

# CSNP: Consultation on framework for identifying and assessing transmission investment options

## National Grid Group Response

25 August 2023

This consultation response is made on behalf of National Grid Group and represents the views of its UK operations: National Grid Electricity Transmission (NGET), which owns the high voltage transmission system in England and Wales; National Grid Electricity Distribution (NGED, formerly Western Power Distribution), which owns and operates electricity distribution networks in the Midlands, the South West and Wales; National Grid Ventures (NGV), which owns and operates energy businesses in competitive markets, including sub-sea electricity interconnectors. As a legally separate business, National Grid Electricity System Operator (ESO) views are not represented

### Executive Summary

We welcome the opportunity to respond to Ofgem's Centralised Strategic Network Plan (CSNP) consultation on the framework for identifying and assessing transmission investment options, covering stages 2-4 of the CSNP process (the '**Consultation**').

This consultation addresses a topic that will define the electricity network for decades to come at a time of change of a magnitude not seen before. Recent HNDPUE and early tCSNP studies have shown that the volume and scale of new generation to facilitate net zero could more than double the flows across key system boundaries, with the differences between scenarios also spanning tens of gigawatts, making system planning more difficult than ever before.

A single integrated whole system planning approach will play a critical role in enabling the transition towards net zero to progress at pace and ensuring the power system does not become a barrier to that transition. It will provide greater clarity, certainty and stability over the investments required for the delivery bodies, as well as for network customers, consumers and the communities hosting the infrastructure. This will be key to creating a refreshed architecture for a decarbonised energy system that will unlock the benefits of net zero for consumers, network customers, and broader society, providing a safe, reliable, and resilient service for the UK through to the end of this century and beyond.

We therefore fully support the creation of a CSNP and want to ensure it achieves the desired outcomes. We agree with the direction of the proposals set out in the Consultation. There is a significant level of detail that remains to be worked through and it is essential that this next layer of detail is developed in collaboration with key stakeholders, including network companies, to ensure the CSNP delivers its intended whole system view of efficient network planning and is robust against challenge. This further detail will also allow the relevant parties to ensure they are set up to meet their respective roles and responsibilities to deliver for consumers and network customers.

Our specific responses to the individual questions posed in the Consultation are in the appendix to this response but have drawn out our key messages in this Executive Summary. In short, to achieve the desired outcomes from the CSNP, it is critical that the CSNP is:

- (i) **Robust** – it must be robust to challenge and have sufficient formal authority to enable the consenting and delivery of infrastructure projects;
- (ii) **Spatial** – the relationship between the CSNP and a spatial energy plan must be established and clear;
- (iii) **Clear** – the standards to which the network is designed, the basis on which options are selected and the obligations of relevant parties must all be clearly defined;
- (iv) **Comprehensive** - the proposals on system need should consider the broader scope outlined for the CSNP in the introduction to the Consultation; and
- (v) **Deliverable** - the CSNP needs to have sufficiently considered and reflected factors that impact on the deliverability of infrastructure.

- **ROBUST – the CSNP must be robust to challenge and have sufficient formal authority to enable the consenting and delivery of infrastructure projects**

Whilst we are keen for the CSNP to be published as soon as possible – and believe that delivery of the first CSNP in 2026 is achievable – the products of CSNP, and the decisions made, need to be robust to public scrutiny and challenge (including potential Judicial Review) under a planning process to facilitate delivery of projects. The methodology, processes, and timescales of the CSNP must therefore be flexible and adapted as appropriate to meet applicable statutory standards. To have weight in the planning framework, the products of CSNP will need to undergo Marine Environmental Assessment (MEA), Strategic Environmental Assessment (SEA), Habitats Regulation Assessments (HRA) (the SEA, MEA and HRA collectively referred to in this response as 'Environmental Assessments') and meaningful national public consultation, including with affected communities.

To be meaningful, the consultation process must allow for revisions in response to feedback and concerns from stakeholders, and ensure the resulting plan is robust. Ideally, this would allow a spatial CSNP, that has been

subject to appropriate assessment and consultation to be endorsed as government policy in the National Policy Statement (NPS) (in line with the recent recommendations by the Electricity Networks Commissioner). This would provide the necessary level of certainty for the delivery bodies to deliver against the plan. Even without endorsement in the NPS, the completion of the Environmental Assessments with appropriate consultation would provide a robust basis for the consenting and delivery of infrastructure projects. Failure to do this would undermine the value and validity of the CSNP, likely lead to delay and challenge in consent processes and risk a need to revisit decisions, and ultimately delay delivery of reinforcements that would provide benefits to consumers.

- ***SPATIAL – the relationship between the CSNP and a spatial energy plan must be established and clear***

The relationship between the CSNP and spatial energy planning should be made clearer, to support the creation of an overall robust spatial energy plan, which can provide clear direction for the industry, government, and the public, in line with the recommendations of the Electricity Network Commissioner. The spatial energy plan should be an essential pre-requisite to a successful strategic network plan. Without this the background will continue to change significantly – as have seen from HND to HND FUE, and as we are currently seeing between HND FUE and tCSNP, with differences of up to 20GW of transfer requirement across a key boundary. Without establishing the hierarchy between the two there is a risk that the CSNP changes significantly from one iteration to the next, and that it misses the magnitude of change being identified. This could mean that, rather than incremental additions to the network, a more substantial “stand-back” is needed to review if, for example, large scale ultra-high voltage grid solutions are required.

