggests an ecomodernist approach.


urgenda
SAMEN SNELLER DUURZAAM

www.urgenda.nl

The in 2008 founded Urgenda is explicitly inspired by transition theory and co-founded by transition theory scholar Jan Rotmans, (www.urgenda.nl). They aim for a "*fast transition towards a sustainable society with a circular economy*" (www.urgenda.nl/en). They also developed a detailed scenario for the energy transition to 100% renewable energy in 2030, in this case specifically for the transition in the Netherlands (Urgenda, 2014). Their main object of claim is the government, but many of their projects and activities are aimed at bringing sustainable 'front runners' in the market together and scale up 'best-practices' or breaking open new markets with actions that companies can follow and copy (www.urgenda.nl). Last year they won an important court case against the Dutch government and their unambitious climate policy - which is arguably the most significant victory of the movement in the last decade (de Graaf & Jans, 2015).



On a regional level all local environmental organisations are clustered into federations, the Natuur en Milieu Federaties (NMF), in each of the 12 'provinces' of the Netherlands. As a federation of local groups their goals are diverse but generally are committed to 'sustainability' and 'renewable energy', and similar to N&M they engage in collaboration with companies and others as well as challenge (regional) governmental authorities (www.natuurenmilieufederaties.nl).



GroenFront! is the main direct action group in the movement. In relation to energy they mainly target gas companies (object of claim) and their construction sites; they state to have a biocentrist goal, implying protection of the earth (nature) with a higher priority than humans (www.groenfront.nl).



Fossil free NL has several more or less grassroots campaigns pressuring public institutions (object of claim) to divest their money from fossil fuels with the underlying goal of reaching a 'fossil free' future (www.gofossilfree.org/nl).

Cumulatively, the movement tries to achieve a 'sustainable future' for the Netherlands, which for all groups seems to at least include a phasing out of fossil fuels. Some organisations mainly want this transition to happen 'fast', others 'fair'. But there is certainly a common ground that a transition to renewable energy is one of the main goals of the Dutch climate movement. The new solution I propose – flourishing energy co-ops as major driver of the transition – should thus be desirable for the movement and for the individual organisations, because it would contribute to a realisation of their own goals.

The four largest organisations (Greenpeace, Milieudefensie, Natuur&Milieu and Urgenda) are the organisations with most relevance as Agent of Change, because they challenge the policy makers directly. Regulations on a regional level can be challenged by the regional Natuur en Milieu Federaties (NMFs). Based on the goals and objects of claim of GroenFront! and Fossil Free NL they are less relevant for influencing policies, but they aim to counter the dominance of the fossil fuel industry; what transition theory calls 'destabilising the regime'; this would then consequently also make policy changes more likely (Bosman, Loorbach, Frantzeskaki, & Pistorius, 2014; Geels, 2014).

As Van der Heijden (2000) has shown, the movement has significant influence on policy makers. Their role as agent in realising the new solution I propose – creating a favourable regulatory framework so that the co-ops can flourish – lies in line with their area of influence, while it would contribute to their goals. In theory, this makes the movement a suitable Agent of Change.

What about in practice? Social Movement Theory tells us that the dynamics of movements can be understood by looking at the structures of opportunities and threats: only if the movement perceives an opportunity to achieve success, the movement will collectively act. The perceived opportunity is a prerequisite for collective action, as it is the source of mobilisation that initiates it (Tarrow, 2011). In the next section I will therefore look at the movement's (subjective) perceptions of opportunities, based on their view of the energy transition and its barriers and their perception of the viability of co-ops.

5.4 Movement perspective on barriers to the transition, and their perception of co-ops

While the general features of the movement and its EMOs could be analysed through 'desk-work' (academic literature, EMO documents and EMO websites), the less formalised and more subjective elements could not. To find out what the movement's perception of the *barriers* is to the Dutch energy transition, as well as their perception on the viability of *energy co-operatives* in the transition, I have interviewed 9 key figures in the climate movement. A list of my interviewees can be found in Appendix 2. For the analysis of these results I will use the concept 'Political Opportunity Structures'.

5.4.1 The movement's perception of the barriers to the Dutch energy transition

Interviewees agree with my diagnosis that the power of vested interests forms the main barrier to the transition. The general trend that emerges from the interviews is demonstrated by the following example. More quotes from interviewees can be found in Appendix III.

