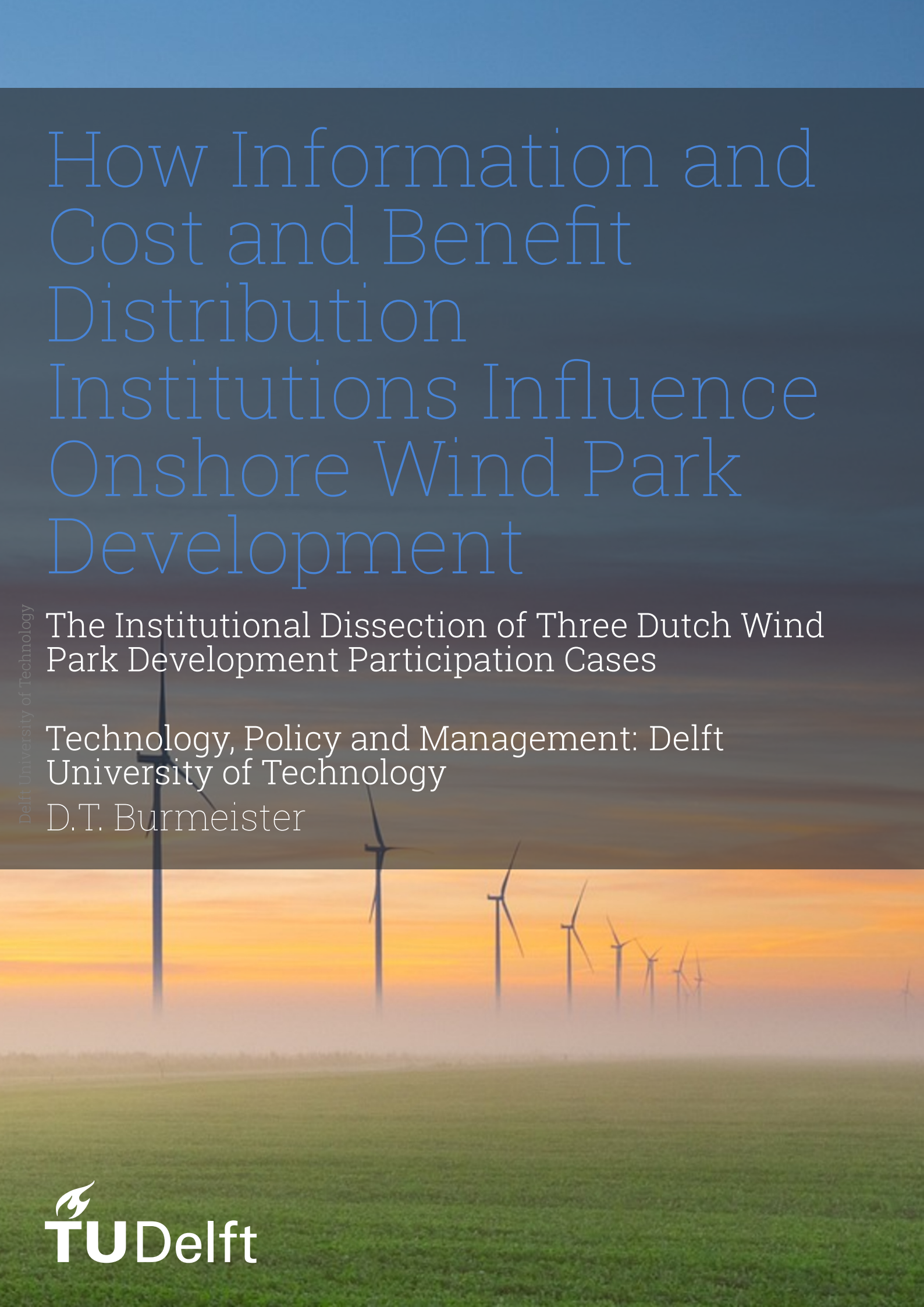
How Information and Cost and Benefit Distribution Institutions Influence Onshore Wind Park Development

The Institutional Dissection of Three Dutch Wind Park Development Participation Cases

Technology, Policy and Management: Delft University of Technology

D.T. Burmeister



TU Delft

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The Institutional Dissection of Three Dutch Wind Park Development Participation Cases

by

D.T. Burmeister

to obtain the degree of Master of Science

at the Delft University of Technology,

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Preface

This thesis encompasses a very detailed account of participatory processes of Dutch onshore wind park development. It ranges from very generic institutions to very detailed case dynamics. By taking this wide scope it hopes to capture the intricate dynamics of institutions at various levels of governance and implementation. It was written between January and September of 2024. Two supervisors have overseen the study, conducted at the Faculty of Technology, Policy and Management of the Technical University of Delft.

I would like to start with the impressive process that this thesis has been to go through. While the thesis process has not been without struggle, my personal private challenges have simultaneously played a role during the thesis process. While challenging I have received support and weekly attention from my supervisor Rutger van Bergem, whom I want to thank for that. His input for this thesis has kick-started the project and given me the perspectives from which the thesis sprung. The informal attitude and dialogues about institutional theories were always pleasant and motivating. Second, I would like to thank Amineh Ghorbani for her input and sharp feedback during the short feedback moments that we had. Her input on the methodology and structure were transformational for this final version of the thesis.

Lastly, I would like to thanks J.S. Brouwer and the Bachelor Students that worked so hard to provide the basis of the knowledge about the Dutch LEC-involved wind park cases. My special thanks goes out to Floor Broekman, who has provided a lot of the input for the case studies with her Bachelor End Project. Her detailed accounts made it possible to analyse the specific institutions at case level. Altogether, I am happy to present my final master thesis, *How Information and Cost and Benefit Distribution Institutions Influence Onshore Wind Park Development*

D.T. Burmeister
Delft, September 2024

Summary

This thesis addresses the critical issue of advancing the transition to renewable energy by focusing on onshore wind park development. In countries like the Netherlands, where population density is high, wind energy projects often face resistance from local communities. Local Energy Cooperatives (LECs) have emerged as a potential solution, offering a way to involve citizens more directly in the ownership and development of energy resources. This approach is seen as a way to reduce opposition and enhance acceptance of wind energy projects. The core aim of the thesis is to explore how structuring local participation through LECs can contribute to accelerating the energy transition.

To investigate this, the research employs an institutional case study approach, drawing on Williamson's New Institutional Economics Theory and Ostrom's Institutional Grammar. These frameworks are used to analyse both formal institution, such as laws and regulations, and informal ones, such as norms and shared values that influence the development of wind parks. By examining three specific cases, the study assesses how communication and benefit distribution are managed in wind park projects and how public and private actors interact within the broader institutional context. The analysis integrates high-level national policies with the detailed processes occurring at the case level, offering a comprehensive view of how rules, norms, and strategies shape the interactions and agreements between multiple actors involved in wind park development.

The findings of the thesis highlight several key insights. Firstly, the size and authority of the jurisdiction overseeing a wind park project significantly impact its development. Larger authorities tend to have more resources, which enables them to manage the project more effectively and engage with local residents. Additionally, location-specific planning and permitting procedures, particularly where pre-selected sites have been identified in land use plans, facilitate the development process by making information more accessible and improving the dynamics between local residents and project initiators. Early stakeholder engagement and thorough upfront planning are also critical to the success of wind park projects. Transparent communication with local residents from the outset is essential to reducing opposition and building trust, while a lack of engagement tends to foster resistance and delay development. Another important finding is that the current policies governing participation and benefit distribution are often inadequately implemented. More flexible policies that allow for interpretation by local authorities and are guided by strong principles rather than strict regulations tend to yield better results. Early engagement with stakeholders, combined with tailored compensatory measures that reflect the specific needs of different resident groups, leads to more efficient project outcomes. Understanding the differences between local resident groups, such as those living close to the project versus those living in nearby cities, helps to ensure that compensatory measures are appropriate and that development processes are shortened.

The research carries important implications for advising policymakers and project initiators. It emphasises the need for early and continuous engagement with local residents to build trust and reduce opposition. Moreover, flexible policies that allow for interpretation and are supported by clear principles are more effective than rigid regulations. Educating municipalities and expanding successful strategies, such as the Regional Energy Strategies, can further enhance the effectiveness of wind park projects. These steps can help authorities select competent project initiators and improve the implementation of participation processes. The scientific contribution of this thesis lies in its novel approach of linking high-level national institutions with case-specific participatory processes. By combining these perspectives, the research provides a deeper understanding of how formal policies and spatial planning laws are translated into practical actions at the local level. This dual-level analysis sheds light on the interactions between different actors and institutions, offering insights that had not been studied in such detail before. In doing so, the thesis contributes valuable knowledge to the field of institutional analysis and renewable energy development.

Contents

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Nomenclature

Abbreviations

Abbreviation	Definition
AOJ	Authority of jurisdiction
CoS	Council of State
CWEPD	Commercial Wind Energy Project Developer
GMR	Groene Metropool Regio (Arnhem-Nijmegen)
IS	Institutional Statement
IG	Institutional Grammar
LEC	Local Energy Community
MWh	Mega Watt hour - Electricity energy metric
MC	Municipal Council
ME	Municipal Executive
PC	Provincial Council
PE	Provincial Executive
RE	Renewable Energy
RES	Regional Energy Strategy
RiF	Rules in Form
RiU	Rules in Use
TWh	Tera Watt hour - Energy metric - a million MWh

Terminology

Term	Definition
Authority of jurisdiction	*The authority that has the mandate to grant permits, usually the environmental permit to developers*
Planning blight	*A legal compensation measure for civilians that experience loss of property value due to the change of spatial plans*
Shadow flicker	*The shadow that is casted periodically over an area due to the rotations of wind turbine rotors*
Wind park	4 or more wind turbines, placed in proximity and built and managed as one project

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Introduction

1.1. Problem introduction

Society needs to move away from burning fossil fuels and install less carbon-intensive energy production capacity. In the international Paris Agreement countries committed themselves to keep global warming under the 2 degrees Celsius (UN, 2015). These goals are translated into National Renewable Energy (RE) goals, via agreements as the Dutch National Climate Agreement (Government, 2019). These goals lead national energy transitions, moving societies to a different energy system. This future energy system is a system where the primary energy mainly comes from Renewable Energy sources. To achieve these goals large amounts of RE are necessary. This means that both solar and wind energy are needed, on both land and sea. These technologies need space, for which they compete with other spatial interests, which creates a set of challenges. Particularly concerning the trade-off between more RE and the impact this has on its environment. With almost 29 million MWh wind energy compared to 21 million MWh solar in The Netherlands in 2023 (CBS, 2024), wind energy is a crucial resource to fulfil this energy demand. But it is not only positive. Wind turbines are associated with noise pollution, flicker shadow, scenic impact, and ecological impact, such as bird strikes (Wolsink, 1999). Although many people support wind energy, they often do not support wind turbines near their home. This effect is called 'Not In My Back Yard'- or the NIMBY-effect, which describes the discrepancy between people's support of wind energy and their support for siting a wind park (Wolsink, 1999). This resistance can lead to legal procedures, extensive planning and development processes, and delays for wind park development (Brouwer, 2023).

The social acceptance of RE such as wind turbines is driven by two principles, procedural justice and distributional justice (Luca et al., 2020). Case studies have demonstrated that local involvement can positively impact the local support for RE projects (Berka and Creamer, 2018; Musall and Kuik, 2011; Warren and McFadyen, 2010). Local involvement can materialise in different forms. It can be through compensation measures, financial participation in projects, consulting in projects, or by even taking a small or large share of the ownership of an RE project. These forms of participation seek a more equal distribution between the benefits and the burdens of a wind park.

A form of local involvement is through Local Energy Communities or Local Energy Cooperatives (LECs). LECs have many different types of forms and definitions. According to Bauwens (2019) LECs are 'initiatives where citizens collaborate to address various aspects of low-carbon energy transitions, encompassing development of projects for heat and power generation from RE sources.'. LECs in The Netherlands have a long history. While LECs originated from environmental concerns and resistance to nuclear energy in the 70s, they have evolved from managing small-scale, community-based wind turbines to playing a significant role in the national energy landscape (Warbroek et al., 2019). Their expansion reflects a broader trend in Western Europe and has been particularly notable in the Netherlands, where their numbers increased from 20 in 2011 to over 700 by 2022, demonstrating a shift towards community-driven energy initiatives (Germes et al., 2021; HIER, 2022). LECs are not merely seen as individual efforts, but also as a mechanism for fostering community control over energy sys-

tems, democratising this crucial resource, and promoting civil ownership and local participation in the energy transition (Bauwens et al., 2022).

Because of their increasing presence LECs are maturing as a concept and are increasingly fostered by regulation. The Dutch National government aims to have 50% local ownership in new energy projects (Government, 2019). In 2019 the EU adopted the Clean Energy for All Europeans package. This package involved the acknowledgement of LECs as actors in the energy landscape (Anfinson et al., 2023). Giving them rights to access energy markets, and more handles to operate as a legal entity. This is also supported by sentiment in the Dutch society. As two-thirds of the Dutch people are positive about LECs and 30% of people would consider joining an LEC (Schwencke, 2019). These benefits are correlated with placing energy production capacity in areas where it conflicts with other interests. As it was technically estimated that 40% of the Dutch national energy demand can be satisfied by local energy production (Boon & Dieperink, 2014). This competition for land and other interests than still poses large challenges, but if it succeeds it could have major benefits for the future energy system. This has not gone unnoticed and more calls for the acknowledgement of LECs are made (Tebbens, 2024). These benefits create potential for LECs to become an established actor in the changing Dutch energy landscape (Dóci et al., 2015).

Locally owned energy through LECs could solve select contemporary problems. But this will need further implementation of LECs. And while they can be fostered due to better legislation, they are still dependent on the landscape that they function in. This landscape is a distinct mix of policy, public authorities, commercial actors, and local stakeholders, such as residents. LECs are dependent on internal and external factors that can pose barriers. LECs are driven by both public and private values (Brummer, 2018), therefore they are often dependent on both public support and local social capital (Berka & Creamer, 2018). Social capital and cooperation cannot be mobilised without trust, so this is essential for LECs to function well (Walker et al., 2010). This need for social trust also causes vulnerability for LECs in a field of focused and strongly organised actors such as state actors or commercial energy development companies. Other problems that LECs encounter are limited network support, lack of expertise, lack of finance, lack of support from local governments, and the mobilization of local residents (Germes et al., 2021).

Concurrently, commercial parties have leveraged substantial investments and professionalized business strategies to contribute to the growth of wind energy on an increasing scale. These parties leverage substantial resources and professional development skills to develop profitable wind energy projects (Brouwer, 2023). Yet, these operations have not been without scrutiny, as debates over the transparency of their practices, concerning foreign investments and distribution of burdens, have emerged (Bohmeijer, 2022). While foreign investments provide increased financial resources for RE development, they also allocate part of the revenues to foreign actors. The burdens of these parks still end up in the local area, increasing discrepancies between the distribution of benefits. The spectrum of LECs and their difference from the commercially driven actors leads to a spectrum of organizational models and governance challenges in the wind energy domain.

Altogether LECs have a large potential to contribute to the energy transition but still face a number of challenges due to their social nature and the complex field that they function in. It is clear that involving local stakeholders such as local residents can increase local acceptance of RE wind projects. It is also clear that LECs can organise local participation in different ways, which influences local resistance and project outcomes. But with the variety of types of LECs and the other forms of local participation, it is not yet clear how to organise participation through LEC-ownership optimally. Especially in this rapidly changing field with a wide variety of different actors. This thesis aims to clarify what form of local participation through LECs can contribute to better onshore wind project development. But the process can only be improved if it is understood. Therefore, this thesis aims to identify the institutions that influence local participation through LECs and how the interaction between actors impact the development process of onshore renewable energy projects.

1.2. Knowledge gap

Research on LECs and participation of the local area has manifested itself in a number of different ways. Each providing their own addition to the current understanding local participation through LECs.

Research has progressed from describing LECs as a homogeneous value-based activist groups to more focused research on governance and economic functioning (Berka & Creamer, 2018). The research points out that there is a wide range of different LECs, with different motivations, contexts and governance (Brummer, 2018; Gui et al., 2017). Next to LECs being entities that own energy resources, LECs can also be seen as a form of local participation (Dudka et al., 2023). This makes it very hard to generalise knowledge about LECs and demands deeper insight in specific contexts, and the impact of LECs on their local environment (Berka and Creamer, 2018; Brummer, 2018). Deeper understanding of the dynamics inside the specific cases can create more insight. This insight enables more effective identification of barriers and success factors. Institutional research has been proposed as an effective way of analysing the complex field of RE development such as wind energy. This has been done on a larger scale analysing the institutional governance models (Dudka et al., 2023). Analysing institutions in the form of supra-national regulations (Anfinson et al., 2023). By using the IAD-framework to study value development in LECs (Milchram et al., 2019). Or using the IAD Framework to study fourteen cases to identify information institutions and payoff institutions as the most important institutional categories in Dutch onshore wind park development (Brouwer, 2023). Institutional research allows interpretation of both the written policy and legal frameworks, as unwritten agreements. It is therefore useful for analysing actor organisation and coordination mechanisms. Institutional research is thus a promising line of research for participatory systems in the energy transition.

Former institutional research has identified institutions about information dissemination and the distribution of costs and benefits as important types of institutions, but it did not elicit which specific institutions influence the development process on a detailed level (Brouwer, 2023). It also lacks the understanding of how these are formed, and what this means for the behaviour and coordination of actors. Former studies identify what institutions are important, but not how these institutions exactly influence the actors and their behaviour specifically. This leaves open a knowledge gap, which could improve understanding of how the most important institutions can be used to create more efficient wind park development processes. By analysing what institutions originate from policy and how these are translated to workable institutions on case-level, the process of the forming of institutions and their effectiveness can be understood. This understanding can be used to create new institutions or focus the support of policy makers on the right type of institutions. It also adds to the understanding how both formal and informal norms interact to create outcomes on case-level.

This thesis will zoom in three cases to add knowledge in understanding the most important types of institutions guiding LEC wind park development. It takes a next step by addressing the fine-grained rules and norms guiding actor interactions and their impact on the participation through LECs onshore wind park development. To do this it will identify how written regulations from different governmental levels influenced the implementation of the participation and inclusion process, focusing specifically on the distribution of information and costs and benefits. By identifying the national laws and institutions, written participatory policies, informal agreements at case-level and actor dynamics, knowledge is added on the interaction between national laws, participation policies, and the participation of stakeholders at case-level. Creating insight in the focus areas for policy creation and the direction for further institutional research. Finally, leading to policy recommendations and potential avenues for further research that can further improve the wind park development process.

1.3. Research Structure and Research Questions

This thesis is structured through national law and wind park development institutions analysis, a written participation policy analysis, and an informal case-level institutions analysis. First, the Dutch state governance and national spatial laws are analysed to understand national wind park institutions, then the three cases are presented, then the written case participation policies applicable to the cases are analysed, after which the informal agreements and actor coordination mechanisms are analysed. Lastly, the results are analysed across all cases to synthesise the results from the three cases into the most important institutions and their workings, and the resulting actor coordination mechanisms. This will lead to insight in what institutions are important and where future policy makers and research should focus on.

Multiple theories are used to structure the institutional analysis. Williamson's Institutional Economics theory is used to provide the theoretical basis for extracting high-over institutions such as spatial plan-

ning laws, permitting procedures and the structure of Dutch governance. This allows for understanding the context of more specific institutions at case-level, and the interaction between higher and lower level institutions. It further uses the institutional theories of Ostrom linked through the IAD-Framework to categorise institutions and link them to the actors coordination at case-level. The Action Situation rule categories and the Institutional Grammar of Ostrom and Crawford provide a tool to categorise and structure institutions at different levels of governance and the nature of the institutions. The combined framework is used to understand the origins, the development, and outcomes of institutions at case-level from an outsider perspective. Which then allows to understand how the institutions work and what can be changed or improved to foster better institutional settings for future onshore wind park development in The Netherlands. The study is structured using four sub-questions (SQs), each adding their own layer of insight and specificity to result in an answer to the main research question (MRQ). The main research- and sub-questions are presented and explained below. The main research question is:

"How does the relationship, between written rules, informal agreements, and the coordination mechanisms between actors about participation, influence Dutch onshore wind park development?"

1.4. Sub-questions

The primary research question will be addressed through four distinct sub-questions (SQs), to systematically structure the research:

SQ1: Exploring the Dutch Wind Energy Development institutions

- *What institutions influence onshore wind park development in the Netherlands?*

  SQ1 forms the contextual inquiry, delving deeper into the regulatory and process context. It uses the Williamson Four-Layer framework theory, in combination with grey and scientific literature to provide what context institutions exist for the development of onshore wind parks in The Netherlands, and their participation.

  This is important for understanding how institutions at case level are influenced by the larger institutional system and wind energy process practices. It lays the groundwork for understanding the wind park development process, and where the formal, and informal rules in the cases originate from. It also provides oversight of what actors and governance institutions play a role in the Dutch field of wind energy development.

SQ2: Identifying the Formal Rules

- *What are the written agreements in policy documents that influence communication and costs and benefit distribution in onshore Dutch wind park development?*

  SQ2 forms the formal rules identification. It builds on the results of SQ1 to identify the right sources for the formal participation institutions. The formal institutions are analysed using Institutional Grammar theory of Ostrom in the form of the ADICO-syntax. It uses desk research to identify grey literature in the form of policy documents of governmental organisations. This will provide the specific formal rules guiding participation specifically, how prescriptive they are, and by which policy-making actors they are prescribed.

  This is important for understanding what formal rules prescribe participation in wind park development in The Netherlands. It also gives insight in what participatory rules are embedded in the policies, how open ended they are prescribed, and where they originate from. Ultimately this provides insight in how written institutional were the context for the informal and voluntary agreements at case-level. This will lead to conclusions about the structure of the policy-framework and is discussed per case.

SQ3: Identifying the Informal Rules

- *What are the detailed informal agreements about communication and costs and benefits distribution between actors in onshore Dutch wind park development?*

SQ3 forms the informal rules identification. It analyses three selected cases to identify what informal rules guide the distribution of benefits and communication. It uses the Institutional Rule Categories from the Action Situation of Ostrom's IAD-Framework to identify the right type of institutions. It uses case studies, interview data, and supplementary desk research to identify the informal institutions, dynamics, and participation results of the actor dynamics and institutions.

This allows understanding for what formal and informal rules shaped the cost and benefit, and information, distribution in the cases. It also allows the identification of how the formal participatory institutions led to the informal payoff and information institutions at case level. This sets the stage for understanding how formal and informal rules interact with actor coordination mechanisms to form information and benefit distribution and the resulting development process.

SQ4: Interpreting the Institutional Impact on wind park development

- *How do the formal institutions, informal agreements, and actor coordination mechanisms impact communication and benefits distribution in Dutch onshore wind park development?*

  SQ4 uses the results of SQ1, SQ2, and SQ3 to identify the most important actor coordination mechanisms to analyse how all the institutions and the actors influence each other. This is compared across cases to see if and how the information and payoff rules influenced indirectly and directly influenced the project development. This is the interpretive step to identify the workings of institutions and policies, and chances of improvement. This is used to answer the MRQ.

1.5. Research Flow Diagram

The research is structured using four phases. First the initiation and discussion is done in chapter 1, 2, and 3. Then, the context institutions and case information are provided through chapter 4, and the case backgrounds in chapter 5. This leads to the specific participatory case analyses. Starting with the formal institutions analysis in chapter 6, continuing with the informal institutions at case level in chapter 7. Ending with a synthesis of the case results in chapter 8, embedded in the context institutions provided in chapter 4. The last phase is the conclusion and discussion of the results to answer the research question and discuss the findings in chapter 9. The structure of the thesis is outlined in the research flow diagram in figure 1.1, below.

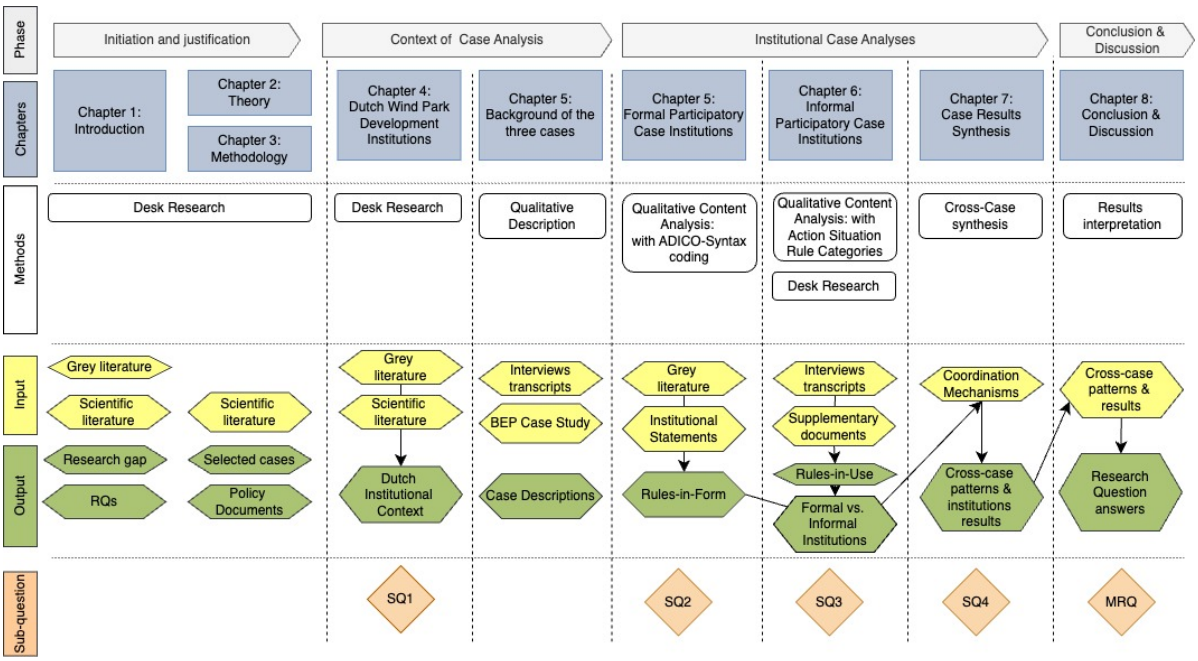

Figure 1.1: Research Flow Diagram

1.6. Relevance to CoSEM Master Program

The Complex Systems Engineering and Management Master at the TPM faculty of the TU Delft focuses on socio-technical system engineering and design. Critical elements are the complexity of human-engineered systems that interact with society and therefore are inherently unpredictable. This complex social component benefits from extra lenses such as modelling sciences, organisational sciences, economical sciences, and institutional sciences.

Institutions, as defined by North (2006), encompass both formal and informal rules shaping human economic behaviour. This institutional lens includes written legal rules, intrinsic property rights systems, and human customs and culture. Institutions, essentially the (often unconscious) rules guiding human interaction and behaviour, play a crucial role. Examining socio-technical systems through the institutional lens allows capturing both the intricate social dynamics and the technical constraints of the system. Applying institutional theories to analyse the socio-technical systems of LECs involved in developing wind parks in the Netherlands, aligns seamlessly with this program's focus on the social, organisational, and technical aspects of these systems.

The social components are conceptualised as an action situation where social interactions determine collaboration, motivation, or opposition to new wind parks. Organizational aspects involve internal agreements and decision-making rights within LECs and with other stakeholders. On the technical side, wind parks comprise technological systems with turbines with specific sizes, properties, and capabilities. For instance, the interconnected nature of size, location, and quantity affects the produced power, which is in turn reliant on connection to the national energy grid to provide utility. The distribution of benefits of this power is intricately linked to agreements made under specific decision rights and social consensus on fairness. This interplay of social, organizational, and technical aspects creates a complex system, exemplified by the intricate relationships between location, turbine size, benefit distribution, and social agreements. Considering the potential contribution to a more just and sustainable future, this research is highly relevant and applicable to a CoSEM master thesis.

