

SONNET – SOCIAL INNOVATION IN ENERGY TRANSITIONS

Co-creating a rich understanding of the diversity, processes, contributions, success and future potentials of social innovation in the energy sector

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Research report on *Financing and subsidies for RE (solar and wind) in the Netherlands*



About SONNET: SONNET is a research project that aims to develop an understanding of diversity, processes, contributions and future potential of social innovation in the energy sector. It is co-funded by the European Commission and runs for three years, from 2019-2022. The SONNET consortium consists of 12 partners across Europe, including academics and city administrations. For more information, please visit our website: <https://sonnet-energy.eu>

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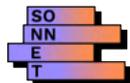
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1. Forward

SONNET (Social Innovation in Energy Transitions) brings diverse groups together to make sense of how social innovation can bring about a more sustainable energy sector in Europe. The project aims to co-create a rich understanding of the diversity, processes, contributions, successes and future potentials of social innovation in the energy sector (SIE). We define SIE as combination of ideas, objects and/ or actions that change social relations and involve new ways of doing, thinking and/ or organising energy. As part of this work, we make use of an embedded case study approach to build a better understanding of the development of diverse SIE-fields (e.g. participatory incubation and experimentation, framings against specific energy pathways, local electricity exchange) over time. Our research questions that frame the case study work are:

- How do SIEs and SIE-fields emerge, develop and institutionalise over time?
- How do SIE-field-actors and other field-actors interact with the ‘outside’ institutional environment and thereby co-shape the SIE-field over time?
- What are the enabling and impeding factors for SIE-field-actors and other field-actors to conduct institutional work and change the ‘outside’ institutional environment?

A SIE-field is an arena/space that includes a specific SIE as well as SIE-field-actors working on it and other field-actors enabling and/or impeding it. In this arena/ space these actors take one another and their actions into account and have a shared (but not necessarily consensual) understanding of a SIE and of their relationship to other actors. They recognise (but not necessarily follow) shared norms, beliefs and rules. SIE-fields are often not homogenous but are composed of actors with diverse and contradictory aims and interests. An example: The UK cooperative energy field includes SIE-initiatives and SIE-field-actors (e.g. Brighton Energy Co-op, Cooperative UK, Community Energy England, UK Government, City of Brighton), who have a shared understanding of an SIE, which exists as ‘organising under cooperative principles to generate renewable energy’.

The structure of this report is as follows. Section 2 provides a summary of the SIE-field relevant for this report and lists some key insights. Section 3 outlines the boundaries of the SIE-field and shows how it has been studied in the country context. Section 4 shows a visual development of the SIE-field. Section 5 tells the historical development of the SIE-field over time, including analytical/ interpretive reflections from the SONNET researchers and quotes from the actors involved in the field developments. Section 6 outlines key research findings, providing answers to the three research questions. Section 7 outlines recommendations for policymakers based on the findings. Finally, Section 9 outlines the methodological approach and includes a more detailed timeline of the SIE-field and its actors.

The following boxes are used within the report:

Conceptual work
...

Introduction to SIE-initiative
...

2. Financing and subsidies for RE (solar and wind)

This case study studies the Social Innovation in Energy (SIE) of Financing and subsidies for RE (solar and wind) in the Netherlands. This SIE-field is defined as financing and subsidy mechanisms through which funding or investment is made available to facilitate the activities of novel actor constellations related to the installation of wind and solar energy. Alongside the Netherlands, this field is studied in the United Kingdom and Poland.

Key empirical insights on the energy transition

- Over the last two decades, **the Dutch energy system gradually shifted from subsidisation, towards financing**. This shift is evident throughout the four phases described in the case study:
 1. The effect of innovation stimulation subsidies such as MEP, SDE, SDE+ and SDE++ made RE more profitable over time. This **decreased the dependency of RE on national subsidy mechanisms**. The first wind park without subsidisation was installed in 2018 (see section Bridging the Unprofitable Top: The Rise and Fall of The Dutch RE Subsidy System (ca. 1998 - 2020));
 2. The **sale of utility shares** around 2010-2012 opened up large **'regional energy funds'** for municipalities and regional authorities. This sale was accompanied with a market-oriented mindset in local authorities to end years of 'playing mad Hank that just spends money' and become 'smarter with their money' (see section **'Giants with Feet of Clay: Increasing Decentralisation (ca. 2012 - 2020)'**);
 3. The rise of **investment through crowdfunding** between 2010-2016 (see section 'Power to the People: the Rise of Financial Citizen Participation');
 4. The institutionalisation of a **national promotional bank Invest-NL** in 2015-2020, which gave the national government a national financing instrument to invest in the energy transition (see section **'Shooting Blanks with Silver Bullets: Attempts at Institutionalising a New Order (2014 - now)'**).
- The Dutch **financial and subsidy landscape for RE has become more decentralised** over time. Firstly, local and regional authorities gained substantial financial resources to direct the energy transition through the sale of their utility shares (see section **'Giants with Feet of Clay: Increasing Decentralisation (ca. 2012 - 2020)'**).
- This sale led to the rise **of regional energy funds**. These funds radically shifted the role of the local and regional governments, from a small player holding utility shares in the wings of a national subsidy scheme, to a central player with vast funds to finance the energy transition. Secondly, local and regional

authorities were institutionalised as important players in realising the energy transition in the national Energy Agreement of 2013. The regional energy funds and the Energy Agreement put the local and regional governments as central players in the energy transition.

- Despite decentralisation of power through the energy agreement and regional energy funds, **the power of local and regional governments to finance the energy transition to operate as directors of the energy transition remained low. This was for two reasons:**
 1. **They were understaffed:** decentral authorities did not have enough capacity to govern the transition, with often only 0.5 full-time equivalents to cover multiple topics in the field of sustainability;
 2. **They did not have the right skillset, attitude or knowledge:** at times, policy makers had been working at decentral governments for several years did not have the mindset of governing a transition (for both points, see chapter ‘Giants with Feet of Clay: Increasing Decentralisation (ca. 2012 - 2020)).
- **Citizens have become an increasingly important player** in the financing energy transition through participation in energy cooperatives and crowdfunding (see page 33). The institutionalisation of citizen participation in the Energy Agreement of 2013 gave citizen engagement another impetus. After that, other actors, such as banks, started to take cooperatives as professionals. Nevertheless, the Dutch crowdfunding sector remains small, despite efforts to professionalise through a trade organisation. This is mostly because of the countervailing power of the vast financial sector and increasingly little encouragement from the national government (see page 41).
- The financial sector is in a strong position to support the energy transition, both directly through capital provision, and indirectly by using their wide geographical reach to drive societal change. However, **the financial sector is currently not making use of their power to drive societal change.** They hardly invest in unlisted small project developers. This is due to the fragmentation of the energy market and the lack of scale, liquidity and attractive risk-return profile of small RE project developers and crowdfunding platforms.
- Professionalisation and financial literacy is often perceived as similar terms. Financially literate citizens with a solid business plan are considered professional clients by the financial sector.
- On multiple accounts, the case study illustrates a **dominance of a neoliberal logic**, in which governments ought to 1) refrain from ‘overstimulating’ the markets, 2) stimulate innovation, and 3) focus on technical innovation.

Key theoretical insights on social innovation

For the SONNET project, the field ‘Financing and subsidies for RE (solar and wind)’ is particularly interesting because it reveals several important issues for social innovation in energy transitions. It illustrates that:

- **Institutionalisation and policy making aids social innovation in two ways:**
 1. Institutionalisation can lead to ‘**social standards**’ that solve social dilemmas associated with public good or common pool resource problems, such as climate change mitigation. A social dilemma posits that individual efforts are useless unless others participate (Kollock, 1998). The EU’s Treaty of Amsterdam (1997), the Dutch Energy Agreement (2013), the international Paris Climate Agreement (2015) and the Dutch Climate Agreement (2019) seemed particularly influential in bridging this social dilemma for market regime actors such as banks. It offered trust that competitors were tackling the same problems, and lowered their perception of investment risk (see Analytical box 9 on page 50).
 2. Secondly, **institutionalisation allows for legitimisation of new actors**. For example, the integration of citizens and financial citizen participation in the Energy Agreement (2013) led to them being more accepted and trusted by incumbent regime actors and helped in mainstreaming financial citizen engagement in the energy transition (see page 37).
- **Replacing or transforming institutions appears to be more difficult than maintaining or creating new institutions**. For example, in the story of the institutionalisation of a new promotional bank, institutional entrepreneur Kremers was successful in creating a new regulatory institution (Invest-NL). However, he was not able to replace existing regulatory institutions, as those in power (BNG, RVO, NWB, FMO) were actively maintaining their institutions, eventually leading to political recoil (see page 61).
- The SIE-field logic has changed over the years in three ways (for more information, see 6.1.A):
 1. Increasing **formalisation** within SIE-field (within the community sphere);
 2. Increasing **for-profit logic** within the SIE-field (within community as well as state spheres);
 3. Increasing **privatisation** of the SIE-field (from state monopoly to free market).
- There are two layers of role innovation (for more information, see 6.1.E):
 1. Role innovation in respect to an actor (i.e. a new actor takes up a role that is new to them but known to the system, such as citizens becoming investors)
 2. Role innovation in respect to the SIE-field (i.e. an actor takes up a role that is not taken up in the field yet, such as the government stimulating the free market)
- The case study demonstrates how relations in this field changed **from cooperation, towards competition and exchange** (see 6.1.D)

3. Introduction to Financing and subsidies for RE (solar and wind) in the Netherlands



With its vast capital-intensive infrastructure, the energy sector is no stranger to questions about financing and subsidisation. By tracing the developments of financing and subsidies for wind and solar energy, this case study focuses on **the development, implementation and/or abolition of a diverse set of financial and subsidy mechanisms for wind and solar RE projects in the Netherlands**. As social scientists, we study the social dimensions of this development: **how do social relations between actors change with these financial and subsidy mechanisms? What actor roles shift? And how do institutions (norms, rules, culture) and power play a part in how we subsidise and finance the energy transition in the Netherlands?**

What are the system boundaries of our research?

We focus on RE subsidies and financial instruments geared at energy technology diffusion, such as public and private equity (i.e. ownership of shares) and corporate debt (i.e. bank loans) (Table 1). In particular, we will elaborate on the following set of financial and subsidy mechanisms for RE projects installing wind and solar energy: national subsidies, regional funds, crowdfunding through online crowdfunding platforms and state loans through a national promotional bank (see also Table 2 in ‘Analytical box 1 SIE changing social relations’ on page 11). This focus has emerged through interactive explorative research (for more information on system boundaries and methodology, see Annex 1).

We study the time period between 1998-2020. The case study starts with the first step towards liberalisation through the Gas and Electricity act in 1998 and ends at the time of producing the case study in December 2020.

Table 1 Financing energy technology innovation, as adapted from (Polzin, Sanders, & Täube, 2017). This case study only looks at the ‘diffusion’ phase of financing energy technology innovations

Phase	Company perspective	Finance source	Example RE projects	In this case study?
Generation	Basic and applied R&D	Private R&D grants by firms, the government and crowdfunding	Organic batteries, Organic to gas	No
Commercialisation	Demonstration and pre-commercial prototyping	Family, friends, founders, business angels, crowdfunding, venture capital	Smart grids, energy storage, fuel cells, batteries	No
Diffusion	Niche market and revenue growth	Venture capital, private & public equity (i.e. ownership of assets or shares), corporate debt (i.e. bank loans), project finance	Renewable energy, grid infrastructure	Yes

SIE-initiatives upon investigation: which initiatives have we studied?

The case study discusses two Social Innovation in Energy Initiatives (SIE-I): national promotional bank Invest-NL (see page 59) and crowdfunding platform DuurzaamInvesteren (see page 40). Invest-NL is a

national promotional bank, with 1.7 billion euros available to invest in the energy transition (among others). It was selected to be studied in this case study for two reasons. Firstly, because its focus on financing rather than subsidisation marks the changing tides of the rationale of the government around 2012-2015. Secondly, because it portrays an example of institutional work through institutional entrepreneurship, which will be further elaborated in the analytical box ‘Analytical box 11: Institutional work conducted by SIE-field actors and other field-actors ’ on page 61. DuurzaamInvesteren is a crowdfunding platform, which was included in this case study because it marks the story of increasing financial citizen participation in the energy transition (see ‘Analytical box 6: DuurzaamInvesteren (SIE-I)’).

A short summary of the case study

This case study unfolds the innovation history of subsidisation and financing mechanisms in the Netherlands.

The first chapter, ‘Bridging the Unprofitable Top: The Rise and Fall of The Dutch RE Subsidy System (ca. 1998 - 2020)’, lays out the rise of a national subsidy system for RE between 1998 and 2012. In the years thereafter, the Netherlands gradually shifts its weight from subsidisation towards financing solar and wind energy.

In the wake of ongoing privatisation of the energy sector, regional energy funds emerge around 2012. These, as well as the Energy Agreement of 2013, place decentral governments central stage in realising the energy transition. Around the same time, citizens start participating in the energy transition through shareholding in crowdfunding platforms and energy cooperatives. Financial participation becomes synonymous with citizen participation, which is applauded by policy-makers for its potential to solve Not-In-My-Backyard behaviour (NIMBYism). Citizen participation becomes institutionalised as an important pillar of the Dutch energy transition in the national Energy Agreement of 2013. In the meantime, crowdfunding platforms are no match for the massive Dutch financial sector. Because of cultural, normative and regulative institutional barriers maintained by the national government and the financial sector, the Dutch crowdfunding sector remains small as compared to the U.K or the U.S.

The last chapter marks the story of the institutionalisation of a national promotional bank, Invest-NL. The bank would solve the lack of a high-risk investor in the Dutch financing landscape. Although the bank was eventually launched in 2019, with a budget of 1.7 billion euros, it is currently unclear as to whether it will be able to realise its ambitious goals of financing the energy transition. Most funds have been redirected towards the covid-19 pandemic, and it appears that the bank is more risk-averse than initially intended.

For an overview of the finance and subsidy mechanisms discussed in this case study, their respective socially innovative qualities and an evaluation of the innovative capacity of the field, see Analytical box 1 SIE changing social relations below.

Analytical box 1 SIE changing social relations

In SONNET, social innovation is defined as combinations of ideas, objects and/or actions that change social relations and involve new ways of doing, thinking and/or organising energy (Avelino et al., 2019; Pel et al., 2020; Wittmayer, Hielscher, Rogge, & Avelino, 2020). This field discusses the social innovation rendered by finance and subsidy mechanisms for solar and wind energy. The socially innovative aspect is the fact that these mechanisms change the social relations amongst actors (i.e. municipalities, national governments, banks, institutional investors, citizens) and change their current way of doing, thinking and/or organising.

Finance and Subsidy mechanisms for Solar and Wind in the Netherlands

Over the course of a decade, finance and Subsidy mechanisms for solar and wind have shifted from **subsidy-based**, to **funding-based** (see Table 2). The SIE-field also demonstrates a change in **centralised** mechanisms (MEP, SDE, SDE+, SDE++ subsidies), towards **decentralised** mechanisms (crowdfunding, regional energy funds), and an attempt to **re-centralise** financing mechanisms through a national promotional bank. These changes are mainly driven by ongoing waves of **privatisation**, and a **neoliberal political climate** and **large market-logic** (see Analytical box 9: Regulatory, normative and/ or cultural cognitive institutions).

Table 2 Main finance and subsidy mechanisms for solar/wind RE in the Netherlands discussed in this case study

Mechanism	Year	Type	Actors involved	Changed roles	Characterising quote	Page
MEP, SDE, SDE+, SDE++	2008	Subsidy	National government,	These were the first large-scale subsidy after privatisation, thus marking a new role for the	<i>"A huge palette of energy innovation subsidies has passed [the department where I work] [...] which make it</i>	15

			RE project developers	government: stimulating a free market, rather than utility ownership.	<i>possible for entrepreneurs to try to bring their innovation to market</i> ¹	
Regional Energy Funds	Ca. 2012	Funding	Local/regional governments and RE project developers and utilities	The sale of utility shares shifted the role of local/regional governments: from being shareholders in a utility, they now had access to funds for energy-labelled loans. It also marked an increasing trend of decentralisation in the energy transition.	<i>"We have become more business-minded. We shouldn't be 'mad Hank' who just spends money. We also want to see revenues."</i> ²	26
Crowdfunding	Ca. 2012	Funding	Citizens and RE project developers	The rise of crowdfunding (and energy cooperatives) resulted in increased citizen engagement in financing wind and solar projects. In particular, the increase of financial literacy in energy cooperatives shifted citizens from informal actors, to professionals.	<i>"Within a timeframe of a few years, there is a very small part of the Netherlands that thinks crowdfunding is a thing. But I think that 80 percent of the Netherlands really or more 85 cents for the Netherlands has no clue what crowdfunding is."</i> ³	33
State loans (from promotional bank)	2020	Funding	Government institutions, business lobby organisations, Jeroen Kremers (former top-banker)	The renewed institutionalisation of a national promotional bank (Invest-NL) challenged – but didn't succeed in - the merge of governmental institutions. It did mark a change in tide of government attitude towards RE, away from subsidisation towards financing.	<i>"...the most important was, we have a gap when it comes to co-financing risk-bearing innovative enterprises. Especially in the field of sustainability. So therefore Invest-NL was created. [...] in practice Invest-NL appears to be risk-averse. And to me ..., that is a pity."</i> ⁴	53

¹ NL: "binnen mijn afdeling waar ik dan werk is een enorm palet aan energie innovaties subsidies voor diverse ontwikkelingen gepasseerd, [...] die het voor ondernemers mogelijk maken om met een subsidie op de markt proberen te brengen." (Interviewee 3)

² NL: "We zijn zakelijker geworden. We moeten niet gekke Henkie zijn die maar geld uitgeeft. We willen ook revenuen zien."

³ NL: "So but that is within a time frame of a few years, there is a very small part of the Netherlands that thinks crowdfunding is a thing. But I think that 80 percent of the Netherlands really or more 85 cents for the Netherlands has no bloody clue, which is crowdfunding." (Interviewee 2)

⁴ NL: "het belangrijkste was van joh, we hebben gewoon een gat als het gaat om, zeg maar het meefinancieren risicodragend in echte innovatieve ondernemingen. Juist op het gebied van duurzaamheid. Dus dus invest-NL is daar uitgekomen. En volgens mij is dat dus heb je daarmee 80 procent van het probleem had je kunnen oplossen. De grote vraag is alleen nu wat gaat Invest in NL nou precies doen? En daar hoor ik gewoon niet zulke hele goede verhalen over. Dus dus het idee is dat Invest-NL toch best wel risicomijdend is. En dat is volgens mij echter de de dood in de pot, dat is heel jammer." (Interviewee 4)

From cooperation, towards competition and exchange

Before this case study, the energy market was in public hands. However, after the **liberalisation** of the energy sector in 1998, the market opened, marking the kick-off of **market competition** in the energy sector.

In this first phase, **the government was cooperative towards the energy sector**: the market was to be supported, stimulated and facilitated by ‘bridging the unprofitable top’ of innovation through subsidies (MEP, SDE(+ / ++)) in order to reach the shared goal of increased RE in the Dutch energy sector. In later years, as the market and technology matured, the **government’s attitude changed towards exchange**: the government started to expect a return on their investment (Invest-NL and the regional energy funds). At the same time, **emerging niches** (i.e. crowdfunding and energy cooperatives) **started to compete with the incumbent actors** of the system through providing an alternative to the status-quo (bank loans).

Overall, the case study thus demonstrates how **relations in this field changed from cooperation, towards competition and exchange**.

Three types of role changes

Several actors in this case study took up new roles (see Table 2). However, the analysis demonstrates that there are three types of role innovation in this case study (Table 3). The difference is that the first is only innovative to the actor itself, the second is innovative to the SIE-field, and the third is innovative for the wider system (the outside institutional environment). Often, a new role for the outside institutional environment, or the SIE-field, is also innovative to the actor itself.

Table 3 demonstrates several examples of these various types from the case study. For example, crowdfunding platforms and energy cooperatives changed the role of citizens from consumers, to investors. The *investor* role itself was not new to the SIE-field at the time, as banks were also investing in the energy transition. Therefore, the change in role from consumers to investors was only innovative in respect to the citizens themselves. This illustrates a change in role within the current system of roles, and thus not a dramatic change of the system of roles.

Another example is the change in role of the government from utility owner to the stimulator of the free market around the liberalisation of the energy market. Before liberalisation, there was no *stimulator* (through subsidies) in the SIE-field. Thus, the change in role of the government also marked a new role for the SIE-field.

This case study does not show any examples in which a new role of an actor posed a new role of the wider institutional system. More research has to be done on this topic to clarify this further.

Table 3 Type of role innovations in this case study for actors, the SIE-field and the outside institutional environment

Type of role innovation	Innovative role in respect to...	Examples from case study (non-definitive)		
		Mechanisms	Actor	Phase <i>old role</i> → <i>new role</i>
New role for a certain actor	the actor itself	Crowdfunding platforms and energy cooperatives	Citizens	B <i>Consumers</i> → <i>investors</i>
New role for the SIE-field	the SIE-field	Subsidies (MEP, SDE, SDE+, SDE++)	National government	A <i>Utility owner</i> → <i>stimulator of a free market</i>
		Regional Energy Funds	Decentral governments	B <i>Utility owner</i> → <i>investor</i>
		Investments (Invest-NL)	National government	C <i>Stimulator</i> → <i>investor</i>

4. Timeline

The timeline illustrates the development of the case study in the context of landscape⁵ developments and policy changes. It is illustrated in three distinct visuals, each representing one of the three phases of the case study: **Bridging the Unprofitable Top**, **Giants with Feet of Clay** and **Shooting Blanks with Silver Bullets**.



LANDSCAPE

Crowdfunding emerges in the U.S (2004)

Innovation of online payment technology (i.e. iDeal)

British Business Bank in U.K is legally obligated to refer entrepreneurs to crowdfunding platforms

POLICY

Limited regulation crowdfunding (2014)

Energy Agreement (2013): "citizen investments and local authorities are pillars of energy transition"

Increasing enforcement regulation & request to professionalise (2016)

PHASE A

Bridging the unprofitable top: the rise and fall of the Dutch RE subsidy system

Donation based crowdfunding (2010-2014)

Increasing number of energy cooperatives

Investment based RE crowdfunding emerges, total yearly RE investments (graph) start to rise (2016)

Professionalisation sector: launch of crowdfunding trade organisation (2016)

Attempts to lobby for BBB example stopped by banks



Sale utility shares

Regional energy funds (ca. 2012)

Local/regional authorities have means (funds) and agency (energy agreement) to implement and steer energy transition, but face difficulties: understaffed, knowledge lack, no transition mindset

PHASE B

Giants with feet of clay: increasing decentralisation

PHASE C

Shooting blanks with silver bullets: an attempt at recentralisation

Dutch energy transition falling behind; only 6% RE in 2014

Trend: away from subsidy towards financing instruments

outside institutional environment

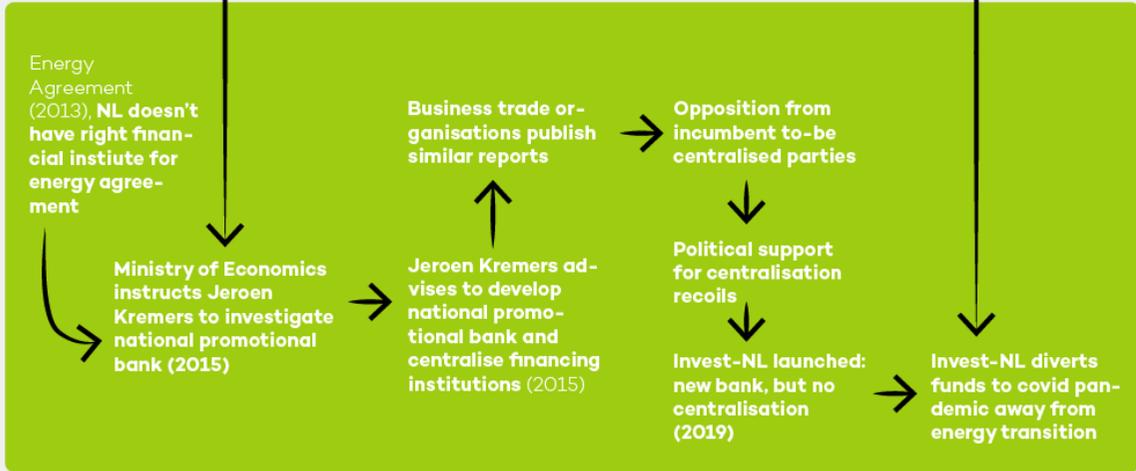
Institutional environment

PHASE A
Bridging the unprofitable top: the rise and fall of the Dutch RE subsidy system

PHASE B
Giants with feet of clay: increasing decentralisation

Inspiration for NL: KfW (Germany) provides 103 billion of funding for RE (2012 - 2016)

Covid-19



PHASE C
Shooting blanks with silver bullets: an attempt at recentralisation

1998 | 2015 | 2020

5. The Emergence and Development of RE Subsidy and Finance Mechanisms for Renewable Energy in the Netherlands

This chapter study traces the emergence and development of RE subsidy and finance mechanisms in three overlapping phases:

- A. Bridging the Unprofitable Top: The Rise and Fall of the Dutch RE Subsidy System (ca. 1998-2020)
- B. Giants with Feet of Clay: Increasing Decentralisation (ca. 2012 - 2020)
- C. Shooting Blanks with Silver Bullets: Attempts at Recentralisation

A. Bridging the Unprofitable Top: The Rise and Fall of The Dutch RE Subsidy System (ca. 1998 - 2020)

Our story starts around the year 2000, where two trends coincide to give rise to a national Renewable Energy (RE) subsidy system. This section discusses the emergence and development of these subsidies.



Innovation in a liberalised state: the subsidy era

The RE subsidy system emerged out of two European pressures. Firstly, the energy market liberalisation directive (The First Energy Package) was adopted by the European Union in 1996. This directive was transposed to the Dutch Electricity and Gas Act in 1998, shifting ownership of the energy system from the state to market. The 90s also marked a decade of international commitments to environmental protection: the treaty of Maastricht (1993) made the environment a formal policy domain, and the treaty of Amsterdam (1997) enforced environmental protection to be embedded in all EU sectoral policies in order to promote sustainable development. Together, the Electricity and Gas Act and the Treaty of Amsterdam and Maastricht prescribed a radical shift away from a state-based fossil system, to a market-based system committed to sustainable development.

These shifts were to be made through subsidising RE. As such, the new millennium marked a cascade of emerging RE subsidies (see Table 4 and Figure 1). In 2003 the Regulating Energy Tax (NL: *Regulerende Energie Belasting*, REB) was replaced by the Ministerial regulation on the environmental quality of electricity production (NL: *Ministeriële regeling milieukwaliteit elektriciteitsproductie*, MEP), which was replaced in 2008 by the Stimulation regulation Sustainable Energy Production (NL: *Stimulering Duurzame Energiesubsidie*, SDE). The SDE subsidy was later replaced by the SDE+ (2011) and SDE++ (2020) subsidies. The Ministry of Economic Affairs and Climate has set aside €36,9 billion for the MEP, SDE and SDE(+ /++) between 2020 and 2032 (Algemene Rekenkamer, 2019).

Table 4 Overview of RE subsidy mechanisms over time. ^a(Mulder, Korteland, & Blom, 2007); ^b(Algemene Rekenkamer, 2019); ^c(Wiebes, 2020).

Subsidy		Start	Goal	Total expenditure in billion € (data based on an interval of years)	Difference in set-up to predecessor
MEP	Ministerial regulation on the environmental quality of electricity production (NL: Ministeriële regeling	2003	9% RE in 2010	1,6 (2003-2016) ^a	<ul style="list-style-type: none"> Stimulate usage and production of green electricity through a subsidy, instead of a tax (Regulating Energy Tax, REB, of 1996)

	Milieukwaliteit Elektriciteitsproductie)				
SDE	Stimulation regulation Sustainable Energy Production (NL: Stimulerend Duurzame Energiesubsidie)	2008	15% RE in 2020	3.3 (2010-2020) ^α	<ul style="list-style-type: none"> • Increased focus on efficiency of subsidization • Increased focus on stimulating innovation • Broader focus including more technologies (i.e. heat, green gas) • Shift in focus from biomass to wind energy
SDE+	Stimulation regulation Sustainable Energy Production (NL: Stimulerend Duurzame Energiesubsidie)	2011	15% RE in 2020	7.7 (2013-2018) ^α	<ul style="list-style-type: none"> • Increased focus on efficiency of subsidization • Shift in focus from private individuals to economic efficiency
SDE++	Stimulation regulation Sustainable Energy Production (NL: Stimulerend Duurzame Energiesubsidie)	2020	49% (2030) and 95% (2050) CO2-reduction as compared to 1990	5.0 (2020) ^β	<ul style="list-style-type: none"> • Shift in focus from stimulating RE, to reducing CO2 • Shift in focus from stimulating RE, to stimulating CO2-reducing techniques (i.e. carbon capture and storage and green hydrogen)

These subsidies are aimed at stimulating RE by taking away the ‘unprofitable top’⁶ of RES energy investments as compared to their relatively profitable fossil competitors. Figure 1 demonstrates how this mechanism works in the SDE subsidies.

⁶ This how the Dutch government frames the amount between the RES cost price and the electricity price (NL: onrendabele top).

