



Webinar Efficiency-as-a-Service (EaaS) Heating servitisation for efficient Dutch buildings



8 February 2022, 13:00 - 14:00 CET



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Moderators



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Webinar Efficiency-as-a-Service (EaaS) Heating servitisation for efficient Dutch buildings



Speakers



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HVG Law



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Delta-EE



Webinar Efficiency-as-a-Service (EaaS) Heating servitisation for efficient Dutch buildings

Session 1

Perspectives on legal issues

A circular logo with the text "EaaS" in the center, surrounded by a white border.A photograph of two glowing incandescent light bulbs hanging from black cords against a blurred background of a room with other lights.



**Perspectives on legal issues: Dutch
Heat Act & Securing ownership**

HVG Law | EIT InnoEnergy

8 February 2022



The better the question. The better the answer.
The better the world works.



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LAW

1 Introduction

Perspectives on legal issues: Dutch Heat Act & Securing ownership

1. Introduction
2. Securing ownership on installation under Dutch law
3. Dutch Heat Act (*Warmtewet*)
4. New legislation: Dutch Collective Heat Supply Act
5. Q&A

2 Securing ownership on installation under Dutch law

- In EaaS structures the service provider retains the ownership of the installation.
- Under Dutch law, two ways to lose ownership:
 - 1) Loss of ownership via accession via the ground (in Dutch: *Natrekking*)
 - 2) Loss of ownership via component formation (in Dutch: *Bestanddeelvorming* or *horizontale natrekking*)

2 Securing ownership on installation under Dutch law

- 1) Loss of ownership via accession via the ground (in Dutch: *Natrekking*)
 - Ownership of land includes the buildings and “works” that are permanently united with the ground (*duurzaam met de grond verenigd*) (art. 5:20 sub e of the Dutch Civil Code (DCC)).
 - The test is whether the equipment is (directly or indirectly) permanently united with the ground (Portacabin assessment) (immovable property art. 3:3 DCC). If so, the equipment becomes the property of the land owner.
 - Examples:
 - No - Temporary Technical Room (TTR) (Rb Gelderland 20 December 2019);
 - Yes – Solar park (Rb Gelderland 28 June 2016); WWK (HR 27 September 2013).

2 Securing ownership on installation under Dutch law

- 2) Loss of ownership via component formation (in Dutch: *Bestanddeel-vorming* or *horizontale natrekking*)
 - If, after installation, the equipment qualifies as a component of the building, the equipment loses its independent (*zakelijke*) identity and then becomes part of the building. Consequently, the equipment becomes the property of the owner the building (art. 5:3 DCC).
 - The test is twofold (art. 3:4 DCC), the equipment qualifies as a component if
 - (i) equipment to common perception (*verkeersopvatting*) is part of the home (constructive matched / incomplete without), and / or
 - (ii) equipment cannot be separated from the home without damaging either.
 - Examples:
 - No - Temporary Technical Room (TTR) (Rb Gelderland 20 December 2019);
 - Yes - WKO (HR 21 January 2022); integrated solar panels/boiler (Hof Amsterdam 26 juni 2018).

2 Securing ownership on installation under Dutch law

- Prevent loss of ownership
 - Cannot be contractual excluded.
 - Establishment of a right of superficies (*recht van opstal*) (art. 5: 101 DCC). For components not clear.
 - Requires notarial deed.
 - Key take away: stay in control of ownership.

3 Dutch Heat Act (*Warmtewet*)

- Dutch Heat Act (*Warmtewet*)
 - Background: consumer protection
 - > sector self-regulation (“*not-more-expensive-than-gas* principle”)
 - > Heat Act as per 2014 (amended in 2019)
 - Distinction between:
 - > small consumers: connection \leq 100kW (both residential and small business)
 - > large consumers: connection $>$ 100kW
 - It is prohibited to supply heat to small consumers without a license from the regulator Authority for Consumers and Markets (ACM)
 - > Exemptions for small projects (max. 10 consumers or 10,000GJ) and for landlord/lessor
 - Licensed supplier
 - > subject to supervision by ACM
 - > obliged to procure reliable heat supply at reasonable conditions and good service level

3 Dutch Heat Act (*Warmtewet*)

- Dutch Heat Act (*Warmtewet*)
 - Tariff regulation
 - > maximum price for heat supply
 - > maximum price for supply set (*'afleverzet'*)
 - > one-off connection fee
 - Maximum heat price may vary depending on the supply temperature and consists of two components:
 - > price in EUR per GJ
 - > fixed periodical component in EUR
 - Maximum price for supply set (*'afleverzet'*) may vary depending on different categories and functionalities

3 Dutch Heat Act (*Warmtewet*)

- Dutch Heat Act (*Warmtewet*)
 - Compensation in case of outage/malfunction
 - > set by the Minister
 - Supplier of last resort
 - > heat supplier/producer must notify Minister in case of problems or anticipated end of supply
 - > Minister may revoke license, appoint supplier of last resort and oblige producer to deliver heat
 - negotiated Third Party Access (nTPA)
 - > heat producer may force heat grid operator and supplier to negotiate on access to heat grid
 - > share information on available transport capacity, heat demand, transport tariffs and profile

4 Dutch Collective Heat Supply Act

- Upcoming new legislation: Dutch Collective Heat Supply Act (*Wet collectieve warmtevoorziening - WCW*)
 - Also referred to as the new Heat Act or Heat Act 2.0 (*Warmtewet 2.0*).
 - Implements agreements from Dutch national Climate Agreement (*Klimaatakkoord*).
 - Public consultation took place in 2020 (112 responses).
 - Main amendments following the consultation round set out in letter to Parliament of 15 December 2020.
 - In January 2022 extended for a year; proposal now expected to be sent to Parliament in 2023.

