**Hitachi Energy’s response to Ofgem’s Electricity Distribution Price Control (ED3) Framework consultation**

**Introducing Hitachi Energy**

Hitachi Energy is a global leader in technologies that increase the capacity, resilience and flexibility of the electricity grid. Leveraging £5bn of investment, we are harnessing best practices in the energy, industrial, mobility, IT and smart cities sectors in the UK and around the world. We are a major investor in the UK, with a turnover of over £1 billion and operations across the country, from Shetland to Somerset and North Wales to Norfolk. We are continuing our growth journey in the UK with over 650 employees, and are on track to more than double our UK operations over the last 5 years

We are advancing the world’s energy system based on renewable energy, the lowest cost, most secure and most sustainable source of power. As a technology leader, we collaborate with customers and partners to enable a sustainable energy future – for today’s generations and those to come. We are already helping to bring clean energy to more than ten million UK homes by connecting the world’s two largest offshore windfarms at Dogger Bank and Hornsea to the grid.

We strongly believe that the UK can become a clean energy superpower with a secure, low cost, Net Zero energy system through investing in technologies to make the energy system more sustainable, flexible, and secure. In an increasingly competitive global market, this can only be achieved with rapid investment and a crucial pace of change.

**Our response**

We have responded to select questions which are relevant to Hitachi Energy, and offer no response to the questions which are not mentioned below.

***Drivers for change***

**Q1. Do you agree with our characterisation of the wider context for ED3? Are there any other areas of context that you consider material for ED3?**

We agree with Ofgem’s characterisation of the wider context for ED3 and the identified drivers for change for the ED3 framework. However, supply chain, workforce, and skills constraints are major barriers to the delivery of new, upgraded, and reinforced electricity distribution infrastructure, which we expand on in our response to Question 11 of this consultation. Consequently, we believe that these constraints should be considered in the wider context for ED3 and included as a driver for change.

***ED3 objective and consumer outcomes***

**Q2. What are your views on our overarching objective and proposed consumer outcomes?**

Hitachi Energy broadly agrees with the four proposed consumer outcomes for ED3, and we believe that Ofgem has made progress towards realising the overarching objective and four consumer outcomes.

Whilst we welcome the proposal that network investment is based on “whole system value for current and future users,” we do not believe that Ofgem should pursue network investment at “least cost.” In our view, *best value,* based on a whole system perspective, should be the principal objective and assessment criteria, not the lowest capital cost of projects.

***Networks for net zero***

**Q11. To what extent are global supply chain and workforce pressures contributing to longer lead times for delivery network reinforcement?**

The drive for clean energy, worldwide, has significantly increased market demand for network reinforcement and new grid infrastructure. This has placed significant pressure on global supply chains, as countries and relevant companies compete for constrained capacity and limited resources. This includes critical minerals and components, expertise, workers, and skills. These constraints pose a significant challenge to delivering network reinforcement at pace. Therefore, it is vital that Ofgem works with the Government, the regulator, the DSOs, and industry to ensure that the global supply chain is attracted to UK network reinforcement projects, whilst the UK grows its own capabilities and workforce in this sector. It should be noted that strong, reliable, supply chains are considered a critical enabler for the UK to meet its Clean Power 2030 target, as noted in Government’s Clean Power 2024 Action Plan, published in December 2024, and by National Energy System Operator’s (NESO) commissioned advice to government on how it can meet this target.

However, it should be noted that global supply chain and workforce pressures are not as severe in the distribution sector as they are in transmission sector. This is because the equipment used in the distribution network is smaller and, therefore, quicker to supply than the equipment used in the transmission network. Furthermore, the buildout and upgrade of the transmission system globally as part of the transition to net zero has progressed faster and further than the distribution system, and consequently global competition for the associated supply chain and workforce is currently greater for the UK’s transmission system.