2

Theory

This thesis uses two bodies of theory, the Four-Layer model of Williamson and the Institutional Theories of Ostrom to structure the data for the institutional research. It uses the second layer of the Four-Layer model of the New Economics Theory of Williamson to understand the wind park context institutions forming the development process, and thus the participation process, are described in chapter 4. This is explained in section 2.2. Then it uses Ostrom's Institutional Grammar and ADICO-syntax to categorise, order, and dissect the participatory institutions, explained in section 2.3. These institutions from governmental policy documents around participation are analysed in chapter 6. Then, Ostrom's Action Situation and its Rules are explained in section 2.3.3. This theory is used to categorise the informal and formal institutions surrounding participation, that are analysed in chapters 6 and 7. This chapter starts with a general discussion of what institutions are in the first section, it continues with Williamson's Four-Layer model, and ends with Ostrom's Institutional Grammar, IAD-Framework, and Action Situation with the Institutional Rule Categories.

2.1. Defining Institutions and Rules

This thesis uses the term 'institution' in a broad manner. This encompasses both formal institutions such as, laws, organisational rules, and polity. As informal institutions such as norms, culture, and unconscious cooperative strategies. Institutions are essential to the governance of individual and collective behaviour (Siddiki et al., 2022). Classically the term 'institution' is used for a large building housing a bureaucratic organisation like a school or a hospital (Watkins & Westphal, 2016). But in economics the term 'institution' is more generally used as 'all formal and informal rules shaping economic behaviour' (North, 2006). By institutional analysts institutions are defined as 'collectively shared prescriptions that guide human behaviour in any given situation' (Crawford & Ostrom, 1995).

Institutions, formal rules, and informal rules are overlapping terms that are used in Institutional Analyses. As this thesis conducts an institutional analysis, the term 'institutions' and what it encompasses are essential to this research. This section will therefore demarcate how institutions are conceptualised. Institutions can thus refer to the simple rules that allow members of an organisation to organise themselves, but it can also mean a specific institution, 'rule' or 'prescription' that guides how organisations themselves are allowed to interact. This means that the term 'institution' can mean a 'specific written legislative rule in a policy document', but also a 'process guided by administrative norms' such as a wind park development process. Because they both are rules or sets of rules guiding economic behaviour and organisation. The former definitions can co-exist and all concern the conscious and unconscious rules that guide human or behaviour that lead to organisation. Brought together as "the prescriptions that humans use to organize all forms of repetitive and structured interactions including those within families, neighbourhoods, markets, firms, sports leagues, churches, private associations, and governments at all scales." (Ostrom2005book, p.4).

The broad application of the term 'institution' makes it suitable to analyse large organisational structures, while also applying to small specific rules that lead to these organisational structures, makes it possible

for these organisational structures to emerge. By connecting these two concepts under the same term, 'institutions' allows studying the complex interwoven institutions on different layers of organisation. *Formal rules* are formally codified prescriptions, such as public policies, administrative rules, legislation, and policy guidelines (Siddiki et al., 2022). *Informal rules* are defined as social norms or practices (Siddiki et al., 2022). This research uses institutions as being rules or other types of norms, or less prescriptive guiding principles of behaviour. Those can be formal institutions and informal institutions, but these concepts are not mutually exclusive. Sometimes a policy prescription can be a norm that is formally prescribed as a norm as well. Case-level agreements and contracts between stakeholders present ambiguous situations as well. An informal norm or rule that is not yet prescribed can be agreed between actors and become a formal written institution. In which case it is not prescribed as formal institution in policy, but does manifest itself in a legal written agreement. When such a rule is successful a policymaker can integrate this, previously, informal institution as new policy. This way formal rules are informed by informal rules, and the other way around. The other way around formal rules can impose informal ways of conduct. These dynamics will be researched in the analysis. *Descriptive institutional analysis* assesses the institutions based on their qualities, without focus on explanatory relationships or the effects of institutional design (Siddikiheikkila 2022). *Diagnostic institutional analysis* focuses itself on why particular institutions emerge evolve or how they affect behaviours and social outcomes (Siddikiheikkila 2022). The combination of this descriptive and diagnostic approach can lead to insight of how these institutions influence behaviours and social outcomes (Siddiki et al., 2022).

2.2. Four-Layer Framework

In this thesis the Four-Layer Framework is used to provide structure in the embedded nature of the researched institutions and link the high-over institutions to more specific institutions in the cases. The structure of Dutch governance, the spatial acts, and the norms of participation on national level are presented as the embedded features of the second Layer of the Framework, while the rest of the analysis of chapter 6 and 7, is segmented on Layer 3. Using the different layers, allows this thesis to analyse the relationship and interaction between high-over laws and specific participatory norms and rules. Understanding this relationship allows uncovering of the origins of norms and provides a full understanding of the institutions that guide actor behaviour on case-level. To understand the functions the Framework and its link to Ostrom's institutional theories is provided in this section. The embedding of theories and analyses are demonstrated in figure 2.1.

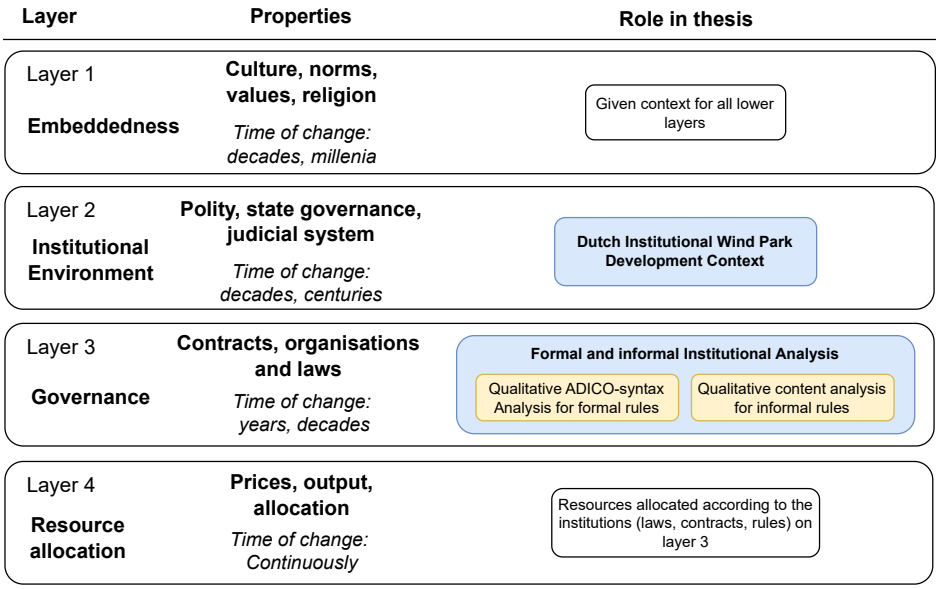

Figure 2.1: Embedding of Four-Layer Model (Williamson, 1998), adjusted by author

The Four-Level or Four-Layer Framework originates from Williamson (2000), that presented it as part of his New Institutional Economics theory. This framework theory for the analysis of how institutions shape economic outcomes (Williamson, 2000). More specifically, it provides layers of institution types, where higher layers provide context for the institutions at lower layers. The framework is presented below.

1. *Level 1:* **Embeddedness** is the highest layer, it is the domain of social theory. Embeddedness means that this describes inherent features of a society, such as its culture, customs, norms, and (importantly) religion (Williamson, 1998). The parameters on this level change very slowly, in matters of hundreds or thousands of years. It is therefore subject to descriptive institutional research, but not for diagnostic research aimed for improvement.
2. *Level 2:* **Institutional Environment** is the second layer, the domain of Economy of property rights or 'the play of the game'. The Institutional Environment is the institutional setting of constitutional rules that provide the playing field for making rules and agreements. It is the product of politics and embodies the bureaucracy, the polity of a state (Williamson, 1998). It comprises the constitutional laws, property rights, justice courts, governance and polity structure. It changes slow as well, in matters of tens to hundreds of years. It is therefore hard to study with the aim of improving but is suited to describe for better understanding of institutions on level 3.
3. *Level 3:* **Governance** is the layer above Resource allocation, and is described as 'the rules of the game'. Governance is the layer which determines the way that formal interactions are structured and enforced. The institutions of Level 2 can be seen as shift parameters for Level 3 (Williamson, 1998). This determines more concretely how markets, firms, bureaus or hybrids are governed, and what they can and cannot arrange within and between these organisations. It is the level of the formal rules and project structuring. The dynamics between actors and the institutions guiding participation through LECs are located here. The decisions on this layer come up more frequently, in matters of years or decades. This makes them subjective to diagnostic institutional analysis, as insights can provide handles for future policy.
4. *Level 4:* **Resource allocation** is the lowest and most specific layer, is the domain of Neoclassical Economics. Resource allocation means that the layer encompasses the analysis of economic interactions between actors. It deals with incentive alignment, efficiency and risk aversion, and moves from structural to marginal analysis (Williamson, 1998). It can be used for analysis of price, output, and adjusting to market conditions, it is therefore constantly adjusting and changes continuously. This layer can be studies to see the outcomes of formal and informal institutions on layer 3. It is the area of diagnostic research, but institutional changes are not made to this level. The layer can be seen as where the distribution of benefits and communication would materialize according to the identified institutional rules.

2.3. Ostrom's Institutions

The use of Ostrom's Institutions in this thesis is twofold. It uses the Action Situation and Institutional Rule categories as central component for identifying certain types of Institutions. But it also uses the Institutional Grammar to be able to dissect all institutions from different government levels and categorise them. By categorising the types of institutions and linking them to specific government levels, the IG provides insight in how the institutions differ on governance levels, and where lower level institutions originate from. This allows for placing them in the larger institutional framework and understanding the nature and workings of institutions and how they are created through the policy creation process. This section describes the different theoretical concepts and their background. First the Institutional Grammar and its concepts are introduced, after this the wider theory of the Action Situation and Institutional rule categories are introduced. In the end the IAD-Framework is used to explain how IG, the Action Situation, and the Institutional Rule categories are linked.

2.3.1. Institutional Grammar

Institutional Grammar (IG) theory is used in this thesis to dissect specific formal institutions from policy documents. This theory is part of a larger body of theory surrounding Ostrom's Institutional Development and Analysis (IAD) – Framework. This section will provide the theoretical foundation for the formal

and informal rules. The formal and informal rules are conceptualized as the Institutions-in-Form and the Institutions-in-Use. These are the more specific terms for Rules-in-Form and Rules-in-Use. These Institutions and Rules in-Use and in-Form can be simplified using Institutional Statements. These Institutional Statements are used to understand and analyse prescriptions. IG also provides the theory for the Linguistic Syntax Components or ADICO-syntax which is used to analyse formal institutions. The relevant parts of the theory are described below.

Institutional Statements (IS)

Ostrom's definition of institutions uses the word 'prescriptions' instead of rules in her definition of 'institutions'. This is because norms and strategies are also types of prescriptions that can guide behaviour, and these differ from rules. Institutions can be linguistically captured in Institutional Statements (IS). It provides a common manner of conceptualising institutions, both formal and informal. The term 'institutional statement', is defined as the 'shared linguistic constraint or opportunity, that prescribes, permits, or advises actions, or outcomes for actors' Crawford and Ostrom (1995)(Crawford & Ostrom, 1995, p.583.). Institutions-in-Form and Institutions-in-Use, correspond with Rules-in-Form and Rules-in-Use, but are more specific. Institutions in this sense mean rules, as well as norms and shared strategies.

Rules, Norms, and Strategies

An institutional statement can be a Rule, a Norm, and a Strategy. In this context Rules are 'shared prescriptions', that are mutually understood. They are enforced with sanctions or consequences when they are not respected. Norms are 'shared prescriptions that tend to be followed and enforced by actors by internal and external costs and incentives, but sanctions. Strategies are regularized plans of actions that individuals make within the existing rules, norms, and expected behaviour of others in the same situation affecting them (Ostrom, 2005; Siddiki et al., 2011). Institutional Statements (ISs) can be linguistically dissected. Every component of an IS can be structured and categorised using the Linguistic Syntax components, as demonstrated in figure 2.2.

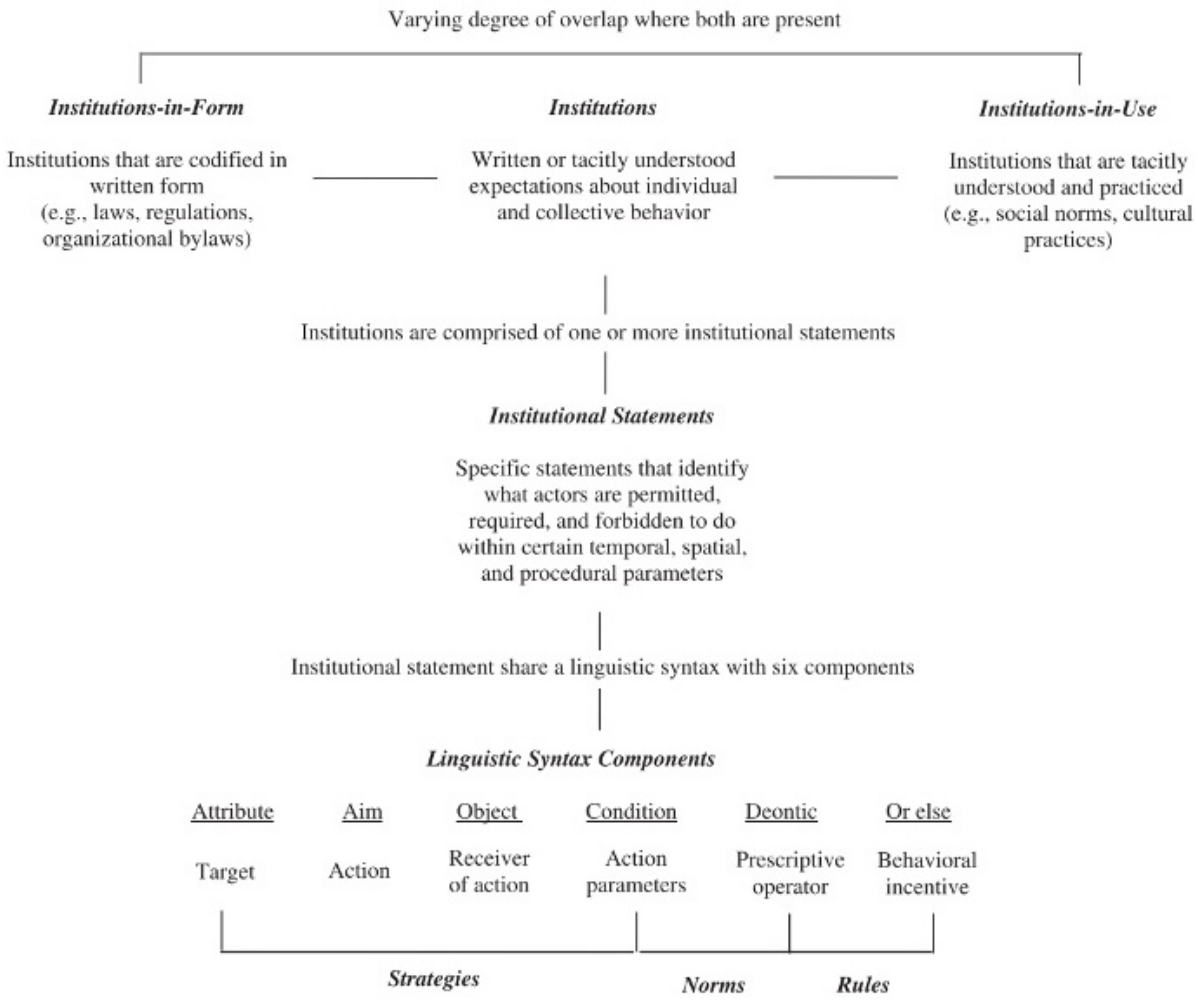

Figure 2.2: Linking formal Institutions-in-Form to Informal Institutions-in-Use through Institutional Grammar (Siddiki et al., 2022)

Coding Rules with the A(B)DICO-Syntax

An IS can be dissected and structured using the ADICO-syntax. This is a linguistic syntax that labels the different components of an IS. The Linguistic Syntax Components, or the 'A(B)DICO-syntax' can be used to identify and analyse Rules, Norms, and Strategies. The syntax is composed of five working parts, the Attribute (A), Deontic (D), aIm (I), Condition (C), and the Or else (O) (Crawford & Ostrom, 1995), which are described below.

The Attribute (A) is the agent that carries out the aIm, this can be individuals, organizations or groups of individuals. The Deontic (D) is the prescriptive operator of an institutional statement, that describes what ideally is permitted, obliged, or forbidden (Crawford & Ostrom, 1995). Next to permitted, obliged, or forbidden, other words such as must, must not, should, should not are also possible. The aIm (I) describes the goal or action of the statement that the Deontic refers to Crawford and Ostrom, 1995. The Condition (C) represents the part of the statement that modifies the aIm, often in temporal or spatial terms, but can also include descriptions of how the action identified in the aIm is to occur (Siddiki et al., 2011). The Or else (O) is the punitive action or consequence if the rule is not respected. The oBject is the inanimate or animate part of a statement that is the receiver of the action described in the aIm and executed by the agent in the Attribute (Siddiki et al., 2011).

In institutional statements, strategies only consist of an Attribute, aIm, and Condition (AIC), norms additionally have a Deontic (ADIC), and rules have a sanction: Or else (ADICO).

2.3.2. IAD – Framework

This thesis uses the Rules-in-Use (RiU) as research area, and looks at how this works out on case-level, which can be considered the active part, or the Action Situation. By analysing this specific part, the thesis allows to look at how the given RiU influence the Action Situation at case-level. This allows suggestion for improving future RiU, which can in turn create an easier Action Situation, being the development of an onshore wind park in The Netherlands in this thesis. The IAD - Framework is a meta-theoretical framework that enables scholars to embed different theories to describe a complex situation. In simple form the framework consists of an Action Situation affected by external variables. The broadest categories of external elements of the IAD-framework as coherently explained by Ostrom (2010), are:

- *Biophysical Conditions:* are the biological and physical properties that are intrinsic to the system (Ostrom, 2010).
- *Attributes of community:* are the social properties, in the broad sense of the word, that are intrinsic to the system. This can be history of prior interaction, internal hetero- or homogeneity, and the knowledge and social capital of the involved actors or of parties that influence the involved actors (Ostrom, 2010).
- *Rules-in-use:* are the shared rules, norms and strategies in the system. Shared meaning underlines the fact that the rules and norms need to be commonly understood. These rules may change over time as they interact with other action situations, or use collective-choice or constitutional-choice rule-setting in conscious manner (Ostrom, 2010).

Rules-in-Form are used to describe the formal institutions, or ‘formal rules’, they encompass written codified laws, regulations or policies. Rules-in-Use are used to describe the informal institutions, or ’informal rules’ that are tacitly understood, such as social norms, cooperative strategies and cultural practices. The Rules-in-Use are the component of external rules to the Action Situation. It is where the analysis of this thesis is embedded in. It also encompasses both Rules-in-Form and Rules-in-Use, which can be Payoff rules, Information rules, but also Payoff and Information Norms or Shared strategies. It connects the actor coordination mechanisms under the influence of rules that can be identified in form (formal rules, or policies) or cases (informal rules, or contracts). This means that Institutional Rule Categories can encompass prescriptions that are truly rules, but also other institutions, such as norms or strategies that influence the Action Situation.

2.3.3. Action Situation and Rules

An Action Situation is the action arena of Ostrom’s Institutional Analysis and Development (IAD) – Framework. The Action Situation is the subpart where the scoped actors’ interaction takes place. It represents a conceptualised choice and interaction arena for actors, based on the rules or institutions that structure this interaction (Ostrom, 2010). The Action Situation is the conceptual foundation in which actor interactions are discussed. It provides the theoretical link between institutional rules and actor coordination mechanisms. The way institutional rules structure an Action Situation is demonstrated in figure 2.3, below.

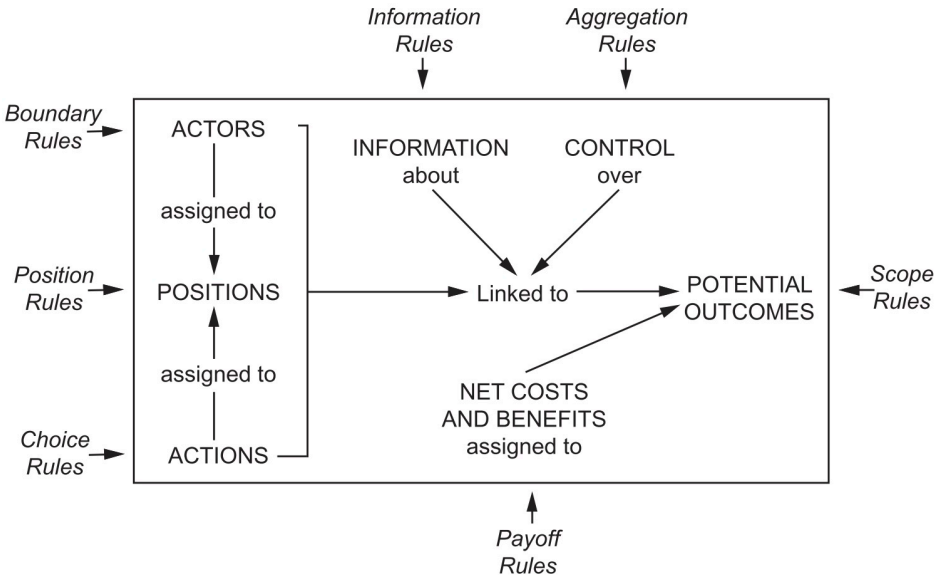

Figure 2.3: Action Situation structured by Rule Categories (Ostrom, 2005, p.33)

Institutional Rule Categories

The rules in figure 2.3 structure actor interactions. For the analysis of participatory processes this thesis focuses specifically on Information Rules and Payoff Rules. This way it will elicit the distribution of benefits and communication. The Information and Payoff rules are discussed below.

- *Information Rules:* specify, inside the process, what information is available for which actors about which actor(s) (Ostrom, 2005, p. 206). Meaning that the availability of type of information is regulated by rules (e.g. in business meetings price-setting is forbidden to discuss). This is important information as the information processes or actors can change their actions in the future on the basis of information. It also functions to help determine who is trustworthy. Which is essential for participation.
- *Payoff Rules:* Payoff rules assign external rewards or sanctions to particular choices or actions that will or have been conducted (Ostrom, 2005, p. 207). Meaning that certain benefits or costs of choices are distributed among participants in a certain way (e.g. financial payments at certain moments or the distributions of benefits among investors).

Rules in this context are not necessarily rules with consequences, but rather a category of institutions. A payoff or information rules can also be a payoff or information norm or shared strategy as these can still structure the interaction between the actors in the Action Situation.

3

Methodology

In this chapter the method is discussed, it addresses the research approach and what data and theories are used to answer the different research questions. This chapter first describes the research approach. Then the method applied to each chapter answering a sub-question. To answer SQ1 it starts with the method of a high-over analysis of Dutch wind park development institutions, using the second layer of Williamson's Four-Layer framework, grey literature, and scientific literature. To answer SQ2 the formal rules for participation that are applicable to the cases are analysed using the ADICO-syntax to study policy documents of different governments. This policy analysis will use desk research and the ADICO-syntax dissect the formal policies and rules that influence the institutional information and payoff rules. Then, the informal rules are identified using a detailed case analysis, resulting in what institutions played a role in the cases to answer SQ3. This case analysis is conducted using qualitative content analysis of raw interviews, and case contracts to identify the informal information and payoff rules. SQ4 is answered by the synthesis of the results of the former analyses to deduct coordination mechanisms and the most important institutions across cases.

3.1. Research approach

This study takes a qualitative case study approach. It uses institutional analysis of institutional context, policy, and details of three cases to identify institutions and actor coordination mechanisms surrounding participation through LECs. To do this, two theoretical concepts are used as presented in figure 2.1. Layer 2 of the Williamson framework for the contextual institutions in chapter 4, and Ostrom's Institutional Grammar and Information and Payoff Rules for the case institutions analysis in chapter 6 & 7. It uses policy documents, scientific literature, grey literature, and case studies to identify all components of the institutions that guide the participatory process, with a focus on the distribution of benefits and communication in onshore wind park development in the Netherlands.

This thesis uses both descriptive and diagnostic institutional analysis. It uses descriptive institutional analysis in the Dutch institutional context. This provides context for more specific dissection of institutions of Dutch policies and at case level. By describing institutions that exist the nature of these institutions will become clear. Diagnostic institutional analysis is the final resulting analysis. Where the results of the descriptive findings about the institutions are categorised and connected to the institutions in the cases. This way institutions can be used to understand what guided actor interactions and finally led to the organisation of actors and resulting institutions. This approach leads to a top down understanding of all institutions guiding the participation and actor coordination. From high-over contextual institutions that are both formal and informal, to detailed institutions and interactions at case-level. Allowing for the comparison of what policy institutions were of influence on the cases. Giving perspective on what the current status of policy for participation in wind park development is, but also allowing for advice on what policies should be improved in what manner.

3.2. Method of Dutch Wind Park Development Context Institutions

To answer SQ1, the institutions of Dutch wind park development are researched. These high-over institutions are important because they guide the spatial and judicial processes that guide wind park development and the participation. The second layer of the Four-Layer model of Williamson provides the theoretical framework for the analysis. The framework identifies and places the high-over institutions in context to the more case-based analyses of chapter 6 and chapter 7. Creating a clear distinction between slowly changing embedded institutions, and more rapidly changing rules and policies. It uses desk research to identify the Dutch governance structure, the nature of Dutch wind park development process, and the general participatory concepts in Dutch institutional context.

This description of context creates an overview of what the playing field for wind park development in The Netherlands looks like. Next to spatial planning practices, land planning and permitting are embedded in regulated processes and standardized bureaucracy. The formal rules that are specifically about wind parks only bear significance if understood in its full context. This analysis will identify what policy frameworks are applicable, what the background is of LECs and governance in The Netherlands. What general spatial planning processes are applicable to onshore wind park development. It will also identify the standard bureaucratic process of developing a wind park. Afterwards general participatory framework in the Dutch context is elicited. This will lead to insight in what higher-level institutions guide wind park development in The Netherlands. And therefore, answer what institutions are influencing the onshore wind park development, without looking at the specific rules or institutions that guide wind park participation.

Data

It uses a variety of data sources. Desk research is used to identify different forms of grey literature, scientific literature and government websites. It has intensely used governmental websites that explain spatial laws and procedures. It has also intensely researched the information resources that semi-governmental organisations, such as the RVO publish. This wide search of national norms and guidelines included national government websites and factsheets interpreting governments information. To identify the structure of Dutch government the governmental websites and literature on land use governance was used. A preference for official documents and official governmental or semi-governmental organisation was used to increase reliability.

Analysis

The analysis was structured with a top-down tendency. It gathered all types of data and categorised this. This was further substantiated with reading about the wind park development process and identifying what important processes embodied. First it elicits the institutional actor landscape, which encompasses the general high-over property rights for land use and the spatial laws that guide it, the Dutch governance structure and the background of LECs and other entities involved in wind park development. It then focuses more on wind park development institutions. Starting with generic spatial planning legal framework applied to wind park development, the legal procedures that are crucial to understanding payoff and information rules and institutions in the Dutch context. It continues with the generic process steps that are embedded in spatial planning institutions and ends with the It then describes the background of the other actors in the context of onshore wind park developments, including the background of LECs and commercial developers in this field. Ending with the institutional form of participation that are suggested in the Dutch context. Leading to an oversight in what types of institutions exist that guide the participation in onshore wind park development.