"The interest of Fossil companies that do not want to go along in this [energy transition], is by far the most important barrier" Joris Wijnhoven (Greenpeace)

5.4.2 The movement's perception of the importance of energy co-ops in the transition

Interviewees see energy co-operatives as very important to create public support, in particular to counter NIMBYism, and there is some recognition of their potential to change power structures and to decentralise the energy sector. The potential to create public support was implicit in all interviews and voiced explicitly for example by Talitha Koek (N&M):

“I mainly see them [the co-operatives] as very important to get public support but the big numbers won’t come from them in the sense of the amount of energy that we need.”

Important to note is that she says that the *“big numbers won’t come from them”*. The key point where the view of interviewees *differs from my analysis* comes down to the question of viability. This is further explored in the next section.

5.4.3 The movement’s perception of the viability of energy co-ops in the transition

In general, interviewees consider the co-operative model as viable, because the regulatory framework that determines their viability is considered to be ‘mouldable’. In this sense they do agree with Polanyi rather than Hayek and recognize their role as counter-force to the lobby forces of industry that shape the conditions of viability and competitiveness.

“Fossil interest has been running the show at the Ministry of Economic Affairs and that’s crucial because no matter how idealistic you are you need to have some sort of business case for renewable energy [...] and those preconditions are set by the government and as long as fossil forces succeeded in keeping those preconditions lousy nothing ever became of renewable energy. [...] I mainly mean the financial preconditions. How do you make sure that people put panels on their roofs, like in Germany... all pretty much due to the feed-in tariff. [...] You need the government for a co-operative model because the market alone won’t get you there... because solar panels are cheap, but not so cheap compared to coal” Joris Wijnhoven

“We [the environmental movement] need to make sure that the financial [and] fiscal conditions are favourable” Talitha Koek

However, co-operatives are certainly not considered to be the key engine of the transition. The consensus seems to be that although co-operatives are important or ‘nice’, a transition that depends on bottom-up processes would be too *slow*.

“To start all the way at zero and say like we’ll lay it [the responsibility for a transition] at the people themselves... well to be honest, we simply don’t have that time anymore.” Joris Wijnhoven

In conclusion: Key figures in the movement consider co-operatives as important to create public support for the energy transition, and for wind mills in particular. They recognize their role in shaping favourable conditions for these co-operatives, but at the same time they are not convinced that co-operatives are capable of being a major contribution to the capacity for energy generation, at least not on the short term. In other words, they agree that the viability depends on a regulatory framework, which they can influence. Yet, they do *not see co-operatives as the 'big solution' but as complementary*. As we know from social movement theory, movements act on opportunities for mobilisation. Apparently, the movement does not perceive an *opportunity* for realising the alternative solution proposed in this thesis. The *gap* that needs to be bridged is thus that the movement perceives an *opportunity* to influence the regulatory framework such that co-ops will be more than 'complementary' but in fact the main driver of the transition.

5.5 Sum-up

Following Polanyi, we had established that regulatory frameworks determining market relations are no 'spontaneous order' but rather shaped by political actors. Smink has shown how this is particularly the case in the Dutch energy transition. Based on this insight, energy co-operatives *can* be a feasible solution to the failing energy transition, but only if current regulatory framework is made more 'conducive' so that they can truly flourish. Civil society plays a crucial role in overcoming those barriers; but intermediary civil society groups with a facilitating and 'niche nurturing' role are unlikely to bring radical change (Seyfang et al., 2013). This is why we need a social movement to challenge authorities and change the regulatory framework, and the Dutch climate movement seemed to be the most suitable candidate for being the agent that could do this. The proposed solution turns out to fit with their goals (although their emphasis is on technology rather than organisational models) and their analysis of the current barriers to the transition (interest of fossil fuel industry), and the movement even has significant influence on the relevant 'object of claim', the government (Van der Heijden, 2000).

However, they perceive no real opportunity for the solution to succeed: although co-operatives are considered to play an important role in the transition (mainly to overcome NIMBYism) they are also believed to be incapable of being a major driver of the transition. At the same time, they recognize that the viability of energy co-operatives depends on the regulatory framework (agreeing with Polanyi rather than Hayek) and point at Germany as 'proof' of this. They also recognize their role in

shaping those conditions. Apparently, though, they see no way of successfully challenging current conditions and radically changing it.