Given the need for greater network reinforcement, the supply chain and workforce pressures in the distribution industry will also grow in severity, especially as the exponential growth of the transmission network exacerbates these pressures. We welcome Ofgem’s recognition of the pressures faced by the transmission industry and the work it has done to date to remedy these pressures. However, it is important that Ofgem does not lose sight of the pressures likely to be faced by the distribution sector and learns from what has happened in the transmission sector, so that the distribution network is well-prepared for the inevitably greater supply chain and workforce pressures it will face.

**Q12. Do you agree that the risk and downside for consumers of network underinvestment in network reinforcement would be greater than the downside of overinvestment?**

As highlighted in our response to Question 11, it is vital that Ofgem, Government, and industry learns from what has happened in the transmission sector. A lack of transmission network capacity led to long delays to grid connections, contributing to significant congestion in the grid connections queue that will take a long time to resolve. Additionally, there are several disadvantages of any delay in developing adequate distribution network capacity, including longer grid connection times for generators and consumers and stunted economic growth due to a lack of power for assets, such as a data centres and AI.

It is, therefore, imperative that Ofgem works to ensure sufficient investment in distribution network reinforcement.

**Q13. What are the benefits and risks to deliverability if network reinforcement is deferred to future periods?**

As Ofgem highlights in this consultation, there is now greater certainty about the growing rate and extent of the electrification needed to ensure that the UK’s Clean Power 2030 and overarching net zero targets are met. Therefore, we agree with Ofgem’s assessment that the risk of underinvestment in network reinforcement is greater than the risk of overinvestment. This is because we assess that the likelihood of insufficient electricity distribution infrastructure due to underinvestment is far greater than the possibility of surplus electricity distribution infrastructure due to overinvestment, according to current trajectories and strategic plans.

It is widely understood that network reinforcement will be required to support greater electrification of the economy and accommodate anticipated new demand. However, the quantum of anticipated new demand is difficult to fully forecast, due to the potential power needs for future digital economy infrastructure (data centres etc.). It is, therefore, wise to consider overinvestment in electricity distribution infrastructure now, ensuring that benefits can be realised at lower cost and less risk.

**Q14. What do you see as the role of distributed flexibility, both in the short and longer term, to manage distribution network constraints?**

As illustrated in the Clean Power 2030 Action Plan, there is an increased need for domestic flexibility to achieve the 2030 target. In the short-term, time of use tariffs have proved effective in providing a degree of flexibility. In the longer-term, we need many more sources of flexibility. The effective operation of these sources will require a much more digitalised network to automate the provision of that flexibility.

**Q15. How do we ensure that network flexibility is used only when it is in consumers’ long-term interests in ED3?**

Network flexibility should not be used as a reason not to anticipate the investment that will be required in the longer term.

The long-term strategic plans in development, such as the Regional Energy Strategic Plan (RESP), should be used to define the most appropriate solutions regarding network flexibility. It is important that investment is made into expanding the network for the longer-term, and flexibility should not be solely relied upon as a short-term fix in the knowledge that network capacity will have to expanded to meet longer-term needs.

**Q17. Do you agree that the tRESP output outlined for early 2026 will help create a level playing field for DNOs’ business planning and support the ED3 objective and consumer outcomes?**

Earlier this year, Hitachi Energy supported Ofgem’s policy framework to support NESO’s development of the tRESP output in early 2026. By providing both a long-term regional vision, as well a series of short- and long-term directive pathways, the tRESP will help create a level playing field for DNOs’ business planning by inducing greater confidence and certainty amongst the DNOs.

We note that Ofgem has proposed annual data refreshes, and a full RESP update every three years, in alignment with the planned Centralised Strategic Network Plan (CSNP). However, business plans for both transmission and distribution, as well as price control periods, operate along a five-year cycle. Therefore, it is important that Ofgem considers the suitability of greater alignment between the different cycles.