3.3. Case Selection and Description

To answer the other three sub-question a case-based analysis is conducted. To do this the cases are first presented in chapter 5. These were selected using a step by step selection process. Narrowing it down to a minimal of two and a maximum of four cases, to fit the detailed analysis of this thesis. The starting scope was recent wind parks in The Netherlands with a preference for LEC ownership in The Netherlands. For this reason the richly described case studies of the research of Brouwer (2023) and the case studies of four bachelor students were used as a starting point. An oversight of these cases can be found in the master thesis *Local Ownership: Does It Matter?* (Brouwer, 2023), located in the TU Delft Repository. The cases provided a comparatively large base of partially processed data, but with

ample opportunity to dive deeper into the institutional analysis by making it more specific and detailed. The fact that these cases fell in the scope of this thesis and were already analysed institutionally made it suitable for the specific research goal of this thesis. It provided general information about the cases including an institutional lens, which provided the right information to select cases that are valuable for more specific analysis of information and payoff institutions.

The case selection process was conducted using specific criteria. The steps of the resulting selection process are described below:

1. *The selection started with the thirteen cases.* These cases are described by Brouwer and three bachelor students that conducted IAD-Framework Analysis of 2 to 3 cases each. These fourteen cases were selected on similar wind farm properties, analogous biophysical conditions, community attributes, and regulatory environments. Similarity between regulation in provinces led to preference of a limited number of different provinces as location. Resulting in 5 provinces with selected cases in them, and different yet comparable technological and regulatory cases. Distinct technical criteria were capacities between 5-100 MW (LEC-projects often feature 4-5 turbines), average capacity of 4 MW/turbine, hub height of over 85 meters, proximity of 1 km to the closest residence and 2.5 km from the main residential zone, more recent development, and it allowed repowered (renewed turbines) as well.
2. Then the cases were narrowed down based on a preliminary analysis and three criteria that followed from this. To do this, first, all 13 cases were scanned and summarised. All data sources, including interviews were scanned through and judged. Every case was described per phase, the important characteristics, and the information and payoff institutions at first sight. This was also used to familiarise the topics and the dynamics of the cases. After this, the criteria were made based on what was to be important after the preliminary case reading of all fourteen cases was conducted. Three criteria were developed. The criteria for the case selection were *interview data quality*, *comparability*, and *consistency*. Interview data quality because the case interviews must contain enough information for in-dept analysis of the informal institutions, but this differed significantly across cases, and per bachelor student. Comparability, because the cases must be comparable to be able to discern specifically how the institutions impacted the cases, as some cases were so different in essence that the detailed comparison would not yield much insight. And they must be consistently enough described to be able to analyse how the institutions impacted the processes and the actor coordination mechanisms, since the reporting on the cases can skew results if interpretation and reporting quality were too different.
3. *First, repowered project cases were excluded on the basis of comparability*. Resulting in the exclusion of 4 of the 13 wind parks: Oostzeedijk, Jacobahaven, Jaap Rodenburg II, and Zeewolde. A repowered project is different because the refurbishment of a wind park is a different procedure then placing turbines in a site where there were none before. If there were wind turbines already, the local stakeholders are already familiar with its effects, and the authorities have gone through the spatial processes before, meaning they have a more advanced information and expertise starting position.
4. *Then cases with exceptional administrative complications were excluded on the basis of comparability*. Resulting in the exclusion of 2 of the remaining 9 cases: Deil and Avri. Since these projects were initially part of one project, but the project had to be split after a merger of two involved municipalities. This caused a lot of complicating administrative processes that trouble the view of the essential underlying development process.
5. *Then 3 of the remaining 7 cases were chosen on the basis of consistency and interview data quality and the constraint of 2-4 cases maximum for detailed analysis*. As the remaining cases were of three different authors, there was only one author that had three consistent cases with the most elaborate interviews and more interviews per case. These cases were chosen since three cases were preferred over two cases, for comparability. Taking into account that one author and similar aspects were also preferred. The selected cases were all three described by Floor Broekman, one of the bachelor students, and all located in the same province. This provided the most consistent and comparable cases with the most rich and comprehensive interview data.
6. *Resulting in 3 cases for the case analysis: Bijvanck, Koningspleij, and Nijmegen-Betuwe in*

Gelderland. These cases have 1 to 2 information rich interviews each, with diverse representatives of important stakeholders. The cases demonstrate similar features in the amount of turbines, the height, and they are all located in the same geographical area. They differ on the aspect of LEC ownership percentage, which makes them different on the important feature of how the local participation through an LEC is structured. They are introduced and described in chapter 5.

These cases are described in detail in chapter 5. For the description of the cases the Bachelor Ending Project of F. Broekman was used. These materials, including interviews and a case study were used for the case description in this thesis. The data was reinterpreted and adjusted to make it suitable for this thesis. The materials of Brouwer and the bachelor students can not be publicly presented, but are in the possession of the TU Delft. Information or details about the cases and data can be requested via Rutger van Bergem.

3.4. Method of Formal Participatory Case Institutions Analysis

To answer sub-question 2, the Institutional Grammar (IG) of Ostrom is used to dissect and categorise institutions from policy documents. Dissecting and understanding the institutions that are prescribed on different governance levels, and seeing how they differ, provides insight in the process and interaction of policy actors on the specific topic of participation. This makes it possible to understand how the governmental and semi-governmental actors provide a policy and information framework that influences the norms and choices for actors in the wind park development process. Coding them in a structured way, provides a manner to understand precisely what policy actors at different levels of governance influence each other, and therefore the case-level, but also which institutions do not. Knowing what institutions influence other policy actors and the case level helps to understand how to create more effective policy for future projects. Structuring these somewhat hidden policies in the ADICO-syntax and extracting them from the many textual policy documents, provides a tool to generate unique insight in the somewhat erratic process of policy and norm creation. This fills in the complicated process of institutional workings between rules as national laws, provided in chapter 4 and the informal agreements and contracts that are identified at case-level in chapter 7.

To do this it uses the ADICO-syntax to extract, organise and analyse the institutions in governmental or semi-governmental policy documents about participation. It then uses Qualitative Content Analysis (QCA) to identify and describe all formal rules and institutions that guide participation at the case level. The analysis also makes use of Ostrom's Action Situation, Rule Categories to identify the Information and Payoff rules and institutions that are applicable to the participatory aspect of the development process. This will allow for comparison between the formal Rules-in-Form and the informal Rules-in-Use later. The ADICO-syntax is used to code the identified rules and institutions from the policy documents as these are not always presented as formal Institutional Statements. This allows for dissecting and structuring the exact prescriptions of the different policy actors. And identifies what governance levels produce what type of formal institutions. This is especially helpful in categorising and comparing the less prescriptive institutions between cases and actors, as the institutions are located and spread over many different policy documents. Altogether, the syntax helps to identify the somewhat organic process of prescriptive participatory measure of different governmental or semi-governmental levels by categorising and structuring the written IS statements that are found in policy documents of the governmental or semi-governmental entities that directly influence the cases.

3.4.1. Policy Statement Identification

The formal institutions are first analysed by identifying all policy documents that are relevant to the cases. This was done using the following steps.

1. The scope of relevant documents is determined by their relevance to the cases. The document must be representative and an official policy document from public authorities that are relevant for the cases. A document is considered relevant if it is policy made by a governmental authority that has an influential role in the case. Or if the policy document is referred to as the basis for the original policy document. To contribute data they must also contain relevant institutions for information and payoff rules in the context of wind park development.
2. The documents are identified through google searches and snowballing. The search focuses on

spatial planning documents, with a preference for specified documents on participation or wind energy planning. The search terms are the selected public authorities names in comination with terms as 'wind energie', 'participatie', 'omgevingsvisie', 'structuurvisie', 'windmolens', and synonyms of those. This led to multiple initial documents for the each of the different entities. By screening the initial documents, other important documents such as guidelines or more specific participatory documents were identified. This comprehensive search in combination with document snowballing was used to identify a cluster of relevant policies around all cases and governmental levels influencing lower-level policy institutions.

3. The documents were screened to identify the relevant parts about information and payoff rules. The selected documents are screened for relevant institutional statements on wind development, participation and information or payoff rules. This was done different per document type. *Smaller and more specific documents* were scanned completely. These were mostly municipal level documents specified for wind park implementation. *Middle-sized documents* such as structural visions and other spatial documents were analysed per section and with search words. To identify relevant subparts, search terms about participatory processes were used, including: 'participatie', 'wind energie', 'kosten', 'baten', 'omwonenden', and 'wind turbine'. For these documents often contain specifics in small sections on wind energy or participation. This was done next to a quick search on terms as: 'wind energy', 'renewable energy', 'participation', 'residents', 'information', 'communication' , and 'payoff'. Often in Dutch terms for Dutch policy documents. *Large documents* often on regional or national level were analysed using the same approach as for middle-sized documents, supplemented with sources describing the relevant statements from the documents.
4. Resulting in a total of 17 documents that were considered inside the scope. After screening 7 documents were identified as relevant governmental policy documents containing IS about information and payoff rules and institutions. The identified relevant policies and IS were subsequently coded using the ADICO syntax, described in the following section.

The documents, the analysis and the sources for the documents are structured and categorised in an excel-data file. This data file is in possession of the TU Delft, and can be retrieved by contacting my supervisor Rutger van Bergem, at R.vanBergem@tudelft.nl.

3.4.2. Qualitative Content Analysis with ADICO-Syntax

The policy documents of governmental bodies that contain policies about information and payoff rules are coded using the ADICO-syntax. Coding Institutional Statements with IG was developed by Crawford & Ostrom (2005), applied more concretely by Basurto (2010). This was specifically for policy documents, but Institutional Statements can also be extracted from interviews, or other governmental documents. This thesis uses an adapted approach of Watkins & Westphal (2015), that uses the policy coding steps of Siddiki et al. (2011), as they were first applied by Basurto (2010). This is specifically adapted to extract Institutional Statements from written policy documents that are not legal documents. The following steps were used to extract results:

1. *Start with a spreadsheet.* This is used to link the raw textual input to the coded Institutional Statements, track the source and other data about the coded Institutional Statement. Use the columns (categories): the document, page, and date of the statement, the raw textual statement, each ADICO component, the full Institutional Statement, Institutional Rule Category, the type of institution, notes, and qualitative tags. Add other classifications to classify the entity that created the policy, the entity type, the document type, and the case the statement applies to.
2. *Identify the relevant raw statements from the sections from the Policy Statement Identification*. First titles and headings are discarded because they are fairly easy to locate and rarely constitute an institutional statement of theoretical or practical interest. Then subdivide all identified relevant sections or subsections from the policy statement identification that have multiple sentences into sentence-based units of observations. If a section or subsection does not have a complete sentence ending in a period, code the entire section or subsection as one unit of observation. If there are multiple sentences in the section or subsection, code each sentence as units of observation.
3. *Code the units of observation following the A(B)DICO syntax.* The text in each unit is coded with

respect to the Attribute, oBject, Deontic, aIm, Condition, and Or else. You may have more than one Attribute for which all other syntactic components are identical, multiple Attributes may be included in the same statement. Since the Deontic is a clear indicator and the Aim is useful in determining the Object and its conditions, the advised order is Deontic (D), aIm (I), oBject (B), Condition (C), Or Else (O)/Attribute (A).

4. *Apply qualitative text ADICO coding if policy rules aren't clearly formulated.* First identify the aIm (I), the 'what' in an action. This is easiest to deduct and is often stated clearly in interviews or written text (Watkins & Westphal, 2015). Spoken interviews or written texts in policy always state this, but sometimes leave out obvious Attributes or Deontics. Then continue to identify the Attribute (A), or 'who', and Condition (C), or 'how'. This is easy when the aIm has been identified. The Attribute in spoken text is often implied, but clear. While the conditions can be easily extracted as boundaries to the aIm and are often 'default' in qualitative policy text (Watkins & Westphal, 2016).

5. *Imply components when they are not explicitly provided in the statement.* In some cases, the Attribute is missing because the statement under consideration is actually an extension of the statement prior to it in the document. The coder can use the Attribute from a previous statement. When this is not obvious the coder should logically deduce what the Attribute is that should carry out the aIm. To ensure reproducibility the implied statements are noted within square brackets ([*statement*]), and the logic behind the interpreted statement will be noted down.

6. *Code the Institutional Rule Category.* The statement is classified as a Payoff Rule or institution when the statement is about exchange of resources or the distribution of benefits. It is classified as Information Rule or institution if it is about the exchanges of information or information channels. This is often determined by the aim.

7. *Code the unit of observation as Rules/Norm/Strategy in the designated spreadsheet column.* These type of institution is determined by what ABDICO components are present. A rule contains at least ADICO, as it is a prescription with consequence. A Norm contains at least ADIC, as it is a clear prescription, but just has no (implied) consequence. A Shared strategy contains AIC, as it has no Deontic or consequence. It is not so much a prescription as strategic conduct that is collectively used.

8. *Resulting in a total of 66 coded Institutional Statements*. These statements all concerned Rules, Norms, or Strategies that were prescribed by 4 governmental levels that had an active role in shaping the development process of the cases.

Type	ADICO Components	Sanctions	Additional Characteristics
Strategy	AIC	- Automatic consequences of not following (or following) a statement - Not established and carried out by another person - As such, there is no normative expression of obligation or permission (no deontic) - Not represented in the syntax (that is, no O for Or Else)	- Amenable to change without collective action
Norm	ADIC	- Delta parameters, or emotional consequences of not following (or following) a statement - May be just as strong as (or stronger than) rules in influencing behavior - May be graduated - Not represented in the syntax (i.e., no O for Or Else) - May also have automatic sanctions	- Can change over time
Rule	ADICO	- Tangible consequence associated with not following (or following) statement - May be graduated - Represented by Or Else (O) in the syntax - May also have emotional and automatic sanctions	- *Requires* previous collective action process to establish rule - Rules required to establish a monitor

Figure 3.1: Type of Institutional Statement (Rule/Norm/Strategy) (Watkins & Westphal, 2016)

3.4.3. Formal Institutions Results

The identified institutions will be analysed to identify the nature of the rules and institutions guiding participation in onshore wind park development. It therefore analyses specifically the Institutions of the Payoff and Information Category. The uninterpreted results of the ADICO-coding are presented in Appendix A. The full data excel with coded statements, categories and sources can be retrieved by contacting my supervisor, Rutger van Bergem, email: R.vanBergem@tudelft.nl. First, a thematic analysis will elicit what categories and themes are identified from the formal rules analysis. It will discuss these themes and provide examples of typical institutions and patterns in the identified rules. After that the content is analysed per governance level and policy actor category. By analysing the types of Institutional Statements per policy actor, the structure of policy and institution forming will be elicited. It will then discuss the results of the ADICO-QCA, and finally present the identified insights for the formal institutions per case. In the end general conclusions from the Formal Rules Analysis will be presented.

3.5. Method of Informal Participatory Case Institutions Analysis

To answer the sub-question 3 the informal case institutions are analysed using Ostrom's Information and Payoff Institutional Categories of the Action Situation from the IAD-Framework. It analyses what participatory information and payoff rules were used in the cases. This can be in different representations. Ways of described structural conduct are informal institutions, representing an underlying norm. But also contractual agreements that are voluntarily negotiated represent the informal agreements that the actors value. These are all analysed in this Chapter. It uses the information and payoff institutional rule categories to analyse the cases for Institutions-in-Use. A Qualitative Content Analysis of interviews, case studies and supplementary grey literature. These are finally compared to the identified formal institutions of the chapters 6 and 7. The Institutions-in-Use are extracted as category and as separate rules, but ADICO-syntax coding was used for this informal Rules-in-Use Analysis, since coding all institutional statements from interviews is not realistic and does not add a lot of value. This is due to the unstructured nature of data sources and the amount and variety of all informal rules.

Data

Interview data is used to understand the specifics of the three cases. The interview data consists of five interviews. Of which three are conducted with a professional project developer, one with a nature organisation that took on the role of project developer, one with an action group opposing the wind park, and one with a project manager of a municipality. *Case studies* of the BEP of Floor Broekman are used to describe the cases. These also encompass the interview data and online sources. The case study information for the cases of this thesis were checked and reinterpreted if necessary. Direct sources were online articles of the official wind park site and governmental publications. These are listed in the original case-study which can be retrieved and checked by contacting Rutger van Bergem, at email: R.vanBergem@tudelft.nl. *Supplementary desk research* is used to identify extra information through grey literature and case contracts and other agreements. These will be Qualitatively Analysed by scanning and reading to identify information and payoff institutions-in-use about the cases. This information is used to deepen the understanding of how the distribution of benefits and communication was structured, with potentially using an LEC..

Information and Payoff Institutions-in-Use Analysis

The interview data will be analysed using qualitative data extraction. All interview text regarding the exchange of benefits and burdens, and the exchange of information are coded and categorized to extract the informal Payoff and Information rules and institutions. This is based on the description of Ostrom about what information and payoff rules encompass in Ostrom's description as provided in chapter 2. By categorizing the Institutions-in-Use the institutions guiding the distribution of benefits and communication can be analysed thoroughly. The identified institutions will be used to gain insight in the actor coordination mechanisms and resulting participation.

Finally the Formal rules of chapter 6 and 7, are compared to the identified informal institutions. This provides insight of how the higher-level institutions influenced the conduct and agreements on case-level.

3.6. Method of Synthesis of Case Results

To answer the sub-question 4, the results synthesis, in chapter 8, consolidates the findings by describing the actor coordination mechanisms and the insights on participatory case institutions. It uses the results of the wind park development context institutions, the formal participatory case institutions and informal participatory case institutions about participation to provide inside in mechanisms and dynamics. It elicits the actor coordination mechanisms that were identified in the cases, informed by all institutions that were identified in the cases and their context. This is done generically, after which the participation results and details of the cases are presented and described. The most important Information and Payoff Institutions will then be consolidated and discussed to understand them embedded in the participation of wind park development processes. This leads to the final results of the workings of the participatory institutions, their origin and what institutions are more or less effective for onshore wind park development.

4

Dutch Wind Park Development Context Institutions

In this chapter the over-arching institutions, both formal and informal, that form the wind park development process are analysed to understand the wind park development process. It analyses the rules of Dutch land use, the state governance, the primary actors and the generic development process. This provides understanding for how the participatory process is embedded in larger institutional processes. It uses the second layer of the Four-Layer framework of Williamson to elicit the institutional context. Starting with formal governance institutions, it provides the structure of Dutch governance, spatial planning laws and procedures. Followed by the different roles and the development process that follows from these spatial planning frameworks and governance. It ends with the participatory forms that are possible in the Dutch context, providing oversight in the generic types of participation. The data is collected using desk research. The most important data source is grey literature such as government documents and government websites. This is supplemented with scientific literature on LEC regulation to answer the first sub-question. The analysis of the Dutch wind park development context provides the rules and processes that are the foundation in which more specific Information and Payoff rules are embedded. It lays the critical foundation for understanding the cases of chapter 5 and further case analyses in chapter 6 and 7.

4.1. Dutch Institutional Actor Landscape

This section describes the playing field of wind park development in the Netherlands. It starts with the types of entities that can determine the use of land, then discusses the governmental actors that are at play, and ends with the commercial and LEC actors in the field. This provides an understanding of what entities have which roles and permissions. Which determines the actions and interactions that are possible in the participation and development process which is located on the institutional layer 3 of the Four-Layer Framework.

4.1.1. Dutch Land Use Institutions

In The Netherlands land is scarce and the use of it is therefore regulated. The market for land is therefore limited by the government. The government has a say in how property rights can be assigned and changed. In this case the use of land for the specific goal of building wind turbines is restricted by the spatial plans governing land use in the Netherlands. It is thus the government who determines what land can be used for wind turbines, and not the market. This poses the essential limit on wind park development. Land use is regulated by different types of zoning plans and spatial procedures, which are developed and managed by municipalities. This leads to different entities participating in decision-making processes. The landowners can decide to use their land to generate profits, they can sell their land, but they can not change the 'use' of that land as they please. If land is designated as farmland, even the owner cannot build houses on it without permission from the designated government, which is usually the municipality. For changing land, building or doing activities that affect its surroundings,

permits are required. When someone wants to change the use of a large strip of land, such as farmland to use for a new purpose it must also make sure the land use plan or 'zoning plan' is changed (InfoMil, n.d.-c). It will need the local government for that, which will usually be the municipality, but can also be the province or national government. The change of land use is conducted via spatial planning procedures. This is also applicable to wind parks, as this often is a new use of the land. The different governing entities that can be involved in this are explained in paragraph 4.1.2.

4.1.2. Dutch Governmental Actors

Dutch governmental actors play a vital role in determining participation in wind parks. These governmental bodies can also play a role in the development, the financing and the permitting of wind parks. Which government entities have which responsibilities and permissions sets the stage for interactions between state actors and private actors. This means that understanding these entities and their relation to the development process are essential to understanding the actor coordination mechanisms of the development process. The state actors are explained below.

National Government

The national government is involved through its ministries. It outlines national policies such as the 'Nederlands Energie Akkoord' or the Dutch Climate Agreement (Government, 2019). This is a document following the International Paris Climate Agreement in 2015, to become CO2 neutral before 2050. The Dutch Climate Agreement makes a commitment reduce CO2 emissions with 49% and have have 70% of its electricity consumption originate from renewable sources (RVO, 2018a). This translates into a national goal of 37.4 TWh renewable energy on land in 2030, with 50% local ownership. These agreements are not laws, but function as policy directions, guidelines or norms. The national government also set up national strategies such as the Regional Energy Strategy (RES) that is a nationally coordinated strategy of 30 regions that helps establish local goals and organisation for the implementation of renewable energy (RES, n.d.). The role of the government is therefore largely strategic. Only large wind parks have active involvement of the national government as this can span multiple provinces or impact land use on national scale.

Water boards

The Dutch *water boards*, are a direct result of the Dutch struggle against water. They are independent administrative bodies that are solely tasked with the management of water. Originating from as early as the 13th century. As a river delta country, 26% of the Netherlands lies below sea level, causing 55% of the country to be vulnerable to floods (Authorities, n.d.). 21 water boards were created to deal with large water protection projects such as dikes, geographical flood areas and water pumping stations. These water boards still hold significant power over land, as they still bear these responsibilities. They are in charge of these different types of geographical areas and can therefore be the authority of jurisdiction in spatial processes.

Provinces

The *provinces* in the Netherlands are the administrative authority between local and the national government. The provinces are tasked with translating national renewable energy goals into provincial goals. The province also outlines potential locations for wind parks (RVO, 2018a). The province can own land, invest in projects, support the projects, and be the authority for permits and other spatial procedures. They are governed by two main organs. The Deputies of State (Gedeputeerde Staten), also the 'Provincial Executive' (PE), are in charge of the daily governance of the province. And the Provincial State (Provinciale Staten), also the 'Provincial Council' (PC) which resemble a parliament of the province. The Provincial Executive has more agency and can take on different roles and actively manage projects. The Provincial Council is tasked with adopting new policies and establishing new spatial plans.

Municipalities

The *municipalities* are the local authority in the Netherlands and the third layer in the Dutch governance levels. They have direct relations with the citizens in the area and are tasked with producing detailed land use plans (RVO, 2018a). Municipalities are the primary entity to grant permits. The municipality also plays a pivotal role as the connection between government and civilians. The municipalities can

work together via regional or provincial programs. Differences between municipalities can be large, where large municipalities of big cities have larger challenges to manage than small rural municipalities. The governance is structured with the 'College van Burgemeester en Wethouders', which are the mayor and aldermen, also the 'Municipal Executive' (ME). They are in charge of the daily management of a city or municipality. This is overseen by the Municipal Council (MC), which is an elected college of representatives with legislative powers, and charged with the adoption of new policies and spatial plans.

Council of State

The Council of State (CoS) is an independent advising entity to the state (van State, n.d.). It is also the entity that has the last say in disputes between citizens and the government. It can judge the validity of new zoning plan adjustments or integration plans. The Council of State therefore plays a critical role in the wind park development process. If the Council of State rules an appeal justified, this can mean the termination of the wind park development. On the other hand, if the Council of State rules the permits and development/integration plan irrevocable, the plan has no showstoppers except for the execution.

4.1.3. Commercial and Cooperative Actors

Many parties are active in Dutch onshore wind energy development. Large companies and local entrepreneurs, such as land owners or farmers, but also investors. Public entities such as municipalities, provinces, water boards and semi-governmental organisations are also active in the development itself. These public bodies can act as investors, land owners or support private actors that develop wind parks. There are specific roles in the development process. Different types of actors can fulfill these roles in different combinations. To understand the position of LECs and the participation process it is important to understand the playing field and the different actors in it. The nature of the different types of organisation has an effect on the process itself. If a municipality for example is part of the developers and also the entity to give out permits, it is possible to have a more optimal process, since the interests are aligned. Although the roles and actors can be different per wind park, they all need to play by specific rules. These laws guide processes for implementation of environmental changes, building prescriptions, and the monitoring of impact on its surroundings.

LEC background

LECs can fulfill a specific role in this field. They can connect the local area to the development of a wind park. They allow for organisation of local ownership, resulting in both influence on the process, as profiting from the benefits. While they originated from environmental concerns and resistance to nuclear energy in the early 1900s, they have evolved from managing small-scale, community-based wind turbines to playing a significant role in the national energy landscape (Warbroek et al., 2019). Their expansion reflects a broader trend in Western Europe and has been particularly notable in the Netherlands, where their numbers increased from 20 in 2011 to over 700 by 2022 (HIER, 2022). Both national and international Governments have adopted legal support of LECs, giving out subsidies and setting up facilitating policies for LECs. This has allowed the further development in various ways.

Local ownership through LECs

Local ownership of wind parks in The Netherlands is increasing. In 2022 36% of the installed wind capacity was locally owned (I-SEARCH, 2023). Although this view can be skewed. Large parks developed by LECs increase the amount of installed capacity of wind energy, but do not mean local individuals are automatically profiting (I-SEARCH, 2023). Landowners and local businesses can also be counted as local owners, which means that the ownership still lies with a few wealthy individuals or companies. A locally owned wind park can therefore be different in how the local area is actually involved. If a few local companies own the wind park it is locally owned, but local residents might still have no part in it. Thereby, due to the higher initial investments for larger wind parks, more wealthy individuals or companies are often better equipped to develop larger scale wind parks. This has an extra effect on the amount of 'local owned capacity', since every park that is build by the LECs that are backed by wealthier experts also have a higher chance of building more capacity at once. Different types of LECs are therefore mainly discerned by who owns the shares in the LEC, or 'who's behind it'. Companies, wealthy individuals or types of land owners such as farmers can set up an LEC together and profit from the benefits, while local residents will be forgone. This will then be in conflict with the

idea of letting 'the area profit from it'. Giving that 'the area' should encompasses a representative group of stakeholders, that live and operates in the effected area.

4.2. Dutch Wind Park Development Process Laws and Institutions

The landscape of developing wind parks is structured largely through standard spatial laws and processes. These apply to all projects with spatial components, so automatically to all wind parks. These are formal laws that are formal rules, guiding the wind park development process. These formal laws are supplemented with informal rules and norms that together form a development process that is applicable to every wind park development process in The Netherlands. This section first discusses the formal spatial planning laws that apply to wind park development, then it discusses what roles exists in the process, and concludes with a standardised development process.

