

Response to Call for Evidence - September 2023

Dear Ofgem

I am responding to the above consultation on behalf of Continuum Industries. For clarity, Continuum Industries is a software provider that offers a new approach to desktop optioneering studies for linear infrastructure such as transmission and distribution overhead lines and subsurface cables. Our software - 'Optioneer™' will allow Ofgem to realise the objective of centralising the approach to strategic network development. It allows for project teams to automate the existing optioneering process, efficiently capture detailed geospatial information, consider environmental, consenting, cost and engineering factors, and iterate through thousands of design options to find the most optimal solutions.

Response to Comments

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

On a broad basis, the outlined approach would appear to be coherent from the point of view of a 'technical system'. However, regarding stage 5 of the CSNP the document states that the proposed CSNP should develop an offering that can have '*acceptable impacts, in planning terms, on environment and communities*'. Currently this remit would overlap significantly with existing planning and consenting bodies such as the Planning Inspectorate, local authorities and consultees such as Natural England and the Environment Agency. There is no reference within the consultation document regarding whether these groups have had any input into the development of the CSNP products or how their future relationship would transpire.

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?

With reference to Table 1 we are of the view that we broadly support the proposed systems needs covered by the CSNP. However, we wish to raise some points around strategic connection exercises and local connections.

Regarding strategic connection exercises, this will involve significant overlap between the FSO and the TO roles. Whilst the FSO is proposed to have responsibility for a holistic assessment, this may result in a system design that is challenging or infeasible for the TOs to meet. We therefore suggest that standardised software is utilised by both the FSO and TOs to allow for a joined up network design approach to be taken to avoid duplication of effort and critically, mutual certainty in outcomes.

On the point of local connections we support the proposal as it currently stands. In particular with regard to where a particular connection results in significant reinforcements, such as a new nuclear power plant, or where network planning for an accumulation of connections in a

given area this could be undertaken strategically. We would suggest that this would be undertaken as a joint approach by the FSO and relevant TO utilising standardised routing selection software.

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

Yes. However, it is important to allow flexibility in system needs and environmental modelling to be built into the CSNP as new or improved generation and transmission assets come online. A 'live' modelling software offering which would permit the FSO to model different scenarios on an ongoing basis would be useful in this regard. For clarity this relates to environmental modelling such as woodland rather than electricity modelling.

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

Yes. This would be a net benefit to the assessment process. The utilisation of new digital technologies will help with this transition. However, there is a lack of clarity in the consultation document as to the exact definition of what a 'year round nodal assessment' would be. Does every substation represent a node and what is the trigger for identifying the need for additional nodes versus reinforcement of existing?

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

We are of the view that digital stakeholder engagement platforms should be supported by Ofgem to effectively gather and issue feedback and strategic decisions on behalf of both regulators and stakeholders as a Single Source of Truth.

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?

Continuum Industries are of the view that sufficient data and digital tools are available to allow more detailed analysis of option designs than previously possible. As such, these approaches should be prioritised to ensure option feasibility at the earliest stages of option design.

Currently, the practice of establishing a preferred corridor for new linear development such as transmission lines involves a level of detailed design such as environmental, engineering/technical and cost considerations that is already sufficiently complex as to constitute a 'middle ground' between high level and detailed. Proposals to segment high level design away from the detailed is not practicable and in fact may lead to a slow down in delivery of new transmission infrastructure.

Exploring this point further, the adoption of new digital technologies such as automated routing software and digital twins is already causing much of the 'detailed design' to be

brought forward into higher level considerations. Best practice entails bringing all known factors, including engineering requirements forward to as early a stage as possible during routing design. This allows for a concurrent approach to design as opposed to sequential and speeds up consenting issues and allows for greater stakeholder and community input whilst optionality still exists.

Secondly, regarding paragraph 5.10 the consultation document states that the *minimum expectations should be set where consistency is of most value, for example the level of detail needed for a desktop assessment of the:*

- *spatial characteristics, including identifying possible route corridors and site locations, considering environmental limitations, eg river crossings, Areas of Outstanding Natural Beauty (AONBs), and community impacts*

We strongly support the default set of assumptions regarding environmental and consenting issues to establish a Great Britain wide approach to environmental, planning, engineering and communities consideration re: new transmission infrastructure. This would allow for quantifiable approaches to be taken in comparing and contrasting routes versus more subjective qualitative based narrative discussion.

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

Continuum Industries strongly support the proposals for consideration of environmental and community impacts as part of high-level design of options. However, we would go further and suggest that engineering and cost considerations should also be considered at as early a possible stage in the design process to achieve an efficient and coordinated approach to route development.

Regarding paragraph 5.15 we have the following views to offer:

- *as part of its CSNP Methodology, should develop guidance on the minimum consistent approach to identify and, where appropriate, mitigate, environmental and community impacts using desktop assessments, as part of developing high level designs of options.*

We support this approach and regard the need for measurable and consistent numerical ranking on environmental and community impacts to be designed and supported by the CSNP to allow for a metrics based approach to optioneering versus a qualitative and inherently more subjective one.

