UsersTCP

Hard-to-Reach Energy Users

# Subtask 2: Case Study Analysis

## The Netherlands

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# Preface

This report was developed under the 'Users Technology Collaboration Programme (TCP) by the International Energy Agency (IEA) Task on Hard-to-Reach (HTR) Energy Users'. The Task aims to provide country participants with the opportunity to share and exchange successful approaches identifying and better engaging HTR energy users. Under the Task, HTR energy users are broadly defined as *'any energy user from the residential and non-residential sectors, who uses any type of energy or fuel, and who is typically either hard-to-reach physically, underserved, or hard to engage or motivate in behaviour change, energy efficiency and demand-side interventions*'.

Outcomes from the Task indicate that HTR energy users involve, for example, renters and landlords; low- and high-income households; the MUSH (municipalities, universities, schools, and hospitals) sector; small to medium enterprises / businesses (SMEs / SMBs); and people exposed to intersecting and compounding vulnerabilities based on factors such as age, race, gender, minority status, geographic, linguistic, technological or social isolation.

The case studies presented in this report aim to offer insights into programmes that aim to better engage HTR energy users in The Netherlands. Particular attention is given to design, implementation and behaviour change aspects. Other country case studies developed under the Task also include: Aotearoa New Zealand, Canada, Italy, Portugal, Sweden, the UK and the U.S.

We would like to thank all participating countries, their authors, and the interviewees who provided insights into their programmes targeting the HTR. I would like to particularly like to thank our National Experts participating in this Task, and any national experts who undertook peer reviews.

All case studies can be found in the project's website.

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*Users TCP by IEA Task on HTR Energy Users*

*Wellington, September 2021*

# Country background: The Netherlands

## Overview of the Energy System

In the Netherlands, there is no official definition of hard-to-reach (HTR) energy users. Energy poverty is also a relatively unknown phenomenon, but that does not mean that there are no energy-poor households (Feenstra et al., 2021). There is emerging attention to measure energy poverty and formulate mitigation policies, especially at the local level, where municipalities have the mandate to implement social welfare policies and observe the growing struggle for households to afford the increasing energy prices. Energy poverty is considered a consequence of economic poverty, and should be covered by the social welfare state policies (NECP 2019). Also, the fact that The Netherlands has a wealthy economy, with one of the highest GDP per capita in the EU (the GDP of 2021 is 59,335 US$[1]) adds to the assumption that all Dutch citizens can afford the energy the need. However, only 25% of Dutch households have an average income.

Figure 1: Map of the Netherlands with provinces and capitals of the provinces

As a highly densely-populated country with a strong decentralisation of policies, the social-economic differences among locations do not differ substantially. The 2019 population density in the Netherlands is 507 people per Km2 (1,313 people per mi2), calculated on a total land area of 33,720 Km2 (13,019 sq. miles)[2]. In 2019, 92.1% of the population lived in urban areas. The national figure of the unemployment rate is 3.4% (CBS, 2019). Social housing is a widely-used housing option in the Netherlands, both in urban and rural communities, representing around 41% of the stock in the capital Amsterdam, and 33% in the city of Tilburg as an example of a mid-sized average city (CBS, 2019). Beside social housing corporations, there are also private housing corporations that rent out their own properties. In Amsterdam, only 29.9% of the people live in a house that they own themselves compared to 50.9% in Tilburg (CBS, 2019).

Homeowners can benefit from tax abatements or subsidies when they invest in energy efficiency (NECP, 2019). In contrast, households with a lower income are eligible for social housing, but their home's energy efficiency is dependent on their housing corporation. However, retrofitting is not a luxury in the Netherlands, as demonstrated by the age of the

[1] https://data.oecd.org/netherlands.htm

[2] https://www.worldometers.info/demographics/netherlands-demographics/

housing stock. All cities show that, on average, in the Netherlands, only 20% were newly built after 1995, and only 10% after 2005 (CBS, 2019). Energy efficiency to protect from harsh weather conditions is not a huge argument in the Netherlands. As a relatively small country, the Netherlands has only one dominant climate zone - Cfb in the Koeppen-Geiger classification[3]. The summers are relatively cool and the winters moderate. Heating homes is only a necessity in the months October – March, on average.

## Energy Poverty in The Netherlands

Research on energy poverty in the Netherlands is in its infancy, and there is hardly any research focusing on HTR energy users. Initial quantitative work has mainly focused on measuring energy poverty in terms of the affordability of energy bills (PBL, 2018). There has also been some qualitative lived-experience research, which has helped to add detail to our understanding of daily lives of those facing a shortage of energy services (Straver et al. 2017).

Whether an energy bill is affordable does not only depend on a household's energy expenditure, but also on its disposable income and its other necessary expenditures. In a study of the affordability of energy bills in the Netherlands, PBL (2018) uses two complementary indicators to measure affordability: the *energy ratio*, and the *payment risk*. The energy ratio is the share of disposable income that a household spends on energy. It is the most common indicator used in Dutch studies on the affordability of energy – often an energy ratio of 10% is taken as a threshold level to define energy poverty. A household has a payment risk if they have insufficient budget left over for minimum subsistence expenditures, after paying their housing and energy costs.