It is vital that the CSNP includes the right level of spatial assessment of options to ensure that the selection process and subsequent development of projects are sound. Where appropriate, this should then enable the CSNP to identify more specific solutions such as strategic locations (e.g. onshore or offshore solutions), technology choice and strategic measures to mitigate the impacts of transmission infrastructure (e.g. overhead lines or undergrounding solutions), as well as potential ‘capacity hubs’ to enable connection of new projects and ensure capacity is available ahead of need, suitable onshore connection “zones” or new nodal locations for large scale connections. It is important, however, that there remains some flexibility to allow TOs and third parties to develop the most efficient solution.

Provided the necessary Environmental Assessments and public consultation have been undertaken (as outlined above), determining these spatial elements and a clear needs case in the CSNP would avoid having to repeat this in the subsequent development of individual projects and reduce the risk of the proposals being re-opened, which could significantly accelerate project development, consenting and delivery.

- ***CLEAR – the standards to which the network is designed, the basis on which options are selected and the obligations of relevant parties must all be clearly defined***

A critical element of the CSNP process is that the standards, methodologies, and obligations should be extremely clear. There are two main areas where we believe significant work is needed to establish this clarity.

The first is on the SQSS and the basis for choice of options. The Consultation refers to the CSNP being compliant with SQSS and asks if SQSS needs to be reviewed – our view is that it must be reviewed. Many of the parameters that the network will face over the next 50 years have changed from those faced over the last 50 years – intermittent generation, climate change, battery storage, changes in disposition of load through the year and day – and as such the SQSS needs to be reviewed to ensure networks continue to meet customer and societal needs, with a firm basis on which to plan.

The Consultation also covers cost benefit analysis and discusses the assessment of resilience (specifically in relation to climate resilience) to low probability, high impact events. These elements should all be encompassed within a revised version of SQSS, rather than standing outside SQSS. It is essential that the CSNP is based on a clear standard, which codifies the basis of designing a secure, economic and resilient network reflecting future generator and demand customer needs and the environment that the network will operate in.

The second area is the obligations on licensees. The obligations need to be aligned with the licensee’s ability to comply with them. Where at present the obligations to comply with SQSS are mirrored between ESO and TOs, it would be impossible for a TO to meet their obligations if the ESO/FSO were to define a process that did not comply. Where the FSO is taking a greater role to define the design of the network, the TOs obligations cannot be contingent on the FSO complying with theirs. In addition, the FSO should set out a clear programme for delivering CSNP, with clarity on the roles and expectations of each party e.g., clear scope, dates, commitments of all parties, based on an agreed programme, with a formal change control process. Whilst this should not replace an expectation of collaboration and each party endeavouring to deliver a robust and high quality CSNP, formalised arrangements will allow each party to plan, identify resource and hold each other to account.

- ***COMPREHENSIVE – the proposals on system need should consider the broader scope outlined for the CSNP in the introduction to the Consultation***

The CSNP products must be comprehensive in terms of identifying strategic infrastructure reinforcements, and in identifying alternatives to infrastructure. The CSNP must reflect the changing dynamics of the power system, with the increasing shift from an AC onshore power system to an AC and DC power system that is both onshore and offshore. To do this the CSNP must ensure that the assessment of the network and system needs is sufficient to

fully identify the need for major new infrastructure. This should include consideration of all relevant drivers, including energy cost (beyond constraint costs), reliability, resilience and security, and supply chain constraints.

We agree that a wider range of system needs identified by networks and other key stakeholders should be considered to support the widened scope of the CSNP, including onshore and offshore electricity transmission in GB as well as cross-border electricity interconnectors and offshore hybrid assets. However, the summary of system needs set out in Table 1 in the Consultation is predominantly focused on onshore transmission and needs further work to reflect the broader scope, especially before wider aspects of the energy system such as hydrogen and gas are added to the CSNP. Each of the elements outlined in Table 1 also have their own detail and process that already exists today. As a minimum, the current processes must be incorporated into the CSNP process so that the needs are clear to relevant stakeholders and provides directionally consistent signals for network/power system development, which will also help network customers understand the future power system when considering projects. This will also ensure resources are used effectively, avoiding duplication and ensuring roles and responsibilities are clearly defined for production of an efficient and effective CSNP.

Table 1 currently excludes some elements of system analysis from the scope of the CSNP, such as fault levels and interventions to manage environmental abatement (e.g., removal of SF<sub>6</sub>) – the CSNP needs to consider all relevant aspects of the power system, or risks making poor choices that need to be redesigned to ensure they are safe, reflect the full range of conditions and requirements of standards.

To be comprehensive, the CSNP also needs to be based on scenarios that will lead to the development of a secure and resilient network. The FES pathways are approximate representations of an uncertain future. History has shown that scenarios and future predictions are rarely right even in broad terms, and even over relatively short periods. The output of the CSNP should acknowledge and reflect the level of risk of designing to specific scenarios and ensure that the selected options are suitably future proofed across a range of scenarios to ensure that a lack of network capacity does not hold back the achievement of net zero.

- ***DELIVERABLE – the CSNP needs to have sufficiently considered and reflected factors that impact on the deliverability of infrastructure***

As a party that will be responsible for delivering options selected by the FSO, we expect the preparation and development of the CSNP to be subject to rigorous assessment on deliverability and stakeholder support. It is particularly important that proper account is taken of supply chain availability, lead times and system access before Stage 3 of the CSNP when technology choices and delivery dates are determined. This should include the cumulative impact of the decisions, where multiple projects drawing on the same pool of resources, supply chains and system access requirements are triggered at the same time. In doing so the FSO should be cognisant that any recommendations on interconnectors to Europe will also draw on many of the same suppliers, resources, and supply chain capabilities. If this is not done, the CSNP will produce an undeliverable plan, fail to highlight the gaps between ambition and what can be delivered, and fail to make prioritisation choices on projects it triggers from the “funnel” into delivery.

