



# Encouraging Citizen Participation and Engagement in the Energy Transition Process through Policy Instruments

A rural case study of the municipalities of Tynaarlo and Aa & Hunze

## Abstract

This thesis investigates the policy instruments employed by the municipalities of Tynaarlo and Aa & Hunze in the Netherlands to facilitate energy transition and explores their potential impact on fostering energy citizenship. By examining the policy landscape, the research identifies the main instruments employed to incentivize and promote sustainable energy practices at the local level. These instruments encompass a range of strategies, including financial incentives, regulatory frameworks, collaborative platforms, and educational initiatives. By assessing the potential influence of policy instruments on energy citizenship, the study aims to elucidate the extent to which these policies can empower citizens and encourage their participation.

Preliminary findings suggest that both municipalities have implemented a variety of policy instruments tailored to their specific contexts and goals. The analysis reveals that financial incentives, such as subsidies and tax incentives, play a vital role in motivating residents to adopt renewable energy technologies.

## Keywords

*Energy Transition, Energy Citizenship, Policy Instruments, Municipality, Sustainability*

# Colophon

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# Introduction

## 1.1 Background

Energy is fundamental to the functioning of our modern world and has far-reaching implications for our economy, environment and social well-being. (IPCC, 2011) The usage and production of energy accounts for more than 75% of greenhouse emission gasses that are emitted within the European Union (European Commission, 2019). Consequently, the European Union has recognized the need for a swift energy transition towards carbon neutrality by 2050. The Netherlands are trying to keep up with the energy transition by means of the 'Klimaatakkoord' (Klimaatakkoord, 2019).

Many countries are searching for policy solutions to advance the energy transition. As the world grapples with the challenges of climate change and the urgent need for sustainable energy solutions, local municipalities have emerged as key players in promoting the transition towards cleaner and more efficient energy systems.

This study will focus on policy instruments and how they affect energy citizenship. As policy instruments function on a multi-level scale, this research will investigate several different scales of policy instrument implementation in the Netherlands with a focus on the local scale. Energy citizenship is a crucial concept within the energy transition because it emphasizes the idea that energy production, consumption and governance are not just technical issues, but also deeply social and political ones that involve a range of actors and stakeholders (Wahlund & Palm, 2022). As such, it recognizes the importance of citizen participation and -engagement within socio-technical problems such as the energy transition.

## 1.2 Research problem

The research problem of this thesis is to investigate the policy instruments utilized for promoting energy transition within the municipalities of Tynaarlo and Aa & Hunze and to understand their potential impact on energy citizenship. The key focus is to explore the specific policy measures and tools employed by these municipalities to facilitate the transition towards sustainable energy sources and assess how these instruments can influence individuals' engagement, awareness, and sense of ownership in the energy transition process.

The two rural places have been selected as they are both unable to use a general plan and are therefore forced to use a more inhabitant-specific approach. Besides this, social cohesion, which is regarded to play an important role in energy citizenship, is regarded as higher in rural areas (Méndez et al., 2021). By comparing the two cases, this research hopes to address the advantages and disadvantages of policy instruments and their effect on energy citizenship.

The main research question can be identified as:

- ❖ *What policy instruments are used to promote energy transition within the municipalities of Tynaarlo and Aa & Hunze and how can they affect energy citizenship?*

To further investigate the different aspects present within the question, a set of secondary questions will be used to guide the process. These questions follow:

- ❖ *Which policy instruments are available within the energy transition of these municipalities and what are their effects on a local scale?*
- ❖ *How do the policy instruments encourage citizen participation and engagement in the energy transition process?*
- ❖ *What are the social, economic, and environmental impacts of the policy instruments on the local communities that are included within the energy transition of these municipalities?*

### 1.3 Study area

The RES region of Drenthe is a collaboration composed of the province of Drenthe working together with 12 municipalities and 4 waterboards. These governmental bodies work together with network operators and other societal partners such as citizen initiatives, local companies and citizens themselves in order to achieve a total amount of 3,5 TWh of carbon-free energy by 2030 (Unie van Waterschappen, 2019). Within this RES region, two municipalities have been selected for further research, namely those of Aa & Hunze and Tynaarlo (*figure 1*). Both municipalities have been selected as they are comparable in size and numbers, and are both unable to use a general plan approach. (Aa & Hunze: 278.9km<sup>2</sup>; 25.386 inhabitants, Tynaarlo: 147.7km<sup>2</sup>; 33.698 inhabitants) (Gemeente Tynaarlo, 2022; Gemeente Aa & Hunze, 2022).

Many (larger) municipalities favor a district-based approach to develop sustainable alternatives as these require less effort and are more easily implemented by use of local-scale policy instruments (Gemeente Tynaarlo, 2022; Gemeente Aa & Hunze, 2022). However, municipalities in more rural areas are increasingly abandoning the district-based approach. In the more rural municipalities, fewer collective solutions are possible, so often more individual solutions are required in order to become more sustainable. Given the implementation strategy of these municipalities, there is a more municipality-wide approach (individual approach). At the same time, a number of collective sustainability opportunities can be explored. Therefore, policies aimed at target groups or building typologies are preferred as a more effective solution (Gemeente Tynaarlo, 2022; Gemeente Aa & Hunze, 2022). These ‘customized’ plans require a tighter collaboration between municipalities and their target groups, as the needs of different groups will depend on their situation.

