

Sent by email to [RIIOED2@ofgem.gov.uk](mailto:RIIOED2@ofgem.gov.uk)

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Dear Ofgem

### **Ofgem draft determinations**

Thermal Storage UK welcomes Ofgem's draft determinations for 2023 - 2028. Resilient and efficient electricity networks are critical to joining up renewable power with electric demand products such as heat pumps and thermal stores. On the demand side, Britain could be installing 600,000 heat pumps per year by the end of the ED2 price control. Indeed, UK Power Networks forecasts a 26-fold increase in heat pumps from 27,000 today to 712,000 by 2028. At the same time, the UK government has committed to achieve 50 GW of offshore wind by 2030. The electricity grid must support both the extra electricity demand for heating and transport and the additional renewable generation. One of the big challenges for the 2023 - 2028 price control is to join up the electricity grid and the world of heating.

We support the baseline investment of £2.7 billion in network upgrades to support the rollout of demand products such as electric vehicles, heat pumps and thermal storage, as well as low carbon generation. We recognise the risks that Ofgem must trade off between allowing potentially inefficient investment now and the risk of network constraints limiting uptake of low carbon technologies later. Given the uncertainty, we support Ofgem using baseline allowances and uncertainty mechanisms in this price control to allow investment to adapt to the volume of low carbon technology. We also support the commitment to innovation through the Strategic Innovation Fund (SIF) and the Network Innovation Allowance (NIA).

Making the most of flexibility, including demand side response, will deliver net zero at lowest cost. Smart thermal storage products help to provide this flexibility, whether working with or instead of heat pumps. Smart thermal stores work with time of use tariffs to provide flexibility, making the most of renewable electricity to provide warmth. In the Future Energy Scenarios 2022, National Grid ESO sees thermal energy storage (excluding storage heaters) increasing from low levels today to between 1.2 GW and 3.8 GW by 2050. National Grid ESO sees thermal storage shaving 32% off peak demand from heat pumps.

Electricity networks have a key role in providing flexibility, including through the creation of Distribution System Operators (DSOs). While the draft determinations include promising steps on developing DSOs, we recommend that Ofgem goes further. In particular, we encourage:

- Ofgem to scrutinise the flexibility assumptions made by DNOs to ensure that local networks can handle technologies such as heat pumps, thermal stores and electric vehicles. This may include investigating assumptions about whether products are installed to operate flexibly.

- Ofgem to put in place a clear incentive structure for DNOs to develop flexibility markets and to look for demand side flexibility before upgrading infrastructure. This may include offering payments to people and businesses to change behaviour before building more grid infrastructure.
- DNOs to work with the government on the standards proposed in the Energy Security Bill for products such as heat pumps, thermal stores and storage heaters. This may include minimum standards for flexibility as well as cybersecurity and interoperability.

To ensure that price signals are provided to people and businesses to install flexible assets such as thermal stores and to provide flexibility, Ofgem should continue to reform the wider energy market. This includes reforming electricity network charges, introducing a requirement for all energy suppliers to offer at least one time of use tariff for low carbon heating and moving to half hourly settlement before 2025.

We encourage Ofgem to consider in the final determinations how best to encourage networks to respond agilely and cost effectively to the following concern raised in the BEIS Review of Electricity Market Arrangements (REMA):

“An increasing number of distribution-connected and ‘behind-the-meter’ (i.e. directly connected to buildings) generation assets will need to be integrated into the system. A large proportion of the increase in demand will come from the electrification of heat and transport, as many homes and businesses shift to electric vehicles and heat pumps. Most of these assets will be connected to the distribution network, and the transition will have a locational element as different cities, towns and streets decarbonise at different rates. This will increase the constraints on the distribution network, likely leading to more actions needed to resolve local imbalances.”

