



AN ADAPTIVE REGIONAL ENERGY TRANSITION POLICY FRAMEWORK

TO OPTIMIZE THE ADAPTIVENESS OF THE
ENERGY TRANSITION GOVERNANCE WITHIN
THE CONTEXT OF THE REGIONAL ENERGY
STRATEGY

By

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With this research ‘An adaptive regional energy transition policy framework’ I complete my Master’s degree in Public Administration at the University of Twente. Despite having spent most of my time at home due to the Coronavirus, it feels like I completed this degree in the wink of an eye. In a short period of a little over one and a half year I was able to get acquainted with the field of Public Administration with a special focus on the local and regional government and the regional energy transition.

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Enjoy reading.

Chloë Gerritsen
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Abstract

Collaboration with a wide diversity of stakeholders whilst handling uncertainty and accelerating social and technological change in the complex setting of the energy transition is challenging. In the context of the Regional Energy Strategy in the Netherlands, regional and local governments face several challenges regarding the intergovernmental and participatory policy development/implementation. A policy framework that can handle the complexity of the Dutch energy transition is necessary. This research argues that a focus on adaptive governance whilst including the benefits of democratic and inclusive governance could have the potential to optimize the energy transition governance. Derived from the literature 19 characteristics are proposed to optimize the adaptiveness of the energy transition governance. Through this research these characteristics are evaluated to determine which characteristics are found to be the most critical according to a Regional Energy Strategy (RES) region. This research adopts a qualitative research approach following the principles of the instrumental case study method, focusing specifically on the RES region of Fryslân. This research is conducted using a multi-layered research approach: phase 1 examines the policy output through a content analysis and phase 2 examines the policy process through semi-structured interviews and an interview analysis. It can be concluded that there are five characteristics found to be most critical according to RESFryslân, these are: 3. The cooperation is multi-stakeholder oriented, 9. Different stakeholders and stakeholder groups have participation opportunities, 13. Trust is built between stakeholders, 15. Government, business, academia and citizens are included, 16. Stakeholders understand their role within the process. These characteristics are however context specific for RESFryslân. To further optimize the adaptiveness of the energy transition governance, it is wise for each RES region to implement as much of the characteristics as possible. The proposed guidelines and practical examples can assist the RES regions in the implementation.

Keywords: Adaptive governance; Energy transition; Regional policy framework; Democratic governance; Inclusive governance; Regional Energy strategy; Multi-stakeholder; Characteristics

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1 Introduction

The energy transition requires a significant reduction of CO₂ emissions from fossil energy. The Netherlands has committed to reducing its CO₂ emissions by half (compared to 1990) by 2030 and by 95 percent by 2050 (Ministry of Economic Affairs of the Netherlands, 2016). However, the Netherlands is among the countries that is furthest away from achieving the renewable energy goals (NLTimes.nl, 2019). Its energy consumption is higher than 80% (Martins, Felgueiras, & Smitková, 2018, p.110). This level of consumption is both unsustainable and contributes to climate change. Moreover, a continued overreliance on non-renewable energy exposes Dutch communities to risks related to negative environmental, social, and economic impacts and energy insecurity (Martins, Felgueiras, & Smitková, 2018, p.108, Höök & Tang, 2013, p.798).

In order to transition, communities must be brought into the fold of the energy transition. Active participation by the government, civil society, the private sector, network operators and energy corporations is crucial for achieving an energy transition (European Commission, 2019, p.2). These stakeholders are all affected in some shape or form by the energy transition. By stakeholders I am referring to: *‘those who have an interest in a particular decision, either as individuals or representatives of a group. This includes people who influence a decision, or can influence it, as well as those affected by it’* (Hemmati, 2002, p.2). The different interests and levels of influence among stakeholders are interlinked. That is, no single stakeholder controls all the knowledge and/or resources necessary for the energy transition (Schneider et al., 2003, p.143). Governments therefore need to work with various stakeholders, across different levels, to create policies. It follows that public policy is not simply shaped by stakeholder input, it also engages stakeholders in the co-production and delivery of public goods (van der Graaf, Long, & Veeckman, 2021).

Local and regional governments have been placed at the forefront of the Dutch energy transition. During the Dutch transition towards natural gas in the 1960’s, there was a clear leadership and executive role for the central government of the Netherlands (Brinck, 2021). In today’s energy transition, leadership and executive roles have been assigned to regional and local governments placing emphasis on regional, local and even district-oriented cooperation’s (Cabinet of the Netherlands, 2019). This shift is accompanied by calls for more efficient and effective policy development and implementation. To encourage the active participation of a wide diversity of stakeholders involved in the energy transition, 30 Dutch Regional Energy

Strategy (hereafter RES) regions have been created in the Netherlands in 2018, where it is expected that: *‘public authorities work alongside social partners, network managers (for gas, electricity and heating), the business community and, where possible, residents to develop regionally supported choices’* (Cabinet of the Netherlands, 2019, p.232).

Within a RES national agreements from the climate agreement are to be put into practice (Cabinet of the Netherlands, 2019, p.222). A RES is led by five authorities: provinces, municipalities, water boards, the Ministry of Economic Affairs and the Ministry of Foreign Affairs. The RES is governed by a steering group that makes decisions together. Frequent interactions with and between the involved authorities about the energy transition is one of the highest priorities of a RES (VNG, 2018). The RES regions are the most visible manifestation of the climate agreement in the Netherlands at present (Tweede Kamer der Staten-Generaal, 2021, p.2).

Situating energy transition planning at the local and regional level makes sense. Local and regional institutions act as a powerful mechanism in the role of national and international policy shaping (Uyarra, Flanagan, Magro, Wilson, & Sotarauta, 2017). Also the ‘knowledgeable’ local stakeholders and their position and relationship within the multi-stakeholder setting are essential in the regional context and the combining of expertise (Dawley, 2014, p.103). However, collaboration with diverse stakeholders can be challenging. Regional and local governments face several challenges related to the intergovernmental and participatory policy development/implementation (Ansell & Gash, 2007, p.560). The decision-making processes in a multi-stakeholder setting often involve complex social dynamics that include building trust, power imbalances and personal interests (Edwards et al., 2019, p.2). Diversity is both a strength and a weakness as is argued by Kemp et al. (2007). In their research they argue that different people have different perspectives and values, and favour different solution for what can be seen as ‘the problem’ (p.316). Additionally, a shared understanding and ownership for the energy transition policy is missing and, relatedly, a lack of urgency for an energy transition by the public is one of the challenges. Finally, power/resource imbalances can emerge between stakeholders because of the (technical) complexity of collaborative decision-making (Ansell & Gash, 2007, p.551), particularly concerning sustainability domains such as the energy transition. Thus, local and regional governments need a policy framework that can handle the complexity of the Dutch energy transition.

Many of the challenges listed above are tied to the fact that handling uncertainty whilst accelerating social and technological change also poses a challenge to fostering an inclusive participatory process (Skjølsvold & Coenen, 2021). Rapidly changing external conditions triggered by technological and political changes can further complicate policy making, making the situation even more uncertain. Being able to deal with unanticipated challenges at any level of governance or coming from any stakeholder group requires a strategy that can adapt quickly to changing needs, is flexible, effective, and also efficient. In short, an adaptive governance approach in public policy development is needed. Nelson, Howden, & Smith (2008) define adaptive governance as: *‘evolving and locally context-specific balancing and integration of alternative interests through participatory engagement between governments and communities facilitated by the integration of local and scientific knowledge.’* (p.592) Adaptive governance is mostly applied in situations with complex societal issues (such as climate change) with a wide diversity of stakeholders involved and uncertainty about which future actions are necessary to be taken (Janssen & van der Voort, 2016, p.3). Currently, there is a gap in our understanding of what contributes to adaptive governance in the energy transition. Therefore, this research tackles, the following research question:

‘What are critical characteristics to optimize the adaptiveness of the regional energy transition governance within the context of the Regional Energy Strategy?’

The answer to this question has both a high societal and scientific significance. There is a switch from the government as producer and citizens as consumers towards a new context of co-production and partnership (which becomes more and more important in the context of the energy transition). As is becoming common practice these days, the local government has to create a democratic participatory process in order for the wide diversity of stakeholders to be involved in the energy transition, but this may have implications for the adaptiveness of governance. Insights offered by this research could contribute to the regional energy transition policy governance, enabling it to become more adaptive, democratic and inclusive and thus also more efficient and effective. Moreover, as of the moment not much research has been carried out on developing and implementing an adaptive, democratic and inclusive regional energy transition policy framework. This research will thus attempt to further close the gap of the limited research on these topics.

The research question will be answered by addressing the following sub-questions:

1. What are characteristics that enable the optimization of the adaptiveness of the regional energy transition governance?
2. What characteristics are found to be critical according to a Regional Energy Strategy region?
3. What are guidelines to assist a Regional Energy Strategy in the implementation of the characteristics?

Dutch regional and local governments such as the provinces, municipalities and water boards already gained some experience, having cooperated in various different partnerships on a decentralized level (Ministry of Internal Affairs, 2020, p.2) However, the scale of the energy transition and the multi-stakeholder context therein requires far greater cooperation within an adaptive governance framework. Adaptive governance is an approach to manage uncertainties and resolve tensions between competing demands posed by a rapidly changing environmental context (Edwards et al., 2019, p.1). Adaptive governance rejects the more traditional modes of governance with a linear or goal-based framework and focuses on flexibility, shared resources, mutual understanding, monitoring, collaboration and learning and experimenting (Edwards et al., 2019, p.2). However, it remains unclear how local governments can establish and support adaptive governance.

2 Descriptive model: adaptive, democratic and inclusive

With the aim to identify critical characteristics, this chapter zooms in on knowledge generated by academics regarding adaptive governance, democratic governance and inclusive governance. Following the literature, a descriptive model will be developed. This model will be evaluated throughout this research.

2.1 Adaptive governance

Given the uncertainties and challenges associated with the energy transition, a highly adaptive system is needed (Chaffin et al., 2014, p.1). Adaptive governance acknowledges the complexity of environmental issues, involving diverse scales, many stakeholders and different contexts, the need for flexibility, social learning and the need to build capacity for change (Edwards et al., 2019, p.3). Whereas conventional governance systems struggle with learning from experimentation and planning for failure, adaptive governance enhances these factors (Wyborn et al., 2019, p.57). This approach focused on low probability, high consequence possibilities to promote change that may not seem optimal in the short run, which however may prove to be the wiser choice in the long run (Dietz et al., 2003, p.1909; Kemp et al, 2007; Wolfram, 2019).

Experimentation and learning are the core elements of the adaptive governance approach. Uncertainty about which actions need to be taken indicate that policy development/implementation is a continuous experiment. Trial and error become a habit in rapidly responding to conflicting goals, knowledge gaps and change in the economic, environmental and social conditions (Nelson, Howden, & Smith, 2008, p.591). This is a meaningful way to manage and govern the energy transition which “relies on ‘darwinistic’ processes of guided variation and selection instead of planning. Collective choices are made ‘along the way’ on the basis of (new) learning experiences at different levels. Different trajectories are explored and flexibility is maintained, which is exactly what managers would do when faced with great uncertainty and complexity: instead of defining end states for development, they set out in a certain direction and are careful to avoid premature choices” (Kemp et al 2007).

Within the adaptive governance approach communities are engaged in every opportunity. Local participants together with governments make use of their context specific knowledge in order to collectively make decisions whilst focusing collaboration and the common interest (Brunner et al., 2005, p.viii). Individuals as well as social networks and science take on an essential role within adaptive governance. Social networks tie together participants in the adaptive governance approach (Edwards et al., 2019, p.3). Within these social networks,

leadership and trust building are required (Folke et al., 2005, p.451). Monitoring and evaluation plays an important role therein. Rigorous monitoring, evaluation and adjustments of governance is needed for governance to become more adaptive (Chaffin & Gunderson, 2016, p.86; Larson & Williams, 2009).

The set of criteria set up by Folke et al. (2005) for a successful governance transformation to adaptive governance are: collaboration, devolution of management rights, power sharing, trust, leadership, social memory and participation. Sharma-Wallace, Velarde, & Wreford (2018) add one more important way to enhance adaptive governance, namely, linking decision-making and knowledge via monitoring. Placing an emphasis on the learning and experimenting focus of adaptive governance.

With the failure of conventional governance mechanisms in recent decades, new governance arrangements have emerged (Kersbergen & Waarden, 2004, 143). Conventional governance mechanisms involved steering by the central government reinforced by a top-down approach, whereas various new governance mechanisms indicate interactions with society accompanied by a bottom-up approach (Katsamunskaja, 2016, p.133). Because a top-down approach seldom coheres with the rapid changing environment and complexity of the energy transition, local stakeholders and social networks are trying new governance mechanisms of bottom-up approaches (Chaffin et al., 2014), among them democratic governance and inclusive governance. This research argues that this has consequences for adaptive governance. Adaptive governance comes with many challenges and very few communities actually apply this approach because the best route as to how to establish this governance paradigm remains unclear. Here, we argue that democratic and inclusive governance are not simply different forms of governance, instead democratic governance and inclusive governance could enhance adaptivity by helping stakeholders to anticipate the various challenges related to the energy transitions, thus making it more adaptive.

The first and foremost challenge of adaptive governance is implementing the approach in policy development/implementation. Aspects of adaptive governance such as implementing decentralised decision-making influence existing power structures and change the status quo. Changing the status quo might result in instability. The biggest challenge therefore is ensuring stability and flexibility/adaptability at the same time (Janssen & van der Voort, 2016, p.3, Folke et al., 2005, p.449). Democratic governance and inclusive governance could function as a way to strengthen both the flexibility/adaptability as well as the stability of policy development and

implementation. Democratic governance with its focus on checks and balances promotes trust, transparency, legitimacy and accountability and shared responsibilities (Canadian Index of Wellbeing, 2009, p.17/55). This could help increase the stability through being able to manage risks that come with the energy transition. Inclusive governance with its focus on including different stakeholders such as the government, academia, business and citizens, brings together many different resources (Hasche, Höglund, & Linton, 2020). This could help increase the flexibility through being able to manage errors. In terms of inclusiveness, Aytur, Hecht, & Kirshen (2015) describe, in a practical way, several aspects that could enhance adaptive governance. These include: 1) defining common goals with the wide diversity of stakeholders; 2) enhancing local communication; 3) integrating local knowledge but also balancing complementary knowledge systems; 4) developing and refining policy in the local context; 5) sharing lessons learned across multiple communities and regions (Aytur, Hecht, & Kirshen, 2015, p.84).

Mobilizing and recalling social memory is another crucial challenge for adaptive governance (Folke et al., 2005, p.453). Social memory is defined by Folke et al. (2005) as: *'the arena in which captured experience with change and successful adaptations, embedded in a deeper level of values, is actualized through community debate and decision-making processes into appropriate strategies for dealing with ongoing change'* (p. 453). Linking past captured experiences of change and successful adaptations with present and future policies is essential to enhance information flow and collaboration across the wide diversity of stakeholders (Folke et al., 2005, p.453). Along with mobilizing social memory, linking a broad range of stakeholders at multiple scales (like in the energy transition) is a challenge of adaptive governance. As Folke et al. (2005) argue, this challenge involves the interrelated dynamics of resources, management systems, uncertainty, unpredictability and also surprise (p.462). Inclusive and networked governance could play an important role in these challenges as well, by allowing stakeholders to have repeated interactions that can give rise to a macro-culture. As explained by Jones et al., (1997), the macro-culture with the independent entities therein specifies roles, role relationships and accepted approaches to complex tasks which relates to the social memory mentioned by Folke et. al (Jones et al., 1997, p.929).

