

# Heat as a Service propositions: One of the keys to unlocking the residential retrofit market for heat pumps

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Heat contract propositions such as heat as a service, which can reduce the upfront costs and risks for residential end-users of switching from fossil boilers to lower carbon heating like heat pumps, are emerging rapidly across Europe. They offer promise as a way of driving uptake of heat pumps in existing residential buildings – a notoriously difficult segment to decarbonize. Today, <1% of heating systems sold across Europe annually are sold “on a contract”, but this could reach 10% of the market by 2030.

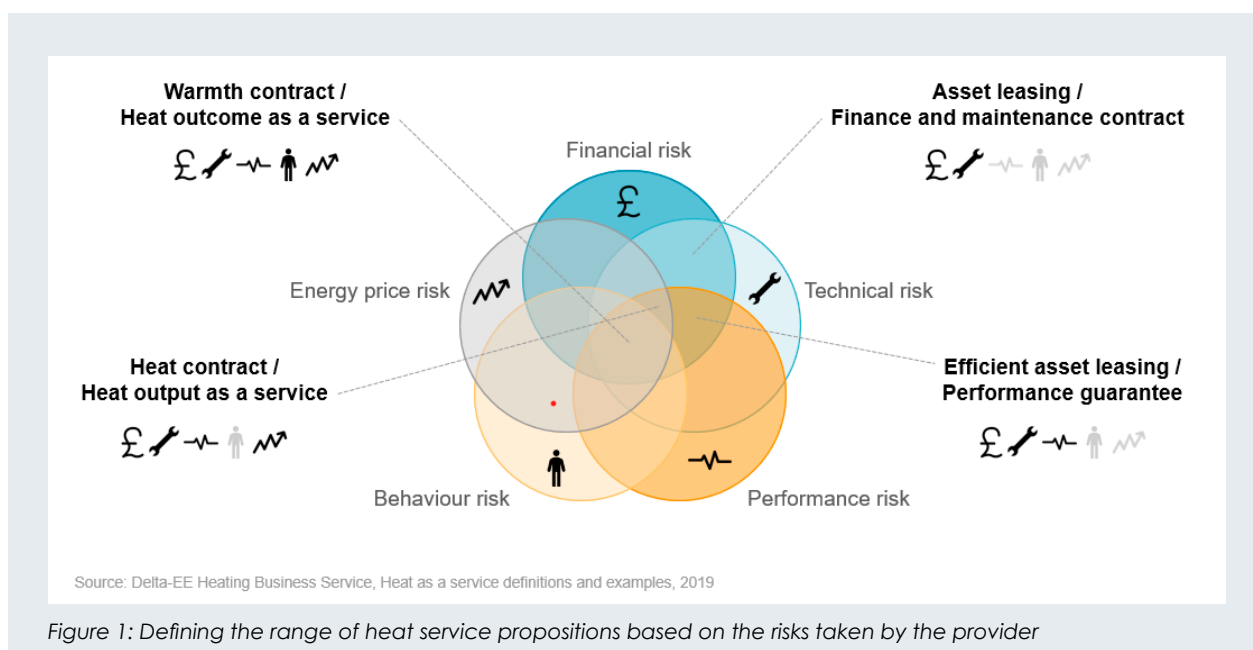
While heat pump uptake in new build accelerates thanks to increasingly tight building regulations across many parts of Europe, only small steps have been made in driving heat pump market growth in existing buildings. As a result, heat pumps make up less than 2% of the installed base of heating systems in dwellings across Europe. Two of the major challenges to increasing uptake of heat pumps in existing buildings are the poor customer economics, and the lack of end-user trust in the technology. To meet decarbonization targets and drive HP market growth to meet current ambitions, a significant shift is required in the rate of heat pump uptake in existing buildings, especially displacing gas boilers. There is an urgent need for a new way of selling heat pumps, which can remove some of the perceived risks from end-users, and make the economics look more attractive. Emerging heat contract propositions – including heat as a service – offer promise to tackle both of these challenges. There are an increasing number of market players engaging, from energy companies to heating manufacturers, to start-ups and specialist service providers.

## What is heat as a service, and how can it overcome barriers to heat pump uptake in existing homes?

Figure 1 shows Delta-EE's risk-based framework for analyzing heating propositions. Propositions range from leasing, financing and maintenance contracts, to heat (output) as a service and even comfort (heat outcome) as a service. The more risks taken on by service providers, the less risk the end-user takes on.

The two biggest challenges for heat pumps in existing buildings are their poor end-user economics and the pervasive lack of trust in the technology

- » End-user economics rarely stack up for heat pumps, particularly compared to gas – an installed heat pump costs two to four times that of a gas boiler, and in many markets, it is difficult for heat pumps to achieve running cost savings with current energy price ratios. ‘Heat as a Service’ can improve the customer economics, by removing – or reducing – the upfront cost barrier for a heat pump, and giv-



ing greater certainty about running costs through a fixed-rate heat cost.