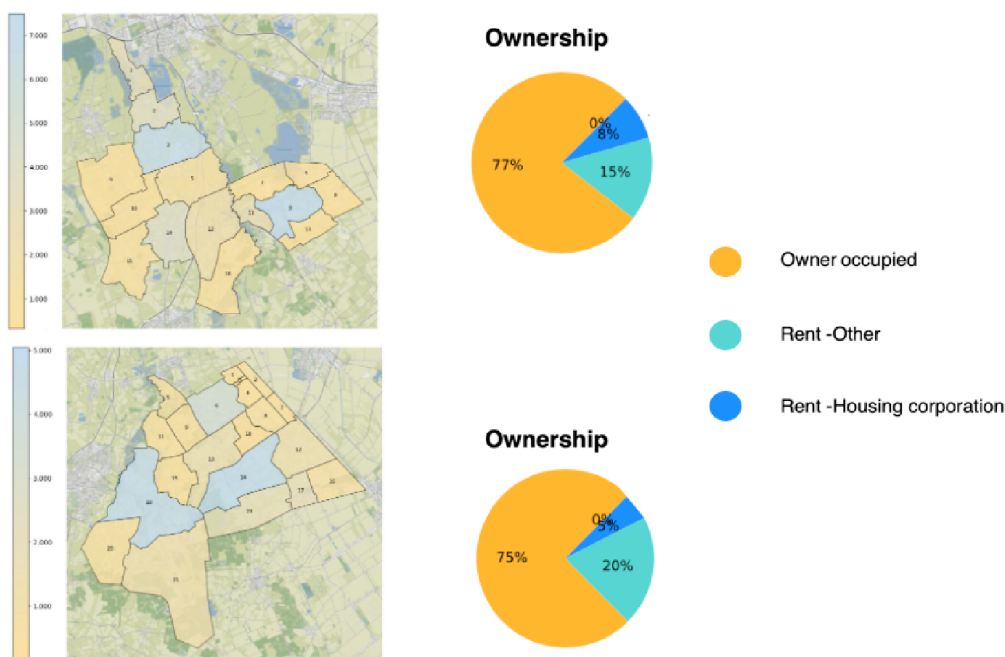


Figure 1. Inhabitants number distribution (left side) and property percentages distribution (right side) of the municipalities of Tynaarlo (row above) and Aa en Hunze (row below). Translations have been provided in legend on the right side of the figures. Dated 2019. Sourced from Allecijfers.nl(2023).

# Theoretical framework

## 2.1 Energy Citizenship

Over the past few years, the relevance of the term energy citizenship in relation to the energy transition has increased as pointed out in the article by Wahlund and Palm (2022). The term energy citizenship relates to a person that is actively participating in energy networks, and *“tends to emphasize behavior change and ways for individuals to participate in energy systems, thereby often focusing on individuals as agents of change.”* (Wahlund & Palm, 2022).

To meet the goals set in the Green Deal (European Commission, 2019), there is a demand for more decentralized energy networks as opposed to the current centralized form that is present within most European countries. The green deal has been created by the EU as a set of policy initiatives in order to reach the overarching goal of reducing greenhouse gasses for 55% by 2030 and achieving carbon-neutrality by 2050.

Since decentralized systems have different requirements for its implementation, there is a need for adaptation within the planning process. Most centralized networks were able to use command and control policy instruments in order to achieve their goals as corporations and citizens are considered as consumers within this relationship (Kemp, 2010). However, decentralized networks have more parties involved within their planning process, as goals need to be achieved that are in need of an overarching collaboration guided by governmental bodies. These collaborations often consist of governmental bodies, local citizens, citizen initiatives and private corporations (Beermann & Tews, 2017).

In order to realize more bottom-up collaboration between involved parties, citizens are desired to move away from their role of consumer into a role of prosumer (Burke & Stephens, 2017). This ‘switch of roles’ however, is determined by one’s willingness and knowledge towards any substitution regarding their energy supply and demand. By actively including citizens within the process of the energy transition, governmental bodies are able to provide resources and information on the possibilities of this transition on a more individual scale. These local-scale collaborations are therefore better able to render solutions that see both parties involved achieve their goals. Therefore, a balanced mix of policy instruments is necessary to enable energy citizenship and achieve energy transition goals.

## 2.2 Policy Instruments

As specified by Mohammed Ali (2013), policy instruments are “a linkage between policy formulation and policy implementation. The intention in policy formulation is reflected in policy implementation through instrument. Policy instruments are often known as governing tools as well, particularly when they are applied with all conditions associated to them.” This linkage is essential for the formulation of fit-to-scale policies as a well-constructed policy should bridge the gap from becoming aware of the problem towards problem solving.

As governmental bodies are now tasked with the challenge of creating prosumers, they are urged to use their policy instruments in order to achieve desired results. Policy instruments can remove barriers and provide incentives that make it easier for individuals, organizations, or communities to engage in a desired behavior or achieve a desired outcome (Park, 2015). However, the new resulting policies are subjected to existing policies, which are often centered around fossil fuels (Schmidt & Sewerin, 2019). The path-dependency of policies therefore plays an important part to address in the energy transition. If governmental bodies want inhabitants to engage with long-term plans, the policies adopted will need to impact the psychological behavior of inhabitants to have an enabling effect towards their goals. (Bemelmans-Video et al., 1998).

The subset of policy instruments that form policies can be ordered into a tri-fold system as presented in the research conducted by Park (2015). The subset consists of three different policy instruments that can be classified by their respective form and ways they act upon the target group (*figure 2*).