Using these two complementary measures, PBL (2018) estimated that in 2014, approximately 269,000 Dutch households (3.5% of all households) faced both a high 'energy ratio' and 'payment risks'. Another 385,000 households (5%) only face a high energy ratio, and a further 259.000 households (3.4%) face payment risks even without a high energy ratio. Hence, in 2014 in total 528,000 households faced payment risks, which amounts to about 7% of all households. Using the energy ratio definition of energy poverty (>10% of income is spent on energy), a more recent study by Straver et al. (2020) found that in 2019, 650,000 of Dutch households were energy poor, which equals more than 8% of total households. *"With the increasing energy prices, it is expected that more Dutch households will struggle to pay for heating their homes." (Koen Straver)*

## Energy Poverty Policy

Energy poverty is an emerging policy agenda in the Netherlands, principally driven by local authorities' recognition of the value of addressing environmental, health, social welfare and poverty goals through measures that address the problem. *"Dutch energy planning to date has done little to take into account the most vulnerable energy consumers on a national scale." (Koen Straver)* Recent national interest in a just transition, as reflected in the *Dutch*

[3] https://www.weatheronline.co.uk/reports/climate/The-Netherlands.htm#:~:text=The%20Netherlands%20have%20a%20temperate,%C2%B0C%20in%20the%20summer

*National Climate and Energy Plan* (2019), has created an opportunity for both, the growing Dutch research on energy poverty, and local authority experiences in managing this problem, to have an impact on shaping national policy.

The first White Paper on *Energy Poverty in the Netherlands* was published in November 2020. The *EU Energy Directive* requires Member States to consider access to clean energy in their *National Energy and Climate Plan*. With the firm recommendations of the European Commission to address energy poverty through national policy, the *National Energy and Climate Plan* of the Netherlands added a section on energy poverty in the final version. This makes the Netherlands one of the last Member States of the European Union to begin to draft an energy poverty policy. That the agenda of energy poverty is only just emerging in the Netherlands, is for a number of reasons, as mentioned by our interviewees. First, the agenda has been somewhat ignored at national level, where government has tended to take the line that this is not a problem distinct from poverty in general, and should be covered in the extensive social welfare policy legacy in the Netherlands. Second, the multi-level governance model of the Netherlands decentralises much of the implementation of energy transition policy to municipalities, where work on energy poverty is already underway. *"Municipalities have recognised the value of addressing multiple policy goals through measures to address energy poverty." (Koen van Waes)* They are also responsible for the decentralised implementation of social welfare policy, a closely linked agenda.

The Netherlands is behind on both understanding, and acting on energy poverty in comparison to other European nations. The national government explicitly places this matter in the context of social and welfare policies by using a narrow interpretation of energy poverty as a consequence of low income. Its position comes through clearly in the *Integrated National Energy and Climate Plan (NECP) 2021-2030*, which states: "*The Netherlands has no specific objectives related to energy poverty. Support for households with a lower income forms part of policy to combat poverty, which is ultimately part of general social policy*" (NECP, 2019, p. 46).

On the other hand, the *2017 Coalition Agreement* (*Confidence in the future, Coalition Agreement 2017-2021*) was the political announcement of the *Climate Agreement* to address climate change and energy transition. The energy transition ambitions of the Dutch government are rooted in the *Energy Agreement of 2013* and are formalised in the *Climate Act of 2019*. The *Dutch National Energy and Climate Plan* (as required by the EU) content is based on the *Climate Agreement* of 28 June 2019, containing a package of measures with the decarbonisation target of 49% by 2030, compared to 1990. The Senate approved the *Climate Act* on 28 May 2019. The *Climate Agreement* addresses the five dimensions of the Energy Union: decarbonisation, energy efficiency, energy security, internal energy market, and research and innovation.

In this national policy framework for energy transition, there is no mention of energy poverty. However, much of what it contains has an impact on energy poverty. For instance, the ambition of the government to make new homes natural gas-free, and existing homes more suitable for the low carbon transition. This will have different impacts on energy-poor households that are less likely to be able to afford any upfront costs associated with renovation. The political support for the *White Paper on Energy Poverty* has demonstrated that there is an increasing realisation that addressing energy poverty is central in a fair and just energy transition in which all citizens can participate. To eradicate energy poverty

through a just energy transition is a unique policy angle of the Netherlands as identified by the interviewees.

## Hard-to-Reach Audiences

As mentioned before, policy documents do not use an official definition of 'hard-to-reach' (HTR) energy users. Efforts have only just begun to identify them, along with the development of the HTR policy discourse in general (Rotmann et al., 2020). However, research in the context of the *IEA Users TCP Task on HTR Energy Users* suggests that the following audiences can be distinguished in the country (see Ashby, Rotmann et al., 2020; Ashby, Smith et al., 2020):

- In the commercial sector: small and medium-sized enterprises (SMEs).
- In the residential sector: housing / building associations, low / high-income households; and non-native speakers.

Although there are clear limitations, these audiences (characterised in more depth in subsequent chapters) are consistent with the literature (for details see Rotmann et al., 2020). In the residential sector, barriers include: the stagnation of EE improvements; the relaxation of building regulations; a lack of technical knowledge; high transaction costs; and the principal-agent problem (Nässén et al., 2008; Nässén & Holmberg, 2005; Ó Broin et al., 2015; Unander et al., 2004). As a whole, the literature underscores the need for better-integrated and more ambitious HTR policy interventions (Rotmann et al., 2020).

