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Strategy for heat - The Netherlands

Policy Description

Heat policy in the Netherlands is currently going through a transformation. The starting point for this visioning process was the 'Energy Agreement for Sustainable Growth'[i] in 2013, a collaborative agreement between 47 stakeholder groups (government, industry, third sector and trade unions) setting out a long-term perspective for energy and climate policy. The Dutch government subsequently published a Heat Vision[ii] in 2015 and Energy Agenda[iii] in 2016 to complement the Energy Agreement. Combined, these documents set out long-term priorities and a vision for the energy system to 2050, although concrete policies and implementation mechanisms are largely still to be formulated. While the government has implied that Dutch society, and thus its buildings stock, will need to be (nearly) carbon neutral by 2050, it has not made an explicit commitment to phase out natural gas[1].[iv] With parliamentary elections coming up in March 2017 it will be up to the next government, as well as local and regional authorities, to transform the current government's ambitions and visions into concrete policies and proposals.

This case study focuses on domestic heat generation and demand reduction, although there are connections to other industries, particularly regarding the use of waste heat. Policies and proposals relating to domestic heat can be categorised into 2 pillars, demand reduction and stimulating low-carbon heat generation:

	Reduce heat demand	**Stimulate low-carbon heat generation**
Implemented	Tightened energy performance requirements for social and private rental sector.[v]	Renewable Energy Stimulation Scheme (primarily aimed at larger energy installations).[vi]
	Encourage homeowners to install further energy saving measures through subsidies, low-interest loans and an information campaign.[vii]	Investment Subsidy in Renewable Energy (ISDE): financial incentive to stimulate the uptake of solar thermal, heat pumps and biomass boilers.[viii]
		Energy taxation change: shifting tax burden from electricity to gas in order to stimulate uptake of heat pumps.[ix]
Proposed		No gas connection for newbuilt neighbourhoods. Replace mandatory gas connection with a 'right to heat' from 2018 onwards.[x]
		Reform the heat market so that it emulates markets for gas and electricity in order to stimulate development of district heating.[2] [xi]

Table 1: Current and proposed heat policies

Targets

Background: In 2012, heat demand accounted for approximately 55% of all energy use in the Netherlands.[xii][xiii] 29% of heat demand came from households.[xiv] Whilst the Government expects demand to decrease, it expects these reductions to be moderate in the next 10-15 years.[xv] In 2013, only 3% of all heat came from renewable sources, and

[1] Despite reports which implied that these are concrete targets (e.g. http://energypost.eu/dutch-government-evs-hydrogen-cars-2035-phase-natural-gas/)

[2] The 2014 Heat Act introduced legislation that sets a maximum price for heat, to ensure customers connected to district heating network do not pay more than if they were connected to the gas network.[2] The Dutch Government now wants to introduce further reforms.

an additional 5% was provided by utilising waste heat.[xvi] Whilst currently 93% of homes are heated by natural gas, researchers expect[3] this to decrease to 90% in 2020 and 85% in 2030 as more homes will be heated through heat pumps or district heating, as a result of the policies above.[xvii]

Targets

The transition to a more sustainable heat system is currently largely under development. The targets which are currently in place are largely guided by EU, rather than national, policy. Until 2023 the Dutch Government has specific targets for renewable energy (Table 2). Beyond 2023, the Government has decided that GHG emission reductions should be the guiding principle for Dutch energy policy, and it has not set a separate renewables target.[xviii] [xix]

In order to reduce its CO_2 emissions by 80-95% by 2050 to meet its European commitments, the Dutch Ministry for Economic Affairs wants heating in buildings to be 'largely free[4] of CO_2 emissions' by 2050.[xx] Whilst this means that the use of natural gas in domestic properties will need ot be phased-out, concrete targets and policies are yet to be developed. Where specific targets have been set, these primarily focus on energy saving in buildings. These are guided by the EU's Energy Performance for Buildings Directive and the 2013 Dutch Energy Agreement, and have been established in collaboration with key stakeholders.[xxi]