- » Awareness and trust in heat pumps remain low amongst a large share of heating customers in many of Europe's biggest markets, so buying a heat pump remains a "risky" prospect. 'Heat as a service' can remove the risk of poor heat pump performance and break-downs from the end-user by providing maintenance, remote monitoring, and guaranteeing the heat outcome.

#### Who is offering heat as a service or other heat contracting models?

Energy suppliers are the leading providers of service-based contracts today, and we expect them to drive much of the growth in sales over the next decade. Rental/leasing models are also offered by a number of established and new entrant specialist heating service providers, who are increasing the competition in the market. A

small number of ambitious HVAC manufacturers are beginning to offer service-based contracts directly to customers, taking steps to reposition themselves as service providers and not only product suppliers.

Figure 2 shows some examples of companies with different types of heat contracting models using heat pumps across Europe.

#### How many heating systems are sold on a contract – and what is the outlook?

The majority of the market for heat contract sales is taken by gas boilers; there is a long history in Germany of such contracts. In the Netherlands, as much as 8% of all heating systems are sold on a contract (mainly gas boilers). Currently, only around 3,000 heat pumps per year are sold on a contract in Europe's main markets, but these sales could grow to as much as 100,000 per year this decade (see Figure 3).

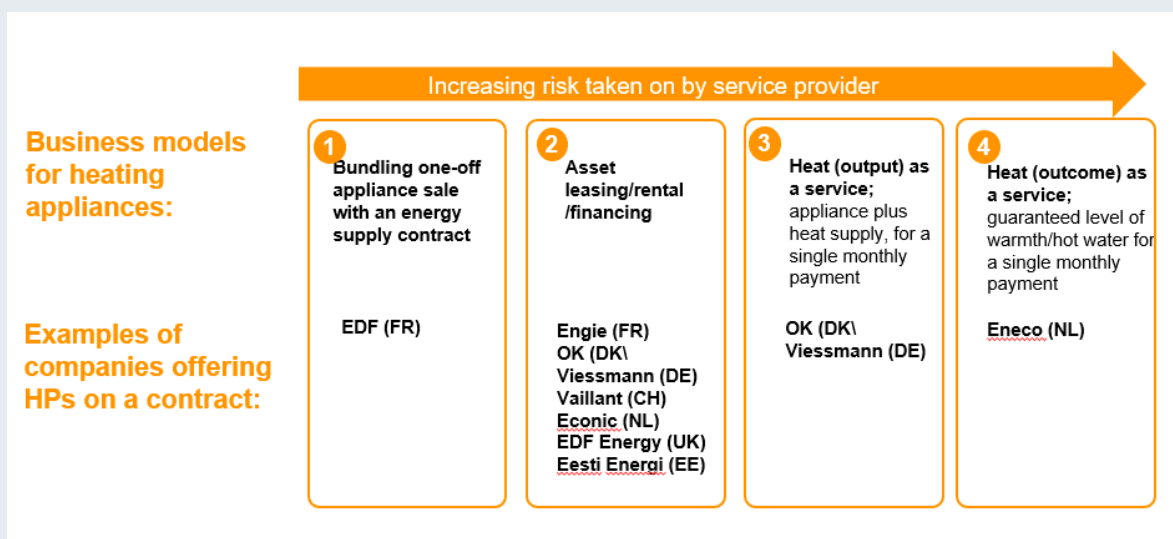


Figure 2. Who is offering heat pumps on a contract?

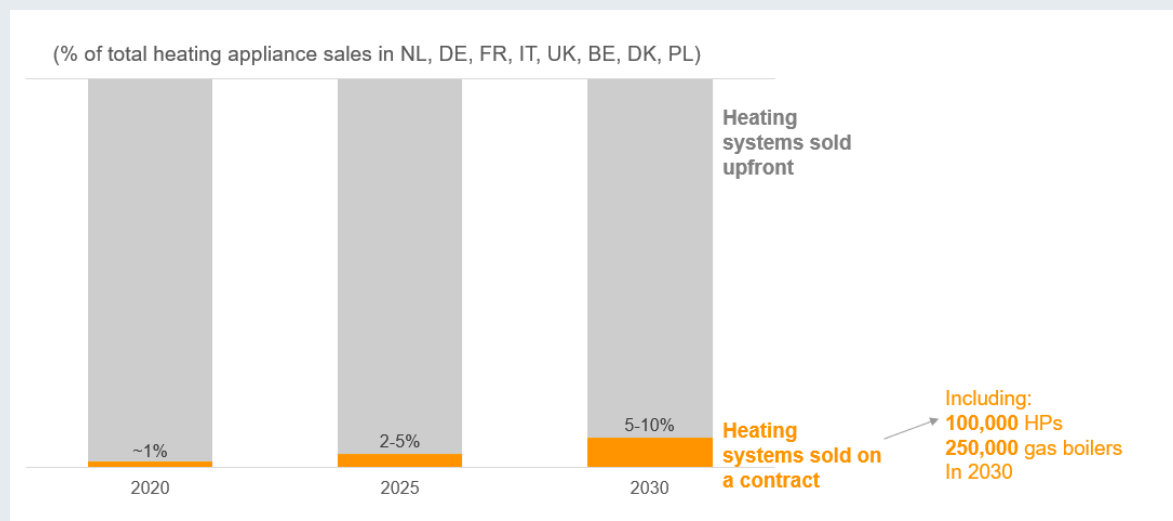


Figure 3. Share of heating systems sold on a contract today, and forecast to 2030