In the next chapter I explore plausible pathways for the movement to influence the Political Opportunity Structure such that new opportunities would emerge. Only if a credible strategy can be developed that could open up new opportunities, the movement would be able to be the Agent of Change to accomplish this solution.

6 Paving the Way – Plausible Pathways for the Movement

In this Chapter I will explore the final piece of the puzzle: a ‘pathway’ for the Agent of Change to realise the proposed solution. Without a plausible pathway the movement sees no opportunity for success and thus no reason to pay more attention to co-operatives than they are already doing. If there would be a plausible pathway to success and this can be communicated to the movement, the movement might perceive new opportunities which could then form a source of mobilisation for the movement. The perception of an opportunity is an absolute prerequisite for the movement to be the Agent of Change. With ‘pathway’ I mean a strategy to enable a causal mechanism that – when the movement takes up the task of agent – would materialise their demands (a favourable regulatory framework in which co-ops can flourish). Kolb (2007) has developed a typology of five such causal mechanisms through which social movements cause political change – described in Chapter 5.2. This chapter follows three steps:

1. First I will look at the *general strategies* that the movement uses to further the transition.
2. After scrutinizing their general strategies I will look at their specific *current attempts* to change the regulatory framework.
3. Based on their current approaches I will then use Kolb, Tarrow and the writings on strategy by Wright, to develop a *coherent set of plausible strategies* for the movement to achieve a system of flourishing energy co-operatives.

6.1 Current general strategies to further the transition

The three main strategies or approaches that interviewees pointed out can be grouped as: A) demanding policy change directly, B) challenging the power of vested interests and C) building solutions.

A. Demanding policy change directly

My interviewees mention “*lobbying*” as the most important strategy (interview 1 tot 9) to further the transition and change policies. Lobbying falls under what Kolb describes as the ‘*political access mechanism*’.

Authorities are not only lobbied, but also pressured in other ways. The Urgenda court case against the government is a clear example of the ‘*judicial mechanism*’, although I have found little evidence of a wider use of this mechanism. Interviewees note that mobilising public opinion, through petitions

or demonstrations, (the *'public preference mechanism'*) also plays an important role for them – for Milieudefensie more important than lobbying (Interview 7).

B. Challenge the power of vested interests

Interviewees mention several strategies to address the barrier formed by powerful vested interest. Joris Wijnhoven explains that an important part of Greenpeace's strategy has been to drive a wedge between fossil fuel companies and greener companies, in order to stand stronger in negotiations. Most 'direct action' also falls within this group. In a personal conversation (02-04-2016) I had with an (anonymous) 'direct action coordinator' at one organisation, *"most actions have a small disruptive component but are mainly designed for generating publicity"*. The strategy behind those actions seems to be aimed at enabling the 'public preference' rather than the 'disruption mechanism'.

C. Building solutions

In addition to the power struggle with industry and authorities, the environmental movement feels a clear responsibility for building 'solutions' too. In the same way the very first environmental organisations that were founded around 1900 conserved nature by buying up land themselves (Van Noort, 1988) many contemporary EMOs do much more than campaigning. These activities are generally more market-based and involve collaboration with companies or engagement of green consumers (see the introduction of N&M, Urgenda and NMF, page 29, for examples). This falls in the same category as the 'intermediary' civil society groups discussed in Chapter 5.1.2. As concluded in that section: the role of such activities is important for the development of energy co-ops (Hargreaves et al., 2013), but without policy change the potential of this strategy is limited (Seyfang et al., 2013).

In summary, the Dutch climate movement has a strong focus on the political access mechanism, while there is also considerable use of the public preference mechanism. The movement mainly attempts to achieve their demands through directly lobbying authorities, but also recognizes the importance of addressing the power relations, i.e. the dominance of the fossil fuel & heavy industry. In addition, a major part of the movement has developed activities around 'building solutions', such as facilitating niches like co-ops and engaging green consumers. This is their general approach to the energy transition, in the next section I look at the specific approach to the regulatory framework that determines the viability of the energy co-ops.

6.2 Current attempts to change the Regulatory Framework

My interviewees reported that changing the energy co-operative related policies is not their core focus at the moment. They note that some policies, especially the subsidies for large-scale solar parks, should be made more favourable, but more radical changes (like a feed-in tariff) are considered impossible to achieve. Interviewees note that these matters are 'far too technical' to engage the general public.

