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Hitachi Energy's response to Ofgem's ED3 Sector Specific Methodology 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 practises in the energy, industrial, mobility, IT and smart cities sectors around the world and delivering this insight to the markets that we operate in. 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 seven hundred employees and are on track to more than double our UK operations over the last five 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.

Our response reflects our role in the electricity networks sector in Great Britain.

Our response

We welcome the opportunity to continue to engage with Ofgem on the next price control period by responding to the ED3 Sector Specific Methodology Consultation. In summary, Hitachi Energy broadly agrees with the proposals in this consultation, particularly the range of measures to smooth delivery across ED3 and ED4. In our engagement to date, we have raised concerns about the lack of clarity on the future project pipeline and continuity of this pipeline which can lead to uncertainty, often referred to as "boom and bust" cycles in growth-driving sectors, which is why Hitachi Energy welcomes these measures as well as the general move towards promoting proactive and anticipatory investment. In our view, investors and industry players need a steady and visible pipeline of projects to plan effectively for the future, and we suggest that Ofgem should continue to supplement these efforts with explicit incentives for timely delivery and explicit encouragement of using the reopener windows in ED2 to place full, firm orders at the earliest opportunities.

Given the well-known, significant, constraints in the global supply chain market, we also welcome the explicit acknowledgement of the need for Distribution Network Operators (DNOs) to ensure supply chain readiness in order to deliver their ED3 delivery profiles, as well as the measures proposed to require supply chain strategies from networks to deliver best system value. The proposals to make volumes visible are particularly critical in providing certainty. The continued investment in innovation funding is also welcome, and we agree that more needs to be done to ensure that innovations are supported and disseminated to become a part of core operations across network companies. While this is beyond the scope of this consultation, we note 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 procure than the equipment used in the transmission network.

We also agree with Ofgem's proposals to require a greater role for Distribution System Operators (DSOs) in voltage management. While voltage management can serve a number of purposes, it can usually only serve one of those purposes at a time, and Ofgem will need to be clear on how these should be prioritised.

In addition to our comments above, we provide responses to selected questions below which are relevant to Hitachi Energy. We offer no response to the questions which are not mentioned below.

Long-term integrated network development plans

Q1. What are your views on our regulatory guiding principles that will inform the development of accountable investment planning and delivery?

In Hitachi Energy's view, the guiding principles set out in paragraph 3.5 are appropriate. We particularly support Ofgem's view that there is a need to ensure supply chain readiness, as well as the shift towards holding DNOs to account for infrastructure delivery and ensuring that regulatory mechanisms are proportionate to the vast scale and complexity of the investment.

Q2. Are the proposed objectives for the long-term integrated network development plans appropriate?

We broadly agree with the proposed objectives. We particularly welcome the recognition of the need to smooth delivery of investment across ED3 and ED4, which will be essential for supporting the supply chain and investor confidence. This is why we also welcome the explicit recognition of the need to provide certainty to the supply chain of future demand. We believe that smooth profile and building confidence in the future pipeline will increase efficiency, boost deliverability, and lower costs throughout the supply chain. Alongside the long-term network plan, this will require clarity on who will procure equipment and services within that plan and a procurement mechanism for long term partnerships for programmes of work (as opposed to project by project procurement).

Q5. What are your views on the guidelines for proactive investment decision-making across all DNOs?

Given the well-known, significant constraints in the global supply chain market, we agree with the guidelines for proactive investment decision-making across DNOs. This will be critical if UK DNOs are to become more competitive in the global market. We particularly support Ofgem's recognition of:

- The need for an anticipatory approach to investing ahead of future demand and generation growth.
- The need to ensure network reinforcement can be upsized for long-term need and taking advantage of economies of scale.
- The need to avoid constraints or connection delays caused by delaying investment.
- The need to enable wider societal benefits such as housing, clean growth and significant infrastructure projects.
- The need to consider risks to reliability and resilience.

With the next pricing period due to support one of the UK's largest and most complex network programme, we also support the move towards upfront funding for low-regret proactive investment. Such streamlined and timely decision-making should allow DNOs to take a more strategic approach with greater supply chain engagement. While we suggest that any delay of early investment decisions poses financial and strategic risks, we also support balancing this with clear expectations and delivery accountability.