2.2 Theoretical framework

Based on the literature about adaptive governance, democratic governance and inclusive governance, the following theoretical framework was designed (figure 1). The framework shows characteristics of each governance mechanism. Furthermore, the framework shows the

proposed relation where democratic and inclusive governance enhance the adaptive governance approach.

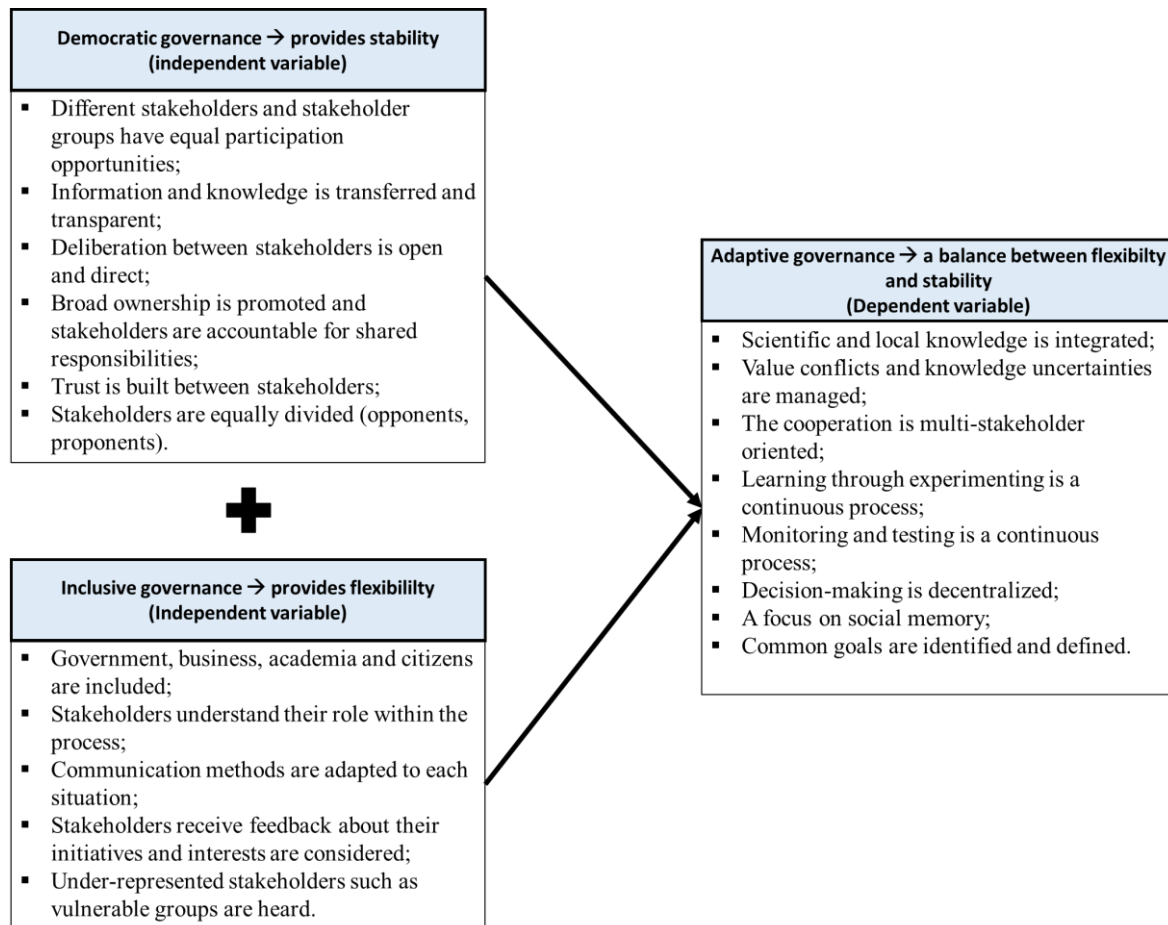


Figure 1: Theoretical framework

2.3 Democratic governance

Democratic governance may positively contribute to adaptive governance. Democracy refers to the processes guiding behaviour of the stakeholders being engaged in political decision-making. Democracy is proposed to promote a peaceful conflict solving sphere where citizens are granted influence and the right to voice their opinions freely (Kammerlander & Schulze 2020). Democracy is supposed to improve coordination and representation of the individual priorities. Next to that, free press, free elections, freedom of association and the rule of law ensure that preferences of individuals are better represented in the political process (Kammerlander & Schulze, 2020, p.1). With the shift towards a more participatory society, being engaged in political decision-making now implies attending public meetings, participating in community associations and gaining knowledge about decisions that are being made by the government (Canadian Index of Wellbeing, 2009, p.18). In their research about

democratic engagement, the Canadian Index of Wellbeing (2009) describes democracy in the sense of individual engagement and government engagement. The ‘individual’ dimension relates to participation in political activities, expressing political views and fostering political knowledge. The ‘government’ dimension refers to relationships, trust, transparency, legitimacy, accountability, shared responsibilities and participation and representation opportunities for individual participation (Canadian Index of Wellbeing, 2009, p.17/55).

Successful democracy requires reciprocal effort from the government and stakeholders. Stakeholders work on being engaged and governments work on engaging stakeholders. However, when stakeholders do not recognize the government’s effort, their behaviour will be influenced (Canadian Index of Wellbeing, 2009, p.50). Transparency and trust play a big role therein. In addition, time and costs are a challenge. Redistributing the power from the government to stakeholders and upholding the level of information sharing that is needed brings along the challenge of costs and time management (Canadian Index of Wellbeing, 2009, p.85). In their research Sørensen & Torfing (2004) argue that a lack of accountability as well as a lack of legitimacy is a present democratic challenge (p.234).

Ways to enhance democratic policy development/implementation

In practical terms this would indicate 1) ensuring transparency through providing relevant information, also possible private interests; 2) insisting on open and responsive deliberation/dialogue; 3) ensuring an equal group of stakeholders by also involving opponents; 4) spreading accountability among the diverse network of stakeholders (Sørensen & Torfing, 2009) (Klijn, 2011). Open, accessible, participative and responsive governing structures are important therein (Canadian Index of Wellbeing, 2009, p.17).

2.4 Inclusive governance

Inclusive governance may positively contribute to adaptive governance. Inclusivity in this research implies a focus on a range of stakeholders including the government, business, academia and citizens, the quadruple helix model. The government has limited knowledge and is dependent on knowledge of other stakeholders. For the reason of the dependency on each other, stakeholders of various ‘helices work together. The government as well as the private sector and academia come together in the triple helix model, the inclusion of citizens and civil society in the process marks the link towards the quadruple helix model. Thus, there must be a special focus on a citizen centred and the participatory process. The inclusion of civil society in the quadruple helix has been underlined as highly critical for the process (Hasche, Höglund,

& Linton, 2020, p.524). The goal of the quadruple helix model is to create smart strategies that foster knowledge creation and exchange between the four ‘helices’ (Roman et al., 2020,p.4). According to the research by Hasche, Höglund, & Linton (2020), the quadruple helix model envisions a strong focus on the dynamically intertwined processes of collaboration and innovation. Relationships aspects between the different ‘helices’ are put in focus in the quadruple helix model (Hasche, Höglund, & Linton, 2020, p.526). This research therefore focuses strongly on the relationships between all the different stakeholders involved in the energy transition process.

The government has a role of supporting development, firms and research organizations and supporting networks of different stakeholders (Arnkil 2010). The responsibility of firms is to develop commercial products and collect information about the needs and experiences of users. Academia have the role of producing relevant knowledge and also training/producing experts. The responsibility of citizens and civil society is to provide information about experiences, test products and also participate in the process of developing innovations (Arnkil, 2010, p.68). The focus on citizens’ involvement in the quadruple helix model introduces the importance of how individuals can effectively present their perspectives and how the government, business, and the academia can benefit from their knowledge (Schütz et al., 2019, p.129). In their research, Roman et al. (2020) add on to this by stating that citizen engagement advocates the democratic values, promotes ‘bottom-up’ insights, it support the creation of social innovation and is essential for their commitment and ownership of the policy developments and implementations (Roman et al., 2009, p.3).

Including citizens in the process has thus been marked as crucial. According to Koster (2014), the participatory society offers an improved version of the Dutch society: ‘one in which citizens have to cooperate, participate, and assume responsibility for their own well-being’ (p.49). Under this view, citizens are seen as actively contributing to a wide variety of public values. But what motivates citizens to participate? Mattijssen et al. (2019) argue that citizens act in the public domain when they feel challenged or motivated and are sufficiently equipped and skilled (Mattijssen et al., 2019, p.1). Therefore this research stresses the importance by focussing especially on citizens’ engagement.

Ways to enhance democratic policy development/implementation

In their research, Schütz et al. (2019) conclude that it is essential for the four helices to understand their role and function within the cooperation (p.140). Arnkil (2010) acknowledges

the importance of defining and understanding roles as well (p.78). Focussing more on enhancing the inclusivity of citizens and civil society is described by Roman et al. (2009). In their research it is argued that face-to-face meetings as well as public meetings and information sessions whilst focussing on building the knowledge of citizens so that they are able to contribute is fundamental. In addition, an interactive project website for citizens to find all their information as well as workshops and the establishment of meeting places is essential for enhancing the inclusivity. Providing feedback during the process of participation about received ideas and joint achievement is important (Roman et al., 2009, p.10). Enhancing the inclusivity also means involving under-represented groups as stated by Vandenbussche (2021). In his research he argues that making sure the under-represented groups are involved in deliberation, are heard and are able to provide their input is an under-exploited opportunity (p.17).

2.5 Descriptive model – the adaptive policy framework

The framework (as depicted in Figure 1) argues that adaptive governance can be enhanced through a focus on democratic governance and inclusive governance. The characteristics in the framework as well as the interpretation and significance described above leads us towards a list of characteristics with corresponding guidelines (table 1)

To prioritize the characteristics and guidelines from most critical to less critical the MoSCoW method was used. The acronyms of MoSCoW stand for the following: M(ust have) stand for the guidelines which it would be impossible to manage without; S(hould have) for the guidelines which are important, however we could work around them and manage for at least a while without them; C(ould have) for guidelines which would add benefits to the policy framework but are not essential; W(ont have) stand for guidelines that can be dropped to focus on the more important ones (Tudor & Walter 2006, p.2).

Adaptive governance			
Characteristic	Guideline	Critical level (MoSCoW)	Practical examples
1. Scientific and local knowledge is integrated	▪ Decisions are made after consulting scientific expertise (knowledge institutions, academia, scientists) a decision cannot be finalized if scientific expertise was not consulted.	▪ M	▪ The municipality of Sudwest-Fryslân focuses on a citizens panel which integrates initiatives and ideas from citizens about the energy transition policy towards the local council.
	▪ The RES supports the exchange of local	▪ S	https://vng.nl/sites/default/files/2021-11/resultaten-

	<p>knowledge by actively bringing together locals in the decision-making process.</p> <ul style="list-style-type: none"> ▪ The RES actively searches for existing scientific and local knowledge to integrate within their decisions. 	<ul style="list-style-type: none"> ▪ S 	onderzoek-toekomst-van-energie-gemeente-sudwest-fryslan_0.pdf
2. Value conflicts and knowledge uncertainties are managed	<ul style="list-style-type: none"> ▪ All information about the energy transition within a region is provided in a way for all stakeholders to understand. ▪ Stakeholders are sufficiently equipped with knowledge to be able to participate. 	<ul style="list-style-type: none"> ▪ M ▪ M 	
3. The cooperation is multi-stakeholder oriented	<ul style="list-style-type: none"> ▪ Whilst cooperating, all stakeholder groups are able to participate and co-decide. ▪ A focus on including as many different types of stakeholders to participate and during decision-making is promoted. 	<ul style="list-style-type: none"> ▪ M ▪ S 	
4. Learning through experimenting is a continuous process	<ul style="list-style-type: none"> ▪ Endless deliberation is avoided by switching faster to experimenting with smaller projects on a regional and local level. 	<ul style="list-style-type: none"> ▪ M 	
5. Monitoring is a continuous process	<ul style="list-style-type: none"> ▪ All processes and accepted recommendation within a RES are monitored with a regional/local focus. ▪ Progress reports are regular, once every quartile, and are made available for all stakeholders/the public through a website. 	<ul style="list-style-type: none"> ▪ M ▪ S 	
6. Decision-making is decentralized	<ul style="list-style-type: none"> ▪ The RES provides infrastructure to 	<ul style="list-style-type: none"> ▪ M 	