4.2.1. Wind Park Spatial Laws

The most important spatial laws are the Wro, the Awb, the Chw, and the Wabo. These acts are the foundation of the tools that are used to guide spatial planning processes. These laws change and evolve in matters of years or decades. General processes are quite constant, such as permitting procedures and spatial planning documents. This subsection explains the different laws and what spatial planning concepts follow from it.

The Wro is the 'Wet ruimtelijke ordening', which means Spatial Planning Act. It is about the division of land use in the Netherlands. It is the law that demands every municipality, province and the national government (InfoMil, n.d.-f) has an outline for the use of its land to fulfil all spatial needs of the area as well as possible. This is all recorded in a 'structuurvisie', 'structural vision', or 'zoning plan' that every municipality, province and the national government has to make according to the Wro.

It is also the legal basis of the *development plan* and the *integration plan* which are basically the same but the development plan is when a municipality wants to implement a spatial project, and the integration plan is when the province or national government wants to implement it (InfoMil, n.d.-f).

The Wro allows a so-called *coordination decision*, which means that multiple processes of a new project will be treated as one. This speeds up the process and allows for more streamlined use of the bureaucratic resources, as the legal procedures can also treat decisions at once, shortening the timelines (InfoMil, n.d.-b). The decisions that can be combined can be environmental permits, water permits, Nature Protection Law derogation, and the new environmental plan itself.

The Wro also regulates the *planning blight*. Which is the compensation for civilians that are negatively impacted by an environmental plan or integration plan (InfoMil, n.d.-f). Local residents can invoke this legal measure at their municipality to receive compensation for value decrease of property or other damages. 2% is at own risk, meaning that if the damages are not more than 2% there will be no compensation.

The Wabo is the 'Wet algemene bepalingen', or General Provisions Act. This regulated the environmental permits. The environmental permit regulates the spatial permission to deviate from the original land use plan (InfoMil, n.d.-d). This permit encapsulates building, living, monuments, space, nature and the environment. Permits can be given 'binnenplans' meaning 'inside the plan', or 'buitenplans' meaning 'outside the plan'. 'Binnenplans' means that the new 'use' for the land use was already outlined in the structural vision, while 'buitenplans' means that it was not outlined in the structural vision yet. 'Buitenplans' takes extra motivation as it differs further from the previously established plan.

The Chw is the 'Crisis- and Hertelwet' which means the Crisis- and Repair Act. It is a set of laws that gives preferential or fast-track treatment to specific projects. This results in the possible preferential treatment of renewable energy projects such as wind parks (InfoMil, n.d.-a). An important feature of this act is that provinces can overrule municipal land use plans. This means that the province can push a plan through if it thinks this is necessary for its RE goals.

The MER is the 'Milieueffectenrapportage', which is the Dutch Environmental Impact Assessment. It is a tool that originates from European law. The MER is a report on the broader environmental impact of a project. It is a tool to give nature and the environment influence in the spatial process. Wind parks with 15 MW power or more, or that have more than 10 turbines are obliged to conduct an MER (RVO, 2021).

Factors that are taken into account in an MER are the quality of water, soil, air, waste, nature, ecology, health, and archaeological impact (Leefomgeving, n.d.-a). These MERs are conducted by commercial advisors on behalf of the initiator and the authority of jurisdiction.

4.2.2. Legal Procedures

To pass a permit, a new land use plan, or an MER, procedures are in place to ensure communication and fair chances of appeal for all stakeholders. This is embedded in a few key concepts of spatial planning. These administrative decisions can be taken exclusively by public authorities. Which authorities have jurisdiction differs per situation.

The adoption of a new plan is a tool where the local authority of jurisdiction has the power to acknowledge a change in spatial policy. This can be the adjustment to a current zoning plan. These plans are often created and approved as concept by the Executive arm of the authority, but adopted or established by the Council of that authority.

The publicly presenting of these decisions is obligatory for all major decisions in the spatial procedure (Leefomgeving, n.d.-b). This is required by general governance law. The authority is obliged to publicly present the decision, plan, permit or adjustment physically at the town hall, online or else. Each decision, plan, permit, concept, or MER report must be publicly presented before it can be approved and adopted. Since 1 July 2023 this must be done digitally, where before just physically was accepted as well (KOOP, n.d.).

Views are the opinions or different 'perspectives' that any organisation, person, or authority can submit to a potential adoption of new policy. This can be different ideas, wishes or objections. These must be submitted by mail, e-mail, fax, or verbally (InfoMil, n.d.-e).

An appeal can be filed by citizens when they oppose a decision that has been adopted. Often appeals are lodged against spatial plans or permits. These appeals are handled by the Council of State, which carefully examines the situation. Their verdict decides whether the appeal is justified or not. This decision can block a project, or oblige the responsible entity to revise and adjust the plan. If the Council of State dismisses the appeals, the decision is final. Because this is such an important decision, the Council of State examines the material very close, which can cause the process to take up a lot of time.

4.2.3. Policy for Wind Energy Business Case

During the operational phase the wind park generates income from the sale of electricity. This income is usually used to payoff the debt. It is also used to pay the operational costs and the owners of the wind park. Next to revenue from selling electricity the wind parks also generate revenue from green certificates and possibly subsidies. The government has created these policies to facilitate a better investment climate for RE. This is meant to foster the investment and growth of wind parks, or other RE in The Netherlands.

SDE+ is a subsidy of the Dutch government. It covers the difference of the price of a MWh of wind energy and a MWh of grey electricity (RVO, 2018b). This means that if the revenues go down due to low fuel prices the wind energy can still sell their power at the necessary profit. It is not always necessary, but does provide more security to the investors of the project.

Green Certificates provide extra income for every produced MWh. The fact that the electricity of a wind park is renewable has value in itself. This is capitalized by green certificates that are nothing more but a proof of green energy (REIJE, 2020). An energy retail company can buy these certificates to sell them to customers that want to buy green electricity. This produces an extra revenue stream for the wind park.

4.3. The wind park development process

Knowing all steps, actors, procedures and other institutions the process for a wind park can be elicited. The legal processes of section 4.2 intersect with social components and technical components to form the development process.

Competent authority	Size wind park
Municipality	*<5 MW*
Province	*5-100 MW*
Ministry and Municipality	*>100 MW*

Table 4.1: Competent authority per park size adjusted from RVO (2019)

4.3.1. Roles in the Development Process

The initiator is the developer of the wind park. It can be one entity or a group that collaborates. The initiator is responsible for the conceptual plans of the park and the implementation of it (RVO, 2019). The initiator can be a purposely founded company in which the entities that participate own shares, but this is not a must. The initiator(s) can be a company, a foundation, an LEC, but also investors or state actors as municipalities or provinces themselves. A wide range of legal structures and ownership are possible. The initiator can operate the park after implementation, but does not have to. Specialised development companies set up projects and sell them before implementation as their business model.

The authority of jurisdiction (AOJ) is the specific public authority that is responsible for the permitting process. It is also the authority that is able to approve permits, environmental plans or MERs (RVO, 2019). The Executive part of the authority is able to grant the environmental permit, while the Council of a municipality or province is able to adopt a new zoning plan. Next to being the authority of jurisdiction an authority can also support the plans in different ways. The authority of jurisdiction is also in charge of hiring advisors that report on the impact that the project will have. The authority of jurisdiction is primarily determined by the size of the wind park. The roles per wind park size are demonstrated in table 4.1 below.

Following *new legislation* under the Electricity Act, the Provincial Executive is allowed to give back the jurisdiction to the municipality. And under the Crisis- and Repair Act the province gained the possibility of taking over the jurisdiction from the municipality in order to implement a wind park, by means of an integration plan.

Advisors conduct studies on the effects of a proposed plan on its surroundings. These entities are private and commercial, meaning they are hired to study and report on the impact of a plan on its surroundings. This is done as part of the MER procedure and can be preliminary or about a specific permit or plan. It can also be solely for the permit if an MER is not obligatory due to a smaller sized wind park.

4.3.2. Wind Park Development Steps

The entities in their respective roles have to develop the wind park together. This takes interaction inside the boundaries of the formal spatial and state law. Basic forms of development process phases arise from these formal and informal institutions. The process can be concisely defined in 4 general steps. The decommissioning step is left out as this is not part of the development process.

1. **Initiation**: During the initiation phase, the initiator comes up with the idea of implementing a wind park at a certain location. This can be a new location, or a location that was already posed as preferential location for wind energy by public authorities. This is the moment that an initiator contacts the authority of jurisdiction, and talks to landowners and development partners. The authority of jurisdiction and the initiator work out how much part they want in the organisation, which sets out the first guidelines for the organisation of the development process. Together they discuss preliminary ideas and see what knowledge and actors are important to the process. Preferably these ideas are presented to the stakeholders before the conceptualisation phase starts (RVO, 2019).
2. **Conceptualisation**: The conceptualisation phase is the phase in which the project starts to take shape. The input from local residents, other stakeholders and other actors are gathered and techno-economical concepts are created. In this phase the preliminary conceptualisation starts, which starts with the ideas for the type of turbines, their locations and the accompanied procedures and studies that are necessary for the spatial procedures. Depending on the stakeholder interaction, technical realities, and organisational hurdles this process can take longer or shorter.

3. **Spatial procedures**: The spatial procedure phase is about obtaining the necessary permits and the implementation of the development plan or implementation plan. This can also be in the form of the adoption of adjustment to the land use plan. This phase also encompasses the MER if necessary and all other necessary permits. Other permits that can be required are a water permit, or a derogation to the Nature Protection Act. The permits do not always fall under the jurisdiction of the same authority of jurisdiction. A water permit is granted exclusively by the water board. A Nature Protection Act permit is granted exclusively by the Province, and an Ecological derogation is granted exclusively by the Ministerial Government. These permits each have their own process, as described in section 4.2 including a research phase, a concept phase, a judgement phase, and finally the adoption by the entity involved. After this it is still possible for anyone to appeal, which then has to be handled by the Council of State. Once the permits and new zoning plan (adjustment) are ruled irrevocable the decision is final. This marks the start of the implementation phase. During this phase it is also possible to apply for the SDE+ subsidy and financial loans.
4. **Implementation and operation**: After the spatial procedure is completed the implementation phase starts. In this phase the initiator starts to arrange the construction. At this time the project owner can also be another entity that has bought shares of the project. This is because a developed project with permits is worth more due to the reduced risk of a successful spatial procedure phase. After the project owner has installed everything the operation can start. From this point on the agreements with investors, local residents, and owners start to materialise. This phase continues until the project is repowered or decommissioned.

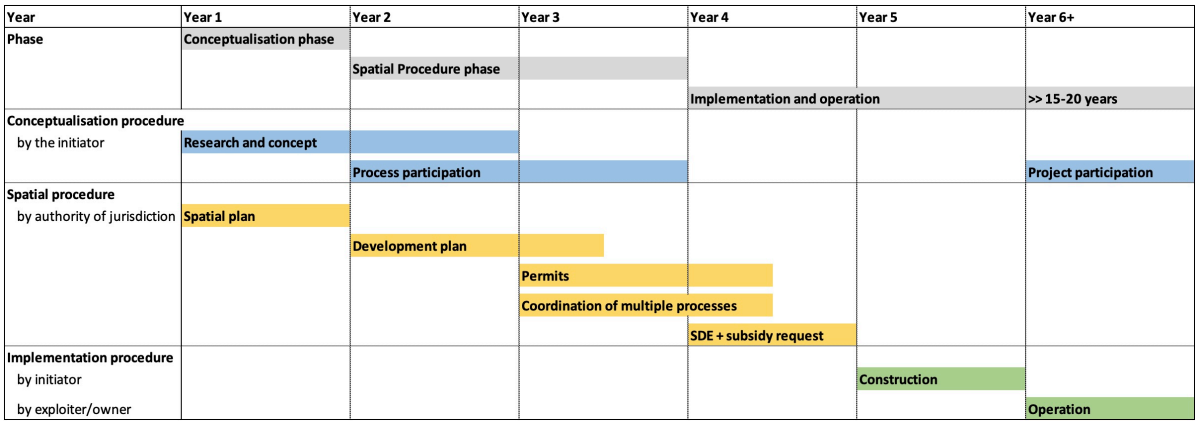

Figure 4.1: Example 5 year planning (RVO, 2019)

4.4. Participation Forms in Dutch Context

This section lines out the participation forms that are possible in Dutch institutional context in a generic form. Deeper participation is not prescribed in the current formal spatial laws. National government organisations as the RVO do prescribe certain forms of participation in information documents. Although these are not formal rules, they are guidelines representing certain norms and informal institutions that give rise to a set of standardised forms of participation. Understanding these concepts is important to understanding what forms participation can take in onshore wind park development in The Netherlands. These forms of participation can be seen as the outcomes a mix of formal and informal institutions. Formal in the sense that they work within Dutch law, informal because they are not prescribed, but provided as norms by distributing information about them.

Participation as a concept

Participation is the way stakeholders neighbouring wind parks are affected or affect the development. It is about the involving of local residents and businesses that live and operate nearby wind parks in all phases of the development (NVDE, 2019). National policy discerns 2 main forms of participation. Process participation and project participation. These are used as categories that correspond with Information and Payoff institutions in this study.

4.4.1. Process participation
All forms of participation start with process participation (NVDE, 2019). It is about involving local residents in the process of creating the wind park project and its location in the area. This is done by gathering input and opinions from local residents or businesses. The local authority is involved in this process, together with the initiator, informs and communicates with the local residents. It is therefore important to start early with the involvement of local residents to make sure their views can be incorporated in the plan before it takes more definitive shape (NVDE, 2019).

4.4.2. Project participation
This is organised by letting local residents take part in the project itself. This can mean ownership or just receiving benefits from the project owner.

Local co-ownership
Local residents or citizens can become owners of a wind park through organisation. This means they have shares in the project and share in the profits, but also in the risks. Forms of organisation can be LECs or an association. In 2022 31% of the wind parks had this type of local ownership (I-SEARCH, 2023). The advantages are the active participation of the area, the influence on the project, and the direct sharing in the success of the park (NVDE, 2019). The disadvantages are financial risk for the participants, the fact that a few local businesses can still own most of the park, the upfront investment necessary for the development, and the responsibility of the operation of the park.

Financial participation
Financial participation is about local residents taking financial part in the project, this can be with shares or bonds. Different forms of this exist, but it means that the participant buys a certificate, bond or share that gives them right to a certain return on the invested amount of money (NVDE, 2019). In 2022 11% of the windparks had this type of financial participation (I-SEARCH, 2023). Advantages of this form are active participation and local small investors, no upfront investment necessary, and no operational responsibilities for the area. The disadvantages are financial risk for participants that not everyone can bear, usually works only for a relatively small group, risk of opportunity ending up at companies and landowners, and no possible impact on operations.

Area fund
An area fund or local fund is about channeling profits to benefit local social projects. This can be a way to distribute benefits to the area itself. This must be managed by an independent board that represents the community. The wind park owner fills the fund with the revenue from the operations by a reasonable amount. Prescribed amounts of dedicated associations can be used as benchmark for these types of funds. It allows people without financial resources to still profit from the wind park. The fund can have a specific goal that can be social, ecological, recreational, or helps with renovating or sustainability improvements. In 2022 45% of the wind parks had an area fund (NVDE, 2019). The advantages are the wide representation, the beneficial effects for the entire area, and the accessibility. Disadvantages are that the benefits are not always clear, and the costs of monitoring the fund.

4.5. Chapter sub-conclusion
Spatial procedures, permitting, and state law play a pivotal role in shaping the development process for all wind park projects in the Netherlands. The legal frameworks that both governments and citizens must follow create a system of checks and balances, managed by a combination of executive bodies and councils across various levels of governance. By applying the second layer of the Four-Layer Framework, the specific context within which participatory processes occur becomes clearer. The positions of the actors involved in negotiations and multi-actor agreements are fundamentally shaped by the structure of the state. Mechanisms such as submitting views, appealing decisions, and public presentations provide citizens with opportunities to influence the process. This provides them with a negotiation position in the more ’voluntary’ participation process that is located on layer 2 of the Four-Layer framework and discussed in chapters 7 and 6. The other role that the government takes is informing, providing standardised norms for participation strategies, as discussed in the last section,4.4.

5

Background of the 3 cases

Before the formal and informal participatory institutions of the cases can be analysed, the cases must be understood. This chapter introduces the three selected cases in detail. The level of detail facilitates dissecting the specific institutions at case-level. Information about the process, the laws and the actors described in chapter 4 provide the context to understand the cases. This provides the information for deeper analysis of the participatory information and payoff institutions at case level, for both the formal institutions in chapter 6 and the informal in chapter 7. The data sources for the case backgrounds are the interviews and the case studies of the Bachelor End Project of F. Broekman. This information is supplemented with desk research where needed. This supplementary data were mostly news websites and the official websites of the cases to identify and confirm details from the case study.

5.1. The three cases

Each case is shortly introduced with a table containing the most basic details of the case, after which the development process is described in detail. The development process is subdivided in the phases described in chapter 4. With a structured approach of grouped events per significant time period. After that a timeline is demonstrated based on F. Broekman's case study timeline, adjusted for the author's insight and the phases that are used for this thesis. The three selected cases, Bijvanck, Koningspleij and Nijmegen-Betuwe, were carefully selected as described in chapter 3. First windpark Bijvanck is described, then wind park Koningspleij, and then wind-park Nijmegen-Betuwe. All three cases are located in the Southern half of the Province of Gelderland. They have similar aspects in size and impact on surroundings. They have different ownership structures, namely fully commercially owned, half LEC-owned, and fully LEC-owned. Next to being similar in technical aspects the cases have different development processes considering the relationships between the authority of jurisdiction, the initiator(s), the local residents, and other stakeholders. These relationships are described in connection to the standard development process. By describing the cases in detail the formal processes, informal norms and specific behaviour of actors the interlinked nature of informal institutions can be elicited. This is of crucial importance when considering the actor coordination mechanisms and how these interact with the formal and informal institutions.

5.2. Case 1: Wind park Bijvanck

Category	Details
LEC ownership	0%
Location	Municipality Zevenaar, Province of Gelderland
Active since	2021
Owner	Raedthuys (Pure Energie)
Number of turbines	4
Total power	8 MW (#4 x 2 MW/turbine)
Axis Height	116.5 meter
Distance to residential area	1,500 meter
Distance to first house	450 meter
Expected Yearly production	±36,000 MWh

Table 5.1: Details wind park Bijvanck

Windpark Bijvanck was a fully commercially-owned wind park in the South of the province of Gelderland. It stands out due to the dynamics between different levels of government entities, namely province and municipality. It also faced strong opposition of local groups that organised themselves into protest groups. The interviews were conducted with both a developer of the commercial developer and a foreman of the protest groups. This opposition provides an extra perspective to this case.

5.2.1. Development Process

Years before the start of the process Gelderland's provincial Vision marks the area Bijvanck as 'possible for wind park development' based on the characteristic of being 400-500 meter from residential areas. It was a favourable location for wind park development at that moment, but there was no initiative from the local municipalities Zevenaar and Montferland to develop a wind park at that site.

Start Initiation Phase

First conceptualisation by initiator Raedthuys, blocked by local municipalities (2006): The case starts the initiation phase when a local landowner approaches a commercial developer, Raedthuys (now: Pure Energie) to suggest building a wind turbine on his land. This starts the initiative at Raedthuys to initiate a wind park at that site. It leads to a first preliminary plan, but the municipalities that are the authority of jurisdiction, Zevenaar and Montferland, do not cooperate. The opposition of the municipalities marks the end of this first initiative in 2006.

New integration plan requested by Raedthuys, made by PE and dismissed by PC (2009-2010): In the meantime the Province of Gelderland is still eager to implement more wind energy, under the pressure of its RE goals. On July, 2008 the new Spatial Planning Act comes into effect. Which probes Raedthuys to request an integration plan. The Provincial Executive decides to support it. Another application for the integration plan is submitted, but the Provincial Council does not agree and dismisses the plan in March, 2010. In this same month the new Crisis- and Repair Act is implemented, which gives wind energy a preferential treatment, as it allows Provinces to overrule municipalities on the spatial procedures, and take charge in these projects.

Revised integration plan dismissed by municipality Zevenaar, Province becomes authority of jurisdiction (2012-2013): In January 2012 a different (smaller) plan with five turbines is proposed to the municipality of Zevenaar, which the municipality dismisses three months later. As Raedthuys knows, the new Crisis and Recovery Act allows them to go straight to the Province for the development procedure, since the law permits the province to develop an integration plan, even if the municipality is opposed. The Province then becomes the new authority of jurisdiction. The province of Gelderland was enthusiastic to implement this windpark, partially due to their own renewable energy goals. After a request of Raedthuys in June, 2012, the Provincial Executive consults with the Provincial Council and they agree to help with the new 'zoning plan' development in April, 2013. This is an important moment since the Province then becomes the authority of jurisdiction instead of the municipality. The decision to transfer this authority takes lengthy legal procedures, and sets bad spirits in the local municipality. It also leads to residents feeling even more distant from the public authority, than they did before. This is the moment

that the Provincial Executive takes up more initiative and starts dealing with the other stakeholders in the process. The province then takes the role which is usually conducted by the municipality.

Start Spatial Planning Phase

Province supports initiator, local protest materialises and Spatial Planning procedures (2014-2017): The new phase starts in May, 2014, when Raedthuys and the Provincial Executive sign a collaboration agreement. Around the same time residents send a letter of protest to the Provincial Executive. This is the moment that the opposing views of residents start to materialise as well. Action groups, such as 'Hoordewindwaait' and the 'Boze Bijvanck' rise up and organise protests. At this same time the Provincial Executive and Raedthuys make progress with the procedures. Advisors are hired by the Provincial Executive to conduct a series of studies around the development site, such as an archaeological study of the area. In this phase an information meeting is held by Raedthuys where participants could ask questions to the advisors of the park on all topics surrounding the park, but most people of the protest are not present there. In the middle of 2016 the Provincial Council decides to use a coordination decision under the Wro (Spatial Planning Act) to handle the project's permits and the zoning plan adjustment procedures as one. Near the end of 2016 the permits and zoning plan adjustment are approved by the Provincial Executive, which marks the first permit approval. The design of the permits and the zoning plan adjustment were presented publicly on December 16, 2016 till January 26, 2017. At this time the permits and zoning plan were presented publicly and *views* (or 'zienswijzen') could be submitted. It was during this time that Raedthuys representatives attended a market in Zevenaar to answer questions about the windpark, and that Raedthuys invited residents to a field trip to another nearby wind park in Neer. The views that were submitted led to further studies about the impact of the park and small adjustments were made again. The final zoning plan adjustment was proposed to the Provincial Council in April, 2017. This final plan was discussed in hearings and with further commissions of the province ('Statencommissie Economie, Energie en Milieu'), which finally led to the approval of the plan by the Provincial Council on May 27th, 2017.

Permit granting, Nature Protection Act Derogation, appeals, and implementation (2017-2020): This allowed the Provincial Executive to grant the permits to the initiator, which were again publicly presented between June 23 and August 4, 2017. In this same period a derogation was requested for the Nature Protection Act at the Province and publicly presented, to which people could also submit views. The water permit at the water board was pending. People submitted views and lodged appeals against most of the spatial planning permits and derogations. So after this, further legal procedures started, under the authority of the Council of State. The Provincial Executive reacted to the views and made small adjustments to the permits. After the submitted and processed views, people appealed, so this still had to be handled by a ruling of the Council of State. This took place at the end of February 2018, and two months later the Council of State decided the permits, zoning plan and derogation irrevocable, which meant that the procedure came to an end and the project owner could start the implementation and construction. Construction finally started in January, 2020.

5.2.2. Timeline and process

The timeline of the different points in the process is demonstrated in figure 5.1.

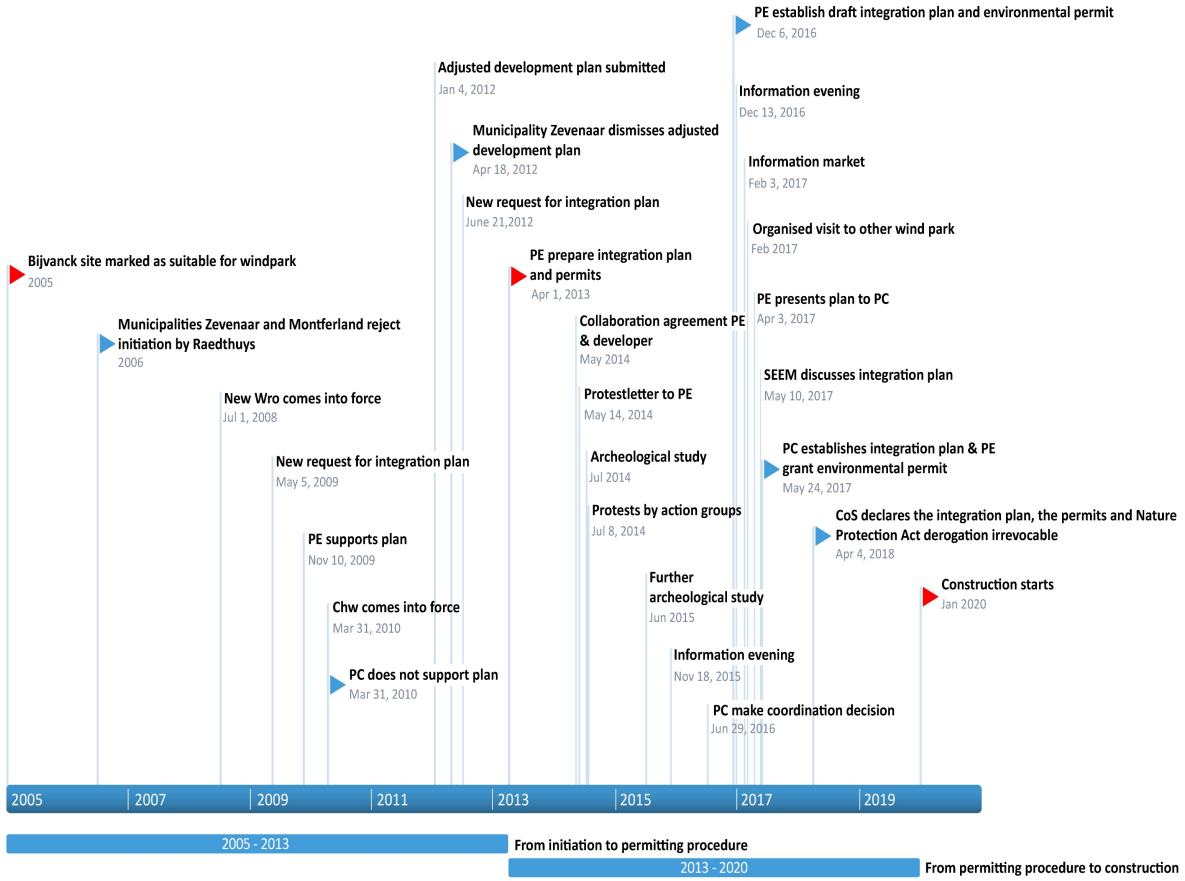

Figure 5.1: Timeline Bijvanck (Adjusted from F. Broekman Bachelor End Project)

This resulted in 8 years of initiation and planning, including the first dismissals of Montferland and Zevenaar. Extra time was taken by the switch of authority of jurisdiction, and the new plans and legal procedures that this encompassed. It took 7 years of spatial planning and encountered 56 views and 7 appeals.