We recommend that Ofgem ensures that DNOs urgently develop visibility of their networks, particularly at the lower voltage levels. By 2025, all DNOs should know where constraints are expected on their network as these constraints will affect the successful deployment of renewable generation and low carbon technologies. DNOs should already have this visibility as part of delivering obligations such as licence condition 7A on whole electricity system obligations, so we would not recommend any additional allowance or incentives to deliver this visibility.

We have answered some of Ofgem’s questions in more detail below and would welcome further discussion with Ofgem. We focus on questions relating to heat decarbonisation and do not answer questions about important areas such as financeability or the cost of capital. We trust that Ofgem will make evidence-based judgements on the balance between preparing the grid for net zero, rewarding investment and keeping bills as low as possible.

Best wishes

Tom Lowe

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**Thermal Storage UK**

## **Detailed response**

### **Core-Q5. Do you agree with our proposed LRE re-opener?**

We support Ofgem proposing a re-opener for load related expenditure (LRE), including the use of baseline allowances and uncertainty mechanisms. Sufficient network capacity is critical to delivering the net zero transition and this means both investing in grid infrastructure and incentivising flexibility. Ofgem is grappling with the right problems in considering the trade-offs between inefficient investment and a lack of investment that delays uptake of low carbon technologies.

### **Core-Q6. Do you agree with our proposed approach to the Net Zero re-opener?**

We agree with a net zero re-opener during the price control. We support Ofgem having the ability to trigger the mechanism at any time during the price control period, with scope for stakeholders to draw attention to relevant issues. We agree with the proposal for Ofgem to consult on any changes. Ofgem needs to strike a balance between responding to major changes in approach to net zero and encouraging investment and reducing uncertainty. We recommend that Ofgem's Net Zero Advisory Group plays a role in triggering a reopener and the consultation that follows.

### **Core-Q7. Do you agree with our proposed approach to the value of the SIF?**

We agree with the proposal to make available a level of total funding equivalent to that provided via the RIIO-1 Network Innovation Competition (NIC) and increase this if necessary. £450 million for the Strategic Innovation Fund (SIF) seems reasonable.

### **Core-Q9. Do you agree with our proposed approach to setting NIA allowances?**

We support Ofgem making available £66.9 million in Network Innovation Allowance (NIA) funding for 2022 - 2025.

To avoid a start-stop approach to funding for the remainder of the price control, we encourage Ofgem to review the success of this funding in autumn 2024, rather than waiting until 2025.

### **Core-Q10. Do you agree with our proposal to allow DNOs to carry over any unspent NIA funds from the final year of RIIO-ED1 into the first year of RIIO-ED2?**

We support Ofgem allowing unspent 2022/23 RIIO-ED1 NIA funds to be carried forward into 2023/24 (the first year of RIIO-ED2). We agree that projects utilising these carried-over funds must start before 31 March 2023. We agree that any unspent 2022/23 RIIO-1 NIA funding would be lost on 31 March 2024.

### **Core-Q24. Do you agree with our proposed design of the DSO incentive?**

While we support the ex-post review of DNOs' delivery of their DSO (Distribution System Operator) activities, we also recommend that reporting on flexibility is more frequent than

annual. Instead, DSOs should develop real-time dashboards for key delivery metrics. These dashboards will allow stakeholders and potential flexibility providers to understand the success of DSOs in different parts of the country and engage with leading DSOs. We recommend that one key delivery metric is the uptake of low carbon technology for both heat and transport.

We agree that DNOs should appoint an independent and reputable market research company to administer a stakeholder survey. We recommend that the stakeholder survey conducted by DSOs includes those organisations working on heat decarbonisation and includes specific questions about the deployment of low carbon heating technologies.

Given the importance of developing DSOs, we encourage a higher incentive range than +/- 0.2% of Return on Regulatory Equity (RoRE). We agree that DSOs should be rewarded for outperformance and be penalised for underperformance.

**Core-Q26. Do you agree with our proposal for the DSO re-opener?**

We agree that Ofgem should increase the adaptability of the price control by providing a means to amend the RIIO-ED2 price control in response to changes to the roles, responsibilities and governance arrangements for DSO functions.