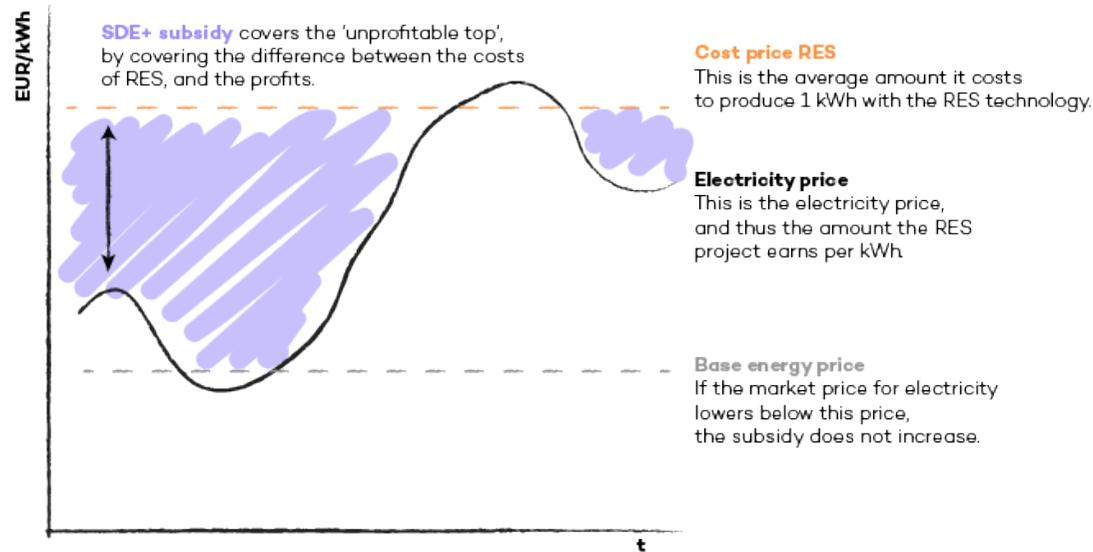


Figure 1 Mechanism of the SDE subsidy scheme. SDE covers the unprofitable top of a RES project by subsidizing the difference between the electricity price (the profits of a project) and the cost price of the technology (the costs of a project). SDE thus makes RES competitive against fossil energy projects, which have a lower cost price. As time ensues (t) the electricity price varies, resulting in different subsidy levels.

In the meantime, consumers had started to become more interested in the energy transition through the electricity billing mechanism net metering (NL: *Salderen*), which had been initiated by a left-wing politician in 2004⁷. Net metering allowed prosumers⁸ to reduce their energy bill. It is designed to promote prosumerism⁹. The enormous increase in PV-installations owing to net metering had the side-effect of creating widespread interest in the energy system in wider society. According to interviewee 1, *“As a result, a lot of private individuals have become interested, and it turns out [...], because they see the advantages of investing in their own solar panels for themselves, they also become*

⁷ 2004, Amendement Samsom

⁸ Consumers of electricity who also produce electricity, i.e. through solar panels on their roof.

⁹ Prosumerism is a phenomenon when consumers of electricity also produce electricity.

interested in other topics, such as energy savings. As a result, they become more interested in the subject of energy.”¹⁰

Thus, around 2012 several developments coincided: citizens had become more interested in participating in the energy transition, and the amount of RES production had grown under the popularity of the Dutch RE stimulation system.

An end of an era: decreasing subsidisation (ca. 2014-now)

In general, the amount of SDE (+/++) subsidy per kWh has decreased over time. The SDE+ subsidy for solar panels has decreased from ca. 0.14€/kWh in 2014, to ca. 0.10 €/kWh in 2019. In 2018, Chinook/Vattenfall won the first tender without subsidy for wind park Dutch Coast (south) (NL: Hollandse Kust (zuid)) III and IV (Figure 2).

According to the government, the savings made by reducing subsidisation are ‘made available again’ for other innovations: *“If the SDE amount goes down [...] then the government says, ‘Yes, but that actually saves money, and that saving, we will now make it available for new energy developments.’ And then you get a kind of iterative process. Beautiful new innovations are coming onto the market, which in turn lead to an even lower amount that the government should subsidise. And that saving is then made available again. Well that is actually a cycle that will repeat itself every time”¹¹* (interviewee 3).

¹⁰ NL: “Daardoor zijn heel veel particulieren geïnteresseerd geraakt, en wat blijkt [...], doordat mensen zelf de voordelen zien van investeren in eigen zonnepanelen, gaan ze ook eerder gaan kijken naar andere maatregelen: zoals energiebesparingen. Ze raken daardoor meer geïnteresseerd in het onderwerp energie.” (interviewee 1)

¹¹ NL: “Als het SDE bedrag naar beneden gaat, dan is dat weer een hele mooie bereikte stap voor de overheid, dan zegt overheid, ‘Ja, maar daardoor wordt eigenlijk geld bespaard, en die besparing, die gaan we nu weer beschikbaar stellen voor nieuwe energie ontwikkelingen.’ En dan krijg je een soort iteratief proces. Er komen weer mooie nieuwe innovaties op de markt die weer leiden tot een nóg weer een lager bedrag wat de overheid zou moeten subsidiëren. En die besparing, die wordt dan weer opnieuw beschikbaar gesteld. Nou dat is eigenlijk een cyclus die dan zich iedere keer gaat herhalen” (interviewee 3)

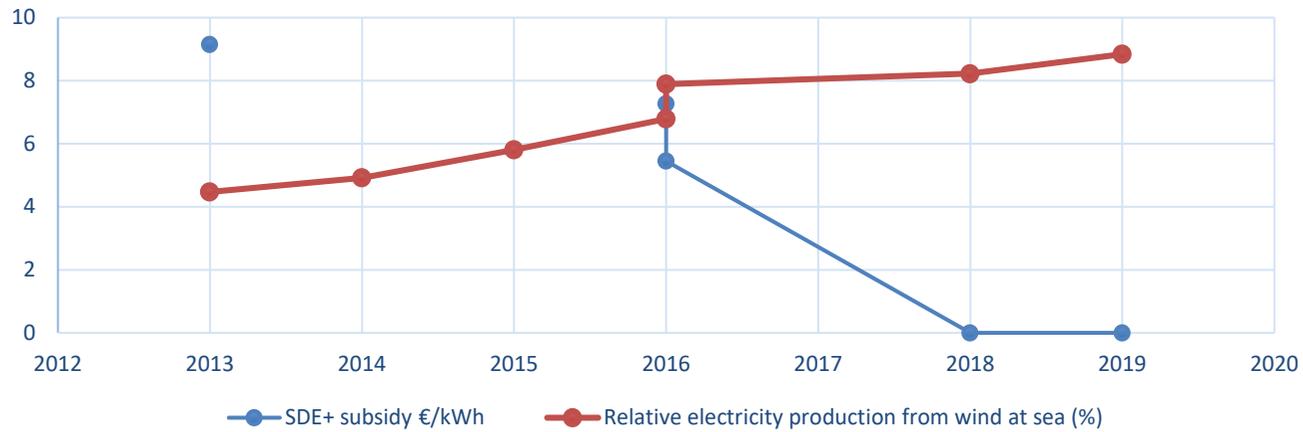


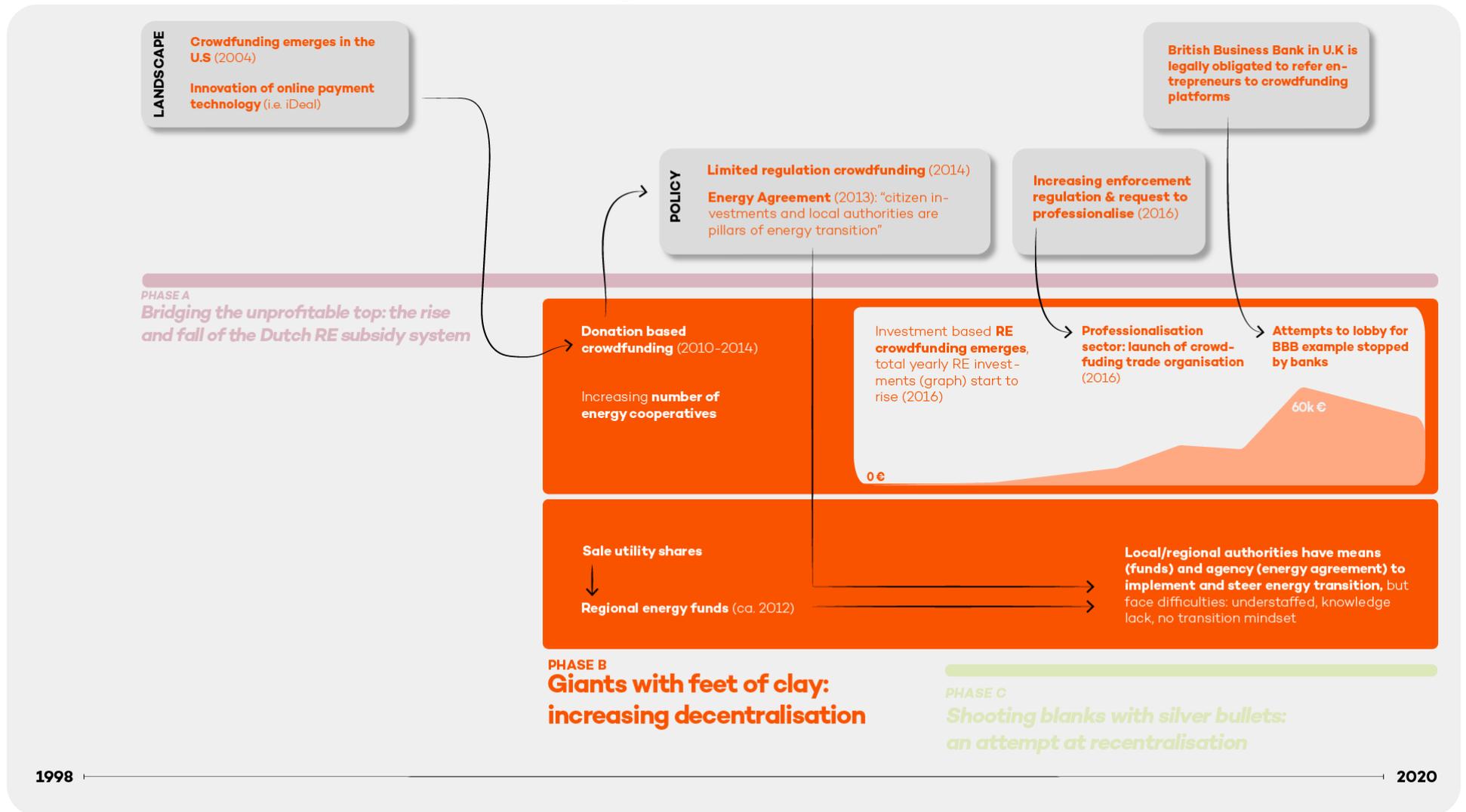
Figure 2 and table 5 SDE+ subsidy for wind parks at sea decrease over time, while the share of electricity production from wind slowly rises. *relative to total electricity production in the Netherlands, in % of the end usage. Data: CBS, 2020.

Year	Event	Winner tender	SDE+ subsidy €/kWh	Relative electricity production from wind at sea* (%)
2013	Energy Agreement ¹²		9,15	4,47
2014				4,92
2015				5,81
2016	Tender of Borssele windpark I and II	Ørsted	7,27	6,79
2016	Tender of Borssele Windpark III and IV	Blauwwind (Royal Dutch Shell, Van Oord, Eneco, Mitsubishi/DGE)	5,45	7,89
2018	Tender of Dutch Coast (south) I and II	Vattenfall	0	8,22
2019	Tender of Dutch Coast (south) III and IV	Vattenfall	0	8,84
2020	Tender of Dutch Coast (north)	Crosswind (Royal Dutch Shell, Eneco)	0	

¹² The energy agreement will be discussed later in this case study. It is included here to illustrate that the SDE+ subsidy was higher at that time, than it is at the current moment (2020). For more information on the energy agreement, see pages 28 and 34.

B. Giants with Feet of Clay¹³: Increasing Decentralisation (ca. 2012 - 2020)

In the second decade of the 2000s, decentralised actors (decentral governments and citizens) became increasingly important in the energy transition. However, this newfound responsibility had its challenges. This section describes the emergence of decentralisation, the change in roles and power relations that followed, and the challenges decentralised actors faced.



The End of 'Mad Hank': The Rise of the Regional Energy Funds (2010-2012)

“We have become more business-minded. We shouldn’t be ‘mad Hank’ who just spends money. We also want to see revenues.”¹⁴

These words, spoken by an Alderman of the city of Amsterdam in 2012, mark an important shift in the decentral governmental position towards the energy transition around that time: a shift away from subsidising, towards investing. This shift was caused by the rise of the regional energy funds.

Around 2010, local and regional governments sold their shares in their local utilities, enabling them to invest substantially (tens of millions) in RES projects through regional energy funds (Figure 3). Some of the sales of these shares were specifically labelled as ‘energy-related’ and were to be invested in the local and regional energy transition.

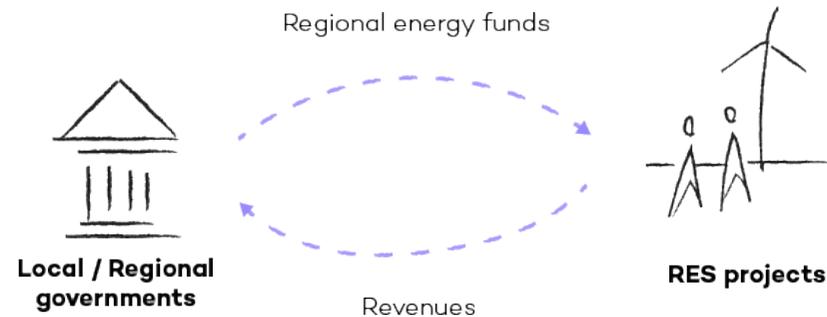


Figure 3 The regional energy fund mechanism. Local/regional governments fund RES projects from a regional energy fund. These governments receive revenues on these investments.

The shift was enormous: local and regional authorities now had substantial resources to invest in a local energy transition. In the words of interviewee 8: *“It was crazy. We suddenly had 1 billion Euros*

¹⁴ NL: “We zijn zakelijker geworden. We moeten niet gekke Henkie zijn die maar geld uitgeeft. We willen ook revenuen zien” Vebraeken en Trappenburg (5 december 2012). Meer fondsen en minder subsidie; Provincies en gemeenten trachten steeds vaker met investeringsfondsen innovatie aan te moedigen. Het Financieele Dagblad. <https://advance-lexis-com.eur.idm.oclc.org/api/document?collection=news&id=urn:contentItem:576B-9R71-JC8W-Y31T-00000-00&context=1516831>.

on the bank account.” Similarly, interviewee 2 noted: “Suddenly municipalities and provinces collectively had billions. And they put all that into funds that they did not know at all what they were going to do with they had to come up with plans to put all that money to good use.”¹⁵ According to Nico Heijmans, a member of the Provincial State of the province of North-Brabant for the left-wing party SP, in a news item reflecting on the time of the sale of their shares in utility Essent: “At the time, if I didn’t watch out, I had supported three motions, and I had spent 5-6 million. That’s how crazy it was at the time. I’m not suggesting there were only idiotic things that the money was spent on. But it was an atmosphere of: it will not run out”¹⁶ (1Vandaag, 2019).

Between 2012 and 2018, the regional energy funds supplied 400 million euros of financing to about 700 RES projects¹⁷. For example, in Amsterdam, the sale of their shares in utilities Essent and Nuon resulted in an energy fund of 45 million euros in 2012 (Verbraeken en Trappenburg, 2012).

Analytical box 2: Key changes in the SIE-field over time

SONNET studies the key changes in the emergence and development of the SIE-field and the key changes that have affected it over time.

Multiple interviewees remark the emergence of the regional energy funds as a key change in this innovation history. Interviewee 5: “Of course, governments do not have unlimited financial resources. So the moment money is released from the sale of energy stocks, they also have the means to make a financial difference. This contributed to the development”¹⁸.

The energy funds radically shifted the role of the government, from a small player holding utility shares in the wings of a national subsidy scheme, to a central player with vast funds to finance the energy transition. The energy funds and the Energy Agreement put the local and regional governments as central players in the energy transition.

¹⁵ NL: “zaten er ineens gemeentes en provincies die zaten ineens met miljarden. En dat hebben ze allemaal gestopt in fondsen waarvan ze helemaal niet wisten wat ze daarmee gingen doen.”

¹⁶ NL: “In die tijd, als ik niet op mijn hoede was en ik had drie moties gesteund, had ik 5-6 miljoen uitgegeven. Zo gek was het destijds. Ik suggereer niet dat er alleen idiote dingen zijn die met het geld zijn uitgegeven. Maar het was een sfeer van: het zal niet opraken.”

¹⁷ <https://www.greendeals.nl/nieuws/regionale-energiefondsen-en-invest-nl-pakken-financiering-grote-energieprojecten-samen-op> accessed 15/1/2021

¹⁸ NL: “Overheden beschikken natuurlijk niet onbeperkt over financiële middelen. Dus op het moment dat er gelden vrijkomen uit de verkoop van energie-aandelen hebben ze ook de middelen om financieel iets te betekenen. Dit heeft bijgedragen aan de ontwikkeling.” (Interviewee 5)

For more information on the power and powerlessness around the energy funds, see Analytical box 5: Power and power relations (power to + power over + power with).

The emergence of regional and local energy funds fitted a landscape of coinciding shocks and trends. The first and most important trend was the ongoing privatisation of the energy sector, which had been kicked-off in 1998 with the Electricity and Gas Act (see previous chapter).

Furthermore, the financial crisis had led to large-scale cutbacks in regional and local governmental budgets. Therefore, governments were already searching for alternatives to subsidisation of RE production. Interviewee 8, working for a local government at the time, recalled: *“I know that I was discussing this with a colleague of mine from the municipality of Deventer. [...] Yes, but we don't have that much money and we can only spend it once. And if we spend it this way, at least one thing is for sure, not everyone can help. So maybe it's better to lend the money.”*¹⁹ In his words, *“there came a sort of reality sense that with subsidies you disturb the market because you drive up the price. So, if it's gone, it's gone, and will we achieve our goals with that? No. So we have to spend our money smarter.”*²⁰

The regional energy funds would meet the need for high-risk upfront investment mechanisms for RE projects. Without venture capitalists or a national promotional bank²¹, the upfront investment needed for these kind of projects could not be met. Private investors (such as banks and pension funds) wanted to assure revenues for their clients, and thus shied away from funding projects that had little chance of success.

¹⁹ NL: “Ik weet dat ik met een collega van mij van de gemeente Deventer daar in discussie over had. [...] ja, maar we hebben niet zoveel geld en we kunnen het maar 1 keer uitgeven. En als we het op deze manier uitgeeft, dan kunnen we in ieder geval een ding is zeker, niet iedereen helpen. Dus misschien kunnen we beter gaan uitlenen” (interviewee 8)

²⁰ NL: “en er kwam een soort van realiteitszin dat je met subsidies en je verstoort de markt doordat je eigenlijk de prijs opdrijft. Uhm, en en het realiseren van ja, je kan het maar één keer uitgeven. Dus als het weg is is het weg en gaan we daarmee onze doelen bereiken? Nee dus. Dus we moeten ons geld slimmer gaan uitgeven.” (interviewee 8)

²¹ A national promotional bank is a national bank, using government funds to invest in projects of national interest. These banks were set up after world war II to help rebuilding the economy. A well-known example is the German KfW, the Credit Institute for Reconstruction (GE: Kreditanstalt für Wiederaufbau).

In the words of a local alderman at the time, regional energy funds would fill this gap and *pull private parties across the line*²² to co-invest. According to interviewee 2: *“Yes, [...] you will of course go to a bank. Your first stop as a project owner looking for funding, would be to go to your bank. But maybe there are also some, often smaller [projects] projects for which there is no bank, or a bank does not want to do provide all the financing required everything. And then in those cases a provincial regional fund might be able to help.”*²³

Analytical box 3: Contestations and relations between actors

SONNET studies the contestations and relations between actors in the SIE-field over time. SIE-field contestations can occur amongst SIE-initiatives and other field-actors over field structures and processes (Fligstein, 1997). These contestations illustrate the institutionalisation of the SIE-field. In this SIE-field, **the main contestations involve topics around privatisation: selling government utility shares and decentralisation V.S. recentralisation.** As such, the contestations are related to the largely neoliberal market-logic that governs the energy sector in the Netherlands (see also Analytical box 9: Regulatory, normative and/ or cultural cognitive institutions).

Contestations around the selling of utility shares

The sales of governmental utility shares were met with considerable political opposition. This opposition was threefold. Firstly, left-wing political parties (SP, GroenLinks, Partij voor de Dieren) did not want to lose influence and money to foreign investors (as i.e. discussed in a op-ed by Jansen, 2008). Secondly, once the sales had occurred and the money was to be divided, there were various opinions on what the money should be spent on and who should be involved in this process. In the words of Nico Heijmans, a left-wing local politician for SP in the province of North-Brabant: *“in the end, what we have failed to do, is to go in a conversation about this with [local] citizens. There was too much thought ‘this is our money, and now we will decide on what we will spend this.’ [...] But people had something like, ‘Essent, that is our provincial company, the profits have been made with the energy bills we have paid all this time, so it’s actually our money’”*²⁴ (1Vandaag, 2019). Neoliberal parties in favour of the sale of utility shares argued the sale would

²² Op de agenda staat dat deze kansen met middelen uit de opbrengst van de verkoop van energiebedrijf Essent worden gestimuleerd. Denk aan zonnepanelen, elektrisch rijden en biomassa. Niet dat we subsidie geven voor het plaatsen van zonnepanelen, maar wel voor het stimuleren van innovatie op deze gebieden. We hebben een energiefonds in voorbereiding dat uitgaat van risicovolle leningen of garantstellingen. Het moet bovendien tot effect hebben dat we er private financiers mee over de streep trekken." HARRIE VERRIJT;E-MAIL: . (7 september 2012 vrijdag). 'Meer dan 60 miljoen in energiefonds'. Eindhovens Dagblad. <https://advance-lexis-com.eur.idm.oclc.org/api/document?collection=news&id=urn:contentitem:56HF-K8D1-JC8W-Y3FB-00000-00&context=1516831>.

²³ NL: “Ja, voor zover die geld nodig hebben ga je natuurlijk naar een bank. Maar misschien zijn er ook kleine waar geen bank voor is of wil een bank niet alles doen. En dan kan een provinciaal fonds bijspringen.”

²⁴ NL: “Wat we uiteindelijk niet hebben gedaan, is hierover in gesprek gaan met [lokale] burgers. Er werd teveel gedacht ‘dit is ons geld, en nu zullen we beslissen wat we dit zullen uitgeven.’ Nu kun je niet achterhalen: wat heeft dit geld ons opgeleverd?”

enable them to end an era of being ‘mad Hank who just spends money’ through subsidisation. Rather, these parties wished to ‘see revenues’ from investments (page 25).

Contestations around recentralisation of government institutions

Another contested topic is that of recentralising government institutions. As discussed in the last chapter of this innovation history, recentralisation was argued to lead to 3 billion of savings in government spending. The report resulted in large opposition by the institutions that would be merged. In the words of the director of one of the banks involved: **Error! Reference source not found.** (page **Error! Bookmark not defined.**). For more information on this topic, see also chapter ‘**Shooting Blanks with Silver Bullets: Attempts at Institutionalising a New Order (2014 - now)**’ on page 53.

Contestations around the responsibility of financial sector

Lastly, the financial sector and their responsibility in the energy transition is contested. In the words of interviewee 4: *“There is an invisible hand that ensures that if everyone takes good care of themselves, that will eventually bring out the best for the whole of society. And if you believe in that, then you really don’t have to be accountable for anything other than simply making a lot of money”*²⁵. However, this dominant logic is contested by interviewee 4: *“We have actually always looked at the financial sector as a player in society that must deduce its legitimacy and its right to exist from the usefulness that it is for that society.”*²⁶

The regional energy funds introduced a new player into the energy transition, as governments outsourced the fund management of the regional energy funds to a private non-profit association: the Stimulation fund of People’s Housing (NL: Stimuleringsfonds Volkshuisvesting, SVN). SVN was selected because of their willingness to provide risky upfront investments. In the words of a fund manager at SVN: *“What SVN is actually aimed at, is to offer a solution for [situations in which a project] is often not taken up by banks for a very good reason, but societally, it is desirable for it to happen”*²⁷. The potential risk of a RE project is that, because of societal resistance or technical difficulties, it won’t be realised and thus not provide a return on the investment. Banks refrain from taking these risks, as put by a bank fund manager: *“but the moment you have a permit and other necessary aspects, then*

25 NL: “Er is een onzichtbare hand en die zorgt ervoor dat als iedereen voor ze goed voor zichzelf zorgt, dat uiteindelijk het beste naar boven komt drijven voor de hele samenleving. En als je daar in gelooft, dan hoef je ook eigenlijk over niks anders verantwoording af te leggen dan dat je gewoon veel geld verdient.” (Interviewee 4)

26 NL: “We hebben eigenlijk altijd gekeken naar de financiële sector als een speler in de samenleving die zijn legitimiteit en zijn bestaansrecht moet afleiden van het nut wat die is voor die samenleving.” (Interviewee 4)

27 NL: “Waar SVN eigenlijk op gericht is, is juist een oplossing te bieden voor [situaties waarin] het door banken om veelal een hele goeie reden niet wordt opgepakt, maar maatschappelijk wel gewenst is dat het gebeurt” (interviewee 5).

you enter a kind of safer water. And then we also dare to contribute the savings of our customers as financiers”²⁸. Besides their willingness to manage risky upfront investment, SVN manages the funds because they are experienced in managing microloans: “[there is] actually only one in the whole of the Netherlands that can put away government loans, that is SVN. Because the big banks are really not going to take over the tens of thousands of micro loans from the government. But SVN is focused on that.”²⁹

Giants with Feet of Clay: The Energy Agreement (2013)

In the meantime, increasing environmental pressures had made energy an important topic on the national policy agenda. Consequently, in 2013, a nation-wide deliberated agreement was launched that provided a vision of the future energy system by a multitude of actors: The Energy Agreement. It was signed by a wide range of stakeholders, varying from civil-society actors to banks, regulators, NGOs, governments, cooperatives and energy actors. The agreement was, according to many of our interviewees, a turning point in the development of the energy transition of the Netherlands. Firstly, because it formalised, for the first time, the importance of citizen participation. We will describe this in more detail in the next phase (see section ‘Institutionalisation of financial citizen participation: The Energy Agreement (2013)’). Secondly, because the agreement listed an important role for local authorities to realise the ambitious goals. For example, the goal of reaching 3-7 petajoules energy-savings in the built environment rested primarily on the plate of decentral governments. As such, the Association of Dutch Municipalities (NL: Vereniging Nederlandse Gemeenten, VNG) stated that *“It is clear that the Energy Agreement will ask a lot of municipal governments in the coming years”³⁰* (VNG, 2014; p.8).

The newly acquired decision-making power in the energy transition posed difficulties for decentral governments. Firstly, they had very limited capacity to create these ambitious strategies (often no

28 NL: “Maar het moment dat je een vergunning en en andere noodzakelijke aspecten hebt, dan kom je in een soort veiliger vaarwater. En dan durven wij ook het spaargeld van onze klanten erin te brengen als financiers.” (interviewee 7)

29 NL: “[er is] eigenlijk maar eentje in heel Nederland die overheidsleningen kan wegzetten, dat is SVN. Want de grootbanken, die gaan echt niet de tienduizenden micro leningen overnemen van de overheid. Maar SVN is daar op in gericht.” (interviewee 8)

30 NL: “Het is duidelijk dat het Energieakkoord de komende jaren veel vraagt van de gemeentelijke overheid.”

more than 0.5 FTE for an entire region) and realising the energy transition was one of many other ambitious sustainability goals on the plate of a busy policy maker. Secondly, as perceived by interviewee 8, the mind-set required to advocate for structural changes in regional or local energy systems was hardly present in policy workers at the time: *“They have of course already had a career for twenty years, in which they have worked their way up in a certain culture and have been given beliefs and working methods. And that is completely imprinted. And with that programming they are in that chair, so you cannot expect them to do it completely differently in one go”*³¹ (interviewee 8).

The fact that governments were understaffed made it prone to external influence and lobbying. Those who contested the sale of the shares in the energy utilities argue that many unnecessary purchases and fundings have been made. According to researcher Bram Logger from research collective SPIT in a news item covering the sale of provincial shares in Essent, *“at some point there’s the question: who’s going to do something with this money? And then you get the effect that people with the strongest lobby pull the longest straw. So we saw that Building Netherlands [NL: Bouwend Nederland], for example, they have very actively jumped on the pot with energy money, and thus a lot of the money has been directed towards the building sector - but that doesn’t have to be the most logical place to spend money”* (1Vandaag, 2019).

Analytical box 4: Policies and policy making

SONNET studies the effect of policies on the SIE-field, the policy making conditions enabling the SIE-field, and the roles of SIE actors in the policy making process. Moreover, SONNET is interested in studying how these policies represent and empower the actors within the SIE.

The main policy underlying the developments of this SIE-field is **the Energy Agreement**. The Energy Agreement was the result of a national deliberation process involving actors from many societal spheres (i.e. banks, NGOs, governments, grid operators, utilities, energy cooperatives). Local and regional authorities were given key responsibility to implement the ambitious goals as set in the Energy Agreement. However, decentral authorities **did not have the time, knowledge or attitude** to implement and accelerate the transition. This made local and regional authorities **prone to lobby**

³¹ NL: “Die hebben natuurlijk al twintig jaar carrière achter de rug, waarin ze in een bepaalde cultuur zich omhoog hebben gewerkt en overtuigingen hebben meegekregen en werkwijze. En dat is helemaal ingeprent. En met die programmering zitten ze op die stoel, dus daar kan je ook niet van verwachten dat ze het in een keer helemaal anders gaan doen.” (Interviewee 8)

organisations. As a result of the lobby of Bouwend Nederland, for example, local and regional financial and subsidising mechanisms become oriented towards topics such as the built environment (for a lengthier discussion, see page **Error! Bookmark not defined.**). Nevertheless, the energy agreement forms an important cornerstone of the case study. It formalised, for the first time, **the importance of (financial) citizen engagement in the energy transition**. The result was that it institutionalised the importance of citizen engagement, crowdfunding platforms and energy cooperatives as key players in the energy transition (for more information on the result of the energy agreement on citizen engagement, see page 37).