Current policies

Interviewees from Greenpeace and N&M (the main lobby organisations) are to a large extent satisfied with current conditions and mainly try to keep them as favourable as they are now.

"As long as the [policy for solar on individual households] will stay as it is [...] people will keep putting solar panels on their roofs. [...] Now [the regulations] are good. The question is: can you uphold them?" Joris Wijnhoven

Others also note to have issues with the regulations for solar subsidies, especially its geographical limitation. Urgenda (2014 p. 84) points out that this is a major barrier to flourishing co-ops:

"If the government really would aim at growth in the area of solar energy, they would allow [subsidies for solar panels] on other people's roof or on fields as well. [...] if that would be possible, then enterprises in this area, from local energy co-operatives to entrepreneurs, would scale up drastically and the amount of solar energy would grow enormously. But apparently the government does not want that."

Introducing other policies

Drawing inspiration from neighbouring country Germany, the feed-in tariff has also been discussed within the Dutch climate movement, but interviewees state that this is unachievable in the Netherlands because of the open end to the costs:

"Germans had the guts to put in place a feed-in tariff that is open-ended. That's taboo in the Netherlands; the Dutch government would never dare to do that. A regulation of which you do not know in advance what it would end up costing; our ministry of finance would find that unacceptable, under any circumstances." Joris Wijnhoven

General strategy

With regard to strategy, there seems to be a consensus that any changes in the regulatory framework can mainly be achieved through the political access mechanism. My interviewees see little opportunity for engaging the general public in a broader campaign. For example, Ike Teuling (Milieudefensie) argues that it is always difficult to mobilise for more favourable renewable energy policies:

“Mobilising on anger or frustration is very easy. Mobilising on ‘we want something nice’ [...] you usually really have to put a lot of energy into it to get that big, and that’s extremely difficult”

The last quote I think sums up the issue really well. For the movement – and at least in their perception also for Dutch people in general – co-operatives are ‘something nice’, desirable to some extent but not actually all too important to meet the national renewable energy targets. Co-operatives are not seen as a solution to a decades old problem of a too powerful industry that keeps holding back the much overdue energy transition, nor as something exciting in itself; something that could democratise society while building a pathway to a truly sustainable future. Energy co-operatives therefore remain a side-topic instead of the centre of the debate.

6.3 The way forward: plausible pathways for transformation

In the last chapters of *Envisioning Real Utopias*, Wright theorises about strategies for transformation. Although he does not focus on energy transitions but rather on ‘defeating capitalism’, we can still learn from his insights on transforming the system through establishing Real Utopias. Wright (2010, 2015) describes three classic strategies of defeating capitalism: 1) Interstitial (‘taming capitalism’ through social democracy), 2) Ruptural (‘smashing capitalism’ through revolution), or 3) Symbiotic (‘eroding capitalism’ through bottom-up alternatives). He (2010, p. 268) notes that *“[n]o one of these strategic logics of transformation is likely to be adequate for the goal of enhancing social power. Any plausible long-term trajectory of transformations needs to draw elements from all three.”* He particularly points to how the interstitial and symbiotic strategy can synergistically strengthen each other. As example of this he elaborates on how the *interstitial* goal of an Unconditional Basic Income would greatly benefit the viability of *symbiotic* approaches like workers co-operatives, by providing them with a secured income to sustain themselves.

These three strategies show great similarity with the three approaches the Dutch climate movement takes: 1) *demanding policy change* (corresponding with ‘interstitial’), 2) *challenge powerful industry* (‘ruptural’) and 3) *building solutions* (‘symbiotic’). To accomplish a successful transition in the Netherlands, likely we also have to draw elements from all three strategies. Energy co-operatives in themselves fall under the symbiotic strategy, and the movement strengthens these symbiotic strategies in two ways: through their ‘intermediary’ role of facilitating the (symbiotic) co-ops (i.e. nurturing the niches), and by (interstitially) influencing the regulatory framework. Meanwhile, probabilities for success of both strategies is likely to be strengthened by the (‘ruptural’) strategy of challenging the power of industry, decreasing the dominance of the fossil fuel industry in the governance of the transition.

As I have argued in this thesis, the emphasis for the *climate movement* as Agent of Change should be on the first (interstitial) strategy so that *energy cooperatives* (as distinct entity from the movement) can succeed as embodiment of the third (symbiotic) strategy. By changing the regulatory framework that determines the viability of energy co-operatives such that it will be more favourable, co-ops will be able to flourish and drive the energy transition.