Environmental framework

Q44. Is the proposed approach to SF_6 - focusing on reducing both absolute emissions and the total SF_6 bank - appropriate and proportionate?

Hitachi Energy supports Ofgem's proposals to reduce F-gases, however, we believe that the overall approach must be grounded in a holistic evaluation of environmental impact. Specifically, this should be reflective of the Life Cycle Assessment, rather than focusing solely on the presence or absence of F-gases in individual components.

Hitachi Energy's own report, the "LCA of Different Concepts of SF_6-free GIS", which has been reviewed and approved by the independent IVL Swedish Environmental Research Institute, provides a robust comparison of SF_6, vacuum, and C4-FN-based solutions. In summary, the findings clearly demonstrate that:

- C4-FN/CO_2/O_2 mixtures offer the lowest total carbon footprint across the full life cycle of high-voltage GIS equipment.
- While vacuum and air-based solutions may have zero GWP gases, their larger physical footprint and increased material use result in higher overall CO_2 equivalent emissions.
- Even under a 100% renewable energy scenario, material production remains a dominant contributor to environmental impact, reinforcing the need for compact and efficient designs.

Fast-tracking AIS solutions may appear beneficial from a gas-centric perspective, but it risks overlooking the broader environmental trade-offs. We advocate for a technology-neutral, LCA-based regulatory framework that prioritises total environmental performance over isolated metrics. As an example, due to the compactness of a GIS solution, it could bring a higher improvement on baseline biodiversity compared to the equivalent AIS alternative as well as being less visually intrusive and therefore less liable to planning delays. The reduced land footprint of GIS can also help lower overall project costs, particularly in areas where land acquisition is – or becomes – expensive or constrained.

Based on these findings, we urge Ofgem to integrate LCA as the cornerstone of its evaluation and fast-tracking criteria. This will ensure that sustainable, scalable solutions are promoted - delivering better outcomes for networks and the planet. We also suggest that Ofgem should explicitly confirm its future expectations for DNOs to purchase SF6-free equipment.

Digitalisation and data

Q51. Do you agree with our proposed approach on all five themes? Why?

Hitachi Energy agrees, but in our view, the principal theme is strategic outcomes and internal capability. If DNOs have the capability to deliver accurate and complete sets of data that they can use and can be provided to third parties in a common format, then all the other themes can follow. We would, however, propose that DNOs need to be supported to make significant investment in the underlying IT infrastructure that is used to manage their operational network. At present, they are often using fragmented and un-supported systems that have not traditionally received investments due to the difficultly in creating a robust cost/benefit analysis that meets the regulatory test. The benefits in upgrading operational IT systems will all be realised through delivery of the ambitions described, not the systems themselves.

Q52. Do you agree with the need and role of the independent expert panel on interoperability? Why?

Yes. In our view, the proposed approach appropriately balances the need for delivery with the need for oversight.

Q53. Do you agree that DSAPs should include outcome-linked digital spend? Why?

Yes. We suggest that previously published DSAPs have highlighted the appropriate level of ambition but have been light on delivery details, so we welcome this proposal.

Innovation

Q54. Do you agree that we should maintain the current NIA Eligibility Criteria? Why?

We do not agree. The ENA innovation portal holds a record of over 2000 innovation projects at a cost of just under £2bn, but in our view it is not clear how this value has been returned to customers. In addition, Ofgem highlights in this consultation several examples where innovation outcomes which have not benefitted DNOs have not been deployed and how innovations in the Electricity Transmission sector have been delayed. Therefore, we suggest that the current innovation eligibility criteria and funding approach needs to be modified. The current approach across NIA and SIF is primarily focused on covering the risk and costs of innovation activities for DNOs with little to no incentive for major technology providers to engage in the process. The deployment fund should be directed at the technology providers, with DNOs recovering their costs through a roll out to BAU and the cost and efficiency savings they will benefit from.

Q55. Do you agree with our suggested approach for assessing and setting NIA? Why?

Please refer to our answer to Question 54.

Q56. Do you have examples of projects that weren't able to deploy in RIIO-ED2 due to the lack of funding, or that you anticipate wouldn't be able to deploy in ED3 without the extension of the Deployment Fund to cover DNOs in ED3?