Other key policies that have directed the course of financing and subsidising RE in the Netherlands, are the EU's First Energy Directive (1996) and the Treaty of Amsterdam (1997). The First Energy Directive resulted in the privatisation of the Dutch electricity market through the Electricity and Gas Act (1998). The Treaty of Amsterdam institutionalised sustainable development within the member states of the EU. Both developments coincided to lead to RE-focused subsidisation mechanism. Later, following a wider trend of privatisation and retreating state, the sale of the utility shares further privatised the Dutch energy market. This opened up substantial budgets for decentral governments.

Power to the People: the Rise of Financial Citizen Participation

The period between 2010 and 2016 marked a substantial increase in financial citizen participation in the energy transition through energy cooperatives and crowdfunding campaigns. The following sections will trace the emergence and institutionalisation of crowdfunding and, to a lesser extent, citizen-led energy cooperatives.

Digitalisation of an age-old tradition: the first wave of crowdfunding (2010-2014)

A new financial instrument had emerged in the US around 2004: online crowdfunding platforms. Through these platforms, citizens (the 'crowd') were able to donate to specific causes or invest in projects. Crowdfunding became popular in the Netherlands in a wider trend of innovation around online payments, such as the emergence of online payment service iDeal in 2005. According to interviewee 2 *"It is a convergence of some very big inevitable trends. [...] the technology (a website and supporting system) is relatively cheap and keeps on getting cheaper, and doing business online*

as well as paying for things online becomes more and more commonplace that you can pay for just a few tens of euros via iDeal.”³²

Around 2010, the first crowdfunding platforms emerged in the Netherlands. The first wave of crowdfunding platforms mainly consisted out of donation-based platforms oriented at realising cultural or creative projects, such as the platform Voordekunst (EN: ‘for the arts’). According to interviewee 2, this was a ‘*digital version of an age-old tradition*’³³ in which funds are gathered to support finance a collective goal.

In the beginning, financial authorities had a passive approach towards these innovative funding schemes. The new financial instrument was still developing, and knowledge on the technology mainly resided with the entrepreneurs behind the budding platforms. Consequently, in the words of interviewee 6: *“So thoseThe first types [...]founders of the first crowdfunding platforms had to [...] go to visit the Netherlands Dutch Authority for the Financial Markets [AFM] to explain yes, what is crowdfunding is.? And The AFM wanted to know how to regulate crowdfunding platforms. how should we regulate you? [...] In a manner of speaking, we had to give a lecture to the AFM to tell what crowdfunding is.”³⁴* In 2014, the Ministry of Financial Affairs requested an investigation on supervising regulation in the budding sector. In this report, the AFM advised limited enforcement of existing regulation to stimulate innovation (AFM, 2014). *“We think it’s important that the crowdfunding sector gets the space to grow in a sustainable and responsible way,”* the report states (p.3). *“We recommend that (the intensity of) legislation and regulations and supervision be considered to grow with the development of the market. This offers the opportunity to make appropriate regulations, which considers the uncertainties of a market that is developing rapidly and stimulates the market to grow in phases towards a sustainable, responsible and mature sector”* (AFM, 2014; p.4).

Analytical box 5: Power and power relations (power to + power over + power with)

³² “Het is een samenkomst van een aantal hele grote onvermijdelijke trends. [...] En dan is denk ik dat de techniek goedkoop is, en dat je voor een paar tientjes via iDeal af kan rekenen.” (Interviewee 2)

³³ NL: “digitale versie van een eeuwenoude traditie.” (Interviewee 2)

³⁴ NL: “Dus die eerste types [...] moesten [...] wel naar de AFM om uit te leggen van ja, wat is crowdfunding voor iets? En hoe moeten we jullie reguleren? [...] Wij moesten bij wijze van spreken college geven aan de AFM om te vertellen wat het was.” (interviewee 6)

SONNET studies the power relations that enable or impede the SIE-field and vice versa. SONNET builds on Avelino (2017) in understanding power as the relational and structural (in)capacity of actors to mobilise resources and institutions to achieve a goal. SIEs can refer to the resources being mobilised and/or the goals being aspired (D1.2). SONNET distinguishes between ‘power to mobilise SIE-related resources and/or to achieve SIE-related goals (incl. (in)equality and in/exclusion), power over others in SIE-related processes (including dependency, oppression & exploitation), and power with other actors to achieve collective (SIE-related) goals’ (Wittmayer, Hielscher, et al., 2020).

Power to

In SONNET, we understand ‘power to’ as the power to mobilise resources to achieve goals. An example of ‘power to’ can be found in the regional energy funds. **The sale of utility shares gave local and regional authorities power to direct energy-labelled funds in whichever project they deemed fitting.** In the words of interviewee 5: *“It starts with social developments, the social necessity, the Climate Agreement. Municipalities and provinces are always putting these topics higher on the agenda. And if financial resources become available, it speeds up the process”*³⁵. However, this power was **prone to external lobbying**, and led to frustrations within municipalities and regional authorities (see also page **Error! Bookmark not defined.** or Analytical box 4: Policies and policy making).

Moreover, **the financial sector has power to support the energy transition.** According to a report by researchers from TNO on the role of institutional investors in the energy transition: *“pension funds are in a strong position to support the energy transition, both directly through capital provision, and indirectly by using their wide geographical reach to drive societal change”* (Donker, Gavrilova, & Halstead, 2020). However, **the sector is currently not making use of their power to drive societal change.** As found by McKinsey (2018), institutional investors (i.e. pension funds) invest mainly in listed financial funds and companies representing vested interests, such as Shell, British Petroleum (BP), Exxon Mobile and Gazprom, whereas they hardly invest in unlisted small project developers (McKinsey, 2018). This has been prescribed to the fragmentation of the energy market and the lack of scale, liquidity and attractive risk-return profile of small RE project developers. As posed by Steffen (2017), the balance sheets of small project developers and individuals are not big enough to match the investment needed for large-scale RE projects (Steffen, 2017). That’s why, according to Steffen (2017), RE projects have been largely financed through project financing. This contrasts to fossil-fuel energy, which has large enough balance sheets to be financed by large corporate players. When interviewee 2 asked an institutional investor why they did not invest in crowdfunded projects, the investor replied that they *“must be able to put away fifty to a hundred million in a year, otherwise it is impossible not feasible. And the whole*

35 NL: “Het begint met maatschappelijke ontwikkelingen, de maatschappelijke noodzaak, het Klimaatakkoord. Gemeenten en provincies plaatsen deze onderwerpen aldoor hoger op de agenda. En als er dan ook financiële middelen beschikbaar komen, dan versnelt dat het proces.” (Interviewee 5)

crowdfunding market is somewhere between 200-400 million. [...] So, it is too small. [...] It doesn't fit their calculation model, their way of workingscale."

Power over

Power 'over' is understood as the power over others in SIE-related processes (Wittmayer, Hielscher, et al., 2020). Crowdfunding platforms, in the beginning of their development, had power over the government because of their knowledge on the topic: *"So those first types [...] had to [...] go to the Netherlands Authority for the Financial Market [AFM] to explain yes, what is crowdfunding? And how should we regulate you? [...] In a manner of speaking, we had to give a lecture to the AFM to tell what it was."*³⁶The AFM exercised their power over the crowdfunding platform by first providing space to experiment (see also page 41), and later enforcing stricter regulations.

The financial sector has 'power over' crowdfunding platforms. This will be discussed in more detail in the next paragraph ('power with'), as the story is closely related to the lobby efforts of the respective sectors.

Power with

SONNET defines 'power with' as the power to achieve collective (SIE-related) goals with other actors. This is especially abundant in the multiple lobbies that have been involved in this SIE-field.

An example of 'power with' occurs in the story of crowdfunding. In 2016, the Ministry of Economic Affairs stimulated to further professionalize the crowdfunding sector to further professionalise. They gave interviewee 6 and a colleague the assignment to set-up a trade organisation. The branchtrade organization gave the sector collective power to lobby for their needs and work towards achieving their goals. However, as discussed in the section 'David and Goliath: crowdfunding challenges the financial sector', crowdfunding was to date not able to lead to institutionalised changes in the ways of doing, thinking or organising in the financial sector. This is mainly because of the sheer size of the financial sector in the Netherlands (see page 45). Interviewee 4: *"That is always the difficulty of the discussions about financing innovation in the Netherlands. The Netherlands simply has an insanely large banking sector. Also, from an international perspective [...] the size of our banks in relation to the economy is simply insanely large. Historically, this has never happened before, but internationally it is nowhere nearly as large as it was in the Netherlands in 2008. It has declined somewhat since then. But that's why we always talk about banks in the Netherlands."*³⁷

When the crowdfunding trade organisation tried to lobby for a change within the way of working at their dependence on bank finance, this was stopped by the banking sector: *"And then we thought with that trade association, wow, we're*

36 NL: "So those first types [...] had to [...] go to the Netherlands Authority for the Financial Market [AFM] to explain yes, what is crowdfunding? And how should we regulate you? [...] In a manner of speaking, we had to give a lecture to the AFM to tell what it was." (Interviewee 6)

37 NL: "Dat is altijd het ingewikkelde aan de discussies over het financieren van innovatie in Nederland. Nederland heeft gewoon een waanzinnig grote bankensector. Ook in internationaal perspectief is [...] de omvang van onze banken ten opzichte van de economie gewoon waanzinnig groot. Historisch gezien is dat nooit eerder voorgekomen, maar ook internationaal is het nergens bijna zo groot als dat in Nederland was in 2008. Het is sindsdien wel wat afgenomen. Maar daarom hebben we het altijd over banken in Nederland." (Interviewee 4)

going to lobby for that too. You know. But of course, the banks saw that coming, so they put a stop to it”³⁸ (for more information, see page 45).

Another example of ‘power with’ can also be found in the crowdfunding story. As the trade organisation was struggling to fight the power of financial institutions, it was tempted to start fighting new entrants in the crowdfunding sector through quality requirements: *“In the beginning you can nip it a bit in the bud, but or at some point a trade association can become a bastion for the established players in the market to [...] make the entry of new parties difficult... And that’s how it was a bit, too. The affiliated members do not only have the interest to advance the sector, but also the interest, above all, to advance themselves and each other. To not make the parties that are not yet affiliated any wiser than necessary. [...] You had those quality requirements [for new entrants]. These requirements were then tested on new entrants [by the trade organisation]”* (Interviewee 6).

Other lobbying efforts are evident in the story of the national promotional bank. In this story, the power of an individual (Jeroen Kremers) went against the power of a collective (several governmental institutions). Kremers’ vision was to merge several governmental institutions to form a central national promotional bank. This bank would be able to provide the high-risk upfront investments and thereby lead to economic growth. However, vested interests did not want to merge their institutions, as ‘no king wants to give up their kingdom’³⁹ (interviewee 4). In the words of Rick Bosman in an article on journalism platform Follow the Money: *“They are actually very separate worlds, which are viewed in different ways. Incumbent parties have an interest in keeping it that way.”*⁴⁰ For a lengthier discussion on this topic, see the chapter ‘Shooting Blanks with Silver Bullets: Attempts at Institutionalising a New Order (2014 - now)’.

Institutionalisation of financial citizen participation: The Energy Agreement (2013)

*“But then came the energy agreement, in the Netherlands. That’s a very important point”*⁴¹ (interviewee 2).

Citizen participation in the energy transition was put on a national agenda through the Energy Agreement of 2013 (see also ‘**Giants with Feet of Clay**: ’). The Energy Agreement institutionalised, for the first time, the importance of local/regional governments as well as participation by citizens and energy cooperatives in the energy transition. It stated that: *“An important part is the decentralized*

³⁸ NL: “En toen dachten we met die branchevereniging dachten we wow, daar gaan we ook voor lobbyen. Weet je wel. Maar de banken zagen dat natuurlijk ook wel aankomen, dus die hebben daar een stokje voor gestoken.” (interviewee 6)

³⁹ NL: “Geen koning wil zijn koninkrijk opgeven.” (interviewee 4)

⁴⁰ NL: “Het zijn eigenlijk hele gescheiden werelden, waar op verschillende manieren naar gekeken wordt. Door de gevestigde partijen wordt er belang aan gehecht dat ook zo te houden.” (Crezee, 2016)

⁴¹ NL: “Maar toen kwam het energie akkoord. Dat is een heel belangrijk punt.” (Interviewee 2)

generation of renewable energy by people themselves, and in the form of cooperative initiatives, the third pillar of the agreement. Citizens will have more options to generate their own renewable energy and local and regional initiatives are supported where necessary and possible by municipalities, provinces and the national government"⁴² (SER, 2013; p.8). The move towards citizen participation in energy policy fits a broader Dutch trend of retreating governments and dismantling government engagement in i.e. the welfare state. The agreement is noted by multiple interviewees as a major turning point in this case study.

The energy agreement created a sense amongst regional and local policy makers that they needed to incorporate citizen participation in their policy, mainly to limit NIMBYism associated with wind energy on land. However, municipalities lacked time, experience and personnel to create a strategic plan in line with the national policy for citizen participation. Crowdfunding platforms helped steer their sense-making by opting showing the feasibility of financial citizen participation. In the words of interviewee 2: *"[...] then the municipality will look at our questions sheepishly with the question of citizen participation? And then we say hey, sure. But then what? And then look at each other for a long time, and then nobody knows what it means. And then it is, um, maybe financial participation? And then everyone sighs, fortunately you know. And so that became financial participation. And nowadays citizen participation is financial participation. municipalities and project developers look for examples of how to define and organise citizen participation. Crowdfunding platforms such as ours give them practical examples they can easily copy and use for themselves."*⁴³

At this point, several large power shifts came together that led to the institutionalisation of financial citizen participation: understaffed decentral authorities were given responsibility to implement the energy transition locally and gained access to certain expertise (from an increasingly professionalising and lobbying crowdfunding sector). Thus, from 2013-2014 onwards, regional and local governments

⁴² NL: "An important part is the decentralized generation of renewable energy by people themselves, and in the form of cooperative initiatives, the third pillar of the agreement. Citizens will have more options to generate their own renewable energy and local and regional initiatives are supported where necessary and possible by municipalities, provinces and the national government."

⁴³ NL: "En de kers op de taart is de wettelijke verplichting. En hoe werkt het, dat Energieakkoord, dat vergunningverlenende autoriteiten dwingt om, eh, euh, euh, als onderdeel van de vergunning de projecteigenaar, [...] want de projecteigenaar heeft geld nodig, om een deel van het geld te dwingen te verzamelen van burgers. Of om burgers de kans te geven om mee te doen aan dat project. " (Interviewee 2)

included financial participation from citizens as a demand in their building and environment permits for RES projects: the Environmental permit (NL: Omgevingsvergunning Milieu), Environmental Construction permit (NL: Omgevingsvergunning Bouw), Revision permit (NL: Revisievergunning) and the Mining Act (NL: Mijnbouwwet). Interviewee 2: *“An important push was the legal obligation [...] The Energy Agreement (Energie Akkoord) [...] forces licensing authorities to, as part of the permit [...] part of the money to be collected from civilians for large scale renewable energy projects. Or to give citizens the opportunity to participate in that project. This led to local governments (such as municipalities) that issued required permits to include burgerparticipatie a a prerequisite for the permit to be issued.”*⁴⁴

Formalisation of financial participation: the rise of a second wave of crowdfunding (2014-2016)

*“People are not just looking for charities to give their money and all their savings to, they are also looking for investment opportunities for their savings. Crowdfunding can cater to both needs.”*⁴⁵ (Interviewee 2)

Around 2014, enough crowdfunding projects had been developed successfully to show entrepreneurs the financial viability of crowdfunding as a financing mechanism. Interviewee 2: *“And then you suddenly see that what starts in one place, some in our case funding a wind energy project, with mandatory citizen participation, spills over to a solar projects, spills over to energy cooperatives, so not only project developers, but also energy cooperatives that want to fund their projects, spills over to entrepreneurs who may not have an SDE project wind or solar, but have hardware on the sustainable side that a renewable energy project but a sustainable business that they want to finance. And that's how it starts to work out, because That's how it works in the financial world. If there is a*

⁴⁴ “And the icing on the cake is the legal obligation. And how does it work, that Energy Agreement, that forces licensing authorities to, uhm, euh, euh, as part of the permit the project owner, read the demander, because the project owner needs money, to force part of the money to be collected from civilians. Or to give citizens the opportunity to participate in that project.” (interviewee 2)

⁴⁵ NL: “Mensen zijn niet op zoek naar goede doelen waar ze hun geld aan kunnen geven en al hun spaargeld, ze zijn op zoek naar investeringsmogelijkheden voor hun spaargeld.” (interviewee 2)

solution to gather money for a good idea a new, proven source of funding, Yes, then of course people come running people and businesses with financing needs will come knocking.”⁴⁶

The ongoing professionalisation of crowdfunding led to various record-breaking crowdfunding levels, with 7.7 million euros of crowdfunding raised by cooperative Zelfstroom in 2014, and 10 million by Windpark Krammer in 2018. The platform DuurzaamInvesteren characterises this phase, as described in Analytical box 6: DuurzaamInvesteren (SIE-I).

Analytical box 6: DuurzaamInvesteren (SIE-I)

DuurzaamInvesteren (or DI, literal translation in English: ‘Sustainable Investing’) is the biggest online crowdfunding platform for sustainable energy projects in the Netherlands. DI was founded in 2014 by two entrepreneurs as a reaction in response to both the desire of retail investors to investing in renewable energy projects, as well as the need requirement and desire on the part of project owners to let citizens (financially) participate in the energy transition their projects, as illustrated by interviewee 2: *“so crowdfunding emerged, sustainable energy citizen participation emerged, and the nexus - well, that is what we do: crowdfunding for sustainable energy project and businesses⁴⁷”*. The projects that are offered on the DI platform concern sustainable energy production (such as solar- hydro- and wind energy), energy storage, energy-saving measures (such as infrared heat panels, LED-lights and ATES installations) and e-mobility. Since the start, DI has generated an investment volume of 100 million euro for these projects.

In the words of interviewee 2, DI is an ‘mediation intermediary’, connecting citizens retail investors that are looking for investment opportunities in sustainable energy with project developers that need finance. In this way, DI aims to create new opportunities for citizens retail investors to financially participate in sustainable projects, amongst which the energy transition: *“so what crowdfunders are doing now, has been done by wealthy individuals and professional parties for centuries [...] The question was; how do we get citizens involved? With our crowdfunding platform we seek*

⁴⁶ NL: “En dan zie je ineens dat dat wat op één plaats begint, een of ander wind project met verplichte burgerparticipatie, overslaat naar zonn project, overslaat naar energietoekomst, dus niet alleen projectontwikkelaars, maar ook energie cooperaties, overslaat naar ondernemers die misschien geen SDE project hebben voor wind of zonn maar wel aan de duurzame kant hardware hebben die ze willen financieren. En zo begint het dan te lopen, want zo werkt dat in de financiële wereld. Als er een oplossing is om geld bij elkaar te sprokkelen voor een goed idee. Ja, dan zijn mensen daar natuurlijk als de kippen bij.” (interviewee 2)

⁴⁷ NL: “He want dat is natuurlijk, dat crowdfunding komt op en duurzame energie burger participatie kwam op, en de Nexus is ja wat wij doen, crowdfunding voor duurzame energie.” (interviewee 2)

to provide retail investors with investment opportunities similar to those that traditionally only have been available to bank, professional investors or institutions investors⁴⁸ (interviewee 2).

The organizational structure of DI is a private company with shareholders. These shareholders vary from the Triodos bank (Sustainable Finance Foundation) to energy suppliers such as Greenchoice. As explained by interviewee 2, *“shareholders are typically people who have a sort of strategic interest in the existence of this company, of this crowdfunding platform.”⁴⁹*

DI is labelled as a gatekeeper (NL: poortwachter) in Dutch regulation, similar to the label of a bank. Thus, it operates under surveillance of the Netherlands Authority for the Financial Markets (AFM) and De Nederlandse Bank (DNB). According to European MiFID2 regulation, DI is an investment firm.

David and Goliath: crowdfunding challenges the financial sector (2012-2016)

In the meantime, the ensuing professionalisation of the crowdfunding sector challenged existing financial institutions (banks and institutional investors) to redefine their role in financing the energy transition. This challenge did not result in large changes. This section describes the multiple attitudes and roles institutional investors and banks have explored towards crowdfunding.

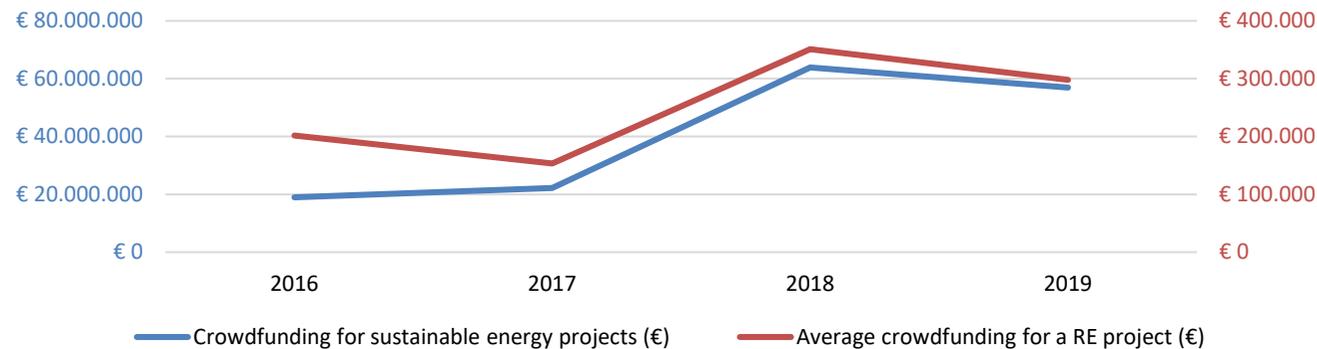
Institutional investors⁵⁰ are currently not participating in crowdfunding. The Dutch pension funds are globally some of the largest pension funds, together managing over 1.1 trillion euros. In their perception, dividing their investments across multiple projects and platforms would require substantial transaction costs. Interviewee 6 addressed this topic to with institutional investors, *“And then I always got the answer yes: “I must should be able to put awayinvest a hundred million in a year, otherwise it is impossible to invest in crowdfunding projects.” At the moment, the whole crowdfunding market is 200 million. [...] So, it is too small. [...] It doesn't fit their calculation model,*

⁴⁸ NL: “Wat crowdfunders dus nu doen, doen vermogende particulieren ook al decennia, en doen professionele partijen al ook al decennia ... De vraag was hoe krijgen je het bij particulieren.” (interviewee 2)

⁴⁹ NL: “Aandeelhouders zijn typisch mensen die een bijna een soort strategisch belang hebben bij het er zijn van dit bedrijf van dit crowdfunding platform.” (Interviewee 2)

⁵⁰ Institutional investors are, according to the Central Bureau of Statistics in the Netherlands: “institutions whose activities provide them with funds that they must invest. These activities mainly consist of insuring pensions and offering private investors opportunities to invest with a desired risk profile. Institutional investors include: pension funds, insurance institutions and investment funds with the exception of money market funds.” (CBS, 2014) Institutional investors are generally large-scale investors.

their way of working.”⁵¹ Crowdfunded RE projects are generally €150.000-300.000 Figure 4 (Crowdfundingcijfers, 2021). This lack of participation of institutional investors in crowdfunding in the Netherlands, is in stark contrast to the U.K and the U.S. Interviewee 6: “In general, in the Dutch crowdfunding sector is still relatively difficult to move institutional money to crowdfunding, while - in England, for example, or in America, with on some platforms, around 80 more than 50% of the money no longer comes from the crowd, but from institutional funds. And such a huge switch, not one platform in the Netherlands has succeeded in doing that.”⁵² For a more in-depth analysis on the power of banks and institutional investors in the energy transition, see Analytical box 5: Power and power relations (power to + power over + power with) on page 34.



51 NL: “En dan krijg ik altijd het antwoord ja, ik moet in een jaar honderd miljoen weg kunnen zetten, anders is het niet te doen. En de hele crowdfundingmarkt is 200 miljoen. Dus ja, dat ga ik niet doen, want dan heb ik de helft van de sector en dat is echt niet verantwoord. Dus het is te klein. Weet je wel, het is gewoon en het past niet in hun rekenmodel, in hun manier van werken.” (Interviewee 6)

52 NL: “Maar over het algemeen lukt het de Nederlandse crowdfundingsector nog relatief slecht om institutioneel geld naar crowdfunding te bewegen, terwijl - in Engeland bijvoorbeeld of in Amerika bij sommige platforms [komt er] rond 80 procent van het geld niet meer van de crowd, maar van institutionele fondsen. En zo'n enorme switch, dat is nog geen één platform in Nederland gelukt.” (interviewee 6)

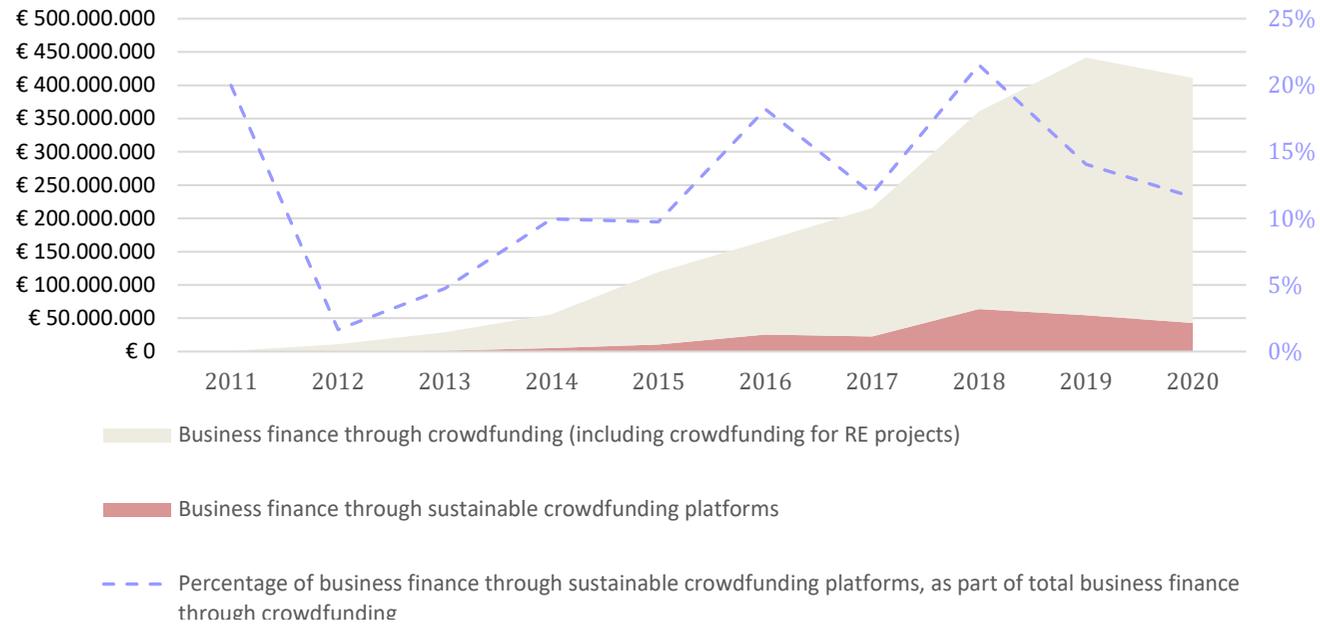


Figure 4 **Growth of crowdfunding for RE projects over the years in the Netherlands.** A: The amount of crowdfunding for RE projects between 2016-2019 in the Netherlands. B: The graph illustrates the growth of crowdfunding for sustainable projects as compared to the total amount of crowdfunding in the wider crowdfunding sector. Sustainable projects take up ca. 10-20% of total crowdfunding business projects. Crowdfunding through sustainable crowdfunding platforms is used as a proxy for crowdfunded RE projects. Graphs are based on (Crowdfundingcijfers, 2021).