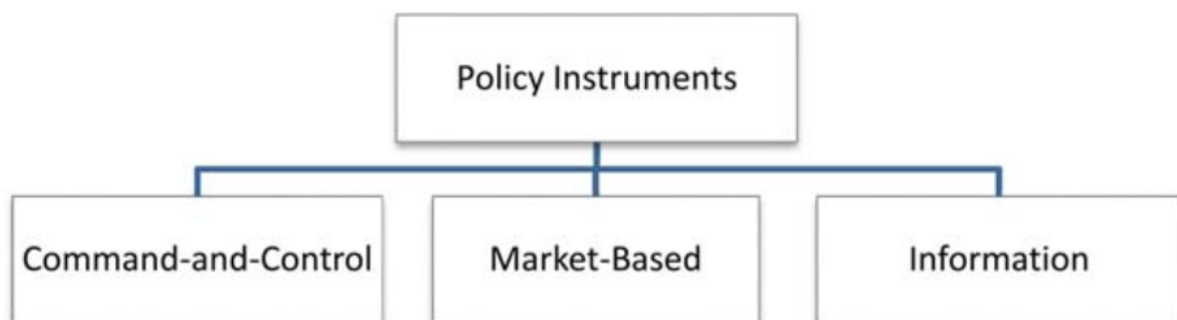


Figure 2. Tri-fold system of policy instruments. (Park, 2015)

### Command-and-Control Instruments (CCIs)

Authoritative application in governmental intervention, often by forceful and coercive ways. However, coercion can often lead to more public pushback (Beauchampet & Walsh, 2021). CCIs can also be divided into a subset of types such as performance and process standards, licenses or permits, bans and zoning. These were often used by governmental bodies in order to achieve their goals from a top-down perspective. The need for such instruments is often in technical rationale applications as presented in the research by de Roo & Rauws (2012), the spectrum of rationale can be seen in *figure 3*.



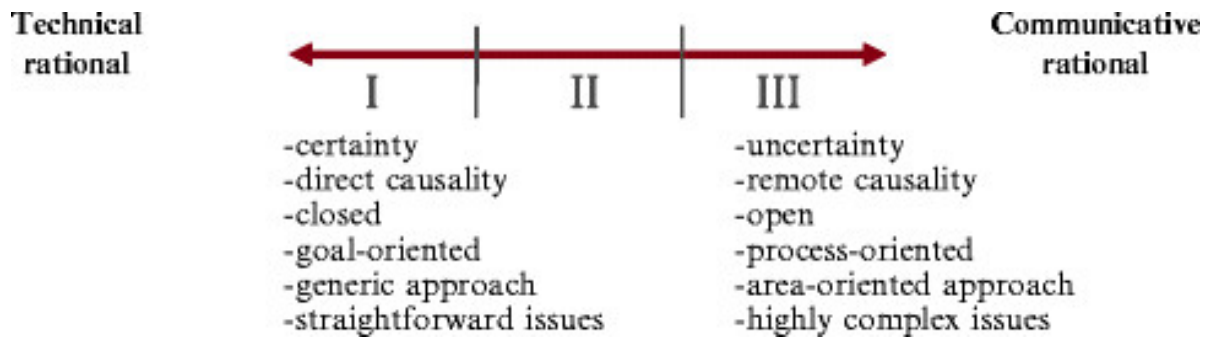


Figure 3. Spectrum of rational. These range from closed (left) to open (right) process design. de Roo & Rauws (2012)

The technical rationale is applied upon 'straight-forward' situations where there is low citizen involvement needed for a problem to be resolved within the spatial domain. This is elucidated upon by factors such as certainty of resolving the situation or a goal-oriented approach. Examples of Command-and-Control based policy instruments are below (figure 4).

<b>Energy efficiency standards</b>	Policies that establish minimum energy efficiency standards for buildings, appliances, and vehicles can reduce energy consumption and promote the use of renewable energy sources.
<b>Zoning Regulations</b>	Zoning regulations control land use by designating specific areas for residential, commercial, industrial, or recreational purposes. These regulations can dictate the type of structures allowed, building heights, or environmental considerations within each zone.
<b>Technology Mandates</b>	Governments can mandate the use of specific technologies to achieve policy objectives. For instance, regulations may require the use of renewable energy sources, the installation of pollution control technologies, or the adoption of energy-efficient technologies in buildings.
<b>Licensing and Permitting</b>	Governments may require individuals or businesses to obtain licenses or permits to engage in certain activities, such as operating a business, practicing a profession, or conducting research. These licenses and permits typically come with specific conditions and requirements.

Figure 4. List of CCI's. Data sourced from Gemeente Tynaarlo (2022) and Gemeente Aa & Hunze (2022).

## Market-Based Instruments (EIs)

Financial incentives to motivate the target group to comply. These are often in the form of tangible payoffs by ways of money or liberties (Harrington et al, 2004). Often multiple incentives are used in combination which work via market mechanisms in order to produce the desired results. Prices for certain goods, resources or services might not genuinely reflect the social or environmental impact. By adjusting the market-prices through policy, societal objectives can be better aligned with market-prices (Bengtsson et al., 2010). Market-based measures can be considered a mixed-method policy instrument itself, as it can have both coercive and informative features. The resulting policies often have a utilitarian nature as they are aimed at achieving maximum welfare (Park, 2015). Examples of Market-Based policy instruments are below (*figure 5*)

Renewable energy standards	Policies that require a certain percentage of energy to come from renewable sources can encourage the development and use of renewable energy technologies. For example, the Renewable Portfolio Standard (RPS) in the United States requires utilities to generate a certain percentage of their electricity from renewable sources (NCSL, 2021).
Feed-in tariffs	Policies that provide a fixed rate for electricity generated from renewable sources can incentivize investment in renewable energy technologies. Feed-in tariffs guarantee a certain price for renewable energy, which can help to make renewable energy projects more financially viable.
Tax incentives	Policies that provide tax credits or other incentives for renewable energy production or energy efficiency upgrades can encourage investment in renewable energy technologies and reduce energy consumption.
Research and development funding	Policies that provide funding for research and development of renewable energy technologies can accelerate the development and deployment of new technologies.

Figure 5. List of EI's. Data sourced from Data sourced from Gemeente Tynaarlo (2022) and Gemeente Aa & Hunze (2022).

## Information Instruments (IIs)

Persuade policy targets by educating and informing market suppliers and customers. It assumes that the lack of knowledge present within the target group prevents them from making the best possible choice. This can take the shape of knowledge transfer, communication and persuasion. Information instruments can be divided into two subtypes: information *as* and information *on* (Park, 2019; Bemelmans-Video et al., 1998). Information *as* is information as a policy instrument itself, information *on* is used to convey knowledge on other policy instruments' existence, availability and meaning.