Building targets

- From 2020 all new buildings to be almost energy neutral.[xxii] Requirements for what constitutes 'almost energy neutral' vary per property type. For dometic properties this means a maximum heat demand of 25kWh/m^2/year, maximum use of fossil fuels of 25kWh/m^2/year, and minimum use of renewable resources (50%), to be enforced through Building Standards.[5] [xxiii]
- All existing domestic rental stock to be at an average EPC 'B' rating[6] for housing corporations[xxiv], and minimum of 'C' for private rental sector by 2020.[xxv]
- 300,000 existing buildings (domestic and non-domestic) to be improved yearly by two EPC rating steps (e.g. C → A).[xxvi] [xxvii]

Built environment

The current government wants to combine building targets with area targets and regulations, the latter for example focused on the use of waste heat.[xxviii] The Dutch Government expects local and regional authorities to take the lead in this.[xxix] In Amsterdam the local authority has developed a strategy to phase out natural gas by 2050 and has signed an agreement with distribution network operators, heat companies and housing associations in order to achieve this.[xxx] [xxxi]

How far have targets been achieved?

	Starting point (year)	Achieved	Target

[3] Note: these are expectations, not targets.
[4] There appears to be no concrete quantification of the 'largely CO2-free' aim
[5] In practice, this means houses need to be carefully designed (size of a house's footprint makes a significant difference), require high levels of insulation and one, or often multiple renewable energy technologies.Two examples in English can be found here (p.55-58), further examples in Dutch can be found here.
[6] Different countries have their own metrics for measuring efficiency, including different variables. A 'B' label in the Netherlands may not necessarily be the equivalent of a 'B' label in Scotland/UK.

% of gross energy consumption from renewable sources[xxxii]	1.6% (2000)	5.8% (2015)	14% (2020) 16% (2023)
% of gross heat consumption from renewable sources[xxxiii]	2.2% (2004)	5.5% (2015)	9% (2020)
GHG emissions reductions (compared to 1990 levels)[xxxiv]	-	12% (2015)	16% (2020) 40% (2030) 80-95% (2050)
Gross final energy consumption (PJ)[xxxv]	2257 (2000)	2076 (2015)	2047 (2020)
Average energy index[7] rating public housing[xxxvi]	1.78 (EPC label C) (2011)	1.61 (EPC label C) (2015)	1.25 (EPC label B) (2020)
Minimum energy index new build homes[xxxvii]	0.6 (EPC label A++) (2013)	No data, but interim target of 0.4 (2015)	Near 0 (EPC label A++)
% of privately rented homes EPC rating 'C' or above	No data found	No data found	80% (2020)

Table 2: Relevant targets and timescales

As this table shows, the Netherlands is still some way off meeting many of its energy targets. It is expected that energy consumption targets for 2020 will be met. It currently seems unlikely, however, that the 2020 renewable energy targets will be met. There is a chance that the 2023 renewable energy target can be met due to an expected increase in renewable energy deployment in coming years.[xxxviii] There are concerns that arrangements made with housing corporations at the local level are insufficient to meet the public housing energy efficiency target.[xxxix]

Timescales

What is the timeline for the transition?

Three main deadlines were identified for the Dutch heat transition:

- 2020: A statutory deadline for the all targets listed above.
    - The only interim aim identified regards the efficiency of new-built homes (identified in the table above).
- 2023: An additional (non-statutory) deadline for renewable energy generation (16% of gross consumption) which emerged out of the 2013 Energy Agreement. [xl]
- 2050: Deadline for EU –set target of 80-95-% reduction in GHG emissions. The Dutch government has said that this means buildings will need to be near-carbon neutral. There are currently, however, no statutory deadlines, interim milestones or measurement criteria for switching off gas or the implementation of other measures to achieve this.