In developing both offshore and onshore solutions we have seen significant constraints in the availability of equipment (e.g., HVDC converter stations, cable laying vessels) and skilled labour (e.g., overhead line men in the construction industry).

In addition to supply chain challenges, the cumulative impact of infrastructure development on local communities should be considered by FSO when choosing to move projects into delivery to ensure that communities can be appraised of the full impact of network development in their area, and to avoid consent processes being impacted by changes and additions to an area.

To achieve the ambition of the CSNP, all parties will need the right skills and resources. The FSO will need to work together with key stakeholders to establish a robust pipeline of talent and capability to ensure that all parties can fulfil their obligations to a high standard. The sector faces a significant skills challenge and establishing skills such as power system engineering and project development have a long lead time, as people build up sufficient experience. Clarity over roles and accountabilities under the process is needed for all parties to establish their resourcing needs.

The outcome of this Consultation, and the development of the CSNP, is fundamental to the future of electricity, and hence to the British economy. There are several interrelated workstreams and publications, such as the HND Follow up Exercise (HND FUE), the Future Systems and Network Regulation consultation (FSNR), connections reform, and the recent recommendations from the Electricity Network Commissioner, which all have relevance to the CSNP. In addition, it is becoming increasingly apparent to us that the magnitude of change required is tremendous, and the CSNP has a clear role in ensuring that it addresses this scale of change. Our responses to this consultation reflect the challenges of a short consultation time (4 weeks) and the focus on stages 2-4 of the CSNP process without visibility of the outcome of the consultation on stage 1. Given the pace and scale of change, we appreciate and agree with the desire to progress development of the CSNP at pace but would welcome the opportunity to continue to work with Ofgem and ESO on the development of the CSNP given its implications and the magnitude of the challenge it is seeking to address. We are keen to continue play our role in the ongoing development of the CSNP process to deliver outcomes that aid the acceleration of the energy transition and unlock the benefits for consumers.

**Our responses to the questions raised in the Consultation are set out in the rest of this document.**

## Annex Responses to the Consultation Questions

### **Qn 1. Do you agree with our broad regulatory approach to establishing the FSO's obligations to deliver the CSNP products?**

- We generally agree with the proposal to reflect the obligations for the FSO to deliver the CSNP and related products within the FSO's licence conditions. The CSNP Governance Document and CSNP Methodology referenced in 3.10 will be important documents and though the Consultation notes that any changes to those documents will be subject to consultation, we also expect the initial documents to be prepared in consultation with interested parties, including network companies, Ofgem and government.
- We note the recognition in 3.9 that this is the first time the CSNP process will be run and may need to adapt and that formal derogation powers will therefore be included within the licence, to direct an alternative delivery date of the CSNP products if appropriate. Given the level of required robustness to external scrutiny and challenge to enable planning and delivery of projects, it is vital that the CSNP products have that robustness and aren't rushed to simply meet an arbitrary date. As a new product we expect the early iterations to build on the work that has been done through the HND, NOA and 'transitional CSNP' (tCSNP), and learnings will need to be taken from those processes. The CSNP will be a critical document in terms of both the plan and the delivery recommendations and will need to balance the importance of not delaying publishing its conclusions and enabling delivery of needed infrastructure, with the need for the quality of its recommendations to be robust. We would therefore expect the proposed derogation powers to be used in limited circumstances and having received prior input from key stakeholders.
- To enable the delivery of a high-quality product on time, we believe the FSO should be obliged to develop a clear scope, and detailed timeline of activities in agreement with the TOs, which should then be subject to formal processes of "early warning" and change control. This more contractual approach would provide all parties with a firmer baseline than has been the case for HNDfUE and tCSNP, and formal processes for identifying and managing risks and issues.
- In addition, to support delivery of a robust CSNP, it is important for the roles and responsibilities for the respective parts of the CSNP process are clearly mapped out. The current approach is sub-optimal and plans, such as the tCSNP, are delivered on a 'best endeavours' basis without clarity on how they will relate/ evolve to delivery of the CSNP. Today, for example, the tCSNP does not consider the range of 'system needs' outlined in Table 1 given the time constraints of the process, meaning a more significant review of solutions may be needed under the first CSNP than in future years, which could be avoided by adopting such principles sooner than the CSNP.
- The proposed twelve year lookahead for deciding on reinforcement options may be too short for two reasons: firstly, some reinforcements may require a longer development and delivery horizon (we have already been asked to consider several schemes which have lead times in excess of 15 years) – the timeline needs to be sufficient to ensure that decisions to move projects into delivery is taken in time to allow that project to deliver; secondly, it may result in investment in a seemingly cheaper option now which is then stranded as a more comprehensive solution is required later.