4 Dutch Collective Heat Supply Act

Warmtewet laat nog minstens een jaar op zich wachten

Jetten onderzoekt loskoppelen prijs warmtenet van gasprijs

04 feb. 2022 in BINNENLAND




Patstelling over Warmtewet 2.0 tussen gemeenten en rijk

4 Dutch Collective Heat Supply Act

- Core elements of the upcoming Dutch Collective Heat Supply Act
 - i. Market organization (*marktordening*) – for growth collective heat systems
 - Directing role municipality (*regierol gemeenten*); determines heat plots (*warmtekavels*); appoints heat companies (*warmtebedrijf*); exclusive right.
 - Prohibits transport and supply of heat to consumers (small scale < 100 kw and large scale consumers > 100 kw) without appointment or exemption from the municipality.
 - Exemptions: Single collective heat system with maximum 10 small scale consumers. | Exemption by request for small collective heat systems. | Definition large scale consumer (*grootverbruiker*) exempts industry and production process and heat not primarily for space heating or warm tap water. | Opt-out for building owner.
 - ii. Tariff regulation (ACM) - cost based – gradual transition - no longer connected to gas prices.
 - iii. Sustainability (*Verduurzaming*) – annual declining CO2 emission allowance – collection right industrial residual heat.
 - iv. Security of supply (*Leveringszekerheid*) – responsibility heat companies.

5 Q&A

Q&A



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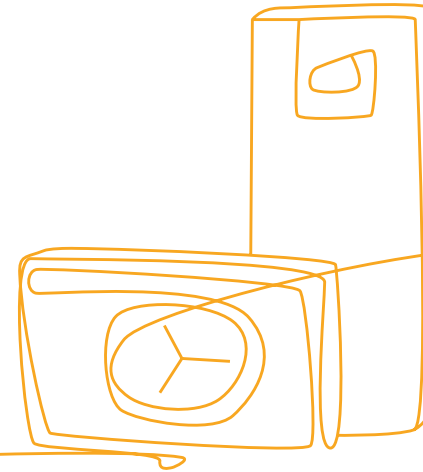
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Session 2

Perspectives on the business models



February 2022



HEAT AS A SERVICE IN EUROPE

Lindsay.sugden@delta-ee.com

Delta-EE Services - knowledge areas

New Energy Business Models Identify and understand the alternative and new business models for the energy transition

Global Hydrogen Intelligence Service An emerging pillar of the new energy sector



Distribution network Service Working with network companies, regulators and Electricity OEMs to make better decisions at the network level



Local Energy Systems

Energy communities, microgrids and local energy markets



Flexibility & Energy Storage

The opportunities emerging from an active demand side



Heat

Gas Heating Service



Distributed Power

Identifying and understanding the alternative and new business models for the energy transition



EV Charging Service

The opportunities and challenges from sector coupling between electricity and transport



Digital Energy

The opportunities in the growing connected home market and how to capture them

Flexibility Service



Electrification of Heat Service



Connected Home Service



Energy Storage Service



Heat Business Service



Energy Insights + Service

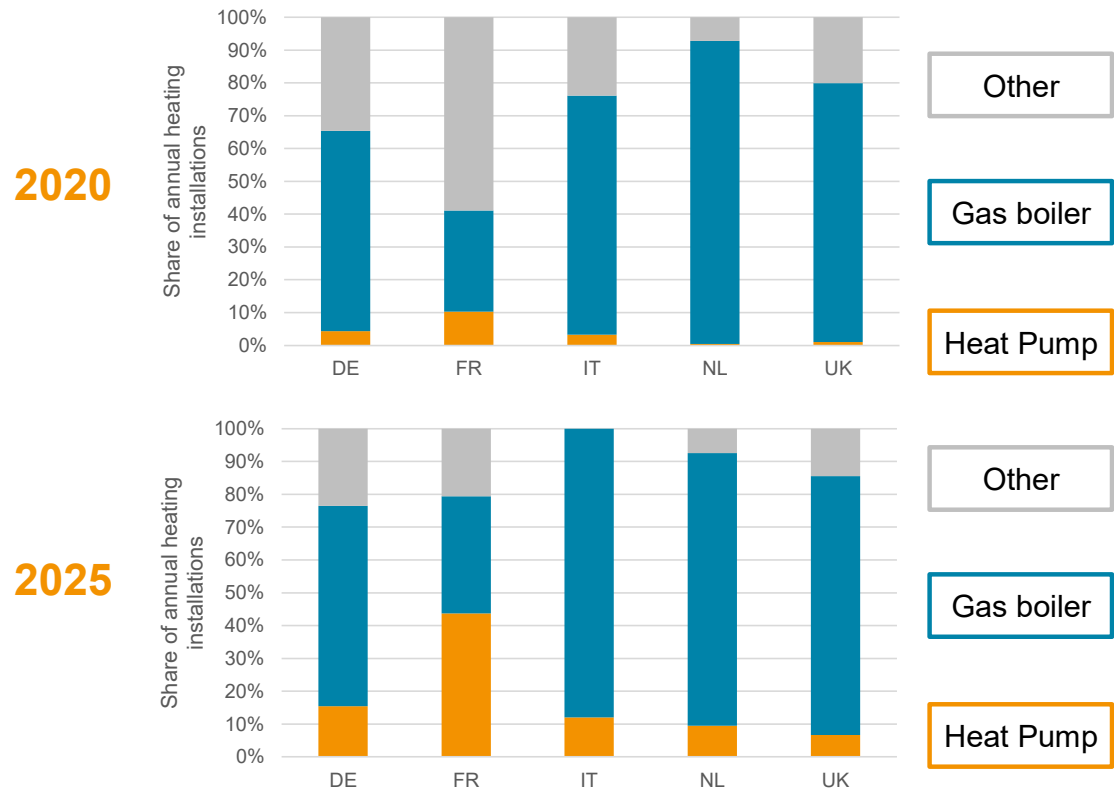


Contents

- About Delta-EE
- **Decarbonising heat in buildings**
- Defining Heat as a Service – and why is it important?
- Current HaaS market - Examples
- Outlook

Decarbonising heat in buildings – the scale of the retrofit challenge

Changing annual heating sales, retrofit, 2020-2025



Source: Delta-EE forecasts

In new build, regulations are driving a significant shift in the heating market.

