The voice of the energy industry

Energy UK Response to the Centralised Strategic Network Plan Draft Methodology Consultation

01.08.2025

Consultation link: https://www.neso.energy/document/363521/download

Energy UK is the trade association for the energy industry, representing companies investing billions of pounds to secure our country's current and future energy needs.

From growing start-ups to major electricity generators, grid and infrastructure developers and energy suppliers, our members are driving change across power, heat, transport and flexibility.

We provide a collective voice for the sector working with governments, regulators, charities and other organisations to provide crucial insight that shapes policy, offers solutions and promotes best practice.

Our broad view across the whole system supports evidence-based positions which are not tied to particular technologies, and are focused on delivering strategic benefits for people, businesses and the economy.

Executive Summary

Energy UK welcomes the consultation on the Centralised Strategic Network Plan (CSNP) methodology, and broadly agrees with most of the proposed approach.

However, further clarity is needed regarding the following:

- NESO should learn from the engagement process for the Strategic Spatial Energy Plan (SSEP) and deliver early direct engagement with industry stakeholders and detailed transparency in information and decision making.
- The proposals put forward do not represent a whole-system plan. Such a plan must consider system needs and holistically assess the optimal solution, considering all vectors and technology types.
- NESO must clarify the interaction and coordination of CSNP timelines with other key energy policy timelines.

If you have any questions regarding this response, or would like to discuss this response, further engagement would be welcome.

Kind regards,

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Energy UK

The voice of the energy industry

Consultation Response

Introduction

1. **Do you agree that NESO is intending to engage with the right stakeholder categories to successfully deliver the CSNP?**

Overall, Energy UK agrees that the relevant groups of stakeholders are being considered.

The input of a wide variety of stakeholders will ensure the development of a safe, secure, resilient and clean energy system. Learning lessons from the SSEP process thus far, it will be essential to involve key business groups as a separate category to 'community and societal interest groups. Notably, splitting the stakeholders as Transmission Owners and "others" NESO risks overlooking the expertise of parties who can propose solutions and deliver these.

It will be essential to involve the right stakeholders early on, allow them more direct access to key materials and involve them more actively with the development of the CSNP at each stage, rather than 'drip-feeding' wider stakeholders' information or running Requests for Information (RFIs) with limited context and short lead times.

CSNP methodology

2. **Do you agree with our current position that the SEA/HRA assessment should not be extended to cover gas and hydrogen?**

While Energy UK appreciates that the GNCNR and GOA will impose an obligation on any other party and are not intended to have any status in planning, in the interest of whole system planning, especially concerning the large amount of decommissioning that will be required for the gas network, the absence of an equivalent to the SEA and HRA for the gas or hydrogen network, may be disadvantageous to the CSNP.

From the consultation document, it's not clear why these assessments would not be extended to gas and hydrogen from the outset. It would seem inefficient to have to pause progress at some future point to enable completion at a later time.

3. **If you do not agree, can you provide a reason why?**

For the sake of the wholesale planning and cohesion described in the consultation documents, all energy vectors should undergo a cohesive environmental assessment.

It is important that the electricity network is not made to undergo an assessment that hydrogen and gas networks are not required to deliver.

If NESO wishes to progress without the gas or hydrogen network being part of the SEA or HRA, further justification is needed.

4. **Do you agree that the methodology steps (drive, identify, develop, appraise, deliver, and plan publications) outlined in the whole system CSNP overview are appropriate for developing a whole system CSNP?**

Generally, Energy UK agrees in principle to the steps set out in the methodology.

In the 'drive stage', it will be essential to begin carefully considering the optimal cost options and geospatial options for networks while the SSEP is still being developed. Ideally, the SSEP and CSNP would be developed in unison to ensure cohesion, though we recognise the need for rapid delivery. There is a risk that the current sequencing could lead to some options for energy assets being selected in areas where it will not be feasible for the electricity or gas/hydrogen network to service.

It is true that 'distance to network' is already being considered as part of SSEP modelling. However, further consideration of the economics, local challenges, and geospatial suitability of the route to connect suggested assets is needed early on in the CSNP process, ideally as part of the SSEP modelling before the CSNP process begins.