	<p>promote decentralized decision-making.</p> <ul style="list-style-type: none"> Decision-making is also based on knowledge generated through monitoring. All stakeholder groups can take part in the decision-making process. 	<ul style="list-style-type: none"> C M 	
7. A focus on social memory.	<ul style="list-style-type: none"> Acquired experiences is shared through an online platform where all regional and local governments of the RES region update their experiences every quartile. The RES actively searches for past experiences that helps stakeholders understand the process better. Lessons learned are shared with all stakeholders. 	<ul style="list-style-type: none"> S S S 	<ul style="list-style-type: none"> Sharing lessons learned can be done through designing a small book and providing stakeholders with a free copy or an online version. <p>This example is from the municipality in Ameland:</p> <p>https://duurzaameland.nl/wp-content/uploads/2019/10/Learning-History_brochure_DEF_mail.pdf</p>
8. Common goals are identified and defined	<ul style="list-style-type: none"> Goals of the different stakeholder groups are openly available. Stakeholders are motivated to learn to identify the different perspectives of each other. 	<ul style="list-style-type: none"> M S 	<ul style="list-style-type: none"> RES Fryslân focuses in their process on a clear definition of concepts to make sure there is no misinterpretation between different stakeholder groups. The FEA is in charge of this tasks. <p>See appendix 6 of the following document: https://api1.ibabs.eu/publicdownload.aspx?site=heerenveen&id=100192175</p>
Democratic governance			
Characteristic	Guideline	Critical level (MoSCoW)	Practical example
9. Different stakeholders and stakeholder groups have participation opportunities	<ul style="list-style-type: none"> Participation rules and regulations as well as the level of participation are the same for all stakeholders. 	<ul style="list-style-type: none"> M 	
10. Information and knowledge	<ul style="list-style-type: none"> Acquired information and knowledge is 	<ul style="list-style-type: none"> M 	<ul style="list-style-type: none"> RES Fryslân recently designed a so-called ‘gespreksarter’

is transferred and transparent	<p>openly available to all stakeholders as well as the decision-making process.</p> <ul style="list-style-type: none"> ▪ The RES facilitates this through designing a RES website outlining all projects, ideas, initiatives. 	▪ S	<p>(conversation partner). An open online accessible tool bringing together information about RESFryslân, their working methods and up-to-date information about important topics related to the energy transition in the region.</p> <p>https://media.regionale-energiestrategie.nl/resgespreksassistent/</p>
11. Deliberation between stakeholders is open and direct	<ul style="list-style-type: none"> ▪ Working methods and solutions are decided during the deliberation process. Defining end states before the possibility for all stakeholders to openly deliberate is avoided. 	▪ M	
12. Broad ownership is promoted and stakeholders are accountable for shared responsibilities	<ul style="list-style-type: none"> ▪ Decision are not made by only one stakeholder or stakeholder group. 	▪ M	
13. Trust is built between stakeholders	<ul style="list-style-type: none"> ▪ Clear, open and regular communication from the RES to all stakeholders. 	▪ M	
14. Stakeholder are equally divided (opponents, proponents)	<ul style="list-style-type: none"> ▪ When deliberating about a project, an equal amount of stakeholder for and stakeholder against this project are able to voice their concerns/opinions. 	▪ S	
Inclusive governance			
Characteristic	Guideline	Critical level (MoSCoW)	Practical examples
15. Government, business, academia and citizens are included	<ul style="list-style-type: none"> ▪ Social and physical infrastructure such as platforms or forums are provided. Accessible for all stakeholder groups to be able to share knowledge, ideas and start initiatives. 	▪ M	
16. Stakeholders	<ul style="list-style-type: none"> ▪ A continuous process is set up to verify whether 	▪ M	

understand their role within the process	stakeholders understand their role in the energy transition of the region, as well as their possibilities.	
17. Communication methods are adapted to each situation	<ul style="list-style-type: none"> ▪ A continuous re-evaluation of the communication strategy is conducted. 	▪ M
18. Stakeholders receive feedback about their initiatives and interests are considered	<ul style="list-style-type: none"> ▪ The RES promotes stakeholder initiatives by actively providing feedback about whether the initiatives will be implemented and other ways the stakeholder can participate in the energy transition. 	▪ S
19. Under-represented stakeholders such as vulnerable groups are heard	<ul style="list-style-type: none"> ▪ With every decision, process or project, an analysis/ assessment of possible missing voices and vulnerable groups are made. ▪ To guarantee their inclusion, a decision cannot be made or a project are not started without having actively included these specific stakeholders. 	<ul style="list-style-type: none"> ▪ M ▪ M

Table 1: Descriptive model – the adaptive policy framework

3 Methods

This research adopts a qualitative research approach following the principles of the instrumental case study method. Through this approach we gain a detailed description of subjects opinions and experiences to achieve deeper insights into the case of RESFryslân (Denzin, 1989).

The case study method builds on that by functioning as an in-depth research of a unit (people, organizations or a local community). Using the case study method is useful when trying to understand the interaction between a context or phenomenon. The case study method offers detailed and relevant information whilst retaining a holistic view of real-life events, in this case: RESFryslân (Merriam, 2009). The researcher conducting an instrumental case study is more focused on studying the phenomenon through a specific case than in studying the case itself. When it comes to an instrumental case study method, there is not an agreed upon set of methods to use. Methods are chosen based on their capacity to answer the research question, research objectives and also nature of the case (Luck et al., 2007, p.12). For this research, methods that enabled a specific focus on the stakeholders within the region of RESFryslân was sought after.

This research consists of two phases using a multi-layered research approach. Phase 1 (chapter 4) aims to provide the state of play in the ongoing process of the regional energy transition policy framework and the RES. Through a content analysis this phase aims to find what characteristics from the model are found to be critical in the policy output. Phase 2 (chapter 5) of this research aims to examine the process leading to the policy output, the policy process. Through interviews with a diversity of subjects: civil servants, citizens, energy companies, this phase aims to find what characteristics from the descriptive model are found to be critical according to these subjects.

4 Examining the policy output

This research will focus on the RES of Fryslân (hereafter RESFryslân), which involves a wide diversity of stakeholders (figure 2). This structure of stakeholders differs per RES region. RESFryslân firstly consists of a steering group. The ‘Fryske Energy Alliance’ (hereafter: FEA) with its many non-profit organisations and associations is the second most important stakeholder within the structure. The role of the FEA is to bring together many interests and advice the steering group in their decision. In addition, temporary project teams consisting of civil servants and external partners are part of RESFryslân. Climate and energy portfolio keepers are represented in RESFryslân as well. The local councils hold the final responsibilities. (Jong, Heslinga, Dieters, & Mos., 2021, p.7).



Figure 2: Organizational chart RESFryslân

The expectation of the Dutch House of Representatives towards the RES are as follows:

- All RES regions are expected to have a total of 35 terawatt-hours (TWh) of solar and wind energy on the land by 2030;
- In a document written by the Ministry of Economic Affairs and Climate Policy it is clearly stated that a reinforcement of the cooperation between the governments on regional level is expected (Ministry of Economic Affairs and Climate Policy, 2021, p.2);
- A better involvement of citizens during decision-making is expected;
- Each RES expected to be clear and transparent about participation opportunities in several phases of the process (Tweede Kamer der Staten-Generaal, 2021, p.2, p.5);
- Periodic evaluation and recalibration of the strategy is crucial (Climate Agreement of 2019). This is why it is expected of every RES to write a new RES policy every two years (Cabinet of the Netherlands, 2019, p.235);
- To contribute to an equal participation, citizens have to have 50% ownership of local projects (Cabinet of the Netherlands, 2019, p.219).

The final version of RES 1.0 (the first RES document) has been presented by RESFryslân. This document functions as a way to describe the current situation and future ambition when it comes to the energy transition in Fryslân. In this specific document the following parts are present: a regional interpretation of the capacity in megawatt-hours for renewable energy on land, taking into account social support, a clear explanation of the choices of areas to be used for sustainable energy generation, a regional structure for heat energy describing heat sources within the region and providing an overview of existing infrastructure, an overview of relevant stakeholders involved and how they will be involved in the future. Currently RESFryslân is working on implementing what was stated in RES 1.0. The development of RES 2.0 is also already in progress.

4.1 Data collection and analytical approaches

Data collection - Phase 1

During phase 1 policy documents related to RESFryslân and the regional energy transition in Fryslân were analysed (see appendix I for an overview of the documents) to examine **the policy output of the regional energy transition policy framework of RESFryslân**. Policy documents related to RESFryslân and the regional energy transition in Fryslân from 2019, the start of the European climate agreement, and onwards were gathered. The dataset includes a total of 15 documents released by the province of Fryslân, RESFryslân, municipalities and the

water board. Additional data about the type of document, who released/wrote it and also its relevance for this research are documented in the overview (see appendix I).

Analytical approaches - Phase 1

The policy documents gathered for phase 1 were analysed through several methods in order to conduct a more precise analysis of the text. First a **content analysis** using qualitative analysis software Atlas.ti was conducted. The policy documents (see appendix I) were analysed using open coding as described by Strauss (1987). This initial open coding serves as a ‘springboard’ that provides a general overview of the data (Strauss, 1987, p. 63). Insights from literature (as discussed in Chapter 2) guides the open coding process.

Next, a network text analysis (hereafter NTA) was conducted using InfraNodus software. NTA allows for the detection and specification of where the emphasis within the documents lies, and the linkages between these topics becomes visible within the network. The 15 policy documents were run through the program whereafter a text network was generated automatically. It was decided to follow the default settings of the program, indicating that the 150 most important words were displayed in the network. After manually deleting articles and adjectives, about 100 words remained in the network. One limitation of InfraNodus is that it is prone to misinterpretation. To overcome this limitation, a word list was generated using Atlas.ti. The word list shows the importance of the characteristics from the descriptive model through frequencies.

4.2 Adaptive, democratic and inclusive governance in the policy output

Context specific for RESFryslân

The content analysis suggests there are four main foci of RESFryslân at the moment: (1) to stop consuming energy supplied from outside of the region by generating sufficient energy to meet its own energy needs, (2) sustainable energy is generated for and by the ‘Mienskip’ (translated: the Fryslân community), indicating the emphasis on the social transition and cooperation, (3) devoting considerable attention to the landscape within the region, indicating a focus on solar energy instead of wind energy, (4) the heat transition and the energy-infrastructure (Provincie Friesland, 2019) (RESFryslân, 2021) (Provincie Friesland, 2021) (Wetterskip Fryslân, 2019). In addition to the content analysis, the focus on these four aspects can also be found in the NTA visible in figure 3.

The network text analysis (NTA) shows the approximately 100 words most important in the 15 policy documents related to the energy transition in Fryslân. The NTA shows a focus on

Adaptive governance

From the literature we know that adaptive governance is portrayed by a total of eight characteristics. These characteristics are linked to a range of related concepts in order to find their frequencies (see table 2 below). The NTA represents adaptive governance through the visibility of the concepts decision-making and local, indicating a special focus on these concepts within RESFryslân. Other concepts related to adaptive governance are not found in the NTA.

Characteristic	Related concepts	Translated to Dutch (including plural and singular words and synonyms)	Frequency
1. Scientific and local knowledge is integrated	Science	Wetenschap	1
	Knowledge institutions	Kennisinstellingen, kennisinstituten	12
	Local (knowledge)	Lokaal, lokale, lokaalniveau,	232
2. Value conflicts and knowledge uncertainties are managed	Sharing knowledge	Kennisuitwisseling	10
	Uncertainty	Onzekerheid, onzeker	5
3. The cooperation is multi-stakeholder oriented	Cooperation	Samenwerken, samenwerking, samenwerkingen	165
4. Learning through experimenting is a continuous process	Learning	Leren, lerende, leermomenten, leerproces	31
	Experimenting	Experimenteren	13
5. Monitoring is a continuous process	Monitoring	Monitoren, monitoring, monitor, monitoringsmomenten	40
6. Decision-making is decentralized	Decision-making	Besluiten, beslissen, beslissingen, besluit, besloten, besluitvorming, besluitvormingsruimte	135
7. A focus on social memory. Lessons learned are shared with all stakeholders	Social memory	Ervaring, reflectie, reflecteren	31
	Evaluation	Evaluatie, evaluaties, evalueren	17

8. Common goals are identified and defined	Common goals	Gemeenschappelijke doelen	2
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Table 2: Adaptive governance - content analysis

The literature states that adaptive governance integrates *scientific knowledge* and knowledge institutions as an important part of knowledge sharing during the process of policy development and implementation (Edwards et al., 2019, p.3). Science and knowledge institutions and knowledge sharing are however absent in the NTA. In addition, the concepts have a low total frequency of 23 (table 2). The content analysis indicates that the government has the ambition to work together and share knowledge with science, business and citizens. In what specific way science or knowledge sharing will be integrated is not mentioned. How to deal with *uncertainties* in regards to knowledge did not come up in the content analysis. The NTA shows that Fryslân places a great deal of focus on the concept of *local knowledge*, with a total frequency of 232. Based on the content analysis, local knowledge is described in the sense of local initiatives being supported and strengthened from the start. Initiatives are also visible in the NTA. The *cooperation* within the region can be described as multi-stakeholder oriented. Through the content analysis it was found that a wide range of stakeholders are mentioned in the same sentence where cooperation is mentioned.

As the literature describes, *learning* is an important aspect of adaptive governance (Nelson, Howden, & Smith, 2008, p.591). We know that *monitoring* and *evaluation* contribute significantly to the learning process. These concepts are not visible in the NTA. Despite that, a total frequency of 88 in the word list indicate that Fryslân does recognize certain value in monitoring and evaluation. The content analysis points out that the development of monitoring systems for the RES has not yet started. In addition, monitoring specifically because it is essential to learn and improve within the process cannot be subtracted from the policy documents. When reading the guidelines to RES 2.0 it is mentioned that monitoring will become mandatory in the future. Next to learning, the literature implies that *experimenting* (trial and error) is the core of adaptive governance (Nelson, Howden, & Smith, 2008, p.591). Experimenting however receives only limited focus with a total frequency of 13 in the energy transition of Fryslân. The content analysis suggests that experiments and pilots are welcome, a broad coordination between different tasks and departments is however necessary.

Decision-making, especially on a collective basis where every stakeholders adds their knowledge is essential according to the literature on adaptive governance (Brunner et al., 2005, p.viii). Decision making does receive a fair amount of attention with a total frequency of 135 and it is visible in the NTA. Based on the content analysis we know that decision-making at the moment is mostly between political parties within Fryslân, with limited inclusion of other stakeholders such as business and citizens. Where the literature focuses a lot on the social memory as a way to improve the adaptive approach (Folke et al., 2005, p.453), the RESFryslân region does not focus much on past experiences as a way to approach new issues which are collective. RESFryslân does see their future process becoming more adaptive and focused on learning as is written in the guidelines to RES 2.0.

To summarize:

- Science and knowledge institutions are not emphasized in the policy documents, therefore not integrated in the process at the moment;
- Local knowledge and integration generates a lot of focus from the Fryslân region;
- The cooperation can be described as multi-stakeholder oriented;
- There is some focus on monitoring however the focus lies within needing to change the policy instead of learning and improving;
- Experimenting is not integrated in the policy development/implementation of the region;
- Decision-making thus far includes mostly political parties;
- There is almost no focus on past experiences as a way to learn how to approach new collaborative issues;
- RESFryslân does foresee a future that indicates an adaptive and learning approach.

Democratic governance

From the literature we know that democratic governance is portrayed by a total of six characteristics. These characteristics are linked to a range of related concepts in order to find their frequencies (see table 3 below). The NTA (figure 3) represents democratic governance through the visibility of the concepts participation and engaged/involved, indicating a special focus on these concepts within RESFryslân. Other concepts related to democratic governance are not found in the NTA.

Characteristic	Concept	Translated to Dutch (including plural and singular words and synonyms)	Frequency
9. Different stakeholders and stakeholder groups have participation opportunities	Participation	Participatie, beleidsparticipatie, burgerparticipatie, overheidsparticipatie, participatief, participatiemogelijkheden, participatieproces, participatieplan, participeren	134
	Engaged/involved	Betrokken, betrokkenheid	274
	Influence	Invloed, invloedverdeling	27
10. Information and knowledge is transferred and transparent	Transparency	Transparant, transparantie	7
11. Deliberation between stakeholders is open and direct	Open / responsive deliberation	Open, responsieve, responsief	87
12. Broad ownership is promoted and stakeholders are accountable for shared responsibilities	Accountability	Verantwoordelijkheid, verantwoordelijk, verantwoordelijke, procesverantwoordelijk, eerstverantwoordelijke	79
13. Trust is built between stakeholders	Trust	Vertrouwen, vertrouw	48
14. Stakeholder are equally divided (opponents, proponents)	Opponents, proponents	Voorstanders, tegenstanders	0

Table 3: Democratic governance - content analysis

According to the literature, democracy within policy development and implementation is for the most part about the *participation* and *involvement* of stakeholders in the process (Canadian Index of Wellbeing, 2009, p.18). Both concepts are visible in the NTA and have a high total frequency in the word list. This indicates that Fryslân highly values these concepts in the energy transition. In addition, the content analysis suggests that participation is stimulated within RESFryslân, especially participation of local organizations, citizens and the participation of the FEA (including the corresponding alliances/associations). The participation of business

is mentioned infrequently. The participating government is a concept mentioned in the documents, Fryslân is looking for ways to shape this process. The participating government would imply more focus on cooperation and participation for business and citizens. Ensuring *transparency* of information is according to the literature a way to enhance the democratic process (Canadian Index of Wellbeing, 2009, p.17/55). In Fryslân there is very insufficient focus on transparency with a total frequency of 7. It is solely mentioned that transparency in the sense of information sharing and in the participation process is essential. Closely related to transparency is *openness*. The literature talks about an open and responsive deliberation as a way to enhance the democratic value of the process (Sørensen & Torfing, 2009) (Klijn, 2011). These concepts are mentioned 87 times in the policy document, it can therefore be stated that this is important within the energy transition of RESFryslân. Based on the content analysis we know that open dialogue between RES-parties is essential for getting to know each other's viewpoints, opinions and assumptions. Open dialogue with other stakeholders is however mentioned seldomly.