[7] The 'energy index' concept is a new way to calculate the energy efficiency of homes. The key difference with earlier calculations of the EPC rating is that the energy index on a much larger number of characteristics (150). The numerical rating reflects the efficiency of a property in a similar way that the A-G scale in the UK does. In this case, a property with a rating of 0 is energy neutral.

How has the timescale been set?

Timescales have been set in a number of ways. Most derive from EU legislation, although the content of the targets have been set through collaborative processes with stakeholders and public consultation.

- Building targets are driven by EU directives, with the specifics drawn up in agreement with housing corporations representative and the private rental sector.[xli]
- The Dutch Government has set up a 'Heat Table', consisting of three working groups made up of Ministers from different departments, local and regional authorities, and the private sector to transform these long-term visions into more concrete proposals. The next government will be responsible for transforming these into policies and timescales. [xlii]

Communication

Approaches to communicating challenges and policy trade-offs

The main innovative approach that has been tried has been an 'Energy Dialogue', organised by the Dutch Government, which took place over a period of three months in 2016. The aim was to engage citizens in the question of how to further the energy transition between 2023 and 2050.[xliii] This dialogue took place both online and offline, on a designated website, social media and during 150 'offline' events.[xliv] As the dialogue only concluded in September 2016, it has been difficult to identify results of, or feedback on, this process.

General reactions to proposals for heat:

In 2013 less than 9% of heat came from renewable sources or by using heat from waste[xlv], but here appears to be broad agreement for the need to decarbonise heat (including from the gas industry). This headline from the Algemeen Dagblad newspaper appears to reflect the national mood quite well: *'A Netherlands without natural gas? We'll have to!'*.

Particularly, ongoing problems with natural gas extraction have helped make the issue of heat more tangible for three reasons. First, most of the natural gas is produced domestically, but an estimated 80% of reserves have been exploited. The government is reluctant to increase gas imports for both economic and energy security reasons.[xlvi] Additionally, there has been a growing public disapproval of domestic gas extraction due to a number of earthquakes in recent years, which have been attributed to gas extraction.[xlvii] [xlviii] Finally, in many Dutch cities the gas network needs modernising. Given the two factors above there is general agreement among politicians and the public this is a good time to consider alternative options rather than invest in updating current gas network.[xlix] As a result of these drivers, the government has limited gas extraction 24 billion m^3 per annum from 2016 onwards[8], with the majority of political parties indicating they would like to see an even greater reduction.[l]

The recent approach to heat is one of establishing long-term visions and agendas, without committing to specific targets, interim aims or implementation strategies. This can possibly be (partly) explained by the upcoming parliamentary elections, which may have contributed to a situation where the current government wanted to be seen as taking action, without entering into long-term commitments.[li] Nonetheless, this has resulted in criticism from other political parties (including the junior coalition party), and commentators from both industry and non-governmental organisations that current agendas and reports are 'full of vision' but contain few concrete measures for practical implementation. [lii] [liii] [liv] [lv] [lvi] [lvii] As a result (and as part of the ongoing election campaigns) five centre-left political parties have stated they would support a new Climate Act, which would set out legally-binding targets and deadlines until 2050.[lviii] The five parties argue that such an Act is important to 'depoliticise' Climate Change by introducing long-term statutory obligations.[lix] Interistingly, the Act has also gained the support from industrial stakeholders, including energy companies such as Shell, who say they would benefit from clear and consistent long-term policies.[lx]

[8] Down from a peak of 52 billion m^3 in 2013

Whilst there have been calls for more concrete measures, the general public appears wary of heat networks[9], the potential for cost increases,and measures forcing homeowners to make their homes more energy efficient.[lxi] This general support for decarbonisation of heat, but disagreement or concern about possible measures, may help explain why the current government has indicated it is the responsibility of the next government and local authorities to introduce more concrete policies and mechanisms. The lack of concrete plans from the government may thus obscure underlying tensions and policy trade-offs.

Context-specific factors

How were policy trade-offs addressed and why?