5.3. Case 2: Wind park Koningspleij

Category	Details
LEC ownership	50%
Location	Municipality Arnhem
Active since	2022
Owner	LEC REIJE, Pure Energie & Prowind
Number of turbines	4
Total power	16 MW *(#4 x 4.2 MW/turbine)*
Axis Height	120
Distance to residential area	720 meter
Distance to first house	500 meter
Expected Yearly production	±30,000 MWh

Table 5.2: Details wind park Koningspleij

Wind park Koningspleij, is a partially LEC developed and owned wind park in the South of the Province of Gelderland. The project was initiated by a local offshore wind park developer, after which an LEC helped with the process and bought 50% of the total project (and # of turbines) later on in the process. The fourth turbine was bought by another commercial developer creating a combined LEC- and commercially owned wind park, that was also collaboratively developed. Both the municipality and province were strongly involved, but permitting was complicated due to the involvement of the local water board and the province. The process was thus complicated, but this did not cause significant delays. The interview data was from one interview with the developer of the wind park.

5.3.1. Development Process

The development of Koningspleij started with the RE goals of the municipality of Arnhem. These goals were transposed from the provincial RE goals. Since the park was more than 5 MW installed capacity the province was the authority of jurisdiction by default (see chapter 4. But the province used the Electricity Act to make the municipality the authority of jurisdiction. For the environmental permit the municipality of Arnhem was thus in charge, but a Nature Protection Act derogation and a water permit were also necessary, due to its location. The Nature Protection Act derogation was still handled by the province, and the water permit by the water board Rijn and IJssel.

Start Initiation Phase

Start conceptualisation by Outsmart and municipality, creation of LEC REIJE (2010-2014): The initiation starts with a local wind energy developer, 'Outsmart' approaching the municipality about developing wind energy on this location. This land was owned by the municipality itself. It is unclear when the municipality and Outsmart started their first conversation, but Outsmart started operating in Arnhem in 2010. This was spearheaded by Maarten the Keijzer, founder and director of Outsmart, and later also founder of the LEC 'Rijn en IJssel Energiecooperatie' (REIJE), and the project B.V. 'Pleij B.V.'. The LEC REIJE was created in 2012, Pleij B.V. was created in 2013. In 2013 the municipality decides they want to develop a wind park at this specific location and supports the first initiators.

New municipal council proceeds development and IPKW joins with developer Pure Energie (2014-2015): After a new Municipal Council was elected in March 2014, it became clear that the municipality had the intention of developing wind turbines at this location. The municipality started with consults for residents and other stakeholders to express their views and exchange information. This concerned three turbines on municipal land at first. The fourth turbine extended the project when another landowner, IPKW, approached the developer 'Pure Energie' (before: Raedthuys) in 2015. Industry park 'Industriepark Kleefse Waard' (IPKW) approached Pure Energie in order to develop another turbine on its own property within the development process of the currently proposed park. This brought Pure Energie on the project development team as a co-initiator.

Adjustment of development plan for bird species de Wulp, as result of exploratory MER (2016): Due to a proposed installed capacity of 16 MW, the limit of 15 MW was reached and the development process was MER obligated. Starting with an exploratory MER. In June 2016 an independent advisor, Waardenburg, presented their exploratory MER report. They advised to implement measures to mitigate the effect on a local bird species, the Wulp. In September 2016 this resulted in a 'shutdown system' to protect the birds, for three of the 4 turbines, resulting in approximately 5% revenue loss annually.

Start Spatial Planning Phase

Start spatial planning procedure and public communication (2016-2017): In December, 2016 LEC REIJE decided that members would be able to participate through member-certificates, called 'windshares'. In the same month the municipality of Arnhem decided to use a coordination decision, to treat the development plan, the MER, and the environmental permit in one procedure. Which leads to the permit application on January 3, 2017. After the permit application the initiators (led by the LEC) organised multiple meetings. On February 8, 2017 a meeting for 'windambasssadors' which were volunteers that wanted to put in time to help with the development process. On March 16, a meeting was organised in the 'Energy Cafe'. On March 29 and 30, and April 3 and 4, 2017 multiple information markets were organised. During this same time the development plan and environmental permit were publicly presented from March 20 till May 1st 2017, resulting in multiple views. But these views led to minimal technical changes in the plan.

SDE subsidy application: The SDE+ subsidy application was submitted in October, 2017 (HIER, 2017). This subsidy was granted on 19 December 2017 by the RVO, for a time period of 15 years from the start of production (REIJE, 2020).

Permits, revised spatial plan and MER to Municipal Council, ending at Council of State after appeals (2017): The Municipal Executive then decided to submit the adjusted development plan and the MER to the Municipal Council of Arnhem. The Municipal Council accorded the plans on July 10, 2017. Which were then again presented in a new land use plan from August 2 till September 12, 2017. It was decided that changes were still necessary, and a revised plan was handed in on 15 May 2019. After this appeals could be lodged and on July 2019 the Council of State held court about the appeals submitted about the development plan, the environmental permit, and the derogation for the Nature Protection Act. All treated at the same time. In this same year Outsmart sold part of their shares in Pleij B.V. (the project B.V.) to Prowind. The share-sale amounted to 1 turbine.

Water permit application, public presenting and granting (2018-2019): While the environmental permit and development plan were handled by the municipality of Arnhem, the procedure for the water permit was handled alongside this, as this falls under the jurisdiction of the water board. The initiator applied for the water permit on 10 September 2018, which was after the adoption of the procedure at the municipality of Arnhem, but before the appeals were treated. The concept of this permit was presented publicly from 6 November till 8 December 2018, leading to views as well. At this time (December 3rd) another preliminary study about non-detonated explosives around the site was conducted as well. The water permit was granted by the water board on 27 February 2019, and publicly presented from 19 March 19 till 30 April 2019.

Ruling on appeals to permits, development plan, and the Nature Protection Act derogation (2019-2020): Appeals were lodged against both the new development plan and environmental permit in Arnhem, and against the water permit at the water board. These appeals were handled together in court on 3 December 2019 by the Council of State. Parallel to the plans and permits at the municipality of Arnhem and the water permit at the water board, the derogation for the Nature Protection Act was also still being processed. This derogation was granted and appealed. But on 13 February 2019, the Council of State ruled the derogation to the Nature Protection Act irrevocable. More than a year later on April 1, 2020 the Council of State finally ruled the water permit, environmental permit, and adjusted development plan irrevocable, after which the construction process could start. The physical construction started 9 months later in February 2021.

Post Spatial Planning

Change of ownership before implementation of project: The LEC REIJE, bought shares, amounting to two turbines from Outsmart after the spatial procedures were finalised. This was probably at a premium considering that the risk of project failure is considerably lower when the permits and changes to the spatial plan have been approved.

Local involvement continued during implementation phase: During this construction phase volunteers of the LEC set up an information centre near the wind park. This was permitted by the municipality and partially financed by the province, who both liked the idea. 1,500 people visited and viewed the exposition of everything about wind power and this specific project (WindparkKoninspleij, 2022).

5.3.2. Timeline and process

The timeline of the different steps in the process is demonstrated in figure 5.2.

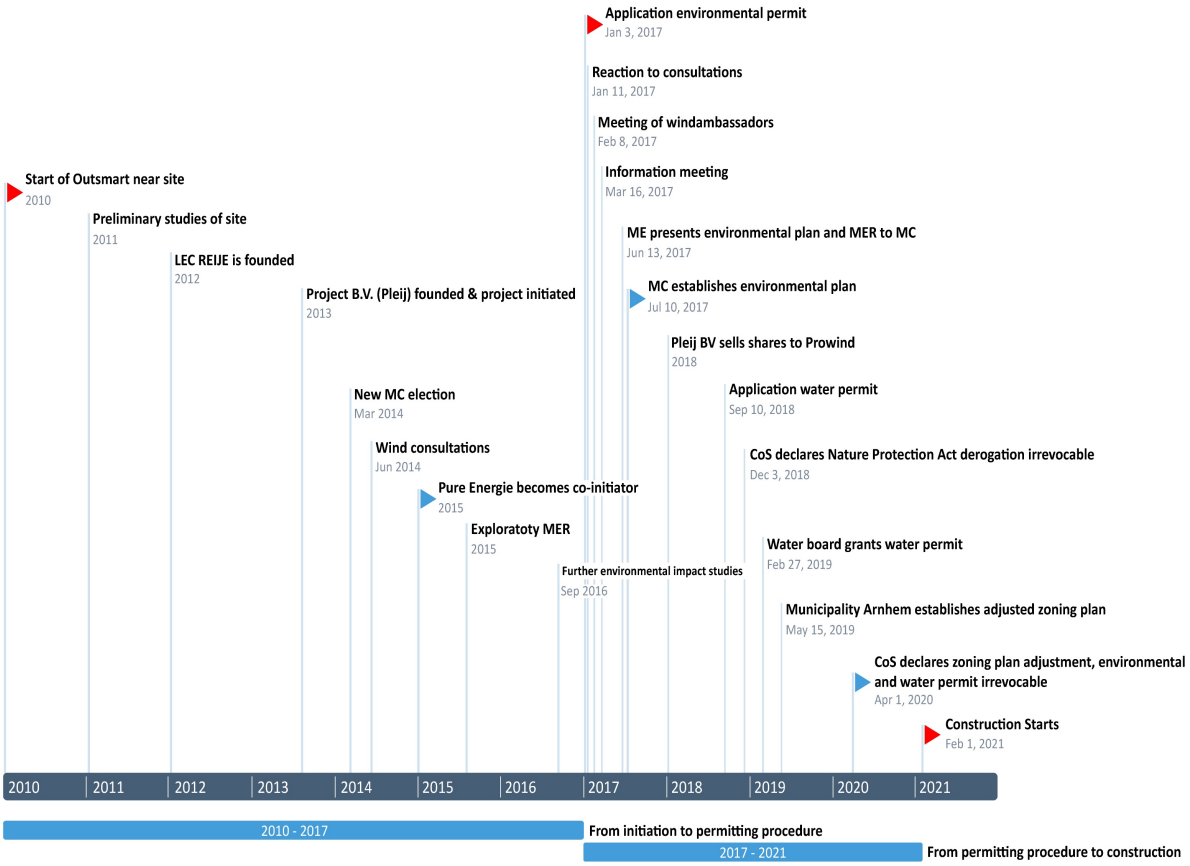

Figure 5.2: Timeline Koningspleij (Adjusted from F. Broekman Bachelor End Project)

This resulted in 7 years of initiation and planning. Taking into account the preliminary work of the municipality before the first official concept was developed. Extra time went into the MER research and mitigating the impact on the bird species 'the Wulp'. It took 4 years of spatial planning procedures. Permits and a derogation needed to be granted by three different entities despite the coordination decision of the municipality of Arnhem. Encountering 154 views and 10 appeals.

5.4. Case 3: Wind park Nijmegen-Betuwe

Category	Details
LEC ownership	100%
Location	Municipality Nijmegen
Active since	2016
Owner	Windpower Nijmegen & IEG
Number of turbines	4
Total power	10 MW *(#4 x 2.5 MW/turbine)*
Axis Height	99 meter
Distance to residential area	900 meter
Distance to first house	450 meter
Expected Yearly production	±24,000 MWh

Table 5.3: Details wind park Nijmegen-Betuwe

Nijmegen-Betuwe is an LEC-developed and owned wind park, in the South of the province of Gelderland. The wind park site had a previous commercial initiator that did not succeed due to local opposition and administrative errors in the MER reporting. After this, the municipality got in touch with a local environmental organisation, the NMG, and jointly setup the project. This went relatively smooth. New procedures were started and it was implemented 4 years from its preliminary conception. The case is located near the Bijvanck wind park and has similar characteristics apart from the LEC ownership percentage. The interview data comes from two interviews with a municipal project manager and a foreman of the initiator, NMG.

5.4.1. Development Process

The start of the initiative for wind park Nijmegen-Betuwe is when the municipality of Nijmegen marks the area suitable for wind turbines in 1996. In 2001 a preliminary MER is conducted, to confirm if the area is actually suitable. After this, the location is taken up into the provincial Spatial Plan in 2005.

Commercial Evelop initiates, but Council of State blocks development (2006-2012): A year later, in 2006, a commercial developer, 'Evelop' (later Eneco) wants to develop the location. In 2009 the Municipal Executive decides to support this, but in April 2012, after protest by local residents the Council of State ruled that the project would not be implemented. The Council of State dismissed the project on the basis of an MER administrative error. The commercial developer then quit its efforts since the project was becoming too expensive.

Start Initiation phase

NMG initiates the project, with commercial developer 'Izzy Projects', municipality cooperates (2012-2013): In 2012 the NMG, also 'Natuur en Milieu Gelderland' (or Milieu Federatie Gelderland) presented a concept together with a commercial developer, Izzy Projects. The municipality still intended to develop a wind park at the specific site. The new initiator, the NMG, had already tried to join Evelop on the first project, but did not get the chance. NMG was a nature organisation that previously helped organise protests against local industrial projects, but it had recently gotten interested in developing renewable energy itself. This led to an intention agreement between the new initiators and the municipality a year later in 2013. At this moment a foundation is set up, 'Wiek-II', to manage the project, and an LEC is founded, called 'Windpower Nijmegen' (WPN). This setup was at the request of the municipality. The official that was the project manager at the municipality becomes part of the board of the LEC WPN. Having helped on the previous projects, the municipality could more easily work on this new project since there was considerable internal knowledge of the location and wind park development. During this time the initiators also approach the province for support or possible subsidies and with the help of a smart application they received financial help from a Provincial fund, Oost NL (now: IEG). Which is a provincial fund that was created after the sale of a NUON plant that was owned by the province. The project also collided with another provincial project, which led to a provincial official helping local residents to file objections to the wind park project.

Start Spatial Planning Phase

The municipality conducts MER for new zoning plan, locals start to resist (2013-2014): In 2013 the municipality works on new spatial planning documents ('Duurzaamheid in uitvoering' and 'Roetekaart Power 2 Nijmegen') to find space for more RE. In January 2014, a new MER is conducted in light of these new zoning plans. The MER deems the location suitable again. Which is then the first time the location is marked positively, since the negative ruling of the Council of State two years before, in 2012. At the same time local opposition grows. Especially on the Reethsestraat, a street that is located very close to the wind park site. They are not open to conversations and do not want to join the LEC. Even when the initiator offers them direct financial compensation. These 25 houses, were not organised against the park, but were strongly opposed, due to fear of the impact of the park.

Development plan finishes, plans are publicly presented & partially accepted, 'windshares' are offered (2014): During this time the procedure of the development plan starts, and after the concept of the development plan was finished it was presented publicly together with the newly conducted MER, from 27 March till 17 May, 2014. On 17 April 2014 an information evening was organised, after which the Municipal Council approved the new structure vision, the zoning plan adjustment, and the MER. This was automatically followed by presenting it publicly for six weeks, after which five appeals were

filed. The Council of State declared the new environmental vision irrevocable after which people from Nijmegen and the area could sign up for 'windaandelen' or 'windshares', which was done in large amounts.

Council of State rules environmental permits irrevocable and implementation starts (2015-2016): Before the ruling of the Council of State the initiator applied for the environmental permit at the Municipality on 4 March 2015. The draft decision was published on 27 March 2015, after which it was publicly presented for 6 weeks. The environmental permit was then granted on 28 May 2015, after which it was publicly presented from 5 June till 17 July 2015. One appeal was filed, but the permits was declared irrevocable by the Council of State on 21 October 2015. This was the last decision that was necessary, so the construction started in April 2016.

5.4.2. Timeline and process

The timeline of the different steps in the process is demonstrated in figure 5.3.

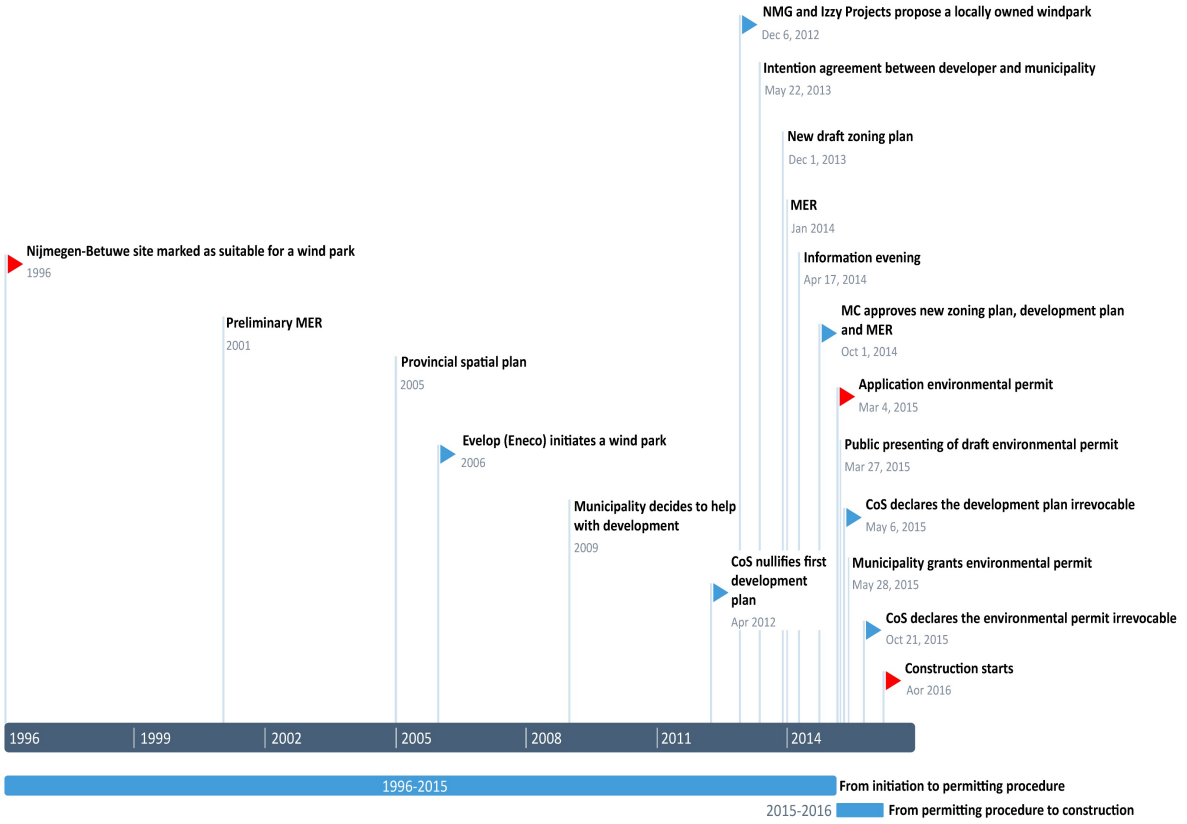

Figure 5.3: Timeline Nijmegen-Betuwe (Adjusted from F. Broekman Bachelor End Project)

This resulted in 3 years of conceptualisation, but 9 years if the development process of Evelop is included. Especially, considering that the first process familiarised the municipality with the site, which possibly sped up the process later. The process had 2 years of spatial planning. This process was relatively quick due to different factors. First, the municipality conducted an MER for its new zoning plan during that time, meaning that a lot of information was available to handle the procedure. Second, not a lot of extra procedures were necessary, due to the nature of the site itself. Third, the Council of State ruled fairly quickly. The project encountered 4 views and 1 appeal. Which can be considered low.

5.5. Case Process Details

The summary of the different case process details are demonstrated in table 5.4, below.

Details	Bijvanck	Koningspleij	Nijmegen-Betuwe
LEC owned (%)	0%	50%	95%
Duration initiation phase	8 years	7 years	9 years
Spatial planning phase	7 years	4 years	1 year
Views (#)	56	154	4
Appeals (#)	7	10	1

Table 5.4: Case Outcomes Summary

6

Formal Participatory Case Institutions

This chapter analyses the formal written policies concerning the participation process in The Netherlands to answer sub-question 2. It uses the IG ADICO-syntax to extract institutions and institutional statements, to categorise them and identify their origin, their governance level, and content. By looking at the resulting IS's, their topics and what they prescribe the analysis will shed light on the policy making process and how rules, strategies, and norms are created between policy actors.

The data are grey literature in the form of governmental Spatial vision documents and documents concerning wind parks and participation in the development process. The scope for these documents were documents created by the governmental bodies that played a role in the cases. This was supplemented with the documents or policies that are directly referred to in these documents as sources of benchmarks or critical guidelines. The analysis does not limit itself to prescriptive laws, but includes suggested guidelines, visions, and norms set by policy actors as institutions that influence the participatory process down to the case level.

The detailed policy document identification process is discussed in chapter 3. The results generalised coding results are presented in Appendix A. First, the generic themes of all identified institutions will be presented to demonstrate what topics and themes were identified, in section 6.1. These themes will be provided with examples to understand the exact nature of these institutions. In section 6.2 the information and payoff institutions that apply to all cases are discussed. This is structured from the national level, down to the case-level. The last section, 6.3, discusses what institutions from the selected policy documents influenced the cases.

6.1. Thematic Content Analysis

The qualitative content analysis of the Institutional Statements resulted in three main themes, *process participation*, *project participation* and *roles and responsibilities*. These process participation and project participation correlate with information and payoff rules. The rules and sub-themes are discussed per main theme.

Process participation

Starting with process participation, corresponding with information institutions. It encompasses the communication and process management rules and institutions. It reflects how and when actors communicate, with who, and how this is processed. These institutions often correspond with information rules. Their content is described below.

One type of process rules were about the specific timing of processes. Such as: *'The initiator should start with the participatory process before the spacial procedure starts'*. The way these processes should be conducted, such as: *'The initiator should organise a desirable and attainable form of participation'*. And who should be included in the process. Such as: *'The initiator should actively involve the surrounding area (residents/businesses) during each part of the process'*. These formal institutions provide guidelines on how participation in the process should be organised. It often leaves room for

interpretation, but sometimes specific institutions are used to emphasize certain aspects of communication. This is mainly done for timing of communication and information exchange. Such as institutions that oblige the initiator to establish communication with local resident actors before it starts designing. Other specific institutions urge the initiator to report on how it incorporated the views of local actors, and to report the results of stakeholder consults back to the attendees of such a meeting. Such as: *'The initiator should report how it incorporated the stakeholder consult* The type of prescription also demonstrates that the largest amount of these communication process rules are not obligatory and are open to interpretation. Institutions get more specific on certain topics, such as timing, or intrinsic properties as 'attainable' and 'proactive'. With statements such as: *'The initiator must actively involve the stakeholders, in an accessible way, with understandable language, and proportional effort with ample time to react to the concept [or the municipality won't grant a permit]'*, and: *'[The initiator] must present the concept design, to the designated actors, immediately upon finishing [or the initiator won't receive a permit from the municipality]'*

Project participation

The second important theme was, project participation, corresponding closely to payoff institutions. This is concerns how benefits and burdens of a wind park are distributed among different actors. These stakeholders can encompass owners, residents, governments, businesses, interest organisations, or a mix of these. But the main focus of legislation and rules are about the distribution of the revenues from the park among the owners and the directly affected surroundings. Recurring institutions highlight, suggest, or prescribe the participatory options that are also discussed in chapter 4. While some simply elicit the fact that participation is necessary, others oblige the initiator to distribute benefits in certain forms. Project participation institutions often correspond with payoff rules.

Multiple clear functions were identified in the rules. Namely, establishing project participation and fair distribution of benefits and burdens in different forms. Mostly done by urging that the local area should be involved, such as: *'The initiator should provide equal benefits and burdens to stakeholders'*. Or the obligation to make a clear benefits-participation plan, or more specifically: *'The initiator must write up how he makes effort to come up, with a reasonable (financial) compensation for the area'* Benchmarks for participation (radius for compensation, and height of €/MWh), also including principles such as 'maximizing giving back'. The amounts and formulation differ per IS. Such as: *'The initiator must give at least 0.75 €/MWh produced as an area- and individual compensation budget [or the initiator won't receive a permit from the municipality]'*, and *'[The Initiator] [should] give at least 1.0 €/MWh produced to the area (through an area fund f.e.) every year'*. Forms of participation, financial, area fund, via a cooperative. Usually stated in an open form, as a basic norm, such as: *'[The Initiator] [may] organise financial participation in the form of a cooperation'*, or *'[The Initiator] [may] organise financial participation in the form of bonds or shares'*

Roles and responsibilities

Finally, institutions were found that delegate roles and responsibilities concerning the process and project participation. These are institutions that position the actors and their intended roles. Subthemes were responsibilities of the authority, support of authorities, and role designation. These statements could designate the author's own role, or what other actor's roles should be. Examples are the province providing specific resources or supporting a specific part of the development process. Such as: *'The province should facilitate the project in the form of a project leader'*, or *'The province may support [participative] citizen initiatives'*. The designation of a role could also be about designating the author of the institution as responsible for something, or specifically to not be responsible for something. Examples of this are rules such as: *'The Initiator [should] hold responsibility for the stakeholder management'*, or *'The Initiator [should] manage communications through its own channels'* The final IS were identified where the RES organisation set out guidelines for what their role in the process could be. It outlines what their support could be, such as: *'[The RES organization] provides help with socially responsible procurement tenders to municipalities'*, or *'[The authority of jurisdiction] provides process participation locally and regionally to youth'*

These statements mainly discerned between roles of the authority of jurisdiction and the roles of the initiator. Often these tend to work together, so clear rule division is understandably important to the process and the collaboration.

6.2. Formal Information and Payoff Institutions for multiple cases

With information on the types of institutions that exist between formal laws and procedures in chapter 4 and informal norms and agreements that exist at case-level, this in-between field of participation policy appears, which contains norms and rules, and influences the development participation process. These principles are often not obligatory and cannot be called laws, but are written policy with consequences if they're not complied with according to the authorities norms. They are subject to a more erratic process of the creation of written guidelines that influence the critical part of non-obligatory prescriptions that form the participatory process for wind parks. To structure this process the institutions from these policy documents are discussed per governance level. To identify the way that the written institutions that result at case level are formed through a less organised policy interaction process. This section starts with general information and payoff institutions at the national level, and works its way down to case-level. National non-governmental organisations also influence these policy guidelines, by setting benchmarks and norms for participation through informing governmental policies. These organisations are sometimes partially funded and led by governmental business organisations, such as the RVO. These guidelines and documents are described because many governmental policy documents on participation referred to them as the basis for their own policies. The combination of all these institutional rules, norms, and strategies, including who made them and what characterises them is important to pinpoint how the informal institutions at case-level come were influenced by the policy process.

6.2.1. National

The national policy that directly influences participation stems from the Dutch Climate Agreement. This states the ground principles of the energy transition in the Netherlands, including the RE goals of the National Government. It is applicable to all cases. Providing the basic principles of which organisations should fulfil certain roles. Thereby forming the basis of the Regional Energy Strategies and the roles of lower-level governmental entities such as provinces and municipalities (Government, 2019). These statements also set out the principles upon which lower level governments base and create their own policies. Especially for policy on participation.

The specifics of the rules identified: Policies that were identified at national level all came from the Dutch Climate Agreement. Institutional Statements were identified, with the help of an information factsheet of the Participatiecoalitie (Participatiecoalitie, 2020). They are not rules with direct consequences, but rather norms that are to be interpreted and transposed into more specific policy at lower levels of government.

1. *The first norm is that the initiator and authority of jurisdiction should strive for 50% local ownership of production*. This is not a strict rule, but a guideline that follows from EU legislation and is often transposed into lower-level policy. It is the norm that is top-down adopted in most other sub-national policy documents on participation. Often referred to in the policies of provinces, the RES, and municipalities.
2. *The second norm is about 'organising a desirable and attainable form of participation' by the initiator*. Participation in this general form is understood as both process and project participation. This is classified as both an information and a payoff institution.
3. *The third norm is about incorporating a 'participation plan' in the 'project plan' by the initiator*. This means that the project plan, which is necessary to receive an environmental permit, will need a participation plan as well. This is both an information and payoff rule for the same reason as under the second norm. It forms the basis for all other participatory norms, that inform how a participation plan can be substantiated.