Within democracy, where stakeholders are encouraged to take part in the process, *accountability* becomes a challenge. The literature states that ownership of decisions and the spreading of accountability are a part of the democratic process (Sørensen & Torfing, 2004, p.234). Accountability is not visible in the NTA, it is however does have a total frequency of 79 in the word list, indicating that some emphasis is placed on this concept within Fryslân. The content analysis indicates collective accountability in the form of cooperation and support base between several stakeholders. When accountability is mentioned it is mostly about who (the province, municipalities, FEA, the water board) is responsible for what role. *Influence* with a total frequency of 27 in the word list is about the influence the government and energy transition trends could have. The content analysis suggests that *trust*, with a total frequency of 48 is about an open positive arena based on trust where stakeholders can voice their opinions. In the policy documents trust is mentioned as the basis of the challenge towards the energy transition, trusting that together the energy transition will succeed. This indicates that trust is a highly valued concept in the energy transition of Fryslân.

To summarize

- Participation and involvement of stakeholders are seen as valuable by the region, RESFryslân stimulates these processes;
- The stakeholder group business is mentioned less than other stakeholders;

- Almost no emphasis is placed on the transparency of information;
- Open dialogue is promoted within the RES parties, open dialogue with other stakeholders is mentioned seldomly;
- Trust is a highly valued concepts for the region of Fryslân ;
- Accountability, influence and power are mentioned, however only in the context of the government, not including other stakeholders.

Inclusive governance

From the literature we know that inclusive governance is portrayed by a total of six characteristics. These characteristics are linked to a range of related concepts in order to find their frequencies (see table 4 below). The NTA (figure 3) represents inclusive governance through the visibility of the concepts interest and role, indicating a special focus on these concepts within RESFryslân. Other concepts related to inclusive governance are not found in the NTA.

Characteristic	Concept	Translated to Dutch (including plural and singular words and synonyms)	Frequency
15. Government, business, academia and citizens are included	Inclusive	Inclusief, inclusieve, samen met	200
16. Stakeholders understand their role within the process	Division of tasks	Taakverdeling, taak	12
	Understanding roles	Rol verdeling, rol, rollen, rolinvulling	167
17. Communication methods are adapted to each situation	Communication (channels)	Communicatie, communiceren, communicatiemiddelen, communicatieplan, communicatieadviseur	51
18. Stakeholders receive feedback about their initiatives and interests are considered.	Feedback	Feedback	0
	Interests	Belangen, belang, belangenafweging, belangenbehartiger	116
19. Under-represented stakeholders such as vulnerable groups are heard	Equality	Gelijk, gelijkheid, gelijkenis,	13
	Unheard voices	Ontbrekende stemmen, armoede, armoedebestrijding, kinderen, vrouwen, jongeren	6

Table 4: Inclusive governance - content analysis

The literature suggests that *inclusivity* within policy development and implementation is mostly about including the government, business, academia and citizens in the process (Hasche, Höglund, & Linton, 2020, p.524). Whilst inclusivity is not visible in the NTA, it does receive a fair amount of focus in Fryslân with a total frequency of 200 in the word list. Based on the content analysis it can be stated that a just and inclusive transition is wanted. Inclusive is mostly mentioned in a way of working together with the government, societal organisations, energy net companies and energy cooperation's. Citizens are mentioned seldomly. The literature about inclusivity states that it is essential that *roles* are designed and clearly divided (Schütz et al., 2019, p.140) (Arnkil, 2010, p.78). Not only this but in addition for every stakeholder to understand their role in the network. Role is visible in the NTA, together with division of tasks there is a total frequency of 179. This indicates the importance of this concept. The content analysis show that the role and responsibilities of the region, the government and the energy net company are emphasised even more. It becomes prominent that municipalities have a crucial role within the energy transition in Fryslân, because they are positioned closest to the local citizens and are mentioned most often. If the roles are clear to all involved stakeholders cannot be derived from the content analysis.

In the context of *communication*, the literature states face-to-face meetings and public meetings are fundamental (Roman et al., 2009, p.10). Communication has a total frequency of 51 in the word list. Based on the content analysis it is stated that in the current phase, several public meetings have been organized to inform stakeholders about the progress. Stakeholders in this case are mostly the alderman and people with a higher position. In addition it is stated that communication plans have to be set up for the following phases of the energy transition. *Feedback* was also introduced in the literature as important for feeling of joint achievement (Roman et al., 2009, p.10), however, feedback was not mentioned in the policy documents. Soliciting stakeholder inputs and interest is important for enhancing inclusivity. *Interest considerations* are made according to the content analysis. It is not stated in what way stakeholder interests are solicited. Although *equality* only has a total frequency of 13, there are several ways in which the energy transition takes into account equality. In the policy documents equality is mentioned in ways of equal cooperation, creating an equal arena for stakeholders and also treating stakeholder initiatives equally.

To summarize:

- RESFryslân focuses on an inclusive transition, citizens are however not mentioned often in the policy documents;
- There is an emphasis on roles within the region as well as responsibilities of each stakeholder, if roles are clear for each stakeholder cannot be derived from the content analysis;
- Mostly alderman have been informed and communicated with, further communication plans are in progress;
- There is no focus on feedback within the region;
- Interests of stakeholders are considered, however the policy documents do not mention a specific method for this process;
- An equal process is mentioned seldom, however various diverse ways to enhance equality within the process are mentioned.

4.3 Critical characteristics and absent characteristics of the policy output

The document analysis enables us to tell what characteristics are emphasized and found to be critical and what characteristics are absent from the policy output of RESFryslân, see table 5 below.

Critical characteristics of the policy output	Absent characteristics
1. Local knowledge is integrated (scientific knowledge is absent)	2. Value conflicts and knowledge uncertainties are managed
3. The cooperation is multi-stakeholder oriented	4. Learning through experimenting is a continuous process
9. Different stakeholders and stakeholder groups have participation opportunities	5. Monitoring is a continuous process
11. Deliberation between stakeholders is open and direct	6. Decision-making is decentralized
13. Trust is built between stakeholders	7. A focus on social memory. Lessons learned are shared with all stakeholders
15. Government, business, academia and citizens are included	8. Common goals are identified and defined
16. Stakeholders understand their role within the process	10. Information and knowledge is transferred and transparent

17. Communication methods are adapted to each situation	12. Broad ownership is promoted and stakeholders are accountable for shared responsibilities
	14. Stakeholder are equally divided (opponents, proponents)
	18. Stakeholders receive feedback about their initiatives and interests are considered
	19. Under-represented stakeholders such as vulnerable groups are heard

Table 5: Critical and absent characteristics - content analysis

It becomes visible that 8 out of the 19 characteristics are found to be critical in the policy output of RESFryslân. These characteristics are emphasized throughout the policy documents. The remaining 11 characteristics are not seen as critical in the current stage of the energy transition in RESFryslân. It could also be that these characteristics are unknown in the region at the moment. This being the case, it can be said that these are characteristics RESFryslân can improve towards creating a more adaptive energy transition governance.

5 Examining the policy process

Where the previous chapter examines the policy output of RESFryslân, this chapter examines the policy process of RESFryslân.

5.1 Data collection and analytical approaches

Data collection - Phase 2

During phase 2, a total of 10 subjects (table 6), all related to RESFryslân or the regional energy transition in Fryslân were interviewed to examine **the policy process of the regional energy transition policy framework of RESFryslân**. Semi-structured interviews (SSI) were conducted. This method holds the advantage of being able to undertake an in-depth conversation in a systematic manner, while also accounting for verbal and non-verbal responses (silence, laughter) to reveal a possible ‘hidden’ message behind the answer given to the question (Kakilla, 2021, p.1). The interview questions were developed in advance (see appendix II for an overview of the interview questions). The questions were piloted by interviewing two master students, their feedback was used to improve the interview questions.

Subject n=10	Male/Female	Position	Involved in the RES since:	Involved in the regional energy transition since:
335	Male	Program manager & responsible for the sustainable energy policy in the municipality of Leeuwarden	Since the beginning	Since already before the RES
241	Male	Alderman of the municipality of Leeuwarden	Since April 1 st , 2020	Since 2010
425	Male	Civil servant of the municipality of Leeuwarden & active in citizen participation	Since the beginning	Since already before the RES
652	Female	Relationsmanager at the energy net company Liander	Since November 2020	Since June 2020

314	Male	Alderman of the municipality of Dantumadiel.	Since the beginning	Since 2016 (2 terms as Alderman)
622	Female	Employee of the Fries Sociaal Planbureau (FSP) & of the Fryske Energy Alliance	Since 2020 years	Since 2020 years
526	Male	Civil servant of the municipality of Nordeast – Fryslân	Since the beginning	Since 2019 years
134	Female	Civil servant of the municipality of Nordeast – Fryslân	Since the beginning (was also involved in the predecessor, the FES = Fryslân energy strategy)	Working in the environment since 2001, the energy transition gradually became part of her work
514	Male	Program manager with a focus on communication in the municipality of Ameland.	Since the beginning	Since around 2007
236	Female	Deputy/representative (alderman) of the province of Fryslân	Since the beginning	in her term in 2011 she already had the environment in her portefeuille, the energy transition gradually became part of that

Table 6: Interviewed subjects

The subjects were asked for 60 minutes of their time to answer 18 questions. Before the start of the interview, the subjects signed an informed consent (see appendix III). The interviews were conducted and recorded through the usage of Microsoft Teams, face-to-face interviews were not possible due to a Covid-19 lockdown in the Netherlands. The subjects were selected mostly

through snowball sampling.¹ To provide anonymity within this research paper, the subjects were each given a random number consisting of three digits (see table 6). The digits were randomly selected through rolling three dices.

Analytical approaches - Phase 2

During phase 2 the **interviews were analysed** using Atlas.ti. The interviews were analysed through finding a total of 47 themes. A report was generated of the 47 themes. All information from the themes is made visible in a table (see appendix V). Through this method, a general understanding of the main findings and further information provided by the subjects was created.

5.2 Adaptive, democratic and inclusive governance in the policy process

Context specific for RESFryslân

The interview analysis shows that whilst organizing RES 1.0 it was decided to focus on what was already in the pipeline when it came to sustainable energy projects, as a subject explains (all quotations in this chapter are translated from Dutch to English): *‘a large part of the ambition is about what was already in the pipeline, an extra part of 0.5 TWh was added to the initial ambition.’* (314, personal communication, January 20th, 2022). Discussion has thus not taken place so far as explained by subjects. Next to that, the RES did not point out any locations for projects within the region, indicating even more that during the organization of RES 1.0 the actual problems and discussions were avoided and postponed. Looking towards RES 2.0 a few subjects are interested in what the future of RESFryslân may hold:

Once we start talking about specific locations we will get a completely different discussion with the involved stakeholders. The period between RES 1.0 and RES 2.0 will be a very interesting one.’ (526, personal communication, January 10th, 2022)

The interview analysis indicates that RESFryslân is only a small part of what is happening in terms of the energy transition within the Fryslân region. Far before the RES was set up, the Friese Energy Strategy (FES) already existed. Another important realisation is that RESFryslân does not develop the energy transition policy. The energy transition policy is developed by the province and municipalities of the region. RESFryslân has a role of bringing together various policies and finding common ambitions and goals, as explained by a subject: *‘All municipalities*

¹ The first four subjects were provided by a supervisor who is connected to RESFryslân. The subjects were recruited via email. They were sent a short overview with information about myself, the research and the interview (see appendix IV).

and the province determine their own policy, as well as the water board. So, RESFryslân tries to bring all these policies together and look for common ambitions and seek for compromises.' (335, personal communication January 25th, 2022) This is described as one of the strengths of RESFryslân during the interview analysis, other strengths of RESFryslân that were found are strengthening the cooperation between central, regional and local governments, organizing the conversation between the wide diversity of stakeholders, generating knowledge and learning from each other and functioning as the formal line between the central government and the regional and local governments. On the contrary, a weakness of RESFryslân and the RES more in general is that the tasks are limited. As was explained before, RESFryslân is just a small part of the energy transition in the region. The context around RESFryslân is hindering the development of an energy strategy. In addition, the interview analysis shows that RESFryslân focuses on large-scale energy generation, causing a loss of focus on the smaller energy transition goals such as saving energy and other smaller initiatives. When thinking about participation and inclusion of citizens, a focus on the smaller initiatives matters, as a subject explains:

'We need more emphasis on the smaller projects, this is tricky because the RES focuses on the large-scale projects. When talking about involvement of people and breaking through old patterns, small-scale is where we have to start. This has always been a discussion point for us so far.' (622, January 11th, 2022)

The biggest weakness of the RES that appeared in the interview analysis is the lack of democratic legitimacy. RESFryslân as well as the FEA have no formal legal form, they hold an advisory role. Decisions are made in the individual local councils of the municipalities or the province. Therefore, if someone wishes to object, they would have to object the local council individually. Various subjects describe the potential of RESFryslân, however support from above (the central government) as well as below (citizens) is necessary. As of this moment, RESFryslân feels little support from either side: *'We have a new coalition agreement 2021-2025, however, the RES was not mentioned once in the entire agreement, so how important are we actually?'* (335, personal communication, January 25th, 2022) & *'At the moment, just a few citizens know what the RES is and what the RES does.'* (425, personal communication, January 6th, 2022) Several subjects still question the creation and added value of the RES in the energy transition of the Netherlands.

To summarize:

- RES document 1.0 consists of plans that were already in the pipeline, indicating that the actual problems and discussions were avoided and postponed to RES document 2.0;
- RESFryslân is just a small part of the energy transition in the region of Fryslân;
- RESFryslân does not develop the energy transition policy, rather it unites different policies and finds common ambitions;
- Cooperation between the central, regional and local government is enhanced through RESFryslân;
- A focus on small-scale energy initiatives of RESFryslân instead of only large-scale could have positive outcomes;
- RESFryslân feels little support from the central government or citizens within the region.