In retrofit, decarbonisation of heat is very slow and faces major challenges.

Heat as a Service models can overcome many of these challenges.

+/-5%

Expected change in annual gas boiler sales in retrofit, 2020-2025

Decarbonising heat in buildings – the scale of the retrofit challenge

1%

Annual building fabric renovation rate in Europe

<500,000

Number of fossil boilers currently displaced by low carbon alternatives per year

200+

Years it would take to replace all the fossil boilers in Europe with lower carbon alternatives, at current renovation rates

<5%

Share of existing gas boilers replaced by a lower carbon appliance per year

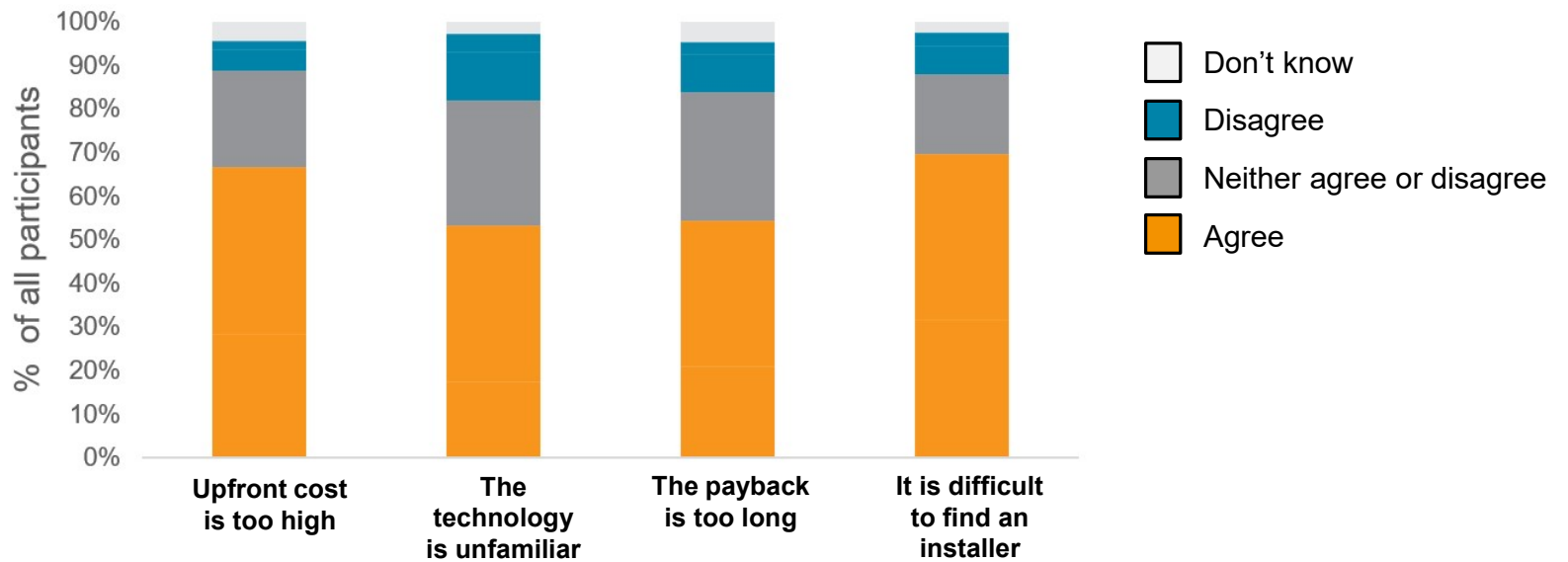
>3 million

Number of fossil boilers which need to be replaced per year, to decarbonise heat by 2050?

Why is retrofit so challenging? Customer pain points

Decarbonising heat is ‘high risk’ for end-users. A poor economic proposition, lack of knowledge and trust in “new” technology, and a difficult customer journey are the biggest barriers to low carbon heat in retrofit

Why are customers concerned about purchasing high efficiency heating systems?



Source: Delta-EE customer research

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Risk-based framework for understanding Heat as a Service

By taking on some or all of the customer's 'risks', service-providers can overcome the biggest barriers to decarbonisation of heat

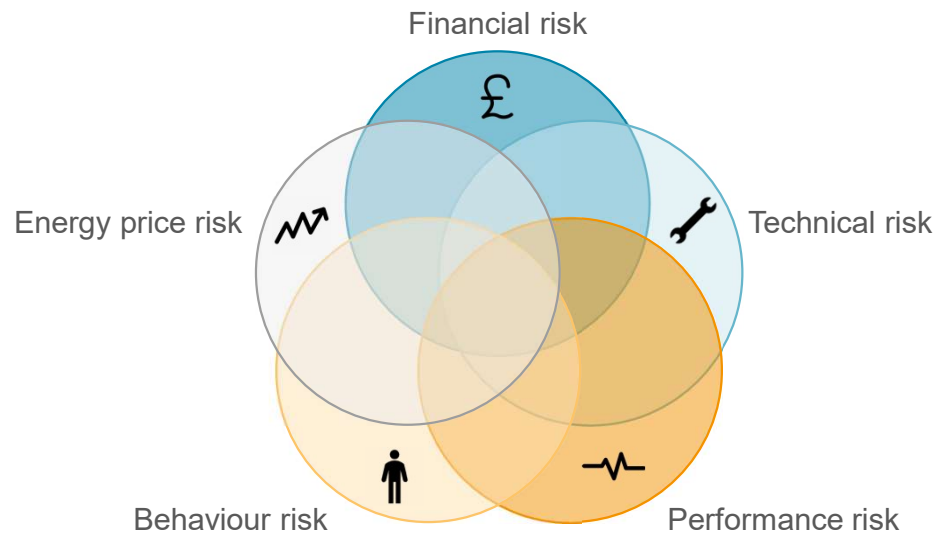
Customer pain points...

