

17<sup>th</sup> December 2021

**National Grid Electricity System Operator Limited (National Grid ESO) response to the consultation on the initial findings of Ofgem’s Electricity Transmission Network Planning Review (ETNPR)**

Dear Konark,

We welcome the opportunity to respond to Ofgem’s consultation on the initial findings of their Electricity Transmission Network Planning Review.

National Grid ESO is the electricity system operator for Great Britain. We move electricity around the country second by second to ensure that the right amount of electricity is where it’s needed, when it’s needed – always keeping supply and demand in perfect balance. As Great Britain transitions towards a low-carbon future, our mission is to enable the sustainable transformation of the energy system and ensure the delivery of reliable, affordable energy for all consumers. National Grid ESO holds a unique position at the heart of the nation’s energy system. We use our unique perspective and independent position to develop future energy scenarios, assess their impact on the network and assess options to meet future capability and operability needs at best value to consumers.

Our response is not confidential, and we are happy for it to be published.

**Key messages:**

- We support Ofgem’s consultation proposals for Centralised Strategic Network Planning (CSNP). We agree with the objectives for planning the electricity transmission network and believe they can facilitate strategic investments that support the delivery of net zero at best value to consumers.
- We agree the ESO, with new roles and capabilities, is well-placed to undertake the Central Planner role, with the future system operator provisions unlocking greater opportunities for whole energy solutions.
- We consider it essential that the ETNPR and Offshore Transmission Network Review (OTNR) work together to deliver a coherent enduring approach to planning the onshore and offshore networks.
- On implementation, we support Ofgem’s proposal for transitional arrangements for strategic investments that support the integration of 40GW of offshore wind generation by 2030 in a timely manner. It is our view that the Holistic Network Design that is being prepared within the OTNR ‘Pathway to 2030’ workstream can be appropriate to use as a transitional CSNP.
- Also on implementation, we agree that it is important to take the time to properly develop the arrangements that underpin Ofgem’s enduring vision for CSNP, given the magnitude of the changes that are likely to be required to the skills and capabilities of the future system operator. A pragmatic set of transitional arrangements would support this aim.

Our detailed responses to the consultation questions are included in the appendix below.

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We welcome the opportunity to discuss the views presented within this response. Should you require further information or clarity on any of the points raised, please contact Ian Pashley in the first instance at [ian.pashley@nationalgrideso.com](mailto:ian.pashley@nationalgrideso.com).

Yours sincerely,

**Julian Leslie**  
Head of Networks

## **Appendix: ESO response to consultation questions**

### **Context for Electricity Transmission Network Planning Review**

#### **Question 1: What are your views on our key objectives for future ET network planning arrangements that can deliver Net Zero at lowest cost to consumers?**

We support the objectives for CSNP and believe they can facilitate strategic investments that support the delivery of net zero at best value to consumers.

We think a more strategic approach can enable a more coordinated way of connecting the levels of generation and demand that are expected to be required to support the decarbonisation pathway to net zero. Given the massive increase in electrification envisaged across our Future Energy Scenarios, we consider that the risk of stranded assets is diminishing, whereas the costs of not having network capacity available when needed are increasing. Adopting a more strategic/anticipatory approach to developing the network, including whole energy system considerations and a strong focus on driving positive environmental and social outcomes, could be hugely beneficial in meeting the UK's net zero ambition.

#### **Question 2: Are there any other key workstreams that interact with this review that we need to align with?**

We think the list of workstreams is comprehensive and highlights the breadth and magnitude of work that needs to be coordinated to ensure efficient outcomes. The challenge of ensuring alignment and collaboration across the workstreams shouldn't be underestimated, however it presents an opportunity to set the tone for the type of collaborative ways of working that will be essential if we are to collectively succeed in our net zero ambitions.

We welcome the clarity around how the ETNPR and OTNR are expected to interact - we consider it essential that ETNPR and OTNR work together to deliver a coherent approach to planning the onshore and offshore networks, both in terms of transitional arrangements, which will be led by the work being done on the Holistic Network Design (HND), and enduring arrangements, which present the opportunity for the development of an integrated approach that covers both onshore and offshore networks in an appropriate way.