Regarding the areas in which specific targets are still to be formulated, there has thus far been a relatively broad consensus regarding the direction of travel. We identified three main reasons for the limited opposition. Two of these have been discussed above: the lack of clarity for the direction of travel and identification of a shared problem (the issues with natural gas). The thid is the consensus approach to finding solutions.

Consensus approach to identifying way forward: The current Governmnent has been reluctant to introduce statutory obligations, preferring a collaborative approach to formulating targets and approaches. The 2013 Energy Agreement was formed through cross stakeholder deliberation, ensuring that it set out a direction which was largely acceptable to most/all major players. Subsequent developments such as the 'Heat Table' described earlier take this collaborative approach forward. In order to take heat policy forward, the Ministry of Economic Affairs established a 'Heat Table' in 2016 to bring together Ministers from different departments, local and regional authorities, and the private sector with the purpose of turning the government's Heat Vision into regulation, implementation and concrete projects.[lxii] Academics have expressed concerns, however, that the involvement of key incumbent actors in driving the energy transition means that they set the tone of the debate, at the detriment of new/other stakeholders and more radical visions.[lxiii]

Push-forward: Despite the collaborative approach and the general acceptance for the need to reduce reliance on gas, there has been some push back from stakeholders with more radical visions. In 2015 the Urgenda Foundation[10] took the Dutch State to court. The case ended in Urgenda's favour, as a result of which the government has to reduce GHG emissions by 25% in 2020 compared to 1990 levels, rather than the 16% reduction target initially set by the Dutch Government.[lxiv] Unless overturned (the government is currently appealing the decision), this 'hard' target is likely to drive further policy changes.[lxv]

What key factors made the policy work and what lessons can be learned?

The identification of a shared, tangible problem (the problems with natural gas extractions) has been one key factor to increase acceptance for decarbonising heat. The second key factor which appears to have helped the Dutch government move forward with its heat policy is the inclusion of other levels of government as well as societal and industry stakeholders in developing a heat strategy from an early stage.

The Netherlands has a history of adopting a consensus-approach to decision making,[lxvi] and has also adopted this approach to develop a general direction for energy policy. The Dutch Ministry for Economic Affairs (responsibly for energy policy) has argued that it is not 'able or willing' to be solely responsible for making fundamental changes to provisions to heat supply.[lxvii] It has therefore called on other stakeholders to contribute to a joint-approach, in which the Ministry of Economic Affairs plays a coordinating role. The Government's position is that decisions on the organisation of the heat supply are best made at the local level, based on local conditions and preferences.[lxviii] It thus foresees a greater role for local authorities, but also building managers, property developers and residents. Starting

[9] In 2014 4.5% of homes were connected to heat networks. This is expected to increase to 5% by 2020.

[10] Urgenda is an independent third sector organisation for sustainability and innovation, founded in 2007 by two researchers.

point will be a regional heating plan to be developed by regional authorities.[lxix] The national government sees its role as supporting: reviewing policy and market rules for the supply of energy and maintenance of infrastructure.[lxx]

Conclusions

- In 2016 the Dutch Government set out its long-term vision for a (nearly) decarbonised domestic heat sector by 2050.
- 2020 – 2023 heating sector decarbonisation targets primarily focus on energy saving in buildings.
- Policies for 2023 – 2050 are yet to be developed.
- Decreasing natural gas resources and problems with gas extraction lead to a widespread support for decarbonisation across the political spectrum, civil society and industry.
- Stakeholders from different sectors (from industry to NGOs) as well as various political parties are currently pushing for more concrete decarbonisation targets. This may, however, create tensions around the underlying policy trade-offs visible, which have thus far been largely obscured by the lack of concrete proposals.
- Going forward, the Dutch Government has thus far adopted a collaborative approach. It is currently involving industry stakeholders and other levels of government in the development of a broad strategy for a heat transition.
- The Dutch Government sees its role as a coordinating one, with local and regional authorities taking the lead in collaboration with other stakeholders.

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