Upfront cost is too high

The technology is unfamiliar

The payback is too long

It is difficult to find an installer



Source: Heat as a service: Definitions and examples (Heating Business Service)

Risk-based framework for understanding Heat as a Service

By taking on some or all of the customer's 'risks', service-providers can overcome the biggest barriers to decarbonisation of heat

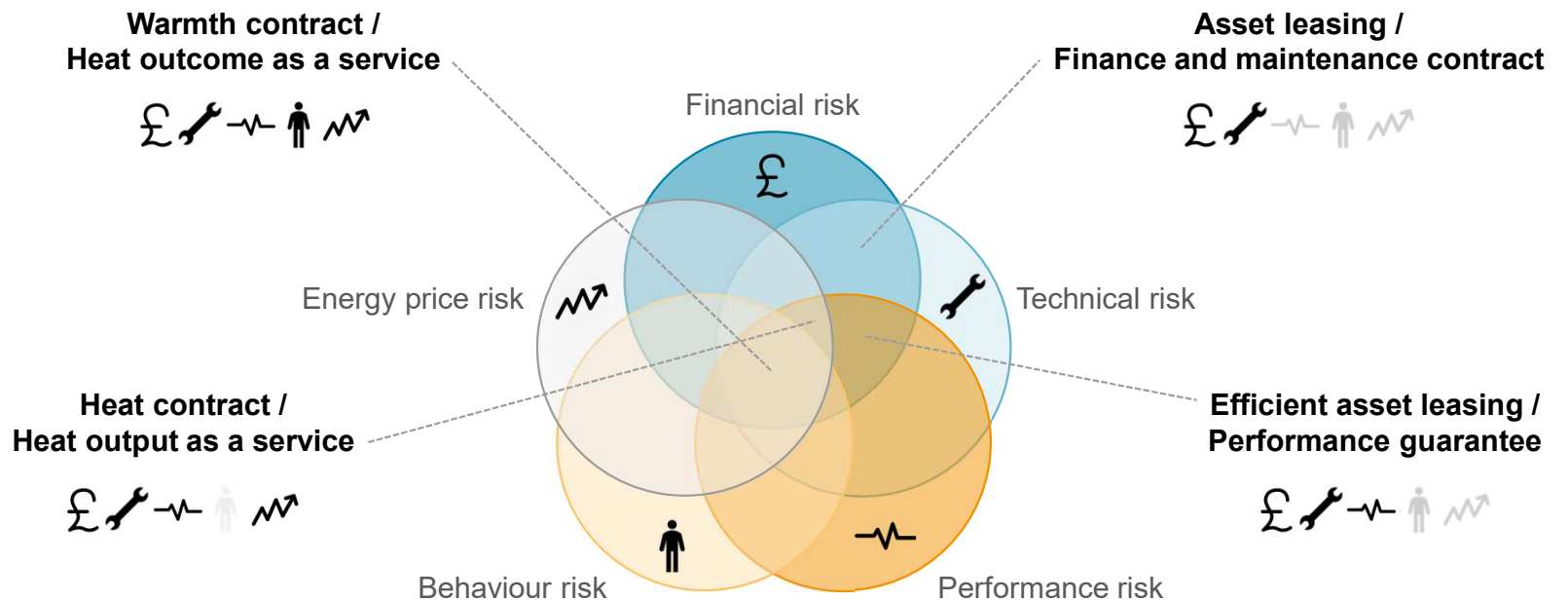
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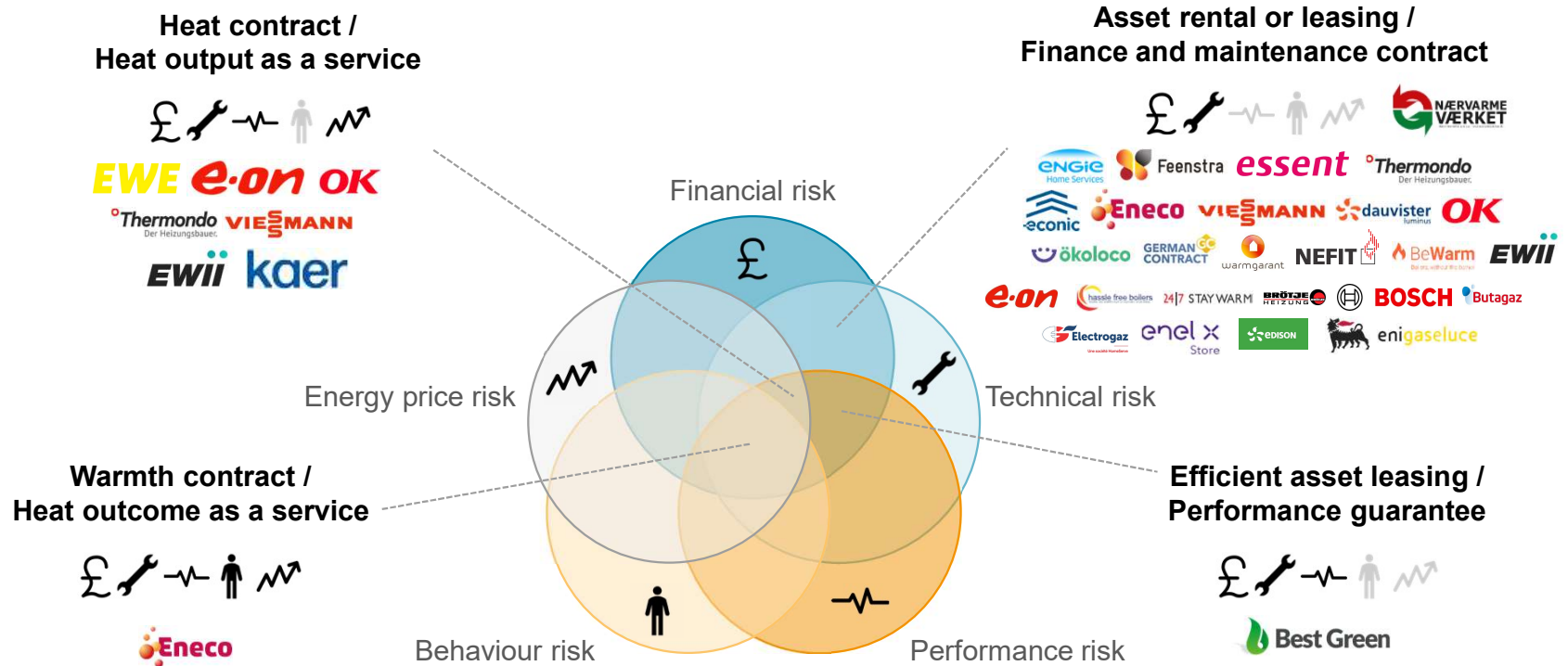