Within this context, this report presents the results of one case study, which offer an insight into EE project initiatives that aim to engage HTR audiences in The Netherlands. It focuses primarily on two HTR audiences (energy-poor households and tenants of social housing) that have been identified by our interviewees and through literature and policy review as high priority in terms of energy-saving potential. There were several projects and EE initiatives mentioned in the interviews. However, it was difficult to get extensive insights in these projects within the time frame and with limited information to follow the *ABCDE Building Blocks* framework (see Karlin, 2021; Rotmann et al, 2021) for all of them. Therefore, the *ABCDE Building Blocks* methodology is only applied to the SBNOM project since five of the respondents (Peter Linders, Brigitte Berendsen, Monique Jansen, Koen van Waes and Kirstin van der Aalst) were involved in that project. The insights from the other interviewees and the examples from other projects are used for the general sections and the discussion chapter of this report.

# Case Study Methodology

The methodology to develop the case studies for the User TCP HTR is composed of the following elements (see Mundaca, 2021). First, the case studies were chosen based on the outcomes of previous activities undertaken by the *Users TCP HTR Task*. As indicated in the previous section, these activities aimed to identify and characterise HTR audiences in participating countries. To that end, a variety of data sources were used, including an international survey, interviews with experts and practitioners, and a literature review (for details, see Ashby, Rotmann et al., 2020; Ashby, Smith et al., 2020). For the particular case of the Netherlands, these activities revealed that *tenants of social housing* were important HTR audiences. Therefore, the case study focused on programmes or initiatives targeting this audience.

Second, and from an analytical point of view, the approach adopted the framework developed by the *See Change Institute*, called *The ABCDE Building Blocks of Behaviour Change* (for details, see Karlin et al., 2021; and Rotmann et al., 2021). This framework focuses on the analysis and systematisation of the design, implementation and assessment of interventions addressing behaviour change that, in our case, target EE and energy conservation. The framework focuses on data collection across specific blocks, namely: Audience, Behaviour, Content, Design and Evaluation. Data gathering is guided by an interview protocol that addresses each block, and the set of questions can be found in Rotmann et al. (2021).

Third, seven interviews (~60 minutes) supported data collection and provided a deeper understanding of role of actors in EE interventions to reach the HTR audiences. These were conducted by the author of this report and the following people were interviewed:

- Ms. Musetta Blauw, Zon op alle daken[4] (17 May 2021)
- Ms. Brigitte Berendsen, Kwartiermakers in de Bouw[5] (18 May 2021)
- Mr. Koen Straver, TNO Energy Transition[6] (19 May 2021)
- Mr. Koen van Waes, Het Energiebureau[7] (25 May 2021)
- Mr. Peter Linders, Kwartiermakers in de Bouw[8] (25 May 2021)
- Ms. Monique Jansen, Enpuls[9] (1 June 2021)
- Ms. Kirstin van der Aalst, Enpuls (3 June 2021)

All interviewees have given their consent to use their insights and observations for this report. This report has been peer reviewed by two academics. The report was sent to the interviewees to be checked for inconsistencies and their consent for publication.

[4] https://www.zonopalledaken.nl/

[5] https://www.kwartiermakersindebouw.nl/

[6] https://www.tno.nl/en/

[7] https://www.hetenergiebureau.nl/

[8] https://peterlinders.itscreative.nl/

[9] https://www.enpuls.nl/

# The Netherland's Case Study – Social Housing

## Background

The energy mix for household consumption in the Netherlands is a combination of electricity (2.80%) and natural gas (85.90%) for heating and cooking (CBS, 2019). The Netherlands has a large natural gas mining plant in the Northern Province of Groningen, hence the wide-spread use of natural gas for heating and cooking. To adhere to the sustainability goals, the national Dutch government is out-phasing the use of natural gas by stimulating the transition to all-electric energy sources for domestic use. However, this is an enormous endeavour, with the current domestic heating system heavily relying on natural gas. To stimulate homeowners to disconnect from the gas system, the Dutch government provides subsidies for this transition and increased the taxes of the use of natural gas. As a result, the gap between those energy users that can afford to participate in the energy transition and those who can't is increasing in the Netherlands (Feenstra et al., 2021).

As part of the *Dutch Climate Agreement*, the national government has committed to transitioning 1.5 million households of the 7.5 million Dutch households from natural gas to a different energy source for heating and cooking, by 2030. "*This is a major undertaking and will involve major infrastructural interventions in people's homes and living environments, such as the installation of new heating systems and related retrofitting measures in residential buildings or the construction of district heating nets across Dutch municipalities*." *(Peter Linders).*

The entire undertaking raises many urgent questions around sufficiently viable and affordable alternatives, locally and at household level, as well as questions of equity, prioritisation of different types of (energy poor) households in retrofitting, and the distribution of burdens, benefits and resources through the lens of energy justice and just transition. From a perspective of participatory justice, *"it will also be important to include people at the local (neighbourhood) level in the expected changes of energy systems, and giving them a measure of control over decision-making, and the ultimate operation of new systems." (Musetta Blauw).*

## Case Study Methodology

The case study is based on a combination of desk review of policy documents of the Dutch national government and key respondent interviews. The choice was made to interview intermediary project managers of energy efficiency and retrofitting projects. They are considered intermediaries since they are not a representative of housing organisations, like home-owners associations or housing corporations. They are also no employees of governmental organisations like municipalities, nor are part of the building sector or energy companies. Often, they were selected based on tendering procedures to take the role of project manager in energy efficiency projects developed in a triple-helix collaboration of stakeholders[10]. The profile of the intermediaries is often described as a broker between the different stakeholders. They are not necessarily an expert on the used technology but rather able to manoeuvre between the different needs and interests of the parties involved. *"We smooth out the process, and are able to speak the different languages of the stakeholders."*

[10] Triple-helix collaboration in the context of this report consists of collaboration between public institutions (e.g. municipalities), private entities (e.g. building corporations, industry) and academia (e.g. knowledge institutions).