Adaptive governance

The interview analysis indicates that RESFryslân is not yet looking into and communicating about implementing more flexibility and stability. Adaptive governance or a way to work more adaptive is unknown by most subjects. However, as a subject explains: *‘I think it is underestimated at the moment how important this is. It also requires enormous knowledge of how that would work, so we have to think very carefully about how we could implement adaptivity.’* (425, personal communication, January 6th, 2022)

At the moment, subjects see that adaptive governance will be difficult to implement because the frequency of RES meetings is not high. In addition, flexibility is not programmed from the beginning, therefore cooperation structures cannot act flexible or make decision quicker. Moreover, the council plays an important role when it comes to implementing adaptivity: *‘Adapting quickly may not be possible, because we always have to go back to the local and provincial councils.’* (652, personal communication, January 28th, 2022) Monitoring plays an important role, subjects see the importance. RESFryslân has now started to look into ways to form the monitoring process, for the RES document 2.0 monitoring is a requirement. Cooperation between the multi-stakeholder setting of the energy transition remains difficult because of conflicts in interests. Subjects explain that somewhere there must be a common interest: *‘Even the smallest interest that we have in common together can sometimes be just*

what we need to continue forward.' (514, personal communication, January 13th, 2022) RESFryslân focuses on building a network with the wide diversity of stakeholders to strengthen the cooperation. Experimenting as the core of adaptive governance can be enhanced through a better cooperation according to a subject:

Working better together between stakeholders will increase the innovations, we can learn faster and experiment more. There is so much knowledge within Fryslân.' (622, January 11th, 2022)

Looking into past experiences of the Fryslân one subject explains that the community solved many complex problems collectively. We should therefore look into these experiences, into the social memory to see what worked and what did not work. The subject mentions examples such as the garbage collection within the region. One main finding from the interview analysis is that scientific knowledge is seldom integrated within the RES process or decision-making. This is confirmed by more than half of the interviewed subjects.

To summarize:

- RESFryslân is not yet focusing on implementing adaptive governance;
- The potential of adaptive governance is seen by the subjects, however the current ways of working hinder RESFryslân from becoming more adaptive;
- A monitoring process will be designed for the RES document 2.0;
- RESFryslân focuses on finding the common interest and building a network to strengthen the cooperation between the diversity of stakeholders;
- A better cooperation will enhance innovations and experimenting;
- There is little focus on social memory and past experiences;
- Scientific knowledge is not sufficiently integrated at the moment.

Democratic governance

Based on the interview analysis we know that the local council has to do their job really well to promote a democratic process within RESFryslân, for the reason that final decisions are made by the local council. RESFryslân in cooperation with the FEA can influence and prepare the final decision-making by bringing forward their ambitions and goals. Their role is however limited to an advisory role. Therefore, as mentioned before, the local council is held accountable for any decisions made. Because of the FEA, many associations with different interests are able to voice their opinions. Despite that, a subject explains the following: *'Most stakeholders are*

involved on the step of informing, we have not come further than that so far.’ (526, personal communication, January 10th, 2022) When looking at knowledge transfer within RESFryslân it can be said that the RES amplifies the knowledge transfer about the energy transition, as a subject states:

‘Through RESFryslân we bring everything together and we learn from each other, building on a knowledge center.’ (314, personal communication, January 13th, 2022)

In addition, the FEA contributes to this knowledge transfer because of the diversity of connected associations. Local council members were also brought up to level with the newest information through various meetings and information evenings. Looking into social integration and participation it can be found that RESFryslân focuses on bringing all the stakeholders along in the process, participation and communication is crucial for the region. It has become clear that there are many conflicting ideas within the region. A subject describes that citizens deliberation will help with this issue. All the knowledge and information about RESFryslân and the energy transition should be transparent, however the subjects explain that they never tested whether this was the case. A subject also explains: *‘In my opinion it is important to be sceptic about transparency. For many people the energy transition is just not on their minds.’* (622, personal communication, January 11th, 2022) Trust was also mentioned a few times by subjects and is seen as essential for relationship building with all the involved stakeholders. Trust between stakeholders is mentioned as essential by several subjects, in addition leadership is emphasized.

To summarize:

- The local council is responsible for the final decision and can also thus be held accountable;
- Most stakeholders so far have been on the step of ‘informing’ so far, they have not been involved in further decision-making;
- Knowledge transfer within RESFryslân and the region is designed well. RESFryslân as well as the FEA contribute to this process;
- Social integration and participation are seen as crucial for a successful energy transition;
- The information could be seen as transparent, however, one should keep in mind that the level of transparency was never tested or monitored;
- Trust and leadership are seen as essential.

Inclusive governance

The interview analysis shows a mixed opinion about the focus on the quadruple helix (government, business, academia, citizens). Their opinions range from being in favour of a focus on the quadruple helix as a way to create a greater impact of the energy transition to not wanting to focus too much on the quadruple helix because of a possible loss of connection with people: *'So the danger of a focus on these kind of theories like the quadruple helix is that you could lose the connection with reality.'* (236, personal communication, January 13th, 2022) One thing remains certain, a focus on the quadruple helix is not simple. The relationship with the government and businesses is good in the opinion of the subjects. However almost all subjects agree with the fact that the academia has not been included in the process so far, whilst science and academia are essential for the transition as mentioned by a subject. Within RESFryslân the subjects explain that in the future more and more stakeholders will be involved, however that next to academia also citizens are not yet involved properly as explained by a subject:

'We want the maximum possible input from citizens, not everyone is actively involved at this moment, the process remains a search.' (241, personal communication, January 20th, 2022)

The subjects explain that with information gatherings only the 'usual suspects' show up, young people, woman, children and also the poor citizens are the missing voices in the energy transition of Fryslân. It has to be kept in mind however that so far the RES process was mostly on a formal and strategic level, some subjects question whether citizens should have been involved more at this stage: *'So I have mixed feelings about whether we should have organized more involvement and participation at this stage when all was still very abstract.'* (622, personal communication, January 13th, 2022) For the energy transition in the Fryslân region, the process of involving stakeholders lies in the hands of the municipalities, the RES does not have this responsibility. The provinces fulfils the role of facilitator. One subject however points out an important factor about several stakeholders struggling to fulfil their role for various reasons as a subject explains:

I see all kinds of parties struggling with their role, there are a lot of people who actually do not want to have their role. The assignment is very complex, there are financial difficulties, there is not enough knowledge and not enough clarity coming from the central government.'

(335, personal communication, January 25th, 2022)

Communication has the goal to increase support base as is mentioned by two subjects. A specific communication strategy is however not described by the subjects.

To summarize:

- There are mixed feelings about acknowledging the quadruple helix as a way to have a greater impact on the energy transition process;
- Academia are not involved in the process so far, citizens are not yet involved properly as well. However subjects questions whether this should have been the case;
- Young people, woman, children and also the poor citizens are the missing voices;
- Municipalities have the responsibility of organizing involvement and participation;
- Various parties struggle with their role within the energy transition in Fryslân.

5.3 Critical characteristics and absent characteristics of the policy process

The interview analysis enables us to tell what characteristics are emphasized by the subjects related to RESFryslân and the energy transition. It also enables us to see absent characteristics that were not emphasized by the subjects (table 7). In addition, the interview analysis enables us to find possible missing characteristics introduced by the subject but not yet covered in the descriptive model.

Critical characteristics of the policy process	Absent characteristics
3. The cooperation is multi-stakeholder oriented	1. Local and scientific knowledge is integrated
5. Monitoring is a continuous process	2. Value conflicts and knowledge uncertainties are managed
8. Common goals are identified and defined	4. Learning through experimenting is a continuous process
9. Different stakeholders and stakeholder groups have participation opportunities	6. Decision-making is decentralized
10. Information and knowledge is transferred and transparent	7. A focus on social memory. Lessons learned are shared with all stakeholders
13. Trust is built between stakeholders	11. Deliberation between stakeholders is open and direct
15. Government, business, academia and citizens are included	12. Broad ownership is promoted and stakeholders are accountable for shared responsibilities

16. Stakeholders understand their role within the process	14. Stakeholder are equally divided (opponents, proponents)
19. Under-represented stakeholders such as vulnerable groups are heard	17. Communication methods are adapted to each situation
	18. Stakeholders receive feedback about their initiatives and interests are considered

Table 7: Critical and absent characteristics - interview analysis

Based on the interview analysis it becomes visible that 9 of 19 characteristics are found to be critical by the subjects. They are emphasised and found to be essential by subjects despite some of the characteristics not being implemented at the moment. Characteristics not covered in our model but found to be critical by subjects are: frequent meetings of the RES steering group, better leadership role from the RES, stakeholders stand higher in the participation ladder than ‘informing’.

6 Discussion

Collaboration with diverse stakeholders whilst handling uncertainty and accelerating social and technological change in the complex setting of the energy transition is challenging. Regional and local governments face several challenges regarding the intergovernmental and participatory policy development/implementation. **A policy framework that can handle the complexity of the Dutch energy transition is necessary. This research argues that a focus on adaptive governance whilst including the benefits of democratic and inclusive governance, could have the potential to optimize the energy transition governance.** Democratic and inclusive governance could help anticipate the various challenges faced in the adaptive governance approach.

Derived from the literature, a set of critical characteristics that can optimize the adaptiveness of the regional energy transition governance. By conducting a content analysis along with an interview analysis this set of characteristics was evaluated in the context of the RES region of Fryslân. The results from both the content analysis and interview analysis show that as of this moment the level of adaptiveness is insufficient within RESFryslân.

Comparing both tables from paragraph 4.3 and 5.3 indicate that a total of five critical characteristics are corresponding:

- 3. The cooperation is multi-stakeholder oriented;
- 9. Different stakeholders and stakeholder groups have participation opportunities;
- 13. Trust is built between stakeholders;
- 15. Government, business, academia and citizens are included;
- 16. Stakeholders understand their role within the process.

Keeping in mind that despite the fact that not all stakeholder groups are sufficiently involved and not all stakeholders understand their role, RESFryslân does see the importance of these characteristics.

A total of seven absent characteristics are corresponding within the two tables:

- 1. Scientific knowledge is integrated;
- 2. Value conflicts and knowledge uncertainties are managed;
- 4. Learning through experimenting is a continuous process;
- 6. Decision-making is decentralized;

- 12. Broad ownership is promoted and stakeholders are accountable for shared responsibilities;
- 14. Stakeholder are equally divided (opponents, proponents);
- 18. Stakeholders receive feedback about their initiatives and interests are considered.

Context specific for RESFryslân

The process that led to this level of adaptiveness within RESFryslân as reflected in RES 1.0 can be determined through an examination of the present and absent critical characteristics. Where there is a focus on integrating local knowledge, the analyses showed that there is no focus on integrating academia and scientific knowledge. The literature suggests that academia and scientific knowledge is important for the generation of new knowledge (Edwards et al., 2019, p.3). Hence, very essential for this stage where we are trying to comprehend the complexity of the energy transition. Alongside academia, citizens' have not been involved enough by RESFryslân. This can be explained by the fact that municipalities have the main responsibility of organizing citizens' engagement within the process. It has yet to be discovered if in the future RESFryslân will play a greater role in citizens involvement. Both analyses show there is no clear guidance on how to manage value conflicts between stakeholders and possible knowledge uncertainties.

Learning and experimenting are the core elements of adaptive governance (Nelson, Howden, & Smith, 2008, p.591), and here RESFryslân focuses insufficiently on these characteristics. Especially in the early phase of the energy transition, experimenting could benefit RES regions to speed up the learning process and find out what works and what does not. Decision-making as of this moment is not decentralized because all is in the hands of the local councils. This also applies to accountability and shared responsibilities. From the analysis we know the current level of adaptivity in RESFryslân is also based on the equality of proponents and opponents in the RES process. At moment, there is little focus on an equal division. To integrate more local knowledge and stimulate stakeholders to participate more it will be necessary to focus on stakeholder initiatives and provide them with feedback (Roman et al., 2009, p.10). This is however one of the absent characteristics. The document analysis shows that roles within the region of each party are clear, the interview analysis suggests that various parties struggle with their role within the energy transition. This contradiction shows that the roles could be described clearly but are still difficult to execute for stakeholders.

Limitations and suggestions for future research

These results should, of course, be considered in light of the limitations of this study. The first limitation of this research is that it only zoomed in on one RES region. Each RES region however has its own structure, specific focus within the region, tasks and roles. Therefore, what characteristics are seen as critical and applying the adaptive governance framework would be different for each RES region. This research is thus not directly generalizable to all RES regions. Further research can be conducted focussing on other RES regions as well. It can be interesting to conduct a comparing analysis between several RES regions. The second limitation is that a specific group of 10 subjects were interviewed. We can discuss that this research would have other results if a different group of subjects or possibly a larger group were interviewed. The third limitation of this research is that the RES is still fairly new and therefore situated in one of the beginning phases. Repeating this research at another phase could result in other conclusions.

The relation between adaptive governance, democratic governance and inclusive governance proposed in this research can be analysed more thoroughly. With a special focus on the benefits that democratic and inclusive governance bring for the challenges of the adaptive governance approach. The proposed relation can be researched in additional contexts other than the energy transition to find its future relevance.

7 Guidelines and recommendations

In terms of achieving the characteristics towards optimizing the adaptiveness of the regional energy transition governance, there are various steps a RES can take.

7.1 Guidelines to implement the critical characteristics

This research proposes a range of guidelines to assist RES regions in the implementation of the characteristics. In addition, a few practical examples are outlined to further assist RES regions (table 8). The practical examples are focused on RES Fryslân. Absent practical examples indicate an absence of that characteristic or a specific example in the policy output and policy process of the RES region of Fryslân.