Banks investigated multiple attitudes and roles towards crowdfunding RE over the years: becoming a co-investor in crowd-funded projects, becoming a shareholder in platforms, starting their own platform, or redirecting rejected clients to crowdfunding platforms. One of the first steps they took was to explore their own crowdfunding platform. Interviewee 6 recalls a crowdfunding platform set up by ABN AMRO bank, *“That’s what happenedThe crowdfunding platform was a project at their innovation department. And Gerrit Zalm was then at that time CEO the boss of ABN AMRO. And at one point the bank as a whole had entered a kind of waters in which they had decided to focus more on their core tasksbusiness. And thenOut of nowhere, Gerrit Zalm said in an FD [newspaper] interview in FD [Dutch equivalent to Financial Times] that they should stop their crowdfunding activities. And the peopleHis colleagues who were busy withworking on crowdfunding read that it in the newspaper, instead of knowing that internally, through strategy provisions, so they were dropped by their own boss and chief.... ”*⁵³

A report of the Chamber of Commerce (NL: Kamer van Koophandel, KVK) revealed the problems entrepreneurs faced with getting financing: 2/3 of the entrepreneurs who didn’t manage to get a bank loan often didn’t pursue other financing. Interviewee 6: *“And compared to, for example, other European countries, banks are therefore incredibly dominant in the financing of SMEs. And with that they are very much in a position of power. Because of this, bank finance is also part of the culture of doing business in the Netherlands. In the minds of most business owners, you just go to a bank when you need funding. If a bank all of a sudden does not want to finance your business anymore, a lot of Dutch entrepreneurs are not aware of the alternativessuch an entrepreneur could always go to the bank, and the bank almost always said yes. And if a bank suddenly says no yes, then as an entrepreneur you do not know well enough which alternatives there are.”*⁵⁴

53 NL: “dat is in hun innovatie afdeling was dat gebeurd. En Gerrit Zalm was toen de baas van de ABN. En op een gegeven moment was de bank als geheel in een soort vaarwater terechtgekomen waarin ze hadden besloten om zich meer op hun kerntaken te richten. En toen heeft Gerrit Zalm in een FD interview gezegd dat ze maar met crowdfunding moesten stoppen. En dat lazen de mensen die met crowdfunding bezig waren in de krant, in plaats van dat ze dat intern, via strategie bepalingen allang wisten, dus ze werden eigenlijk door hun eigen baas en opperhoofd afgevalen.” (Interviewee 6)

54 NL: “En banken zijn vergeleken met bijvoorbeeld andere Europese landen daarmee ontegelijk dominant in de financiering van mkb. En daarmee hebben ze heel erg een machtspositie. Maar ook in het culturele. In het hoofd van ondernemers, zo'n ondernemer kon altijd naar de bank en de bank zei bijna altijd ja. En als een bank dan opeens nee zegt ja, dan weet je als ondernemer niet goed genoeg welke alternatieven er zijn.” (Interviewee 6)

In 2016, a crowdfunding platform trade organisation was initiated and launched by (with support from the Ministry of Economic Affairs) to further professionalize the crowdfunding sector. The trade organization gave the sector collective power to lobby for their needs and against the dominance of the Dutch banking sector. In the meantime, the crowdfunding sector was looking at England as an example. There, banks had a legal obligation to refer rejected entrepreneurs to the British Business Bank, who were legally obligated to refer referred entrepreneurs to other alternative financing sources, such as crowdfunding platforms. *“And then we thought with that trade association, wow, we’re going to lobby for that too. You know. But of course, the banks saw that coming, so they put a stop to [the legal it.]”*⁵⁵ (interviewee 6).

Nevertheless, the KVK report and the developments around crowdfunding overseas had inspired Dutch banks to experiment with referring clients to crowdfunding platforms. For example, the Rabobank started to redirect rejected clients to crowdfunding platforms through so-called ‘financial directors’.⁵⁶ However, the role was not integrated within the bank or the wider sector, and the role eventually faded. Interviewee 6 stated that this concept *“didn’t take off, because no account manager was held accountable for anything other than providing bank financing to clients. So, if you referred someone, it took your time, but it was of no use for your yearly evaluation.”*⁵⁶

All in all, the Dutch crowdfunding sector is relatively small as compared to the U.K. and the U.S. (see Figure 4). As put by interviewee 2: *“within a time frame of a few years, there is a very small part of the Netherlands that thinks crowdfunding is a thing. But I think that 80 percent of the Netherlands really or more 85 cents for the Netherlands has no clue what crowdfunding is.”*⁵⁷

Analytical box 7: ‘Outside’ institutional environment shaping the development of the SIE-field

55 NL: “En toen dachten we met die branchevereniging dachten we wow, daar gaan we ook voor lobbyen. Weet je wel. Maar de banken zagen dat natuurlijk ook wel aankomen, dus die hebben daar een stokje voor gestoken.” (interviewee 6)

56 NL: “kwam heel moeilijk van de grond, want geen enkele accountmanager werd afgerekend op iets anders dan bankfinanciering verstrekken aan klanten. Dus als je iemand doorverwees kostte dat je tijd, maar had je er niks aan je beoordelingsgesprek.” (Interviewee 6)

57 NL: “So but that is within a time frame of a few years, there is a very small part of the Netherlands that thinks crowdfunding is a thing. But I think that 80 percent of the Netherlands really or more 85 cents for the Netherlands has no bloody clue, which is crowdfunding.” (Interviewee 2)

The SIE field is nested within a larger institutional environment of rules, norms and cultural beliefs. In SONNET, we refer to this as the ‘**outside**’ institutional environment and we are interested in the shocks and trends within this environment that unsettle the SIE-field, and thereby co-shape its direction. (Hielscher et al., 2020; Wittmayer, Hielscher, et al., 2020). To construct the innovation history of the ‘subsidising and financing solar and wind energy’ field, we have taken a number of outside developments in delineating the four phases of development.

The main interactions between the outside institutional environment, and the inside institutional environment of this case study are (1) the inspiration of the crowdfunding sector in the Netherlands of crowdfunding in the UK and US, (2) increasing institutionalisation of environmental pressures.

Inspiration from overseas: crowdfunding in the UK and US posed examples for the Netherlands

Firstly, **the emergence of crowdfunding in the U.S.A. and the wider trend of emerging online payment technology** led to the emergence of a crowdfunding sector in the Netherlands in c.a. 2012 (see also **Power to the People: the Rise of Financial Citizen Participation**). According to interviewee 2 *“It is a convergence of some very big inevitable trends. [...] the technology is cheap, and that you can pay for just a few tens of euros via iDeal.”*⁵⁸ Over the years, the U.S.A and the U.K. formed examples for the budding crowdfunding sector in the Netherlands. Interviewees repeatedly compared the Dutch crowdfunding sector, to that in the U.K. A point of interest to them was the difference of the relationship between crowdfunding and their institutional context. Interviewee 2: *“In general, in the Dutch crowdfunding sector is still relatively difficult to move institutional money to crowdfunding, while - in England, for example, or in America, with some platforms, around 80 percent of the money no longer comes from the crowd, but from institutional funds. And such a huge switch, not one platform in the Netherlands has succeeded in that.”*⁵⁹ As such, **the crowdfunding sector in the U.K. formed an example to the Dutch crowdfunding platforms**. In particular, they were interested in the legal obligation for banks to refer rejected entrepreneurs to the British Business Bank, who were legally obligated to refer entrepreneurs to other financing sources, such as crowdfunding platforms. Interviewee 6 recalled: *“And then we thought with that trade association, wow, we’re going to lobby for that too”*⁶⁰ (interviewee 6).

Institutionalisation built trust and addressed social dilemmas

Secondly, the institutionalisation of environmental pressures co-shaped the SIE-field: it posed a solution to the social dilemma associated with climate change mitigation. This dilemma posits that individual efforts are useless unless others

⁵⁸ “Het is een samenkomst van een aantal hele grote onvermijdelijke trends. [...] En dan is denk ik dat de techniek goedkoop is, en dat je voor een paar tientjes via iDeal af kan rekenen.” (Interviewee 2)

⁵⁹ NL: “Maar over het algemeen lukt het de Nederlandse crowdfundingsector nog relatief slecht om institutioneel geld naar crowdfunding te bewegen, terwijl - in Engeland bijvoorbeeld of in Amerika bij sommige platforms [komt er] rond 80 procent van het geld niet meer van de crowd, maar van institutionele fondsen. En zo'n enorme switch, dat is nog geen één platform in Nederland gelukt.” (interviewee 62)

⁶⁰ NL: “En toen dachten we met die branchevereniging dachten we wow, daar gaan we ook voor lobbyen.” (interviewee 6)

participate (Kollock, 1998). The EU's Treaty of Amsterdam (1997), the Dutch Energy Agreement (2013), the international Paris Climate Agreement (2015) and the Dutch Climate Agreement (2019) seemed particularly influential in bridging this social dilemma. Interviewees often remarked on the fact that these agreements offered trust and a lower perception of risk. For example, interviewee 7: *"We assess our risks with long-term projects, we often finance a project for between 10 and 15 years and we also try to look ahead at the state of the country in which we operate, usually just the Netherlands or North-West Europe, what is the stance of these countries in supporting such projects? And then it is also good if you see that a cabinet or political decision to the climate agreement in which they actually indicate over a long period that they also consider what such an energy project does important, and also link subsidies that have the same term, so expensive. And that you also know that [its stimulation] also appears to be long-term from the government. The moment we know that countries have a positive attitude towards it, that means a decrease in risk for us, which makes us more interested in getting involved. [...] It does help to reduce that risk and thereby increase our share in the project again, so that we will ultimately again finance that sustainable energy world more."*⁶¹ In the words of interviewee 4: *"What really tipped it off is that the Paris climate treaty was signed, actually setting some kind of great social standard. From: we want to move towards that. And that the demand came more and more to the financial sector. What are you going to do about that?"*⁶² In a similar attempt to bridge the social dilemma of climate change mitigation and to illustrate their collective willingness to participate in climate change mitigation, the financial sector added a paragraph to the national Climate Agreement (2019) where they voiced that *"They want[ed] to decarbonise their own balance sheets in line with the objective of the Dutch cabinet"*⁶³ (interviewee 4). According to interviewee 4, such a collective effort was unprecedented: *"that an entire sector - actually all pension funds, insurers and banks - make that promise, that was really unique"*⁶⁴(interviewee 4).

Another outside institutional influence on this SIE-field is that of energy cooperatives, following a wider trend of decentralising state and participation in the energy transition. This is discussed in Analytical box 8: Inter-field interactions.

61 NL: "Wij beoordelen onze risico's met langjarig projecten, we gaan vaak tussen 10 en 15 jaar lang een project financieren en proberen we ook vooruit te kijken naar hoe staat het land waarin we opereren veelal gewoon Nederland of Noord-West-Europa, hoe staan die landen in de ondersteuning van dat soort projecten? En dan is ook goed als je ziet dat een kabinet of politiek besluit tot het klimaatakkoord waarin ze eigenlijk langjarig aangeven dat ze hetgeen wat zo'n energieproject doet ook belangrijk vinden, en daar ook subsidies aan koppelen die die diezelfde termijn hebben dus ook lange lange duur hebben. En dat je ook weet dat [de stimulering] ervan ook in ieder geval vanuit het rijk langjarig blijft te zijn. Op het moment dat wij weten dat dat landen er positief tegenover staan, is dat voor ons een afname van het risico, waardoor we ook weer geïnteresseerder zijn om erin te stappen. [...] het helpt wel om dat risico te verlagen en daardoor ons aandeel in het project weer te vergroten, waardoor we uiteindelijk weer die duurzame energie wereld meer financieren." (Interviewee 7)

62 NL: "Wat het echt heeft doen kantelen is dat het klimaatverdrag van Parijs is ondertekend, waarmee het eigenlijk een soort van grote maatschappelijke norm is gesteld. Van: daar willen we naartoe gaan bewegen. En dat dat de vraag alsmaar meer kwam naar de financiële sector. Wat ga jij daar nou aan doen?" (Interviewee 4)

63 NL: "zij hun eigen balansen allemaal willen gaan decarboniseren in lijn met de doelstelling van het Nederlandse kabinet." (Interviewee 4)

64 NL: "dat een hele sector dus eigenlijk alle pensioenfondsen, verzekeraars en banken die belofte maken - dat was echt uniek" (Interviewee 4)

New roles, new rules: professionalisation of citizen engagement (ca. 2016)

The professionalisation of the crowdfunding sector and energy cooperatives shifted the attitude of banks towards citizen engagement (see Analytical box 8: Inter-field interactions on page 49). As explained by interviewee 7, there was an ongoing trend in which banks started to see cooperatives and crowdfunders no longer as “*private individuals*” but as “*in fact a collection of private individuals who, together, become so professional that they can take on quite large projects. Well, we are actually seeing a professionalization step, and that now, with the help of an advisor or with someone else, [they are] ultimately being [treated as] a professional customer.*”⁶⁵ (Interviewee 7)

Similarly, the Authority Financial Markets (AFM) started treating crowdfunding platforms more as professional players in the financial sector. The leniency of the first years changed after the year 2016, when their exemption on legal regulation was lifted. From that moment on, crowdfunding platforms were under closer supervision by the AFM. In the words of interviewee 2, “*actually, after 2016 there was no positive message anymore about crowdfunding from the government or financial authorities.*”⁶⁶

The end of this phase marks the joining of several trendlines and events that lead to a decentralisation of financing the energy transition, a decentralisation which was challenged on multiple accounts. Firstly, municipalities and regional authorities had become more powerful: with newly acquired means (regional energy funds), and key responsibility for the implementation of the energy transition through the Energy Agreement, decentral governments became key players in realising the energy transition. However, this posed a challenge for understaffed and relatively inexperienced governments.

Secondly, citizen investors (formalised through crowdfunding or cooperatives) had undergone waves of professionalisation, formalisation and institutionalisation, challenging banks and energy regime

65 NL: “in feite een verzameling van particulieren die die die bij elkaar toch dermate professioneel worden dat dat ze best wel grote projecten aan kunnen gaan. Nou we zien eigenlijk een professionaliseringslag, En dat dat nou dan wel met de hulp van een adviseur of met iemand anders erbij, uiteindelijk een professionele klant zijn.” (Interviewee 7)

66 NL: “na 2016 is er eigenlijk geen positief bericht meer geweest over crowdfunding vanuit overheid of financiële autoriteiten.” (Interviewee 2)

actors to their role in the system. However, citizen investment through crowdfunding remains a small fraction of the market to this day.

Analytical box 8: Inter-field interactions

SONNET studies the phenomenon of inter-field interactions between various SIE-fields, and how these have enabled or impeded the SIE-field. A particularly related SIE-field is that of Energy Cooperatives (Wittmayer, Fraaije, Hielscher, & Avelino, 2020). These collectives are formalised in the legal form of a cooperative. Cooperatives have an association, a board, and members. In the Netherlands, energy cooperatives have steadily increased over the years. In 2018, there were 484 cooperatives with up to 70.000 members (see Figure 5 below).

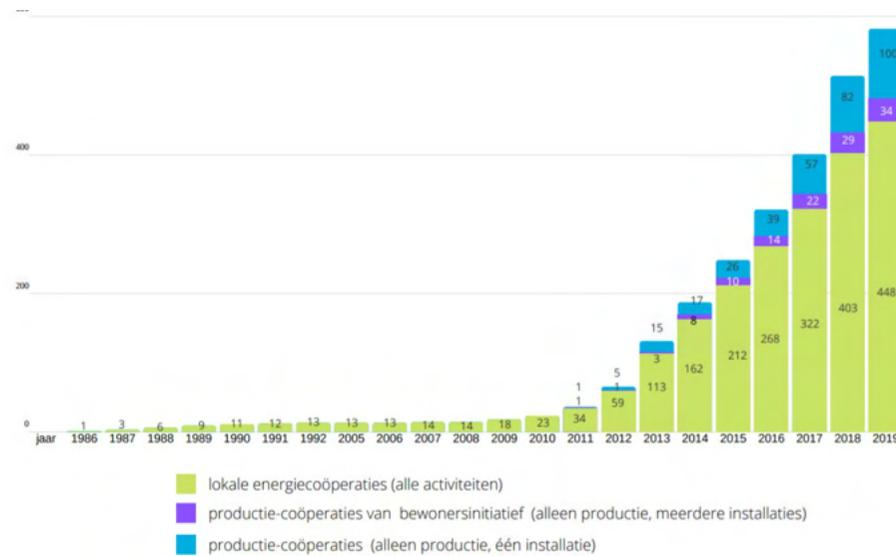


Figure 5: The amount of energy cooperatives has increased over the years. Green: local cooperatives, purple: cooperatives by a housing collective, blue: production cooperatives.

The emergence, development and professionalisation of energy cooperatives has made the field of financing and subsidising RE more accessible to citizens. As discussed in the section ‘New roles, new rules: professionalisation of citizen engagement (ca. 2016)

’, there was an ongoing trend in which banks no longer saw cooperatives and crowdfunders as “*private individuals*” but as “*in fact a collection of private individuals who, together, become so professional that they can take on quite large projects. Well, we are actually seeing a professionalization step, and [...] with the help of an advisor or with someone else, [they are] ultimately being [treated as] a professional customer*”⁶⁷ (Interviewee 7).

Analytical box 9: Regulative, normative and/ or cultural cognitive institutions

SONNET studies the institutions that have shaped the SIE- field. These include regulative institutions (laws, rules, standards, and policies), normative institutions (norms and value systems) and cultural-cognitive institutions (shared conceptions of reality, binding expectations, common beliefs) (Hielscher et al., 2020; Wittmayer, Hielscher, et al., 2020).

Cultural-Cognitive Institution: the dominance of neoliberal thinking

On multiple accounts, the case study illustrates a dominance of a neoliberal logic, in which governments ought to 1) refrain from ‘overstimulating’ the markets, 2) stimulate innovation, and 3) focus on technical innovation.

The perceived risk of government interference and overstimulating markets is marked by interviewee 5: “*The regular financiers act where possible for them. However, it is socially desirable to supplement where this is not done or is not done sufficiently. If this is not done in the right way, it will lead to mutual competition.*”⁶⁸ The fear of government intervention portrays how the Dutch government sees itself. Its activities are strictly stimulating, facilitating. As such, upon asking about the revenues from government loans at the Netherlands Enterprise Agency (NL: Rijksdienst voor Ondernemend Nederland, RVO), interviewee 3 noted that the amount was not significant and “*you should not expect too much from that, because there are also funded projects that fail. It is more, just call it a*

67 NL: “in feite een verzameling van particulieren die die bij elkaar toch dermate professioneel worden dat dat ze best wel grote projecten aan kunnen gaan. Nou we zien eigenlijk een professionaliseringslag, En dat dat nou dan wel met de hulp van een adviseur of met iemand anders erbij, uiteindelijk een professionele klant zijn.” (Interviewee 7)

68 NL: “De reguliere financiers treden op waar dat voor hen mogelijk is. Het is echter maatschappelijk gewenst om aan te vullen waar dit niet of onvoldoende gebeurt. Als dat niet op een juiste manier gaat, werkt dat onderlinge concurrentie in de hand.” (interviewee 5)

*commission, that we receive for a surety scheme, and which is fairly common. And for a loan provided by the Ministry of Economic Affairs, the entrepreneur simply pays interest and repayment.”*⁶⁹

The importance of stimulating innovation is evident through the ample space given by the Authority Financial Markets (AFM) to crowdfunding platforms to develop. Citing a conclusion of their report on supervising the budding crowdfunding sector: “We recommend that (the intensity of) legislation and regulations and supervision be considered to grow with the development of the market. This offers the opportunity to make appropriate regulations, which considers the uncertainties of a market that is developing rapidly and stimulates the market to grow in phases towards a sustainable, responsible and mature sector” (AFM, 2014; p.4). Later, in 2016, when crowdfunding was no longer perceived as a new sector, regulation was enforced again. For a lengthier discussion on the relationship of crowdfunding platforms towards existing institutions, see page 41. This notion also relates to the topic of power, as discussed in Analytical box 5: Power and power relations (power to + power over + power with) on page 34.

Lastly, the neoliberalist approach is evident through the approach towards realising innovation. Global issues such as climate change are addressed through technological innovation, portraying a dominant norm of techno-optimism. In the words of interviewee 3: “The enormous attention to the problems of the planet, governments have started to look globally: what can we do? In the Netherlands, this led to the Topsector [innovation] policy, and to making much more money available to the nice solutions that will come. [...] Yes, that’s high on the political agenda, and has been for years.”⁷⁰

Cultural-Cognitive institution: ‘Professional’ equals entrepreneurship and financial literacy

Professionalism is often understood as financial literacy. For example, a report by the Social Economic Council (NL: Sociaal Economische Raad, SER) of 2016 stated that “Provinces support the initiative to professionalise local energy cooperatives; the experience is that the availability of money is not the problem, but the ability to draw up the business case properly. If you facilitate that better, you can start clustering for a pension fund, for example.”⁷¹ (SER, 2016). Similarly, the Netherlands Environmental Assessment Agency (NL: Planbureau voor de Leefomgeving, PBL) stated that “the absence of professionalism can be an impeding factor as well,” ensuing that “good entrepreneurship is often the basis for flexible financing; the entrepreneur must incorporate technical, economic and social (support) considerations into his approach. The professionalization of entrepreneurship is pursued by sector organizations active in neighborhoods and on location”⁷² (PBL, 2017; p.6). In this same line of thinking, banks started to consider citizens

69 NL: “Daar moet je niet te veel van verwachten, omdat er ook projecten gefinancierd worden die falen. Het is meer, noem het maar een provisie die we voor een borgstellingsregeling ontvangen en die die vrij gangbaar is. En voor een vanuit EZK verstrekte lening betaalt de ondernemer gewoon rente en aflossing.” (Interviewee 3)

70 NL: “Door de enorme aandacht voor de problemen van de planeet zijn overheden wereldwijd gaan kijken: wat kunnen we doen? Dat heeft in Nederland geleid tot het Topsector [innovatie] beleid, en tot het beschikbaar komen van veel meer geld voor de mooie oplossingen die gaan komen. [...] Ja, dat staat hoog op de politieke agenda. Al jaren.”

71 NL: “provincies steunen het initiatief om te komen tot een professionalisering van de lokale energie coöperaties; de ervaring is dat beschikbaarheid van geld niet het probleem is, maar wel het goed kunnen opstellen van de business case. Indien je dat beter faciliteert kun je gaan clusteren voor bijvoorbeeld een pensioenfonds.”

72NL: “Goed ondernemerschap is veelal de basis voor soepele financiering; de ondernemer dient zowel technische, economische als sociale (draagvlak) overwegingen in te bouwen in zijn aanpak. Het professionaliseren van ondernemerschap wordt nagestreefd door brancheorganisaties actief in wijken en op locatie.”

as professionals when they “become so professional that they can take on quite large projects. And [...] with the help of an advisor or with someone else, [they are] ultimately being [treated as] a professional customer”⁷³ (Interviewee 7).

Cultural-Cognitive institution: experience, culture and dominant ways of working

On multiple accounts, the case study demonstrates that the culture of an organisation proved too robust for social innovation (a change in social relations and new ways of doing/thinking/organising in the energy transition). Interviewee 6 remarked that, when he posed the question on why institutional investors did not invest in crowdfunding, he always got the reply that “‘I must be able to put away a hundred million in a year, otherwise it is impossible.’ And the whole crowdfunding market is 200 million. So yes, I will not do that, because then I will have half of the sector and that is really not justified. So, it is too small. You know, it’s normal and it doesn’t fit their calculation model, their way of working. And then I always got the answer: ‘I should be able to invest a hundred million in a year, otherwise it is impossible to invest in crowdfunding projects.’” At the moment, the whole crowdfunding market is 200 million. [...] So, it is too small. [...] It doesn’t fit their calculation model, their way of working.”⁷⁴

Furthermore, local/regional authorities didn’t have the ‘right mindset’ for the energy transition (interviewee 8): “They have already had a career for twenty years, in which they have worked their way up in a certain culture and have been given beliefs and working methods. And that is completely imprinted. And with that programming they are in that chair, so you cannot expect them to do it completely differently in one go”⁷⁵ (interviewee 8).

A final example of how culture can be leading in defining the future focus of an organisation, is that of SVn, the regional energy fund manager. As the company emerged out of the built environment sector, this remains one of their key focus areas in sustainability and the energy transition: “originally, we were very involved with the built environment. [...] Then, sustainability became very dominant. Then we included that. So, if you look where are we active now? That is a bit of building, living and sustainability. That is where we define our boundaries. When there are sustainability operations in the transport sector, for example, that is too far beyond our expertise and we do not interfere with that”⁷⁶ (interviewee 5).

73 NL: “in feite een verzameling van particulieren die die die bij elkaar toch dermate professioneel worden dat dat ze best wel grote projecten aan kunnen gaan. Nou we zien eigenlijk een professionaliseringslag, En dat dat nou dan wel met de hulp van een adviseur of met iemand anders erbij, uiteindelijk een professionele klant zijn.” (Interviewee 7)

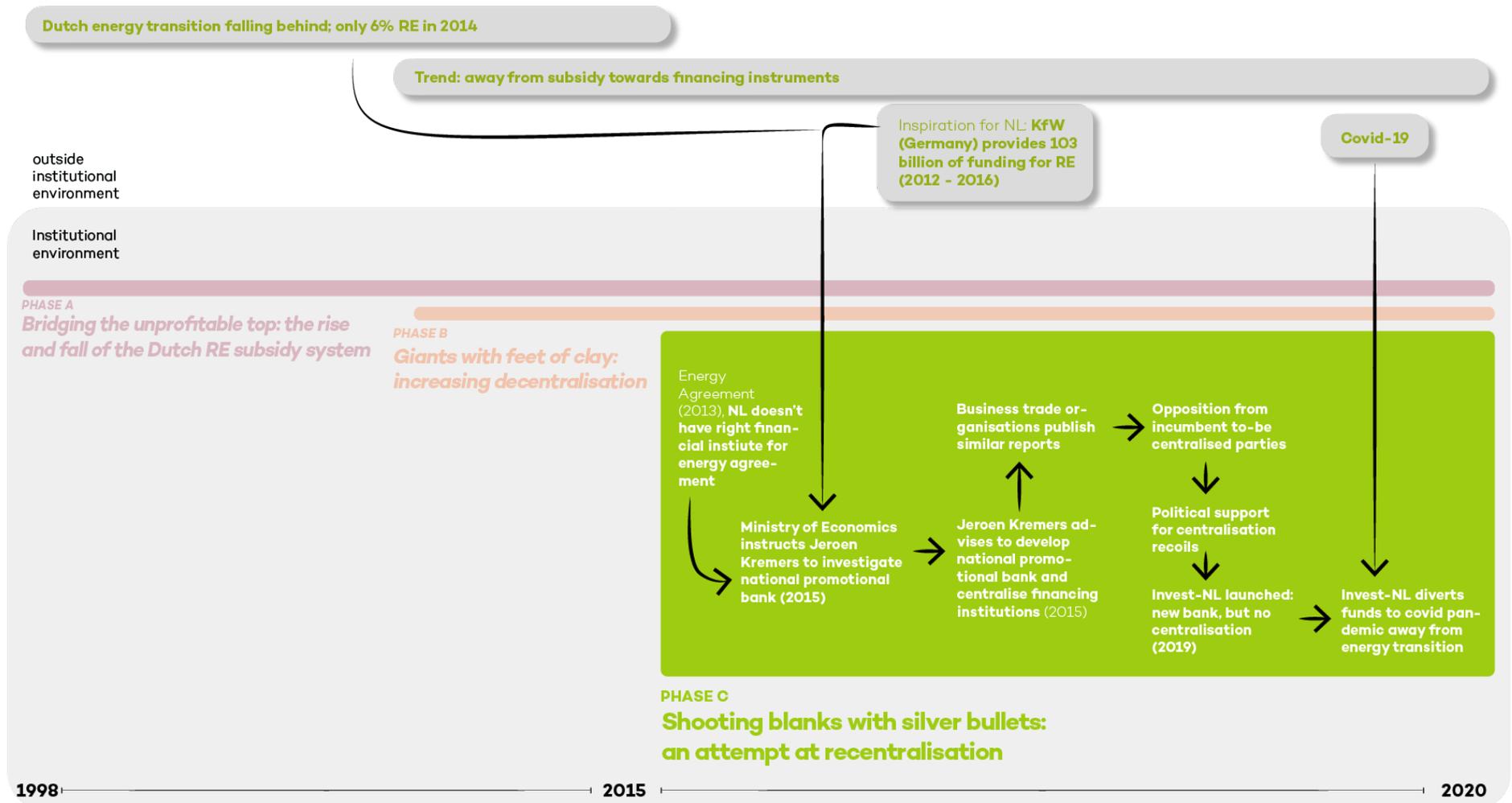
74 NL: “En dan krijg ik altijd het antwoord ja, ik moet in een jaar honderd miljoen weg kunnen zetten, anders is het niet te doen. En de hele crowdfundingmarkt is 200 miljoen. Dus ja, dat ga ik niet doen, want dan heb ik de helft van de sector en dat is echt niet verantwoord. Dus het is te klein. Weet je wel, het is gewoon en het past niet in hun rekenmodel, in hun manier van werken.” (Interviewee 6)

75 NL: “Die hebben natuurlijk al twintig jaar carrière achter de rug, waarin ze in een bepaalde cultuur zich omhoog hebben gewerkt en overtuigingen hebben meegekregen en werkwijze. En dat is helemaal ingeprent. En met die programmering zitten ze op die stoel, dus daar kan je ook niet van verwachten dat ze het in een keer helemaal anders gaan doen.” (Interviewee 8)

76 NL: “orspronkelijk waren we erg van de gebouwde omgeving. [...] Uiteindelijk werd verduurzaming heel dominant. En eigenlijk hebben we dat erbij genomen. Dus als je kijkt waar zijn we nu actief? Dat is een beetje bouwen, wonen en verduurzamen. Dat is dat waar we eigenlijk ons gebied afbakenen. Op de momenten dat de verduurzamings operaties zijn in bijvoorbeeld de transportsector. Ja, dat dat ligt te ver buiten onze expertise en daar bemoeien we ons niet mee” (interviewee 5).

C. Shooting Blanks with Silver Bullets: Attempts at Institutionalising a New Order (2014 - now)

The previous chapter described the waves of decentralisation in organising financing for the energy transition. Through decentralisation, the energy transition had become 'fragmented' and thereby difficult to navigate. The solution was to centralise state financing, a silver bullet would solve the issue around fragmentation as well as provide the high-risk investments the energy transition was lacking at the time. This section traces the emergence and difficulties around the institutionalisation of this silver bullet.