Source: Heat as a service: Definitions and examples (Heating Business Service)

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Heat as a Service: Landscape of service providers

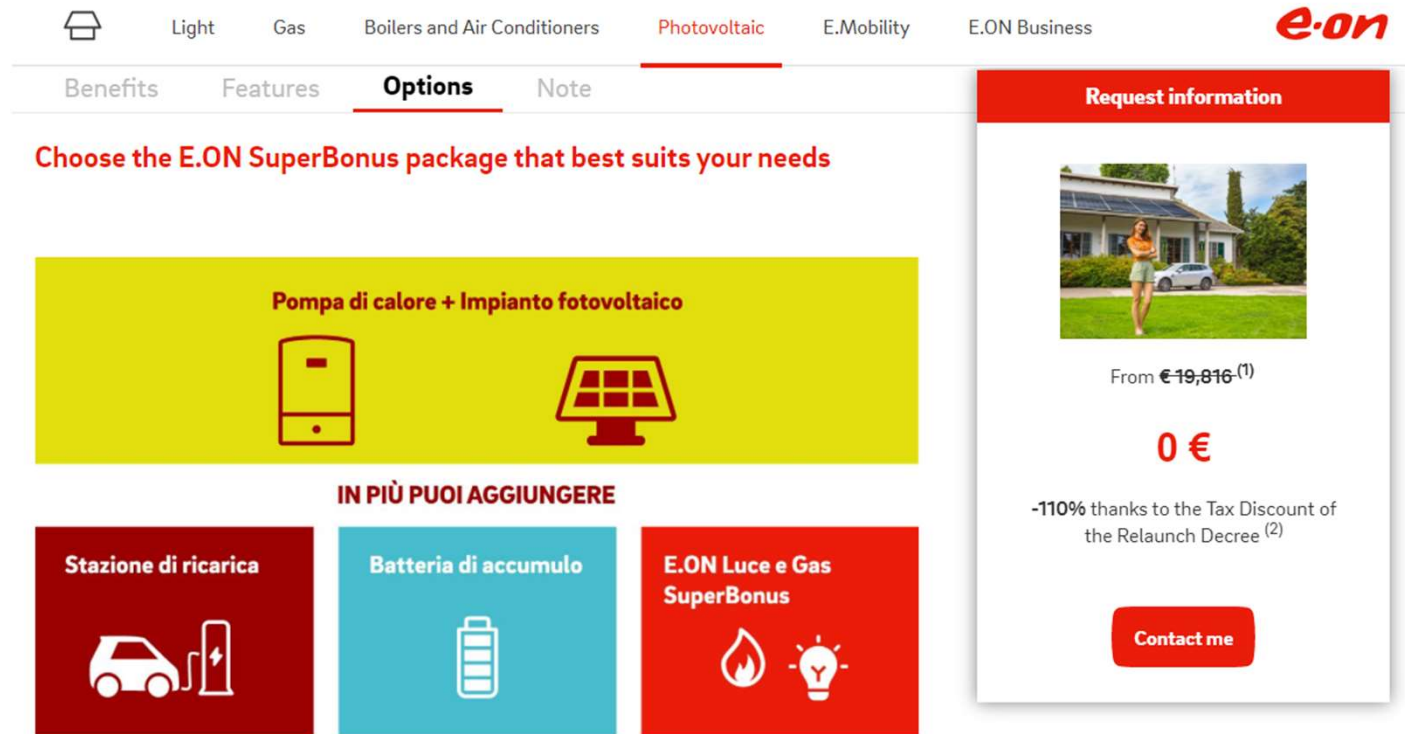


Superbonus 110% bundles

E.ON, Enel, ENI, Sonnen and others

Location:
Italy

Risks:

Light Gas Boilers and Air Conditioners **Photovoltaic** E.Mobility E.ON Business

Benefits Features **Options** Note

Choose the E.ON SuperBonus package that best suits your needs

Pompa di calore + Impianto fotovoltaico

IN PIÙ PUOI AGGIUNGERE

- Stazione di ricarica
- Batteria di accumulo
- E.ON Luce e Gas SuperBonus

Request information

From €19,816⁽¹⁾

0 €

-110% thanks to the Tax Discount of the Relaunch Decree⁽²⁾

Contact me

Source: [Multi-technology heating bundles – the next big thing?](#)

“Transition Pack”

Engie Home Services

Location:
France

Risks:


Opt for the Transition + Pack

A maximum of services, and the support of a heating expert at every stage!