### **Qn 2. What are your views on the types of system need that we have proposed are covered by the CSNP? Are there any gaps?**

- Bringing more strategic planning and decision making into the discussion and anticipating interventions around enabling investments is welcomed, however, the table presented within the Consultation (Table 1: System needs) requires significant further work and discussion with relevant stakeholder, as this is currently incomplete to achieve a whole system planning assessment/solution. Many of the requirements and associated processes that would provide a more complete view already exist today and we would be happy to provide more information on where such activities are undertaken today (e.g., NGET's involvement in Power Quality and elements of Network Resilience activities).
- Para 4.2 in the Consultation states that the focus of the current network planning process is "*identifying boundary capacity deficits for moving power from generation to supply under the different scenarios over the next ten years...The electricity TOs use this information to develop network reinforcement options to increase future network capacity*". We note that this does not reflect the broader network drivers (asset replacement, specific connections, network compliance, power quality, resilience, for example) used to define the network requirements in a more coordinated manner. These drivers and insights should be incorporated to ensure a whole system approach is achieved.
- As part of the long-term assessment of system need, the CSNP must anticipate the future challenges of the network in determining how system requirements are addressed. System access, land take for solutions and supply chain will all influence the solutions to meet requirements in a timely manner and should form part of the considerations of an enduring network strategy. For example, the ability for the TOs to take reasonable outage on the network should be recognised as a system need. If the network continues to be developed using cost benefit based on constraint economics, decisions could be made now that in the future lead to a reluctance from the FSO to grant outages that incur significant constraint cost. Taking a narrower view of network needs may lead to the

need for a fundamental directional re-think at a later point in the process when broader considerations come to light, with potential time, cost, and delivery implications.

- Whilst Table 1 may be intended as a simplified start point, it is vital that accountabilities are clear, and that the FSO and relevant parties can carry out all of their respective licence duties in relation to planning the network, whether included in CSNP or not. As an example, the table indicates that fault level studies are excluded from CSNP – however the fault levels at a particular site may well restrict or influence the cost of development at that site, and hence influence the broader solutions identified.
- The role that interconnectors play in the UK energy system warrants more attention as does the consideration around the European implications on our onshore and offshore networks and this is excluded from the list. The UK and Europe have a symbiotic existence that must be considered as part of any future planning as part of the CSNP.

### **Qn 3. Do you agree that the time horizon for system need assessment should be extended to 2050?**

- We agree it is important to ensure system need takes a long-term view to ensure readiness for 2050 and projecting out to this focal point to develop system need assessments signals a more strategic approach being adopted. It will be important for this long-term view to continue with each CSNP and the 2050 view should not be static; for example, the CSNP process should always look forward 25 years. With so much uncertainty over an extended period, options considered may have to consider technology and market developments beyond 2050 on a forward rolling basis and have a broader scope to enable a level of flexibility.
- We do not believe that modification of approaches such as the Network Options Assessment (NOA), designed for economic assessment of incremental network growth, are appropriate for the large-scale whole-system strategic network requirements, despite their adoption for tCSNP activities. They were specifically developed for wider works network assessment, which as Table 1 reflects, is only one of many requirements for network development. We also believe that a longer time horizon should be accompanied by a broader “step-back” to assess whether there are fundamentally different approaches required. As an example, the current network was developed as an entirely new, higher voltage grid superimposed over the existing infrastructure – given the scale of likely new infrastructure build required, another extra high voltage and capacity grid is a possible solution. We believe it would be appropriate to incorporate a requirement to consider where a more radical approach would provide better long-term value and security for consumers.
- Electricity Transmission assets last beyond 50 years and the planning horizon should take this into consideration along with the time required to deliver large scale infrastructure, which in some complex cases could be 15-20 years. Assessments on too short a basis may lead to a lowest cost approach over a best value business case.

### **Qn 4. Do you agree that the FSO should move to a year-round nodal assessment of system need as part of the CSNP?**

- It is important to continue to assess the network on a national level to understand the net network flows and develop the network capacity required, but to recognise that the solutions proposed are both an impact on, and are impacted by, the regional and local (nodal) network requirements identified by network businesses in conjunction with key stakeholders. This will include some of the requirements outlined in Table 1, including asset replacement, local network compliance and capacity upgrade requirements. These will be varied and geographically nuanced based on the network topology and stakeholder needs but will in turn potentially impact strategic network solutions developed for bulk power flow.
- Assessing the network need and conducting analysis at this more granular level can help reveal insights that lead to better strategic decisions being taken although this is likely to require additional resource and skills reinforcement to achieve. This is also consistent with the approach taken by electricity distribution for their ‘Network Development Plan’ (Electricity Distribution Licence SLC25B) which uses nodal analysis to identify constraints.
- More granular detail towards a year-round analysis of network capacity needs will give the right signals under real market conditions, which will be identified as ‘options’ under planning conditions, for example, investment in inter-seasonal energy storage where energy is stored (currently) in seasons of lower demand (summer) towards use in high demand seasons (winter) when there is pressure on the grid due to increased heating demand and lights coming on earlier and for longer. This extra level of detail will however only be worthwhile when supported with having the right market arrangements and tariff structures alongside it, that send the right signals to investors in inter-seasonal energy storage technologies.
- A drilldown from network boundaries to system nodes in assessing future requirements will also help to more accurately identify land required to site new substations as a system need and an appropriate time horizon for analysis of this data should be discussed and agreed.

### **Qn 5. We welcome stakeholders’ views on how the FSO can communicate effectively about future system needs?**



- Early engagement and involvement of TOs throughout the process of identifying future system needs is of vital importance and opportunities. We propose that prior to any broadcast being made that a local panel review be held to agree on options content and detail.
- Earlier identification and communication of some types of future system need would allow different parties, including the TOs, more time to consider potential solutions in advance of formal procurement processes. For TOs this might mean adapting regional or site strategies to allow for connection of future solutions whether these would be provided by the TO or third parties.