*(Brigitte Berendsen).* Due to their proven track record in energy efficiency project management, they are considered a neutral, efficient and trustworthy partner for these kinds of projects.

## Audience

To illustrate the residential energy situation, we take four cities (Amsterdam, Groningen, Enschede and Tilburg) as example in our case study and mentioned by our interviewees as representative for average Dutch cities. The four locations reflect the different regions in the Netherlands: Amsterdam as the capital is by far the largest city of the four, and situated in the west of the country. Amsterdam is a historic city, founded in 1275, which explains the high number of historic buildings and the age of the houses. Enschede is situated in the far east on the border with Germany. It is a relatively small city with a rich history in the textile industry, similar to Tilburg. Tilburg is situated in the more southern part of the Netherlands. Groningen is positioned in the North of the Netherlands and is the main city in this more rural area. Enschede, Groningen and Tilburg can be considered working-class cities, where the housing prices are still relatively low compared to Amsterdam, reflecting the average lower income of the population living in those three cities. Social housing and rental housing of the private sector is widespread in these cities, reflecting the lower incomes and the need for temporary housing for students.

The housing composition in the Netherlands is a mix of privately-owned property and social housing. With 40.97% social housing in Amsterdam and 33.05% in Tilburg (CBS, 2019), social housing is a widely-used housing option in the four cities in the Netherlands. Besides social housing, there are private housing corporations that rent out their property. As a result, only 29.9% of the people in Amsterdam live in a house that they own themselves compared to 50.88% in Tilburg (CBS, 2019). The dominant energy-efficiency policy intervention is that homeowners receive a tax-benefit or subsidies when they invest in energy efficiency. However, this is only an option for home-owners. Households with a lower income are eligible for social housing, but for their energy-efficiency investment they depend on the investment of the housing corporation. That retrofitting is not a luxury in the Netherlands is demonstrated by the age of the housing stock. On average in the Netherlands only 20% is newly built after 1995 and after 2005 only ~10% is newly-built (CBS, 2019). Retrofitting is a major aim of the Dutch national government. The energy efficiency labelling of the housing stock identifies 22.5% of homes with a label A. Tilburg with 30.09% is performing the best of our four case study cities, but with 13% houses built after 2005, they have also the highest percentage of newly-built houses - assuming that new houses are more energy efficient.

## Behaviours

As indicated by the interviewees, the energy transition in the Netherlands is currently at such a stage that the urgency to invest in energy efficiency is felt strongly. In The Netherlands, energy prices are rising, and thus the financial motivation to invest in energy efficiency is increasing. The national government has implemented several financial instruments, like subsidies and tax benefits for home owners investing in energy efficiency. More frequently, housing corporations are encouraged to retrofit their existing building stock and the Netherlands makes no exception to that trend. A project, financed by the EU *EFRO Programme*, mentioned by a couple of interviewees is the *SBNOM* project coordinated by

the Municipality of 's-Hertogenbosch[11]. The SBNOM project was a 3-year project (from 2016 -2019) in the Southern part of the Netherlands collaborating between 16 partners municipalities, housing corporations and the building industry to retrofit 500 social houses to become zero-emission.

The main behaviour aimed for was *co-creation and collaboration* within the Quadruple Helix of public-private-academia-civil society towards energy-efficient social housing. The SBNOM project served as a pilot how to smoothen the collaboration between these different partners with each their own agenda, mandate, knowledge and resources. *"The aim was to create energy-efficiency packages that were easier to install, better to use, and cheaper for the market: an "Ikea model" (Peter Linders).*

## Content

*"A comfortable, affordable and sustainable house that fully meets its own energy needs is the standard in the Dutch housing market: what still seems like a utopia can be made possible within a few years." (Monique Jansen).* In the Netherlands, approximately 40% of all $CO_2$ emissions are released by the energy we use in the built environment. In 2015, more than 100 parties in North Brabant, including the province, municipalities, construction companies and energy and housing corporations, signed the *Brabant Nul op de Meter* (Zero-emission) deal. The aim of this covenant is to achieve 800,000 energy-neutral homes by 2050. Sixteen chain partners from Brabant, Limburg and Zeeland have found each other in the pioneering program *Faster and Better to Zero on the Meter* (SBNOM).

*"What is needed to convert as many existing homes as possible into energy-neutral homes in the coming years? First, an industrialised and cost-efficient concept that the construction sector can use. Secondly, a market of home owners who want and can invest once, to enjoy years without energy bills." (Brigitte Berendsen).* In order to bring supply and demand together, innovative power from the entire construction chain is needed. The consortium therefore consists of municipalities, housing associations, energy suppliers, the construction industry, a marketing concept developer and *SPARKCampus*, the innovation hub for construction. The project is co-financed from the European subsidy programme *OPZuid* (EFRO). SBNOM focused on the energy renovation of existing buildings, mainly attached houses built between 1950 and 1980. The collaborating partners developed a practical, industrial approach with which these homes can be renovated on a large scale. At the same time, they have worked on a sound business model and a consumer proposition.