Equipment

from € 39 / month over 60 months ⁽⁷⁾, installation included

- A high-performance air / water heat pump from a major brand
- A programmable thermostat included
- State aid deduction



A "Safety +" maintenance contract

21 € / month for more peace of mind

- Annual maintenance visit
- Parts and labor warranty for 5 years
- Unlimited repairs (travel and labor)
- Optional Illigo ^{(8) service} for an additional € 2.
Learn more about the Illigo service

MaPrimeRénov' ¹	MaPrimeRénov' ¹	MaPrimeRénov' ¹	MaPrimeRénov' ¹
BLUE	YELLOW	PURPLE	ROSE
(very modest)	(modest)	(intermediate)	(very easy)
from	from	from	from
39 € tax incl.	59 € tax incl.	113 € tax incl.	149 € tax incl.
per month over 60 months	per month over 60 months ⁽⁷⁾	per month over 60 months	per month over 60 months
or € 2,124 including tax, cash payment	or € 3,213 including tax, cash payment	or € 6,154 including tax, cash payment	or € 8,814 including tax, cash payment

Find out more about the Transition + Pack

Source: [Heat as a service: Market status and outlook](#), [Residential Heating Propositions Database](#)

KAER: Cooling as a Service in Singapore

Location:
Singapore, wider Asia

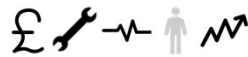
Risks:


Kaer Air allows you to simply dictate the conditions you want to achieve in your space and buy it in the same way that you buy electricity and water.



HVAC manufacturer becoming service providers

Viessmann Warme in Germany



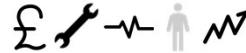
Empfehlung

Wärme Flex

- ✓ Heizungsrente
- ✓ Wartung
- ✓ Reparaturen
- ✓ Schornsteinfeger
- ✓ Wärmelieferung
- Öko-Wärme
- Einzelraumsteuerung

ab 77€

Vaillant Heat365 in Switzerland



Heat365 Gas heating Heat pump Common questions

Modern heat pump system:

A modern, highly efficient complete air / water heat pump system

Our heat pump system consists of a highly efficient, very quiet air / water heat pump (up to 12 kW heating capacity), hot water storage tank and all the necessary accessories.

This system is particularly well suited for modernization. There are no additional investment costs for a term of 15 years.

Nefit Rentals in Netherlands



NEFIT BOSCH

Advies & service Products Sustainable living News Actions Consumentendag

Insured of heat and hot water

No fine print. A transparent contract. That is renting from Nefit Bosch. Tailor-made advice in 3 steps.

Direct tailor-made advice

The 5 benefits

- ✓ Not a big investment all at once
- ✓ Fixed low monthly amount
- ✓ Free installation, maintenance
- ✓ Tailored advice
- ✓ A transparent contract

Rental price from € 52.99

Directly from Nefit Bosch

Service

At Nefit Bosch you can rent many different types of heat pumps for different rental prices per month. The Nefit EnviLine Split

If you choose a heat pump from Nefit Bosch, you do business directly with the manufacturer. That provides certainty. The

The all-in-one for your rental

Source: [Residential heating propositions database](#)

Denmark – leading in Europe in service-based models for electric heat pumps

Strong foundations for a heat services market with HP: (1) demonstration project exploring business models to increase HP uptake, (2) subsidies for service providers to offer HP on a contract, (3) removal of tax on electricity for heat, (4) engagement of wide range of service providers, (5) marketing and awareness-raising

~5%

Of HPs installed on service-based contracts per year in DK



Who are they? Oil supplier

Offering? Heat as a service, financing and leasing offerings with heat pumps, targeting oil customers (residential & commercial).



Who are they? Community-owned heat services company

Offering? “simplified” HaaS where end-user buys into co-operative, receiving HP at low cost + ongoing maintenance.



Who are they? Energy supplier

Offering? Range of service offerings including Heat as a Service with heat pumps (and sometimes hybrid solutions) to commercial customers



Who are they? Start-up energy services company

Offering? Heat as a Service with heat pumps – including fixed heat price and service/maintenance.

Learnings from current HaaS offerings – designing a proposition

5 Challenges

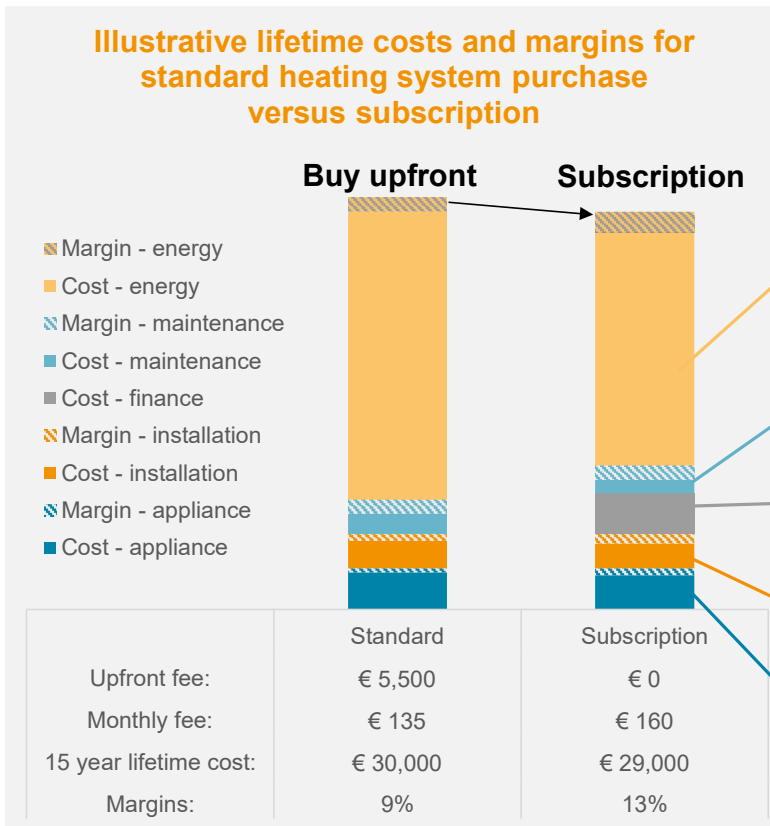
1. Value proposition does not always stack up
2. Risk management strategies can limit the value of the customer proposition
3. Achieving economies of scale is not an overnight process
4. Regulations can limit proposition designs
5. How to ensure enough boots on the ground?