We note that the scope of many of the new functions required to undertake CSNP are contingent on the outcome of the July 2021 future system operator consultation by BEIS and Ofgem. We consider it important to ensure alignment between that work and this review, to ensure activities and obligations recommended to be undertaken in a future system operator context are enabled by suitable licence and statutory provisions; and that sufficient time is allocated for delivering these, along with relevant shareholder approval. Aligned to this, given the breadth of ongoing activities that are influencing the work of the ETNPR, we consider it essential that industry roles and responsibilities are considered holistically across all relevant workstreams.

We also note the work underway across government including the Nationally Significant Infrastructure Planning reform, and the recently concluded Planning for New Energy Infrastructure (Draft National Policy Statements for Energy Infrastructure) consultation. In our response, we noted the work of the ETNPR and raised the question of whether, if a competent authority is able to formally designate certain network infrastructure as being strategic, that infrastructure should then be given a specific significance in the planning process.

Finally, regarding competition in electricity transmission networks, the ETNPR will need to consider how to identify projects suitable for early competition, including the level of certainty that would be required to support their progression. The enduring methodology for CSNP should allow time for the identification of such projects and completion of the necessary competitive processes; and we would expect the required level of certainty for strategic investments to be beneficial when looking to progress them through competitive means.

### **How we have structured the ETNPR and Success Criteria**

#### **Question 3: Do you have any views on the scope of the review? Are there any key topics that we have missed?**

We consider the scope of the review to be appropriate. By considering how CSNP might drive changes to existing scenario, network development and decision-making processes, we have the opportunity to consolidate with ongoing initiatives to create a coherent, future-ready approach to network development. We

note the full whole energy scope is likely to best allow for strategic/anticipatory investment options to be identified and progressed, subject to the outcome of the ongoing future system operator work.

Regarding structure, continuing with the concept of a Strategic Advisory Group and next-level working groups should allow for both detailed review of options, and high-level steers, to continue to be provided. We think it would be worth investigating how that structure might support coordination with other, related work, which we highlighted earlier as being essential to the collective success of that work.

**Question 4: Do you have any views on the success criteria? Are there any key areas that we have missed?**

We think the success criteria are appropriate and reflect the characteristics we would expect the CSNP to exhibit. We agree that, as cost should be a fundamental minimum consideration, it is not necessary to call out with specific stand-alone criteria.

We note that an initial assessment of the enduring approach has been presented, albeit with some aspects yet to be scored. We would argue such an assessment at this early stage represents more a statement about the desired end-state and agree that the assessment should be reviewed more fully once there is more clarity on the underpinning detail. We would anticipate that detail to take best-practice where it exists currently, to support the development of a robust, comprehensive approach to CSNP, designed to ensure the success criteria are met to an appropriate standard.

Given the anticipated benefits of close cooperation with the OTNR, it may be worth ensuring alignment with relevant success criteria set out for that project, as well as any overarching and supporting statutory duties emerging from the future system operator work.

**Centralised Strategic Network Planning (CSNP)**

**Question 5: What are your views on our enduring vision for Centralised Strategic Network Planning?**

We recognise that by taking a GB-wide holistic view of the anticipated future needs of the changing energy system, we as an industry will be better placed to make joined-up decisions on electricity transmission network investments that can best deliver value for consumers as we set ourselves up for net zero. Enabling a move to strategic energy system planning will enhance this aim, by enabling even greater coordination across multiple energy vectors.

**Question 6: Do you have any views on the proposed central network planner's role, who that planner might be, and how it may perform this function?**

We see benefits in having a single, independent expert body taking a holistic view of the options to meet anticipated network needs, with a remit to develop high-level designs for low-regret strategic investments. We believe the ESO, with new roles and capabilities, will be well-placed to undertake the Central Planner role, given its aim of unlocking greater potential for whole energy solutions.

We have already noted our belief that the greater independence established through the future system operator proposals will unlock the full benefits a Central Planner can bring to the development of a CSNP. ESO already possesses strong capabilities that would support the development of CSNP; however we note that the CSNP process requires the development by the Central Planner of high-level strategic network investment options, which can then be progressed in more detail by an appointed delivery body, once approved. This will be a new activity for the ESO, with high-level design of strategic investments, and consideration of the environmental and social implications of those investments, being capabilities that will need to be developed. It is possible that there may be synergies with capabilities required to support early competition processes.

This will take time, and the timescales for establishing the future system operator will be a driving factor of what can be achieved by when, alongside implementation timescales for other initiatives such as the interconnector policy review. As noted in the consultation, the Central Planner will require strong support from incumbent TOs and third parties to develop feasible and deliverable options for consideration within the CSNP, and believe that the respective roles and responsibilities that underpin the arrangements will need to be clearly set out, so that expectations of and obligations on parties can be well understood, and parties can support each other to succeed.