Interviewees acknowledge this, but see no way of succeeding this for two reasons: they are unable to achieve this through the *political access mechanism* because the government is unwilling, but also the issue is considered far too technical to achieve this through the *public preference mechanism*. These two are the main mechanisms on which the movement depends. As a result, the movement regards the co-ops as ‘complementary’ rather than the ‘big solution’.

There is one way to overcome this barrier: by increasing the ‘salience’ of the issue, i.e. by developing a compelling narrative that captures the importance, the potential *and* the feasibility of energy co-ops as ‘big solution’. The movement will only accept the co-ops as viable if they perceive an opportunity to influence the regulatory framework, and they would have an opportunity if only it would not be considered ‘too technical to campaign on’. If public opinion can be shaped such that the issue is not regarded as a boring technical matter, but in fact as the *key solution* to the transition, this could open new opportunities for mobilisation. Kolb (2007, p. 61) shows that ‘salience’ is the key variable that relates public opinion with the realisation of movement goals. He notes that “*when it comes to the question of impact, [public] preference and salience interact: empirical research has consistently found the impact of public preferences on public policies to be particularly strong when the salience of an issue is high.*” The fact that the relevant policies are considered ‘too technical to campaign on’ suggests that it is currently the *complete opposite* of a salient issue.

It is well studied that movements actively construct interpretations of situations and environments by 'framing' (Tarrow, 2011). Although the way in which different frames and opportunity structures interact and activate collective action is not yet fully understood (Tarrow, 2011, p184), it is suggested that framings that resonate with potential movement participants can be important sources of mobilisation (Snow, David and Benford, 1988). In this way, a compelling framing or 'narrative' that captures the relevance, importance and seriousness of the issue, could enable the movement to influence the regulatory framework through the *public preference* and *political access* mechanism.

A compelling narrative about flourishing energy co-operatives would highlight the concept of energy democracy, ownership of the means of energy production and 'breaking free' from the inert large energy companies that are willingly using their power to hold back the transition. It would transcend breaking our heads over short-term renewable energy 'targets' and instead make clear that the long-term transition is in fact desirable, viable *and* achievable. It would lay out a strategy for deeper societal and political transformation that is prerequisite to a successful transition, and it would also highlight the potential for realising a 'Just Transition', opening up new opportunities for the climate movement to form allies with the labour movement. If the salience of the issue can be increased through such a compelling narrative, as Kolb (2007, p. 61) points out, "*chance for political success is high*".

The most plausible pathway for the movement to realise a favourable regulatory framework in which co-ops can flourish is thus to develop a compelling narrative that captures the importance and feasibility of energy co-operatives as major driver of the transition. This requires that the movement is in the first place truly convinced of the viability of co-ops, which is not yet the case. After bridging this gap, the movement can adopt such a framing or narrative as described here, so that new opportunities for mobilisation are formed. This will strengthen the movement's leverage toward government, and thus their potential for *interstitial* change.

It is the interstitial strategy that should succeed in changing the regulatory framework such that co-ops can flourish. Chances for success are strengthened by ruptural strategies that counter the power of vested interests to shape conditions in their favour, and by 'intermediary' strategies that support, facilitate and nurture the energy co-ops directly. With this set of strategies, the climate movement will have better chances of repowering the sluggish Dutch energy transition and setting the Netherlands on a prosperous path to renewable energy.

Discussion

With this thesis I have tried to identify a new *solution* to the lethargic energy transition, as well as the *agent* that could accomplish this solution and a *pathway* (or strategy) for them to accomplish this. The task that is left is not necessarily an academic one: this proposal should be discussed and explored with the climate movement, and the exact strategy for developing a more successful narrative should be explored. Setting things in motion will require pioneering work of activists to explore the grounds for a common front with movement organisations, energy co-operatives and potentially other civil-society groups and the labour movement. Sustainability scientists *could* play a role in this, for example through visioning tools developed by Wiek and Iwaniec (2014) or by drawing on framing and discourse theory, but activists could achieve the same by initiating internal discussion within the movement. Personally I will focus on the latter, by converting this thesis in debate articles for magazines within the movement.

My aim has been to contribute to the Dutch energy transition, but in doing so I think this thesis also contributes to broader sustainability issues in two ways: i) the transition in the energy sector could initiate a broader transition towards sustainability and ii) other countries can draw lessons from the Dutch case.