Calls for Change: renewed interest in a national promotional bank (2013-2015)

In the second decade of the new millennium, the Dutch energy transition was falling behind as compared to other European countries, with a RE share of only 6% in 2014 (see also Figure 1 on page 22). A set of agreements on realising the energy transition were deliberated, resulting in an Energy Agreement (see also page 25). The agreement was ambitious, and a report from the Social Economic Board (NL: Sociaal Economische Raad, SER) posed several problems around financing the ambitions as postulated in the Energy Agreement. They found that the absence of a national financing institute made it difficult to link up with European investment initiatives, thus cause the Netherlands to miss out on large budgets. Moreover, they reported that Small Medium Enterprises (SMEs) were difficult to finance (SER, 2014, 2015).

These issues led to a renewed interest in a national promotional bank. National promotional banks are state-owned national financial institutions, which provide funding to projects in benefit of the economic growth of the country. They generally provide high-risk investments to projects that have high upfront costs. An example of a national promotional bank is the German Credit Institute for Reconstruction (GE: Kreditanstalt für Wiederaufbau, KfW). In the Netherlands, the Dutch Investment Bank (NL: de Nederlandse Investeringsbank, NIB) was instated after the second world war to help with reconstruction efforts. However, the NIB was privatised in 1986 within a trend of ongoing liberalisation. In the words of interviewee 4, *“people were asking themselves: But why do we have an investment institution? [...] You had that discussion in all kinds of countries. [...] The Netherlands is, say, a small, flexible country, and it always led the way with things like that [privatisation]. With a lot of privatisations, we were ahead, so there too.”*⁷⁷

The national promotional bank followed a wider trend away from subsidisation towards financing and investing in the energy transition. According to Jeroen Kremers, a former top-banker of ING in an article by news platform Follow the Money: *“Partly thanks to KfW, Germany was able to*

⁷⁷ NL: “Mensen vroegen zich af: maar waarom hebben we eigenlijk een nationale investeringsmaatschappij? [...] Je had die discussie in allerlei landen. [...] Nederland is bijvoorbeeld een klein, flexibel land, en liep altijd voorop met dat soort dingen [privatisering]. Met veel privatiseringen liepen we voor, dus ook daar.” (Interviewee 4)

*implement the Energiewende. The Netherlands is not well prepared for such a shift to financing, the highly fragmented financing landscape is to blame for this*⁷⁸ (Crezee, 2016).

The national promotional bank was also posed as a solution in a broader debate than strictly the energy transition. Firstly, the national promotional bank would fill a gap in the financing landscape of the Netherlands. As put by interviewee 4: *“We miss something in the financing landscape in the Netherlands, namely a party that dares to take certain risks. And all those financial and private financial institutions say yes, we cannot, because those are too great risks.”*⁷⁹ Secondly, the financial crisis of 2008 had resulted in difficulties to provide aid to struggling Small Medium Enterprises (SMEs). This was a stark contrast to countries such as Germany, which had a national promotional bank to take up this role: *“in Germany the KfW took over almost all of the lending to SMEs and in the Netherlands we had no such thing. So here, SMEs just had a big problem getting money”*⁸⁰ (interviewee 4).

Man on a Mission: Institutionalising a New Order (2015-2017)

*“In all fairness when I first heard about that, I thought man, what are you getting yourself into? Because these are kingdoms that do not want to work together at all.”*⁸¹ (Interviewee 4)

Thus, in 2015, the quest for a national promotional bank began. This quest was mainly taken up by Jeroen Kremers, former top-banker and IMF manager. The Ministry of Economic Affairs and Finance instructed him to research whether the newly established Dutch Investment Agency (NL: Nederlands Investerings Agentschap, NIA) could provide the role of a national promotional bank (Kamp, 2015). Hence, Jeroen Kremers published a paper called Netherlands Investment Agency for EFSI: Start-up

78 NL: “Mede dankzij KfW heeft Duitsland de Energiewende kunnen doorvoeren. Op zo’n verschuiving naar financiering is Nederland niet goed voorbereid, het sterk versnipperde financieringslandschap is daar debet aan”

79 NL: “We missen iets in Nederland in het financierings landschap, namelijk een partij die bepaalde risico's durft te nemen. En al die financiële en private financiële instellingen zeggen van ja, wij kunnen dat niet, want dat zijn te grote risico's.” (Interviewee 4)

80 NL: “En in ja, in Duitsland nam dus die KfW bijna de hele kredietverlening aan het MKB over en in Nederland hadden we zoiets niet. Dus hier had het MKB gewoon een groot probleem om aan geld te komen.” (Interviewee 4)

81 NL: “In alle eerlijkheid toen ik daar voor het eerst van hoorde, dacht ik man, wat haal je je op de hals? Want dat is natuurlijk allemaal koninkrijkjes die helemaal niet met elkaar samen willen gaan werken.” (Interviewee 4)

and Further Design, on 8 Oct 2015. He advised to develop the NIA further into a national promotional bank, such as the German KfW. Beyond the introduction of a national promotional bank, Kremers advised a merging of existing institutions, such as the Netherlands Enterprise Agency (NL: Rijksdienst voor Ondernemend Nederland, RVO) and the Entrepreneurial Development Bank (NL: Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden, FMO). the words of interviewee 4: *“We already have an RVO, we have a Dutch water board bank, we have FMO, we have the Dutch municipalities bank, we already have public investment institutions. And what could be better than bringing them all together in one large institution, making it all much more flexible and cheaper?”*⁸² This call for streamlining institutions was not unheard of at the time. For example, in 2015, the cabinet announced to streamline the financing instruments for exports and foreign investments (Ploumen, 2015).

As a response to Kremers’ report, the cabinet announced in 2015 to investigate whether a national financing institution for economic development should be established in the Netherlands. In 2016, Social and Economic Affairs Committee of the Social Economic Council (NL: Sociaal Economische Raad, SER) invited Jeroen Kremers to see how the KfW could provide inspiration for a national promotional bank. Later, Kremers published his paper, titled ‘a Dutch Financing Institution for Economic Development: The German KfW as a source of inspiration’ (Kremers, 2016). In it he refers to the earlier reports of the SER from 2013, 2014 and 2015 on the difficulty in realising the Energy Agreement financially. In the words of Kremers: “those agendas meet here” (Kremers, 2016; p.1). The example of the KfW formed a leading example in the Dutch renewed interest in a national promotional bank. The KfW plays a key role in financing de Energiewende⁸³. Between 2012 and 2016, KfW provided EUR 103 billion of funding for projects in connection with the energy transition (Kuittinen & Velte, 2018).

⁸² NL: “we hebben al een RVO, we hebben een Nederlandse waterschaps bank, we hebben FMO, we hebben de bank Nederlandse gemeenten, we hebben al publieke investeringsinstellingen. En en en wat is er nou mooier dan die allemaal bij elkaar te brengen in één grote instelling, waardoor het nou allemaal veel flexibeler en goedkoper kan gebeuren?” (Interviewee 4)

⁸³ Energiewende: the German energy transition.

In the meantime, entrepreneur trade organisations joined Kremers' mission and started lobbying for a national promotional bank. The entrepreneur association VNO-NCW published a plan like Kremers' national promotional bank, titled the "Next Level Investment Fund" (Weissink & Zeemeijer, 2017). Similarly, other trade associations such as SME Netherlands (NL: Midden Klein Bedrijf Nederland, MKB Nederland) and the Netherlands Agricultural and Horticultural Association (NL: Land- en Tuinbouw Organisatie Nederland, LTO) started to lobby for a national investment fund in The Hague (König, 2017).

No King Wants to Give Up Their Kingdom: Opposition from Incumbent Power

Kremer wanted to bring together several financial institutions and activities of four ministries in 1 fund. As such, the BNG bank for dutch municipalities (NL: Bank voor Nederlandse Gemeenten, BNG), the Dutch Water Board Bank (NL: Nederlandse Waterschapsbank, NWB), the Netherlands Enterprise Agency (NL: Rijksdienst voor Ondernemend Nederland, RVO) were to form one central Netherlands Financing Institution for Economic Development (König, 2017). According to Kremers' calculations, this merge would yield 3 billion in savings.

However, this plan didn't go down well with the parties involved. The Bank of Dutch Governments (NL: Bank Nederlandse Gemeenten) also oppose the merger. In the words of financial specialist Jan van der Lei: "*Kremers conjures money out of the hat and chases the municipality on costs*". He continues that "civil servants in The Hague must repent quickly". In his words, "a new financing institution is fine, but without BNG ". Menno Snel, director of NWB, also expressed concern about the plan. He warned his contacts at the Ministry of Finance and Economic Affairs. He stated that he did not believe that "you get a good sausage if you put three institutions in a meat grinder" (Weissink & Zeemeijer, 2017). He was also concerned that the merger of two competitors, BNG and NWB, would create a monopolistic situation with negative consequences for customers. The latter argument was opposed by housing corporations, who had informed Kremers that they liked the plan. According to

interviewee 4, these parties opposed the merger *“basically just because every kingdom had a king and no king wants to give up their kingdom. And nobody wanted to break through that either.”*⁸⁴

All this criticism made political support for Kremers’ plans recoil (Weissink & Zeemeijer, 2017). However, his plan wasn’t abolished completely. A proposal for a separate national promotional banking institution became adopted by the Senate and the House of Representatives in 2019. Consequently, on January 16th, 2020, a national promotional bank came into being: Invest-NL (EZK, 2020).

A Warm Welcome: Scaling up with the Daredevil

Invest-NL provided a new player in the financing landscape of the energy transition. Its arrival was welcomed by other financiers of energy projects, such as the regional energy funds.

The regional energy funds had already been able to provide risk capital. However, its budgets were often limited, making it difficult to meet the financial needs of large energy projects (Greendeals.nl, 2020). In the words of A. Potze, a policy worker at a regional authority, Invest-NL was to aid the energy transition in scaling up novel technologies: *“Until now, the Netherlands lacked the facility for really large investments, such as you have in almost all European countries. That slows down the development of the energy transition. We are now in the upscaling phase, in which proven technologies for solar and wind energy are realized with private money. Because these projects have a good predictable return. But it is different with riskier technologies such as geothermal energy, where a lot of money is involved with a more uncertain outcome.”*⁸⁵ (Greendeals.nl, 2020).

The arrival of Invest-NL led to new collaborations within the energy financing landscape. On January 16th, 2020, 15 regional energy funds and Invest-NL signed an agreement that states that they will

⁸⁴ NL: “Ik denk in de kern gewoon omdat elke elk koninkrijkje had een koning en geen koning wil ze koninkrijken afgeven. En daar had ook niemand had zin om daar doorheen te gaan gaan breken.” (Interviewee 4)

⁸⁵ NL: “In Nederland ontbrak tot nu toe de faciliteit voor echt grote investeringen, zoals je die in bijna alle Europese landen wel hebt. Dat vertraagt de ontwikkeling van de energietransitie. We zitten nu in de opschalingsfase, waarbij bewezen technologieën rond zon- en windenergie wel gerealiseerd worden met privaat geld. Want deze projecten hebben een goed voorspelbaar rendement. Maar anders is het bij risicovollere technologieën zoals geothermie, waarbij veel geld gemoeid is met een meer onzekere uitkomst.” (Greendeals.nl, 2020)

collaborate to accelerate the energy transition together, mainly by financing unknown or complex technologies with an uncertain or longer payback time (Greendeals.nl, 2020).

Analytical box 10: Invest NL (SIE-I)

Invest-NL is the largest investment fund of the Netherlands with 1.7 billion euro risk capital available to invest in innovative scale-ups and fast growing companies that contribute to the energy transition (EZK, 2020; Thole, 2020). Specifically, Invest-NL focuses on electrification, circularity, agrifood, the built environment and industrial technologies, within the energy transition. The requirements for funding by Invest-NL are a minimal investment of 5 million euros, collaboration with other financiers, and a maximum of 50% of the shares minus one (Thole, 2020).

Invest-NL was established in 2019 and aimed to allow companies and/or projects that contribute to major societal transitions to get funded by market parties. Another aim was to provide risk capital, which was perceived to be lacking as compared to i.e. Germany or the U.K (EZK, 2020; Thole, 2020). Therefore, the national government created Invest-NL to provide funding to projects that would otherwise not be able to receive funding. This is possible because Invest-NL has access to European resources and receives risk capital from the government that is used to fund projects with high risks, long maturities and that require large amounts of money (Invest-NL, n.d.-a; Ministry of Economic Affairs and Climate, 2020). They describe themselves as ‘impact investors’ and their philosophy is: “*Impact is our goal, yield is our tool*”⁸⁶ (Invest-NL, n.d.-a, n.d.-b).

Invest-NL is a private company headed by Wouter Bos (former Dutch politician of the Labour Party) that is funded with public resources (EZK, 2020; Invest-NL, n.d.-b). Invest-NL has 50 employees. The organizational structure is a shareholding company, with the Ministry of Economic Affairs and Climate as shareholder (Invest-NL, n.d.-b). The shareholder has appointed a Supervisory Board that supervises the management of Invest-NL. Despite the Ministry being the shareholder, Invest-NL independently decides which projects to fund (Invest-NL, n.d.-c).

⁸⁶ NL: “Impact is ons doel, rendement is ons middel”

Cracks in the Dream: Risk-aversion and Covid-19

Invest-NL was presented as a silver bullet to provide risk capital to innovative scale-ups and SMEs, and was given a warm welcome by existing financiers. However, two recent developments challenge the ability of Invest-NL to live up to its expectations.

Originally, Invest-NL aimed to invest most of its funds into the energy transition. However, since the **outbreak of covid-19** and ensuing pandemic, Invest-NL retracted their initial promises to the energy transition and instead made 100 million euros available for the Temporary bridging loan for innovative start-ups and scale-ups (NL: Tijdelijke Overbruggingskrediet innovatieve start- en scale-ups, TOPPS) (Hueck, 2020). TOPPS is mainly used to support companies from collapsing and is at the expense of investments in the energy transition. According to its CEO Wouter Bos, the energy transition will receive 1/5 or up to 4/5 of the amount of funds made available for TOPPS (Figure 6).

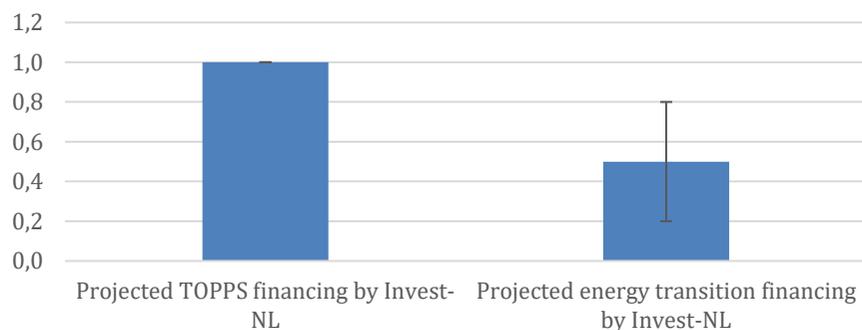


Figure 6 The amount of financing for the energy transition is 1/5- 4/5th the amount of financing made available for covid-19 TOPPS financing. The y-axis is a relative scale, with TOPPS' financing standardised to 1.

Furthermore, trade organisation Entrepreneurial Netherlands (NL: Ondernemend Nederland, ONL) complained that Invest-NL is still too risk-averse. In their perspective, the minimum loan of 5 million euros doesn't cater to the SMEs for which the national promotional bank of Kremers was initially intended (van Zilver, 2020). In the words of interviewee 4: *"...the most important was, we have a*

gap when it comes to co-financing risk-bearing innovative enterprises. Especially in the field of sustainability. So therefore Invest-NL was created. I think that should have covered 80% of the problem. However, the big question remains: what is Invest-NL going to do exactly? And I do not hear good stories about that. So, in practice Invest-NL appears to be risk-averse. And to me ..., that is a pity”⁸⁷.

For analytical reflections on the institutionalisation of Invest-NL, see also Analytical box 11: Institutional work conducted by SIE-field actors and other field-actors.

Analytical box 11: Institutional work conducted by SIE-field actors and other field-actors

SONNET studies the institutional work of actors, defined as the activities of SIE-field-actors and other field-actors that aim to create, maintain and transform regulative, normative and/ or cultural-cognitive institutions (Hielscher et al., 2020; Wittmayer, Hielscher, et al., 2020). This builds on the definition of institutional work by Lawrence & Suddaby: “the purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions” (Lawrence & Suddaby, 2006; p.215). In this analysis, we will use the typology of institutional work by Funfschilling & Truffer (2016), which distinguish between various forms of institutional work (see Table 6).

Table 6 Types of institutional work, copied from Funfschilling & Truffer, 2015, as adapted by Lawrence & Suddaby, 2006.

Forms of institutional work	Definition
Advocacy	The mobilization of political and regulatory support through direct and deliberate techniques of social suasion
Defining	The construction of rule systems that confer status or identity, define boundaries of membership or create status hierarchies within a field
Vesting	The creation of rule structures that confer property rights
Constructing identities	Defining the relationship between an actor and the field in which that actor operates
Changing normative associations	Re-making the connections between sets of practices and the moral and cultural foundations for those practices
Constructing normative networks	Construction of interorganizational connections through which practices become normatively sanctioned and which form the relevant peer group with respect to compliance, monitoring and evaluation
Mimicry	Associating new practices with existing sets of taken-for-granted practices, technologies and rules in order to ease adoption
Theorizing	The development and specification of abstract categories and the elaboration of chains of cause and effect
Educating	The educating of actors in skills and knowledge necessary to support the new institution

⁸⁷ NL: “het belangrijkste was van joh, we hebben gewoon een gat als het gaat om, zeg maar het meefinancieren risicodragend in echte innovatieve ondernemingen. Juist op het gebied van duurzaamheid. Dus dus invest-NL is daar uitgekomen. En volgens mij is dat dus heb je daarmee 80 procent van het probleem had je kunnen oplossen. De grote vraag is alleen nu wat gaat Invest in NL nou precies doen? En daar hoor ik gewoon niet zulke hele goede verhalen over. Dus dus het idee is dat Invest-NL toch best wel risicomijdend is. En dat is volgens mij echter de de dood in de pot, dat is heel jammer.” (Interviewee 4)

The case study demonstrates various accounts of institutional work, the most prominent being the **quest for a national promotional bank Invest-NL**. The promotional bank was to solve the lack of high-risk investment capital in the Netherlands, provide financing to SMEs and take up after the German KfW in financing the ambitious goals of the energy transition. The work was conducted through advocacy, theorizing and educating by former top-banker Jeroen Kremers, who had close ties with the Ministry of Economics and Finance. Kremers was joined by business trade organisations VNO-NCW and Netherlands Agricultural and Horticultural Association (NL: Land- en Tuinbouw Organisatie Nederland, LTO), who started to advocate and educate for the same goal, publishing their positive reflections in reports (König, 2017; Weissink & Zeemeijer, 2017).

Kremers goals were bifold: 1) to create a national promotional bank to stimulate economic development of the Netherlands, and 2) to merge existing government institutions into a central financing institute. According to Kremers, the latter would lead to substantial government savings and decreased fragmentation of the financing landscape. However, his ambitious plans didn't go down well with the parties involved. The Bank of Dutch Governments (NL: Bank Nederlandse Gemeenten, BNG), the Dutch Waterboard Bank (NL: Nederlandse Waterschapsbank, NWB) and the Dutch Entrepreneurial Development Bank (NL: Nederlandse Financierings-maatschappij voor Ontwikkelingslanden, FMO) were informed of the plans and reacted critically (Weissink & Zeemeijer, 2017). For example, Menno Snel, director of NWB, stated that he did not believe that “you get a good sausage if you put three institutions in a meat grinder” (Weissink & Zeemeijer, 2017). According to interviewee 4, these parties opposed the merger “*basically just because every kingdom had a king and no king wants to give up their kingdom. And nobody wanted to break through that either.*”⁸⁸ All this criticism made political support for Kremers' plans recoil (Weissink & Zeemeijer, 2017). However, his plan wasn't abolished completely. His primary goal for creating a national promotional banking institution became adopted by the Senate and the House of

⁸⁸ NL: “Ik denk in de kern gewoon omdat elke elk koninkrijkje had een koning en geen koning wil ze koninkrijken afgeven. En daar had ook niemand had zin om daar doorheen te gaan gaan breken.” (Interviewee 4)

Representatives in 2019. Consequently, on January 16th, 2020, a national promotional bank came into being: Invest-NL (EZK, 2020).

In conclusion, while Kremers was thus successful in creating a new regulatory institution (Invest-NL), he was not able to replace existing regulatory institutions, as those in power (BNG, RVO, NWB, FMO) were actively maintaining their institutions, eventually leading to political recoil.

The story of institutionalising Invest-NL shows three phases of institutional work: 1) a transformative institution is presented, 2) maintaining institutions oppose the transformative institution and 3) an institution is created as an alternative to the transformative institution.

The story around the institutionalisation of a national promotional bank is an example of sociologist's DiMaggio's 'institutional entrepreneurship', where "new institutions arise when organized actors with sufficient resources [institutional entrepreneurs] see in them an opportunity to realize interests that they value highly" (DiMaggio, 1988; p.14). As described in Lawrence, Suddaby, & Leca (2009), institutional entrepreneurs are often presented as 'heroic', making large-scale, visible and dramatic changes to existing institutions.

6. Summary, synthesis and conclusions

6.1 How do SIEs and SIE-fields emerge, develop and institutionalise over time?

6.1.A Who are relevant SIE-field-actors and other field-actors within the SIE-field and what are their roles within the SIE-field? How have these changed over time?

The most relevant SIE-actors are **financial institutions** (banks, institutional investors, crowdfunding platforms), **citizen initiatives** (energy cooperatives) and **governments** (authority financial markets, local, regional, national and European governments). To provide an indication as to which roles these actors have played in the SIE-field over time, we will use the multi-actor perspective of Avelino & Wittmayer (2015) (Figure 8).

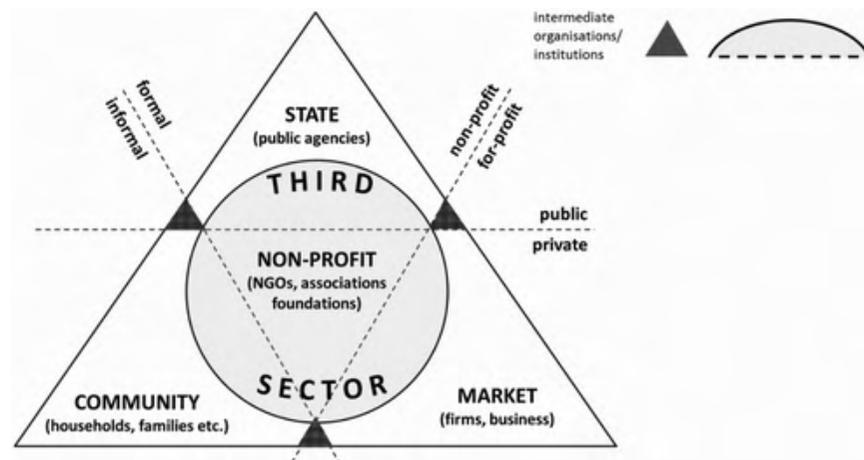


Figure 7 Multi actor perspective of Avelino & Wittmayer (2015) as adopted from Evers and Laville (2004, p. 17).

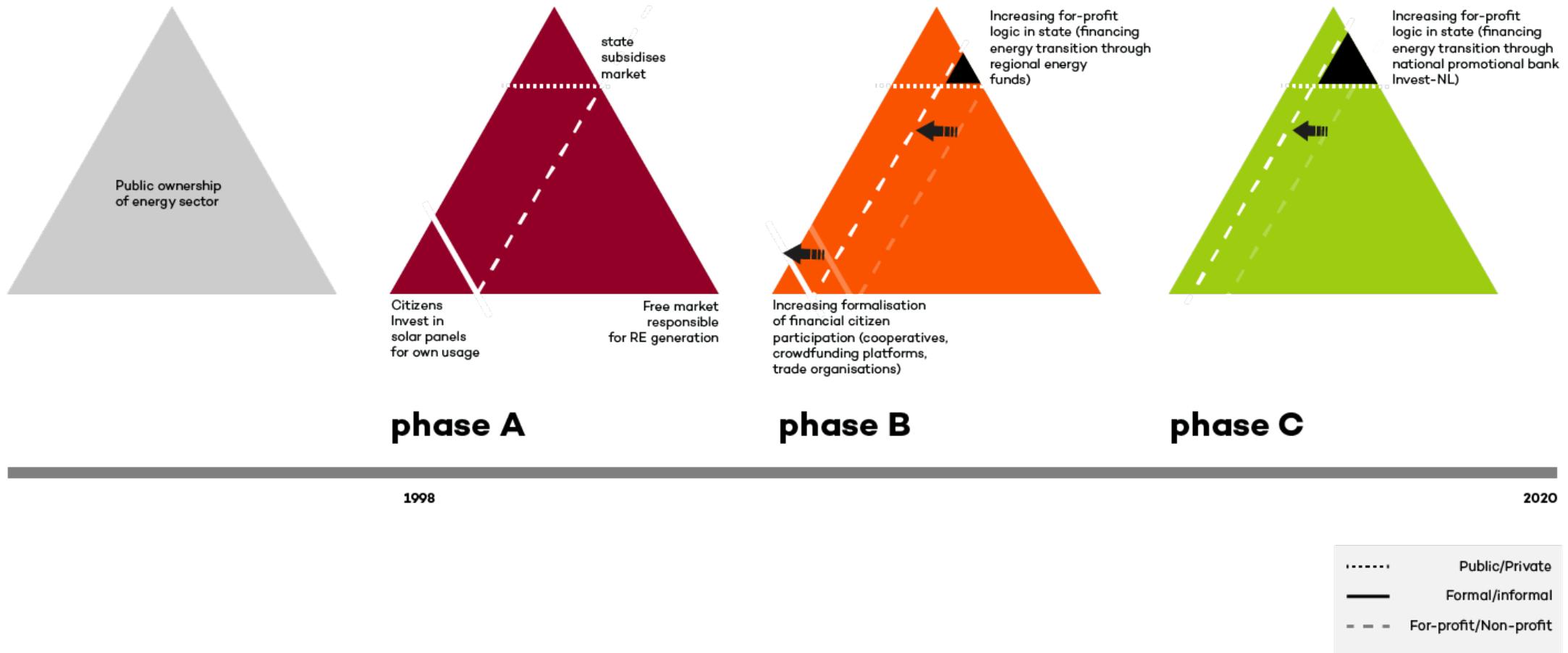


Figure 8 The multi-actor perspective (Avelino & Wittmayer, 2015) as applied to this case study. The figure shows that the SIE-field increasingly formalises and privatises over time. It also shows an increasing for-profit logic within the state.

Three observations are evident when looking at the case study through the multi-actor perspective (Figure 9):

- 1) Increasing **formalisation** within SIE-field (within the community sphere);
- 2) Increasing **for-profit logic** within the SIE-field (within community as well as state spheres);
- 3) Increasing **privatisation** of the SIE-field (from state monopoly to free market).

6.1.B What are relevant activities, aims/goals and narratives that have been developed and manifested by SIE-field-actors and/ or other field-actors within the SIE-field over time?

Over time, actors have taken up diverse activities (see Figure 11): i.e. lobbying for or against the institutionalisation of crowdfunding, lobbying for or against a national promotional bank or formalising into cooperatives or trade organisations.

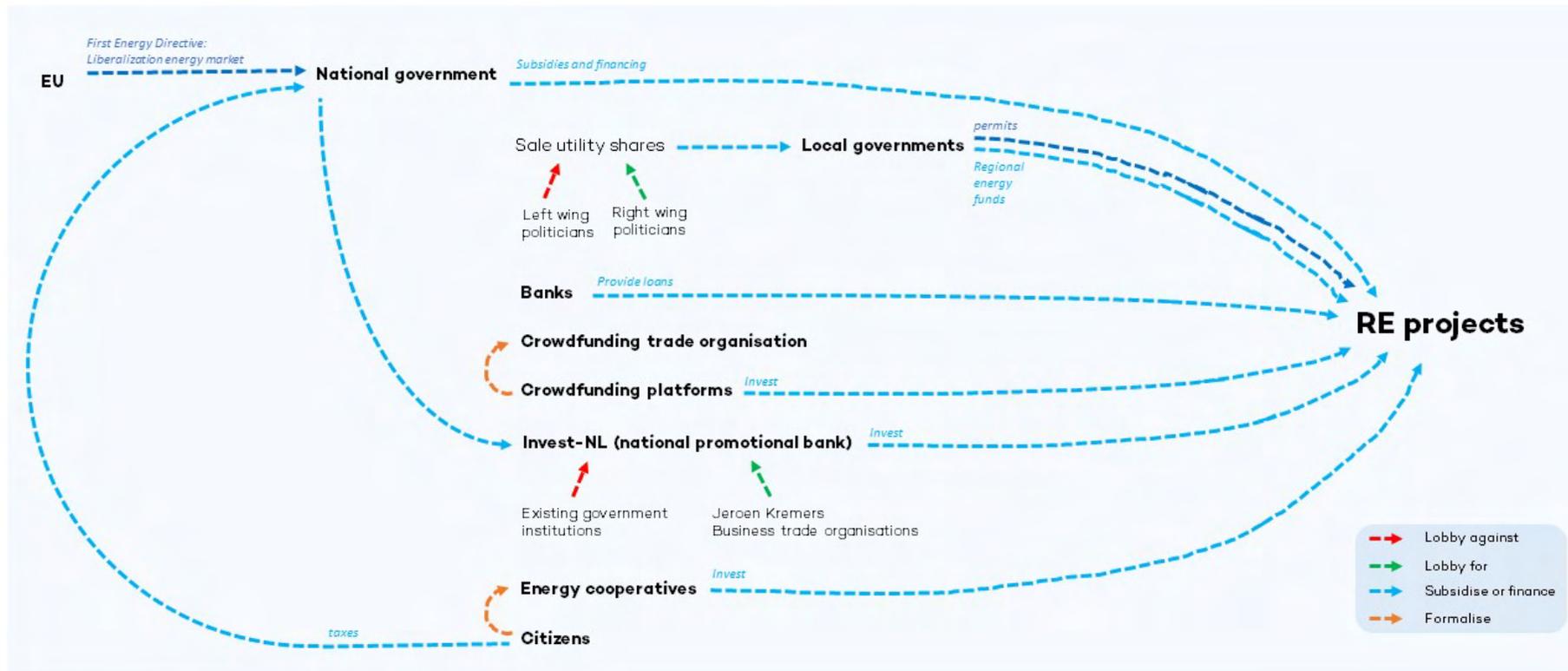


Figure 9 Activities of actors in this SIE-field: subsidising or financing (blue), lobbying for (green) or against (red), and formalising (orange).