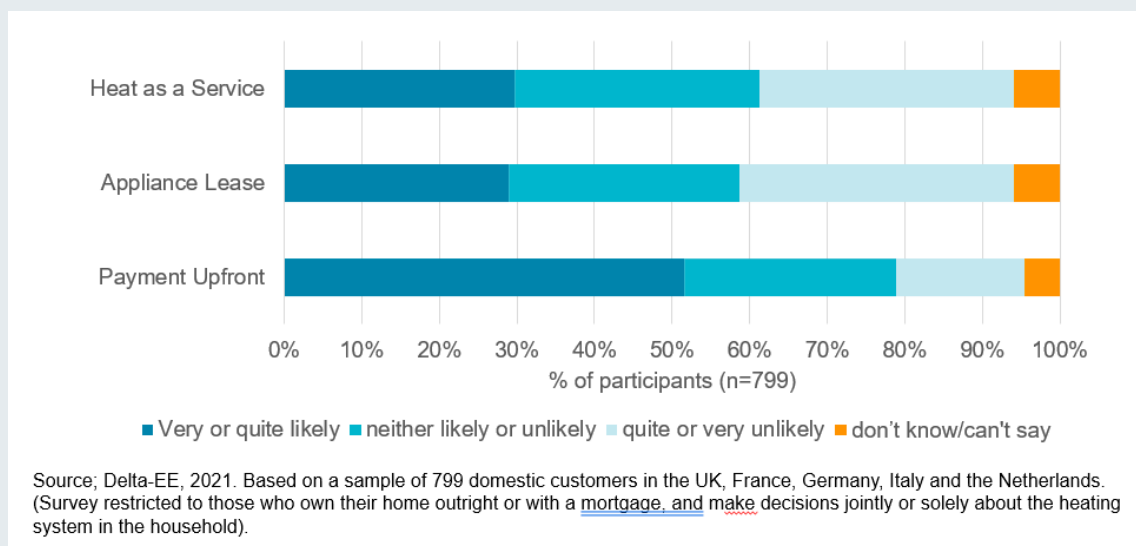


Figure 4. How likely would end-users be to take up heat contract propositions?

This growth could be possible for a number of reasons:

- » A growing number of companies are now becoming interested in the heat services market, and we expect strong growth as players seek new revenue streams to take advantage of the expanding heat pump market, and make up for lost revenue from energy sales. Offerings are increasingly “customer-centric” compared to traditional heating propositions, as innovative concepts emerge.
- » Heat as a Service and related models are attractive to customers. See Figure 4, which illustrates outcomes of Delta-EE’s customer research assessing the end-user preferences on how they would consider buying their heating; ~25% of end-users surveyed would be interested in taking up such an offer if it was available.
- » Experience to date indicates that once customers buy heat rather than kWh of gas or electricity, it becomes easier to switch the heating system – so switching a gas customer who is already on a heat contract towards a heat pump will be easier than switching a gas customer who has paid upfront to a heat pump.
- » There are opportunities to add further value to these business models by incorporating value streams from subsidies, time of use tariff or PV optimization, and (increasingly in future) demand-side flexibility values.

Challenges remain to meet such growth levels – for example, regulations limiting 3<sup>rd</sup> party access to subsidies can block revenue streams so the business model cannot work, or forcing service providers to supply the lowest running cost source of energy often does not work in the favor of heat pumps. However, the increasingly ambitious heat decarbonization targets being set by European governments mean that existing buildings, and in particular those heated by gas today, need to be shifted away from fossil fuels. Heat as a Service offers a lower risk, lower upfront cost way for these difficult to decarbonize

end-users to move away from gas, and policy-makers are waking up to this in some markets. We expect greater support for innovation in business models and the removal of barriers over this decade.

## Conclusions

Heat as a service, and the range of service-based heat propositions discussed in this paper, can play a key role in the decarbonization of heat in the existing buildings segment, potentially supporting the installation of a further 100,000 heat pumps per year or more across Europe’s main markets by 2030. From an end-user perspective, heat as a service offers a lower risk, lower upfront cost way for residential customers to access lower carbon heating systems such as heat pumps. From a service provider perspective, heat as a service offers new and regular revenue streams from heat contract sales as well as future growth in revenue by layering new value streams from optimization or demand-side response. From a policy-maker perspective, heat as a service overcomes some of the major barriers to decarbonizing heat in existing buildings and could be one of the key tools in the toolbox to tackle this segment, where very little progress has been made to date.

## References

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