This instrument is often used as a solution within problems of the communicative rationale (*figure 3*). These problems are often highly complex, with a lot of parties involved. Therefore a bottom-up approach is desired in order to meet all parties' expectations to some degree by involving them (de Roo & Rauws, 2012). In order to facilitate this process in an orderly way, active involvement of citizens plays a significant role. However, to stimulate citizens into becoming actively participating, they need to feel included within their local community. This implies that social cohesion has a significant share in catalyzing the process of having citizens participate actively.

## 2.3 Social Cohesion

Social cohesion is an important factor to consider when implementing spatial policies on a municipal scale. Social cohesion refers to the degree to which individuals and communities have a sense of belonging, trust, and solidarity with one another. In the context of municipal spatial policies, social cohesion can affect the success of policies related to housing, transportation, public spaces, and other aspects of urban development.

Research has shown that social cohesion is positively associated with various measures of urban well-being, including safety, health, and economic development (Kawachi & Berkman, 2000). For example, a study by Hamidi et al. (2016) examined the relationship between social cohesion and the implementation of a pedestrian and bicycle infrastructure plan in Los Angeles. The study found that neighborhoods with higher levels of social cohesion were more likely to support and use the new infrastructure, and that social cohesion played a key role in building community support and participation in the planning process. By fostering a sense of community and belonging, municipal governments can build trust and support for development projects and increase their chances of success. Social cohesion therefore plays a significant role in the foundation of energy citizenship.

Municipalities face several challenges related to social cohesion when implementing spatial policies. These challenges are well documented in the literature and include issues such as social inequality (Burke & Stephens, 2017), fragmentation and segregation (Méndez et al., 2021), language barriers (Beauchampet & Walsh, 2021), and a lack of community engagement (Beauchampet & Walsh, 2021).

For instance, a study by Hamidi et al. (2018) found that social inequality is a significant barrier to community cohesion and engagement in urban development projects. The study highlights the need for inclusive community engagement strategies that address the concerns and interests of all members of the community. Effective community engagement strategies that promote dialogue, participation, and collaboration can help to build trust and support for urban development projects (Amin & Thrift, 2002).

Overall, the challenges related to social cohesion that municipalities face when implementing spatial policies are complex and require careful consideration of the unique social, economic, and cultural contexts of each community. By addressing these challenges through inclusive community engagement strategies and promoting social mixing and interaction, municipalities can build trust and solidarity among community members and increase their chances of success in implementing spatial policies.

## 2.4 Conceptual framework

The conceptual framework in *figure 6* combines both *figures 2 and 3*. The spectrum of policy rationale has been applied upon the set of different policy instruments. CCI's find best practice in a closed process. Market-based can address both sides of the spectrum and is most flexible in its usage. Information finds best practice in communicative-rooted problems where process-design is open and there is uncertainty of factors. Additionally, information is seen as a minimal first step in encouraging energy citizenship by increasing social cohesion. Informational instruments therefore play a pivotal role in the activation of active community engagement.

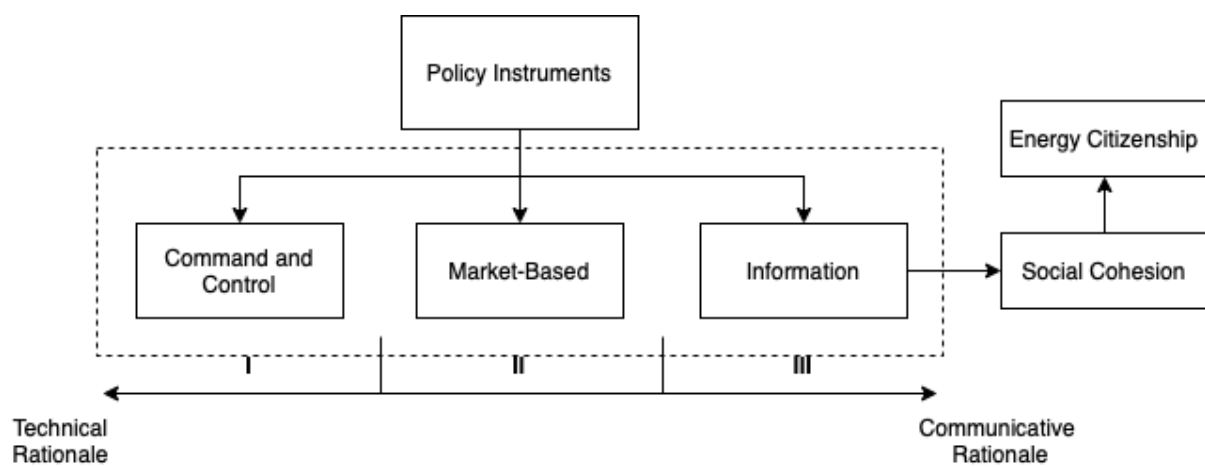


Figure 6. Conceptual framework.

# Research Methodology

## 3.1 Structure

This research will be conducted in a qualitative approach. This will consist of a literature review, a policy document analysis, a media analysis and a survey. The qualitative approach has been chosen as it is able to give more insight into the factors that determine how the main concepts relate to each other. Besides this, it may offer more understanding of the behavioral choices of the inhabitants. Qualitative research does have some downsides, as the significance of the results of the research will depend on first-hand data and respondents might not accurately represent the general population of that area.

The literature research is used to build a foundation out of secondary data in order to place the concepts in their context. Since there are a lot of varying concepts, it is of importance to accurately use and explain these as in the theoretical framework.