Table 7 Relevant activities and narratives developed and manifested by SIE-field actors and other field-actors over time.

Phase	Actor	Activity	Activities and the associated narrative
A	European Union	Privatise	Privatising the energy sector of member states to increase efficiency and economic growth.
A	National government	Subsidise	Subsidising the newly created free market to make RE projects profitable.
B	Decentral governments	Finance	Sold utility shares and started financing the energy transition with the profits, moving away from subsidies, in order to be 'smarter with money'.
B	National government (Authority Financial Markets and Ministry of Economics)	Enforce regulation	Initially, the national government takes a passive role towards crowdfunding: they do not enforce crowdfunding platforms in order to stimulate innovation. Later, the government switches their approach and starts enforcing regulation and takes a more hesitant tone towards crowdfunding.
B	Crowdfunding platforms	Crowdfund	Sourcing the crowd to increase financial citizen participation in the energy transition.
B	Crowdfunding platforms	Lobby for	Further institutionalising crowdfunding within legislation to ensure that banks are forced to refer to crowdfunding platforms if they reject a proposal by an entrepreneur, in order to increase financial citizen participation in the energy transition.
B	Banks	Lobby against	Put a stop to the further institutionalisation of crowdfunding by lobbying against the proposed legislation (see previous row).
C	Jeroen Kremers, LTO, VNO-NCW	Lobby for	Lobbying for a national promotional bank and the centralisation of government financing institutes
C	BNG, NWB, FMO, VNG	Lobby against	Lobbying against the centralisation of government financing institutes
C	National Promotional Bank Invest-NL	Finance	Invest-NL was established in 2019 and aimed to allow companies and/or projects that contribute to major societal transitions to get funded by market parties. Another aim was to provide risk capital, which was perceived to be lacking as compared to i.e. Germany or the U.K (EZK, 2020; Thole, 2020).

The **motivations behind these activities** are diverse. Several examples will be discussed in this paragraph. In phase A, the government wanted to **privatise and subsidise to stimulate innovation and efficiency in the energy market**. In phase B, governments started financing rather than subsidising, in order to gain profits on their investments and to **stop being 'mad-Hank who just spends money'** (see also phase B). Another narrative that has been developed is that of **financial citizen participation**, where citizens, formalised into cooperatives or crowdfunding platforms to partake financially in the energy transition (see also phase B). Another interesting narrative that has been developed is that of **centralisation, in order to increase efficiency**. This narrative has been put forward by those behind the institutionalisation of the national promotional bank Invest-NL: Jeroen

Kremers, and business trade organisations (see also phase C). The narrative was contested by the institutions that were to be centralised, such as RVO, BNG, VNG and NWB.

The **creation of narratives** was less at the surface of this case study. In order to provide insight into this analytically, more research would be necessary.

6.1.C What types of interactions/ relations exist between SIE-field-actors and/ or other field-actors? What types of informal and formal alliances, networks, collaborations have existed (and possibly still do)?

This section describes the relationship between formalisation, professionalisation and power through two types of networks: tangible and intangible networks.

Tangible networks: Formalisation of citizens increases professionalisation

In this SIE-field, citizens have formalised into networks, associations or cooperatives. Examples of this include energy cooperatives, crowdfunding platforms, and the crowdfunding trade organisation. According to an interviewee, citizen formalisation coincided with them being increasingly recognised as professional actors within the SIE field. This relationship between formalisation and professionalisation also emerges from the example of crowdfunding. Here, the crowdfunding trade platform was specifically initiated because the Ministry of Economics wanted to further professionalise the crowdfunding sector. They feared the lack of professionalisation would potentially harm citizen investors.

Co-financing creates invisible networks

Figure 11 indicates the relationships between actors in this field. It portrays the high level of co-financing (also referred to as ‘stack financing’) currently evident. RE projects gather their funds from a variety of sources of funding. The argument could be made that this high level of co-financing creates invisible or informal networks between the associated actors: each actor provides a different

piece to the puzzle. Governments and crowdfunding provide the high-risk financing in the beginning of the project, and because of that, banks are able to come in later with less risky financing.

6.1.D How can the interactions/relations between SIE-field-actors and/ or other field-actors be characterised (e.g., cooperation, exchange, competition and conflict)? How have they changed over time?

Before this case study, the energy market was in public hands. However, after the **liberalisation** of the energy sector in 1998, the market opened, marking the kick-off of **market competition** in the energy sector.

In this first phase, **the government was cooperative towards the energy sector**: the market was to be supported, stimulated and facilitated by ‘bridging the unprofitable top’ of innovation through subsidies (MEP, SDE(+ / ++)) in order to reach the shared goal of increased RE in the Dutch energy sector. In later years, as the market and technology matured, **the government’s attitude changed towards exchange**: the government started to expect a return on their investment (Invest-NL and the regional energy funds). At the same time, **emerging niches started to compete with the incumbent actors** of the system through providing an alternative option.

Overall, the case study thus demonstrates how **relations in this field changed from cooperation, towards competition and exchange**.

6.1.E What is ‘socially innovative’ about the SIE (including SIE-initiatives and/ or SIE-field-actors)? How and to what extent do which ideas, objects and/or actions demonstrate a change in social relations and new ways of doing, thinking and/or organising energy?

In SONNET, social innovation is defined as combinations of ideas, objects and/or actions that change social relations and involve new ways of doing, thinking and/or organising energy (Avelino et al., 2019; Pel et al., 2020; Wittmayer, Hielscher, Rogge, & Avelino, 2020). This field discusses the social innovation rendered by finance and subsidy mechanisms for solar and wind energy. The socially innovative aspect is the fact that these mechanisms change the social relations amongst actors (i.e. municipalities, national governments, banks, institutional investors, citizens) and change their current way of doing, thinking and/or organising. The extent at which this case study is ‘socially innovative’ will be analysed through the changing of actor roles in the system.

Finance and Subsidy mechanisms for Solar and Wind in the Netherlands

Over the course of a decade, finance and Subsidy mechanisms for solar and wind have shifted from **subsidy-based**, to **funding-based** (see Table 2). The SIE-field also demonstrate a change in **centralised** mechanisms (MEP, SDE, SDE+, SDE++ subsidies), towards **decentralised** mechanisms (crowdfunding, regional energy funds), and an attempt to **re-centralise** financing mechanisms through a national promotional bank. These changes are mainly driven by ongoing waves of **privatisation**, and a **neoliberal political climate** and **large market-logic** (see Analytical box 9: Regulative, normative and/ or cultural cognitive institutions).

Table 8 Main finance and subsidy mechanisms for solar/wind RE in the Netherlands discussed in this case study

Mechanism	Year	Type	Actors involved	Changed roles	Characterising quote	Page
MEP, SDE, SDE+, SDE++	2008	Subsidy	National government, RE project developers	These were the first large-scale subsidy after privatisation, thus marking a new role for the government: stimulating a free market, rather than utility ownership.	<i>“A huge palette of energy innovation subsidies has passed [the department where I work] [...] which make it</i>	15

					<i>possible for entrepreneurs to try to bring their innovation to market</i> ⁸⁹	
Regional Energy Funds	Ca. 2012	Funding	Local/regional governments and RE project developers and utilities	The sale of utility shares shifted the role of local/regional governments: from being shareholders in a utility, they now had access to funds for energy-labelled loans. It also marked an increasing trend of decentralisation in the energy transition.	<i>"We have become more business-minded. We shouldn't be 'mad Hank' who just spends money. We also want to see revenues."</i> ⁹⁰	25
Crowdfunding	Ca. 2012	Funding	Citizens and RE project developers	The rise of crowdfunding (and energy cooperatives) resulted in increased citizen engagement in financing wind and solar projects. In particular, the increase of financial literacy in energy cooperatives shifted citizens from informal actors, to professionals.	<i>"Within a timeframe of a few years, there is a very small part of the Netherlands that thinks crowdfunding is a thing. But I think that 80 percent of the Netherlands really or more 85 cents for the Netherlands has no clue what crowdfunding is."</i> ⁹¹	33
State loans (from promotional bank)	2020	Funding	Government institutions, business lobby organisations, Jeroen Kremers (former top-banker)	The renewed institutionalisation of a national promotional bank (Invest-NL) challenged – but didn't succeed in - the merge of governmental institutions. It did mark a change in tide of government attitude towards RE, away from subsidisation towards financing.	<i>"...the most important was, we have a gap when it comes to co-financing risk-bearing innovative enterprises. Especially in the field of sustainability. So therefore Invest-NL was created. [...] in practice Invest-NL appears to be risk-averse. And to me ..., that is a pity."</i> ⁹²	53

Two types of role changes in the SIE-field

⁸⁹ NL: "binnen mijn afdeling waar ik dan werk is een enorm palet aan energie innovaties subsidies voor diverse ontwikkelingen gepasseerd, [...] die het voor ondernemers mogelijk maken om met een subsidie op de markt proberen te brengen." (Interviewee 3)

⁹⁰ NL: "We zijn zakelijker geworden. We moeten niet gekke Henkie zijn die maar geld uitgeeft. We willen ook revenuen zien."

⁹¹ NL: "So but that is within a time frame of a few years, there is a very small part of the Netherlands that thinks crowdfunding is a thing. But I think that 80 percent of the Netherlands really or more 85 cents for the Netherlands has no bloody clue, which is crowdfunding." (Interviewee 2)

⁹² NL: "het belangrijkste was van joh, we hebben gewoon een gat als het gaat om, zeg maar het meefinancieren risicodragend in echte innovatieve ondernemingen. Juist op het gebied van duurzaamheid. Dus dus invest-NL is daar uitgekomen. En volgens mij is dat dus heb je daarmee 80 procent van het probleem had je kunnen oplossen. De grote vraag is alleen nu wat gaat Invest in NL nou precies doen? En daar hoor ik gewoon niet zulke hele goede verhalen over. Dus dus het idee is dat Invest-NL toch best wel risicomijnd is. En dat is volgens mij echter de de dood in de pot, dat is heel jammer." (Interviewee 4)

Several actors in this case study took up new roles (Table 8). However, the analysis demonstrates that there are two types of role innovation in this case study (Table 9). The difference is that the first is only innovative to the actor itself and the second is innovative to the SIE-field. A new role for the SIE-field is also innovative to the actor itself (Figure 11).

Table 3 demonstrates several examples of these various types from the case study. For example, crowdfunding platforms and energy cooperatives changed the role of citizens from consumers, to investors. The *investor* role itself was not new to the SIE-field at the time, as banks were also investing in the energy transition. Therefore, the change in role from consumers to investors was only innovative in respect to the citizens themselves. This illustrates a change in role within the current system of roles, and thus not a dramatic change of the system of roles.

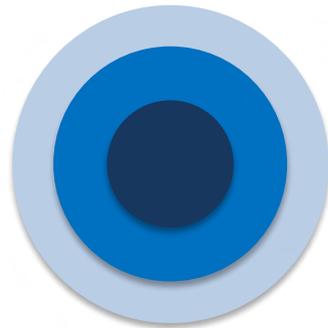
Another example is the change in role of the government from utility owner to the stimulator of the free market around the liberalisation of the energy market. Before liberalisation, there was no *stimulator* (through subsidies) in the SIE-field. Thus, the change in role of the government also marked a new role for the SIE-field.

Lastly, an observation worth noting and which will be further examined in 6.1.H, is that the creation new role for a certain actor might come with legitimising power. For example, banks started referring to citizens as 'professional' SIE-actors once citizens became formalised into energy cooperatives and institutionalised in the Energy Agreement which listed them as a 'pillar of the energy transition' (interviewee 4).

Table 9 Type of role innovations in this case study for actors, the SIE-field and the outside institutional environment

Type of role innovation	Innovative role in respect to...	Examples from case study (non-definitive)		
		Mechanisms	Actor	Phase <i>old role</i> → <i>new role</i>
New role for a certain actor	the actor itself	Crowdfunding platforms and energy cooperatives	Citizens	B <i>Consumers</i> → <i>investors</i>
New role for the SIE-field	the SIE-field	Subsidies (MEP, SDE, SDE+, SDE++)	National government	A <i>Utility owner</i> → <i>stimulator of a free market</i>
		Regional Energy Funds	Decentral governments	B <i>Utility owner</i> → <i>investor</i>
		Investments (Invest-NL)	National government	C <i>Stimulator</i> → <i>investor</i>
<i>New role for the outside institutional environment⁹³</i>	<i>the wider system</i>	<i>n/a</i>	<i>n/a</i>	<i>n/a</i>

Figure 10 The types of role innovation are often overlapping: when an actor gets a new role which is innovative for itself, this might not be innovative for the outside institutional environment.



New role for a certain actor

New role for the SIE-field

New role for the outside institutional environment

⁹³ This case study does not show any examples in which a new role of an actor posed a new role of the wider institutional system. More research has to be done on this topic to clarify this further. Thus this category remains hypothetical at this point.

6.1.F How has the SIE developed over time (and space)?

The first chapter, 'Bridging the Unprofitable Top: The Rise and Fall of The Dutch RE Subsidy System (ca. 1998 - 2020)', lays out the rise of a national subsidy system for RE between 1998 and 2016. In the years thereafter, the Netherlands gradually shifts its weight from subsidisation towards financing solar and wind energy.

In the wake of ongoing privatisation of the energy sector, regional energy funds emerged around 2012. These, as well as the Energy Agreement of 2013, placed decentral governments central stage in realising the energy transition. Around the same time, citizens started participating in the energy transition through shareholding in crowdfunding platforms and energy cooperatives. Financial participation became synonymous with citizen participation, which was applauded by policy-makers for its potential to solve Not-In-My-Backyard behaviour (NIMBYism). Citizen participation became institutionalised as an important pillar of the Dutch energy transition in the national Energy Agreement of 2013. In the meantime, crowdfunding platforms were no match for the massive Dutch financial sector. Because of cultural, normative and regulative institutional barriers maintained by the national government and the financial sector, the Dutch crowdfunding sector remained small as compared to the U.K or the U.S.

The last chapter marks the story of the institutionalisation of a national promotional bank, Invest-NL. The bank was to solve the lack of a high-risk investor in the Dutch financing landscape. Although the bank was eventually launched in 2019, with a budget of 1.7 billion euros, it is currently unclear as to whether it will be able to realise its ambitious goals of financing the energy transition. Most funds have been redirected towards the covid-19 pandemic, and it appears that the bank is more risk-averse than initially intended.

6.1.G How/ to what extent do narratives and activities by SIE-field-actors and other field-actors refer to power issues and include ambitions to improve them?

As portrayed in Table 7, showing the narratives of SIE-actors over time, there are roughly three narratives developed in this SIE-field:

1. **Privatisation and liberalisation will lead to increased efficiency of the energy system and heightened economic growth.** It is a way for governments to be ‘smarter with money’. This narrative comes back in the following instances: the EU’s First Energy Directive (1996) and the Dutch Electricity and Gas Act (1998) leading to energy sector liberalisation and the sale of the utility shares leading to the emergence of regional energy funds for local/regional governments (ca. 2010).
2. **Subsidisation is mad, investment is smart.** This narrative manifests in phase B, where regional governments want to ‘stop playing mad Hank’ by ‘just spending money’ through subsidisation, and instead want to invest in the energy transition through regional energy funds. Around the same time, citizen investment arises, and the call for a national investment institute (which would later become Invest-NL) emerges. What these trends have in common is that investment is positioned in all of these dynamics as a way to be smarter with money as compared to its predecessor (subsidisation or letting the money rest on bank accounts of individual citizens).
3. **Financial citizen participation is a crucial ‘pillar of the energy transition’.** This narrative is represented mainly in phase B, where financial citizen participation formalises into energy cooperatives, crowdfunding platforms and a crowdfunding trade organisation. It becomes institutionalised within the Energy Agreement (2013) which states that citizens are an ‘important pillar for the energy transition’. The institutionalised narrative becomes dominant in the way of thinking and working in other SIE-actors, such as banks. As described by interviewee 4, banks start considering citizens as ‘professional actors’ rather than individual customers.

In a way, all narratives relate to power issues. The former narrative aims to **increase the power of the market**, by stimulating market-driven innovation. The later narrative emerged out of a need to **increase the power position of citizens** in the energy transition.

6.1.H What have been (shared) narratives, activities, knowledge, learnt lessons, etc. between alliances/networks/collaborations of SIE-field-actors and/ or other field-actors? How have they been reproduced, adopted and replicated in the SIE-field? To which extent have they been legitimised and/ or contested by several actors within the SIE-field? Have there been any key changes over time (if so)?

This case study studies actual networks or otherwise formalised groups (energy cooperatives, crowdfunding platform trade organisations), and the less tangible networks (see Table 10). In the cases where the network actively lobbied for a change in institution, their activities were contested by the regime SIE-actor which represented the power that needed to be changed according to the network. Key examples are the **trade organisation of crowdfunding platforms**, and the intangible network around the **lobbying for the national promotional bank**. Crowdfunding organisations lobbied for regulatory space within the government that would force banks to forward rejected loan applications to crowdfunding platforms. This was inspired by the U.K., where such a practice had been institutionalised. However, banks put a stop to this. The national promotional bank was put forward by Jeroen Kremers and several trade organisations (VNO-NCW and LTO). They opted for a centralisation of government institutions, to decrease the fragmentation and transaction cost of the financing landscape. The government institutions which were to be centralised opposed such a merger and put a stop to this.

Lastly, an observation worth noting is that **the creation of a shared narrative or network seems to have a legitimising power**. For example, banks started referring to citizens as ‘professional’ SIE-actors once citizens became formalised into energy cooperatives, and institutionalised in the Energy Agreement which listed them as a ‘pillar of the energy transition’ (interviewee 4).

Table 10 Types of networks in this case study.

Type of network	Examples from the case study
Tangible, formalised networks which self-identify as such	Phase B: Energy cooperatives and crowdfunding platforms (network of citizens), crowdfunding trade organisation (network of crowdfunding platforms) Phase C: VNO-NCW and LTO (networks of businesses)
Intangible networks, formed around a shared activity or shared understanding or co-dependency which might not self-identify as a network	Phase A-C: The invisible networks around co-financing SIE-actors (banks, governments, cooperatives, crowdfunding) that all depend on each other to realise RE projects together financially (Figure 11). Phase C: Jeroen Kremers and VNO-NCW and LTO, (shared activity/co-dependency: lobby for a national promotional bank)

6.2 How do SIE-field-actors and other field-actors interact with the ‘outside’ institutional environment and thereby co-shape the SIE-field over time?

6.2.A Which institutions (regulative, normative, cultural-cognitive) within the ‘outside’ institutional environment have shaped (including enabled/ impeded) SIEs and its SIE-fields (and how)?

Table 11 portrays an overview of the institutions of the ‘outside’ institutional environment, and how they have been translated into the SIE-field institutional context.

On multiple accounts, the case study illustrates a dominance of a **neoliberalist set of values**, which has influenced the ideas, practices and materialities of the SIE-field. As neoliberal values are highly institutionalised (i.e. through the First Energy Directive and the Gas and Electricity Act 1996-8), it is too rigid and widespread to be effectively transformed by SIE-field actors. Rather, SIE-Is have gradually become more in line with neoliberalism. For example, in the beginning, crowdfunding platforms emerged as a non-neoliberal financing instrument, as it allowed citizens to make donations for projects they valued. There was no return on investment at this stage. As time passed, crowdfunding platforms became increasingly focused on investment and returns, in line with the wider normative belief in neoliberalism.

The main impeding factor is the organisational and individual cultural/normative beliefs in pre-existing institutions. These **pre-existing institutions ‘carry on’ to the SIE-field and seem to impede individual actors, or organisations, to break from path dependency**. For example, the organisation SVn focused on the built environment in their financing instruments because that’s where their previous work experience lay (see table below for more examples).

Table 11 An overview of which institutions in the 'outside' institutional environment have translated to the SIE-field.

Institution in the 'outside' institutional environment	The translation of this institution into this SIE-field	Example from SIE-field
Societal cultural institution: neoliberalism	Out of a cultural cognitive fear for overstimulating the market, governments avoid oversubsidisation	The perceived risk of government interference and overstimulating markets through oversubsidisation is marked by interviewee 5: <i>“If the market does something, then actually, you should not interfere with that with government money. It’s about realising something that isn’t automatic. [...] You have the regular financiers who act where they can, and it is socially desirable to supplement where it is not done or is not done sufficiently. If you don’t do that well, it will compete with each other. [...] If you look at the heat fund, 9 out of 10 house owners can in principle also go to ABN Amro, ING and Rabobank.”</i> The fear of government intervention portrays how the Dutch government sees itself. Its activities are strictly stimulating, facilitating. As such, upon asking about the revenues from government loans at the Netherlands Enterprise Agency (NL: Rijksdienst voor Ondernemend Nederland, RVO), interviewee 3 noted that the amount was not significant and <i>“you shouldn’t expect too much from that.”</i>
	Out of a cultural belief in market-driven innovation, governments actively promote innovation in the market sphere	The importance of stimulating innovation is evident through the ample space given by the Authority Financial Markets (AFM) to crowdfunding platforms to develop. Citing a conclusion of their report on supervising the budding crowdfunding sector: <i>“We recommend that (the intensity of) legislation and regulations and supervision be considered to grow with the development of the market. This offers the opportunity to make appropriate regulations, which considers the uncertainties of a market that is developing rapidly and stimulates the market to grow in phases towards a sustainable, responsible and mature sector”</i> (AFM, 2014; p.4). Later, in 2016, when crowdfunding was no longer perceived as a new sector, regulation was enforced again. For a lengthier discussion on the relationship of crowdfunding platforms towards existing institutions, see page 22.
	Out of a cultural-cognitive belief in techno-optimism, governments	Issues such as climate change are addressed through technological innovation, portraying a dominant belief in techno-optimism. In the words of interviewee 3:

	actively support technological innovation	<i>“The enormous attention to the problems of the planet, governments have started to look globally: what can we do? In the Netherlands, this led to the Topsector [innovation] policy, and to making much more money available to the nice solutions that will come. [...] Yes, that’s high on the political agenda, and has been for years.”</i>
Institutions within organisations or individuals before they engaged with investing or subsidising RE	Because SVn has previous experience in the built environment, it applies their activities in this SIE-field (financing the energy transition) mainly to the built environment	A final example of how culture can be leading in defining the future focus of an organisation, is that of SVn, the regional energy fund manager. As the company emerged out of the built environment sector, this remains one of their key focus areas in sustainability and the energy transition: “originally, we were very involved with the built environment. [...] Then, sustainability became very dominant. Then we included that. So, if you look where are we active now? That is a bit of building, living and sustainability. That is where we define our boundaries. When there are sustainability operations in the transport sector, for example, that is too far beyond our expertise and we do not interfere with that” (interviewee 5).
	Because institutional investors are used to larger investment opportunities, they do not engage with crowdfunding	Interviewee 6 remarked that, when he posed the question on why institutional investors did not invest in crowdfunding, he always got the reply that <i>“I must be able to put away a hundred million in a year, otherwise it is impossible.” And the whole crowdfunding market is 200 million. So yes, I will not do that, because then I will have half of the sector and that is really not justified. So, it is too small. You know, it’s normal and it doesn’t fit their calculation model, their way of working. And then I always got the answer: “I should be able to invest a hundred million in a year, otherwise it is impossible to invest in crowdfunding projects.” At the moment, the whole crowdfunding market is 200 million. [...] So, it is too small. [...] It doesn’t fit their calculation model, their way of working.”..”</i>
	Because policy workers have ‘imprinted’ beliefs and ways of working, their ability to manage the energy transition is limited	Interviewee 8: <i>“They have already had a career for twenty years, in which they have worked their way up in a certain culture and have been given beliefs and working methods. And that is completely imprinted. And with that programming they are in that chair, so you cannot expect them to do it completely differently in one go.”</i> As interviewee 8 explains, the dominant way of working of policy workers in decentral governments (before entering this SIE-field of financing/subsidising RE) affected their way of working within this SIE-field. For a lengthier discussion on the troubles decentral governments faced in realising the energy transition, see section ‘giants with feet of clay: the energy agreement’ in phase B.

6.2.B What are the key events, external shocks, trends and inter-field interactions that enable/ impede SIEs and its SIE-fields (now and in the past)?

Table 12 demonstrates the largest events, shocks, trends and inter-field interactions that enabled SIEs.

Table 12 The largest events, shocks and trends that enabled this SIE field.

Time (phase)	What happened?	Characterising quote	Type?	How did it affect SIE?
1996-8 (A)	Liberalisation of the energy sector in the EU kicked off with the EU's First Energy Directive (1996), which was transposed into the Electricity and Gas Act of 1998 in the Netherlands.	<i>"A huge palette of energy innovation subsidies has passed [the department where I work] [...] which make it possible for entrepreneurs to try to bring their innovation to market"⁹⁴</i>	Key policy event	The social relations between actors in the energy sector changed radically (from state monopoly to a free market). It marked a new role for the government: stimulating a free market through subsidies.

⁹⁴ NL: "binnen mijn afdeling waar ik dan werk is een enorm palet aan energie innovaties subsidies voor diverse ontwikkelingen gepasseerd, [...] die het voor ondernemers mogelijk maken om met een subsidie op de markt proberen te brengen." (Interviewee 3)

2010-2 (B)	<p>The sale of the decentral government's utility shares opened up substantial budgets for regional/local governments, which were used for the newly instated regional energy funds.</p> <p>The sale of the utility shares followed a wider trend of liberalisation, which had been kicked-off by the liberalisation of the energy sector.</p>	<p><i>"We have become more business-minded. We shouldn't be 'mad Hank' who just spends money. We also want to see revenues."</i>⁹⁵</p>	<p>Key policy event within wider trend.</p>	<p>The sale of utility shares opened budgets to radically change the role of local/regional governments: from being shareholders in a utility, focusing mainly on subsidisation, they now had access to funds for energy-labelled loans.</p> <p>The regional energy funds also marked an increasing trend of decentralisation in the energy transition.</p>
Ca. 2004-2010 (B)	<p>Online payment technology emerged (in the Netherlands: iDeal), and crowdfunding platforms emerged in the US in 2004.</p>	<p><i>"It is a convergence of some very big inevitable trends. [...] the technology (a website and supporting system) is relatively cheap and keeps on getting cheaper, and doing business online as well as paying for things online becomes more and more commonplace that you can pay for just a few tens of euros via iDeal."</i>⁹⁶</p>	<p>Trend in the 'outside' institutional environment.</p>	<p>The emergence of crowdfunding in the US was adopted in the Netherlands around 2010.</p> <p>The rise of crowdfunding (and energy cooperatives) resulted in increased citizen engagement in financing wind and solar projects. In particular, it shifted citizens from informal actors, to professionals, in the eyes of the status-quo.</p>
2000-2020	<p>Energy cooperatives become increasingly formalised, professionalised and institutionalised within the Netherlands.</p>	<p>Interviewee 7 states that around 2014-5, banks no longer saw citizens as "private individuals" but as "in fact a collection of private individuals who, together, become so professional that they can take on quite large projects. Well, we are actually seeing a professionalization step, and [...] with the help of an advisor or with someone</p>	<p>Inter-field interaction of a trend.</p>	<p>The increasing acknowledgement of citizens as professionals by incumbent actors (such as banks) changes their role from private individuals to 'professionals', thus changing the role between citizens and market parties.</p>

⁹⁵ NL: "We zijn zakelijker geworden. We moeten niet gekke Henkie zijn die maar geld uitgeeft. We willen ook revenuen zien."

⁹⁶ "Het is een samenkomst van een aantal hele grote onvermijdelijke trends. [...] En dan is denk ik dat de techniek goedkoop is, en dat je voor een paar tientjes via iDeal af kan rekenen." (Interviewee 2)

		<i>else, [they are] ultimately being [treated as] a professional customer”⁹⁷</i>		
2013 (B)	The Energy Agreement institutionalised the importance of decentral actors in the energy transition.	<i>“An important part is the decentralized generation of renewable energy by people themselves, and in the form of cooperative initiatives, the third pillar of the agreement. Citizens will have more options to generate their own renewable energy and local and regional initiatives are supported where necessary and possible by municipalities, provinces and the national government.”⁹⁸</i>	Key policy event	The Energy Agreement gave legitimacy to new actors in the energy transition, such as citizens, thereby contributing to a change in social relations in the energy system.
2014 (B)	A report ordered by the Authority Financial Market (AFM) advises limited enforcement of existing regulation on crowdfunding platforms, to stimulate innovation (AFM, 2014).	<i>“We think it’s important that the crowdfunding sector gets the space to grow in a sustainable and responsible way”⁹⁹ (AFM, 2014; p.4)</i>	Key policy event	The AFM’s leniency towards crowdfunding allowed the crowdfunding sector to develop and professionalise. This allowed citizens to develop into professional investors.
2020 (C)	The launch of SIE-I Invest-NL provided a new financial institution for financing the energy transition: a national promotional bank.	<i>“...the most important was, we have a gap when it comes to co-financing risk-bearing innovative enterprises. Especially in the field of sustainability. So therefore Invest-NL was created. [...]</i>	Key event	Invest-NL changed the role of the government in the energy transition, following a wider trend towards financing (loans) rather than subsidisation. It also marked the (failed) institutionalisation of an attempt to centralise government roles.