**Qn 6. What are your views on the FSO establishing minimum design requirements for high-level option designs and are there areas where exceptions are needed?**

- We agree minimum design requirements for high-level designs make sense. As noted in para 5.9, we agree the FSO should work with industry to agree the approach to be taken and it would be useful for the FSO to clearly outline what is presented today and how this will differ in the future.
- The rationale for the Consultation position references the NOA. We agree that an alternative approach is needed to design activity that incorporates the elements outlined in 'Table 1' which is significantly broader than an incremental wider works investment approach of NOA, and thus believe that a fundamentally different approach is required for establishing minimum design requirements.
- As mentioned previously in this response, the design requirements (whether part of a minimum requirement or otherwise) should consider practical constraints to deliver in a timely manner – we believe these to include supply chain, system access and land/ space requirements which may steer solution choice.
- The design requirements should always consider the full suite of network requirements (including but not limited to those outlined in Table 1 of the Consultation) as early as reasonably practicable to avoid significant later re-work of solutions. A framework by which these are considered as an exception as part of the minimum design requirements would be welcomed (for example, where an asset replacement need alters the time or scope of a load related driver).
- We would also note that the design requirement referred to largely related to routing and siting of reinforcements and construction programmes – the FSO does not have any experience or expertise in this area, nor is it likely to have the accountability to consent and deliver solutions. We would request that the FSO establish the criteria in close collaboration with TOs to ensure that the criteria are achievable, and do not hinder the future consenting and delivery of solutions.
- The consultation refers to “spatial characteristics” being considered as part of the desktop development and assessment of options, including “identifying possible route corridors and site locations”. Route corridors and specific site locations suggests a level of detail that is determined at the detailed design stage, rather than what a high-level desktop development of options can deliver. We agree that the CSNP should have a spatial dimension and in our view, this could identify strategic locations (e.g., onshore or offshore solutions), technology choice and strategic measures to mitigate the impacts of transmission infrastructure (e.g., overhead lines or undergrounding solutions), as well as suitable onshore connection “zones” or new nodal locations for large scale connections. The CSNP and these spatial elements should then be endorsed as government policy in the National Policy Statement and National Planning Framework (in line with the recent recommendations by the Electricity Networks Commissioner).
- Provided the necessary environmental assessments and public consultation have been undertaken (see below), determining these spatial elements and a clear needs case in the CSNP could avoid having to repeat this in the subsequent development of individual projects which could significantly accelerate project development, consenting and delivery.

**Qn 7. Do you have any views on our proposals for considering environmental and community impacts as part of high-level design of options?**

- We agree that environmental and community impacts and mitigations should be factored into high level design, however; it is critical that the detail of what this will incorporate, and what standing it will have, is developed collaboratively with TOs and other parties that will be directly involved with the later elements of design, Environmental Impact Assessment, and consenting. The FSOs work should be a clear part of the evidence case that is considered in the final consent process for new infrastructure, and the FSO should, in that case, be required to respond to challenge and defend their SEA and MEA in such processes.
- We support the proposal that the CSNP should be subject to Strategic Environmental Assessment (SEA). However, there needs to be recognition of the full requirements that come with SEA, including the need for public consultation and for appropriate feedback loops in the option development process to take account of consultation feedback. The process proposed in the Consultation does not seem to cater for these requirements, so it is important that process to be developed by the FSO will meet the full SEA requirements in terms of what, when and how the assessment is carried out and integrated into the CSNP process.
- At paragraph 7.21 the Consultation seems to suggest that SEA will be undertaken for “onshore network developments” and marine environmental assessment (MEA) will cover “offshore developments” and that “further

thinking is required to determine whether the SEA can/should incorporate any marine environmental assessments (where timings align)". As the CSNP is to provide a holistic view across onshore and offshore, the environmental assessment needs to cover onshore and offshore and the interactions between them – this can't be optional as suggested by reference to "the SEA can/should incorporate any marine environmental assessments". Not meeting SEA requirements in full across the scope covered by the CSNP would significantly increase the risk of successful Judicial Review of the CSNP – it is therefore important that SEA requirements are met in full across the scope of the CSNP.

**Qn 8. Do you have any views on our proposal for the FSO to independently decide which network needs it may lead the high-level design of?**

- We are broadly comfortable for the FSO to independently decide which needs it creates high-level designs for, but we have a few concerns with the current proposals. Even where FSO is 'leading' on the high-level design:
  - it should not restrict TOs or third parties from also putting forward their own high-level designs – i.e., this should not be limited to circumstances where the FSO exercises its discretion to "invite" other proposals
  - in the interests of using (and not duplicating) the best collective and finite industry knowledge, skills, and expertise, a clear process of when and how this will be exacted is needed in our view
  - the FSO should be required (not just expected) to engage with TOs and other third parties to test the practicality and deliverability of their design (NB, we don't think this should be limited to TOs, especially if part of the rationale for the FSO leading on designs is to come up with innovative non-network solutions – in which case input from a broader group than the TOs may be appropriate)
  - where the FSO ultimately decides to adopt a proposal that it has put forwards, it must be clear that the FSO takes accountability for the solutions compliance with relevant standards, particularly the SQSS
  - where such proposals are adopted, all third parties who are subsequently committed to deliver by such action should be engaged and in agreement of any subsequent commitment and accountability to progress and deliver the options.
  - a clear process for ratification and governance of such decisions is required to ensure practicalities and concerns are accounted for in such cases where all affected parties of FSO-led design are not in agreement.
  - enhanced levels of information sharing (and the information security of such sharing) are needed to ensure that FSO has sufficient view of all network needs (of which many today sit with TOs) to support them in making decisions about where they are the appropriate party to lead high level design.