**Question 7: What are your views on the proposed stages and focus of the enduring CSNP model? If you can suggest alternative approaches to any of the stages then please do so.**

The proposed stages of the enduring CSNP model take their structure from existing processes, and we believe the general flow from modelling future supply and demand scenarios through to finalisation of the CSNP, sign-off and handover to Delivery Bodies is appropriate for the purposes of identifying and progressing strategic network investments. We present more detailed thoughts on the specific stages of the process below:

**Model future supply and demand**

Ofgem states there may be a case to move away from the ‘broad scenario-based approach used in the FES to a less mechanistic approach that makes assumptions, at least for the nearer-term future, that are governed more by strategic thinking.’

We recognise the importance of supply/demand scenarios that provide sufficient certainty to support decision-making on strategic/anticipatory investments. However, we also note the importance and widespread use of existing scenario frameworks by the industry. We believe it will be important to ensure consistency in the principles and building blocks of the range of scenarios currently prepared for, and used by, the wider industry, and those developed or enhanced to support CSNP – noting Ofgem’s intention that the CSNP process be run potentially on a 2-3 year cycle, rather than annually.

We agree that iterations of the scenarios should be informed by their impact on the network. This should help ensure that the impact on network cost driven by the location of potential future generation and demand can inform whether that generation or demand might better be sited elsewhere.

We agree that scenarios should be developed in a transparent manner, using robust data and input from a range of sources, both top-down and bottom-up. From a regional perspective, we note the potential for a vast number of Local Area Energy Plans (LAEPs) and envisage the need for clear criteria of how to consistently apply these to the network planning process, and how to ensure coordination between the Distribution System/Network Operators and the central planner in how LAEPs are used for whole system decision making.

We note Ofgem’s view that there may be a case to move from the current scenario-based approach used in FES to a less mechanistic approach that makes assumptions, at least for the nearer-term future, based more on strategic thinking. For scenarios to have sufficient certainty to support decision-making on strategic investments we would anticipate a mix of analytical rigour and informed strategic insight that enables decisions to be made and adhered to with enough certainty that investments can proceed. This may need to include probabilistic treatments, or stress-testing of assumptions to determine network capability tipping points – particularly where policies may be under discussion but not yet finalised.

Further work is required to understand how best to develop scenarios that are suitable for CSNP and to understand their relationship with the existing approach to scenario development and use by industry, so that we can ensure efficient delivery of fit-for-purpose future generation and demand scenarios on a consistent basis. We believe it will be important to include in this consideration the proposed Strategic Plan being developed within the OTNR enduring regime work.

**Identify system need**

We agree that the process for identifying system need requires an appropriate level of rigour across the full range of capability and operability requirements in a proportionate way, over an appropriate period. We consider the current Electricity Ten Year Statement (ETYS) is a sound starting point for this but expect we will need to look out both to 2035 and to 2050 to ensure a robust assessment of the network requirements to support delivery of the Net Zero target and the government’s plans to decarbonise the UK power system by 2035.

We are already working to expand the current ETYS approach to consider a broader range of operability requirements, including by analysing (e.g.) voltage and stability issues year-round to account for the fact that not all operability challenges manifest at winter peak. We will ensure we capture learnings from existing projects, pathfinders, etc to inform the further development of the way we identify system needs, to support the development of options that address them. We note, however, that the current ETYS/NOA approach works as we are able to do many assessments on a large scale. This is much larger than what we can

currently do for other areas of analysis, so the approach required to tackle other operability challenges needs to be well understood in terms of the volume of assessments required, and the tools available to do those assessments.

### **Identify investment options**

We agree that an appropriately broad range of investment options should be developed and considered against the identified system needs. Ofgem states that this should include options for both strategic and non-strategic investments, but that the Central Planner should only concern itself with investments that are strategic in nature. We agree that this is appropriate and note that Ofgem envisage flexibility in what type of system needs the Central Planner considers to be strategic.

The need to consider both strategic and non-strategic investments in formulating the overall CSNP suggests an interaction between the development and assessment of strategic investments (a new process) with the assessment of non-strategic investments (as currently performed by the Network Options Assessment (NOA) process). This interaction needs to be carefully considered so that the right recommendations can continue to be made across both strategic and non-strategic investments. We would expect to take learnings from the process currently being followed to develop and assess the HND alongside NOA7, to arrive at a sustainable enduring proposal.

