

Sent by email to [FutureConsumers@ofgem.gov.uk](mailto:FutureConsumers@ofgem.gov.uk)

27 November 2024

Dear Ofgem

### **Innovation in the energy retail market - Thermal Storage UK response**

Thermal Storage UK agrees with Ofgem that the energy system is changing. The regulatory framework needs to adapt to support innovation in the energy retail market. The regulation of utilities must move on from the approach first adopted in the 1990s and 2000s, as it is no longer fit for purpose. Our response focuses on electricity market retail innovation as the gas network is expected to start shrinking as homes and businesses increasingly electrify heating, transport and industrial processes.

The Electricity Act 1989 and the Utilities Act 2000 was based on the reality of the time, with electricity supply being the endpoint of a centralised power system that took electricity from large power plants (mainly burning fossil fuels) through the wires of monopoly networks to largely passive consumers. Energy retailers acted as both the contact point for those consumers and as the distributors of money upstream to networks, generators and other parts of the system such as balancing and settlement. Energy retailers primarily competed over a limited set of areas, particularly pricing (normally within 5% - 10% of the total energy bill), on bill accuracy and how quickly they could resolve issues. This was still largely the reality when the CMA investigated the energy sector in 2014 - 2016.

The UK energy system now has significant distributed generation capacity through rooftop solar, as well as increasing deployment of low-carbon technologies such as EVs, heat pumps and heat batteries in homes and businesses. These technologies, underpinned by internet connectivity and

software, can generate electricity for individual properties and can operate flexibly to make the best use of renewables. British manufacturers are increasingly switching industrial processes from fossil fuels to electricity using technologies such as heat pumps and heat batteries.

Smart tariffs, whether time-of-use or type-of-use, are one of the main innovations in the retail market and aim to take advantage of the highly flexible products such as heat batteries and EVs. Unfortunately, electricity flexibility is not adequately valued through the power system, making it more difficult for retailers to offer tariffs and limiting the take-up of demand-side response and the technologies that enable it. While there has been some progress (with smart tariffs now available for domestic heat from EDF, EON Next, Octopus and Ovo), heat flexibility remains particularly undervalued by the system. This undervaluing of flexibility poses a significant problem for the government's Clean Power 2030 mission.

While the need to hold an electricity supply licence is an important barrier to market entry, we encourage Ofgem to consider regulatory barriers beyond this. It is fundamentally correct that companies providing an essential service such as electricity face significant regulatory scrutiny. However, we encourage Ofgem to explore two additional areas where the regulatory regime may constrain innovation. This is based on the following observations:

1. The current regulatory regime is very prescriptive in many areas, constraining the ability of electricity retailers to offer innovative propositions to a subset of customers. We recommend exploring removing rules that are no longer fit for purpose. Ofgem could set itself the challenge of creating a supply licence that is 100 pages long, rather than 500+ pages.
2. Ofgem's regulatory oversight of energy retailers involves significant focus on (relatively) easy-to-measure metrics such as how quickly a phonecall is answered. Ofgem has limited oversight of how holistically that call is handled or the issue resolved. This is particularly relevant for electrifying heat. For instance, if a customer

calls because they are in energy debt, the energy retailer could explore offering a cheaper tariff, upgrading their heating system to a low carbon solution (including through the Boiler Upgrade Scheme) or offering insulation (through schemes such as ECO or GBIS). Instead, energy retailers are typically judged on the very narrow criteria of whether they offer an appropriate payment plan to repay the debt.

We also recommend that, in parallel to this work on retail innovation, Ofgem improves how energy network funding such as the Strategic Innovation Fund (SIF) targets domestic heating and industrial processes. This could include:

- Providing long-term certainty on the importance of heat flexibility within the SIF strategic challenges.
- Monitoring the number of innovation projects undertaken by electricity networks in each SIF challenge area, including heat flexibility.
- Improving transparency of how many innovation projects are proposed in each challenge area and which projects proceed through from discovery to alpha to beta.
- Encouraging electricity networks to work with British manufacturers to explore new ways to reduce peak electricity demand at their sites.
- Clarifying whether electricity networks can invest in innovation that overlaps with areas that the Department of Energy Security and Net Zero are exploring.

Perhaps most fundamentally, innovation funding through energy networks should consider how to allow projects to proceed where the network sees only some of the value. For instance, DNOs see some benefit from the use of flexible assets but there is also value for homeowners, local authorities and energy retailers. Innovators may struggle to secure funding for innovation projects if the DNO has limited interest because their focus is only on the value that is available to them. Similarly, innovators may struggle to bring together a consortium that both includes a wide range of stakeholders (capturing all of the benefits) and remains under-budget.

We provide more detail in the answers that follow and are very happy to meet with Ofgem to discuss further.

Yours sincerely

Tom Lowe

Founding Director  
**Thermal Storage UK**

## **Questions - Thermal Storage UK response**

### **1. What innovation is currently happening in the domestic and non-domestic retail markets? What is the scale of this innovation?**

While there is significant innovation in UK energy, the pace of innovation in the energy retail sector is too slow and too shallow. There is a risk that the regulatory framework for energy retailers holds back product innovation.

More energy retailers are offering low carbon electric technologies, including electric vehicles, super-efficient heat pumps and highly flexible heat batteries. In some cases, energy retailers are offering to install EV chargers or electric heating and offer medium-term financing.