A policy document analysis is used to research the goals, plans and issues regarding the energy transition in the municipalities of Tynaarlo and Aa & Hunze. This is done in order to research the nature of the policies and the policy instruments that constitute these. This provides perspective on the multi-level usage of policy instruments. The investigated documents range from a supranational to local scale. The search terms for the policy document analysis have been provided in section 3.2 and a table with all researched documents (including media analysis) has been provided in *figure 7*. These documents will be coded manually to find relations between the documents. The used codes have been provided in *figure 8*.

Additionally, a media analysis of local newspapers and other mediums is conducted. These mediums are of importance in determining the relationship between inhabitants and the municipalities, since the municipalities use these mediums in order to communicate their plans towards inhabitants. Two newspaper articles and three websites have been selected as reference material on how these municipalities communicate their resources.

Finally, a survey request was submitted to seven municipal officials, two municipalities and a housing corporation (*see Appendix*). The results of this survey would help to gain awareness of the processes of different policy instruments and their application. The survey was planned as an open-ended interview to maintain the flexibility of a persons' opinion. However, only 4 replies were gathered and no interviews were able to be planned. Therefore, no survey responses were gathered and the survey was unable to provide additional insights. The lack of response is partly due to the deadline of the RES 2.0 during the research, and low municipal capacities for the two municipalities. However, the lack of first-hand data decreases the significance of eventual results. To make up for this, additional data provided by Blekkenhorst et al. (2019) has been used. This data researched the willingness of Drentse inhabitants in the energy transition and is able to give insight into general patterns.

## 3.2 Data collection and analysis

The documents that were selected for further analysis are presented in *figure 7*. The policy documents (11) have been selected by searching upon several terms. These terms include, but are not limited to: 'Energy Citizenship', 'Policy Instruments', 'RES', 'Energietransitie', 'Beleidsinstrumenten', 'Gemeente Aa & Hunze', 'Gemeente Tynaarlo', 'lokale initiatieven', 'energie initiatieven' and 'municipal policies'. Other documents include local newspaper articles (2) and website articles (3).

<b>Title of document</b>	<b>Publisher</b>	<b>Date of publication</b>
Analysedocument	Gemeente Aa & Hunze	05/10/2022
Transitie Visie Warmte	Gemeente Aa & Hunze	11/01/2022
Klimaatovereenkomst	Ministry of Economic affairs and climate	28/06/2019
Warmtevisie Tynaarlo	Gemeente Tynaarlo	02/2022
Voortgangsdokument Regionale Energiestrategie (RES) regio Drenthe	Gemeente Drenthe	03/2023
Raadsvergadering	Gemeenteraad Tynaarlo	06/04/2021
Beantwoording aanvullende schriftelijke vragen CDA over energiearmoede	Gemeenteraad Aa & Hunze	28/03/2023
Amendement VVD RES Drenthe - afdwingbaarheid	Gemeenteraad Aa & Hunze	03/06/2021
Werkblad Participatie	RES Nederland	n.d.
Programmaplan NP RES 2.0	RES Nederland	n.d.
Inwoners De Fledders in Vries zonder gas in 2035?	De krant van Tynaarlo (local website)	19/05/2023
Starterspakket energietransitie	De Schakel (local newspaper)	28/05/2023
Inwoners in financiële nood krijgen hulp van Gemeente Tynaarlo	De krant van Tynaarlo (local website)	01/06/2023
Werkblad Lokaal Eigendom	RES Nederland	n.d.
Raad Aa en Hunze wil niets weten van dwang in energietransitie en morrelt wat aan de tekst van de Regionale Energiestrategie	Dagblad van het Noorden (local website)	04/06/2021
Extra financiële middelen voor energietransitie in Drenthe	De Schakel (local newspaper)	06/07/2022

Figure 7. Table of used documents for policy document analysis.

<b>Theme</b>	<b>Description</b>	<b>Sub-theme</b>
Energy Citizenship	Documents describe citizen engagement, involvement or any other participatory form.	<ul style="list-style-type: none"> <li>● Social cohesion</li> <li>● Citizen involvement</li> <li>● Consumer/Prosumer</li> <li>● Community</li> </ul>
Policy Instruments	Documents describe how policy instruments are used or designed. Also includes reflection and evaluation documents.	<ul style="list-style-type: none"> <li>● Policy</li> <li>● Municipal</li> <li>● Design Process</li> <li>● Governance</li> <li>● Planning</li> <li>● Implementation</li> </ul>
Energy Transition	General documents for transitional goals.	<ul style="list-style-type: none"> <li>● Sustainability</li> <li>● Low-carbon</li> <li>● Fossil fuel</li> </ul>

Figure 8. Codebook of used themes with according description and subthemes. Used for manual document analysis.

### 3.3 Ethical Considerations

Ethical considerations have been taken into account for this research in order to ensure that this research is conducted in a responsible and respectful manner. Secondary data has therefore been properly sourced and referenced. Next to this, respondents need to consent to having their answers used and to have the option to reply anonymously. The research has been conducted according to the no-harm principle. Researcher is not aware of personal preference that would influence the process of this research and tried to prevent personal statements. Other reflections throughout the research can be found under the reflection header (*Ch. 5.2*).



### 3.4 Expectations

As presented in the conceptual model, there are several policy instruments available for municipalities to promote the energy transition. The author would expect that the effects of these instruments depend on the scale that they will be implemented. As coercion often leads to more pushback, CCI's don't seem fit in encouraging people, but seem essential in setting up a framework of standards. These seem more fit on a supranational to national scale. EI's are usable in a wide variety of cases. As they can incentivize people by financial means, I would find they are of importance in stimulating people to become more sustainable. Municipalities or governments might use these to stimulate investments in infrastructure or new techniques on supranational to local scale. II's seem best fit for encouraging the energy transition, as people won't invest if they don't see any advantages. Besides this, in encouraging energy citizenship, information is regarded as the minimal first step. The author would therefore expect that information as a policy instrument is regarded as an important tool in stimulating inhabitants from supranational to local scale.