97 NL: “in feite een verzameling van particulieren die die die bij elkaar toch dermate professioneel worden dat dat ze best wel grote projecten aan kunnen gaan. Nou we zien eigenlijk een professionaliseringslag, En dat dat nou dan wel met de hulp van een adviseur of met iemand anders erbij, uiteindelijk een professionele klant zijn.” (Interviewee 7)

98 NL: “Een belangrijk onderdeel vormt de decentrale opwekking van hernieuwbare energie door mensen zelf, en in de vorm van coöperatieve initiatieven, de derde pijler van het akkoord. Burgers krijgen meer mogelijkheden om zelf hernieuwbare energie op te wekken en lokale en regionale initiatieven worden waar nodig en mogelijk door gemeenten, provincies en de rijksoverheid ondersteund.”

99 NL: “Wij vinden het belangrijk dat de crowdfundingsector de ruimte krijgt om op een duurzame en verantwoorde manier te groeien”

		<i>in practice Invest-NL appears to be risk-averse. And to me ..., that is a pity.</i> ¹⁰⁰		
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¹⁰⁰ NL: "het belangrijkste was van joh, we hebben gewoon een gat als het gaat om, zeg maar het meefinancieren risicodragend in echte innovatieve ondernemingen. Juist op het gebied van duurzaamheid. Dus dus invest-NL is daar uitgekomen. En volgens mij is dat dus heb je daarmee 80 procent van het probleem had je kunnen oplossen. De grote vraag is alleen nu wat gaat Invest in NL nou precies doen? En daar hoor ik gewoon niet zulke hele goede verhalen over. Dus dus het idee is dat Invest-NL toch best wel risicomijdend is. En dat is volgens mij echter de de dood in de pot, dat is heel jammer." (Interviewee 4)

Table 13 The largest events, shocks and trends that impeded SIE.

Time (phase)	What happened?	Characterising quote	Type?	How did it affect SIE?
2016 (B)	The Authority Financial Markets (AFM) stops being lenient towards crowdfunding and starts enforcing regulation more strictly.	<i>“Actually, after 2016 there was no positive message anymore about crowdfunding from the government or financial authorities.” (interviewee 2)</i>	Key policy event	The AFM’s strict attitude towards crowdfunding makes it difficult for social relations in the energy transition to change: financial citizen participation is now limited in their capacity to take over the role of banks.
2019 (C)	There is opposition from several government institutions (BNG, VNG, NWB) as a response to Jeroen Kremers’ idea to centralise these institutions in a national promotional bank. This leads to a political recoil for support in Kremers’ plan. Invest-NL is founded, but does not centralise existing institutions. Rather, it becomes a new institution operating alongside the others.	Interviewee 4 explains the opposition as follows: <i>“basically just because every kingdom had a king and no king wants to give up their kingdom. And nobody wanted to break through that either.”¹⁰¹</i>	Key policy event	The political recoil in Kremers’ plan to centralise institutions impedes the formation of new social relations. Instead, existing incumbent organisations stay fixed in their roles.

When looking at the tables above, several observations might be made:

- **We have distinguished more enabling, than impeding factors.** Yet we assess the level of social innovation to be relatively low. Likely, this is because we have not extensively researched the impeding events/shocks/trends of SIE. Another reason might be that whereas most enabling factors seem to be captured in (policy) events (i.e. the Energy Agreement, the

¹⁰¹ NL: “Ik denk in de kern gewoon omdat elke elk koninkrijkje had een koning en geen koning wil ze koninkrijken afgeven. En daar had ook niemand had zin om daar doorheen te gaan gaan breken.” (Interviewee 4)

First Energy Directive, etc), impeding factors are mainly a continuation of the status quo. Thus, one might argue that whereas events, shocks and trends might uproot the system and enable SIE to happen, **impediments to SIE often comes from a rigidity in existing norms, beliefs and regulation** (discussed in the previous subsection).

- **Policy events are important enablers** because they institutionalise certain trends within society, which can have two positive effects for SIE:
 1. Institutionalisation can lead to **‘social standards’ that solve social dilemmas** associated with public good or common pool resource problems, such as climate change mitigation. A social dilemma posits that individual efforts are useless unless others participate (Kollock, 1998). The EU’s Treaty of Amsterdam (1997), the Dutch Energy Agreement (2013), the international Paris Climate Agreement (2015) and the Dutch Climate Agreement (2019) seemed particularly influential in bridging this social dilemma for market regime actors such as banks. It offered trust that competitors were tackling the same problems, and lowered their perception of investment risk (see Analytical box 9).
 2. Secondly, **institutionalisation allows for legitimisation of new actors**. For example, the integration of citizens and financial citizen participation in the Energy Agreement (2013) led to them being more accepted and trusted by incumbent regime actors and helped in mainstreaming financial citizen engagement in the energy transition.

6.2.C How (if so) have the SIEs and their SIE-fields and ‘outside’ institutional environment been shaped by these events, external shocks, trends and inter-field interactions (now and in the past)?

This question has been integrated in the columns ‘what happened?’ and ‘how did it affect SIE’ in Table 12 and Table 13.

6.2.D What have been the most important alliances/networks/collaborations SIE-field-actors and/ or other field-actors that emerged from these events, shocks, trends, and inter-field interactions (when, how and for what reasons)?

As described in 6.1.C, networks were not based on particular events, shocks or trends, rather around shared ideas (energy cooperatives, crowdfunding). As this question is thus less relevant to this case study it will not be discussed further.

6.2.E How have the SIE-fields co-evolved with the policy context (if so) (and what was the relative importance of the urban, regional, national and European level)?

As described in Table 12 and Table 13, policy events have a large influence on the SIE field. These tables also indicate the effect these policy events have had on the SIE-field.

In several instances, **the SIE-field led to changes within policy, and thereby co-evolved with the policy context.** For example, the Authority Financial Markets (AFM) first did not enforce regulation on crowdfunding platforms (2014, Table 12) but later became more strict (2016, Table 13). There was a close relationship between SIE-field actors (crowdfunding platforms) and policy around 2012, when governments were learning from crowdfunding platforms. This notion is discussed in phase B in the section ‘digitalisation of an age-old tradition’.

6.2.F How are which power relations (such as inequality, exclusion, oppression, exploitation, injustice) being transformed and/ or reproduced by the SIE-phenomenon under study? (and vice versa – how are SIEs enabled and impeded by power relations?)

SONNET studies the power relations that enable or impede the SIE-field and vice versa. SONNET builds on Avelino (2017) in understanding power as the relational and structural (in)capacity of actors to mobilise resources and institutions to achieve a goal. SIEs can refer to the resources being mobilised and/or the goals being aspired (D1.2). SONNET distinguishes between ‘power to mobilise SIE-related resources and/or to achieve SIE-related goals (incl. (in)equality and in/exclusion), power

over others in SIE-related processes (including dependency, oppression & exploitation), and power with other actors to achieve collective (SIE-related) goals' (Wittmayer, Hielscher, et al., 2020). This section will describe 5 ways in which power relations are being transformed or reproduced in this case study, through this lens of power to/power over/power with:

1. Power to: without resources, existing power relations are reproduced
2. Power to: regional energy funds empower decentral governments
3. Power to: the financial sector does not use their power to drive societal change
4. Power over: knowledge creates power over learning actors
5. Power with: lobbying in collectives for a shared goal

1. Power to: without resources, existing power relations are reproduced

In SONNET, we understand 'power to' as the power to mobilise resources to achieve goals. An example of 'power to' can be found in the regional energy funds. This section will describe how the lack of resources reproduces, rather than transforms existing power relations.

An often-discussed topic around power relations and financing in the energy transition, is that of **energy poverty**. This concept has been defined by Reddy (2000) as follows: *“the absence of sufficient choice in accessing adequate, affordable, reliable, high-quality, safe and environmentally benign energy services to support economic and human development”* (Reddy, 2017; p.44). According to some authors, the silver bullet to solve energy poverty is **financial inclusion** (Kelly & Rhyne, 2015). The World Bank defines this concept as follows: *“Financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs - transactions, payments, savings, credit and insurance - delivered in a responsible and sustainable way.”* (World Bank, n.d.) **Emerging financial instruments, such as crowdfunding, have recently been thought of as means to achieve financial inclusion, because “crowdfunding is [...] democratization and disintermediation made possible by the use of internet and social networks which allow people and potential investors to directly browse and investigate investment options. As such it is a powerful empowerment tool, which**

positions people at the center of economic and financial processes with a participatory ambition” (Candelise, 2015; p.4).

However, while crowdfunding is indeed a powerful ‘empowerment tool’ as the former author argues, **this case study shows that without sufficient resources (network, knowledge and money) crowdfunding reproduces, rather than transforms, existing power relations around energy poverty.** This is because only a wealthy and knowledgeable part of the population can invest. In the words of interviewee 2: *“Within a timeframe of a few years, there is a very small part of the Netherlands that thinks crowdfunding is a thing. But I think that 80% or 85% of the Netherlands has no clue what crowdfunding is.”*¹⁰²

2. Power to: regional energy funds empowered decentral governments

Another example of power ‘to’ can be found in the story of the regional energy funds. **The sale of utility shares gave local and regional authorities power to direct energy-labelled funds in whichever project they deemed fitting.** In the words of interviewee 5: *“It starts with social developments, the social necessity, the Climate Agreement. Municipalities and provinces are always putting these topics higher on the agenda. And if financial resources become available, it speeds up the process”*¹⁰³. However, this power was **prone to external lobbying**, and led to frustrations within municipalities and regional authorities (see Analytical box 4: Policies and policy making).

3. Power to: financial sector does not use their power to drive societal change

Moreover, **the financial sector has power to support the energy transition.** According to a report by researchers from TNO on the role of institutional investors in the energy transition: *“pension funds are in a strong position to support the energy transition, both directly through capital provision, and indirectly by using their wide geographical reach to drive societal change”* (Donker, Gavrilova, & Halstead, 2020). However, **the sector is currently not making use of their power to drive societal**

102 NL: “So but that is within a time frame of a few years, there is a very small part of the Netherlands that thinks crowdfunding is a thing. But I think that 80 percent of the Netherlands really or more 85 cents for the Netherlands has no bloody clue, which is crowdfunding.” (Interviewee 2)

103 NL: “Het begint met maatschappelijke ontwikkelingen, de maatschappelijke noodzaak, het Klimaatakkoord. Gemeenten en provincies plaatsen deze onderwerpen aldoor hoger op de agenda. En als er dan ook financiële middelen beschikbaar komen, dan versnelt dat het proces.” (Interviewee 5)

change. As found by McKinsey (2018), institutional investors (i.e. pension funds) invest mainly in listed financial funds and companies representing vested interests, such as Shell, British Petroleum (BP), Exxon Mobile and Gazprom, whereas they hardly invest in unlisted small project developers (McKinsey, 2018). This has been prescribed to the fragmentation of the energy market and the lack of scale, liquidity and attractive risk-return profile of small RE project developers. As posed by Steffen (2017), the balance sheets of small project developers and individuals are not big enough to match the investment needed for large-scale RE projects (Steffen, 2017). That's why, according to Steffen (2017), RE projects have been largely financed through project financing. This contrasts to fossil-fuel energy, which has large enough balance sheets to be financed by large corporate players. When interviewee 2 asked an institutional investor why they did not invest in crowdfunded projects, the investor replied that they *“must be able to put away fifty to a hundred million in a year, otherwise it is impossible not feasible. And the whole crowdfunding market is somewhere between 200-400 million. [...] So, it is too small. [...] It doesn't fit their calculation model, their way of workingscale.”*

4. Power over: knowledge creates power over learning actors

Power 'over' is understood as the power over others in SIE-related processes (Wittmayer, Hielscher, et al., 2020). Crowdfunding platforms, in the beginning of their development, had power over the government because of their knowledge on the topic: *“So those first types [...] had to [...] go to the Netherlands Authority for the Financial Market [AFM] to explain yes, what is crowdfunding? And how should we regulate you? [...] In a manner of speaking, we had to give a lecture to the AFM to tell what it was.”*¹⁰⁴The AFM exercised their power over the crowdfunding platform by first providing space to experiment (see also page 41), and later enforcing stricter regulations. The financial sector has 'power over' crowdfunding platforms. This will be discussed in more detail in the next paragraph ('power with'), as the story is closely related to the lobby efforts of the respective sectors.

5. Power with: lobbying in collectives for a shared goal

SONNET defines 'power with' as the power to achieve collective (SIE-related) goals with other actors. This is especially abundant in the multiple lobbies that have been involved in this SIE-field.

¹⁰⁴ NL: “So those first types [...] had to [...] go to the Netherlands Authority for the Financial Market [AFM] to explain yes, what is crowdfunding? And how should we regulate you? [...] In a manner of speaking, we had to give a lecture to the AFM to tell what it was.” (Interviewee 6)

An example of ‘power with’ occurs in the story of crowdfunding. In 2016, the Ministry of Economic Affairs stimulated to further professionalize the crowdfunding sector to further professionalise. They gave interviewee 6 and a colleague the assignment to set-up a trade organisation. The trade organization gave the sector collective power to lobby for their needs and work towards achieving their goals. However, as discussed in the section ‘David and Goliath: crowdfunding challenges the financial sector’, crowdfunding was to date not able to lead to institutionalised changes in the ways of doing, thinking or organising in the financial sector. This is mainly because of the sheer size of the financial sector in the Netherlands (see page 45). Interviewee 4: *“That is always the difficulty of the discussions about financing innovation in the Netherlands. The Netherlands simply has an insanely large banking sector. Also, from an international perspective [...] the size of our banks in relation to the economy is simply insanely large. Historically, this has never happened before, but internationally it is nowhere nearly as large as it was in the Netherlands in 2008. It has declined somewhat since then. But that’s why we always talk about banks in the Netherlands.”*¹⁰⁵

When the crowdfunding trade organisation tried to lobby for a change within the way of working at their dependence on bank finance, this was stopped by the banking sector: *“And then we thought with that trade association, wow, we’re going to lobby for that too. You know. But of course, the banks saw that coming, so they put a stop to it”*¹⁰⁶ (for more information, see page 45).

Another example of ‘power with’ can also be found in the crowdfunding story. As the trade organisation was struggling to fight the power of financial institutions, it was tempted to start fighting new entrants in the crowdfunding sector through quality requirements: *“In the beginning you can nip it a bit in the bud, but or at some point a trade association can become a bastion for the established players in the market to [...] make the entry of new parties difficult... And that’s how it was a bit, too. The affiliated members do not only have the interest to advance the sector, but also the interest, above all, to advance themselves and each other. To not make the parties that are not yet*

105 NL: “Dat is altijd het ingewikkelde aan de discussies over het financieren van innovatie in Nederland. Nederland heeft gewoon een waanzinnig grote bankensector. Ook in internationaal perspectief is [...] de omvang van onze banken ten opzichte van de economie gewoon waanzinnig groot. Historisch gezien is dat nooit eerder voorgekomen, maar ook internationaal is het nergens bijna zo groot als dat in Nederland was in 2008. Het is sindsdien wel wat afgenomen. Maar daarom hebben we het altijd over banken in Nederland.” (Interviewee 4)

106 NL: “En toen dachten we met die branchevereniging dachten we wow, daar gaan we ook voor lobbyen. Weet je wel. Maar de banken zagen dat natuurlijk ook wel aankomen, dus die hebben daar een stokje voor gestoken.” (Interviewee 6)

affiliated any wiser than necessary. [...] You had those quality requirements [for new entrants]. These requirements were then tested on new entrants [by the trade organisation]” (Interviewee 6).

Other lobbying efforts are evident in the story of the national promotional bank. In this story, the power of an individual (Jeroen Kremers) went against the power of a collective (several governmental institutions). Kremers’ vision was to merge several governmental institutions to form a central national promotional bank. This bank would be able to provide the high-risk upfront investments and thereby lead to economic growth. However, vested interests did not want to merge their institutions, as ‘no king wants to give up their kingdom’¹⁰⁷ (interviewee 4). In the words of Rick Bosman in an article on journalism platform Follow the Money: *“They are actually very separate worlds, which are viewed in different ways. Incumbent parties have an interest in keeping it that way.”*¹⁰⁸

107 NL: “Geen koning wil zijn koninkrijk opgeven.” (interviewee 4)

108 NL: “Het zijn eigenlijk hele gescheiden werelden, waar op verschillende manieren naar gekeken wordt. Door de gevestigde partijen wordt er belang aan gehecht dat ook zo te houden.” (Crezee, 2016)

6.3 What are the enabling and impeding factors for SIE-field-actors and other field-actors to conduct institutional work and change the ‘outside’ institutional environment?

6.3.A Who is involved in conducting institutional work (and who is not)? Which actors benefit from this work (or not)? How does this shape the SIE-field?

In this analysis, we will use the typology of institutional work by Funfschilling & Truffer (2016), which distinguish between various forms of institutional work (see Table 6).

Table 14 Types of institutional work, copied from Fuenfschilling & Truffer, 2015, as adapted by Lawrence & Suddaby, 2006.

Forms of institutional work	Definition
Advocacy	The mobilization of political and regulatory support through direct and deliberate techniques of social suasion
Defining	The construction of rule systems that confer status or identity, define boundaries of membership or create status hierarchies within a field
Vesting	The creation of rule structures that confer property rights
Constructing identities	Defining the relationship between an actor and the field in which that actor operates
Changing normative associations	Re-making the connections between sets of practices and the moral and cultural foundations for those practices
Constructing normative networks	Construction of interorganizational connections through which practices become normatively sanctioned and which form the relevant peer group with respect to compliance, monitoring and evaluation
Mimicry	Associating new practices with existing sets of taken-for-granted practices, technologies and rules in order to ease adoption
Theorizing	The development and specification of abstract categories and the elaboration of chains of cause and effect
Educating	The educating of actors in skills and knowledge necessary to support the new institution

The table below demonstrates the multiple accounts of institutional work in this case study. The table allows for two observations:

- The case demonstrates **institutional work in multiple societal spheres** (state, market, community, third sector).
- **The state is mainly vesting and defining**, whereas markets are educating and advocating.
- **The community sphere is underrepresented**. Communities are formalised into energy cooperatives or crowdfunding platforms, and thereby adhere to the third sector / market logic rather than the community sphere.

- ‘Advocacy for’ is always countered by ‘advocacy against’ by incumbent actors (i.e. crowdfunding VS banks, or Kremers VS BNG, VNG, etc).
- The institutional work of ‘constructing identities’ might be associated with the most change in social relations between actors. For example, from the table below:
 - Privatisation energy sector: The relations between market and state changed radically;
 - Energy Agreement: The legitimacy of citizens increased and allowed for the increase of financial citizen participation, which changed the relations between citizens/market/state. And it institutionalised the importance of decentral governments, changing their role towards citizens/market/state.

Table 15 Types of institutional work of SIE-field actors.

Phase	Actor	Societal sphere ¹⁰⁹	Type of institutional work	Description
A	European Union	State	Vesting / constructing identities	Privatising the energy sector of member states to increase efficiency and economic growth through the First Energy Directive. This was transposed by the Netherlands into the Electricity and Gas Act of 1998.
A	National government	State	Vesting	Subsidising the newly created free market to make RE projects profitable.
B	Decentral governments	State	Vesting	Sold utility shares and started financing the energy transition with the profits, moving away from subsidies, in order to be ‘smarter with money’.
B	Multi-actor (initiated by ministries)	Diverse	Defining / constructing identities	Stating that citizens and decentral governments are pillars of the energy transition in the Energy Agreement, which was signed by a broad coalition of actors from diverse societal spheres.
B	National government (Authority Financial Markets and Ministry of Economics)	State	Vesting	Initially, the national government takes a passive role towards crowdfunding: they do not enforce crowdfunding platforms in order to stimulate innovation. Later, the government switches their approach and starts enforcing regulation and takes a more hesitant tone towards crowdfunding.
B	National government	State	Defining	Assigning the crowdfunding sector the task to professionalise by instigating a crowdfunding trade organisation.

¹⁰⁹ Based on the multi-actor perspective by Avelino & Wittmayer (2015)

	(Authority Financial Markets and Ministry of Economics)			
B	Crowdfunding platforms	Market	Educating / constructing identities	Educating the Authority Financial Markets (AFM) and the Ministry of Economics about crowdfunding.
B	Banks	Market	Constructing identities	Exploring their role towards crowdfunding in multiple experiments (which did not institutionalise and mainstream in the end).
B	Crowdfunding platforms	Market	Advocacy for	Lobbying for the further institutionalisation of crowdfunding within legislation to ensure that banks are forced to refer to crowdfunding platforms if they reject a proposal by an entrepreneur, in order to increase financial citizen participation in the energy transition.
B	Banks	Market	Advocacy against	Put a stop to the further institutionalisation of crowdfunding by lobbying against the proposed legislation (see previous row).
C	Jeroen Kremers, LTO, VNO-NCW	State	Educating / Advocacy for / Constructing identities	Educating the ministry of economics and the political cabinet about the German KfW and national promotional banks, and lobbying for a national promotional bank and the centralisation of government financing institutes.
C	BNG, NWB, FMO, VNG	State	Educating / Advocacy against	Lobbying against the centralisation of government financing institutes by posing counterarguments to Kremers, LTO and VNO-NCW.
C	National Promotional Bank Invest-NL	State	Vesting	Invest-NL funds energy transition projects.

6.3.B How, why, and where do SIE-field-actors and/ or other field-actors conduct activities linked to creating, maintaining and transforming institutions?

SONNET studies the institutional work of actors, defined as the activities of SIE-field-actors and other field-actors that aim to create, maintain and transform regulative, normative and/ or cultural-cognitive institutions (Hielscher et al., 2020; Wittmayer, Hielscher, et al., 2020). This builds on the definition of institutional work by Lawrence & Suddaby: “*the purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions*” (Lawrence & Suddaby, 2006;

p.215). This section contains the three most dominant examples of institutional work that were found within this case study:

- 1) Creating institutions: Invest-NL
- 2) Maintaining institutions: banks and crowdfunding platforms
- 3) Transforming institutions: financial citizen participation

Other examples of institutional work were not researched in the same depth and thus not selected for the analysis in this section. For more information on institutional work, see Analytical box 11.

Creating institutions: Invest-NL

The most prominent institutional work of this case study is the **quest for a high-risk national investor**. This investor was to solve the lack of high-risk investment capital in the Netherlands, provide financing to SMEs and take up after the German KfW in financing the ambitious goals of the energy transition. The institutional work included advocacy, theorising and educating by former top-banker Jeroen Kremers, who had close ties with the Ministry of Economics and Finance. Kremers was joined by business trade organisations VNO-NCW and Netherlands Agricultural and Horticultural Association (NL: Land- en Tuinbouw Organisatie Nederland, LTO), who started to advocate and educate for the same goal, publishing their positive reflections in reports (König, 2017; Weissink & Zeemeijer, 2017).

Kremers goals were bifold: 1) to create a national promotional bank to stimulate economic development of the Netherlands, and 2) to transform existing government institutions by merging them into a central financing institute. According to Kremers, the latter would lead to substantial government savings and decreased fragmentation of the financing landscape. However, his ambitious plans didn't go down well with the parties concerned. The Bank of Dutch Governments (NL: Bank Nederlandse Gemeenten, BNG), the Dutch Waterboard Bank (NL: Nederlandse Waterschapsbank, NWB) and the Dutch Entrepreneurial Development Bank (NL: Nederlandse Financierings-maatschappij voor Ontwikkelingslanden, FMO) were informed of the plans and reacted critically (Weissink & Zeemeijer, 2017). For example, Menno Snel, director of NWB, stated that he did not believe that “you get a good

sausage if you put three institutions in a meat grinder” (Weissink & Zeemeijer, 2017). According to interviewee 4, these parties opposed the merger “*basically just because every kingdom had a king and no king wants to give up their kingdom. And nobody wanted to break through that either.*”¹¹⁰ All this criticism made political support for Kremers’ plans recoil (Weissink & Zeemeijer, 2017). However, his plan wasn’t abolished completely. His primary goal for creating a national promotional banking institution became adopted by the Senate and the House of Representatives in 2019. Consequently, on January 16th, 2020, a national promotional bank came into being: Invest-NL (EZK, 2020).

In conclusion, while Kremers was thus successful in creating a new regulatory institution (Invest-NL), he was not able to replace existing regulatory institutions, as those in power (BNG, RVO, NWB, FMO) were actively maintaining their institutions, eventually leading to political recoil.

The story around the institutionalisation of a national promotional bank is an example of sociologist’s DiMaggio’s ‘institutional entrepreneurship’, where “new institutions arise when organized actors with sufficient resources [institutional entrepreneurs] see in them an opportunity to realize interests that they value highly” (DiMaggio, 1988; p.14). As described in Lawrence, Suddaby, & Leca (2009), institutional entrepreneurs are often presented as ‘heroic’, making large-scale, visible and dramatic changes to existing institutions.

Maintaining institutions: banks and crowdfunding platforms

An example of institutional work through which institutions are ‘maintained’ is the work invested by the financial sector to stop the lobbying of crowdfunding platforms (in itself also institutional work aimed at transforming the sector). In 2016, the Ministry of Economic Affairs stimulated the crowdfunding sector to further professionalise. They gave interviewee 6 and a colleague the assignment to set-up a trade organisation. The trade organization gave the sector collective power to lobby for their needs and work towards achieving their goals. However, crowdfunding platforms did not lead to institutionalised changes in the ways of doing, thinking or organising within the financial

¹¹⁰ NL: “Ik denk in de kern gewoon omdat elke elk koninkrijkje had een koning en geen koning wil ze koninkrijken afgeven. En daar had ook niemand had zin om daar doorheen te gaan gaan breken.” (Interviewee 4)

sector: the financial sector maintained their previous way of doing/thinking/organising, despite their investigations towards a new role and attitude towards the novel financial instrument (see also the section ‘David and Goliath: crowdfunding challenges the financial sector’).

This is mainly because of the sheer size of the financial sector in the Netherlands (see page 45). Interviewee 4: *“That is always the difficulty of the discussions about financing innovation in the Netherlands. The Netherlands simply has a large banking sector. Also, from an international perspective [...] the size of our banks in relation to the economy is simply very large. Historically, this has never happened before, but internationally it is nowhere nearly as large as it was in the Netherlands in 2008. It has declined somewhat since then. But that's why we always talk about banks in the Netherlands.”*¹¹¹

When the crowdfunding trade organisation tried to lobby for a change within the way of working of financing (RE) projects, this was stopped by the banking sector: *“And then we thought with that trade association, wow, we're going to lobby for that too. You know. But of course, the banks saw that coming, so they put a stop to it”*¹¹² (for more information, see page 45).

Transforming institutions: financial citizen participation

Lastly, an example of institutional work that ‘transformed’ institutions can be found in the story of financial citizen participation. The professionalisation of the crowdfunding sector and energy cooperatives transformed the cultural-cognitive beliefs/norms that incumbent parties had towards citizen engagement. For example, as explained by interviewee 7, there was an ongoing trend in which banks started to see cooperatives and crowdfunders no longer as *“private individuals”* but as *“in fact a collection of private individuals who, together, become so professional that they can take on quite large projects. Well, we are actually seeing a professionalization step, and that now, with the help*

111 NL: “Dat is altijd het ingewikkelde aan de discussies over het financieren van innovatie in Nederland. Nederland heeft gewoon een waanzinnig grote bankensector. Ook in internationaal perspectief is [...] de omvang van onze banken ten opzichte van de economie gewoon waanzinnig groot. Historisch gezien is dat nooit eerder voorgekomen, maar ook internationaal is het nergens bijna zo groot als dat in Nederland was in 2008. Het is sindsdien wel wat afgenomen. Maar daarom hebben we het altijd over banken in Nederland.” (Interviewee 4)

112 NL: “En toen dachten we met die branchevereniging dachten we wow, daar gaan we ook voor lobbyen. Weet je wel. Maar de banken zagen dat natuurlijk ook wel aankomen, dus die hebben daar een stokje voor gestoken.” (Interviewee 6)

of an advisor or with someone else, [they are] ultimately being [treated as] a professional customer.”¹¹³ (Interviewee 7).