- i) The energy transition lies at the heart of a broader transition. Not only is the global energy sector responsible for 25% of global CO₂ emissions (IPCC, 2014), but Kunze & Becker (2015) and Mitchell (2009) also point out that transitions from dominant sources of energy historically go hand in hand with broader societal and economic developments.
- ii) Can the Dutch case be generalised? Other countries probably have a different political economic context: not every country has such big gas reserves, nor does every country have attracted as much heavy industry with interest in cheap electricity. Despite this, similarities can also be found and other countries – and movements – can draw lessons from the Dutch case. But specific drivers and barriers of sustainability as well as political opportunity structures should be analysed before applying recommendations from this thesis to other cases.

This thesis attempts to advance the field of sustainability science by exploring new ways in which sustainability scientists can contribute to sustainability. The defining features of sustainability science make it ideally fitted for making a holistic, comprehensive and critical analysis of the drivers and barriers to sustainability – what Wright calls the ‘diagnosis’. As interdisciplinary science it is also suited for exploring feasible, emancipatory, sustainable alternatives. By drawing on social movement

theory and emancipatory social sciences and going out into the field to interact with social movements, concrete feasible strategies and pathways can be developed that could solve the sustainability problems at hand. Further research should explore how academia can best interact with movements in a way that knowledge sharing is optimised and what the general role of sustainability scientists can be in developing effective narratives and strategies for movements for sustainability.

Conclusion

Energy co-operatives can be a feasible solution to the failing Dutch energy transition, but only under the condition that current barriers to their development are overcome. The current transition is failing; with vested interests holding back change and keeping the Netherlands far behind on the rest of Europe, it is impossible to adequately mitigate climate change. Co-operatives can repower the transition by building renewable energy bottom-up, while disrupting the power relations that now form a major barrier, and thus progressively setting the conditions right for a prosperous transition. What is required is a change in the regulatory framework (the set of fiscal and energy policies and rules for grid access and relevant permits) such that energy co-operatives can 'flourish', i.e. become a main driver of the energy transition. Civil society plays a crucial role in overcoming those barriers; but intermediary civil society groups with a facilitating and 'niche nurturing' role are unlikely to bring radical change, because they will not change the regulatory framework that determines the viability of the co-ops.

Social movements are needed as Agent of Change to challenge authorities and change the regulatory framework. The Dutch climate movement is the most suitable candidate for this. The proposed solution (flourishing co-ops) turns out to fit with their goals (although their emphasis is on technology rather than organisational models). Because in theory co-ops have such a disruptive potential of current power relations, the proposal also fits well with the movement's analysis of the current main barriers to the transition: the interest of fossil fuel and heavy industry. In addition, the movement has significant influence on policy makers.

But the Dutch climate movement can only be the Agent of Change under the condition that they perceive an 'opportunity for success' that can serve as source for mobilisation. This is the gap that needs to be bridged. The movement heavily depends on two causal mechanisms for achieving political change: the 'political access' and 'public preference' mechanism. But with the government unwilling to change the regulatory framework, the political access mechanism has so far been insufficient. At the same time the issue is perceived as 'too technical' and effective mobilisation of public preferences is thus considered unattainable. One way out of this impasse is by developing a compelling narrative and increasing the 'salience' of the topic. Social movement theory suggests that movements have a high chance of success if public opinion is in line with the movement's goals and the salience is high.

The most plausible pathway for the movement to realise a favourable regulatory framework in which co-ops can flourish is thus to develop a compelling narrative that captures the importance

and feasibility of energy co-operatives as major driver of the transition. Such a narrative would transcend a focus on short-term renewable energy ‘targets’ and instead make clear that the long-term transition is in fact desirable, viable *and* achievable. It would also lay out a strategy for deeper societal and political transformation that is prerequisite to a successful transition, and it would highlight the potential for realising a ‘Just Transition’, thus potentially opening up opportunities for the climate movement to form new alliances with labour unions and other civil-society groups. This strategy would thus increase chances of political success in particular through the public preference mechanisms.