**Qn 9. Do you have any views on our proposal for the FSO to set out how and when third parties can be involved within the CSNP?**

- The FSO setting out how and when third parties can be involved within the CSNP is supported and we would like to understand more around triggers or signals that would initiate the third-party engagement. Setting out a transparent process as part of the CSNP will be beneficial to all parties.
- We support the promotion of a 'level playing field' and this should extend to all parts of the process ensuring that proposed alternative solutions and technologies are compliant with SQSS standards and license conditions.
- The approach to third parties would likely be linked to a competitive study and we have provided more detail as part of our response to Qn21 in this consultation.

**Qn 10. Do you have any views on our proposals on data exchange to enable the implementation of CSNP?**

- We are aligned on the need for an industry collaborative review of the System Operator Transmission Owner Codes (STC) to ensure they are fit for CSNP purposes. It is also important for the ESO/FSO's review of codes to include data exchange requirements between the ESO/FSO and other parties, for example data exchanged with DNOs and the ESO/TOs. The FSO should also carry a similar obligation to provide relevant stakeholders, including network companies, with the data required to carry out their duties.
- It is expected that the data needs will be high-level (which should be sufficient considering the CSNP scope is high-level analysis), to protect business/ and commercially sensitive data from being shared with 'potential competition', and to ensure that appropriate steps are made to ensure that the security of sites is not compromised.
- We are therefore keen to understand how the 'open data' approach can account for established data exchange standards and in particular the need for network data relating to network vulnerabilities / enhancements to be kept out of the hands of those with the potential to utilise it for malicious intent.

**Qn 11. Do you have any views on our proposals regarding the principles to be followed in the CSNP decision-making framework?**

- The principles outlined as being "transparent, based on open stakeholder engagement, adaptive to change, robust, consistent and reproducible" appear to provide a positive direction and reflective of the feedback presented on other process discussions.

- We welcome a CSNP that reduces complexity and is highly visible to all interested parties and look forward to seeing further details as the CSNP governance process progresses.

**Qn 12. Do you have any views on our proposals on the decision-making framework for selecting potential projects to address longer-term system needs?**

- In addition to the proposals, we believe the criteria for longer-term projects selection should include factors such as:
  - Recognition of the “option expiry” time for options i.e., when an option would need to be triggered to enable it to deliver in time, even when there is still uncertainty on the need case
  - The status of compliance with SQSS, be that the current SQSS or an updated version
  - Least-cost optimum option to minimise customer costs over an agreed timeframe (e.g., 15 years) impacting final consumer bills
  - Timeline to achieving net zero targets
  - Opportunities to apply innovative technologies, including those that increase energy efficiency and demand side response, including assessment of the maturity and readiness of that technology
  - Option(s) with least potential for supply chain disruption, and the cumulative impact of triggered multiple options to be delivered at the same time
  - Options that account for all network requirements (load related, compliance, asset replacement)
  - Options that account for system access needs and management
  - Consider of spatial constraints (e.g., land requirements)
- In essence, there should be priority measures identified, with weightings assigned that will support the objective assignment of projects into the ‘funnel’. The licence obligations for FSO and TOs need to align to their ability to comply - where FSO choose alternatives to infrastructure that would be required for SQSS compliance, the TOs need to be relieved of their SQSS compliance obligation for that need and solution, and the accountability sit with FSO.
- With reference to the previous question, this is clearly one area where the transparency and consistency of decision making of the FSO is key. For example, where the FSO choose to trigger an option in one area, but not in another, the affected stakeholders of the first area would likely challenge the basis of the decision making in a consenting process, and FSO will need to be able to robustly defend those decisions.

**Qn 13. Do you have any views on the decision-making framework to bring potential projects into the ‘delivery pipeline’ for nearer-term needs?**

- The framework proposal is very high level and descriptive in nature without sufficient substance to make specific comments. Once the FSO has been formally appointed and commences with the process of developing the framework we will be able to comment further. We do agree that the principle of having an objective decision-making framework to move projects into delivery will add value to the CSNP.
- Reflecting the point made on question 12, we would comment that the decision to not take a project into delivery needs to be just as robust as the decision to take a project into delivery – the grounds for not proceeding in one area are likely to be used by affected stakeholders in challenging the grounds for proceeding in a different area. We would also comment that the FSO should develop a methodology in consultation with TOs and other parties and ensure that the methodology is responsive to changes in market conditions e.g., market capacity and lead times for procuring equipment and delivery capacity. Recent experience has shown that this can change significantly over a short period of time.

**Qn 14. We would welcome views on our proposal to not re-evaluate projects that are in the delivery pipeline, and whether a materiality trigger is appropriate and what criteria might be used**

- Decision stability is a key factor in enabling timely delivery of the investments required to decarbonise the energy system and unlock the associated benefits for consumers. We therefore agree that any re-evaluation of projects in the delivery pipeline needs a suitably high materiality threshold to re-open the decision. There must also be provision to ensure (efficient) costs incurred for projects that get halted/changed through a re-opening process can be recovered by the delivery body.
- What is key here is the detail on what is defined as “delivery” for a project, and whether that covers only physical delivery, detailed design and procurement, or consenting. The principle of ‘adaptive to change’ needs to further discussion in general terms and to ensure that the threshold for revisiting/ not re-visiting CSNP pipeline solutions aligns with ASTI projects and their treatment/ exclusions from this process.