### **Cost benefit analysis**

We agree that the cost-benefit analysis approach needs robust consideration of the technical and economic aspects of each option developed to satisfy system needs. We consider it important that the method include strategic thinking that enables decision making to be supported by analysis, rather than in thrall to it. We consider this particularly important when considering environmental and community impacts, as they may be harder to quantify, and monetise, than the technical specifics of the options. We also note that the future system operator proposals would allow for greater scope of options; and a broader whole-energy assessment of benefits to be undertaken.

We note though that the Central Planner's approach to this would only be able to go so far into the detail, with regard to the options considered. When a delivery body is appointed to proceed with the full detailed design of an option, there would need to be confidence that, whilst high-level, the breadth of the Central Planner's assessment of environmental and community impacts would be sufficiently broad so as not to miss something that might become obvious once the more detailed design work is undertaken. Also, a robust feedback loop would be needed to ensure that high-level approach covers the full range of necessary issues that present themselves when detailed plans are developed.

### **Develop CSNP**

An effective CSNP will need to combine strategic investments and non-strategic investments in a way that supports delivery of net zero ambitions whilst retaining sufficient optionality to be able to react to changing circumstances. There will be inherent interactions between strategic options that require longer-term certainty and firm decisions to proceed, and non-strategic options where there may need to be a more flexible approach to recommending whether, and when, options might best be progressed. These interactions will need to be carefully managed, so that a coherent plan, developed against a transparent methodology and creating a combination of decisions and recommendations, is sufficiently robust for funding to be released and delivery to commence.

It would also need to be capable of accommodating competition in the development and delivery of options, where considered appropriate.

### **CSNP finalisation and handover to delivery bodies; and detailed solution design**

We note the need for transparent governance around the finalisation of the CSNP and the approach subsequently taken for approving its recommendations and unlocking funding for delivery bodies to commence more detailed design and delivery of strategic options. As part of this, we would expect that there would need to be a clear articulation in the CSNP of the capabilities required to be delivered by each option,



and a feedback mechanism to ensure that the detailed design and delivery of those options will ultimately deliver the capabilities envisaged by the Central Planner's high-level design work.

**Question 8: What are your views on closer stakeholder co-working to break longer-term uncertainty deadlocks?**

Whether purely analytical or informed by strategic thinking, we expect that gaining sign-on amongst a wide range of key informed stakeholders will be challenging, without clear and transparent expectations on those involved. We agree that there may be value in closer stakeholder working to break uncertainty deadlocks, such as those associated with the interaction between investments and the sizing and timing of supply and demand developments, but would need to work through the practicalities of doing this at scale, as well as how many network investment permutations would be required to be considered.

**Question 9: What are your views on allocating risks and accountability for various aspects of the CSNP, and for delivering the options finalised under CSNP? Do you have any suggestions to mitigate any of the risks?**

We note the three potential risks that Ofgem present and agree that their potential mitigations are appropriate; however, we note that those mitigations aren't without risk themselves.

On the risk that the central planner might not have sufficient knowledge, skills and capabilities required to undertake CSNP, there are risks associated with obtaining the dedicated resources to do the work, and in acquiring and developing the necessary capabilities, often from others within the industry who may currently carry out certain of those activities. We consider it essential that, to support this, roles and responsibilities are clearly established; and that all involved parties are able to resource themselves sufficiently to be able to collaborate to deliver high-quality plans.

On the risk that the CSNP may be of sub-optimal quality, it will be important to ensure that accountability for risks lie with those best-placed to manage them. We would expect the central planner to be accountable for managing risk associated with the delivery of a quality high-level design, and that TOs and 3<sup>rd</sup> parties would be accountable for managing risk associated with the delivery of options put forward for inclusion in the CSNP and for the delivery of options selected. On the subject of compliance with the Security and Quality of Supply Standards, whilst we note Ofgem's statement that "...TOs will retain their responsibility to identify and resolve any shortfalls in the system that would lead to potential non-compliance..." it will be important to ensure that the impact of 3<sup>rd</sup> party options can be managed effectively, and that accountabilities are clear across all involved parties.