No, but we suggest that there is a strong perception amongst some third party, non-DNO companies that any innovative technology that could be developed at scale and a fair market price faces significant challenges in becoming a DNO BAU solution. Therefore, the vendors that could deliver technology are disincentivised to engage with the RIIO Innovation Incentives, and as a result, many projects are never taken past the trial or prototype stage.

Q57. Do you perceive a lack of coordination and direction as an issue for the deployment of innovation in the ED sector, and do you think a similar intervention to the TID is needed to resolve this?

No, we find that DNOs are accessible and willing to engage within the confines imposed on them by the NIA and SIF governance rules.

Q58. Do you agree that further incentivisation is needed within the price control for innovation that doesn't primarily benefit networks? Do you have evidence to support this?

We do not agree. In our view, if DNOs fulfil their obligations to deliver a future-ready network with accessible data in a common format, then the benefits to our wider society should be realised.

Voltage management

Q68. Do you agree with the proposed voltage management responsibilities, for DSOs? Are there any aspects you disagree with, or any additional responsibilities we should consider?

We agree with the proposed voltage management responsibilities for DSOs. We would note that voltage can only be used once and lowering voltage as part of an optimisation programme would preclude using it for purposes like CLASS. DSOs should also be expected to globally optimise voltage rather than picking optimal solutions for local problems that cause less optimal global outcomes.

Q70. How can we support DSOs in getting access to useful 3rd party voltage data from assets such as EV chargers?

In our view, interoperability is key, starting with the business layer. Ensuring that benefits to customers can be demonstrated will also be key in ensuring EV charge point manufacturers do not present a barrier.

Q74. Do you support the requirement for a published voltage management strategy from each DSO, with an annual reporting requirement?

We support this proposal.

Supply Chain and Workforce

Q111. Do you agree with our proposal to require a ten-year Delivery Strategy (ED3+ED4) that embeds supply chain and workforce plans? Are the content expectations complete and proportionate? Where should we be more/less prescriptive and why?

We welcome the proposal to require a ten-year delivery strategy, and in particular the requirement to phase delivery across price controls. An ambitious, comprehensive, clear, and consistent delivery strategy is critical to giving both DNOs and suppliers the visibility they need to plan and invest with confidence.

In our view, a strong steer on the level of detail is likely to help set expectations for DNOs and ensure the plans are of the highest quality and meet Ofgem's expectations. This does not necessarily need to extend to be fully prescriptive, but setting expectations at the start will help to avoid large variations in quality between DNOs.

We, however, urge Ofgem to appropriately consider how it can support DNOs with workforce recruitment. DNOs and the supply chain need to scale up rapidly to deliver projects during this price period, and they cannot face project-specific workforce approvals at a time when securing skilled labour is already one of the sector's biggest challenges.

Q112. Do you agree that DNOs should publish annual equipment and people volumes for ten years to provide better market visibility? What minimum granularity would be most useful to suppliers and training providers?

We agree with the proposal to publish annual equipment volumes to provide better market visibility, which would be a significant step forward in visibility for the supply chain. We would agree with Ofgem specifying a consistent approach to providing data and that publishing the Business Plan Data Templates are likely to be the most efficient and effective way to do this. Ofgem should set clear expectations on what redactions would be justified and look to identify whether some information can still be published in these cases e.g. through aggregation.

We would also welcome direct engagement on any proposed template to ensure that the level of granularity is sufficient to allow them to plan.

Q113. Do you agree that Delivery Strategies should be in scope of BPI Stage A and Stage C? What evidence and criteria should we emphasise in assessing quality and credibility?

We agree with the proposal for delivery strategies to be in scope of the business plan incentive. The key element for manufacturers is a clear, "true" and transparent assessment of volumes for products – setting this out in a consistent template should be a minimum bar for a plan to be considered as being of sufficient quality.

Q114. Should we introduce a supply chain and workforce monitoring framework for ED3 and future price controls? What metrics and reporting frequency would provide the greatest value while remaining proportionate?

We agree with the proposal to require annual monitoring to refresh delivery strategies. The key element will be annual updates to the published data tables to ensure that manufacturers can plan. It would also be helpful to see an explanation for major changes in volumes between publications and a forward look of any risks that might lead to major changes in future years.