5 Success Factors

1. Focus on the customer – and target those with highest running costs
2. Maximise opportunities in the current policy environment -> and prepare for future changes
3. Start simple and plan to layer in future value streams
4. Access low cost finance
5. Partner or acquire to access the right capabilities/skills

Value proposition – in theory, HaaS can reduce costs for customers and increase revenue for providers

Illustrative lifetime costs and margins for standard heating system purchase versus subscription



Ways to reduce cost to service provider

Energy supply costs – can they be reduced through e.g. energy efficiency, optimisation to ToU tariffs, accessing flexibility value streams...?

Remote monitoring and maintenance – to reducing maintenance costs

Accessing cheap finance is key to enabling the business model and keeping costs down

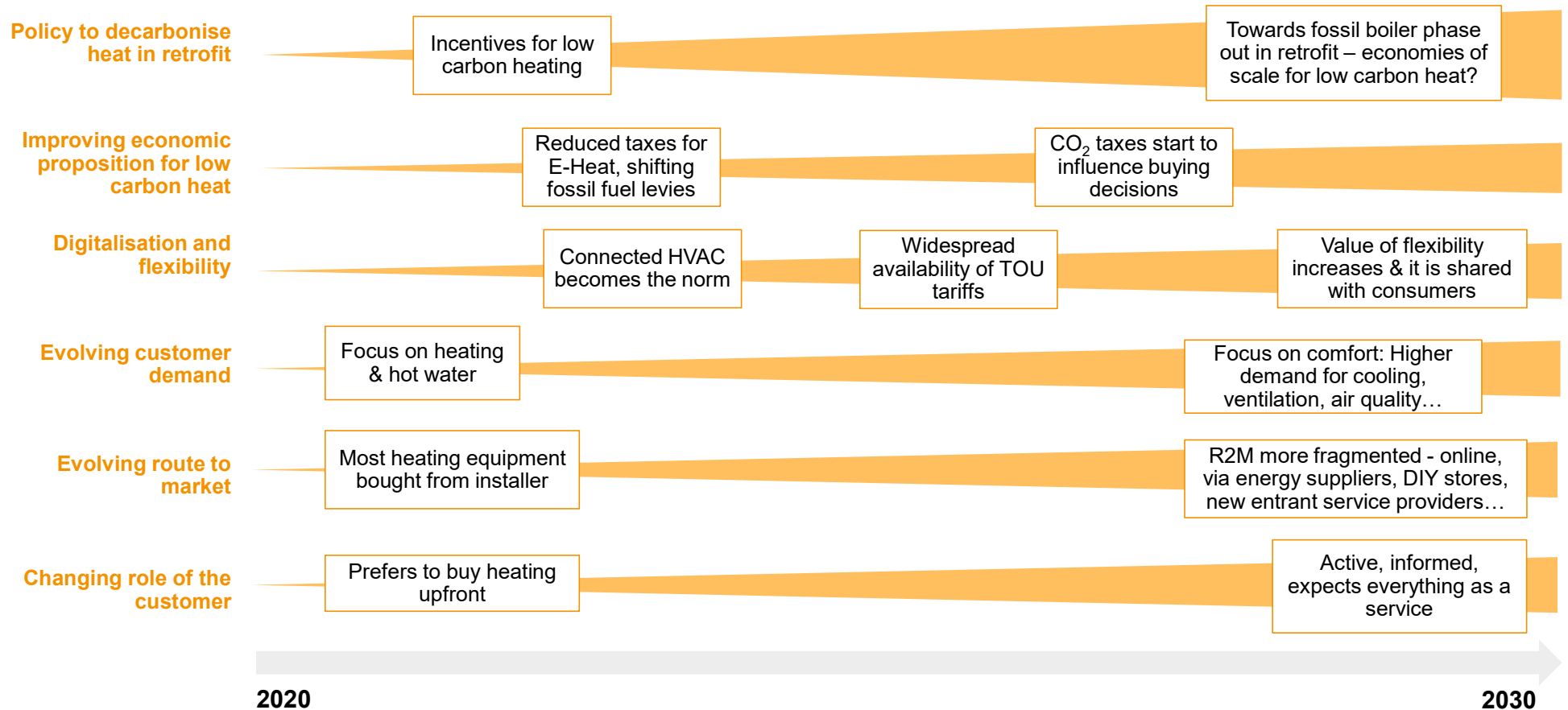
Installation/labour costs – reduce through standardisation, automation, new routes to market?

Appliance cost – reduce through volume purchases / economies of scale?