A compelling narrative could lay the ground for new mobilisation of public opinion and for the formation of new alliances. This will increase the climate movement’s probability of success in their attempts to pressure governmental authorities to change the regulatory framework. This (interstitial) strategy should be supported with the other strategies already in place: ruptural strategies to fight the dominance of vested interests and symbiotic strategies that support, facilitate and ‘nurture’ the energy co-operatives across the country. **With this set of strategies, the climate movement will have much better chances of repowering the Dutch energy transition and setting the Netherlands on a prosperous path to renewable energy.**

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Appendix I: Interview guide

These are the general questions that I had prepared before the interview. Depending on the direction of the interview, I have not always used all of them.

1. What are in your eyes the main barriers to the national switch to 100% renewable energy
2. What is your and your organisation's strategy towards those barriers?
3. How do you expect the electricity generation to be in the Netherlands in 2030?
4. In Germany and Denmark the share of renewables is much higher, and a large share is produced by energy co-operatives. Why do you think that the situation is so much different in the Netherlands?
 - a. What would be needed to achieve a similar situation?
 - b. What is your strategy to achieve that?
5. What is in your eyes the importance of energy co-operatives?
6. What is needed for them to flourish?
 - a. What could the government do?
 - b. What is your strategy to achieve that?
7. What does your organisation's collaboration with energy co-operatives look like?

Appendix II: List of interviewees¹

- 1. Liesje Hartevelde** **22-03-2016**

Project coordinator (2012-2015) for Milieudedefensie. In Project A15, Liesje was responsible for mobilising public support in 6 municipalities for a number of wind turbines along the highway A15. This involved empowering and engaging a number of co-operatives, which is the most extensive experience in collaboration with energy co-operatives that Milieudedefensie has had.
- 2. Joris Wijnhoven** **24-03-2016**

Project coordinator for Greenpeace on Climate and Energy. In particular responsible for lobby towards the government
- 3. Josje Fens** **24-03-2016**

Project employee at Greenpeace on 'public support for wind energy'. Responsible for an exploratory project to find out how Greenpeace can support local energy co-operatives, and how existing public support can be made more visible
- 4. Talitha Koek** **25-03-2016**

Project coordinator 'Energy' for Natuur & Milieu. Responsible for project management as well as lobby towards the government with regard to energy and in particular wind energy
- 5. Maarten Visschers** **30-03-2016**

Employee at GNMF, the NMF in region Gelderland. Among other things responsible for direct support of energy co-operatives in the region. Has initiated the foundation of a successful energy co-operative in Nijmegen
- 6. Peter Polder** **02-04-2016**

Founder of GroenFront! in the '90s, (the dutch branch of Earth First!) and still an engaged activist at that organisation. Since recently also works in the energy team of Milieudedefensie
- 7. Ike Teuling** **02-04-2016**

Campaign leader 'Energy' at Milieudedefensie.
- 8. Peter Loomans** **02-04-2016**

National board of Transition Towns, director and founder of Energy Co-operative Roermond, key organising figure in national movement gatherings
- 9. Liset Meddens** **Email interview. Answers received on 21-04-2016**

Coordinator of Fossil Free NL, former project employee at Urgenda

¹ Descriptions based on personal conversation

Appendix III: Most significant fragments from transcripts

This appendix shows the most important quotes from the interviews on which my conclusions about the subjective perceptions of the movement are based. The analysis is in the thesis; these are just their words, translated by me.

“The interest of Fossil companies that do not want to go along in this [energy transition], is by far the most important barrier” Joris Wijnhoven (Greenpeace)

“The biggest obstacle is the interest of the status quo... and then you’re talking about industry as in large-scale energy users that depend on cheap electricity, you’re talking about companies like Shell that got a major grip on the government and really have become part of the Dutch political system” Ike Teuling (Milieudefensie)

“That gas extraction... It is not only the companies that benefit.. It’s easily 5 or 10% of the state income [...] so to get rid of that you really need to transform the tax system... there’s a high income from the gas revenues but there’s also the energy tax... the more energy we use the more the state earns” Ike Teuling

“Partly this difference [between the Dutch and German energy transition] has to do with the fact that the Netherlands have natural gas. So in the 60s we brought all sorts of energy intensive industry to the Netherlands [...] and that puts you in a disadvantage because that industry is very powerful. If they start squeaking in The Hague then you’ve already nearly lost.” Joris Wijnhoven

“[...] and Denmark, well they don’t have gas fields so they had to switch much earlier.” Maarten Visschers (GNMF)

“[Steps for a transition to 100% renewables] are mentioned in the cabinet plans... but then still, well, in practice they delay and decisions remain to be taken, right...? So the urgency is still too low, unfortunately” Maarten Visschers

“I mainly see them [the cooperatives] as very important to get public support but the big numbers won’t come from them in the sense of the amount of energy that we need.” Talitha Koek (Natuur & Milieu)

“The reason there are more cooperatives in Germany is that politicians realised there that the power of the energy companies had to be broken” Peter Polder (GroenFront!)