**Qn 15. Do you have any views on our proposal on inclusion of environmental and community impacts in the CSNP CBA?**

- We feel that these are critical factors within the CBA and warrant more attention than afforded to date. Balancing the impact on communities and the broader environment has always presented a challenge and we need to



prepare for more difficult conversations and choices in the future that enable the acceleration of decarbonising the network and reduce energy costs at a faster pace.

- We have observed impacted communities use Judicial Review to challenge decisions in a well advised and organised manner that has resulted in consents being refused or projects simply being delayed through due process. These community representatives and stakeholders need early engagement to help shape solutions that create maximum consumer value with the minimum disruption and opposition possible. Likewise, the CBA methodology needs to be robust and defensible and have suitable standing to be used as part of the consultation and legal processes associated with consenting new infrastructure.
- We would note that the recent report by the Electricity Networks Commissioner made recommendations about the guidelines for community benefit for those areas impacted by new infrastructure – we would expect any CBA to reflect any benefits following from those recommendations and subsequent government policy/guidance.

**Qn 16. Do you have any views on our proposal for the CSNP to include a methodology for assessing and taking forward system operability solutions?**

- The FSO including a methodology that sets out how operability solutions will be assessed and taken forward will foster investor confidence and give direction on key focus areas. The assessment measures and process of taking operability solutions forward should also be collaboratively aligned on to ensure stakeholder views are incorporated.

**Qn 17. Do you agree with our proposal for the ESO to review its current approach to assessing short- and long-term solutions, and for the FSO to set out its approach in the CSNP Methodology?**

- Yes, we agree that the review needs to take place and that the FSO should be transparent on their approach within the CSNP methodology. Any methodology should neither artificially favour long or short-term solutions, or network or non-network solutions, but should factor in risk, flexibility, and deliverability as well as cost benefit. Network solutions have, over many decades, provided resilience and robustness to unforeseen events and market developments that have offered real benefits to consumers.

**Qn 18. Do you have views on our proposals for FSO to develop capabilities to consider different combinations of options and how this should be implemented?**

- It makes sense to develop those capabilities and provide insights to relevant parties, and we agree the FSO should not have the ability to take the final decision on matters such as siting of offshore wind farms.
- With the development of those capabilities, we anticipate that multiple combinations of energy system futures could, in some cases, produce divergent network combinations. We would be keen to understand how this will be pragmatically addressed to ensure that decisions on infrastructure reinforcement remain stable and robust.

**Qn 19. Do you agree with our proposal to introduce a requirement, as part of the new CSNP licence condition, for the FSO to make recommendations on additional interconnection and OHAs opportunities between GB and other markets?**

- It will be important to ensure that the new licence condition is not too prescriptive and as a result limit the commercial value that developers can provide. Some degree of flexibility should be provided on location, technology type, capacity, and timing to allow alignment with EU TSOs
- The Future Energy Scenarios (FES) currently published by the ESO captures interconnectors as part of the supply capacity to enable net zero out till 2050. The outputs in this current process will be analogous to Stage 1 of the CSNP process, with the need and solution highlighted in Stages 2 and 3. The FSO having a view and making recommendations on additional interconnection and OHAs will therefore support the vision of whole system planning.
- We know from previous experience that poor modelling of Europe (compared to the GB FES) can have a significant impact on GB assumptions around interconnection flows. Establishing channels for input from Europe and outlining the level of data required to perform effective studies will be vital.

**Qn 20. Do you agree with our proposal that the FSO should use reasonable endeavours to support relevant stakeholders as part of the offshore asset development process?**

- The Stage 1 CSNP process of modelling future supply and demand, when done at a nodal level, will foster the identification of supply nodes which will in turn guide further identification of seabed leasing areas to support offshore supply capacity development.
- In addition to the broad categorisation to “use reasonable endeavours” which makes the extent of the obligation subjective, further guidance should be given and clarified in Ofgem’s CSNP Governance Document on other (directional) supporting roles expected of the FSO (and by extension TOs), as this might also impact workload planning, and depending on the nature of the support required, capability development.
- The support requirements in the area of strategic marine environmental assessments should also be incorporated as part of the Strategic Environmental Assessment (SEA).

**Qn 21. Do you agree with our proposal that the FSO assess third-party options under the CSNP and recommend delivery by competition where proposed solutions meet the relevant competition criteria?**

- In addition to the FSO setting out how and when third parties can be involved within the CSNP, the metrics that will be used in assessing these options against traditional TO proposed options should also be set out.
- We fully support competition where this delivers best value for the consumer. There must be a sharp focus on the 'need', to ensure the right projects are competitively tendered and providing all criteria within the CBA demonstrate that this is the case in a transparent manner, then the proposal is supported.
- This consultation states "Our proposal is that the FSO develops the CSNP to include an analytical approach that allows for third-party options to be fully and transparently assessed against TO proposed options" but does not sufficiently outline details of the approach. We recognise that the criteria to be used in assessing if a project is to be delivered through competition has potentially been covered within the 'Early Competition Cost Benefit Analysis' consultation led by the ESO earlier this year. The outcome of this is awaited and will inform further comments on our position.
- It is vital that only projects that have a high potential to deliver end consumer benefits are selected and the FSO should consider what obligations or commitment is placed on any third parties, and how this relates to licence obligations placed on incumbent TOs.