Characteristic	Guidelines	Practical examples
1. Scientific and local knowledge is integrated	<ul style="list-style-type: none"> Decisions are made after consulting scientific expertise (knowledge institutions, academia, scientists) a decision cannot be finalized if scientific expertise is not consulted. The RES supports the exchange of local knowledge by actively bringing together locals in the decision-making process. The RES actively searches for existing scientific and local knowledge to integrate within their decisions. 	<ul style="list-style-type: none"> The municipality of Sudwest-Fryslân focuses on a citizens panel which integrates initiatives and ideas from citizens about the energy transition policy towards the local council. <p>https://vng.nl/sites/default/files/2021-11/resultaten-onderzoek-toekomst-van-energie-gemeente-sudwest-fryslan_0.pdf</p>
2. Value conflicts and knowledge uncertainties are managed	<ul style="list-style-type: none"> All information about the energy transition within a region is provided in a way for all stakeholders to understand. Stakeholders are sufficiently equipped with knowledge to be able to participate. 	
3. The cooperation is multi-stakeholder oriented	<ul style="list-style-type: none"> Whilst cooperating, all stakeholder groups are able to participate and co-decide. A focus on including as many different types of stakeholders to participate and during decision-making is promoted. 	
4. Learning through experimenting is	<ul style="list-style-type: none"> Endless deliberation is avoided by switching faster to experimenting with smaller projects on a regional and local level. 	

a continuous process		
5. Monitoring is a continuous process	<ul style="list-style-type: none"> ▪ All processes and accepted recommendation within a RES are monitored with a regional/local focus. ▪ Progress reports are regular, once every quartile, and are made available for all stakeholders/the public through a website. 	
6. Decision-making is decentralized	<ul style="list-style-type: none"> ▪ The RES provides infrastructure to promote decentralized decision-making. ▪ Decision-making is also based on knowledge generated through monitoring. ▪ All stakeholder groups can take part in the decision-making process. 	
7. A focus on social memory.	<ul style="list-style-type: none"> ▪ Acquired experiences is shared through an online platform where all regional and local governments of the RES region update their experiences every quartile. ▪ The RES actively searches for past experiences that helps stakeholders understand the process better. ▪ Lessons learned are shared with all stakeholders 	<ul style="list-style-type: none"> ▪ Sharing lessons learned can be done through designing a small book and providing stakeholders with a free copy or an online version. <p>This example is from the municipality in Ameland:</p> <p>https://duurzaameland.nl/wp-content/uploads/2019/10/Learning-History_brochure_DEF_mail.pdf</p>
8. Common goals are identified and defined	<ul style="list-style-type: none"> ▪ Goals of the different stakeholder groups are openly available. ▪ Stakeholders are motivated to learn to identify the different perspectives of each other. 	<ul style="list-style-type: none"> ▪ RESFryslân focuses in their process on a clear definition of concepts to make sure there is no misinterpretation between different stakeholder groups. The FEA is in charge of this tasks. <p>See appendix 6 of the following document: https://api1.ibabs.eu/publicdownload.aspx?site=heerenveen&id=100192175</p>

9. Different stakeholders and stakeholder groups have participation opportunities	<ul style="list-style-type: none"> Participation rules and regulations as well as the level of participation are the same for all stakeholders. 	
10. Information and knowledge is transferred and transparent	<ul style="list-style-type: none"> Acquired information and knowledge is openly available to all stakeholders as well as the decision-making process. The RES facilitates this through designing a RES website outlining all projects, ideas, initiatives. 	<ul style="list-style-type: none"> RESFryslân recently designed a so-called ‘gesprekspartner’ (conversation partner). An open online accessible tool bringing together information about RESFryslân, their working methods and up-to-date information about important topics related to the energy transition in the region. <p>https://media.regionale-energiestrategie.nl/resgespreksassistent/</p>
11. Deliberation between stakeholders is open and direct	<ul style="list-style-type: none"> Working methods and solutions are decided during the deliberation process. Defining end states before the possibility for all stakeholders to openly deliberate is avoided. 	
12. Broad ownership is promoted and stakeholders are accountable for shared responsibilities	<ul style="list-style-type: none"> Decision are not be made by only one stakeholder or stakeholder group. 	
13. Trust is built between stakeholders	<ul style="list-style-type: none"> Clear, open and regular communication from the RES to all stakeholders. 	
14. Stakeholder are equally divided (opponents, proponents)	<ul style="list-style-type: none"> When deliberating about a project, an equal amount of stakeholder for and stakeholder against this project are able to voice their concerns/opinions. 	
15. Government, business, academia and citizens are included	<ul style="list-style-type: none"> Social and physical infrastructure such as platforms or forums are provided. Accessible for all stakeholder groups to be able to share knowledge, ideas and start initiatives. 	
16. Stakeholders understand their	<ul style="list-style-type: none"> A continuous process is set up to verify whether stakeholders 	

role within the process.	understand their role in the energy transition of the region, as well as their possibilities.
17. Communication methods are adapted to each situation	<ul style="list-style-type: none"> ▪ A continuous re-evaluation of the communication strategy is conducted.
18. Stakeholders receive feedback about their initiatives and interests are considered.	<ul style="list-style-type: none"> ▪ The RES promotes stakeholder initiatives by actively providing feedback about whether the initiatives will be implemented and other ways the stakeholder can participate in the energy transition.
19. Under-represented stakeholders such as vulnerable groups are heard	<ul style="list-style-type: none"> ▪ With every decision, process or project, an analysis/ assessment of possible missing voices and vulnerable groups are made. ▪ To guarantee their inclusion, a decision cannot be made or a project are not started without having actively included these specific stakeholders.

Table 8: Guidelines and practical examples

7.2 Additional recommendations from the interviewed subjects

Following recommendations (table 9) were provided by the subjects who participated in this research. The subjects were not specifically asked to provide recommendations however, several subjects proposed ways they thought would improve the energy transition governance of RES regions.

Recommendation	Contributes to	Advantage (+) & Disadvantage (-)
1. An increase of decision-making mandates from the local council to the RES steering group.	Adaptivity	<ul style="list-style-type: none"> ▪ (+) Providing the RES steering group with more decision-making mandates results in the ability to respond faster to unexpected changes. The lengthy process of the local council will no longer be necessary. ▪ (-) The RES does not have democratic legitimacy. Therefore decisions made by the RES steering group are not legitimate and do not represent the political views of the region.
2. A greater focus on the social memory of the region, on how we solved things in the past with a	Adaptivity	<ul style="list-style-type: none"> ▪ (+) A focus on bringing the community back in time where they together solved an issue (such as

focus on what worked well and what did not work.		garbage collection) could help motivate and inspire to solve current issues.
3. A RES functioning as a knowledge centre.	Democracy	<ul style="list-style-type: none"> ▪ (+) Stakeholders will be able to gain knowledge through the RES. Because of the various different stakeholders that come together through a RES, it could function as a knowledge centre where all the local knowledge and ideas come together and are presented.
4. Simplify the procedure of starting new projects.	Adaptivity	<ul style="list-style-type: none"> ▪ (+) Rules and regulations slow down the process of starting new initiatives and projects. Therefore, simplifying this process will fasten innovative ideas. ▪ (-) The existing rules and regulations do have a function, therefore, disregarding these will bring along issues that have to be researched.
5. Build in flexibility from the beginning of the process.	Adaptivity & Inclusivity	<ul style="list-style-type: none"> ▪ (+) Building in flexibility from the beginning within the stakeholders will help adapt quickly in unexpected situations.
6. Generate a vision for not only 2030 but also 2050.	Adaptivity	<ul style="list-style-type: none"> ▪ (+) At the moment we are looking mostly at 2030, people will be discouraged if they realise that the next finish line is in 2050. Therefore, narrating that the finish line is not at 2030 but 2050 prevents this from happening. ▪ (-) For now 2050 sound far away whilst 2030 is close by. Therefore a focus on 2050 might not motivate people to take action at the moment.
7. Set up free advisory energy counters and energy advisors to inform citizens about their possibilities to transition. With a special focus on the under-represented groups.	Inclusivity	<ul style="list-style-type: none"> ▪ (+) Making these tools free of charge will also help the under-represented groups such as the poor citizens to be able to reach out and gain knowledge about their possibilities (for example to update their homes).
8. More steering on the quadruple helix.	Inclusivity	<ul style="list-style-type: none"> ▪ (+) A greater focus on the quadruple helix and the cooperation therein will help in the complexity of the energy transition. ▪ (-) A greater focus on the quadruple helix might results in a loss of what is going on in reality. Focussing too much on theory comes with pitfalls.
9. A new democratic process.	Democracy	

Table 9: Recommendations from subjects

8 Conclusion

This research aimed to answer the following research question:

‘What are critical characteristics to optimize the adaptiveness of the regional energy transition governance within the context of the Regional Energy Strategy?’

To answer this research question a set of three sub-questions were formulated and addressed in this research by means of a content and interview analysis. Here, I reflect on each sub-question and end with a final conclusion about the research.

Sub-question 1: What are characteristics that enable the optimization of the adaptiveness of the regional energy transition governance?

The literature suggests a focus on adaptive governance for the energy transition in order to handle its uncertainties and challenges. However, adaptive governance has not been applied many times because the literature provides little guidance on how to achieve the adaptive governance approach. For small regional and local governments it could be a task too difficult to achieve and an investment and risk too large to take. However this research suggest that doable steps in the form of characteristics and guidelines could help in the path towards an adaptive governance approach. The characteristics are:

1. Scientifics and local knowledge is integrated: because of their integration RES regions can make use of their context specific knowledge in regards of the energy transition.
2. Value conflicts and knowledge uncertainties are managed: because this can help make the stakeholders knowledgeable and focus on common goals.
3. The cooperation is multi-stakeholder oriented: because a wide diversity of stakeholders adds to the capacity to change because of the many different resources.
4. Learning through experimenting is a continuous process: because when faced with uncertainty it will help to maintain flexibility through trial and error instead of defining ends state.
5. Monitoring is a continuous process: regular monitoring and evaluation is needed to learn from experiments and increase the overall learning ability.
6. Decision-making is decentralized: because other than the regional and local governments, communities are to be engaged in every opportunity.

7. A focus on social memory. Lessons learned are shared with all stakeholders: because successful past experiences, accepted approaches and social structures can enhance flexibility and future collaborations.
8. Common goals are identified and defined: because a focus on common goals can increase the multi-stakeholder cooperation.
9. Different stakeholders and stakeholder groups have participation opportunities: because in the context of the participatory society many different stakeholders wish to be involved.
10. Information and knowledge is transferred and transparent: because transparency of information allows for all stakeholders to gain and maintain up to date knowledge. This is necessary for the stakeholders to participate in the process.
11. Deliberation between stakeholders is open and direct: because this allows for working methods and solutions to be decided during the deliberation process where all stakeholders still have the opportunity to voice their opinions.
12. Broad ownership is promoted and stakeholders are accountable for shared responsibilities: because this allows for stakeholders to take ownership and become more involved in the democratic process.
13. Trust is built between stakeholders: because this can enhance the knowledge sharing process and the cooperation between stakeholders, especially between the government and other stakeholders.
14. Stakeholders are equally divided (opponents, proponents): because an equal division will provide an equal process with a wide diversity of interest integrated.
15. Government, business, academia and citizens are included: because a focus including the quadruple helix can foster smart strategies and knowledge creation and exchange.
16. Stakeholders understand their role within the process: because each stakeholder understanding their role can benefit the cooperation between the wide diversity of stakeholders.
17. Communication methods are adapted to each situation: because this can help all stakeholder groups to understand the energy transition and their role therein.
18. Stakeholders receive feedback about their initiatives and interests are considered: because this can stimulate stakeholders to bring in more initiatives and their context specific knowledge.
19. Under-represented stakeholders such as vulnerable groups are heard: because this can foster the inclusivity of the energy transition.

Sub-question 2: What characteristics are found to be critical according to a Regional Energy Strategy region?

This research focused on the RES region of Fryslân to evaluate the characteristics. The results based on the content analysis (the policy output) and the interview analysis (the policy process) suggest the following characteristics to be critical:

- 3. The cooperation is multi-stakeholder oriented;
- 9. Different stakeholders and stakeholder groups have participation opportunities;
- 13. Trust is built between stakeholders;
- 15. Government, business, academia and citizens are included;
- 16. Stakeholders understand their role within the process.

Within the policy documents and also by the subjects interviewed these characteristics were emphasized the most and thus assigned as most critical. This is specific within the context of RESFryslân. This however does not conclude that the other characteristics are not relevant. This research argues that all the characteristics are relevant for RES regions to implement in their process in order to optimize the adaptiveness of the energy transition governance.

Sub-question 3: What are guidelines to assist a Regional Energy Strategy in the implementation of the characteristics?

For RES regions to optimize the adaptiveness of the energy transition governance they can implement the critical characteristics. The guidelines proposed in this research will assist the RES regions in this process.

The results of this research indicate that there is room for RESFryslân to optimize the adaptiveness of the energy transition governance. Zooming in on RESFryslân they can work on implementing also the absent characteristics. Considering the characteristics: Scientific knowledge is integrated, RESFryslân can actively search within the region for scientific knowledge. This can be integrated within the decision-making. It can be decided that without having consulted scientist or academics, the decision-making cannot be finalized. By equipping stakeholders with information provided in an understandable way, value conflicts and knowledge uncertainties can be managed. Making it common practise to avoid endless deliberation and switch to experimenting faster can enhance the adaptiveness. Decentralized-decision making can be implemented by providing infrastructure for stakeholders to take part in the decision-making. This also improves the accountability and shared ownership. By promoting an equal amount of opponents and proponents and equal democratic process can be

realised. By actively providing feedback to all stakeholder who participate in initiatives can motivate more stakeholders to take initiatives. This increases the integration of local knowledge and therefore optimizes the adaptiveness of the energy transition governance.

Through a focus on these guidelines, the energy transition governance of RESFryslân can become more adaptive. This also applies to other RES regions.

Main conclusion

This research aimed to optimize the adaptiveness of the energy transition governance in the context of the Regional Energy Strategy. Proposing a relation between adaptive governance, democratic governance and inclusive governance. Derived from the literature, a set of critical characteristics were created with corresponding guidelines, an indication of the critical level and practical examples. Through a specific focus on the RES region of Fryslân, this set of critical characteristics were evaluated. The evaluation was carried out by using a multi-layered research approach consisting of a content analysis and an interview analysis. The results of these analyses was a set of characteristics seen as most critical by the RES region of Fryslân. These characteristics can be found under sub-question 1. This research argues that the characteristics seen as most critical is context specific for each RES region.

This research is beneficial to RESFryslân because this region now specifically knows where to focus on in order to optimize their adaptiveness. In addition, this research is also beneficial for other RES regions because they can compare their policy output and policy process with RESFryslân. Furthermore, they can focus on implementing the critical characteristics. To further optimize the adaptiveness of the energy transition governance, it is wise for each RES region to implement as much of the characteristics as possible. The proposed guidelines and practical examples can assist the RES regions in the implementation. RES regions can start by implementing the guidelines marked with ‘M’ (must have) and then work their way through the guidelines marked with ‘S’ (should have), ‘C’ (could have), ‘W’ (would have).