It appears that much of NESO's analysis for the CSNP relies on the SSEP, which is currently being developed. It is not clear the extent to which the current network plans by the DNOs/TOs will inform the SSEP, but NESO must avoid the SSEP being too rigid in its assessment of hydrogen demand & the implications for development of the T&S network. Understanding the network plans already in development will help guard against an inflexible view derived simply from DESNZ assumptions on hydrogen demand across the UK.

It is unclear how the CSNP will feedback into the SSEP. For example, if the CSNP makes greater use of high-cost sub-sea HVDC cables than is anticipated in the SSEP, this will drive up costs for new generation in some areas, implying that the output of the SSEP is no longer economically optimal and is in need of revision.

Clarity is needed on which elements of FES/FEP and the SSEP will be used for creating the CSNP pathways, for example:

- Which elements of FES will 'supplement' the hydrogen and electricity pathways?

- Which elements of ‘wider supply and demand inputs’ for FES will be used for the gas network pathways?

It is worth noting here the divergences between the latest Gas Ten Year Statement and the latest FES publication, especially concerning the expected level of unabated gas generation on the system by 2030 and 2035.

Our understanding is that assumptions on future hydrogen supply & demand will come from DESNZ, but will be tested by NESO's FES to evaluate lower and higher demand scenarios, but we would welcome more information about how this process will work in practice; in particular does it mean that NESO's planning for hydrogen will be sufficiently flexible to support different levels of demand? Or will it inform NESO's options from which DESNZ will pick one option and use that to determine the which networks it supports? If the latter, it will be crucial for industry to have the opportunity to engage on NESO's options to ensure that certain regions for potential network developed are not overlooked.

It is also positive to see ‘network management’ as an option type being accounted for as a solution to expand the future capability of the network. However, it is important that flexibility solutions that are ’in market’, or rather, not controlled by the network but by third parties, are considered when assessing solutions for constraints, operability issues, smoothing buildout, managing connections, and any needed outage planning/contingency.

Finally, the five assessment criteria for the ‘appraise stage’ of the CSNP need to be clearly weighted at the outset in a way that aligns with the Government’s policy objectives and is transparent to stakeholders.

5. Do you have any comments on the specific assessment steps shared within the whole system CSNP overview?

Overall, the assessment steps appear sensible.

It will be key to harmonise as much of the process as possible with the SSEP process before the SSEP is finished to ensure cost-effective alignment. Clearer harmonisation between the interactions of electricity, gas and hydrogen network plans is needed.

There is a lack of detail on how the outputs of the SSEP then feed into the CSNP. We welcome the position that the CSNP will be more granular than the SSEP. Subject to the eventual boundaries that are chosen in both the SSEP and the CSNP, this could result in SSEP boundaries straggling network constraints, with material impacts on the network design that follows.

Some early sight of the CSNP and the impact on the network price control, either from NESO or from Ofgem, is also needed.

Regarding the intention to freeze the offshore design of the CSNP during the develop phase, whilst we understand the apparent justification for this freeze, we have concerns that it does not reflect the learnings from the Holistic Network Design (HND), whereby the final design offshore changed significantly in response to what was viable in reality. Any freezing in the presence of coordinated offshore assets must not lead to delays in establishing what offshore network designs are truly viable.

6. **Do you agree that the 'whole system' approach for centralised strategic network planning has been clearly set out in the CSNP methodology?**

From what has been presented, the extent to which the CSNP can be considered a 'whole system' plan is unclear.

The plans are considered in isolation, with the only link being the SSEP. How upcoming policy decisions on the update to the Hydrogen Strategy and the future projects confirmed to receive Hydrogen Business Model funding will feed into the CSNP, and how that will harmonise with the RESPs or RIIO framework, remains unclear. The sequencing of other policy decisions and the CSNP needs clarity.

Further, key participants are not included in their own right, for example DNOs and IDNOs. It is therefore limiting how much this can be considered to be a whole system solution.