**Question 10: What are your views on the proposed Transitional arrangements?**

We support the proposal that the Holistic Network Design (HND) we are currently developing is a pragmatic solution to transitioning fully to centralised strategic network planning. The HND is being designed to facilitate the connections and network reinforcement on the onshore and offshore network required to deliver 40 GW of offshore wind. As such it will make recommendations itself and through the Network Options Assessment (NOA) on the strategic network reinforcements that are required to connect the projects that are in scope of the HND<sup>1</sup>. The HND will also help us learn valuable lessons for the enduring CSNP solution. It will be vital that these key strategic investments are progressed rapidly and with certainty to facilitate the 2030 target as well as the UK's net zero ambitions.

We note Ofgem's requirements for the transitional arrangements, and consider that the integrated HND and NOA will meet these, as follows:

- Clearly and transparently identify low regret strategic infrastructure onshore and offshore: The HND will recommend the required offshore and onshore network investments, including those required to strategically reinforce for the bulk transport of power, to 2030. The HND methodology will be

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<sup>1</sup> This is primarily offshore wind projects that have secured seabed leases through The Crown Estate's seabed leasing round 4 and those that secure them through the current ScotWind and Celtic Sea floating wind seabed leasing rounds.

published in early 2022 and the NOA methodology is already published following previous consultation. The NOA methodology will be reviewed and consulted upon again in Spring 2022. The HND report that is published will set out the options that were considered in reaching the recommended design; and our assessment of them in reaching it.

- **Transparent, plausible future energy scenarios:** The HND will be based on a combination of the OTNR generation map<sup>2</sup>, the 2021 Future Energy Scenarios (FES), project information from the TEC register and other relevant sources, and confidential information received from customers progressing connection applications. At publication, the HND will set out transparently projects that are in scope of the HND, assuming that any confidential information is within the public domain through usual routes such as the TEC Register. Where we have made assumptions, this will also be made clear - as will the basis of those assumptions. This information has been shared with Ofgem in the meantime.
- **Assess options based on a robust methodology balancing cost, environmental and community impact:** The methodology we publish in early 2022 will set out how we are balancing the four equally weighted objectives that are set out in the HND terms of reference – these are economic and efficient costs, deliverability and operability, environmental impact and local communities impact. This methodology has been developed with the input of experts in the appropriate fields and in consultation with the onshore TOs through the HND Central Design Group.

We are leading delivery of the HND through the Central Design Group, which was put in place as a vehicle for us to consult with the TOs and other stakeholders involved in the delivery of the HND and ensure all are working together to ensure successful delivery of a robust product. The HND will provide a snapshot of the recommended offshore network and onshore network requirements for 2030 and the NOA will further assess the HND providing formal recommendations on the specific onshore reinforcements required, including detail on their optimal delivery dates.

We note that Ofgem envisage the future system operator provisions to be implemented for the concept of CSNP to be taken forward most effectively. Whilst we agree, we note that it will be important to establish the right skills and capabilities in a timely manner. Depending on timings, to be able to undertake the sort of enhanced planning activities envisaged in the CSNP proposals, significant preparatory work may need to be undertaken, and skills and capabilities established, ahead of the go-live of those future system operator provisions.

## Next Steps

### **Question 11: Do you have any views on the next steps to implement CSNP?**

We agree that it would be appropriate to decide in early 2022 on next steps for progressing transitional and enduring arrangements for CSNP. Should Ofgem decide to proceed, we consider it essential that implementation activities balance the importance of timely action to identify and enable delivery of strategic investments, with the need to ensure there is time to properly develop and deliver a sustainable enduring approach.

We remain comfortable leading the work on topics 2 (analysis and decision-making methods for load related network planning) and 3 (breadth of solutions, covering whole system solutions and innovation), with Ofgem helping to set the scope for these, and leading the work on topic 4 (roles and responsibilities). We agree it makes sense to continue with the project structure previously set out, with the work groups and Strategic Advisory Group acting to support robust stakeholder engagement.

### **Question 12: What are your thoughts on our initial view of the areas to be covered in the next phase of the review? Are there other areas that aren't included that you would like us to include?**

We consider the list of areas to be covered in the next phase of the review to be sufficiently comprehensive. As written, we believe they should allow for a thorough consideration of the issues that need to be addressed for CSNP to be successful, and we note the potential for the list to be augmented as a result of this consultation.

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<sup>2</sup> <https://www.gov.uk/government/publications/offshore-transmission-network-review-generation-map>