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Appendices

APPENDIX I: CONTENT ANALYSIS - OVERVIEW OF POLICY DOCUMENTS

Resource	Title	Who released the document	Relevance for this research	Type of resource
RESFryslân. (2021). Regionale Energie Strategie Fryslân. Retrieved from https://www.resfryslan.frl/wp-content/uploads/2021/04/RES-1.0_RES-FRYSL%C3%82N_NL_DEF_digitaal.pdf	Regionale Energie Strategie Fryslân ----- Regional Energy Strategy Fryslân	RESFryslân	This document, known as RES 1.0, covers all aspects of the Regional Energy Strategy of Fryslân. The execution strategy, the sustainable energy production, use of available space for sustainable energy and public support are explained.	Policy document/Government document
RESFryslân. (2021). Ambitiedocument Friese overheden. Retrieved from https://www.resfryslan.frl/wp-content/uploads/2021/04/RES-FRYSL%C3%82N_Ambitiedocument-Friese-Overheden_DEF_digitaal.pdf	Ambitiedocument Friese overheden ----- Ambitiondocument Friese governments	RESFryslân	This document describes the vision, goals and strategy of every municipality within the RESFryslân region, as well as the vision, goals and strategy of the waterboard and the province of Fryslân.	Policy document/Government document

RESFryslân. (2021). Achtergronddocumenten RES 1.0 Fryslân. Retrieved from https://www.resfryslan.frl/wp-content/uploads/2021/04/RES-FRYSL%C3%82N_Achtergronddocumenten_DEF_digitaal.pdf	Achtergronddocumenten RES 1.0 Fryslân ----- Background document RES 1.0 Fryslân	RESFryslân	This document contains of several appendices that are related to the RES of Fryslân.	Policy document/Government document
RESfryslân. (2019). Startdocument. Retrieved from https://regionale-energiestrategie.nl/documenten/handlerdownloadfiles.ashx?idnv=1511708	Startdocument	RESFryslân	The goal of this document is expressing administrative commitment as the start of the RES process in Fryslân, administrative confirmation of the principles, of the approach and of the mutual agreements on preconditions such as finances, capacity and lead time.	Policy document/Government document
RESFryslân. (2022). Handreiking Regionale Energiestrategie 2.0. Retrieved from https://www.regionale-energiestrategie.nl/ondersteuning/handreiking2/2049228.aspx	Handreiking Regionale Energiestrategie 2.0 ----- Guide Regional Energystrategy 2.0	RESFryslân	This document describes the future steps that are RESFryslân aims to take.	Policy document/Government document
Nationaal Programma Regionale Energiestrategie. (2020). Regionale Energie Strategien en besluitvorming. Retrieved from https://energieregionwb.nl/app/uploads/sites/3/2020/07/Brochure	Regionale Energie Strategien en besluitvorming ----- Regional Energy Strategies and Decision Making	National Program Regional Energystrategy	This document describes the general role of the RES, the origin and various decision-making methods.	Policy document/Government document

e-Regionale-Energiestrategie-en-Besluitvorming.pdf				
Tweede Kamer der Staten-Generaal. (2021). Kabinetsaanpak Klimaatbeleid. Retrieved from https://zoek.officielebekendmakingen.nl/kst-32813-672.pdf	Kabinetsaanpak Klimaatbeleid ----- Cabinet approach to Climate Policy	Cabinet of the Netherlands	This document describes the state of affairs of the RES approach stating that the RES approach is working, however there is a long road ahead.	Policy document/Government document
Provincie Friesland. (2021). Ontwerp Energieprogramma Fryslân 2022-2025. Retrieved from https://www.fryslan.frl/_flysystem/media/brief-ds-terinzagelegging-ontwerp-energieprogramma-2022-2025.pdf	Ontwerp Energieprogramma Fryslân 2022-2025 ----- Design energy program Fryslan 2022-2025	Province of Friesland	This document describes the energy vision and strategy of Fryslân as well as the way stakeholders can participate. The document also describes several conditions and how everything will be implemented and monitored.	Policy document/Government document
Provincie Friesland. (2021). Uitvoering Klimaatakkoord & Energieprogramma. Retrieved from https://www.fryslan.frl/_flysystem/media/startnotitie-uitvoering-klimaatakkoord-energieprogramma.pdf	Uitvoering Klimaatakkoord & Energieprogramma ----- Implementation of the Climate Agreement & Energy Programme	Province of Friesland	This document explain the agreements that the Province of Friesland agrees to regarding the energy transition. This document also describes several approaches of achieving the goals of the energy transition.	Policy document/Government document
Provincie Friesland. (2019). Vernieuwen in vertrouwen - Geluk op 1, bestuursakkoord. Retrieved from	Vernieuwen in vertrouwen – geluk op 1, bestuursakkoord	Provincie Friesland	This document describes energy principles and describes the role of the Province in the energy transition.	Policy document/Government document

https://www.fryslan.frl/_flysystem/media/bestuursakkoord-geluk-op-1-2019-2023.pdf	----- Renew in confidence – happiness at nr. 1, administrative agreement			
Westfriesland. (2021). Uitvoeringsprogramma Energieneutraal Westfriesland. Retrieved from https://raad.koggenland.nl/Verzamelingen/Gemeenteraad/2021/04-oktober/19:30/Bijlage-1-Uitvoeringsprogramma-Energieneutraal-Westfriesland-3.pdf	Uitvoeringsprogramma Energieneutraal Westfriesland ----- Implementationplan Energyneutral Westfriesland	Westfriesland	This document describes the route of Westfriesland towards becoming energy neutral.	Policy document/Government document
Wetterskip Fryslân. (2019). Coalitie akkoord 2019-2023. Retrieved from https://www.wetterskipfryslan.nl/documenten/bestuur/coalitie-akkoord-wetterskip-fryslan-2019-2023.pdf	Coalitie akkoord 2019-2023 ----- Coalition agreement 2019-2023	Wetterskip Fryslân (waterboard)	Describes the role of the waterboard in the energy transition	Policy document/Government document
Gemeente De Fryske Marren. (2021). Raadsvergadering Debat en Beslút. Retrieved from https://dfm.bestuurlijkeinformatie.nl/Document/View/738ab54	Raadsvergadering Debat en Beslút ----- Council meeting Debate and Decision	Municipality De Fryske Marren	Describes the ambition of this specific municipality related to the RES1.0 document. Describes the need for cooperation with many stakeholders.	Policy document/Government document

d-0b3a-4cf8-bdbb-df1e6dcfe5c4				
Gemeenteraad van Noardeast-Fryslân. (2020). Beleidskader Zonne-energie 2020. Retrieved from https://www.noardeast-fryslan.nl/sites/default/files/2020-06/Beleidskader%20Zonne-energie%202020%20NF.pdf	Beleidskader Zonne-energie 2020 ----- Policy framework Solar energy 2020	Municipality of Nordeast-Fryslân	This document describes what is already available when it comes to energy policies. As well as a participation plan, and the role of the municipality in the energy transition.	Policy document/Government document
Liander. (2020). Liander investeert in Friesland. Retrieved from https://www.liander.nl/sites/default/files/20201001%20Liander%20Investerings_Friesland.pdf	Liander investeert in Friesland ----- Liander invests in Fryslân	Liander (energy company)	This document shows where Lianders plans on investing in Fryslân. It also shows their ambition when it comes to the type of energy they are willing to focus on	Informative document

APPENDIX II: INTERVIEW QUESTIONS

(the research question and sub-questions have been altered in between the interviews and the final version of this research)

Research question: <i>What is the current energy transition regional policy of RESFryslân and how can it be improved to make it more adaptive, democratic and inclusive?</i>
The purpose of this study is to research the current energy transition regional policy of RESFryslân. Research will be conducted to find out how we can ensure that the current policy for the energy transition will perform effectively and efficiently. The aim of this research is to improve the current energy transition policy to make it more adaptive, inclusive and democratic.
Introduction
<p>Thank the participant for their time and interest in the study. Ask if the interview can be audio recorded?</p> <p>Introduce myself, the purpose of the study as well as the purpose of the interview.</p> <p>Ask introduction question to the participant:</p>
1. Please tell me a little bit about your current occupation.
2. Since when have you been involved in RESFryslân (specifically) and in local energy transition (more generally)?
3. How are you involved in in RESFryslân (specifically) and in local energy transition (more generally)? / What is your specific role?
4. With who do you mostly have contact with and work together with (within the RESFryslân consortium)? Please describe how you work together?
SQ1: What is the current policy for the energy transition in RESFryslân?
This is the first sub-question that will be answered in this study. The purpose of this sub-question is to generate an overview and understanding of the current energy transition policy in order to analyse its level of effectiveness and efficiency. Next to that, this sub-question functions as a first step in providing future recommendations for the policy to be more adaptive, inclusive and democratic.
5. Could you describe the current energy transition policy of RESFryslân in a few sentences?
<p>In the RES 1.0 document the following objectives of the energy transition are mentioned.</p> <p>→ the generation of sustainable electricity and the organization of local property therewith;</p> <p>→ the heat transition in the Built Environment, including energy-saving measures;</p> <p>→ the required energy infrastructure;</p> <p>→ social integration, including the themes of communication, policy participation, process and project participation and landscape integration.</p>
6. Could you rank these objectives from most crucial to least crucial? In your opinion, are any important objectives missing from this list? If yes, what are they?
Provide interviewee with a self-created overview of stakeholders involved in RESFryslân.

7. Are we missing any (formal or informal) stakeholders?
8. Is the policy transparent? Is information openly available for all stakeholders (to for example increase their knowledge)?
In the RES 1.0 document it is stated that knowledge is transferred between the stakeholders. However, not all stakeholders are as knowledgeable about the energy transition and goals of the RES
9. How are value conflicts and knowledge uncertainty of stakeholders handled? How is knowledge generated and transferred between stakeholders?
10. On what level are the stakeholders involved in the decision-making process? How are they assigned roles in the process?
The RES wishes to be an inclusive policy, with equal participation opportunities.
11. Is there also attention for the stakeholders who are not actively engaged in the process? Do you think missing voices or the absence of certain stakeholders can have implications for the energy transition?
SQ2: How can we ensure that the current policy for energy transition will perform effectively and efficiently?
This is the second sub-question that will be answered in this study. The purpose of this sub-question is to analyse the level of effectiveness and efficiency of the current energy transition policy of RESFryslân.
Efficiency can be defined as: the good use of time and energy in a way that does not waste any (Cambridge dictionary).
Effectiveness can be defined as: the quality of being successful in achieving what is wanted (Cambridge dictionary).
In the ‘Systematic monitor RES’ document it is stated that to enhance efficiency and effectiveness, the RES policy will be monitored. It aims to contribute to the quality of decision-making regarding the RES and their implementation as widely supported as possible. The involved stakeholders will deliver data and independent organizations will analyse and evaluate the data.
12. What steps are taken so far to realize the monitoring and evaluation of the RES policy? For whom is this monitoring and evaluation data available?
13. How is an efficient and effective (political) dialogue with stakeholders ensured?
Many different stakeholders are involved in the RES regions and the RES policy.
14. How is the cooperation between the government, businesses, academia and citizens shaped?
15. What factors positively and negatively contribute, or could contribute to the relationship/deliberation between the government, businesses, academia and civil society/citizens?
SQ3: How can the current policy of RESFryslân be improved to make it more adaptive, inclusive and democratic?

This is the third sub-question that will be answered in this study. After having analysed the current policy, this sub-question will function as a way to recommend improvements on the energy transition regional policy of RESFryslân.

16. How does the RES improve adaptiveness*?

*By adaptiveness I mean overcoming challenges and barriers by managing value conflicts and knowledge uncertainties between stakeholders, clarifying goals, enhancing the multi-stakeholder cooperation's, creating a broad-based societal awareness and continuous testing/monitoring of the policy.

17. How does the RES improve democracy*?

*By democracy I mean broad ownership of decisions among involved stakeholders, ensuring transparency about information/knowledge, the focus on deliberation between stakeholders and the amount of influence stakeholders have.

18. How does the RES improve inclusivity*?

*By inclusivity I mean the inclusion of the government, businesses, academia and citizens in the process, designing their roles in the process, focussing on equal participation opportunities, soliciting stakeholder input and installing channels of communication. Also the representation of voices who cannot participate (e.g. future generations).

Concluding

→ Concerning this research, are there important aspects that have not come up in this interview that you would like to address?

→ Do you have any recommendations for people who I could interview as well?

Thank participant again for their time and the interesting interview

Ask if they would like to be updated with the progress of the study.

Ask that, if needed, they can be contacted again (for clarification or further questions).

APPENDIX III: INFORMED CONSENT

Please read this consent document carefully before you decide to participate in this study. The researcher will answer any questions before you sign this form.

You are being invited by Chloë Gerritsen to participate in an interview for her master thesis at the University of Twente. The thesis supervisors are Dr. Le Anh Nguyen Long and Dr. Sjoerd de Vries.

STUDY TITLE

An agile, inclusive and democratic energy transition regional policy framework.

STUDY PURPOSE

The purpose of this study is to research the current energy transition regional policy framework of RESFRyslân. Research will be conducted to find out how we can ensure that the current policy framework for the energy transition will perform effectively and efficiently. The purpose of this research is to improve the current energy transition policy framework to make it more agile, inclusive and democratic.

The following research question will be answered: *‘What is the current energy transition regional policy framework of RESFRyslân and how can it be improved to make it more agile, inclusive and democratic?’*

PROCEDURES FOR THE STUDY:

Participants in this research will participate in an interview with 18 questions in all and it takes on average 60 minutes to complete. You may be contacted for a follow up in-depth interviews. Dr. Nguyen Long will be available to answer any questions you may have about the survey, interview, or about the study in general. If you would like to learn more about the study and how your responses will be used and recorded you may contact Dr. Nguyen Long at l.a.n.long@utwente.nl

CONFIDENTIALITY

Efforts will be made to keep your personal information confidential. Your identity will be held in confidence in reports in which the study may be published. From the beginning of the project, you will be assigned a study number and any information that ties you to your responses to the survey or interview will be kept and stored separately from the records of your responses. Organizations that may inspect and/or copy your research records for quality assurance and data analysis include groups such as the study investigator and his/her research associates.

CONTACTS FOR QUESTIONS OR PROBLEMS

For questions about the study, contact the following researchers:

- Researcher Dr. Le Anh Nguyen Long at l.a.n.long@utwente.nl
- Researcher Dr. Sjoerd de Vries at s.a.devries@utwente.nl

VOLUNTARY NATURE OF STUDY

Taking part in this study is voluntary. You may choose not to take part or may leave the study at any time. Leaving the study will not result in any penalty or loss of benefits to which you are entitled.

CONSENT FORM

You will be given a copy of this informed consent form

Please tick the appropriate boxes

Yes No

Taking part in the study

I have read and understood the study information, or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.

☐ ☐

I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.

☐ ☐

Use of the information in the study

I understand that information I provide will be used in the master thesis report and in possible presentations.

☐ ☐

I understand that personal information collected about me that can identify me, such as [e.g. my name or where I live], will not be shared beyond the study team.

☐ ☐

I agree that my information can be quoted in research outputs.

☐ ☐

Consent to be audio recorded

I agree to be audio recorded.

☐ ☐

Signatures

Name of participant

Signature

Date

I have accurately read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.

Researcher name [printed]

Signature

Date

APPENDIX IV: OVERVIEW USED FOR RECRUITING SUBJECTS

This image was sent via email whilst recruiting subjects to provide them with the necessary information in one overview.

Een adaptieve, democratische en inclusieve energietransitie

Onderzoek naar het huidige energietransitie beleid van RESFryslân

Wie ben ik?

Mijn naam is Chloë Gerritsen, ik ben 22 jaar en woon in Daarle.

Op dit moment ben ik druk bezig met afstuderen voor de masteropleiding Bestuurskunde aan Universiteit Twente.

Na het afstuderen hoop ik een baan te vinden als beleidsadviseur milieu of duurzaamheid.

 0610123108

 Chloë Gerritsen

Wat wil ik bereiken?

Het doel van mijn onderzoek is het huidige energietransitie beleid van RESFryslân te evalueren en te verbeteren op het gebied van efficiëntie en effectiviteit.



Middels interviews hoop ik erachter te komen hoe het huidige beleid eruit ziet op het vlak van adaptiviteit, democratie en inclusiviteit en waar op deze vlakken ruimte is voor verbetering.

Het interview

Het interview bestaat uit 18 vragen en zal tussen de 60 minuten duren.