Financial citizen participation institutionalised and became mainstream in a series of ongoing trends and policy events:

- **Retreating governments and decentralising state (ca. 2010):** The move towards citizen participation in energy policy fits a broader Dutch trend of retreating governments and dismantling government engagement in i.e. the welfare state.
- **Inter-field interaction (ongoing trend):** An increasing amount of energy cooperatives had been emerging. Over time, these grew in number, size and gained knowledge. After liberalisation of the energy sector, energy cooperatives were able to attract more members, further increasing the amount of citizen participation in the Netherlands.
- **Energy Agreement (policy event in 2013):** The Energy Agreement was the result of a national deliberation process involving actors from many societal spheres (i.e. banks, NGOs, governments, grid operators, utilities, energy cooperatives). The Energy Agreement institutionalised, for the first time, the importance of local/regional governments as well as participation by citizens and energy cooperatives in the energy transition. It stated that: *“An important part is the decentralized generation of renewable energy by people themselves, and in the form of cooperative initiatives, the third pillar of the agreement. Citizens will have more options to generate their own renewable energy and local and regional initiatives are supported where necessary and possible by municipalities, provinces and the national government”*¹¹⁴ (SER, 2013; p.8). The energy agreement created a sense amongst regional and local policy makers that they needed to incorporate citizen participation in their policy, mainly to limit NIMBYism associated with wind energy on land. Crowdfunding platforms helped steer

113 NL: “in feite een verzameling van particulieren die die die bij elkaar toch dermate professioneel worden dat dat ze best wel grote projecten aan kunnen gaan. Nou we zien eigenlijk een professionaliseringslag, En dat dat nou dan wel met de hulp van een adviseur of met iemand anders erbij, uiteindelijk een professionele klant zijn.” (Interviewee 7)

114 NL: “An important part is the decentralized generation of renewable energy by people themselves, and in the form of cooperative initiatives, the third pillar of the agreement. Citizens will have more options to generate their own renewable energy and local and regional initiatives are supported where necessary and possible by municipalities, provinces and the national government.”

their sense-making by opting showing the feasibility of financial citizen participation. In the words of interviewee 2: “[...] then the municipality will look at our questions sheepishly with the question of citizen participation? And then we say hey, sure. But then what? And then look at each other for a long time, and then nobody knows what it means. And then it is, um, maybe financial participation? And then everyone sighs, fortunately you know. And so that became financial participation. And nowadays citizen participation is financial participation. municipalities and project developers look for examples of how to define and organise citizen participation. Crowdfunding platforms such as ours give them practical examples they can easily copy and use for themselves.”¹¹⁵

6.3.C What have been the most important activities linked to creating, maintaining and transforming institutions? Outline these activities through describing 2-4 examples.

Three examples of institutional work have been described in the first subsection of this chapter. The first two will be described further in the following paragraphs. A short summary of the previous sections is included in the table below.

Table 16 The most important activities linked to creating, maintaining and transforming institutions in two examples from the case study.

Example	Involved SIE-field actors	End result: created, maintained or transformed institution?	Societal sphere ¹¹⁶	Description
Invest-NL	Jeroen Kremers, VNO-NCW, LTO, VNG, NWB, BNG	Created institutions: Invest-NL as an organisation	State	Jeroen Kremers, VNO-NCW, LTO advocated / lobbied for a national promotional bank and the centralization of government institutions. VNG, NWB, BNG opposed the merger of institutions. Instead of a merged institution (one, central national promotional bank), a new

¹¹⁵ NL: “En de kers op de taart is de wettelijke verplichting. En hoe werkt het, dat Energieakkoord, dat vergunningverlenende autoriteiten dwingt om, eh, euh, euh, als onderdeel van de vergunning de projecteigenaar, [...] want de projecteigenaar heeft geld nodig, om een deel van het geld te dwingen te verzamelen van burgers. Of om burgers de kans te geven om mee te doen aan dat project.” (Interviewee 2)

¹¹⁶ Based on the multi-actor perspective by Avelino & Wittmayer (2015)

		(regulatory), but also the preference for a high-risk investor (normative).		bank was created alongside VNG, NWB, BNG. This bank was called Invest-NL.
Crowdfunding	Crowdfunding platforms, crowdfunding trade organization, banks (financial sector)	Maintained institution: no legislation that force financial institutes to forward rejected loan applicants to crowdfunding (regulatory institution)	Market	In 2016, the Ministry of Economic Affairs stimulated to further professionalize the crowdfunding sector to further professionalise by instigating a trade organisation. The trade organization gave the sector collective power to lobby for their needs and work towards achieving their goals. However, as discussed in the section 'David and Goliath: crowdfunding challenges the financial sector', crowdfunding was to date not able to lead to institutionalised changes in the ways of doing, thinking or organising in the financial sector. When the crowdfunding trade organisation saw that the British Business Bank (BBB) were legally forced by the government to send rejected loan applicants to crowdfunding platforms, the Dutch crowdfunding trade organisation started lobbying for the same. However, the financial sector impeded their efforts: <i>"And then we thought with that trade association, wow, we're going to lobby for that too. You know. But of course, the banks saw that coming, so they put a stop to it"</i> ¹¹⁷ .

6.3.D What forms do these activities linked to maintaining, creating and transforming institutions take (i.e. emotion work, boundary work, strategy work, practice work and/or values work)? Link back to the 2-4 examples

The categorisation of the types of institutional work in this section are based on Funfschilling & Truffer (2016)), which have been shown in previous sections in this chapter.

From Table 17 and Table 18 it can be concluded that 'novel' SIE-field actors often start with mimicking other institutions, after which they start educating the status-quo and aid in constructing identities, mainly about which role this SIE-field actor has in the existing system, and what the attitude of the

¹¹⁷ NL: "En toen dachten we met die branchevereniging dachten we wow, daar gaan we ook voor lobbyen. Weet je wel. Maar de banken zagen dat natuurlijk ook wel aankomen, dus die hebben daar een stokje voor gestoken." (interviewee 6)

status-quo towards them ought to be. After this initial phase of relative freedom for the SIE-field actor, the status quo starts vesting, defining and further constructing identities, thereby formalising the SIE-field actor into the system. This is also a moment where the status-quo starts limiting the SIE-field actor, and institutional transformation becomes more difficult. In this more ‘rigid’ institutional context, the SIE-field actor might advocate for their benefit, which might be stopped by the status-quo who have vested interests in keeping the system as it is. As a result, instead of institutional transformation, the SIE-field actors might create an institution alongside the existing institutions instead. An empirical narrative of this summary might be found in the tables below.

Table 17 The types of institutional work around the institutionalisation of crowdfunding platforms in chronological order.

Actor	Type of institutional work	Description of institutional work
Crowdfunding platforms	Mimicry	Copying the concept of crowdfunding through an online platform from the U.S.
Crowdfunding platforms	Educating / constructing identities	Educating the Authority Financial Markets (AFM) and the Ministry of Economics about crowdfunding.
National government (Authority Financial Markets and Ministry of Economics)	Vesting	Initially, the national government takes a passive role towards crowdfunding: they do not enforce crowdfunding platforms in order to stimulate innovation. Later, the government switches their approach and starts enforcing regulation and takes a more hesitant tone towards crowdfunding.
National government (Authority Financial Markets and Ministry of Economics)	Defining	Assigning the crowdfunding sector the task to professionalise by instigating a crowdfunding trade organisation.
Crowdfunding trade organisation	Defining	The crowdfunding organisation starts defining quality requirements for new entrants into the trade organisation. This limits new entrants into the sector.
Banks	Constructing identities	Exploring their role towards crowdfunding in multiple experiments (which did not institutionalise and mainstream in the end).
Crowdfunding platforms	Advocacy for / mimicry	Inspired by the crowdfunding sector and its widespread institutionalisation, the Dutch crowdfunding sector starts lobbying for the further institutionalisation of crowdfunding

		within legislation to ensure that banks are forced to refer to crowdfunding platforms if they reject a proposal by an entrepreneur, in order to increase financial citizen participation in the energy transition.
Banks	Advocacy against	Put a stop to the further institutionalisation of crowdfunding by lobbying against the proposed legislation (see previous row).

Table 18 The types of institutional work around the institutionalisation of Invest-NL in chronological order.

Actor	Type of institutional work	Description of institutional work
Jeroen Kremers, LTO, VNO-NCW	Educating / Mimicry	Educating the ministry of economics and the political cabinet about the German KfW and national promotional banks
Jeroen Kremers, LTO, VNO-NCW	Advocacy for / Constructing identities	and lobbying for a national promotional bank and the centralisation of government financing institutes.
BNG, NWB, FMO, VNG	Advocacy against	Lobbying against the centralisation of government financing institutes by posing counterarguments to Kremers, LTO and VNO-NCW.
National Promotional Bank Invest-NL	Vesting	Invest-NL funds energy transition projects.

6.3.E What factors have enabled and/or impeded institutional work? E.g. Resources, learnt lessons and competences connected to actors/ alliances/ networks/ collaborations. Link back to the 2-4 examples

The enabling factors of institutional work seem to be captured in their capacity to access the varieties of power we have studied in sonnet: power ‘with’, ‘to’ and ‘over’. The factors that have enabled or impeded SIE-field actors to conduct institutional work through harnessing these forms of power are discussed in the table below.

The discussion on which factors have impeded institutional work is difficult to navigate. From the analysis, it appears that institutional work has mainly been impeded by *other* forms of institutional work. Namely, vesting, defining and advocating work of incumbent actors with vested interests in maintaining institutions as they are (Table 19).

Table 19 Factors that have enabled institutional work through power 'with' and power 'to', based on the example of crowdfunding and Invest-NL.

Factor	Type of power harnessed	Empirical example	Empirical effect
Formalisation into a trade organisation	Power 'with'	Crowdfunding	The trade organisation gave the crowdfunding sector collective power to lobby for their needs and work towards achieving their goals.
		Crowdfunding	As the trade organisation was struggling to fight the power of financial institutions, it was tempted to start fighting new entrants in the crowdfunding sector through quality requirements: "[...] at some point a trade association can become a bastion for the established players in the market to [...] make the entry of new parties difficult... And that's how it was a bit, too. The affiliated members do not only have the interest to advance the sector, but also the interest, above all, to advance themselves and each other. To not make the parties that are not yet affiliated any wiser than necessary. [...] There were quality requirements [for new entrants] (Interviewee 6).
Expert knowledge	Power 'to' (resource: knowledge)	Crowdfunding	Crowdfunding platforms, in the beginning of their development, had power over the government because of their knowledge on the topic: <i>"So those first types [...] had to [...] go to the Netherlands Authority for the Financial Market [AFM] to explain yes, what is crowdfunding? And how should we regulate you? [...] In a manner of speaking, we had to give a lecture to the AFM to tell what it was."</i> ¹¹⁸
		Invest-NL	Jeroen Kremers was a former top-banker and had expert knowledge, enabling him to advocate for the institutional change he aspired.
Close connections to those in power	Power 'to' (resource: knowledge)	Invest-NL	Jeroen Kremers had close connections to high-level policy workers and members of the cabinet. This enabled him to advocate and for his goals.

¹¹⁸ NL: "So those first types [...] had to [...] go to the Netherlands Authority for the Financial Market [AFM] to explain yes, what is crowdfunding? And how should we regulate you? [...] In a manner of speaking, we had to give a lecture to the AFM to tell what it was." (Interviewee 6)

6.3.F What have been intended and unintended effects (i.e. contributions) derived from conducting institutional work? What influence have they had on SIE-field and ‘outside’ institutional environments? Link back to the 2-4 examples

The term ‘contributions’ is inherently biased. In this paragraph, we will consider ‘contributions’ in the positive sense of the word. The table below indicates several activities of institutional work that have led to contributions to the SIE-field. It might be observed from the table that:

- Contributions stem from **mimicking, defining, educating and advocating work.**
- Contributions stem mainly **from SIE-field actors that wish to create or transform institutions.**
- There is **no unintended contribution** affiliated with institutional work, as it appears from these examples.

Table 20 The contributions of institutional work of SIE-field actors to the SIE-field (not complete list).

Institutional work conducted	SIE-field actors	Contribution to the SIE-field and ‘outside’ institutional environment
Mimicry of technological innovation from the U.S.	The first crowdfunding platforms	Increased citizen engagement in the energy transition through crowdfunding platforms.
Defining energy agreements	Diverse actors (50+) from state, market and community spheres	Actors start to take citizens more seriously as professional financial agents within the energy system after the institutionalisation of the Energy Agreement of 2013.
Educating the Ministry of economics	Jeroen Kremers, LTO, VNO-NCW	Increased knowledge within the ministry of economics and the political cabinet about national promotional banks.
	Crowdfunding platforms	Increased knowledge within the ministry of economics and the Authority Financial Markets (AFM) about crowdfunding platforms.
Advocacy for a national promotional bank	Jeroen Kremers, LTO, VNO-NCW	The launch of national promotional bank Invest-NL.
Advocacy against a national promotional bank	BNG, NWB, FMO, VNG	Stopping the proposed centralisation of government institutions BNG, NWB, FMO, VNG.

7. Recommendations for our city partners, national and EU policy makers and SIE practitioners

SONNET city partners, national and EU policy makers

- Social innovation can emerge from society (i.e. crowdfunding platforms), or the state (i.e. a new financial policy). You can support social innovation in your city, country or within the EU by empowering the initiatives that underlie them. In the following bullets, the way to do so is addressed.
- How to harness the power of social innovation from society (i.e. crowdfunding platforms, or energy cooperatives):
 - To allow these social innovations to challenge and transform the status-quo, they need to be **empowered**. You can do this by allocating resources to the initiatives, i.e. through financial aid and knowledge. Another option is to limit regulatory enforcement, and provide a rule-free zone for the innovations to operate and grow in.
- How to harness the power of social innovation in your governmental administration (i.e. new policies, regulatory arrangements or ways of thinking):
 - This kind of innovation often occurs through **institutional entrepreneurship**, where policy workers attempt to change the way of thinking of the organisation. This isn't easy. Oftentimes, the biggest barricade is the fact that the culture of the organisation doesn't match the culture of the suggested innovation. You can support these initiatives by allocating policy workers specific FTE to work on the innovation and by educating the status-quo on the new innovation.

SIE-field-actors

- Social innovation takes ca. 5 years to form a mainstream alternative to the current way of doing, thinking or organising (i.e. the example of crowdfunding platforms in the Netherlands). Thus, if you are working on a social innovation, **perseverance** is important. Changes are not made on a day by day, rather a year by year basis. Then again, change might happen quickly after unsettling shocks (i.e. financial crises).
- Legitimation and recognition are important ways to become mainstream practices alongside the dominant status-quo. In this case study, the energy agreement was an important policy event that legitimised several trends (such as community energy) that had before then not been recognised by wider society.

8. List of references

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9. Annex 1

Methodology

The research was conducted in **exploratory** fashion (see below). Because of the iterative nature of this case study, points 1-7 were not conducted chronologically. Rather, they run in parallel:

1. **Scoping:** A scoping was conducted amongst colleagues at the Dutch Research Institute for Transition of which social innovation initiatives they knew of in the realm of finance and subsidisation. Further research through search engines led to a long list of ca. 70 finance/subsidy/tax/fiscal instruments and initiatives.
2. **Document / literature review:** A review of the literature and documents on this topic was conducted. For this, we used nexislexis, Google, Google scholar. Search queries were: 'finance renewable energy', 'financing energy transition'. After the areas of research became clearer, more specific search queries were used: 'invest-nl', 'crowdfunding', 'kfw nederland'.
3. **Coding:** documents were coded in Atlas.ti.
4. **Scoping:** narrowing down the scope for the research in conversation with SONNET colleagues working on the Polish and U.K. case studies, to 1) make our scopes relevant for all three countries, 2) match the limited time available to do the case work (reducing scope).
5. **Interviews:** 8 interviews were conducted by selection and personal invitation through e-mail and LinkedIn. The initial approach was to snowball through these interviewees. However, we wanted to grasp the breadth of innovations and therefore interviewees were selected more specifically for their diversity of knowledge in this topic. LinkedIn was used to place an open call to ask for interviewees from specific organisations.
6. **Analysis:** interviews, documents and codes were analysed and written up.
7. **Validation:** interviewees were asked to review the relevant aspects of the report in order to validate the assumptions and findings. In some instances, interviewees were asked for specific feedback on a paragraph or the key insights. Feedback was incorporated and used for the final research report.

This case study had several challenges and limitations around bias and normativity. Firstly, the case does not manage to break away from the **underlying bias that innovation is good**. Secondly, the depth and breadth of the field (financing and subsidisation of RE) proved difficult to capture within the time limits of this case study. Therefore, at times, we had to leave out relevant narratives in order to save on time. This means that the case study is **not a complete representation of social innovation in finance and subsidisation for RE**.

Additionally, the **covid-19 pandemic** challenged the research because it limited the amount of participant observation that was possible. Participant observations (as provided in the table below) were mainly used to

learn more on the topic of financing, rather than observing the participants in the audience. This was because observations are difficult through a screen, and because of the limited time for interaction in these webinars and lectures.

List of interviewees

Code interview	Interviewee	Type of actor according to SONNET	Date of interview	Duration of interview	Interviewer
Interviewee 1	Frits Verheij, senior consultant energy transition at TNO	SIE-field-actor	3.12.20	1h	Maria Fraaije
Interviewee 2	Co-founder of a renewable energy focused crowdfunding platform	SIE-initiative	3.12.20	2h	Maria Fraaije
Interviewee 3	Martin Otten, Senior Advisor	SIE-field-actor	3.12.20	1h	Maria Fraaije
Interviewee 4	Sustainable finance expert	SIE-field-actor	8.12.20	1h	Maria Fraaije
Interviewee 5	Sustainability fund manager	SIE-field-actor		1h	Maria Fraaije, Sarah Rach
Interviewee 6	Gijsbert Koren, formerly co-founder crowdfunding platform CrowdAboutNow, currently founder of Crowdfundingcijfers	SIE-field-actor	11.12.20	1h	Maria Fraaije

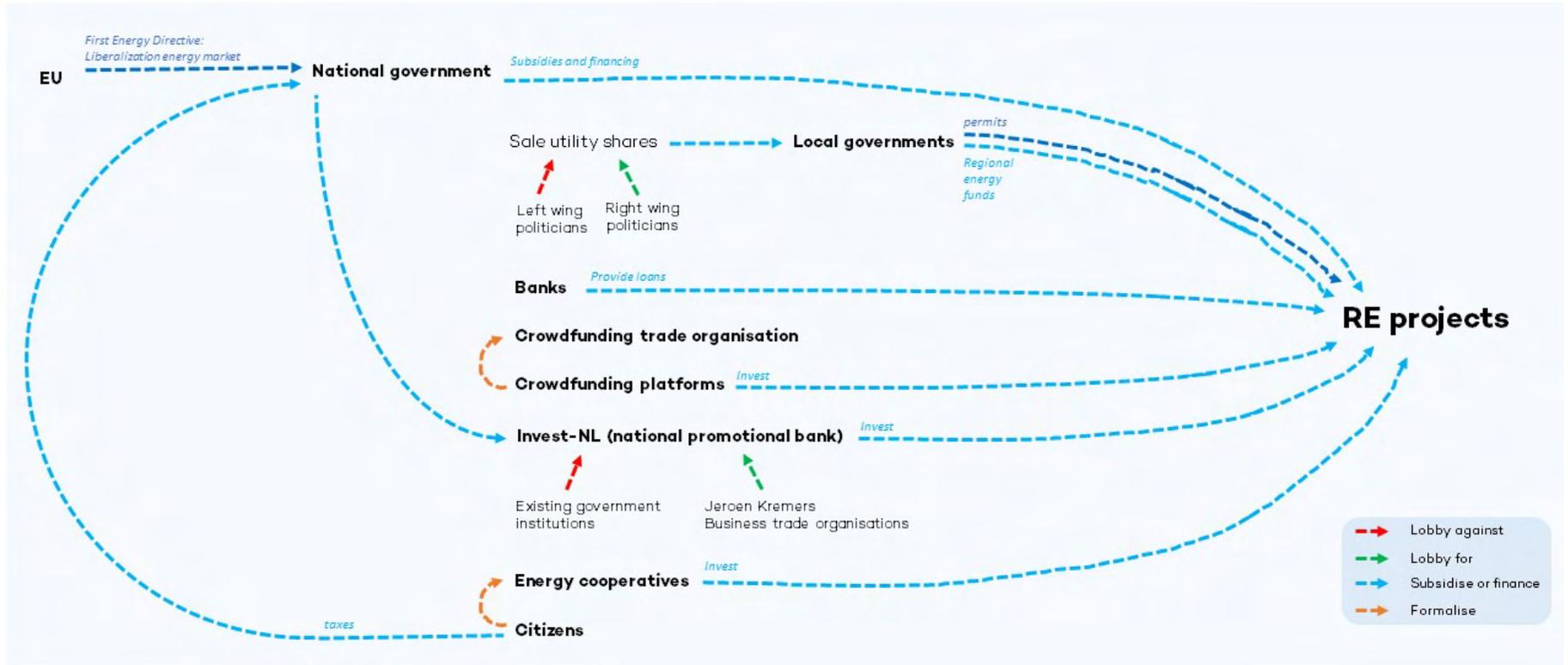
Interviewee 7	Account manager sustainable project finance ASN Bank	SIE-field-actor	16.12.20	1h	Maria Fraaije
Interviewee 8	Freek Kranen, former sustainability project leader at province of Overijssel and renewable energy entrepreneur	SIE-field-actor	17.1.21	1h30	Maria Fraaije

List of meetings and events attended

Event name	Event organiser (name or description)	Type of event	Date of event	Who attended
Webinar finance in transition	DRIFT	Online webinar	9.7.20	Maria Fraaije
Lecture Sustainable Finance	University of Amsterdam	Lecture	18.12.20	Maria Fraaije

10. Annex 2

Detailed SIE-field timeline and actor table



DATE	TYPE OF EVENT	DESCRIPTION OF EVENT	QUOTE & SOURCE e.g. document, interviewee
PHASE 1: Bridging the Unprofitable Top			
1996-1998	Policy event	EU publishes the First Energy Directive, Privatising the energy sector of EU member states to increase efficiency and economic growth through the First Energy Directive. This was transposed by the Netherlands into the Electricity and Gas Act of 1998.	n/a
2003	Policy event	Ministerial regulation on the environmental quality of electricity production (NL: Ministeriële regeling Milieukwaliteit Elektriciteitsproductie) launched. Its goal was to stimulate usage and production of green electricity through a subsidy, instead of a tax (Regulating Energy Tax, REB, of 1996)	(Mulder et al., 2007)
2008	Policy event	Stimulation regulation Sustainable Energy Production (NL: Stimulerend Duurzame Energiesubsidie) (SDE) subsidy launched: <ul style="list-style-type: none"> • Increased focus on efficiency of subsidization • Increased focus on stimulating innovation • Broader focus including more technologies (i.e. heat, green gas) • Shift in focus from biomass to wind energy 	(Mulder et al., 2007)
2011	Policy event	SDE changed to SDE+: <ul style="list-style-type: none"> • Increased focus on efficiency of subsidization • Shift in focus from private individuals to economic efficiency 	(Algemene Rekenkamer, 2019);
2020	Policy event	SDE++ changed to SDE+++: <ul style="list-style-type: none"> • Shift in focus from stimulating RE, to reducing CO2 	(Wiebes, 2020).

		<ul style="list-style-type: none"> Shift in focus from stimulating RE, to stimulating CO2-reducing techniques (i.e. carbon capture and storage and green hydrogen) 	
PHASE 2: Giants with Feet of Clay			
2004	Outside SIE-field event	Crowdfunding platforms emerge in the USA	Interviewee 2
2005	Outside SIE-field event	Emergence of online payment service iDeal	Interviewee 2
2012	SIE-field event	The first donation-based crowdfunding platforms emerge in the Netherlands	Interviewee 2
2012-2016	Ongoing policy trend	In the beginning, financial authorities had a passive approach towards crowdfunding platforms. The Authority Financial Markets (AFM) advised limited enforcement of existing regulation to stimulate innovation.	(AFM, 2014), interviewees 2 & 6
Ca. 2010-2012	Policy event	Local and regional authorities start selling utility shares and start financing the energy transition with the profits (regional energy funds), rather than subsidising.	Interviewee 8
Ca. 2012	SIE-field event	The regional energy funds introduced a new player into the energy transition, as governments outsourced the fund management of the regional energy funds to a private non-profit association: the Stimulation fund of People's Housing (NL: Stimuleringsfonds Volkshuisvesting, SVN).	Interviewee 5
2013	Policy event	in 2013, a nation-wide deliberated agreement was launched that provided a vision of the future energy system by a multitude of actors: The Energy Agreement. It was signed by a wide range of stakeholders, varying from civil-society actors to banks, regulators, NGOs, governments, cooperatives and energy actors. The agreement formalised, for the first time, the importance of citizen participation. Moreover, it prescribed an	Interviewee 2, 8 and (VNG, 2014; p.8).

		important role for local authorities to realise the ambitious goals.	
2014	SIE-field event	The first investment-based crowdfunding platforms emerge in the Netherlands	Interviewee 2 & 6
2012-now	Ongoing trend	Banks investigate their role towards crowdfunding, but none of the changes in ways of doing, think or organising stick.	Interviewee 6
2016	SIE-field event	A crowdfunding platform trade organisation was initiated and launched by (with support from the Ministry of Economic Affairs) to further professionalize the crowdfunding sector. The trade organization gave the sector collective power to lobby for their needs and against the dominance of the Dutch banking sector.	Interviewee 6
2016-2018	SIE-I event	The crowdfunding trade organisation lobbies for the further institutionalisation of crowdfunding within legislation to ensure that banks are forced to refer to crowdfunding platforms if they reject a proposal by an entrepreneur, in order to increase financial citizen participation in the energy transition. Banks put a stop to the further institutionalisation of crowdfunding by lobbying against the proposed legislation.	Interviewee 6
2013-2016	Trend	An ongoing trend in which banks started to see cooperatives and crowdfunders no longer as <i>"private individuals"</i> but as <i>"in fact a collection of private individuals who, together, become so professional that they can take on quite large projects. Well, we are actually seeing a professionalization step, and that now, with the help of an advisor or with someone else, [they are] ultimately being [treated as] a professional customer."</i> ¹¹⁹	Interviewee 7

119 NL: "in feite een verzameling van particulieren die die die bij elkaar toch dermate professioneel worden dat dat ze best wel grote projecten aan kunnen gaan. Nou we zien eigenlijk een professionaliseringslag, En dat dat nou dan wel met de hulp van een adviseur of met iemand anders erbij, uiteindelijk een professionele klant zijn." (Interviewee 7)

2016	Policy event	The Authority Financial Markets (AFM) lifts the exemption on legal regulation for crowdfunding platforms. From that moment on, crowdfunding platforms were under closer supervision by the AFM.	Interviewee 6
2011-2019	Other-field trend	The amount of citizen investment formalised through energy cooperatives rise enormously. From ca. 30 energy cooperatives in 2011, towards ca. 500 energy cooperatives in 2019.	HIER Opgewekt, 2019
PHASE 2: Giants with Feet of Clay			
1945-1986	SIE-field event	The Dutch Investment Bank (NL: de Nederlandse Investeringsbank, NIB) was instated after the second world war to help with reconstruction efforts. However, the NIB was privatised in 1986 within a trend of ongoing liberalisation.	Interviewee 4
1998-2015	Trend	The Dutch energy transition is falling behind as compared to other European countries (6% RE in 2014).	n/a
2014-2015	SIE-field event	Reports from the Social Economic Board (NL: Sociaal Economische Raad, SER) posed several problems around financing the ambitions as postulated in the Energy Agreement. They found that the absence of a national financing institute made it difficult to link up with European investment initiatives, thus cause the Netherlands to miss out on large budgets. Moreover, they reported that Small Medium Enterprises (SMEs) were difficult to finance.	(SER, 2014, 2015).
2012-2016	Outside-field event	The German KfW promotional bank invests 103 billion of funding for the energy transition.	(Kuittinen & Velte, 2018)
2015	SIE-field event	The Ministry of Economic Affairs and Finance instructs Jeroen Kremers (former top-banker) to research whether the newly established Dutch Investment Agency (NL: Nederlands	(Kamp, 2015)

		Investerings Agentschap, NIA) could provide the role of a national promotional bank.	
2015	SIE-field event	Jeroen Kremers published a paper called Netherlands Investment Agency for EFSI: Start-up and Further Design, on 8 Oct 2015. He advised to develop the NIA further into a national promotional bank, such as the German KfW, and centralise government institutions.	
2015	Policy event	The cabinet announced to streamline the financing instruments for exports and foreign investments.	(Ploumen, 2015)
2016	Policy event	As a response to Kremers' report, the cabinet announced in 2015 to investigate whether a national financing institution for economic development should be established in the Netherlands.	
2016	Policy event	Social and Economic Affairs Committee of the Social Economic Council (NL: Sociaal Economische Raad, SER) invited Jeroen Kremers to see how the KfW could provide inspiration for a national promotional bank.	
2016	Policy event	Kremers publishes his paper, titled 'a Dutch Financing Institution for Economic Development: The German KfW as a source of inspiration'.	(Kremers, 2016)
2017	Policy event	The entrepreneur association VNO-NCW published a plan like Kremers' national promotional bank, titled the "Next Level Investment Fund" (Weissink & Zeemeijer, 2017). Similarly, other trade associations such as SME Netherlands (NL: Midden Klein Bedrijf Nederland, MKB Nederland) and the Netherlands Agricultural and Horticultural Association (NL: Land- en Tuinbouw Organisatie Nederland, LTO) started to lobby for a national investment fund in The Hague.	(König, 2017)

2017	Policy event	Political recoil for Kremers' plan to centralise government institutions, due to the large amount of opposition by BNG, NWB, FMO and VNG.	Interviewee 4
2020	SIE-I event	On January 16 th , 2020, a national promotional bank came into being: Invest-NL.	(EZK, 2020)
2020-now	Shock / crisis	Originally, Invest-NL aimed to invest most of its funds into the energy transition. However, since the outbreak of covid-19 and ensuing pandemic, Invest-NL retracted their initial promises to the energy transition and instead made 100 million euros available for the Temporary bridging loan for innovative start-ups and scale-ups (NL: Tijdelijke Overbruggingskrediet innovatieve start- en scale-ups, TOPPS).	(Hueck, 2020)
2020	SIE-field event	Trade organisation Entrepreneurial Netherlands (NL: Ondernemend Nederland, ONL) complains that Invest-NL is still too risk-averse, with their minimum loan of 5 million euros.	(van Zilver, 2020)