*"Where the SBNOM project proved to work to finally get all the stakeholders around the table, the main enabling factor was the external budget by the EU grant that provided the necessity and the opportunity to have these partners involved in a collaborative project." (Peter Linders).* By combining products, knowledge, resources and processes, the target group (social housing residents) were offered a retrofitting solution that increased their energy efficiency and reduced their energy costs. The project manager is an intermediary that "*knows the ropes of all the different stakeholders involved and speaks the language of all the partners." (Brigitte Berendsen)* The involvement of the intermediary smoothed the

[11] https://sbnom.itscreative.nl/homepage

collaboration process and through their network the intermediaries involved the right partners.

*"Storytelling and narratives are proven to be extremely important in persuading people to be involved in energy efficiency projects." (Kirstin van der Aalst).* The SBNOM project had a strong marketing and narrative component. Not only through the dedicated project website, but also through the websites from all partners involved there was a separate dedicated space for updates and information.

## Delivery

Also, in addition to website narratives, social media (Facebook, twitter and LinkedIn) was used to inform partners, business networks and the target audience of engaged citizens. However, social media was found not to be the right platform to reach them. Many of the HTR audiences are not connected to the more professional networks like LinkedIn or twitter. A Facebook site from municipalities could be an efficient way to reach citizens, but that depended on the content. The project manager of SBNOM used short videos and radio broadcasts in which people were interviewed about their experiences in the project. Not only project partners were interviewed, but also the target beneficiaries, the tenants from the social housing companies.

Furthermore, events in the neighbourhoods were organised to involve the tenants with the retrofitting, like an open house in a retrofitted house. These events made retrofitting tangible and within the everyday life of the beneficiaries. Involving trusted social partners, like social workers and community workers, was crucial to reach the HTR and to engage them in the energy efficiency dialogue by familiar faces and non-municipal actors. *"Sending letters, especially when the sender is the municipality, is not the way to approach them. They will not open the letters and government is not always a trusted actor." (Monique Jansen)* Mapping the social partners and the social indicators of the targeted area for the retrofitting project provides essential information to target the HTR audience in an effective way.

## Evaluation

The SBNOM project involved a knowledge partner, the applied University *Avans*, as the impartial monitoring and evaluation partner. They executed an impartial assessment of the full project and created a series of focus groups and workshops with involved partners to monitor the project in the 3-year time span. Their evaluation was both analysing the process of collaboration within the partner consortium as well as measuring the goals of the projects, the retrofitting ambition as stated in the project proposal. Their observations are collected in a report that is publicly available at the project website. When looking at the retrofitting target of SBNOM, the project was not successful. Retrofitting 500 homes to become zero-emission proved to be too ambitious. Especially the industry partners needed more time to develop the concept of a system integrator than the 3-year time span of the project allowed. When assessing the process of the collaboration of the partner consortium, *Avans* also identified that the system integration was one of the main aims in the collaboration. System integration of different systems of the different stakeholders involved is a joint process that needs clear leadership and ownership from alle parties involved. "*Co-creation takes time, and trust needs to be built before business can be done. Three years was proven not to be sufficient-enough time to create such a system." (Peter Linders)*

In addition, another obstacle was the fact that each of the partners had their own agenda. *"Sometimes, the mandate within their organisations was not clear, so efficiency was lost because the wrong people were sitting around the table. Now that the project entered the next phase, the organisations and shareholders are better known." (Brigitte Berendsen).* However, it still is imperative to search for the key actors within these organisations. The representation of the parties is easy-enough to organise, but it is important to also evaluate whether the right people are around the table. *"There is a shared ambition to implement, but with different actors having different shares. Housing cooperations want to keep the EE affordable, but what does that mean to residents in terms of the wider climate targets?" (Monique Jansen).*

*"Finance people are within their own cycles and budgets and have limited flexibility and need to change too. Thus, energy transition has proven again to be a systemic change, and that includes the system around social housing." (Musetta Blauw)*

## Concluding thoughts on the case study

The case study highlighted that energy-efficiency projects can contribute to energy efficiency and climate services for the HTR, but that external funding (e.g. EU resources and grants) are necessary to provide a catalyser for industry partners and social housing companies to collaborate. In combatting energy poverty in the Netherlands, the energy transition is a transition from using natural gas to more renewable energy sources for heating. Also, energy efficiency of social housing contributes to lower the energy costs of vulnerable households (who are eligible for social housing due to their lower incomes). However, with the existing energy-efficiency interventions (like tax reductions and subsidies), only homeowners can benefit, hence tenants are depending on their landlords to invest in order to increase their energy efficiency. Social housing companies can play a crucial role to improve the access to clean and affordable energy services for their tenants, but only if they are sufficiently supported by their collaboration partners in the quadruple helix model.