6.2.2. Non-governmental National

On national level the government works together with a multitude of (semi-)governmental organisations. These organisations create guidelines based on collaborative research into participatory processes and tools. The national government refers to these documents as the main guidelines for these participation forms (RVO, 2018a). These documents were identified in the document search, but are not governmental policies and guidelines. The most important identified organisations that inform governments and policy are the NLOW and the NWEA. The national government advises their norms as guidelines

for project and process participation, and thus set standards for information and payoff rules. They are presented below, with their respective guidelines.

NLOW

The NLOW is the Dutch Association for Windturbine Neighbours, which published its own guideline in 2014 'Gedragscode windenergie op land: Samen naar duurzaam'. This guideline was established to protect and advocate for local residents near wind parks (NLOW, 2014). It outlines the aspects of process and project participation, with a specific focus on compensatory measures for the local stakeholders. The most important advises inside the scope are:

- *Information institutions:*
  - Early and adequate involvement of local residents and property owners
  - Usage of a local discussion group, which directly advises to the authority of jurisdiction
- *Payoff institutions:*
  - Individually negotiated direct compensation inside <750 m turbine radius
  - Damage compensation, with valuation determined by neutral appraiser <1250 m turbine radius
  - Compensation for negative visual impact <2 km turbine radius
  - Financial participation possibility (shares, bonds) <5 km turbine radius
  - Area fund for environment, if property <10 km
  - Advise of €1 or €2 (depending on circumstances) per produced MWh for the area fund
  - The developer can maximally limit participation to 25%

NWEA

The NWEA is the National Wind Energy Association, which collaborated with the provincial nature- and environmental federations, Greenpeace, Milieudefensie, and Ode Decentraal to make a code of conduct: 'Gedragscode Acceptatie & Participatie Windenergie op Land' (NWEA, 2020). This outlines both process and project participation guidelines. Including standard practices such as local residents dialogues and the participation plan. It was first published in 2015, and after revisions the NLOW also co-signed the new version, published in 2020. The identified institutions are listed below:

- *Information institutions:*
  - Early involvement of the local residents, avoiding further conceptualisation and becoming inflexible for the initiator. Stressing the role of the local authority of jurisdiction
  - Responsibility of the authority of jurisdiction for the communication and collaboration with the initiator
  - Stressing the need of a participation plan starting as early as possible, but at least before the spatial process starts
  - The need for extra information dissemination for the local residents to level the communication between the experienced developer and the civil local residents
- *Payoff institutions:*
  - Advising €0.40-0.50 per MWh that should be returned to the area

These guidelines pose clear compensation measures, that are divided and given through mostly independent processes. It also stresses the importance of early communication and planning for participation. €/MWh compensation differs between the organisations, and it is not clearly worked out in what way this compensation should be dispensed. The interests of the organisations and their manner of prescribing differ. The NLOW are guidelines for people that sympathise with the local stakeholders,

while NWEA are more generic terms which set out the minimal principles for participation from the developer's point of view. The guidelines also correspond with principles that are identified in governmental policy, but give more specific substance to the governmental principles of participation.

6.2.3. Provincial

The provincial policy data was from the province Gelderland, as all three cases are sited there. Meaning its policy applies to all cases. The province has a dual role of setting out the policy for the province as an actor itself, but also for setting out policy guidelines for the lower governance levels, such as the municipalities in Gelderland and the RES. At the same time it can be an authority that is also allowed to take on the role of authority of jurisdiction. This means that the rules it creates in the first-mentioned role might have a different needs than in the second. The province mostly focuses on participatory rules for the initiators, and its own role in the process. Many provincial institutions are repeating higher-level rules, such as the necessity of a participation plan, the early start of the area involvement and the need to consider financial participation.

For the *project participation* which concerns the payoff institutions. About radius it states 400 meters as the benchmark for possible turbine distance, but it allows for deviation from that distance under certain circumstances. And it outlines specific ways of stimulating financial participatory measures, namely:

- bonds/mutual (local) funds
- an area fund
- an LEC as financial participation
- electricity price discounts for locals

About *process participation* the province mainly lines out that the participatory process must start before the spatial planning procedure starts.

It further writes up that the province itself sees *a role as supporting the participatory process*. According to the province this can be by:

- supporting citizen initiatives
- helping with an integration plan
- providing a project leader
- providing planning support
- providing participation plan support to initiator and municipality

The province therefore provides a mix of general principles, as well as specific measures to support the participation process. There is a slightly stronger focus on project participation, and roles and responsibilities. The province also does name specific benchmarks such as radial distance to turbines, but still leaves room for deviation.

6.2.4. Regional

On a regional level the RES 1.0 was identified as the effective policy actor for the participation in the cases Koningspleij and Nijmegen-Betuwe. It plays a significant part in the participation process and thus for the information and payoff institutions at case-level. The nationwide Dutch Regional Energy Strategy is a regionally coordinated strategy to fulfil the national and subsequent sub-national goals for RE. The analysed RES 1.0 was from the region RES Region GMR (Groene Metropool Regio) Arnhem-Nijmegen. This RES region organises the implementation of the national RE goals that are reflected in the Dutch Climate Agreement and provincial RE goals. It aims to implement 1.62 TWh of RE in 2030 in the GMR region. It encompasses a collaboration of 16 municipalities, 3 water boards, and the grid operator Liander. The strategy is a project of multiple years, with different evaluation moments, supported by stakeholder input and MER reports. This will lead to the RES 2.0 in 2024 (Nijmegen, n.d.), which evaluates all the input and re-coordinates the strategy. The RES organisation can be seen as a very large coordination scheme that supports multiple participatory processes to align a wide range of public, social and commercial organisations in the development of renewable energy. It determines

the principles for participation and also helps facilitate inter-organisational information exchange, and dialogue.

Institutional Statements about participation that were not identified in other documents were:

- The RES providing process participation locally and regionally to youth
- The RES organising regional inter-municipal conversations
- The RES involving municipal council members for regional organisation

The analysed document exhibits many Institutional Statements in the form of principles, but about seven were identified as information and payoff institutions. The identified Institutional Statements are solely strategies, since the formulation is very generic and non-directive. The standard principles of higher legislation include striving for 50% local ownership, facilitating process participation through conversations and information sharing. The specific focus lies on the way the process participation is organised, with an Institutional Statement stating that it *'must be clear for all stakeholders when and how can be participated'*, specific mentions of different stakeholders that must be informed, regional information sharing, potential help with social tenders for municipalities, and the involvement of youth. The focus of these institutions is enhancing participation, with a strong focus on process participation, but this is not limited to local residents, but takes into account the provinces, municipalities, water boards, nature organisations and grid-operators as well.

6.3. Formal Information and Payoff Institutions Per Case

With all participatory institutions that were identified at higher levels of governance and organisation, all case transcending institutions guiding wind park participation have been discussed. Which institutions are applicable to which case varies. Not all cases fall under the RES GMR, and the municipalities also have different policies. This section describes which identified participatory institutions are relevant for the three different cases and what institutions have been identified for the specific municipalities that differ per case. Each case is discussed, laying the foundation for the comparison between formal and informal rules in chapter 7, and providing a final answer to sub-question 2.

6.3.1. Formal Institutions Bijvanck case

The Authority of Jurisdiction in this case was the Province of Gelderland, making the formal policies identified in subsection 6.2.3 the most important formal institutions. The policies of the municipalities Zevenaar and Montferland are also important to this case, because these actors were of significant influence on the development process of the case. For this reason their written policy fell inside the scope of analysis. Their documents were no direct influence on the case, although it does aid in understanding the role of these municipalities for the overall case. The policy statements of these municipalities are the following.

For the municipality of Montferland the Institutional statements were directive and explicit. Containing general repetition of known national institutions, discussed in subsection 6.2.1, and more specific ones. Delegation of responsibility, where the initiator holds responsibility and should use its own channels for communication and information, and it outlined options for financial participation, such as energy price discounts, area funds, shares and bonds, and an LEC. Corresponding with the provincial institutions on financial participation. More specific rules suggested €0.75/MWh to the area fund for Montferland, and €1.0/MWh for Zevenaar, an effort to pick the most low-noise turbines, maximise revenue return to local area, report on incorporation of stakeholder views for the full length of the process, instating an independent professional to lead information meetings, the presentation of the concept immediately after finishing it, and obligating sending reports about stakeholder meetings to all stakeholders that were present. It further states to directly compensate a stakeholder, if its property is located inside 1 kilometer radius of a turbine. An area fund should be made available for property located in less than 3 kilometer turbine radius, but leaving space for reasonable deviation. It also dictates to allow financial participation for property owners in a turbine radius less than 5 kilometer, with priority for in a radius of 1 kilometer and after that in a radius of 2 kilometer. For the municipality of Montferland, the institutional statements were clear and directive. They included both general references to known national institutions, as discussed in subsection 6.2.1, and more specific ones. The statements outlined

the delegation of responsibility, where the initiator is responsible for using its own channels for communication and information. Additionally, the options for financial participation were detailed, including energy price discounts, area funds, shares, bonds, and a Local Energy Community (LEC). These rules aligned with the provincial policies on financial participation. More specific guidelines proposed a contribution of €0.75/MWh to the area fund for Montferland, and €1.0/MWh for Zevenaar. Other statements included efforts to select low-noise turbines, maximize local revenue return, report on stakeholder input throughout the process, appoint an independent professional to lead information meetings, and present the concept immediately after its completion. Furthermore, it was required to send reports from stakeholder meetings to all participants. The statements also emphasized direct compensation for stakeholders whose properties are within a 1-kilometer radius of a turbine. An area fund should be established for properties within a 3-kilometer radius, while allowing room for reasonable deviations. Financial participation was to be offered to property owners within a 5-kilometer radius, with priority given to those within 1 kilometer, followed by those within 2 kilometers.

The identified institutions of these municipalities appear stricter than higher-level governments. Institutions were more specific, and seem to be aimed to protect its civilians. They also leave open less space for interpretation. In the end this also demonstrates their attitude towards the development process.

6.3.2. Formal Institutions Koningspleij case

For the case Koningspleij the authority of jurisdiction was Arnhem, but no Institutional Statements about payoff or information institutions were found. The municipality itself refers to the RES 1.0 of RES Region GMR. Subsequently, the formal rules on participation that apply to the Koningspleij case are the RES rules that were presented in subsection 6.2.4. Formal procedures were conducted, managed through the RES process, MER reports about sites and the impact on its surroundings impacted the case, but these formal rules were part of generic spatial planning and MER institutions discussed in chapter 4. Leaving ample room for interpretation. Meaning that this case has no clear written participation policy at municipal level. It is therefore guided by the more general framework of regional and provincial policy. Managing the development process was still largely done by the municipality of Arnhem itself.

6.3.3. Formal Institutions Nijmegen-Betuwe case

The Nijmegen-Betuwe case fell under the authority of jurisdiction of Nijmegen and is also part of the RES 1.0 of RES region GMR. Next to the RES institutions Nijmegen had its own institutions about participation as well. All of its institutional statements were on information rules. And almost all Institutional Statements had the initiator as the attribute, except one, which had the authority of jurisdiction as attribute. The institutional statements covered general statements about timing of communication and about the form of communications. Which is in contrast to the specificity and payoff focus of the municipalities of the Bijvanck case.

The identified institutions contain general statements about proactive communication by the initiator, but also more specific forms and timing of information exchange. The municipality states specifically that the initiator should incorporate contacting the municipality in time, such as: *'The initiator [should] make contact about the applicable framework and ambitions with the municipality before the end of the conceptualisation phase'*, that it must actively involve stakeholders in an accessible way. The municipality also prescribes its own role in a simple form: *'[The authority of jurisdiction] involves a most representative group of residents'*.

6.4. Chapter sub-conclusion

Institutions are created at each level of government, higher level governments often have less specific institutions. Lower governance levels provide more specific the prescriptions, but this is not a hard rule. Following from the obligatory participation plan at national level, a participatory process is crucial to receive an environmental permit. This leaves room for benchmarks and information providing that steers the participation process. While the specifics are quite free to be interpreted as the AOJ permits. This informing and benchmarking is done by a mix of stakeholder associations, such as industry organisations in combination with the RVO, more specifically the NWEA and NLOW. These benchmarks inform the the policies at different governance levels, but it is still up to the AOJ to decide what policy they make. In the end smaller or larger governmental bodies make a different types of policy,

demonstrated by the strict rules of the municipalities in the Bijvanck case, and the generic rules of the other two cases. Regional organisations, such as the RES, contribute significantly to the process due to their process participation focus and expertise. The cases with stronger process participation also demonstrate better outcomes and processes. The subtle difference between payoff and information institutions is that payoff institutions have clearer mechanisms, while the information institutions often remain quite generic. How this works out in the cases is yet to be identified. This is described in chapter 7.

7

Informal Participatory Case Institutions

To answer sub-question 3, the informal participatory case institutions are analysed as the informal agreements and contracts about participation at the case level. These can be compared to the formal prescribed institutions in chapters 4 and 6 to learn how they take effect at case level. To do this it analyses the informal information and payoff Institutions-in-Use to categorise the process and project participation institutions. It uses different data sources to study the institutions. It primarily uses the interpreted case study data from chapter 5 and interview data of the Bachelor End Project of F. Broekman. Which is supplemented and crosschecked with additional desk research. The grey literature from the desk research consists of Dutch LEC monitoring reports, the official wind park websites, information documents of the instated area funds of the cases, and the investment brochures of the LECs. This is then used to compare the Institutions-in-Form to the Institutions-in-Use to identify the effectiveness of policies, laws and norms. Each case is first introduced, then the Information Insitutions-In-Use and Payoff Institutions-In-Use are discussed, after which they are separately elicited to provide the most important institutions and ensure comparability. Conclusively, it compares the identified Rules-in-Use to the Rules-in-Form of chapter 6.

7.1. Windpark Bijvanck

Windpark Bijvanck was a 100% CWEPD-owned wind park in the South of the province of Gelderland. It stands out due to its dynamics between different levels of government entities, namely province and municipality. It also faced strong opposition of local groups that organised themselves into protest groups, which gives an opposing perspective to the outcome of this case. The data is based on online research and extensive chapters with both a developer of the CWEPD as a foreman of the protest groups.

7.1.1. Information Rules-in-Use

The initiator interacted with local residents in various ways. The initiator, Raedthuys, conducted about 8 or 9 information meetings. These meetings were held in the form of evening meetings or 'kitchen-table meetings'. It allowed for conversations where any type of question could be asked by anyone. During these meetings representatives of Raedthuys or sometimes the advisors that conducted the environmental impact studies were present. These were strategies of the initiator to inform local residents and include them in the process to increase public acceptance of the wind park. Other forms of communication were a website, a 3D simulation of the wind park, a visit of a Provincial Deputy to the local municipalities, and attending a market where officials were answering questions and presenting information about the wind park. At the same time modality, tone and the way information reached the different actors impacted how the communication was perceived by local residents. The fact that the province was in charge created a perceived distance between local residents and the authority of jurisdiction. Finally resulting in communication blockage and opposition.

Standard information dissemination through spatial procedures such as the public presentation of the concepts and permits was available. The province was in charge of presenting information publicly. It did this by posting these plans on their website, where people could look them up, but did not have more proactive communication. More active spreading of information was done by Raedthuys itself. The order of contact between stakeholders started with the landowner and Raedthuys. This continued later with the Provincial Executive and Raedthuys who were in constant direct contact and both had access to all information about the project at all times, and formed a working group to realise the project. Citizens did not have access to this information and had to wait till plans and decisions were (publicly) presented to react to the plans. These opposing stakeholders perceived the province as a large and unreachable authority that was 'pushing' the plans by 'cutting procedural corners to get what they want', as quoted by one of the interviewees. This started with using the Crisis and Recovery Act to give the authority to the province. This feeling continued when advisors were hired that were perceived to allegedly have an inclination to judge positively towards the interests of the client. Which was explained by the opposition, as a dependency problem, since the advisors are commercially dependent on the public authority (the province in this case) for continuation and future assignments.

The identified informal *Information Institutions* were:

1. the initiator organises information meetings throughout the complete process
2. the province supports the initiator with 3D modeling
3. the initiator organises 'kitchen table talks' with residents
4. the initiator does not talk to residents before the preliminary conceptualisation
5. the local residents can not communicate with the province, as authority of jurisdiction

7.1.2. Payoff Institutions-in-Use

The initial project payoff institutions in the initiator's participation plan did not encompass much of a plan. It did implement an area fund, with the amount of €25.600 annually. This fund is filled by the revenue from the wind park. Money from the fund is distributed by an impartial committee that selects requests of social projects (Raedthuys, 2020). €10.000 of this was destined for two nearby villages, Angerlo and Loil (Raedthuys, 2020). Another compensation measure came forth out of an impact assessment in preparation for the environmental permit. This impact assessment considered the impact of flicker shadow, sound and other impacts on the area. For this reason the initiator agreed to stop the turbines during certain moments, which cost the initiator 0.3% of annual revenue. It should be noted that the initiator was open to include local residents in the ownership of the park. An interviewee of the developer describes that Raedthuys considered having one turbine in local ownership, but when the authority of jurisdiction, the province, did not push or bring it up, they left it this way.

The payoff rules in this specific case play an important role in the opposing party's views. Especially since the opposing parties argue that they were only receiving a burdens from the wind park, while the initiator and the province reap the benefits. This means that there is a misalignment between the experience of the local residents and the norms of fair distribution that were expected in the community, and it did not get solved adequately.

The identified *payoff Institutions* are:

1. an area fund is filled with €25.600 from the wind park revenue annually
2. €10,000 of the fund is annually allocated to nearby villages Angerlo (€5,000) and Loil (€5,000)
3. €15,600 is allocated to direct compensation of 30 addresses that lie the closest
4. village funds can be used after application at the fund foundation once a year
5. village funds can be allocated to social or sustainable projects in the assigned geography
6. village funds can be allocated to a project by an impartial board
7. the direct compensation can be used privately or across addresses that are selected
8. 0,3% of revenue is lost to curb nuisance of flicker shadow, by temporarily stalling the rotors

7.1.3. Institutions-in-Form vs. Institutions-in-Use

The formal spatial planning rules were the structure of the process. It guided the interaction and communication via public presenting of permits and court cases at the Council of State. The fact that the opposition groups' appeals were dismissed by the Council of State, successfully settled the conflict between the opposing parties. The process thus forces the initiator to make use of the 'voluntary measures' as they have to make a 'reasonable participation plan' according to provincial and national law. If this is not done the court can rule against the park and force extra measures, which cost more resources to design and negotiate in the end. The initiator ultimately paid considerable compensations to fix it. The largest impact on this process by state laws was the Crisis- en Herstelwet, as this gave the province the power to overrule the municipalities. The possibility for the province to help with an integration plan, support the permitting and support the initiator partially caused a longer process. The fact that the initial municipalities that had jurisdiction blocked the project means that alternatively the project possibly wouldn't have been realised at all. The process used formal laws to streamline the process such as a coordination decision, views, planning blight, and the available subsidies. Resulting in a total development time of 15 years, with 56 views and 7 appeals.

The information rules of this project were shaped by the fact that the province was the authority of jurisdiction. This could be because province had less policy on process participation, or less information rules, than other governance levels. This contrast is especially strong when considering the municipalities of Zevenaar and Montferland, that had considerably stricter rules process rules about participation. When the province took over the process they ignored the guidelines and institutions made by the local the municipalities. The province did have information institutions that increased information exchange, but these were mostly repetition of higher level process participation rules, or suggestions of supportive measures. An example of this is a 3D model that the province helped the organisation with, which can be found directly in the provincial policy documents. Demonstrating a direct result of a written information institution.

The payoff rules were also strongly shaped by the province. The province did not stimulate the project participation. The resulting project participation measures were an area fund and direct compensation. This was part of the participation plan that was obliged by the province, in line with the Dutch Climate Agreement principle about participation plans. The fund for area and compensation is filled with approximately €0.71/MWh, where the province prescribes nothing, this is higher than the NWEA benchmark of €0.40-0.50/MWh. It is lower than the proposed €0,75/Mwh of Montferland and the €1/MWh of Zevenaar. In the end the total compensation has therefore been lower than the exact prescribed payoff rules of the municipalities that were originally in charge. Of the known participation forms, an area fund and individual local compensation were both used. Financial participation and Local co-ownership were not.

7.1.4. Case sub-conclusion

This case was severely impacted by the formal national laws that allowed the province to take over the ownership of the municipality of Zevenaar, which was the original authority of jurisdiction by default. The fact that the new authority of jurisdiction was a governance level higher had multiple implications. The information exchange narrowed, since the location and accessibility of the province was lower for the local residents than the municipality was. It must also be clear that next to the formal spatial planning laws and institutions, the participatory institutions demonstrated sharp differences in prescriptiveness and specificity. The municipalities that were circumvented by the Chw had much stricter policy about information and payoff rules than the province did. These could have been aimed at protecting its citizens, corresponding with their knowledge of the local community. That can partially explain how the local community reacted when they were forced to accept the wind park and did not have much say in the process. In the end the wind park did get implemented without involving the community as investors, meaning that this has financial upside as the park stayed 100% in the hands of the commercial developer. It did cause significant delays and costs, but it could still be less than splitting the profits over the lifetime of the total project.

7.2. Windpark Koningspleij

Wind park Koningspleij, is a partially LEC developed and owned wind park in the South of the Province of Gelderland. The project was initiated by a local offshore wind park developer, after which an LEC helped with the process and bought 50% of the total project (and # of turbines) later on in the process. The fourth turbine was bought by another commercial developer creating a combined LEC- and commercially-owned wind park. Including an LEC- and commercially-collaborative development process. Both the municipality and province were strongly involved, but permits also needed to be granted by the local water board and the province. The process was thus complicated, but this did not cause significant delays.

7.2.1. Information Institutions-in-Use

The participation strategy of the initiator was in close collaboration with the municipality. They started with conversations with local residents before the concept of the park was developed. They used a multitude of both process and project participation. With an active role of the municipality in the development, and the LEC as coordinator of the participation process. The LEC was therefore both a process participation manager, as the legal and organisational vehicle through which the area could participate in the project. To convince people to invest, a lot of information about the project was automatically disclosed. An information memorandum that was created for this purpose, encompassing all financial information, but also all risks, revenue scenarios, and benefit flows (REIJE, 2020). To raise this money, the LEC actively needed to spread information about the park, strengthening the information dissemination as well as the transparency about the project itself. The fact that the LEC had to raise money from local people also created a different information channel. Further in the process the LEC set up a program for 'windambassadors' to join the project. 'Windambassadors' were local people that helped with the development of the project. These people were rooted in communities surrounding the project, demonstrating cooperative citizens that did not oppose the project. The organisation also used stakeholder panels, including local neighborhood representatives and ecological experts that were consulted and part of discussions about the project. This led to many different views on the project and to direct communication channels between the different neighbourhoods and the initiators. According to a process manager, some local people tried to stop the park and solely opposed it, but their radical opposing suggestions could not, and would not, influence the outcome of the development. In the end the initiator still files the permits, meaning they could still decide what to do with the views and input of these different stakeholders. The input of stakeholders did lead to adjustments to the final form of the project. The formal processes were supplemented with the proactive nature of communication from the initiators and the municipality. Later in the construction phase, volunteers of the LEC that also helped on the project created an information centre near the location. This was with support of both the municipality and the province. It demonstrates the supportive attitude of the different governmental bodies and the proactive attitude of local people participating in the project.

The identified *Information Institutions* were:

1. The initiator engaged in dialogue with local stakeholders before the conceptual phase
2. The initiator created stakeholder panels, with representatives of local residents and other stakeholders
3. The initiator actively promoted the stakeholder panels and other participative functions for LEC members and local residents
4. The initiator organised and promoted multiple information events
5. The initiator engaged in ongoing contact with people that appealed or submitted views
6. The initiator (LEC) disseminated detailed project information to local people as (potential) members and investors of the LEC

7.2.2. Payoff Institutions-in-Use

Multiple Payoff institutions shaped the diverse participatory process in the Koningspleij case. Multiple forms of project participation were employed, including local co-ownership and financial participation through an LEC and an area fund. The most important one was local ownership and financial partici-

pation through the LEC. This was structured through member certificates or 'windshares'. Participation in the project was possible by joining the LEC and buying a windshare for the price of €250 per share, with a maximum amount of 80 windshares per participant. This windshare yielded annual interest of 6% averagely (REIJE, 2020).

The usage of the revenue is structured by first paying the operational and financial costs equally for all shareholders. After that 4% interest is paid over the (depreciated book) value of the shares, unless there is not enough revenue to afford this. In the first years the project is built and the financial costs are high, meaning that no payments or lower payments will be made to shareholders. Money for the development process and the planning blight costs are paid, but also the fees for the use of municipal land, and land of IPKW. What is left is profit or dividends, 75% of this amount is paid out as bonus dividends to the shareholders. 25% is put into a fund 'Fonds Duurzame Energie' which is a fund of the LEC that is used for future projects. These funds flow from the project B.V. to the LEC in the proportion that REIJE owns the shares in the project B.V.. This is 50% of the total wind park shares so REIJE receives half, and Pure Energie and Prowind a quarter each. The LEC REIJE pays its proceeds to its participants, which are its shareholders.

An area fund was instated to return revenue to the local area. This is filled with €0.50/MWh, amounting to about €17,250 annually, depending on the amount of produced MWh (Koningspleij, 2021). The goal of the fund is to 'make the project a good neighbour', and the money is destined for projects in a radius of 1,800 meters around the turbines (Koningspleij, 2021). Specifically for the neighbourhoods Presikhaaf, Westervoort, Malburen, Huissen, Broek/Statenkwartier, and industrial areas. Nine elected representatives these neighbourhoods judge the preliminary requests for money from the fund. The final applications are then judged by a committee of independent experts on planning/sustainability. A specific secretary manages all these processes, this secretary is paid by the municipality. The streams of benefits differ per neighbourhood, of which the amount is determined by the impact of the wind park. The amount of impact is determined by a calculation based on the proximity to all of the turbines and the amount of residents. Meaning that Presikhaaf receives 37.72%, Westervoort 33.93%, Malburgen 20.95%, Huissen 4.71%, Broek/Statenkwartier/ 2.69%, and for local businesses also 2.69%. €800 is the minimum, which will always be paid out. The division of these funds is a guideline rather than a financial rule. *To finance the wind park investment* multiple sources of financing were used. ±€2.6 million is used as starting capital, necessary to get a bank loan. This is financed from the money that 575 windshare-holders bought the windshares for. Total investment for three turbines (of Prowind and REIJE), was €18.65 million, which includes developments costs, the turbines itself, and all construction and network costs. The necessary amount is €22.7 million, of which 17.6% is financed with equity, provided by the selling of wind shares (REIJE, 2020). An SDE+ subsidy was approved and safeguarded the investment through a guaranteed electricity price. Other trade offs of costs and benefits for the surrounding area came forth from the dialogue with locals. Due to the stakeholder panels advertisement on the turbines was banned, decreasing revenue. The turbines have standstill capacity for 6 hours annually against shadow flicker. And when residents lived so close to the project that it nearly failed due to not enough measures being taken. Another impact of the environment was caused by the nearby living area of bird species the Wulp. This bird species had to be protected causing the Southern three turbines to be halted during specific times of the year. Leading to about 5% of yearly revenue decrease. The rules protecting bird species are not written directly, but follow from the MERs and the Nature Protection laws.