As people and businesses adopt these low carbon technologies, electricity pricing will evolve as people look to (a) consume and store energy when renewables are plentiful and prices are low and (b) avoid high-price peak times when fossil fuel generation is on the system and demand is high. There are strong commercial reasons for energy retailers to offer time-of-use tariffs to these people, especially once market-wide half-hourly settlement is introduced. There is an increasing number of smart tariffs available for domestic customers from energy retailers such as EDF, EON Next, Octopus and Ovo.

Energy retailers are devoting less attention to electrifying industrial processes and non-domestic space heating and we recommend that this is an area that Ofgem explores further. Electricity suppliers could expand their offering of smart tariffs to encourage businesses to switch to low-carbon electric space heating and to switch to heat pumps and heat batteries to run their industrial processes. The absence of these price signals and potentially lower running costs makes it harder for businesses to justify the capital investment to deliver significant carbon savings.

### **2. What innovation should happen to meet consumers' needs and meet net zero?**

We are cautious about setting out to Ofgem what innovation should happen. This is difficult for markets to know and it is unlikely that regulators can foresee this with any more clarity than market participants.

Instead, we recommend that Ofgem considers broad areas of energy where innovation may be necessary (for instance such as heat flexibility) and consider how the existing rulebook could change to enable innovation. We recommend this includes exploring which rules to remove from the energy supply licence and, where appropriate, legislation.

### **3. What will be the impact on consumers of new, innovative products and services? How can we maximise the benefits and minimise the risks?**

We recommend that Ofgem considers the broad areas where energy retailers may need to step up their innovation efforts to support decarbonisation. For instance, it is increasingly likely that most homes will electrify their heating systems, while manufacturers electrify their industrial processes. Energy retailers should encourage these changes through tariffs. This means ensuring that the regulations for energy retailers support - or at least do not hinder - their efforts.

### **4. Are there any additional enablers or barriers to innovation?**

We recommend that Ofgem explores opening the regulation sandbox to non-licensed entities and considers dropping the requirement to partner with licensed entities such as energy suppliers. Such an approach would maximise the range of applicants and scope of ideas and avoid some of the issues that Ofgem has faced with the existing energy regulation sandbox. We recommend that the sandbox is deep in scope and allows participating innovators to (safely and in a controlled environment) set aside aspects of the existing energy regulatory framework.

We recommend that Ofgem's regulation sandbox covers the heating sector and innovation in heating technologies. To achieve net zero by 2050, the UK must decarbonise 30 million homes within 26 years through a combination of upgrades to heating systems and building fabric. Heating sandboxes may relate to the flexibility of electricity tariffs and how they interact with heating systems such as heat batteries or heat pumps. For instance, to what extent can flexible heating systems working with smart time-of-use tariffs reduce peak demand and minimise bills, while maintaining comfort.

We also recommend that the regulation sandbox explores the interaction of different low carbon technologies and tariffs. For instance, sandboxes may explore how best to optimise the interaction between electric heating, EV charging and solar panels to minimise electricity bills, maximise renewable energy use and best support the grid.

## **5. What is the most significant barrier to innovation? Why?**

Innovation in the retail market should involve smart tariffs that take full advantage of highly flexible products such as heat batteries and electro-chemical batteries. Unfortunately, electricity flexibility is not adequately valued through the power system, limiting the take-up of demand-side response and the technologies that enable it. While there has been some progress, heat flexibility is particularly undervalued. This undervaluing of flexibility poses a significant problem for the government's Clean Power 2030 mission.

## **6. What innovation is not happening because of regulatory barriers?**

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undervaluing of flexibility poses a significant problem for the government's Clean Power 2030 mission.

## **7. Should we do further work to improve routes to market?**

To reflect other changes in the electricity sector, we recommend that Ofgem considers routes to market across domestic energy supply (energy suppliers), non-domestic energy supply (including heat networks) and demand flexibility (DRSPs).

While the need to hold an electricity supply licence is an important barrier to market entry, we encourage Ofgem to consider regulatory barriers beyond this. It is fundamentally correct that companies providing an essential service such as electricity face significant regulatory scrutiny. However, we encourage Ofgem to explore two additional areas where the regulatory regime may constrain innovation. This is based on the following observations:

1. The current regulatory regime is very prescriptive in many areas, constraining the ability of electricity suppliers to offer innovative propositions to a subset of customers. We recommend exploring removing rules that are no longer fit for purpose. The challenge for Ofgem could be to create a supply licence that is 100 pages long, rather than 500+ pages.
2. Ofgem's regulatory oversight involves significant focus on easy to measure metrics such as how quickly a phonecall is answered. Ofgem has limited oversight of how holistically that call is handled. This is particularly relevant for electrifying heat. For instance, if a customer calls because they are in debt, the energy supplier could explore offering a cheaper tariff, upgrading their heating system to a low carbon solution (including through the Boiler Upgrade Scheme) or offering insulation (through schemes such as ECO or GBIS). Instead, energy suppliers are judged on the very narrow criteria as to whether they offer an appropriate payment plan to repay the debt.



**8. What is the most attractive route to market? Why?**

No comment.

**9. If you think that we need to improve routes to market, which option do you think should be our top priority and why?**

No comment.

**10. What are your views on the options presented for amending routes to market? What would be the risks and benefits of each option?**

No comment.

**11. To facilitate innovation, which licence conditions would most benefit from being reformed?**

No comment.

**12. Are there any other improvements to routes to market which should be considered as part of enabling significant innovation in the retail market?**

No comment.