The *ABCDE Building Block* methodology used as a guideline for the case study, has proven to be a useful methodology to identify the different elements of the project and how these impact the targeted audience. However, since the analysed project is not designed using the ABCDE Building Blocks, some elements were not clearly identified. During the interviews, the researcher sometimes had to explain an element or had to ask clarifying questions to guide the interviewee to address the element. Especially since the ABCDE methodology uses a lot of communication examples, focusing on messaging strategy in building block *Content* for example, projects that have a less prominent communication strategy are less suited to be analysed using the *ABCDE Building Block* methodology. If, however, the *ABCDE Building Blocks* are used in drafting and designing HTR-energy projects and especially the dissemination and communication strategy of these projects, then the methodology can be very useful to make consortium partners aware of their messaging strategy. The impact for the targeted audience can then also better be monitored and assessed. Another limitation of the *ABCDE Building Blocks* is that it seems to be better fitting for projects than for policy assessment, although the elements are important to take into consideration when designing and implementing policy initiatives for the HTR energy users.

# General Discussion

Although the Netherlands is geographically a small country of 41.543 km2, it inhabits 17.5 million people that are governed in a finely-mazed network of governmental institutions and layers. The multi-layered Dutch governance landscape complicates energy transition governance. First, the 355 municipalities have major executive and decision-making power in a wide range of policy areas in the implementation of the energy transition. Under the so-called Dutch '*Participation Law'* they have been given extensive responsibilities for decentralised social service provision, including expectations of tailoring policy solutions to local households' needs. The second layer of the Dutch energy governance landscape is the Provincial level. The Netherlands has 12 Provinces, each with their own democratically-elected government. Currently, the Provinces are getting engaged in the energy poverty agenda (Provinces of Utrecht, Zuid-Holland and the joined effort of the three Northern Provinces Groningen, Friesland and Drenthe). They are funding and stimulating research, provincial programmes and supporting municipalities in their projects and programmes.

The involvement of both municipalities and Provinces in mitigating energy poverty is contrasted by the absence of a national policy on mitigating energy poverty. At the national level, ministries are not involved in drafting energy poverty mitigation policies or funding programmes implemented at the local level. This absence of a national energy poverty policy was one of the remarks in the recommendations of the European Commission in reaction to the draft *National Energy and Climate Plans of the Netherlands* (NECP, 2019). As all EU member states are now obliged to assess and incorporate EP as part of their energy transition strategies, the EU therefore represents a further layer in the governance of this problem.

Another energy government element is the collaboration with private actors in the energy system. The Netherlands has long-time experience in public-private partnerships in energy planning and project management. Within the EU, the decarbonisation and climate change policy as formulated in the EU *Cohesion Policy 2014-2020* pursues a *Triple-Helix innovation model* which involves co-creation and cooperation between three stakeholder groups: public sector, academia and business. In some regions, the model has become the *Quadruple Helix* when civil society is added as the fourth stakeholder group. This is an essential element of all programmes and projects funded by the EU. In achieving the decarbonisation ambition of the EU, many energy efficiency projects are receiving EU grants as a catalyst. Within the Triple- and Quadruple-Helix cooperation, the role of the public sector is becoming less dominant. The corporate sector and NGOs are increasingly working together in energy efficiency projects, leaving government actors to a more facilitating and stimulating role.

A new energy governance element related to forms of collaboration, is the implementation of the *Regional Energy Structures* (RES). This collaboration is formed to create regional decisions on decarbonisation options for 35 regions within the Netherlands, each region having a target of renewable energy production for electricity, heat and the necessary energy infrastructure. "*Provincial and local government collaborate with companies, utilities and citizens to create regional choices on the decarbonisation of their region" (Koen van Waes).* Due to a lack of data on energy poverty, the phenomenon is invisible for policy-makers, hence RES plans do not include energy poverty.

The finely-mazed network of energy governance in the Netherlands brings barriers and opportunities to address energy poverty in just transition policies and engage multiple actors of the Dutch energy governance landscape. When analysing the Dutch energy governance

through the energy justice framework the following issues are identified. Starting with a distributive justice perspective the energy governance of the Netherlands raises three issues impacting energy poverty (Feenstra et al, 2021). First, with the high level of decentralisation of energy transition policy and social welfare policy, the national government is hardly addressing energy poverty in their national energy policy framework. The lack of clear dedicated energy poverty policies in the area of the energy consumption or energy transition may seem non-existent and therefore unproblematic (i.e. *"..under the assumption that it doesn't advantage nor disadvantage anyone. But stimulating energy efficiency only by subsidies or tax benefits can create winners and losers of the energy transition and may well worsen outcomes for energy poverty in the long run. Some people will struggle more to operate under, or benefit from certain policy settings, which may not be the most efficient and optimal tools for targeted public spending" (Koen Straver)*).

Second, the highly-decentralised nature of the Dutch social policy system means that, as for other social policy domains, there is a risk of creating inequality amongst municipalities' residents. Decentralisation could enable tailor-made policy interventions reactive to contextual situations. But, in practice it may also lead to arbitrariness, under-provision of services or lack of supervision on different municipalities' treatment of their residents (De Jong and Vonk, 2019). The latest decentralisation efforts have been dominated by the transition from the traditional welfare state to a 'participation society' (Dijkhoff, 2014). Generally speaking, the term is understood to refer to a community that relies more heavily on the individual's capacities, and on the moral fibre of civil society (de Jong and Vonk, 2019). To achieve this, support should be directed more towards the individual's own capacity, and real needs and the policy interventions should be designed in close consultation with the citizen (Dijkhoff, 2014). This process is metaphorically (although sometimes also literarily) referred to as 'kitchen table talks' (Dijkhoff, 2014). In short, the area of social welfare is characterised by a system of 'regulated decentralisation'; centrally defined goals with the flexibility for local implementation reflecting local context and needs.