A more holistic plan would consider the electricity network, hydrogen and market flexibility solutions in unison to meet future energy needs and assess which options are best for an optimal system.

7. **Do you agree that the outlined governance structure proposed in the methodology is appropriate to support the delivery of the whole system CSNP?**

Energy UK is unable to agree or disagree based on current information.

As with the SSEP, there is a need for a more comprehensive splitting up of the stakeholder group into groups representing business interests, local communities, and other key stakeholder subgroups.

Learning lessons from the SSEP process so far, there is a need for wider stakeholder involvement, early sight of materials, clear efforts to avoid the working groups being siloed and longer lead times for RFIs.

8. **Do you agree that the membership, roles, and responsibilities set out for the governance process will support the delivery of a whole system CSNP?**

Energy UK broadly agrees with the proposed governance process.

However, it must be noted that stakeholders have noted a serious lack of engagement with interconnector and offshore hybrid asset (OHA) developers to date. Given the importance of the interconnection and OHAs to the plan, clarity is needed on where they will fit into the governance structure and more engagement is needed to ensure the plan is fit for purpose.

The inclusion of a Working Group as a coordinator with the Coordination Group and the CSNP Committee could aid in sharing information across the various groups. Therefore, the Working Group's coordinating role should not be limited to Tier 1 and Tier 2 bodies of the governance structure.

Clarity is required over the structure, make-up, and governance of these groups from the outset to ensure the industry is clear where decisions are being made and how to engage effectively.

9. **Do you have any other comments on the overview of the whole system CSNP draft methodology that you would like to share?**

There is a need to align the CSNP with other ongoing policy workstreams in the electricity, gas and hydrogen sectors. It is not immediately clear that NESO has considered how to manage gaps and uncertainties created by interactions across the various elements of the Strategic Planning work. Understanding the relationships between these plans is crucial for ensuring cohesive energy policy and efficient resource allocation across regions.

Stakeholders need to understand linkages and timelines in more detail. This should include clarity over what comes first given some hydrogen production contracts have already been signed, with more being considered under Hydrogen Allocation Round 2 (HAR2), and with the Hydrogen Transport and Storage (T&S) allocation launch next year, likely before the first CSNP.

NESO must clarify the exact interaction mechanisms from the SSEP and the RESPs, and how these will be iterative. NESO should clarify how the CSNP will inform RIIO

price control decisions, especially given changes to how the price control will operate under the RIIO3 period.

A truly whole system plan must model the electricity network, hydrogen network and flexibility solutions as ways to enable greater capability together.

The CSNP for electricity

10. Do you agree with the scope and framework, consisting of the options funnel and delivery pipeline, for electricity transmission network planning?

Energy UK agrees.

The political objectives should inform the shortlisting of the preferred network designs to ensure local and national policy objectives are met.

Further clarity is needed on:

- The graphic on page 41 of the consultation, regarding the elements of the SSEP, connections reform, and the Electricity Transmission Design Principles that will inform the CSNP options funnel process.
- The interaction and sequencing of the CSNP informing the Energy National Policy Statements and the next RIIO price control.
- How the strategic parameters of electricity system reinforcement are considered in harmony with other ways of meeting system needs through low-carbon gas or other flexibility solutions. There is a substantial amount of value to be unlocked from this kind of holistic thinking.

Drive (electricity)

11. Do you agree with our approach to utilise both spatial and electrical coordination in developing offshore networks?

Energy UK agrees with this approach and appreciates the commitment to transparency in the development of resilience scenarios and the keen attention to aligning methodologies with relevant stakeholders early on.

It is welcome to see that lessons from the HND and HNDFUE regarding offshore leasing and electrical coordination have been integrated into the CSNP methodology. Any coordination of offshore network assets must learn the lessons from the past shortcomings of the HND. Although we support the aspirations of coordinated offshore assets, they cannot lead to the significant delays of delivery that we saw in the HND.

