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Heat is Hot

Renewable Energy is the Future

January 2020

In order to meet the targets of the Dutch climate accord €48bn needs to be invested in sustainable heat

This is a result of Deloitte calculations based on the target formulated in the climate accord. When making houses more sustainable, the transition from traditional gas to district heating cannot be realized without government incentives according to the calculations. The incentives required in the next 10 years are estimated at €3.0bn - €4.5bn.

Renewable Energy

Many Dutch homes have relied on cheap gas for heating for decades. This is going to change soon. Based on the climate accord 50% of the Dutch residential gas usage is to be substituted by sustainable heat. To date it is unclear who is going to lead and fund this major transition. Historically district heating –often gas sourced– has been a task of traditional utility companies. In many major cities long term concessions for heating have been awarded to these utility companies.

But heating has become hot. Traditional gas distribution companies are looking to invest in sustainable heating to protect their right to exist. Other private companies have also started investing in sustainable heat projects, and even governments (including the municipality of Rotterdam and the province of Zuid Holland) themselves have invested in heat networks in order to facilitate local energy change.

However, the path towards change is uncertain and the regulatory framework is still missing. Heat is often not an economically viable alternative to gas. Knowledge of efficient sources and investments in heat are lacking and the market is struggling with which roles to play in the energy transition.

Based on the climate accord 750,000 houses need to switch from gas to sustainable sources of heat before 2030

The climate accord sets an intermediate target that carbon emissions in the built environment are to be cut by 3.4 Mton in 2030. In order to achieve this, 1.5 million houses are to be made 'sustainable' before that date. Approximately half of the houses is expected to go all-electric. The other half is assumed to use a sustainable source of heat as an alternative to gas. This means that in ten years from now, 750,000 houses will need to switch from gas to heat. For 2050 the target is to make all 7 million houses and 1 million other buildings sustainable, implying that 4 million houses and buildings will need to switch from gas to heat.

Massive investments are required in order to realize this 'heat transition'. It requires investments in sustainable heat sources such as geothermal, residual heat and biogas heat, but also in the transport and distribution of heat. And finally, in a heat connection to (and in) the homes. Deloitte estimates that the total cost per connection to switch from gas to heat in the most efficient urban areas is currently around €12k. The development

of technical heat and isolation solutions might lead to lower costs per connection in the future, although it should also be taken into account that our estimate is based on our experience in a relatively efficient area.

Based on the costs per connection, the total investment required to realize the heat transition is estimated to be €48bn. Until 2030 the required investment is calculated to be €9bn. To place this into perspective, this implies that until 2030 the total investments in the transition from gas to heat amount to ca. 75% of the book value of all regulatory gas assets that have been put in place in the Netherlands since the 1960s.

Current market dynamics result in an estimated €3.0bn - €4.5bn in required government incentives over the coming 10 years

Currently the business case for switching from traditional gas to sustainable district heating is negative. The required investments per connection amount to approximately €12k, while the running costs for sustainable heat are not cheaper than for gas-sourced heat. This implies that without external contributions heat networks are not capable of achieving a reasonable return on their investments. Deloitte estimates that a contribution of approximately €6k per connection is needed in order to allow for a business case with a reasonable regulatory rate of return. Taking into consideration that government incentives might not be applicable to housing corporations (ca. 29% of all Dutch houses) and the 1 million non-residential buildings, this means that between €3.0bn and €4.5bn in government incentives is needed until 2030.

Investing in the quick wins may not be the most efficient strategy

Because of the required incentives some governments have switched to investing in quick wins, for which the required incentives are much lower. For instance by investing in heat solutions for housing corporations, large institutional owners or government-owned property. In the short term this helps in reducing carbon emissions and achieving short-term energy transition targets, at relatively low costs.

However, it could well be that in the long term this strategy turns out to be very costly, as the ambition is to include all buildings in the transition, and not only the ones that are cheapest to connect. This implies that the transition will need to include the more expensive long tail of the housing stock. Therefore, the focus should be on implementing an all-inclusive strategy with a phased transition. As a consequence, on a high level governments have a choice between:

- investing in a smaller network capacity first to connect the 'quick wins', thereby accepting that the required incentives in the second phase of the transition (connecting the expensive long tail) could be much higher; or
- investing in a network with sufficient capacity for all buildings from the start and providing unused capacity subsidies until enough buildings are connected to allow for a business case with reasonable returns.

Summarizing, governments have to seriously think about the best fitting strategy since only connecting the low hanging fruit is not an option given the targets of the climate accord. Strategies should include a clear view on challenges such as cost of temporary overcapacity heat networks, inefficiency, remaining gas networks and costs of transforming the expensive long tail of the housing stock.

The new heat act provides changes in the regulatory framework that are vital to make heat viable

In order to facilitate the transition from gas to heat, the ministry of Economic Affairs and Climate is working on the new Heat Act 2.0 ("Warmtewet 2.0"). The new act aims to provide clarity to the current regulatory heat framework, in order to make heat a more viable alternative for gas. Although the details are yet to be worked out – the act is envisioned to become active in 2022 – the outlines of the new framework are becoming visible:

- Primary responsibility for assigning a heat company to a heat parcel lies with local governments, supported by the state;
- The assigned heat company has the legal task to realize an efficient heating network and has the responsibility for the integral heat chain, from production, to transport and distribution;
- The state gets the possibility to designate a company responsible for heat transportation in exceptional cases in which local governmental direction is insufficient;
- The new tariffs methodology is (more) cost-based; and
- Regulatory frameworks on tariffs, sustainability and supply security apply to heat parcels on a local scale instead of sector wide.

While the new regulatory framework is taking shape, probably the best way to get the transition to sustainable heat started is to start planning and initiate pilots, to find out what works and what does not.

More information?

Do you want to have a personal discussion about the implications of the energy transition to sustainable heat and the next steps for you? Feel free to reach out to our experts below.



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Our multiple disciplinary experienced professionals active in the heat and energy sector

Selected credentials of Deloitte in the Dutch heating domain

Netherlands

Financial advisor to

Gemeente Rotterdam and provincie Zuid-Holland

in the sale of

Warmebedrijf Rotterdam to VATTENFALL

Financial advisor to

aeb amsterdam

in the sale of

Westpoort Warmte to Gemeente Amsterdam

Financial advisor to

COGAS Twence

Analysis of joint heat network in the Twente area

Financial advisor to

ennatuurlijk

Valuation analyses

Financial advisor to

hvc. energie en hergebruik

Multiple financial analyses regarding heat assets

Financial advisor to

Gemeente Rotterdam

Analysis of a public participation model in local heat networks

Financial advisor to

North₂

Advisory to the consortium with regard to the largest hydrogen project in Europe

Financial advisor to

Gemeente Heerlen

in the sale of Mijnwater to

Limburgs Energie Fonds

Financial advisor to

ebn

Regarding its activities in the heat sector

Financial advisor to

PURMEREND

Valuation analysis on the shares of Stadsverwarming Purmerend

Financial advisor to

Gemeente Rotterdam

Analysing how to socially and fairly distribute heat to the citizens of the Rotterdam area

Financial advise regarding

Eteck

duurzame energie van eigen bodem

refinancing process and acquisition process

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