“What we must ask ourselves... it’s a discussion that we have had internally... is that if you remove all those barriers, that fossil fuel industry that obstructs everything... wouldn’t it just go automatically then... or do you really have to help that renewable energy side to grow stronger so that the fossil fuel industry does not have a say anymore. And probably it’s a bit of both but anyway, that’s a strategic considerations that you make as organisation. [...]” Ike Teuling

“What’s good is that if it comes from citizens it is a first move to the new system that you need to go to, because when energy companies will do it [lead the transition] they will replace a coal-fired power plant with a very large off-shore wind farm and that’s there model, while the model that you need to go to is a model where everybody... and everywhere electricity is generated, and not one central point but a much more split up network.” Ike Teuling

“It’s a matter of supporting all those bottom-up initiatives, not so much by starting to lay solar panels on roofs but mainly just making sure that... well there’s all these fossil laws and regulations that are in the way, that needs to go. And I think that that’s where the environmental movement has a very important role to play...”

Campaign or lobby or kick against those kinds of policies. [...] For example that it's still mandatory to have your house connected to gas, that you need a permit to get rid of that. [...] It should be the other way around! Or those laws and regulations to put your renewable energy on the grid... All those little rules and laws that de facto obstruct the transition" Peter Polder

"If you let it all emerge bottom-up than you simply don't get there. Then you'll have a windmill here and a windmill there and once again, that's great, but it's simply not enough" Talitha Koek

"To start all the way at zero and say like we'll lay it [the responsibility for a transition] at the people themselves... well to be honest, we simply don't have that time anymore. Because it's my favourite too, that people start their little club and start putting down windmills, and there are good examples in the Netherlands but they're fairly scarce, a handful" Joris Wijnhoven

"Our main priority is like, we just need renewable energy and in that sense it doesn't really matter where it comes from. In our ideal picture you'd want that as much as possible is [...] in ownership of people and that it would be good [...] if you have less of those big companies that have the power [...] in that sense it's our ideal that as much as possible of the energy supply comes in the hands of people but on the other side we realise that there's just a lot of ground to cover and in the Netherlands is it at this moment just unrealistic to get that done completely in cooperative relation and with the right speed" Josje Fens (Greenpeace)

"Great that citizens are taking initiative, great that there are cooperatives, great that citizens produce their own electricity but you're just not going to make it with that" Ike Teuling

"As long as the [policy for solar on individual households] will stay as it is... it will change at some point in fact, but if that remains somewhat sustained than people will keep putting solar panels on their roofs. [...] Now they [the regulations] are good. The question is: can you uphold them?" Joris Wijnhoven

"[...] large-scale solar, that's where there is still extra subsidy needed, with solar parks [...] there you have the SDE+ regulation... which will be needed for the time being, we think... so [N&M is] just making sure that the subsidy regulations just remain favourable." Talitha Koek

"We have been messing around with that [solar subsidy] regulation for a long time, and it's a bit... it's such pettiness, like 'you can undertake things together under a favourable regime, but only if you live in each other's postal area... just... why?! What kind of unnecessarily burdensome regulation is that? But still, we think that it is finally favourable enough that it [solar parks] will really take off"

"Germans have had the guts to put down a feed-in tariff that's open-ended. That's taboo in the Netherlands; the Dutch government would never dare to do that. A regulation of which you do not know in advance what it would end up costing; our ministry of finance would find that unacceptable, under any circumstances. Those Germans don't make such a big thing out of it." Joris Wijnhoven

Every now and then we emphasize that [a feed-in tariff] would be good, but... and it has been tried politically in the past but it just never succeeded. The feed-in tariff like in Germany is in fact quite a radical policy because [...] it's quite a risk because you don't know what it will end up costing so it's an open-ended bill." Ike Teuling

"[Solar energy policy] really is a matter of lobby. It's not very communicative or... 'campaignable'." Talitha Koek

"We keep mentioning [a specific favourable regulation for wind energy] in the lobby, but for a campaign its way too technical" Joris Wijnhoven