**Qn 22. What are your views on whether changes to the SQSS or obligations on licensees are needed to support the CSNP – where specifically are these changes needed and when do they need to happen by?**

- We believe that changes to the SQSS are required to develop a network security standard that is relevant, understood, interpreted and employed by all relevant stakeholders. The review of the SQSS should be done in consultation with networks, academics, technical experts, industry and organisations that can provide a societal perspective. This refreshed SQSS should then be used in developing the CSNP so that the plans reflect the updated standard.
- There are a number of reasons to support a review of the SQSS:
  - A prolonged period of a connect and manage regime and significant changes to the energy landscape in recent years, including changing electricity generation types, technologies and profiles of contribution connecting to electricity networks at less conventional entry points, combined with societal changes that have the potential to impact our assessment of the value of lost load (VOLL), has also led to questions about the validity of the current SQSS. It is important that the base assumptions are modernised and refreshed to reflect these changes.
  - Recent plans and assessments of reinforcements, including NOA, HND, HNDFUE and tCSNP, have not fully considered the requirements of SQSS, and the ESO has assessed some reinforcements on economic grounds in making its recommendations. These risks leaving the network companies stuck between the requirements of the SQSS, and the recommendations of the ESO made on an economic basis. In contrast, our approach to network design to meet SQSS compliance includes independent annual network compliance assessments against the SQSS, and unless addressed there will be an increasing gap between the results of those compliance studies and the recommendations from processes such as HNDFUE and tCSNP. We also consider network operability through our assessments of network security when undertaking system outages for maintenance, replacement and new/ enhanced capacity infrastructure. These are important elements of the SQSS and need to be applied to the CSNP. It is essential to get back to a position where the CSNP can be based on a revised SQSS that is a solid basis for planning for all parties.
  - The existing SQSS considers power system economics at its core when determining the necessary security that the network must be designed and operated to. Therefore, in undertaking cost-benefit assessments through processes like NOA and HND based on market (i.e., constraint) economics, and not on security economics, it adds a further layer of economic judgement to the inclusion/ preclusion of network needs signalled by this standard against a constraint management alternative. If continued in perpetuity this approach will lead to underinvestment in network needs against the standard and could lead to a less robust network than the SQSS has provided over past decades, making the network increasingly brittle, with little resilience to accommodate differences between the scenarios and reality, and difficulty in practically operating the network allowing for things like outages on assets.
  - The Consultation specifically outlines climate resilience (question 23), but the SQSS standard should continue to consider the appropriate level of network resilience for higher impact but lower probability events that would not be tolerable for modern society. It should consider the network events (through their impact and likelihood) both today and in the future that have intolerable impact for society, and how this may evolve in a society with greater dependence on electricity today than when the standard was created, and potentially further dependence on electricity in the future for everyday life.
- We also support a review of licensee obligations in this area to ensure that they are aligned with the licensee's ability to meet such obligations. For example, if the FSO is responsible for setting network study parameters / assumption, they must be responsible for ensuring that those parameters and their supporting data align with a

‘renewed’ SQSS. Similarly, the licensees charged with undertaking the resultant network studies must be able to undertake assessments in line with the SQSS and deliver outcomes that can be consistently interpreted by all parties in the context of network compliance.

**Qn 23. Do you agree that the FSO should evaluate the climate resilience of the long-term whole-system CSNP?**

- We agree that the FSO should have overall responsibility for the final evaluation of climate resilience, however; it is important this is done in consultation with all relevant stakeholders. Delivering a resilient network needs to occur at all levels across the network, with the TOs best placed to assess the resilience of individual assets to temperature, substations to flooding etc. As noted in our response to question 22, the SQSS standard should also continue to consider the appropriate level of network resilience (including, but not limited to climate resilience) for higher impact but lower probability events that would not be tolerable for modern society. The FSO could set the parameters around which resilience is tested through engagement with subject matter experts across industry. Sharing resources and knowledge in this area will benefit the industry and ultimately consumers.
- As part of this, it will be important to ensure the FSO has the requisite skills and capabilities, and consideration will need to be given to the current capabilities of the ESO and how long it will take to build the required capabilities for long-term whole-system climate resilience evaluation.
- A climate change factor not immediately called out in the Consultation is the climate change impact on land availability (e.g., flooding, erosion, etc) required for capacity expansion. Geological and environmental study data and forecasts should be widely shared with those feeding into the planning process.

**Qn 24. Do you agree with the proposed position on the treatment of connections in the CSNP?**

- Broadly speaking we agree with the proposed treatment of connections. A three-yearly CSNP cannot restrict the ability for customers to apply for connection to the transmission systems, and so the TOs and FSO should continue to operate a customer connection process outside the CSNP.
- However, it is vital that the FSO consider the background of customer connections, and ensure that the CSNP takes account of ongoing, contractually committed reinforcement works to enable customer connections. Where FES scenarios and pathways differ from the contractual background, the CSNP cannot undermine the ability of TOs to progress connections for customers, and the CSNP will need to reconcile to the differences between scenarios and reality. To compensate for this, nodal assessment made by the FSO must be sufficiently flexible to accommodate and reflect the dynamic market that exists.
- We note that this is an area where Connections Reform has a strong interaction with this consultation and look forward to working with Ofgem and ESO to ensure the alignment of the CSNP and the customer connection arrangements.