**Q18. Can anticipatory network reinforcement be used to smooth the long-term build profile to avoid creating pinch points for the supply chain and workforce? What are the risks and trade-offs?**

We support Ofgem’s belief that there is greater scope for more strategic and anticipatory investment in electricity distribution networks during the ED3 period, despite DNOs tendency to avoid these types of investments previously.

However, a significant barrier to more strategic and anticipatory investment is the lack of clarity on the future project pipeline and continuity of this pipeline. This issue is common across the electricity distribution sector and can lead to uncertainty, often referred to as "boom and bust" cycles. A more strategic and anticipatory approach towards investment can be achieved by ensuring that there is a steady and visible pipeline of electricity distribution network projects.

We believe that this approach will help smooth the UK’s long-term build profile to avoid creating pinch points for the supply chain and workforce. This is because it will boost the UK’s attractiveness to global investors and supply chains by allowing them and the DNOs to plan effectively for the future, as well as to support the sourcing of materials and human resource to meet project timelines.

**Q19. Do you agree that investment optioneering should aim to reduce the lifetime costs by sizing elements of works for long-term need, including considering the impact of thermal losses?**

We agree that investment optioneering should aim to reduce the lifetime costs by sizing elements of works for long-term need. This is because it would be inefficient to have to frequently revisit sections of the distribution network to upgrade them.

**Q20. Is a 5-year price control (2028-33) the right duration to achieve the objective of securing timely network capacity for the net zero transition at least cost to consumers over the long run?**

We believe that it is important that price control periods do not have a slow start or early finish to their workloads. Rather, we need a smooth build profile across the longer term to support supply chain and investor confidence. A smooth profile will increase efficiency, boost deliverability, and lower costs throughout the supply chain.

As mentioned in our response to Question 17, it is important that Ofgem considers the suitability of the different cycles, including the price control periods and associated business plans, as well as the strategic outputs such as the RESP, Centralised Strategic Network Plan (CSNP), and Strategic Spatial Energy Plan (SSEP).

**Q21. To what extent should the price control be more directive on specific anticipatory and strategic investments to achieve the ‘networks for net zero’ consumer outcome?**

The price control should be more directive on digitalisation. This is because DNOs need to be more consistent with the data that they are providing for flexibility services. As it is an area of the distribution network that requires significant transformation, digitalisation needs to be done in a more consistent manner.

**Q22. Do you agree with our characterisation of strategic and anticipatory investment and our expectation that these activities would have different regulatory drivers and controls?**

We agree with Ofgem’s characterisation of strategic and anticipatory investment and its expectation that these activities would have different regulatory drivers and controls. This is because we recognise that strategic and anticipatory investment will become a much more significant part of investment plans. Having defined relevant projects, the price control should ensure effective and timely delivery of these projects.

**Q23. Should the price control provide more guidance or guardrails around the use of particular network solutions to achieve the ‘networks for net zero’ consumer outcome?**

As the scale of the transformation of the network is an emerging area, it could be useful for the price control to provide more guidance. Digitalisation is a key area where more guidance is needed, as discussed in our response to Question 21.

**Q24. Should we consider how we might bring all network capex investment together within the framework, irrespective of driver (eg. load, asset health, resilience), to ensure a common approach to future proofing and delivery?**

We believe that Ofgem should consider how it might bring all network capex investment together within the framework. This is to ensure consistency when it comes to the approach taken towards all network developments.

***Responsible business***

**Q41. How should our approach to cost assessment evolve, to enable us to better manage increasingly pronounced trade-offs between consumer protection, efficiency and investment in the distribution network?**

We agree with Ofgem’s proposed cost assessment approach for capital investment projects, including Ofgem’s consideration of the merits of the RIIO-ET3 “stage gates” approach as well as ex post or cost-plus methodologies for this element of the planned capital investments. We believe this approach will be effective in reflecting changes in market conditions and protecting against delays whilst maintaining competition.