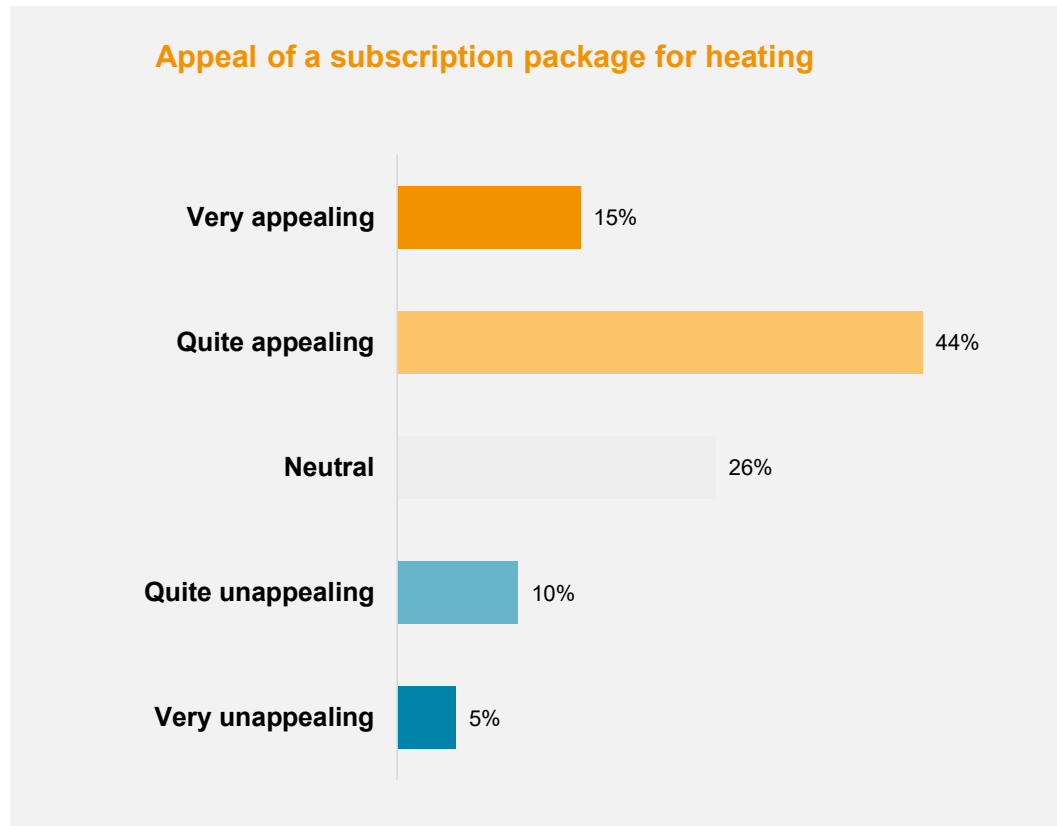
Source: Are customers ready to buy heating on subscription? (Heating Business Service)

Outlook

The heating transition driving Heat as a Service opportunities

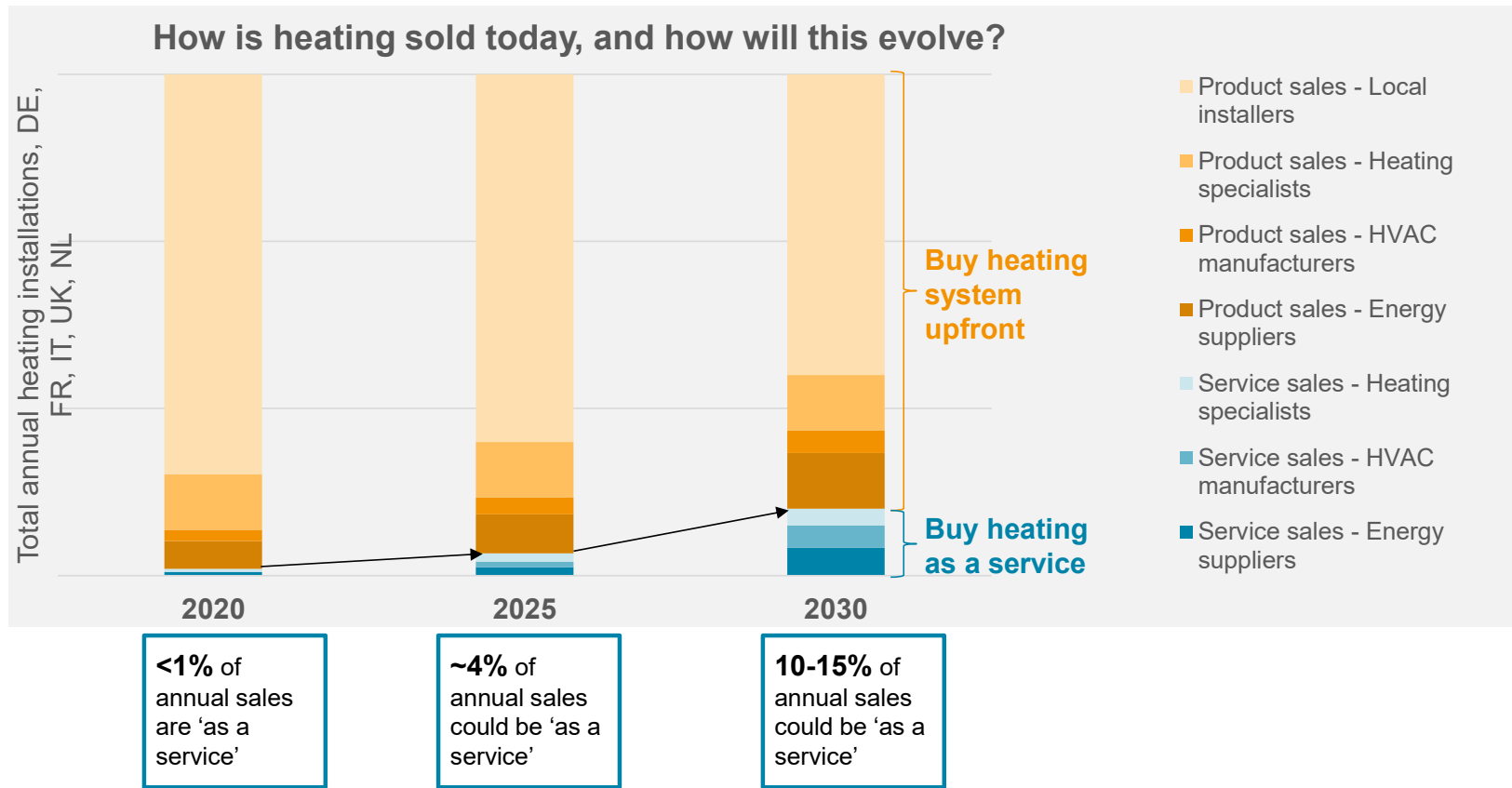


Customer demand for Heat as a Service is there



Source: Delta-EE customer research

Heating service sales could increase 10x by 2030



Source: Heat as a service: State of the market (Heating Business Service)

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Q&A



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Thank you

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