Improvements to reduce the impact of transmission infrastructure from offshore wind farms are also welcome. This should be coordinated in England with the proposed reforms to the pre-application process proposed in the Planning and Infrastructure Bill at the time of writing. For Scotland, this could form part of the new mandatory pre-application process proposed in the same Bill.

The CSNP must take appropriate consideration of forthcoming seabed leases in England and Wales. To do otherwise could lead to an overreliance on a limited number of generation projects and avoidable associated network requirements.

Clarity on how the 'stress testing' of the CSNP against the FES will be delivered is needed.

NESO should consider the role of a mechanism for updating the 17GB network boundary zones for the CSNP as the network develops and constraints shift.

NESO must ensure the SSEP considers some elements of the CSNP early on to ensure optimal deliverability and location of assets.

On risk factors for the resilience of the system, cyber-attacks and the loss of critical assets due to action by hostile states need serious consideration in the final scenarios.

There is also a need to account for upcoming changes in SQSS in the lead-up to modelling.

When considering the standardisation of asset design in the model, we encourage NESO, if they have not already, to engage with work being delivered under the Transmission Acceleration Action Plan by the Electricity Networks Supply Chain Council. That work is already looking to enable the standardisation of network assets. Harmonisation with their work is key to ensuring the model is realistic.

It will be important for the CSNP to engage with and account for things like the EU's Ten-Year Network Development Plan (TYNDP) and North Seas corridor Offshore Network Development Plan (ONDP) produced by ENTSO-E.

The UK and EU will explore possible GB integration into the EU internal electricity market. Both parties have agreed that any agreement will include UK participation in decision-making, which Energy UK believes should include full UK participation in bodies including ENTSO-E. Engagement with ENTSO-G will also be needed regarding the development of hydrogen trade with neighbouring markets. In the future, all this will need to be factored into the design of the CSNP.

Decision-shaping should also include UK involvement in shaping and harmonising pan-European rules for building and operating multipurpose/non-standard interconnectors, which could impact CSNP modelling.

12. Do you agree with our plan to design using current cable standards to provide certainty for connections?

While certainty is welcome, innovation should not be prevented by the approach. There is, for example, an opportunity for NESO to consider innovative cable designs that are either brand new to the market or are established technologies, and save consumers money, but are not widely deployed in GB. These could have a significant impact on reducing the required level of investment.

Indeed, we strongly encourage NESO to engage further with stakeholders including developers and European stakeholders, especially around interoperability. For instance, we would not want to exclude Dedicated Metallic Return (DMR) for 1,800MW without considering these broader views.

13. Would it be helpful to see the indicative offshore design before the system requirements publication?

Yes. It would be useful for the industry to see the indicative offshore design ahead of the system requirements publication. This is essential for getting early feedback from wider stakeholders and ensuring alignment with the SSEP.

To align with the SSEP, the indicative designs for onshore assets should be shared in advance, not just offshore assets.

14. Do you have any additional comments regarding the offshore design process?

During the Insight stage, clarity is needed on what 'lessons learnt' from which areas will be fed into the strategic offshore analysis. Further, during this stage, more clarity is needed on the routes for 'third-party' stakeholders to input into the strategic offshore analysis.

During the Indicate Stage, NESO should pursue an indicative onshore network design during the development of the SSEP pathways, not just an offshore network indicative design. NESO should set out the reasoning as to why this is not currently proposed.

Further, during the Indicate stage we would emphasize the need for greater developer involvement to ensure the chosen pathway is deliverable. We would also recommend that the CSNP incorporates the outputs from European strategic network planning, offshore studies and sea basin studies. Specifically, OTC regional grid planning, ENSTO-E Ten Year Network Development Plan (TYNDP) and ENTSO-E Offshore Network Development Plan (ONDP).

Additionally, regarding the Indicate Stage, the methodology must more explicitly clarify that the indicative offshore designs for offshore wind networks and landing points for interconnectors are integrated smoothly into the shortlisted SSEP scenarios to be placed before the Secretary of State. This must be done well in advance of the scenario shortlisting, given the need for a geospatial analysis of the suitability of landing zones and offshore leasing areas within the SSEP.