***Smarter networks***

**Q50. Our historic approach to publishing and sharing datasets has been stakeholder-led and focused on establishing good digital foundations in the DNOs. With the rapid pace needed for enhanced data and digitalisation, should we instead be considering incentives around strategic priorities, such as network planning, flexibility, and connections?**

Grid digitalisation will be key to securing vital capacity in the UK’s power system through effective planning and management. Encouraging much greater digitalisation, particularly in the distribution system, and providing system flexibility to accommodate the needs of a grid with predominately renewable generation, will minimise the need for building new infrastructure. This will significantly reduce costs and ultimately increase the economic benefits of the transition towards a renewables-heavy energy mix.

This higher-capacity and more complex grid needs to be highly automated to maintain resilience. However, Ofgem will need to provide stronger and clearer guidance to DNOs the data that they will be required to collect, in order to make more informed and intelligent decisions for optimising network capacity.

***Resilient and sustainable networks***

**Q56. Do you agree that we should consider a more integrated approach to managing asset health, together with load-driven expenditure, given the need to future proof for resilience (climate, cyber and physical security) and future demand? What might the risks and benefits of this approach be?**

**Q57. In the context of making anticipatory investment decisions, what do network companies and other stakeholders need to enable the planning and delivery of cost-effective network resilience measures against our changing climate? What risks and opportunities do you see linked to an input-based approach to these investment plans?**

**Q58. How should we monitor progress on the delivery of climate change resilience? Do you have any specific learnings which can help shape this?**

**Q59. Do you have any comments on the suitability of current incentives to ensure that consumers continue to receive a reliable service in the face of climate hazards?**

As climate related events become more frequent, and as electricity demand across the economy increases, it will be essential for the UK’s energy infrastructure to withstand the effects of climate-related events. For instance, with regards to asset replacement, it is important to consider longer-term resilience. Meanwhile, load related expansion must consider the need to be resilient to manage a changing climate. That is why we support Ofgem’s proposals to increase the resilience of the network against the effects of climate change.

**Q60. Do stakeholders agree with retaining and strengthening the main components**

**of the environmental framework from RIIO-ED2?**

We agree with Ofgem’s proposal to strengthen the environmental framework from RIIO-ED2 with regards to power losses. This is because power loss reduction is a crucial step towards lessening the environmental footprint of the distribution network, particularly during a period whereby the network is undergoing significant reinforcement and expansion.

However, we believe that Ofgem should introduce stronger incentives for DNOs to transition away from the use of SF6 gas and towards the purchase of SF6 alternatives as soon as possible. Given that more voltage ranges will be commercially available in SF6 alternatives over the course of the price control period, Ofgem should mandate the purchase of SF6 alternatives where they are available. In addition to the obvious environmental advantages, the transition to SF6 alternatives will benefit the supply chain by inducing greater alignment with the EU, which has already acted to phase out SF6. Greater alignment with the EU will increase the UK’s attractiveness to global supply chains and resultant access to the necessary components.

Additionally, we believe that Ofgem should strengthen the environmental reporting framework by standardising reporting requirements for DNOs, which will reduce administrative and financial costs on the supply chain.

**Q61. Do stakeholders agree with building on the approach taken to cyber resilience in RIIO-3 for ED3?**

Hitachi Energy agrees with Ofgem’s proposals to streamline the cyber resilience framework for distribution network operators (DNOs) by adopting a principles-led approach. This will reduce administrative burdens and costs, reduce the burden on supply chain companies like ourselves, and overall bolster the cyber resilience of the electricity distribution network.

Furthermore, we also believe that it is crucial for Ofgem to work in close partnership with technology suppliers to define an approach towards cyber resilience that focuses on secure outcomes. This approach should ensure that cyber risks are managed by the parties within the supply chain which are most appropriate and able to manage those risks.

More broadly, it is important that the DNOs and other aspects of the supply chain work closely with technology suppliers to ensure that systems are as secure as possible against cyber attacks.