The identified *Payoff Institutions* in the case are:

1. An area fund is filled with €0.50/MWh (amounting to ±€1,7250 annually), from wind park revenue
2. A committee of local representatives screen applications for subsidy from the area fund
3. An independent committee determines to which projects the area fund subsidy is granted
4. The independent committee is organised by a secretary and funded by the municipality
5. The benefits or the area fund are allocated across the local neighbourhoods, based on a guidelines of the population size and distance to all the turbines
6. a windshare or a maximum of #80 windshares per individual LEC member can be bought for €250

7. owning a windshare reaps 6% yearly interest, with the risk of receiving less if revenue is lower than expected or costs are higher
8. windshare interest is positioned as last priority before all participatory and financial cost obligations are met
9. all revenue left for windshareholders exceeding the 6% interest is split 75%/25% between bonus return and an LEC-owned fund for future energy projects

7.2.3. Institutions-in-Form vs. Institutions-in-Use

The formal spatial planning procedure rules influenced a multitude of processes. Especially due to the obligatory MER, the multitude of permits and the Nature Protection Act derogation. This created an extensive amount of processes that were needed to successfully get through the spatial planning phase. These permitting procedures also cause extra moments and locations where local stakeholder could see and react to the plans through public presenting. The final planning blight procedures amounted to ±10 people receiving compensation. These costs were already budgeted as part of the procedure, and are not that comprehensive.

The information rules of this case are strongly based on the involvement of the RES organisation and the LEC. The RES is an organisation that coordinates the participatory aspects of wind park development in different municipalities in the area. It has coordinated participation about the location before the initiator started developing. Meaning that people were already informed that the area might be developed later. This created time for information exchange about preferences before the local residents got the news that a wind park would be build. This creates the situation where the informal institutions, of pro-active communication of the initiators, led by the LEC, exceeded the formal institutions that were applicable to the case. Next to early dialogue, the LEC used local representation in forms of 'windambassadors' and positions on the board of the area fund. It does not clearly define what this meant for locals that weren't able to financially participate. Later in the process an information memorandum about the investment opportunity of the windshares provided detailed information for potential investors. This information was also actively spread as the LEC, as initiator, had incentive to spread the information. This way the information rules were positively influenced by a payoff institution, namely the local ownership through an LEC.

The payoff rules are based on strong process and project participation. Distribution of benefits and burdens to the area was organised through the LEC and an area fund. The local residents could buy windshares of €250 per share, with a yearly return of 6% yearly interest. With a windbonus of 75% of the exceeding profits. Where the rest goes to a fund for future energy projects by that same LEC. Before these LEC participants are paid an area fund is filled yearly with €0.50/MWh (±€1,7250 yearly). This is conform the benchmark of NWEA and not considered high or low. This area fund is equally split over the nearby neighbourhoods based on their distance to each of the turbines, and spend on local projects. Projects are screened by local representatives and granted by a professional committee that is financed by the municipality of Arnhem. No direct compensation from the project was identified outside the planning blight. These rules are not a direct result of the Rules-in-Form since there were only the principles of the RES that regulated it.

7.2.4. Case sub-conclusion

This case was influenced heavily by both formal rules and processes, as being structured with the application of participatory concepts. The formal process was influenced by the obligatory processes, such as special permits and mitigation of ecological impact on bird species the Wulp. These processes were necessary due to the site of the park and the formal rules protecting other spatial interests. A water permit was obligatory due to the location and needed to be obtained at the water board. The project also needed to obtain a Nature Protection Act derogation at the province. And due to its size the project was MER-mandatory. These processes were complex due to their bureaucratic nature of being handled by different entities. Next to these procedures due to this location, the turbines were also located in relatively close proximity to neighborhoods in other municipal jurisdictions. Which resulted in local opposition in the end, but this did not consolidate. The process was also characterised by optimising the voluntary participatory aspects of the park as well as possible. Participation through the LEC, the area fund, through stakeholder dialogues, and windambassadors. In the end the project cost

quite some time to develop, but it used early on voluntary process participation, with local co-ownership, but without direct financial participation. This made the project relatively more profitable, but cost time in the development phase. Resulting in a total process time of 11 years, encountering 154 views, and 10 appeals.

7.3. Windpark Nijmegen-Betuwe

Is a fully LEC developed and owned wind park, in the South of the province of Gelderland. The site was previously attempted to be developed by a commercial initiator that did not succeed due to local opposition and administrative errors. After this the municipality got in touch with a local environmental organisation and decided to set the project up with them. This all happened fairly quickly. New procedures were started and it was implemented 4 years from its preliminary conception. Demonstrating the leading and defining role of the municipality. The case is located near the Bijvanck site and has similar characteristics outside the LEC ownership.

7.3.1. Information Institutions-in-Use

The communication was lead by the municipality of Nijmegen taking a pro-active role. They designated the location as suitable for wind in 1996, and conducted multiple studies and dialogues before it was adopted by in the provincial land use plan as well. The municipality requested the initiator to form an LEC, to be able to make it a 'participative' project. The municipality was actively involved in the information dissemination with local residents, organising information evenings and posting in local newspapers. The process participation already started before the initiation phase as the municipality of Nijmegen had local stakeholder meetings about the location before there was an initiator. This was partially managed by the RES program of the area. The LEC as an entity was a factor in the sharing of information since the participants of the LEC were updated on all the intricacies during the 3 to 4 annual member meetings. This did lead to non-LEC participants being shut off from these type of information sources. The initiator, NMG, had personal ties with local residents from their previous collaboration against other industrial projects in the past. This meant that they were personally familiar and understood the opposing stakeholder group. An example of this is informal contact of an individual member of the NMG that spoke to local people while working in the garden. Even with intensive process participation, local opposition still arose from the Reethsestraat, which was a street located very near the turbines. These opposing people did not join the LEC, nor did they want to talk to the initiator or municipality. The initiator put a lot of effort in communicating and set up measures to compensate them as well as possible. The initiator preferred an open process over keeping parts of the process private for their own interest.

The identified *Information Institutions* are:

1. the municipality and initiator organise information meetings through the whole process
2. the municipality does preliminary studies and dialogues about the location before the initiation phase
3. the initiator has informal relations and communication channels with residents
4. the initiator does 'kitchen table talks' with residents
5. the initiator informs LEC members about the process of the project 3-4 times per year, at member meetings
6. the initiator has frequent, open and direct communication channels with a professional developer and authority of jurisdiction (municipality)
7. local residents that do not join the LEC are actively contacted by initiator and municipality

7.3.2. Payoff Institutions-in-Use

The payoff institutions in this project are structured through LEC memberships and ownership, extra resident compensation, and through planning blight compensation. Benefits were distributed through the LEC, which offered 'windshares' of €250 per share with a maximum of 80 windhares. This would then provide 7% annual return, paid from the profits of the windpark. Extra profits were shared between

50% bonus return for the (wind)shareholders, and 50% that flows to a renewable energy fund, which is used to fund future projects. When revenue from selling electricity is not sufficient, the LEC will use private funds to finance the returns. When these funds aren't sufficient the 'windshare-holders' will receive lower returns. The local residents that lived very near the turbines were urged to participate in the LEC and partake in the profits from the wind park. Some local residents did not want to, even if they were allowed returns without upfront investment. So the initiator agreed on direct financial compensation for specific residents. These monetary compensations were higher than what the LEC members received themselves. These compensations, are treated as operational costs, deducted from revenue before profits are paid to the shareholders. The project's initial stages saw reduced profits due to the financial burdens of bank interest, since windshare returns were the last to be paid after all other expenses. An area fund was also established, contributing €1/MWh, totaling about €24,000 annually, to local neighborhood projects (Nijmegen-Betuwe, 2018). This was a voluntary contribution by the fund to benefit nearby residents. Local individuals or groups can propose projects to the fund, which then finances the most promising ones. Izzy projects used their expertise to apply for a provincial subsidy that was granted. The municipality also helped with financing by paying the MER and research costs for the permits. According to the interview with a municipality official this was goodwill from the municipality and not common. The subsidy by the municipality is a revolving loan and is paid back in the first year. The project received an SDE+ subsidy as well, covering risk of loss for the private and smaller investors. The initial investment of €14.8 million was largely financed through a €12 million bank loan, repaid with interest from early revenue. Approximately €2.5 million was provided by IEG, in exchange for 5% of the shares, which the LEC agreed to repurchase after five years. This financing structure presents a risk-reward balance, with the lowest risk and largest investment contribution coming from the bank, and the highest potential reward reserved for the most at-risk investors, the shareholders, who stand to lose their returns and investment if the project fails.

The identified *Payoff Institutions* were:

1. an area fund is filled with €1/MWh (amounting to ±€24.000 annually)
2. every two years subsidy applications for the fund can be submitted, which are granted by a committee
3. a windshare could be bought for €250, if an individual was an LEC member
4. owning a windshare yields 7% yearly interest, with the risk of receiving less if revenue is lower than expected or costs are higher
5. windshare interest payments is the last priority before all participatory and financial cost obligations are met
6. all revenue exceeding the 7% interest is split 50/50% between bonus return and an LEC-owned fund for future energy projects
7. Municipality can help finance and derisk the development process through a revolving loan
8. the province can help finance the project with investing in shares and selling them back

7.3.3. Institutions-in-Form vs. Institutions-in-Use

The formal spatial planning procedure rules the interaction between formal and informal institutions is evident in this case. The spatial process of Evelop caused the municipality to have a lot more information when the second conceptualisation process started. SDE subsidies were used to curb risk and the coordination decision was used for the handle the permits more swiftly.

The information rules in this case were thus influenced by the information that was available inside the municipality as authority of jurisdiction and the support of the RES organisation. The municipality itself published written institutions, as described in 6.3.3. These institutions focused on involving stakeholders early on, and the municipality helping with involving a most representative group of stakeholders. These principles are upheld by the municipality in the way they proactively communicated. The municipality did preliminary research and stakeholder involvement through the RES program for the site. Involving thorough communication about views and interests of a wide range of stakeholders

around the specific site. When the commercial developer failed the municipality continued with this process with another actor on their own terms. The municipality had people involved in the board of the LEC, and the local initiator, NMG, knew the local residents from their previous activities. This resulted in strong communication and informal information exchange. The opposition that arose was handled with dialogue and negotiation. Information about the development process came from a professional and commercial project developer. The formal rules of the municipality demonstrate the focus of the municipality on process participation. They exist on top of the principles of the RES.

The payoff rules influence was primarily structured through the participation in the LEC, an area fund and local compensation. Participation in the LEC was possible for €250 per share, which needed upfront cash of local residents. Before the shareholders receive money, the area fund is filled with €1/MWh (amounting to ±€24.000 annually), which can be considered a high amount, being double the NWEA standard. Noting that at the time of implementing this park the NWEA standard was not yet published. Financial help from the municipality and the province also helped curb the risk for local investors. This was essential for the funding that was necessary to realise the project. The help from the municipality was in line with the institutions of providing planning support. The investment of the province via IEG was also a possible of result of the provincial norms of supporting citizen-initiatives in the context of wind parks, as described in subsection 6.2.3.

7.3.4. Case sub-conclusion

This case demonstrates the interaction between the formal, informal and professional interactions of private and public organisations. It contains strong involvement of the municipality, the province, the NMG, and a professional developer to realise the project. These are each embedded in the obligatory spatial procedures, which generated interaction and information during the first initiation with Evelop. The difference in this case was that a lot of research, stakeholder dialogue, and provincial and municipal support was given voluntarily. This corresponds with the strong amount of organisation applicable to this case, namely the RES organisation, the proactive policies of the municipality of Nijmegen itself, through which this case differentiates itself. Another difference was the help of the commercial initiator that had an aligned interest through ownership in the project development and not in the project after implementation, and the IEG fund which bought shares with an option on buying them back, which in the end functioned more like a loan. They also made use of all prescribed institutions for payoff measures to compensate the local area, which did result in high costs for the project, but also for a large share of ownership of the project.

7.4. Chapter sub-conclusion

At the case level, many institutional guidelines are applied. Formal national laws and the spatial policy system serve as overarching frameworks for resolving disputes. However, the less formalised aspects of the participation process are negotiated and implemented on a case-by-case basis. This is particularly evident with payoff institutions, such as compensation measures, which are more clearly prescribed and have tangible outcomes and tools. In contrast, information institutions are less clearly defined and simpler. Their effectiveness is often linked to how payoff institutions are applied, depending on the specific needs of stakeholder management. The identification and segmentation of stakeholders play a key role in determining how payoff institutions, like direct compensation, are optimised. While information institutions are rooted in state and spatial law, such as the public presentation of permits, they lack clear mechanisms to enhance process participation. The prescribed process participation measures in participatory policy are often not fully reflected at the case level. Another important finding is that when a Local Energy Cooperative (LEC) is involved in the development process, it fosters a more transparent approach, as the LEC must share and disseminate information while seeking investors from among its members. The payoff institutions align closely with the institutions that were found in chapter 4 as voluntary measures. While the information institutions often remained vague in chapter 6, and were reflected more poorly in the Institutions-in-Use, at the case level.

8

Synthesis of Case Results

To answer sub-question 4, this chapter synthesises all formal and informal institutions that were identified in the analyses and couples them to the actor dynamics in the cases to uncover the actor coordination mechanisms. By comparing the formal Institutions-in-Form from chapter 4 and 6 to the Institutions-in-Use of chapter 7, the effects of different types of policies in spatial law and participatory measures in the Dutch has become clear. By consolidating the findings, this chapter provides insight in the workings and effectiveness of the participation measures, and therefore identifies where there is room for improvement. This chapter starts with outlining the general actor coordination mechanisms and continues with the final results on the information and payoff institutions. This provides the answer to the last sub-question 4.

8.1. Actor Coordination Mechanisms

The three cases had very similar characteristics and differed on seemingly small details only. They also had a different percentage of LEC ownership. The cases demonstrated each their own dynamics, with the large differences in how they came to be and how the authorities positioned themselves. The municipalities have supported the initiators in the LEC cases Koninspleij and Nijmegen-Betuwe, but blocked the project in the Bijvanck case. The support of authorities seems to have had a profound effect on the development process. Especially since the pro-active municipalities of Arnhem and Nijmegen already started dialogues and studies about the locations even before the initiators started the process, under the RES program. This has demonstrated to be of importance during the process itself. The early involvement of all stakeholders, especially the local ones that are affected by the wind park, seems to be the most important to gain trust. The urging of the municipalities to do a participative project with multiple project participation measures demonstrated to be of positive influence on the complete process. This is demonstrated by the fact that in both LEC cases the municipality urged the initiator to establish the LEC as a means of facilitating local ownership and participation in general.

The nature and attitude of the authority of jurisdiction has a profound impact on the participation and the process itself. As demonstrated in the Bijvanck case, where the province took charge to overrule the municipalities and implement an integration plan without the cooperation of the local municipalities. The opposite was true for Koningspleij and Nijmegen-Betuwe, where the pro-active attitude of the municipality improved the outcomes of the development process.

The size of the authority in charge has a significant impact on its interaction with other actors, and thus on the whole development process. The difference between the type of governmental bodies and their attitude is significant. The province, as higher authority, was more concerned with the RE goals than the municipalities. The large municipalities were also concerned with their RE goals, but not at the cost of the participation process. This contrasted again with smaller municipalities, which experience a relatively larger impact on their population and specifically act against wind parks to protect their own citizens.

The geographical nature of the wind park site is inherent to the project, but crucial for the complexity of the spatial procedure. The processes that are part of the development that can't be worked around since they are part of the formal spatial planning laws. Mandatory water permits, Nature Protection Law Act derogations, 'buitenplanse' zoning plan adjustments, and MERs all cost extra process time and effort. For each of these extra processes need extra studies and coordination. This is also demonstrated by the Nijmegen-Betuwe case that had done a lot of previous research about the location and did not have a lot of extra procedures. It is also something that is hard to predict in advance, outside for the mandatory MER that is necessary for specific park sizes. These processes and their outcomes can slow the projects itself, but they also cause more costs, and more procedures that local residents, nature organisations and other actors can object to and lodge appeals to. This causes extra duration of the legal procedures in the end as well.

The cases with LEC ownership had more project participation and seemingly more process participation as well. Meaning the payoff and information rules are more favourable for stakeholder participation in the cases with LECs. The LEC cases often used a mix of all participatory measures that were described in chapter 4 as well. They lay a specific focus on an inclusive process and can be considered a participatory measure themselves, allowing local ownership through the LEC.

Opposition arises in all three cases because local residents that live close to parks always fear the impact on their lives. These people did not join the LECs, nor did they want to engage in the dialogues. This was settled with ongoing communication, early start of dialogues, and rich financial compensatory measures. Especially direct financial compensation for the most nearby residences was demonstrated in all three cases.

8.2. Cross-Case Synthesis

By consolidating the institutional findings of all cases this section elicits the most important participatory institutions in the form of information and payoff institutions. Describing how the project developers used participation and what the outcomes of the cases were consolidates the most important findings on how policy and national institutions lead to participatory processes at the case-level. This leads to the concrete measures for communication and the distribution of costs and benefits. First an oversight of the case details, including the participatory details, is presented. Afterwards the most important payoff and information Institutions-in-Use are presented.

8.2.1. Oversight of identified case details

In this section the details and informal rules of the different cases are demonstrated. The identified information and payoff measures in case context are presented in table 8.1, below.

Category	Bijvanck	Koningspleij	Nijmegen-Betuwe
LEC ownership	0%	50%	95%
Location	Zevenaar	Arnhem	Nijmegen
Active since	2021	2022	2016
Number of turbines	4	4	4
Total power	8 MW	16 MW	10 MW
Axis Height	116.5 m	120 m	99 m
Distance to residential area	1,500 m	720 m	900 m
Distance to first house	450 m	500 m	450 m
Expected Yearly production	±36,000 MWh	±35,000 MWh	±24,000 MWh
Area Fund	€0.71/MWh (€25,600)	€0.50/MWh (€17,250)	€1.0/MWh (€24,000)
Direct compensation	€15,600/€25,000	-	unclear
LEC interest	-	6% (+ 75 % profit)	7% (+ 50% profit)
Process time	15 years	11 years	10 years
Views	56	154	4
Appeals	7	10	1

Table 8.1: Details wind parks comparison

8.2.2. Information Institutions

Across cases the most important differentiating information institutions were identified. These were partially embedded in the formal institutions, partially in the informal. They are listed and discussed below. Presenting both the workings of these institutions, examples of them per case, and shortcomings.

Early stakeholder engagement

The structural principle that is prescribed in formal policies and confirmed in the cases, is that stakeholders want to feel part of the decision making process. This is critical for creating trust, which is essential for the communication between different actors. Neighbours of wind parks that experience negative impact of wind parks, or are afraid that will, are almost always opposed to the wind park. They will need to know why the park is at this specific location, which they can only accept if they understand that there are no other better locations. When they learn about a park that is already conceptualised they don't trust the initiator and they can't react to the park coming. This creates blockage in the actor communication. Concretely, this is about the formal amount and timing of contact moments. Informal ways to do this right is by having engaging in pro-active communication, meaning that the developers actively support dialogue and visit local people that oppose the wind park, in a consistent manner, even if they are not automatically engaging at first. Other important factors are having a dialogue with the important stakeholders, such as the closest neighbours or the most important representatives, and reporting on what has been done with the input. In the end the process of communicating is so important, that it does not mean that all feedback has to be used in the design. Only reasonable adjustments that can be made have to be integrated. Although this institution is a seemingly, it is yet to be more concretely substantiated with actionable measures, in practical policies.

Representation of local community

For information exchange and communication the type of communication, and between who, is essential. The actor landscape is more diverse and complex than is often acknowledged. Local residents are sometimes described as a single actor, while these consists of many sub-groups with their own interests. When an initiator communicates the local residents in a nearby city, the dialogue can differ significantly to local residents in a suburb or country street neighbouring a turbine. This means that representation of all the actor-segments is essential in addressing stakeholder the correct way. Talking to the right group and having their opinions represented in the development process can diminish the amount of financial compensation necessary, if this is done correctly. Measures of doing this is proactively spreading and visiting the local area, consistently reaching out, creating functions for local ambassadors, and building personal relationships can help deepen the crucial understanding of the actor-segments. An example is the Koningspleij case where windambassadors were local representatives that in their turn were a contact point for their own communities. Other ways of representation is for locals to function on the board of the area fund, giving them a voice in distributing the benefits back to the local area. Informal ways of communicating to the right stakeholder is by a transparent communication attitude. This can cost time and effort in the beginning but decrease the opposition to the park significantly. Although, this measure is crucial on understanding how to apply the payoff institutions, it is under-represented in policy. Even when it was identified in policy, it often lacks concrete measures to make it happen.

Information exchange with locals as owners/investors

Local co-ownership is of significant influence on the relationship with local actors. Having local ownership, through an LEC or financial participation aligns interests of the local actors and the other wind park developers. The wind park developer will automatically need to share information with investors to receive funds, this does not only create transparency but also an incentive to pro-actively spread the information about the wind park. The consequence of more information in the hands of local residents is that people can experience more trust and feel less fear, increasing public support.

8.2.3. Payoff Institutions

Across cases payoff institutions that guide compensation measures or project participation are analysed and identified. Outlining four lines of payoff institutions that significantly tribute to the nature of a wind park development process. The concepts confirm the identified project participation institutions in chapter 4, but will be elaborated on.

Direct compensation

The direct compensation is a measure that transfers money from the project developer to an individual or a collective of individuals. It is meant to help and compensate specific people or neighbourhoods that are specifically close to a wind park for their loss in quality of life or the value decrease of their house. A voluntary measure is the direct financial compensation after negotiation. This is a resourceful tool to offer specific compensation to local residents that oppose a wind park. The direct compensation is not regulated and stems from a norm of fair benefit distribution. The amount can be adjusted to compensate people that are more severely. Usually this compensation is reserved for the closest streets, houses, or neighbourhoods of a park. These compensations can be periodically or one off payments. The most important factors for the amount of compensation are the distance to the turbines, the impact of the turbine shadow, and the impact of the turbine noise.

A formal law connected to the spatial planning laws, has the same compensation measure. Namely, a compensation measure for the planning blight caused by zoning. This is something that is claimed and judged in court, where civilians can be compensated for the value decrease of property due to a change in a spatial plan. 2% of this decrease is always at own risk, and the court determines what is a reasonable sum. The compensation is a one time payment. This measure was used in all cases, but only for the people that claimed the compensation. The compensation is usually included in the wind park development budget, and is not considered significant.

Local area fund

An area fund is a financial fund from which financial resources are returned to the area in the form of funding for local projects. This is mostly for projects with a social, ecological, or sustainable component to them, but this is free to choose by the initiators and AOJ. The amounts in the area fund are usually €/MWh, meaning that they take a small share of the revenue to fill the fund annually. The money is distributed differently per area fund, but is often done by annual or bi-annual applications, that are evaluated and judged by a board. The board often consists of professional and administrative representatives of the developing parties. In the Koningspleij case local representatives conducted the first screening of applications, creating extra representation of the local stakeholders. These area funds are not obligatory, but are used in all three cases. It is formally embedded in the obligatory participation plan and supported by the payoff norms that are made by government actors at multiple levels. The national Dutch guideline, informed by the NWEA is 0,40-0,50 €/MWh. The cases demonstrated between 0,50-1,00 €/MWh, meaning the total amount is dependent on the yearly production. With the estimated yearly amounts between €17k-€26k, of which sometimes a part is reserved for direct compensation. The granting of funding is usually coupled to a geographical distance formula to the turbines. Of which an example is demonstrated in *Regeling Omgevingsfonds* Koningspleij (2021), of the Koningspleij fund.

Financial participation

Another way of distributing benefits from the park to local stakeholders is financial participation or co-ownership. In both cases the locals or participants buy a financial interest in the park. Which aligns both the initiator with the local area, at least for the people that have the resources to participate and buy a bond or financial product. They are explained further below.

Bonds, shares or financial products

Buying bonds or a financial product means that the participant loans some money to the wind park developer, which gives a financial return at an agreed percentage. This creates value and benefits for both, where the developer receives extra funding, while the participant receives a return on its money. With a share in the park it works different, because the participants buys a small part of the wind park development company which gives rights to a return corresponding linked to the profit, but also to loss of value if the project loses money. This is higher risk, with a potentially higher return, depending on the applicable agreements. These shares can have voting rights or no voting rights. When they don't have voting rights, they are effectively similar to bond or a financial product. When shares do have voting rights the owner, also becomes co-owner of the project itself, which is what happens through an LEC.

Local co-ownership (LEC)

When local actors such as residents and businesses hold shares in the wind park (development) com-

pany and have voting rights, they are officially co-owners of the wind park. Meaning they can vote to decide what happens to the project and wind park, they have the opportunity of profits and the risk of loss. When these shareholders organise themselves into a collective, are local, and non-profit, they meet the basic terms to be an LEC. The LEC is then often owner for a certain percentage in the wind park company, while other parts might be owned by businesses, investors or even governmental bodies. While the LEC owns a part of the total wind park, the participants in the LEC own parts of the LEC. In this sense it is a share of a share. While ownership and voting rights are determined by the amount and percentage of shares that are owned, the roles of shareholders can also be agreed differently. This means that an LEC can be owned by businesses as well as local individuals, which changes the nature and participatory value of and LEC. Next to those questions the governance and payoff structure can also differ, because it depends on what is agreed. When more businesses or large businesses own the shares of an LEC, local people might not be able to take part in it. Even if they are well-represented in the LEC, the LEC might have a small share in the project. This means that the more shares the LEC has, the better the representation of local stakeholders is in the park. And the more democratic the LEC is structured, and the participants represent the local actors, the better the project participation will be. Collaborations are important to LECs, as they often lack professionalism, knowledge, finance, and capacity. In the cases the LECs used support of professional parties and governments. In the cases Koningspleij and Nijmegen-Betuwe the municipalities played large parts in creating a successful LEC. In the Nijmegen-Betuwe case a professional developer of wind parks delivered expertise to sell its stake after it had created the project. In both LEC cases the supportive attitude of the municipalities was crucial to succesfully making the investment and managing the developments process. It is also common that LECs use part of the profits to create funds for future projects, in that case an LEC might become more experienced and professional. This way the LEC might become more like a professional wind park developer and move on to bigger projects at different locations. Posing the inherent barrier, that they often do not have the same local roots in a different location, which would be in conflict with an LEC having the advantage of being local.

Project ownership and investment risk

Finally, the payoff distribution of a project depends on who owns the shares at what point in the project and what risk encompasses the investments that are made. To develop a wind park a lot of costs need to be made for research, running the organisation, structuring the financing, and managing the project. This is often done using a project company, in the form of a legal entity, a 'B.V.' (English: LLC - 'Limited Liability Company'). The owners of the shares in this B.V. are the owners of the project, which will be the realised wind park after realisation if everything succeeds. If it fails, the owners of their shares lose their investment. These owners can change during the project, by selling or buying shares. This means that an organisation can take more or less risk, depending on what time they enter the process. Early in the process the risk is higher, but the amount of money invested is lower. After the spatial planning procedure goes through, the risk of the project failing becomes a lot lower, meaning that the value of the shares in the project B.V. become higher. This is an important aspect for financial participation, since it is about investing with a chance of both profit and loss. Dealing with these risk and possible losses can be more difficult for local individual residents, since it is quite complex to oversee. Limiting the risk of losing invested money of private participants in LECs is an important factor to their success. This is partially through formal rules of the limited liability, making sure that the individuals can't be sued for losses if the park goes bankrupt. A way of de-risking happened in the Nijmegen-Betuwe case, where the municipality paid part of the development cost itself in the form of a revolving loan. This meant that the participants in the LEC did not have to pay these cost upfront, but could pay the municipality back later with the revenues from the wind park. This in turn incentivises the municipality, who is also the AOJ, to make the project a success.