## Results

In the global pursuit of a sustainable future, the energy transition process plays a pivotal role. To ensure its success, citizen participation and engagement are crucial. Policy instruments serve as vital tools in encouraging and facilitating such involvement. In order to provide a framework for successful use of policy instruments, a clear outline of the specified area is essential for fit-to-scale policies.

Several factors have been appointed as reasons for people to partake in the energy transition within Drenthe by Blekkenhorst et al. (2019). These results were sampled from a group of 973 inhabitants. The most important factor that became obvious in this research is that the **expenses for the energy transition will be fairly divided between income groups** (1). This is followed by; **reducing climate change** (2), **positive effects on society** (3), **green energy** (4), **involvement of inhabitants** (5) and **lower energy costs** (6).

Additionally, the research was able to provide other statistics that can assist municipalities for designing their process, specifically when aimed at target groups. For instance, when age increases, people seem to attach more value to fair division of costs (1) and involvement (5). An example is that of the local initiative 'De Brug' in Gasselternijveen (Aa & Hunze), this initiative mostly consists of elderly people that are concerned with preserving their village. This initiative is responsible for the construction of a 10 hectare solar park, generating around 3.2-3.5 MW, which is owned by the initiative for 50% (Blekkenhorst et al., 2019). The construction of this site was only possible due to the initiative backing the process as municipalities have a difficult job to install such a site. Initiatives are able to play a pivotal role in connecting local inhabitants to municipal plans by creating support in their communities.

The research was also able to show the importance of building typology and residential status. Inhabitants that have been domiciled within an area for a longer period find it increasingly less important to receive subsidies in order to motivate them into becoming more sustainable on one's own. Besides this, owner-occupied houses are related to higher citizen involvement (5), while social housing inhabitants find lower costs (6) more importantly and are less motivated by reducing climate change (2).

Furthermore, there have been several reasons for people to become more sustainable on their own. Generally, lower costs (6) and reducing climate change (2) are appointed as main reasons for people to become more sustainable individually. For owner-occupied housing specifically, the value of the house is the most important factor.

Finally, inhabitants have also stated their preference of what phase of the process they are to be involved in. These vary from; the initial phase (33%), the middle phase (54%) and the end phase (14%). Most people would prefer to be involved when plans have been proposed, but no decisions have been made. Several people within the research have noted that they do not feel heard, mostly due to being involved in a late phase of the process where they are not able to alter the design. Therefore, early involvement is recommended as this seems to prevent pushback and increase bottom-up collaboration.

To summarize, there are diverging interests and factors in play that affect the design of policies regarding the energy transition. Therefore it is essential to be aware of an area's (general) characteristics before designing such a policy. Moreover, policy instrument design plays a crucial role in this design as well. The different policy instruments that are used by the municipalities of Tynaarlo and Aa & Hunze have been listed below.

Noted here should be that support for policies does not translate into inhabitants and companies using the resources made available by municipalities. When goals are set in long-term relation to the policy, the support of available resources and the legitimacy of policy purpose seems to decrease. Therefore, effective policy instruments prioritize public consultation and engagement. They establish mechanisms that allow citizens to provide input, voice concerns, and actively participate in decision-making processes. Public hearings, citizen advisory boards, and online platforms serve as channels for inclusive dialogue. By involving citizens in policy development and implementation, these instruments ensure that the energy transition reflects the collective aspirations and needs of the people. It promotes a sense of ownership and instils confidence in the process.

## 4.1 Command-and-Control

Policy instruments create regulatory frameworks that facilitate citizen participation in the energy transition. Recognizing the importance of distributed energy resources, such as rooftop solar panels and home energy storage systems, these frameworks enable individuals to generate and sell their own energy. By providing favorable policies, governments empower citizens to become active contributors to the transition. This not only encourages participation but also helps decentralize the energy system, making it more resilient and sustainable.

However, regulatory frameworks are path-dependent, as the presence of earlier instated regulatory frameworks might hinder the development potential of new frameworks. Additionally, command-and-control legislation provides no incentive to improve environmental quality beyond the norm specified by a specific law. Inhabitants have little motivation to improve after the command-and-control regulation is met. For instance, the conflict between Russia and Ukraine has caused oil prices to soar internationally (IEA, 2022), leading to the instatement of the “energieplafond” (Rijksoverheid, 2022). This regulatory framework was accepted to prevent energy prices from becoming too high for inhabitants. However, this has caused investments for sustainable alternatives to slow down for the general population (IEA, 2022). Frameworks that positively regulate fossil fuel prices seem to negatively affect the level of sustainable investments.

This makes the duality of command-and-control instruments, as the municipalities benefit from assisting inhabitants in order to increase social cohesion but at the same time are required to meet certain norms regarding the energy transition (Klimaatakkoord, 2019). The municipalities of Tynaarlo and Aa & Hunze are trying to address this by making changes within their environmental framework. These range from altering permits, building codes, zoning regulations and other programs (*omgevingsvisies*). By altering these frameworks they

will more effectively be able to arrange plans within the environment. The goal is to create a level playing field that fosters bottom-up collaborations and creates more chances to facilitate inhabitants' ideas. Flexibility of frameworks can therefore be considered an advantage for future proof planning.

## 4.2 Market-Based

Governments employ financial incentives and subsidies as effective policy instruments to encourage citizen engagement in the energy transition. By reducing the financial barriers associated with adopting renewable energy technologies, these instruments make sustainable solutions more affordable and appealing. Tax credits, grants, and feed-in tariffs are examples of such incentives. By leveraging these mechanisms, citizens are motivated to participate actively in the transition process.

Cost appears to play an important role and Drentse respondents consider social energy transition important; share costs and benefits fairly (Blekkenhorst et al., 2019). The transition must be affordable for everyone. Accessible subsidies can contribute to these issues. Current intermediary parties that provide such subsidies are in place from national to local scale, but need to reach their intended target group in order to achieve best results. This can best be done through providing accurate information for target groups.