**Q62. What specific issues are network companies facing in relation to the skills and capacity of their workforce and what measures should we take through the regulatory framework to mitigate these issues?**

As outlined in our response to Question 11, network companies and the wider sector are facing several challenges posed by workforce and skills shortages.

To mitigate these issues, we urge Ofgem to work with the Government and Skills England as they develop the UK’s skills policy, as well as with devolved authorities as they develop their Local Skills Improvements Plans (LSIPs). Skills development in the UK is highly fragmented, and Ofgem has a key role in working with central and local government, as well as industry, to unify the UK’s approach towards skills policy and training. By taking a leading role in green skills development via greater cooperation and its own regulatory framework, Ofgem can help improve access to skills training and funding opportunities.

In particular, we would welcome Ofgem’s input to the Government as it reforms the Apprenticeship Levy into the Growth and Skills Levy. Currently, the Apprenticeship Levy does not adequately support the skills needs of the green transition, such as attracting talent from diverse backgrounds, supporting early career entrants, facilitating reskilling, and enabling their transition from other sectors. This is a major barrier for network reinforcement delivery and the development of new electricity distribution infrastructure. There is a need for new mechanisms that better align with these demands for reskilling, upskilling and the acquisition of new skilled talent, as the Apprenticeship Levy in its current form does not support this approach.

**Q63. What specific issues are supply chains facing and what measures should we take through the regulatory framework to mitigate these issues?**

As outlined in our response to Question 11, network companies and the wider sector are facing several challenges posed by supply chain constraints. To mitigate these issues, it is vital that Ofgem works with the Government, regulators, and industry to ensure that the global supply chain is attracted to UK electricity distribution network projects, whilst at the same time the UK grows its own capabilities and workforce in this sector.

A significant issue present in the UK market is the lack of standardisation. For many components used in the distribution network, there are no consistent specifications and several variants of product types between DNOs. This inconsistency and variety creates additional costs for the manufacturers of these components as well as increased delivery times, which in turn results in the deprioritisation of the UK market by the global supply chain and investors.

Furthermore, the current procurement approach in the UK is another major issue. The current approach significantly reduces the UK’s attractiveness to global supply chains. Currently, the UK’s approach towards procurement fragments the purchases of supply chain capacity amongst different players in the sector – such as developers, TOs, ITOs, DNOs, and IDNOs **–** which other countrieshave addressed bytakinga more centralised purchasing approach. Reforming procurement processes will help alleviate wider supply chain constraints by providing greater clarity to investors through longer-term visibility of and commitment to projects. Reform can be achieved by Ofgem via various means, including facilitating longer-term procurement partnerships, encouraging a clear and transparent project pipeline, and standardising product solutions.

Ofgem can play a major role in market reform by adopting the Advanced Procurement Mechanism (APM) for procurement in the UK electricity transmission sector. As stated in our response to Ofgem’s consultation on the APM, adoption will assist network companies to secure supplier capacity by allowing them to place orders as early as possible. APM will aim to reduce risks to delivery and mitigate supply chain issues. We believe that Ofgem should consider adopting similar procurement process for the electricity distribution sector, which will help ensure early clarity on project needs.

In addition to increasing the UK’s attractiveness to global supply chains, it is important that Ofgem uses its regulatory framework to encourage the development of domestic supply chains. Currently, there is no regulatory mechanism for encouraging the use of locally sourced materials or services in the development of electricity distribution infrastructure. For Hitachi Energy, these materials and services include components such as transformers and switchgear, and critical minerals such as copper.

**Q64. Given our comments in Chapter 6 around taking a more proactive approach, are there any specific features of a more anticipatory or strategic investment approach that might create risks or opportunities for supply chain and workforce constraints?**

Please refer to our response to Question 18, where it is stated that we believe that a more strategic and anticipatory approach towards investment will help avoid supply chain and workforce pinch points by smoothing the long-term electricity distribution infrastructure build profile.