8.3. Chapter Sub-conclusion

The consolidation of all findings revealed the actor coordination mechanisms and highlighted the most important information and payoff institutions. By comparing the use of various institutions in policy and case studies, the critical role of the municipality or province as the AOJ became evident. These authorities have considerable discretion in how they prepare and assess a site, determine collaboration partners, and decide which permits to grant. Moreover, the inherent dynamics of wind parks—such as site selection being influenced by ecological, geological, and local interests, and the predictable

opposition from residents near onshore wind parks—underscore the importance of having a competent authority to manage these factors effectively.

Identifying the key information and payoff institutions confirmed the basic institutions outlined in Chapter 4, while also demonstrating their functionality and applicability. The information institutions mainly focus on early communication and stakeholder representation but lack concrete actionable measures, unlike the payoff institutions, which are more clearly defined. This indicates that further development and stronger multi-actor coordination could enhance process participation and improve communication between stakeholders. This, in turn could also improve the application of project participation measures. The RES organisation appears to have a positive influence, but it also depends on the municipality's commitment to an inclusive process. Payoff institutions are relatively straightforward and can be applied concurrently to suit the appropriate distribution measures for each stakeholder group. Both information and payoff institutions could contribute more effectively to the process if more concrete process participation measures were regulated and supported by government policy.

9

Conclusion

In this chapter the conclusion and discussion are presented. The conclusion starts with the main findings and answering the research questions. After that the discussion discuss the policy recommendations, limitations of the research and avenues for future research.

9.1. Conclusion

This chapter the main findings are consolidated. They are described and used to generate insights. After this the sub-questions are answered, which then leads to an answer to the main research question.

9.1.1. Main findings

This thesis analysed the blueprint, origin, and formation of all institutions influencing the participation process to better understand the policy development process and its effectiveness. It applied the Rules-in-Use component of Ostrom's Action Situation by looking at Information and Payoff institutions. It generated insights by comparing the Rules-in-Form of policies and laws to the Rules-in-Use from three case studies. The Rules-in-Form were derived from policy documents and government websites, while the Rules-in-Use were identified by analysing the Action Situation of the development process through interviews and case studies. By situating these institutions within the broader context of the second and third layers of the Four-Layer Framework, the theories provided a comprehensive blueprint and detailed examination of the institutions, their effects, and actor dynamics within the national governance and judicial system. By comparing state laws and practices with participation policies and the actual institutions used in the three cases, the thesis uncovered the complex workings and shortcomings of the current development process.

To address the research questions, it found that spatial planning and state laws offer structure, basic rights, and influence to a wide range of stakeholders. This is achieved through public presenting, judicial processes for appeals, and the submission of 'views.' These mechanisms are supplemented with voluntary policies and the provision of information on specific participatory measures for wind park development. These more voluntary participation measures are prescribed through a top-down policy-making process, informed by recommendations from national expert organizations, such as industry groups and interest organisations. At the national level, guidelines such as the 'need for a participation plan for an environmental permit' and the goal of 'striving for 50% local ownership' establish the foundation for lower-level policy. Lower-level policy actors, including provinces, regional organizations, and municipalities, then develop their own policy guidelines, drawing on input from other policy actors. These entities have considerable freedom to interpret these guidelines when approving permits, but their decisions are subject to oversight by the judicial system, including municipal and provincial councils, as well as the Council of State.

The thesis concludes that many participatory institutions are created by policy actors, but not all have proven effective at the case level. This is due to several significant dynamics and shortcomings in the current policy and participation process, such as the complex and critical role of the authority of jurisdic-

tion, the institutions guiding the multi-actor process, and the current sub-optimal interaction between payoff and information rules. These findings will be elaborated upon, below.

Authority of jurisdiction role
The role of the authority of jurisdiction is multi-faceted and crucial to the success of wind park development. This authority is not only tasked with selecting the appropriate initiator but also with ensuring effective communication with local residents. The level of involvement in the project can vary across different governance levels. For example, a provincial authority may be less directly engaged with local stakeholders compared to a municipal authority. The experience and expertise of these authorities in development processes are therefore critical. Municipalities with prior experience in wind park development and the participation process hold a significant advantage. Their role can extend to financially supporting the initial investment or conducting site research before the tendering process begins, which can make or break a participatory project. For instance, a larger municipality might cover the initial costs of permit-related research in the form of a loan, helping cooperatively owned projects that require additional funding or risk management.

Lack of multi-actor process institutions
The multi-actor process involves two key institutions: early stakeholder involvement and community representation. Although these institutions are recognised in policy documents across all levels of government, they lack concrete measures for implementation. The research found that information-sharing institutions are poorly developed and not effectively integrated into the policy process. While some governments have prescribed these institutions, their implementation in the case studies did not align with these guidelines. Enhancing the specific measures that support these institutions improves communication and reduces opposition. Effective institutions that should be incorporated into governmental policy include proactively disseminating information within the local area, consistently engaging with the community, establishing roles for local ambassadors, and building personal relationships to identify all actor-segments involved in the project. Implementing these measures correctly enables more effective use of compensatory institutions, or payoff measures. This emphasises the importance of process participation, as the success of project participation measures is dependent on the effectiveness of the process participation. Finally, having an LEC as the (co-)initiator increases information dissemination, as it is often associated with open communication. However, the initiating LEC must thoroughly inform local actors when seeking investors to further enhance information dissemination. This, in turn, boosts process participation, and thereby improves overall participation in the project.

Using multiple project participation measures
The project participation measures identified in Chapter 8 largely confirmed those described in Section 4.4. The research also concludes that applying all measures together can be most effective, but correct application of each measure to its most suitable end is essential. This is where the payoff institutions, intersect with the information institutions and multi-actor process. A deeper understanding of the various actor groups and segments allows more effective use of project participation measures. Understanding the interaction between the initiating and opposing actors is essential for determining the best strategies for effective participation processes and enhancing social acceptance. Establishing an LEC improves both information dissemination and the distribution of costs and benefits, making it a recommended participatory measure.

9.1.2. Answering the Research Questions
In this subsection the sub-questions are answered to be able to, finally, answer the main research question.

Sub-question 1
What institutions influence onshore wind park development in the Netherlands?
The development of onshore wind parks in the Netherlands is heavily influenced by a spatial planning law framework. In this context, the government plays a key role in regulating land use and issuing the necessary permits for wind park projects. The spatial planning and permitting processes, along with various laws supporting wind park development, shape the legal framework for these projects. Several coordinated steps are required in this process, including Environmental Impact Assessments, participation plans, and integration plans. The development process involves an informal structure with three main phases: conceptualization, spatial procedures, and implementation. During the conceptualiza-

tion and spatial planning phases, the participation process begins, guided mainly by Dutch corporate law and voluntary participation norms. These norms, often voluntarily implemented by project initiators, shape the participatory processes specific to each wind park project. The key institutions influencing wind park development include basic land use rules, spatial planning laws, and the broader political structure. Additionally, both state actors and other stakeholders in the wind park sector play important roles, following specific procedures derived from these systems. The process also includes less formal institutions related to project and process participation, which provide a framework for more informal involvement in the development process. A deeper understanding of these institutions was researched to answer sub-questions 2 and 3.

Sub-question 2
What are the written regulations in policy documents that influence communication and cost and benefit distribution in onshore Dutch wind park development?
In addition to the regulations within the spatial planning framework, there are written policies of all levels of governance that provide the norms and rules for participation, communication, and cost and benefit distribution for onshore wind park development. These policies establish standards for both process and project participation and define supporting roles for various stakeholders. They also regulate aspects like minimum distances to wind turbines, how stakeholder input should be reported, and the portion of revenue that should be returned to local communities. The national government provides guidelines for participation through the Dutch Climate Agreement, which are then adopted and further detailed by lower levels of government. These specific guidelines are often shaped by benchmarks from non-governmental interest groups or the insights of policymakers. Most of these policies are not strictly prescriptive, allowing room for interpretation, which is evaluated on a case-by-case basis by the relevant authorities. The Regional Energy Strategy (RES), a semi-governmental organisation operating regionally decentralised at national scale, does not create rigid regulations but rather uses written principles to facilitate communication and interaction among different actors. While broad principles are frequently reiterated, lower-level governments tend to develop more specific regulations and rules.

Sub-question 3
What are the informal agreements about communication and costs and benefits distribution between actors in onshore Dutch wind park development?
Informal agreements in onshore Dutch wind park development typically emerge through voluntary participation agreements between project initiators and local residents. These agreements share similarities with the participation concepts discussed in section 4.4 and the formal rules identified earlier, but they remain distinct. Their legal basis follows from the nationally prescribed need to include a participation plan in the environmental permit application. Key informal principles include the importance of residents ”feeling included in the decision-making process,” which helps build trust between them and the authorities or initiators. Another significant principle is ”aligned interests in the park, by investing or participating”, which can be fostered by involving locals in the project through including them in the organisation or investment. In the realm of communication, informal agreements tend to focus more on flexible principles compared to those related to costs and benefits distribution. While benefits might be specific, such as an area fund, financial compensation, or a bird-strike protection system, communication is often less tangible, emphasizing factors like the timing of communication, a proactive and transparent approach, and the establishment of personal relationships. These communication principles are frequently embedded in the practices of inter-organizational actors like the RES and responsive municipalities, but their effectiveness largely depends on the attitude, frequency, and style of communication employed by those involved.

Sub-question 4
How do the formal rules, and informal rules, and actor coordination mechanisms impact process and project participation in Dutch LEC onshore wind park development?
In analysing the different cases, certain actor dynamics and coordination mechanisms became particularly significant, such as the dual coordinating role of the authority of jurisdiction (AOJ) and which governmental body fulfills this role. Formal spatial planning procedures tied to specific sites, along with strategies to address inevitable opposition from local residents, also played a key role. To effectively engage with local actors, initiators and the AOJ must prioritise essential information institutions, as process participation measures, including early stakeholder engagement and ensuring that the local community is properly represented in participatory measures. And use the available payoff institutions,

including direct individual compensation, the establishment of a local area fund, and opportunities for financial participation through bonds, shares, or LECs. Thereby, it is crucial that the formal institutions governing project ownership and timing ensure that investment risks are assumed by actors capable of succeeding and, if necessary, absorbing any losses. Given the wide variety of actors and options for participation measures, creating a one-size-fits-all regulation is challenging. Therefore, the success of the process relies heavily on having the right actors lead the development, focusing on the multi-actor process, and ensuring that the chosen participation strategies are tailored to the specific context of each project.

Main Research Question
"How does the relationship, between written rules, informal agreements, and the coordination mechanisms between actors about participation, influence Dutch onshore wind park development?"
To identify the full blueprint institutions in onshore wind park development are shaped by three different institutional components. The first component consists of formal spatial planning laws and state processes that regulate permit procedures, ensuring that local stakeholders are fairly involved and compensated. This includes planning blight compensation, public presentation of spatial decisions, and the ability to appeal. The second component is the less prescriptive formal participation policies that stem from the Dutch Climate Agreement. These policies are developed across all levels of government, down to individual cases, but they are not strict laws or rules with enforceable consequences. Instead, they often take the form of voluntary agreements between authorities, initiators, and local stakeholders. These measures can vary widely between projects, offering significant opportunities to create more efficient processes. These institutions are informed by national interest organisations that represent industry or interest groups, which is coordinated by the national government through the RVO. The third component is the informal framework, consisting of unwritten norms and codes of conduct that differ per individual, actor, and case. These norms are translated into specific actions that initiators or authorities can take. For example, trust, timing, and the form of communication are crucial for effective communication. Early, proactive communication — before the conceptualisation stage — is critical, even if it does not alter the final outcome. For benefits distribution, the focus is on fair compensation, ensuring that local areas are supported through an area fund and that those particularly impacted receive direct financial compensation. Additionally, creating incentives for local support, such as involving residents in profits through financial participation or an LEC, is important.

In conclusion, spatial and state laws provide a framework through which various actors secure a position in negotiations. This is achieved through public presentations, appeals, and decisions made by courts and councils at regional or national levels. A more voluntary participation process, in the form of both process and project participation, aims to address potential opposing views before they escalate into legal disputes. This approach is regulated from the national level down, offering principles for process participation, such as early communication with the appropriate stakeholders, along with standard project participation measures like area funds, individual compensation, and local co-ownership. Improved information institutions can enhance the effectiveness of payoff institutions by enabling their more accurate and appropriate application. This underscores the need for a thorough multi-actor process, backed by more concrete process participation measures informed by the policy-making state actors involved in the projects. While using a LEC is not essential for a successful process, it can be advantageous for both project and process participation. Achieving a balance between profit-sharing and risk-bearing is crucial, and this can be positively supported by municipal or provincial governments.

9.2. Discussion

The discussion section describes how valid and robust the research is. It therefore positions the research and reflects on its shortcomings. From these shortcomings, lanes of further research spring. The section starts with the limitations of research and ends with the suggestions for further research.

9.2.1. Policy Recommendations

The research presents several important implications for policy. First, it highlights that for legislation to be effective, it must allow room for interpretation to accommodate the diverse parameters unique to each case. Flexibility in the legal framework enables better adaptation to specific circumstances. Sec-

ond, the legislation should place greater emphasis on establishing concrete institutions for managing the multi-actor stakeholder identification process. Both information and process participation institutions should be geared towards gathering a broad range of perspectives from all relevant stakeholders, ensuring that each group is addressed in the most optimal way. By identifying and addressing the appropriate stakeholder segments, the most efficient distribution of project participation measures can be negotiated, resulting in significant time and cost savings. Payoff institutions, though relatively straightforward, are only as effective as their application to the appropriate purpose, underscoring the need for a thorough multi-actor process from the outset. Additionally, Local Energy Communities (LECs) should be supported by local governments to help mitigate the initial investment risk for local participants. Supporting the viability of LECs naturally fosters more transparent communication, but it is especially important since it enables local actors to access detailed information that is essential for attracting investors, thereby enhancing both process and project participation outcomes.

9.2.2. Limitations of research

The research presented in this thesis has several limitations that should be acknowledged to ensure a clear understanding of its scope and to highlight potential biases that may affect the findings.

Scoping Issues: Geographically, the study is limited to one province in the Netherlands. This narrow focus may fail to capture a wider range of practices and policies in other regions or countries, limiting the generisability of the findings. Broader comparative research across different regions could provide more comprehensive insights into varying practices and policy outcomes.

Temporal Policy Influence: The policies analysed in this research were published during or after the case studies took place. This overlap in timing complicates the determination of mutual influence between policy development and case outcomes, making it uncertain whether the exact evaluated policies influenced the cases or vice versa.

Repeated Developer Use: Two of the cases involve the same commercial developer. This repetition introduces a potential bias, as the findings may be overly reflective of this specific developer's practices and experiences rather than representing a diverse range of actors and approaches. More varied case studies might have provided a fuller understanding of the dynamics at play.

Rapidly Changing Policy Environment: The field of policy, particularly in renewable energy, is evolving rapidly. The policies analysed in this study were developed recently, and changes in the policy environment may have occurred within a short period. This fluidity means that the formal participatory policy analysis may not remain consistent over time, affecting the reliability of findings as they relate to current or future policy contexts.

Geographic Proximity Bias: The use of case studies located in close geographic proximity may offer a skewed perspective, potentially overlooking regional variations in policies and local challenges across different parts of the Netherlands. Expanding the geographic scope could provide more nuanced insights into how policies might vary across different regions.

Interpretative Coding Challenges: The coding of policies required interpretative judgement, which introduces the risk of subjective biases. For instance, determining whether a policy includes a deontic (a "should" statement) is interpretative, and thus somewhat subjective. Such interpretative decisions may influence the classification of institutional statements and thus affect the conclusions drawn.

Purpose of Data Collection: The interview data used for the case research was not originally collected for the purposes of this study specifically. This could result in misalignments between the available data and the specific research objectives, potentially leading to gaps or a lack of focus on key research questions.

Exhaustiveness of Policy Document Search: The snowball sampling method used to identify policy documents is not exhaustive. Given the vast and complex nature of policy systems, it is possible that some relevant policies were not identified or analysed, which may impede the completeness of the study's policy review.

Norms vs. Strategies: Distinguishing between norms and strategies within policy documents presents another challenge, particularly when deciding if an implied deontic is present. This ambiguity can

influence the classification and subsequent analysis of policies, potentially affecting the accuracy of the findings.

Information Source Bias: The reliance on information from official websites and organisations, without incorporating direct input from local residents, may result in a skewed view that prioritises the governance perspective over the experiences and opinions of the community. Engaging more with local stakeholders would provide a more balanced perspective on the issues being studied.

Limited Sample Size: The relatively small number of rules and policy-making entities analysed limits the ability to draw robust, generalisable conclusions about the formal participatory rules. A larger sample size would strengthen the research's capacity to provide conclusive statements and enhance the overall validity of the findings.

Acknowledging these limitations is crucial for contextualising the results of this research and for understanding the potential constraints on its applicability and validity. Future research should address these limitations by incorporating a broader geographic scope, a larger variety of developers, and more inclusive data sources to improve the comprehensiveness and generalisability of the findings.

9.2.3. Further Research

Building on the findings and limitations of this study, several avenues for further research are recommended to deepen the understanding and improve the practices surrounding onshore wind park development.

Quantitative survey to identify effectiveness of participatory measures: Drawing on the in-depth understanding of information and payoff institutions developed in this thesis, conducting a large-scale survey could help quantify the effectiveness of participatory measures. Examining the levels of direct compensation, area funds, and local co-ownership could identify the most effective combinations, providing more targeted insights for improving future wind park development processes.

Wider Geographic Scope: Future research should expand the scope of this method by comparing different provinces or countries. This comparative approach would help identify regional and international variations in institutional practices and policies, providing a more comprehensive understanding of how different geographic areas manage participation in wind park development.

Broader Institutional Focus: Replicating this study with a focus on broader institutional rule categories could provide a more extensive view of the institutional landscape. This approach would encompass a wider range of policies and regulations, offering a more holistic perspective on the governance of wind park development.

More recent cases and Enriched Interviews: Identifying current cases and conducting interviews with a more enriched focus would yield deeper insights and reflect the latest developments in the field. Interviews with key stakeholders, including local residents, developers, and policymakers, would provide a more nuanced understanding of the current challenges and opportunities in wind park development.

By pursuing these research directions, future studies can build on the foundation established by this thesis, offering richer, more detailed insights into the institutional dynamics of onshore wind park development. This further research would contribute to more effective and inclusive renewable energy policies, ultimately supporting the acceleration of the energy transition.

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A

Appendix: IG ADICO-syntax results

A.1. ADICO syntax coding results

A.1.1. Governmental levels

The national policy that was coded were statements from the Dutch National Energy Agreement. A document of the 'participatiecoalitie' was identified describing the relevant parts of the Energy Agreement for participatory measures (Participatiecoalitie, 2020). This was in line with the information that was found in other policy document frameworks.

Two provincial documents of the Province of Gelderland contained relevant institutional statements. These documents were the wind policy section of the 'new spatial policy document of the province.' And a later extension of this policy that was approved. This resulted in 16 provincial Institutional Statements in total.

At regional level the RES documents over arched two of the three cases. The resulting rules are strictly rules from the RES 1.0 for the 'Regionale Energie Strategie: Groene Metropool Regio (GMR)', encompassing the area of Nijmegen, Arnhem and many surrounding municipalities. These are discussed later in this chapter. Resulting in 9 Institutional Statements.

At municipal level the most Institutional Statements were identified. This included mostly assessment frameworks for solar and wind (renewable energy). These documents were not available for each municipality and varied quite strongly in between. Making this the most clear and specific layer of analysis. In the end four documents of municipal bodies contained 38 Institutional Statements.

Governing Level	National	Provincial	Regional	Municipal
# per level	3	16	9	38

Table A.1: Institutional Statements per governance level

A.1.2. Rule types

The rules type was also classified and resulted in 34 information rules and 30 payoff rules. These rules are often easily distinguished. Two rules were categorized as both information and payoff.

Where information rules generally talk about process participation. This can be in the form of incorporating stakeholder views in the process, the timing of giving notice of new ideas, and all other rules, norms or strategies that are about communication, the exchange of information or views.

Payoff rules are generally about project participation. This can be in different forms of benefit flows, such as personal compensation of local residents or business owners, negative impact measures (e.g. curbing flicker shadow, low-noise turbines), or area funds.

In some cases the rules are coded as both. These were both generic high-over Institutional Statements on the national level. These rules were about the form of both project and process participation.

The general spread of these rules is quite symmetrical, with slightly more information rules on the total. Other results are that there are double the amount of payoff rules at provincial level, compared to information rules. Potentially demonstrating a focus of the province on project participation. For regional level it was the other way around, having 6 Institutional Statements about information rules, and only half of it about payoff. Suggesting the focus on process and communication.

Split rule type	Information	Payoff	Information/Payoff
Total #	**34**	**30**	**2**
National	0	1	2
Provincial	5	11	0
Regional	6	3	0
Municipal	23	15	0

Table A.2: Institutional Statements per institutional rule-type

A.1.3. Rules, norms, and strategies

The Institutional Statements were coded and analysed as either rules, norms or strategies. This led to 8 rules, 47 norms, and 11 strategies. These are an indication of the type of legislation on this topic, rules being the most directive.

A total of 8 rules with a deontic 'must' and an 'or else' were identified, all on municipal level. Suggesting a more directive approach at the lowest level of government. This is the most directive statement, concerning a consequence of not living up to it. Since most policy was not written in clear cut rules, interpretation of implied deontics was used. The context dictated that the municipality as competent authority would be the entity to make permit decisions and thus the realisation of the project. For this reason the 'or else' statements that missed in Institutional Statements with a clear 'must' deontic, got an interpreted 'or won't receive a permit from the municipality'.

The largest group identified were norms, with a total of 47. These were identified on almost all governance levels except regional. Most of the norms were identified at the municipal level, but this corresponds to having the most institutional statements on that level too. The norms often corresponded with the deontics. Implied deontics therefore impacted the division of current amounts of norms and strategies. Possible reasons for the many norms are the legislative process, the coding process, the type of analysed documents, and the way interpretative coding was done.

A number of 11 strategies were identified. These mostly came from the regional policy documents. Strategies were identified when an aim was expressed or valued by an entity without giving a clear direction on that the attribute should execute this. Meaning that the statement was interpreted like a guideline, which did therefore not warrant an implied deontic such as 'should' or 'may'. This was most prominent in the RES document on regional level.

Split IS-type	Rule	Norm	Strategy
Total #	**8**	**47**	**11**
National	0	3	0
Provincial	0	16	0
Regional	0	0	9
Municipal	8	28	2

Table A.3: Institutional Statements as norm/rule/strategy

Trends

Altogether a tendency seems to unfold of the strongest legislation at the bottom and the least defined higher up. Generality is demonstrated by the coding of information and payoff rule type together at the national level, and the most Institutional Statements and rules at the municipal level. Another result was the higher amount of information rules at the regional level, suggesting that these entities focus on information exchange rather than actual benefit streams. Which was reversed for the province, suggesting a deeper focus on payoff rules.

A.2. ABDICO Syntax Elements Analysis

The ABDICO syntax elements were coded as accurately as possible resulting in coded elements for each of the syntax elements. The results will be demonstrated below.

A.2.1. Attribute

All Institutional Statements were coded for one of four actors. This was often not mentioned explicitly, meaning that the attribute of the rule was implied. Usually, the Institutional Statement was about the project or the eventual wind park, meaning that it was up to the manager or owner of the project to live up to these rules. This was therefore often interpreted as 'the initiator', which can be a set of entities as well (e.g. an LEC, a commercial owner and a municipality). In higher level policies it was more often directed at the authority of jurisdiction, as this public body is also responsible for the project and the effects on its citizens. When it was neither of these, it usually referred to the legislator to set up rules about its own role in the process. This resulted in 5 Institutional Statements about the authority of jurisdiction, 51 about the initiator, 4 about the RES organisation, 5 about the province, and 1 about the combination of initiator and authority of jurisdiction. The statement for both initiator and authority of jurisdiction was at the national level, dictating how a project should be conducted, but not specifying strictly how. This was therefore interpreted as being a call on both.

Attribute	# IS	# of implied IS	**Total**
Authority of jurisdiction	-	5	**5**
The initiator	28	23	**51**
The RES organisation	-	4	**4**
The province	5	-	**5**
Initiator and A.O.J.	-	1	**1**

Table A.4: Institutional Statements Attributes

A.2.2. Deontic

The deontics were identified a mix of literal deontics and interpretative deontics. This resulted in 37 'should', 9 'may', 9 'must', and 11 were not available. The high amount of interpreted 'should' deontics are a result of the way these policies are written. More specifically, the policy will say that the authority 'highly values' a specific way of conduct, which is not a direct rule with an or else. It was interpreted as something that the authority thinks 'should' be.

The 'may' deontics were often identified for options of conduct or to delineate roles for attributes. Options of conduct can be the way financial participation 'may' take shape (e.g. bonds, shares, area fund). This is not excluding other forms but do provide guidelines. Roles could be that the authority of the specific policy describes what they 'may' do in the process. By describing what they 'may' do they do not limit their role, but give suggestions and outline what the respective entities position is in the process.

The must deontics were all written out, totalling 9. This corresponds strongly with rules as it is a pressing way of creating an Institutional Statement that must be abided by. The 8 identified 'must' deontic also corresponds closely to the 9 identified rule-type institutional statements.

Of all statements 11 did not have a definable deontic. These statements often exhibited a more general phrasing, corresponding more with a strategy or a norm. This can be generic statements of strategic intentions, such as 'making sure everyone in the region benefits from the plans' or 'Organizing meetings to share regional knowledge'.

A.2.3. Aim and Object

Were coded for each institutional statement. Aims are often the core of the statements as the type of analysed legislation caused the other syntax elements to be interpretative, but the aims and objects clearly represent what the essence of the Institutional statements are. The aim and object did have a small interpretative aspect. The first aspect was that the raw statements were in Dutch, meaning the translation is interpretative. The second was that the raw statement contained more sentences of

Deontic	Total	# IS	# of implied IS
Should	**37**	7	30
May	**9**	2	7
Must	**9**	9	-
Not available	**11**	11	-

Table A.5: Institutional Statements Deontics

which the aim was comprised. Meaning the coding had to carefully read the statement and tune the aim to identify a correct and concise aim.

The object was identified for each rule, but did not have much analytical added value. Namely as the split for these types of statements between aim and object were not that clear. Resulting in most parts of the statement that were the classical aim ended up in the object, while keeping the verb of the statement in the aim. It was therefore decided not to analyse this further in dept.

A.2.4. Condition

The amount of conditions that were identified were 17. The other 49 institutional statements did not have a clear condition and were thus coded as not available (n.a.). Most conditions were temporal and spatial. Main reasons for conditions were the temporal start of communications with the local area actors before the start of a certain phase (e.g. before conceptualisation or permitting phase). And spatial conditions about what distances to wind turbines warranted what type of compensations.

A.2.5. Or else

The ‘or else’, or the consequence of not adhering to the institutional statement was identified 7 times for all institutional statements. All other Institutional Statements were coded as not available. The nature of these statements caused the or else to never have been mentioned explicitly in the raw statements, making all ‘or else’ statements implied. The nature of the documents and types of Institutional Statements made for no direct consequences, except for the authority of jurisdiction not granting permits. Which is why ‘or the initiator won’t receive a permit from the municipality’ was used as the interpreted ‘or else’ measure. This depended on the level of government and specific entity that wrote the policy. For higher levels of government no implied ‘Or else’ was identified as they are presenting higher level governmental policies as guidelines of lower level policy making entities.