Ruim voor het interview ontvangt u de interviewvragen, om ze alvast een keer door te lezen.

Ik verheug me op onze samenwerking!



APPENDIX V: INTERVIEW ANALYSIS – THEMES TABLE

Theme	In agreement	In disagreement	Diverse opinions	Ideas participants
Adaptivity	<p>It is an important subject to look into in the future</p> <p>We have to be prepared to change directions without losing the dot on the horizon</p>	<p>Adapting quickly will not be possible because we always have to discuss and communicate with the local council and the province.</p> <p>The frequency of meetings is not high, therefore, responding fast is not possible.</p> <p>Flexibility is not programmed from the beginning, therefore the cooperation structures can not act flexible or make decisions to adapt quicker.</p>	<p>The RES does not play a role in increasing adaptivity in my opinion</p>	<p>Changing direction faster can be accomplished by focusing on the same interests and having no conflicts therein.</p> <p>The regions have to feel the responsibility that was given to them by the central government</p> <p>The steering group could possibly receive some mandates in order to respond quickly and make decision without the process of the local council. As long as it does not have to go to the municipalities, then decision-making will be faster</p> <p>We have to program flexibility from the start/beginning, so that it can be incorporated in the cooperation structure (x2)</p>
Communication	<p>Communication is there, the leaders as well as the local council are involved and democratic legitimate</p>			<p>Communicating a positive story to the people with good examples is important for people to start feel the urgency</p>

	<p>Communication has its aim of increasing the support base for the transition (x2)</p> <p>As a municipality we have to communicate to make people aware that they can for example switch to sustainable forms to lower their costs, to save money</p>			
Complexity of the energy transition	<p>The energy transition is a very complex transition, there are many ambitions, the tempo is high, trust and leadership play an important role and we need many stakeholder groups to make a success of this transition</p> <p>There are many different opinions about how it should be</p> <p>The complexity also lies in the question of: how are we going to execute and implement this transition. We have never done this before</p>			
Cooperation	<p>Per different phase we need different people to have a successful phase. Now in the political phase we</p>	<p>I see that the local government is not completely able to tackle this assignment adequately, so</p>	<p>We cooperate with academia, business and find a balance in innovations and economic feasible</p>	<p>Governments have to work together, even more and better that they are doing now, this essential for</p>

	<p>need different people then in the implementation phase</p> <p>A process can be more efficient by having/collecting the right people at the right moment. Until now this has been the case</p> <p>Because of a good cooperation we have been able to teach each other a lot about difficult specific subjects.</p> <p>Building a network is very important</p>	<p>insufficient knowledge, there is insufficient funding, there are insufficient legal instruments, there is insufficient clarity from the government. In such a situation, then, when groups come together and say: wait a minute, what are we doing? What should we do? helps? That helps to give direction to what we are doing. The lesson of course that partly can still do that. Which eh the rest? I gave the example of eh. Some municipalities had and do you still have ambitions for 2030. The bothers that swam waiting times should you not have ambitions? Or what are your ambitions? And what is it about? So through?</p>	<p>goals, the government can facilitate this process. We involve the citizens to implement these in the region and to cooperate more.</p>	<p>gaining speed and speed up innovations and experimenting.</p> <p>Cooperation with citizens is customization (maatwerk) per location, per house actually. Asking the right (political) questions to the municipalities and province helps the cooperation with citizens</p>
Corona implications	Corona did not make communicating any easier			
Decision making in the local council	<p>Formal decision making of the RES is through the local council</p> <p>Experts are involved to provide the local council members with</p>		A more democratic process that through the local council is not possible	Having a continuous process of keeping the alderman up to date with the newest information and leveling up their knowledge is essential for a good

	knowledge. There have been a lot of meetings with alderman to have a good dialogue and to level up the knowledge (x2)			<p>preparation and a good discussion for eventually the best outcome. Without this, it will be a mess. The local council has to make the decision, therefore they have to know what they are talking about (x3)</p> <p>→ this could also be done in an informal setting instead of a formal setting = this way, when the camera's are turned off during this informal meeting, they will hear other things that they normally would.</p>
Decision-making process	The steering group of the RES was set up to prepare the formal decision-making process, the RES has an advising role.	Currently people are at a level of only being informed, they play no role in the decision-making process. Except through the Fryske Energy Alliance.	Currently we have a process of: this is the decision and we will start with the implementation tomorrow. This can no longer be the process in today's society	Having a good dialogue, asking the right questions from the beginning and gaining support base by focusing on the realization helps with the decision-making process
Democracy	<p>Transparency of information and knowledge plays an important role.</p> <p>The local council has to do their job really well for a democratic process.</p> <p>The climate agreement asks for a 50% local ownership, a</p>	The RES and also Liander are the democratic legitimate, they can not make policy	<p>The RES does not play a role in the democratic process</p> <p>Democracy is not a genius way to manage the energy transition but at the moment it is the least bad way.</p>	<p>We are in need maybe of a different democratic form because of the many conflicting ideas of stakeholders. Civil deliberation plays an important role therein</p> <p>Monitoring and adapting the participation</p>

	democratic process is needed to finalize this goal			<p>process will become very important</p> <p>The governments have to be willing to let some of their power go to the civil society, this calls for a different process which can result into better progress of the transition</p>
Democratic legitimacy	The RES does not have a democratic legitimacy	Everything is chosen through the local council, this is very legitimate		
Different interests stakeholders	<p>Everyone has their own opinion that do not walk parallel next to each other.</p> <p>Business want fast results, citizens want to be served well, the government has to set up the policy.</p> <p>Also many different opinions in the local council.</p> <p>→ there has to be a general interest somewhere, we have continuously find this general interest.</p>			
Energy infrastructure	We do not have sufficient capacity for the energy transition. The energy net is already full. We can not afford all the electric cars, 5G network on the		Some principles of the RES are at odds with what is efficient with regards to the energy net.	

	<p>energy net. We can not build new business parks because of this problem</p> <p>→ It is hopeless</p> <p>We are walking behind in development. We did not even start the implementation and already have problems with the energy net. The biggest bottle neck at the moment of the process</p>			
Focus on customization and policy	Customization per house is needed for a successful energy transition.		The RES is more of a policy vision document about where we are going.	It is a continuous focus point to have customization on one side but also focus on a general policy on the other side.
Formal and informal role within the RES			<p>The governments part of the RES have a formal role, however the civil partners like the Energy Alliance, there is a continuous discussion whether they have an informal or formal role.</p> <p>Example: if a group of the Fryske Energy Alliances does not agree with what is stated within the RES, then they have to go follow a procedure with all</p>	

			<p>the 18 municipalities involved. They can not go against the RES because the RES is not official democratic legitimate group, the 18 municipalities made a decision</p> <p>→ so there is a informal structure within a formal coalition, the RES, but the formal decision is with the municipalities and formal objection is with the municipalities</p>	
Governance	The questions remains, how do we form governance within the energy transition			
Heat transition	The transition vision Heat were all set up individually per municipality (x2)			
Inclusion of academics	<p>Academica are not involved in the RES so far (x5)</p> <p>Science and academics are essential for the transition</p>	<p>Academica are involved only very little</p> <p>The academics are involved in some way, like the universities are at the table</p>		
Inclusion of business	Businesses often want to get involved from the stage where all the decisions are made	The relation between the government and business is good in my opinion	Sometimes business do not have a feeling that they have anything to say in the process. They come to us and just	

			as: okay you have rules to get by so just tell us what you need so we can start working. → but we want ideas from bottom-up.	
Inclusion of citizens	<p>In my opinion we have involved the citizens so far, however I cannot determine and judge my own work.</p> <p>With the transition vision of Heat, citizens get involved</p>	<p>Not everybody was involved actively. Through the Fryske Energy alliance a lot of groups are involved, however having maximal input from citizens remains an issue</p> <p>Citizens are only involved very limited up until now.</p>	<p>As of this moment, in my opinion there are not many citizens in Fryslan that know of the RES and that know what the RES does.</p> <p>Processes are starting to turn around, instead of top-bottom they become more bottom-up where citizens get the first attention, power and a say in the process.</p> <p>When we are working on involving citizens, often only a small group of citizens show up. We are missing large amounts of younger people, woman and children.</p>	<p>I think in the future we have to work on a simpler procedure, like participation procedures. Decision-making takes a long time now, to be more flexible this amount of time has to decrease. Making a solar park takes more than 4 years, this is a long time.</p> <p>Inclusion of citizens is a mutual process, if it does not interest the citizens, we can work very hard to involve them but it will not work.</p>
Inclusion of poor citizens	<p>Many people do not have enough money to transition to sustainable forms, we need to help these people and communicate a lot with them</p> <p>We have to go through a righteous democratic process. The social</p>		The gap between rich and poor gets even bigger with this energy transition	We can set up free advisors and energy lokets to inform also the poor people about their possibilities

	transition is very important			
Inclusion of stakeholders	<p>Stakeholders have to be informed, however, there is a limit at this moment however</p> <p>In the future, more and more often stakeholders are getting involved</p> <p>Business man, associations, village interests, we have to take them into account</p>	Often we see the same group of people when we are trying to have a participatory process. We have to make process to get everyone involved.	<p>This role is in the hands of the municipalities</p> <p>Inclusivity could maybe form a threat to the democratic process. (again the focus on flexibility and stability from the theory) → maybe they collide along the way</p> <p>The role of the local council plays an important role. At the moment that they decide, this is not going to happen, then we cannot do anything about it</p>	A citizens panel could be set up
Inclusion of the FEA (fryske energy alliance)	This process went very well so far, the FEA was involved and had the time to bring in their opinions and ambitions (x4)			
Inclusion of young people	<p>Youth plays an very important role in the energy transition. It is about their future.</p> <p>They can provide us with insights that we did not think about yet</p>			
Increasing gas prices	Increasing gas prices can provide us with the increasing the urgency of the energy transition			

Knowledge transfer	<p>On the official level (the higher level) there is a lot of knowledge transfer with.</p> <p>Stakeholders teach each other a lot along the way</p> <p>The Fryske Energy Alliance helps a lot with the knowledge transfer</p>		<p>From Liander: we find that the province and municipalities have little knowledge about what a energy company does. Therefore maybe not the right decision can be made</p>	<p>The RES could become a knowledge center in the future.</p> <p>Knowledge centers are important for the transparent transfer. We could set up an website with information and knowledge transfer.</p>
Local solutions/initiatives	<p>Looking more at local solutions becomes more and more important.</p> <p>There are a lot of small initiatives but at the moment they do not matter much</p> <p>Local initiatives are need to realize the goal of 50% local ownership</p>		<p>We should have started with a good conversation with the people instead of going in a technical conversation from the beginning. The technique is not important for people.</p>	
Monitoring	<p>At the moment we are trying to figure out what to do about monitoring, steps have not been made to implement it.</p> <p>Monitoring is essential, very essential because we set very hard deadlines and goals, so we have to stay in touch with what is working and what is not working</p>			
Neighborhood approach		<p>This will never work, there has to be a house to house</p>		

		approach for the transition to work		
Next steps RES/vision	<p>The implementation will be very exciting</p> <p>The power of the RES lies within the cooperation between municipalities</p>		<p>RES 1.0 was not dangerous because we were talking and discussing about the projects that were already happening. The next phase could become more difficult with more conflicts and more difficult conversations</p>	<p>The RES already has a facilitating party (in this case the Province) who brings together different groups, we are missing a directing/steering party = We already know that everything can never all be done at the same time, because we lack money, time and resources. Everything has to be faceted □ the central government says this should be the municipalities.</p> <p>Important to take into account → we are now focusing mostly on 2030, when we arrive at that moment we have to go through the entire process again to get to the goals of 2050. I expect this will bring a lot of conflict from people who are tired and already thought we would be done after 2030.</p>
No wind energy	<p>The province decided on no wind energy in Fryslan to not destroy the landscape. Not everyone was in favour of this decision.</p>		<p>A focus on no wind energy comes with the problem that investors start moving away from Fryslan, because they cannot find work there</p>	

			anymore, this is unfourtunate	
Policy & administrative role RES	<p>The RES has a form that has two sides: a policy side and a administrative side.</p> <p>What is correct on the policy side might not always be correct for the political side</p>		From this policy and administrative role of the RES we can work further down to the local level. This current structure helps to coordinate the energy transition	
Relation between 4helix	Depends on the phase that you are in.	<p>Cooperation between the 4 helix is not simple</p> <p>Understanding each other on a deeper level will help with the cooperation of the 4 helix</p>	As a leader, you can not focus too much on the 4 helix, because you might lose the connection with people	Focusing more on the 4 helix could create a greater impact of the energy transition
Relationship between the province and municipalities	This relationship is complicated. Often their policies are at odds with each other / are at right angles with each other (example, wind energy)		The province of Fryslan could work harder in cooperation with the municipalities	
RES is only a small part of the energy transition	There is so much more happening that only the RES when talking about the energy transition			
RES policy	The RES does not make the policy, the province and municipalities make the policy	The conflict about spatial integration has not actually taken place in the rest, one point zero, so there has been some discussion about it, but with this argumentation it has been moved to the current trajectory.	Generating own energy for our own people	Within the res in the fryske way, as much as possible from the bottom up, home owners are responsible for their own homes, municipalities facilitate. As much as possible at municipal level. Through the RES we bring

				everything together and we learn from each other. Building a knowledge center.
RES strenghts	<p>Organizing the conversation</p> <p>Bringin together the people</p> <p>Formal line between the central government and local government</p> <p>Cooperation between governments</p> <p>Finding common ambitions</p>		<p>This kind is lacking and basically I say, I say it's the position of the rest. He has potential. It can mean a lot, but that has to be support. Support from below, from below and from above that it is one. You didn't ask at all about how much money we have, or anything, whether it's enough.</p> <p>Answer no. That's none at all. Dr. is all. It's us. We don't even know if we'll get funding next year.</p>	
RES weakness	<p>The tasks of a RES are very limited</p> <p>No democratic legitimacy</p> <p>A focus on the big picture,</p>		<p>Sometimes I wonder why we set up the RES regions</p>	
RES working method	<p>Finding common ambitions, focus on large energy generation</p> <p>Constant search with what society wants</p>		<p>The RES does not make policy</p>	
Role of municipalities	<p>Contact with citizens</p> <p>Participation process</p>			
Role of Province	<p>Role of facilitator</p>			

Saving energy	This step is missing in the policies about the energy transition. The first and foremost step should be to save energy			
Shortage of people and knowledge	There is a shortage of people and knowledge whilst the transition is very technical and calls for many people to work on it Not enough employers within municipalities that focus on the energy transition			
Social integration and participation	The most essential goal of the RES policy		Participation for the sake of participation we have done from the beginning and we finally say there still I say: participation, yes, what is that? Is just normal talking to each other and listening to each other.	
Steering group RES				
Transparency	The policy and information should be transparent. However we did not do any research as to how transparent it is, so I cannot answer with precision (x3)	In my opinion it is important to be skeptic about transparency. For many people the energy transition is just not on their minds.		

Trust	Trust and leadership are essential			
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