- *as part of its CSNP Methodology should set out its stakeholder engagement plan to ensure interested parties are clear how and when to engage.*

We propose that stakeholder engagement should be supported and encouraged at a high level stage of route optioneering. If no engagement is undertaken until the detailed design

stage communities and stakeholders are often left with significantly fewer options to consider. This may lead to worse outcomes in terms of optimising new route selection. In addition, transparency improves trust and relations between stakeholders and developers.

- *is well placed to conduct a Strategic Environmental Assessment (SEA) and this should form part of the CSNP process.*

Whilst undertaking a network wide SEA of all existing and proposed transmission assets is a worthwhile exercise, this will be extremely challenging to undertake without digital methods being heavily embraced. We would anticipate the need for some form of digital EIA being 'scaled' up to SEA to allow for this network wide appraisal to be undertaken in a time efficient and staff resource efficient manner.

As the FSO will be in the unique position of being able to consider high level options from an environmental and social perspective the SEA should be supported but not over the 'long term', this needs to be a rapid exercise that leads network roll out, not a monitoring one.

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 of the view that the FSO should work concurrently with the TO's to decide upon the network needs of Great Britain in a transparent manner based on nodal performance. If the FSO is acting entirely independently it may lead to a situation where the most optimal network design is not chosen due to lack of TO involvement which is the opposite outcome of what the CSNP intends to occur.

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?

To achieve the ambitious aims set out by the CSNP, new and innovative tools and methodologies offered by 3rd parties must be considered by the FSO in their high level network design; this should include route options proposed both by the FSO themselves and the TOs. The use of digital optioneering tools to compare and contrast the various network opportunities that may be possible by combining inputs from each party will be key to implementing this. Attempting to segment 3rd parties into a separate routing category will make for an inefficient routing process at a strategic level, increasing the risk of an infeasible network design.

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

Provided there are no issues of commercial confidentiality we are of the view that there are no reasons that data provision utilised in the CSNP cannot be made publicly available to enable openness and transparency in the route optioneering process.

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

No comment

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?

We are of the view that such a framework should be structured based on quantifiable inputs and output such as cost, environmental and technical impacts. We would support such an approach and would suggest that a minimum the FSO should take forward projects of least impact and highest value.

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

No comment

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.

No comment

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

We support the FSO considering the factors outlined in paragraph 6.37 of the consultation and the analysis of these issues set out in paragraphs 6.32 to 6.36. However, there is no discussion within the consultation document as to how these competing factors should be balanced and weighted in terms of importance when route optioneering in a measurable and quantifiable way. We are of the view that assigning numerical values to competing interests is the only method by which open and transparent route selection is possible and this needs to be assisted by digital tools.

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?

No comment

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?

We support a review by the ESO of its current approach to assessing short and long-term solutions and the FSO setting out its approach to the same in the CSNP Methodology. We

are of the view that such a methodology should be structured based on quantifiable inputs and output such as cost, environmental and technical impacts.

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?

Consideration of different energy mix options such as where offshore wind generation is situated closer to demand (and/or hydrogen production plants) resulting in less need for new network, with options where offshore wind generation is situated far away from demand need to be modelled and considered in order to create a transmission network that can balance all competing factors. Use of digital optioneering tools to compare and contrast different combinations is vital to allow this to be undertaken in a timely manner.

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?

We support this proposal to require the FSO to model and recommend additional interconnection and OHA opportunities between Great Britain and other markets. Currently many interconnector projects are private sector proposed and mandated without any overarching approach to how they will connect with the national grid in Great Britain or how they would coexist with other onshore connection proposals.

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?

Yes, onshore and offshore network development cannot be treated separately. A joint network planning approach to transmission development is required, both from a terrestrial and marine perspective to ensure that optimal routes and substations are brought forward at a strategic level. This is particularly relevant with the huge increase in offshore wind which has led to a situation where individual developers are competing for grid connections leading to duplication of routes unnecessarily when a co-ordinated approach would be more appropriate.

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?

As set out in our response to Question 9 new and innovative options proposed by 3rd parties should be considered by the FSO in their high level network design alongside route options proposed both by the FSO themselves and the TO's. The use of digital optioneering tools to compare and contrast the various network opportunities that may be possible by combining inputs from each party will be key to implementing this however. Attempting to segment 3rd parties into a separate routing category will make for an inefficient routing process at a strategic level.

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?

No comment

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

Yes, consideration and modelling of climate impacts and resilience of the entire transmission network should be a consideration of the strategic and whole-system CSNP.

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

As per paragraph 7.51 where a particular connection results in significant reinforcements, such as a new nuclear power plant, or where network planning for an accumulation of connections in a given area can be done strategically it may be more appropriate for the FSO to design connections rather than the TSO. However, this decision cannot be treated in isolation and would require TSO involvement to avoid creation of route options that the TSO feels they cannot deliver.

As per our other responses the line between high level optioneering and detailed design is increasingly blurred and the use of digital optioneering software to consider all factors including environmental, consenting, cost, community and technical from as early a stage as possible is necessary to enable the FSO to deal with the issue of how individual connections should be treated.