Subsidies and incentives are provided on both individual and collective bases. As Drentse inhabitants tend to postpone long-term investments over short-term savings (Blekkenhorst et al., 2019), the municipalities are tasked with encouraging people to choose a long-term option. Both municipalities have recently started to accommodate 'starter packages' targeted at new inhabitants and people with a lower income in order to keep the energy transition affordable to all (Gemeente Tynaarlo, 2022; Gemeente Aa & Hunze, 2022). However, as net congestion prevents people from 'selling' solar energy in parts of Drenthe, the state is urged to address active market forces in order to pursue long-term investments for solar energy. Therefore, a combination of both short- and long-term investments is currently stimulated by both municipalities.

### 4.3 Information

One way policy instruments foster citizen engagement is by providing information and raising awareness. Understanding the benefits of transitioning to cleaner energy sources is essential for active involvement. Policy instruments disseminate knowledge about renewable energy technologies, energy efficiency measures, and the positive impact of sustainable energy practices. By enhancing citizens' understanding, these instruments create a foundation for their participation.

As informational policy instruments are regarded as fitting for the energy transition, these measures are explicitly addressed from supranational to local scale (Green deal; Klimaatakkoord; RES Drenthe). According to Drentse respondents (Blekkenhorst et al., 2019), the most important role of local politics in Drenthe is to inform and educate; carry good information about both the measures to be taken and the urgency and consequences of climate change.

The investigated municipalities mostly communicate their plans with inhabitants through the local newspaper, letters and public meetings. However, as target groups have preferred forms of communication (Blekkenhorst et al., 2019), both general and specific measures are to be taken. By specifically targeting certain groups, individuals will be more aware of the possibilities of becoming more sustainable that are fit to their situation. This approach works well with the individual approach that both municipalities use.

### 4.4 Social Cohesion

Policy instruments recognize the power of community involvement in driving the energy transition forward. To this end, they establish programs that empower citizens to participate collectively. Community solar projects, energy cooperatives, and shared renewable energy initiatives are just a few examples. These initiatives promote collaboration, enabling citizens to pool resources, share costs, and collectively benefit from renewable energy generation. By fostering a sense of ownership and shared responsibility, community-based programs generate meaningful engagement.

Within these municipalities social cohesion is stimulated on a local and regional scale by organising events that foster connectedness of inhabitants (Bloemencorso, Eelde, Sport & Spel Annen, Paardenmarkt Zuidlaren, etc.). Municipalities regard social cohesion as an important factor for creating a support base for sustainable policies. Local initiatives are able to connect municipal support with local support in order to achieve goals from a bottom-up perspective on a collective scale. These initiatives are an accessible gateway into creating a win-win scenario for both the area and the municipality. This can be seen in the case of local initiative 'De Brug', which was only possible due to the connection between inhabitants and municipal plans that the initiative had fostered.

To summarize, municipalities are able to create new opportunities for a sustainable transition by creating an environment where people feel connected to each other. By stimulating

measures or plans that increase social cohesion, therefore assisting in bottom-up collaboration and prevention of coercion, people seem to attach more value to their environment. This creates collective opportunities for both inhabitants and municipalities to explore. By using policy instruments in order to incentivize people to work collectively (financial support for local initiatives; Aa & Hunze), the municipality is more easily able to give voice to those concerns. By setting up for social cohesion, the municipality can work towards reducing the amount of people that feel excluded from the process by trying to include them within their community.

## Conclusion

In the journey toward a sustainable energy future, citizen participation and engagement are integral. Policy instruments serve as catalysts, encouraging individuals and communities to actively participate in the energy transition process. Through information dissemination, incentives, community-based programs, regulatory frameworks, and public engagement mechanisms, the municipalities of Tynaarlo and Aa & Hunze are able to empower citizens. By creating an enabling environment for their involvement, policy instruments pave the way for a more inclusive, resilient, and successful energy transition.

The financial incentives offered by the municipalities, such as grants and subsidies for renewable energy installations, have motivated individuals and businesses to adopt sustainable energy practices. These incentives not only lower the financial barriers to renewable energy adoption but also incentivize residents to actively engage in energy transition efforts. As a result, energy citizenship is enhanced as individuals become active participants in the transition process, taking responsibility for their energy choices and contributing to the overall sustainability goals of their communities.

Furthermore, the regulatory frameworks established by the municipalities have played a significant role in shaping energy citizenship. By implementing policies such as building codes and zoning regulations that prioritize energy efficiency and renewable energy integration, the government and municipalities have created a supportive environment for sustainable practices. These policies encourage residents to consider energy efficiency measures and renewable energy sources when constructing or renovating buildings, thereby promoting a culture of energy citizenship where individuals recognize the importance of their energy consumption patterns and strive for more sustainable alternatives.

Additionally, community engagement initiatives have been crucial in fostering energy citizenship within the municipalities. By organizing workshops, public consultations, and awareness campaigns, the municipalities have empowered residents to actively participate in the decision-making processes related to energy transition. This inclusive approach not only allows individuals to voice their opinions and concerns but also encourages them to take ownership of the energy transition agenda. Through participation in community initiatives, residents develop a sense of belonging and responsibility, increasing social cohesion, driving them to make sustainable energy choices and contribute to the collective goals of the municipality.

In summary, the policy instruments employed by the municipalities of Tynaarlo and Aa & Hunze are effective in promoting energy transition and influencing energy citizenship. By offering financial incentives, establishing supportive regulatory frameworks, and fostering community engagement, these municipalities have encouraged residents to actively participate in the energy transition process. As a result, groups of individuals have adopted their roles as energy citizens, taking responsibility for their energy consumption and making sustainable choices. It is through the combined efforts of policymakers and residents that meaningful progress towards a greener and more sustainable future can be achieved at the local level.