A third issue is the allocation of budget to address energy poverty, where municipalities are struggling to serve multiple policy goals with a low level of resources that are allocated to different municipalities by the national government to fulfil devolved tasks. Municipalities are increasingly financially responsible for a variety of policy implementations, but with a very limited budget to deliver on energy poverty and energy transition. This raises questions both of municipalities' policy discretion to distribute funds across different needs, and the distributional choices made by the national government in terms of devolving public budget for social policy and energy transition objectives. Furthermore, most of the budget delegated from national funds to municipalities is ear-marked for specific purposes, which could lead to either inflexibility to respond to local needs, or to diversion of funds to seemingly more pressing problems.

Many municipal-level and local-scale energy poverty projects exist in The Netherlands, placing municipalities at the forefront of Dutch energy poverty policy making, demonstrating a strong bottom-up approach in agenda setting. Local governments have latched on to the energy poverty agenda as a fitting response to the challenges observed in their local communities which have good potential to be addressed by local action. In this sense, it is important to realise that Dutch municipalities have a large portfolio of devolved tasks in the domain of social welfare policy, as a result of decentralisation policies (de Jong and Vonk, 2019). This means that municipalities are responsible for the implementation of the majority of social welfare programmes and anti-poverty strategies. This also brought into view the aspect of energy poverty, especially amongst socially-vulnerable groups. *"In recent years,*

*municipalities additionally gained an important role in the implementation of central government's objectives on the energy transition, stimulating local (neighbourhood) approaches and solutions, though often with limited resources." (Koen van Waes)*

As a result of these developments, municipalities have now become active drivers of bottom-up approaches to mitigate energy poverty, by developing strategies, action plans and regional agreements municipalities. Recently, regional authorities at the provincial level are starting to support these local initiatives to put energy poverty on the political agenda. Due to the lack of a national framework, the efforts of municipalities are dispersed and risk reinventing the wheel (Straver et al, 2017). This has a detrimental effect on energy transition goals and the distribution of support to Dutch households in need for affordable and sustainable energy services. Worse, it increases inequality among citizens as the support available is dependent on where people live. National involvement and central policy are needed to allow local projects to be run more efficiently, reducing costs to the taxpayer, and to ensure that best practices are shared and implemented. A second problem of the current 'bottom-up' approach of local projects is that they are usually temporary, do not receive sustained and stable funding, rely heavily on 'pilots', and are rarely monitored for co-benefits (as indicated by several interviewees). The latter is important since it is increasingly known from existing studies that well-crafted building retrofit policies could act on a number of public policy goals at the same time: improving physical and mental health, reducing poverty, increasing disposable income, increasing comfort, productivity, and mitigating climate change (Straver et al., 2020).

# Concluding remarks

This report sheds light on some lessons that have been learned from policy initiatives that aimed to better engage HTR audiences in The Netherlands. Due to a fine maze of collaborating actors at the local level and recognition of the importance of (financially) supporting the quadruple helix in targeting social housing. Based on literature review and policy document analysis the Dutch context of energy poverty and HTR audience is described and illustrated with one highlighted project. Where relevant, the study focused on an analysis of participants' behaviour using the *ABCDE Building Blocks of Behaviour Change* framework. The participants in the Dutch case study are quadruple helix actors in the energy sector, like municipalities (the public actor), building industry (private actors), knowledge institutions (academia) and housing corporations (civil actors). With due limitations, the findings reveal various complexities, challenges and uncertainties associated with HTR policy initiatives; particularly from an institutional point of view.

The interviewees provided interesting insights in the institutional challenges to design and implement interventions to support the HTR audience to be beneficiaries in energy-efficiency projects and retrofitting projects. Additional recommendations based on the interviews and observations are:

- Use innovative and tangible communication tools to reach the HTR audience and share the narrative of climate adaptation and the need for energy efficiency in a positive and action-oriented way. *"Ensure they are not overloaded with technical specifications or a sole focus on the economic return of investment, but how EE contributes to wellbeing and better housing situations and thermal comfort." (Kirstin van der Aalst).*

- Involve the HRT audience in all cycles of project planning and management. Organise focus groups, go door-to-door to ask their opinion*: "Do NOT send a survey through mail but have a face-to-face conversation. Involve them in the conversation as equal partners in the energy transition." (Monique Jansen)*
- Energy-efficiency projects of community buildings (schools, sport clubs, churches) are an innovative way to reach the HTR audience, since they are benefitting indirectly from these retrofitting and renewable energy communities that are often created within these projects. They see the benefits and become familiar with the technology in an indirect but effective way. Musetta Blauw mentioned several PV projects with schools and sport clubs that had a spreading effect in the community: *"Through the financial benefits of the PV systems, the membership fee could be reduced so that the sports activities became more affordable. Families with children at the school saw the benefit of the energy efficiency measures and were invited to join the energy community which created financial benefits and reduction in the investment costs for energy efficiency of the community members."*
- Break the silos of the too-fragmented policy areas of social policy, environmental policy and urban planning. Too many barriers are created by the institutional silos and fragmented policy. For example, retrofitting projects are currently facing the lack of building materials. *"Combining the energy transition with the circular economy, creates more sustainable and effective ways to adapt for climate change." (Brigitte Berendsen)*

This case study contributes to academic and policy debates by adding the governance dimension to the HTR audience and addressing energy poverty. The Dutch case demonstrates that, although the recognition of energy poverty started at the local level and the acknowledgement of the phenomenon is addressed at the EU level, the national energy poverty policy direction is still lagging behind. The Dutch national government is therefore sandwiched between two sets of multilevel advocates for energy poverty – the local and the supranational (Feenstra et al., 2021). In order to identify the drivers, barriers and opportunities for addressing the HTR audience, we need to recognise this position, as well as the broader history and culture of governance in the nation.