Q115. What do you consider essential for these mobilisation reopener windows in RIIO-ED2 to be effective in supporting timely ED3 delivery? For example, how should we specify

eligible activities (eg design, surveys, factory deposits), require evidence of supplier commitments, or introduce minimum thresholds for submissions? Are there other measures that would make these windows more useful in accelerating mobilisation and reducing ED3 delivery risk?

We welcome the proposal for reopener windows. DNOs should be encouraged to use these windows to place full, firm orders with the supply chain at an earlier stage to ensure that they can deliver at full capacity in the opening years of ED3. This is a key opportunity to start moving towards a more planned and smoothed trajectory for delivery for ED3 and ED4, in line with the proposals in other areas of the consultation. The supply chain will need to ramp up production in a managed way and early commitment to orders is a critical component of ensuring this can take place.

DNOs should be allowed to use these relatively flexibly to manage the delivery risks they have identified, including securing capacity in potentially constrained parts of the supply chain. This should not necessarily be restricted to equipment which already has highly visible supply chain constraints. Given the scale of the ramp up in demand we are expecting to see over the coming years, new constraints are likely to emerge, and being too prescriptive is likely to restrict DNOs' ability to respond to issues. The reopener windows should be coupled with strong delivery incentives in the first years of ED3 to ensure they are used to maximum value.

Ofgem should continue to consider whether there are other measures they can take to encourage or require earlier commitment to orders. We recognise that the different nature of the distribution network means a direct copy of the Advanced Procurement Mechanism is unlikely to be the best approach, but Ofgem should consider how they can encourage DNOs to provide that earlier commitment and whether a specific mechanism is required. Explicit delivery strategies, incentives for timely delivery and greater cover to engage in long term relationships with suppliers will all also help here.

Q116. How can DNOs demonstrate active engagement in industry and government-wide initiatives such as DESNZ's upcoming industry-led Electricity Networks Sector Growth Plan, the Transmission Operators skills alliance, and OCEJ's Clean Energy Workforce Strategy? What steps should Ofgem take to ensure DNOs play a leading role in these programmes?

In our view, DNOs are generally well engaged with these programmes – it is key for Ofgem to support them in agreeing commitments that will support the supply chain to grow and provide the regulatory underpinning for those commitments. In the event that it is not possible to agree a way forward, then it may be for Ofgem to step in and require a specific approach. But we would not agree that there is a need for regulatory intervention to ensure engagement at this stage.

Q118. Are there features of the price control framework that create barriers to sourcing from UK suppliers or SMEs? How could Ofgem enable greater social value in a way that protects consumers, ensures value for money, and remains compliant with trade obligations?

We suggest that Ofgem needs to place an emphasis on ensuring and maximising value for consumersIn our view, "best value" should be the principal objective and assessment criteria, not the lowest capital cost of projects, which Ofgem has historically focused on. We believe that best value to the consumer can be delivered through accelerated investment in a decarbonised power system that will avoid the environmental impacts of delay, and by transitioning more quickly away from reliance on expensive fossil fuels. Networks should be encouraged to develop long-term partnerships with key UK suppliers, providing confidence to both the supply chain and the DNOs about the future pathway of investment.

In terms of local procurement, we suggest that competition within the UK and local supply chains can only be realised once the UK is competitive in the global market. Any local content incentives should be realistic both in terms of scope and timing, reflecting both the UK's true advantages in production and that there will be some components and products that it will always be more efficient to

import. Any measures taken by Ofgem would need a sufficient transition and notice period, with input from the supply chain.

We also note that actively encouraging DNOs to procure more local content in bulk would likely have significant cost benefits for the UK's growth, support the resilience of the supply chain and fulfil Ofgem's growth duty. This could incentivise Tier 1 suppliers to procure more components of products locally and invest in a more UK-based supply chain as they grow their operations. Incentives for local content could encourage new players to enter the market as Tier 2 suppliers, resulting in a more diverse Tier 2 and Tier 3 supply chain.

We are happy to continue engaging with Ofgem on both the evidence for current levels of local content and social value, and the measures that would be most useful in supporting the supply chain while protecting consumers.