## 5.1 Reflection

One of the key strengths of this research lies in its focus on policy instruments. By investigating the specific measures employed by the municipalities, the study offers insights into the strategies utilized to promote energy transition. Another strength of the research is its emphasis on the concept of energy citizenship. By exploring the relationship between policy instruments and energy citizenship, the study addresses a crucial aspect of community involvement in the energy transition process. This focus can offer valuable insights into the social and behavioral dimensions of energy transition, which are often overlooked in traditional policy analyses.

However, the absence of surveys in the research design is a notable weakness. Surveys can provide qualitative data and capture the perspectives and experiences of the residents directly affected by energy transition policies. To address this weakness, future research could consider incorporating surveys or other empirical methods to complement the existing analysis.

## 5.2 Recommendations

Based on the analysis of policy instruments used to promote energy transition within the municipalities of Tynaarlo and Aa & Hunze, and their potential impact on energy citizenship, the following recommendations are put forth:

- ❖ **Strengthening Community Engagement:** Municipalities should focus on enhancing community engagement initiatives to foster energy citizenship.
- ❖ **Tailoring Policy Instruments:** Policymakers should tailor policy instruments to suit the specific needs and characteristics of each municipality.
- ❖ **Developing Collaborative Networks:** Establishing collaborative networks with relevant stakeholders, including local businesses, research institutions, and energy providers, can foster knowledge sharing and collaborative problem solving.
- ❖ **Increasing Access to Information:** Municipalities should prioritize the provision of accurate and accessible information regarding energy transition initiatives.
- ❖ **Monitoring and Evaluation:** Continuous monitoring and evaluation of policy instruments and their impact on energy transition and energy citizenship are essential.

Further research could look into the factors that determine the effectiveness of an individual approach, the formation of energy citizenship in urban areas and how municipalities might be able to ease the process for local initiatives.



### 5.3 Discussion

Since rural areas differ from urban areas, the theory may differ in application if it is aimed at urban development. Therefore it is of importance to consider that methods applied within rural context might not transfer to the urban context and vice versa. However, as research would suggest (Broto, 2017; Lockert et al., 2019), local scale application can be used within smaller-scaled 'energy communities', that can be present in urban areas. Therefore I would suggest that the transferability of policy application is possible from a bottom-up perspective, following from small scale to a larger scale. Consequently, this research centers itself on local level application of policy instruments as people will most likely be more directly involved.

## Timetable

Week →	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Introduction	■	■																	
Literature		■	■	■	■	■	■												
Theoretical Framework			■	■	■	■	■	■	■										
Methodology				■	■	■	■	■	■	■									
Analysis						■	■	■	■	■	■	■	■						
Results										■	■	■	■	■	■	■			
Conclusion												■	■	■	■	■	■	■	■
Final Submission																			■

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# Appendices

## Appendix A

### Vragenlijst Draagvlak en Energietransitie

*Voor mijn bacheloronderzoek binnen de studie 'Spatial Planning & Design' ben ik benieuwd naar het creëren van draagvlak onder inwoners. Hierbij specifiek naar de invulling van gemeenten rond het creëren van draagvlak voor de energietransitie door middel van beleid.*

*Ik hoop met behulp van deze vragen een duidelijker resultaat te kunnen behalen op de vragen binnen het onderzoek. Uw antwoorden zullen verder niet online gepubliceerd worden maar zullen opgeslagen worden in de databank van de bachelor-onderzoeken. Ik hoop dat u hier de tijd voor kunt vinden en ben benieuwd naar uw reactie!*

*Alvast bedankt en met vriendelijke groet,  
Hessel Jan Niewijk*

1. Hoe worden prioriteiten vastgesteld binnen de energietransitie?
2. Hoe ervaart u de eerste stappen binnen het opzetten /uitvoeren van een beleid binnen de energietransitie binnen uw gemeente?
3. Hoe wordt beleid getest/geëvalueerd om te kijken of het doelgericht werkt?
4. Hoe valt het betrekken van bewoners binnen het opstellen / opgestelde van beleid? Is dit een doelstelling op zich?
5. Op welk moment wordt besloten om voor een specifieke doelgroep gericht naar een oplossing te zoeken?
6. Welke factoren ziet u als belangrijkste voor de vormgeving van een beleid gericht op het creëren van draagvlak onder bewoners?
7. Welke factoren ziet u als belangrijkste voor het betrekken van bewoners in gemeentelijke zaken?
8. Welke factoren ziet u als belangrijkste voor het betrekken van bewoners in de energietransitie?
9. Ziet u binnen deze gemeente het anders lopen dan bij andere gemeenten? Wordt hier onderling in vergeleken?
10. Welke uitdagingen binnen de energietransitie ziet u nog aankomen?

## Appendix B

### **Questionnaire municipal officials**

For my bachelor research within the study 'Spatial Planning & Design' I am curious about the creation of support among residents. I am specifically interested in how municipalities create support for the energy transition through policy.

With the help of these questions I hope to get a clearer result on the questions within the research. Furthermore, your answers will not be published online but will be stored in the undergraduate research database. I hope you can find the time for this and look forward to your response!

Thanks in advance and kind regards,  
Hessel Jan Niewijk

1. How are priorities set within energy transition?
2. How do you experience the first steps within setting up a policy within the energy transition?
3. How is a policy tested/evaluated to see if it works?
4. How does involving residents fall within policy creation? Is this an objective in itself?
5. When is the decision made to look for a targeted solution for a specific target group?
6. What factors do you see as most important in shaping a policy?
7. What factors do you see as most important for involving residents in municipal affairs?
8. What factors do you see as most important for involving residents in energy transition?
9. Do you see things going differently within this municipality than in other places? Are there comparisons between them in this regard?
10. What challenges within the energy transition do you still see coming?