With regards this last point, The Netherlands is a country with a rich legacy as a social welfare state. The national government wrongly assumes that energy poverty is tackled through existing social welfare policies. This situation is not unique to the Netherlands. Energy poverty is also overlooked in other countries with extensive social welfare policies, like Sweden (see Mundaca, 2021), in which national governments believe that energy poverty will be dealt with through existing poverty eradication policies (Feenstra et al., 2021). Addressing energy poverty can be politically-sensitive since it can be seen as a failure of the welfare state to fulfil its function. However, as demonstrated above, energy poverty is still very much a challenge in the Netherlands, with many households unable to afford the energy services they need to live comfortably at home. In a sense, the framing of this problem as 'energy poverty' is less acceptable in the Netherlands as a result of the common feeling that the welfare state is looking after people adequately.

# References

Ashby, K., Rotmann, S., Smith, J., Mundaca, L., Reyes, J., Ambrose, A., Borelli, S., & Talwar, M. (2020). Who are Hard-to-Reach energy users? Segments, barriers and approaches to engage them.

Ashby, K., Smith, J., Rotmann, S., Mundaca, L., & Ambrose, A. (2020). HTR Characterisation. Users TCP HTR Annex: Wellington.

CBS, I. C. B. o. S. (2019). Population in the Localities 2019. Retrieved from https://www.cbs.gov.il/he/publications/doclib/2017/population_madaf/population_madaf_2019_1.xlsx. https://www.cbs.gov.il/he/publications/doclib/2017/population_madaf/population_madaf_2019_1.xlsx

Dijkhof, T. (2014). The Dutch Social Support Act in the shadow of the decentralization dream. Journal of Social Welfare and Family Law. 36 (3): 276 – 294 https://doi-org.ezproxy2.utwente.nl/10.1080/09649069.2014.933590

Feenstra, M., L. Middlemiss, M. Hesselman, K. Straver and S. Tirado Herrero, (2021) Humanising the energy transition: towards a national policy on energy poverty in the Netherlands, in: Frontiers in Sustainable Cities, 10.3389

de Jong, F. and G. Vonk. (2019). Internal coordination of social security in the Netherlands. European Journal of Social Security. 21:2 https://doi-org.ezproxy2.utwente.nl/10.1177/1388262719844985

Karlin, B., Foster, H., Sheats, J., Chapman, D., & Rotmann, S. (2021). The Building Blocks of Behavior Change: A Scientific Approach to Optimizing Impact. Sea Change Institute: LA, USA.

Mundaca, L. (2021). Case Study Analysis – Sweden. HTR Task by Users TCP: Lund.

Nässén, J., & Holmberg, J. (2005). Energy efficiency - A forgotten goal in the Swedish building sector? Energy Policy, 33(8), 1037–1051. https://doi.org/10.1016/j.enpol.2003.11.004

NECP (2019) Integrated National Energy and Climate Plan 2021-2030. Ministry of Economic Affairs and Climate Policy. The Netherlands

Nässén, J., Sprei, F., & Holmberg, J. (2008). Stagnating energy efficiency in the Swedish building sector-Economic and organisational explanations. Energy Policy, 36(10), 3814–3822. https://doi.org/10.1016/j.enpol.2008.07.018

Ó Broin, E., Mata, É., Nässén, J., & Johnsson, F. (2015). Quantification of the energy efficiency gap in the Swedish residential sector. Energy Efficiency, 8(5), 975–993. https://doi.org/10.1007/s12053-015-9323-9

PBL. (2018). Meten met twee maten. Een studie naar de betaalbaarheid van de energierekening van huishoudens. Eds. Middelkoop, M., Van Polen, S., Holtkamp, R. & Bonnerman, F.

Rotmann, S., Mundaca, L., Castaño, R., O'Sullivan, K., Ambrose, A., Marchand, R., Chester, M., Karlin, B., & Ashby, K. (2020). Hard-to-Reach Energy Users: A critical review of audience characteristics and target behaviours.

Straver, K., Siebinga, A., Mastop, J., Van Lidth-de Jeude, M., Vethman, P. & Uyterlinde, M. (2017). Rapportage Energiearmoede. Effectieve interventies om energie efficiëntie te vergroten en energiearmoede te verlagen. ECN-E--17-002. TNO-ECN.

Straver, K., Mulder, P., Hesselman, M., Tirado Herrero, S., Middlemiss, L., Feenstra, M. (2020). Energy poverty and the energy transition. TNO https://www.tno.nl/en/about-tno/news/2020/11/energy-poverty-and-the-energy-transition/?utm_medium=social&utm_source=linkedin&utm_campaign=reach-tno-systeemintegratie-2020

Unander, F., EttestØl, I., Ting, M., & Schipper, L. (2004). Residential energy use: An international perspective on long-term trends in Denmark, Norway and Sweden. Energy Policy, 32(12), 1395–1404. https://doi.org/10.1016/S0301-4215(03)00106-X

## FURTHER INFORMATION

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