It would be useful to understand why NESO feel the onshore landing requirements for offshore wind and interconnectors are similar, and if this is always the case.

NESO must clarify its point on page 72, stating "the initial designs will only use point-to-point interconnection and radial offshore wind farm connections to meet the requirements of the shortlisted SSEP pathways. This reflects the SSEP pathways." This appears to contradict the intention to examine a series of non-radial offshore configurations. It is unclear why such analysis would not be delivered until after the initial design phase.

Finally, during the Design phase, it is important for NESO to consider the ownership arrangements and commercial and regulatory models of certain assets like energy islands and other hybrid offshore assets to ensure the commercial deliverability of the design scenarios.

Identify (electricity)

15. Do you agree with the scope of analysis under the identify step?

Energy UK agrees.

The predicted changes to SQSS must be considered in the model, especially the consideration of how constraints are assessed.

Upcoming Ofgem policy on voltage, as it increasingly becomes a policy issue, must also be considered ahead of time.

16. Do you have any feedback to improve the presentation of system requirements, as shown in this chapter?

While NESO and TOs must be at the heart of the system needs identification process, a system for third-party input into the collaboration process, shown in Figure 43 on page 98, would be instrumental in ensuring all optimal solutions for system reinforcement, not just those recommended by TOs, are considered.

Develop (electricity)

17. What information would be useful to enable you to submit an option in the expression of interest window?

Clarity from NESO is needed on the exact parameters for options reaching the appraisal stage or being rejected, as described on page 108.

Clarity is also needed on routes to appeal a rejection of a submission, on the thresholds beyond which an option would be discarded based on its technological readiness, delivery risk or environmental impact, and on points of contact for submissions and related communications.

18. How would you like that information to be communicated?

Energy UK would advise that clear communications through the NESO website would be the best option for sharing information.

19. What additional support would you need to develop options?

Relevant operability information related to the local network that is not publicly accessible but also not commercially sensitive would be useful to industry.

Other relevant contact information regarding discussions of the environmental assessment of the submission and the transmission operator aiding with analysis would be useful.

20. Do you agree with the options development process and the required information?

Energy UK agrees. Generally speaking, this section is very comprehensive, with some areas mentioned in answers to previous questions that need clarification.

Nonetheless, we would welcome clarity on whether it is possible for multiple types of reinforcement options to be pursued simultaneously for the same constraint

boundary (for example, management to help reduce constraints in the short term at the same time as new assets are being constructed). There may be instances where cost efficiency justifies not “either/or” but “both”.

Appraise (electricity)

21. Are there any other elements that we should include within the economic assessment?

Facilitation of long-term, sustainable economic growth should be one of the assessment criteria, in addition to the criteria already listed.

Further, the cost benefit analysis (CBA) done by Ofgem needs revisiting to ensure it is fit for purpose for this new regime of network planning. The CBA for investment must appropriately reflect the value of reduced risk to delayed connection of generation assets. The risk of early delivery, or of stranded network assets should not unduly influence investment decisions, as has been the case in the past. Underinvestment carries a significant financial cost beyond the cost of constraints and cost of carbon.

We would welcome more transparency regarding the calculation and application of earliest in service dates.

In addition, it is not clear if the “P50” refers only to the probability of early or late delivery, or if this is also weighted by the impact of early or late delivery. For example, if delivery 1 year early of a reinforcement would amount to the asset being under-utilised for 12 months, but a 1-year delay would result in multiple GWs of renewable generation projects being unable to connect as planned, this would have a significant financial cost not captured in carbon and wholesale price evaluations.

Finally, we would welcome clarity on how earliest in service dates (EISDs), which by their nature are far from certain, manifest in connection agreements and the impact this has on risks for developers.

22. Do you agree with our approach regarding sensitivities?

In principle, Energy UK agrees. More detail on the principles guiding how sensitivities are sourced and scrutinised by stakeholders is needed. We would welcome greater clarity on the stress-testing of the assumptions against the FES.

23. Are there any other specific sensitivities you think we should consider?

There is a need to test the sensitivities beyond the resilience risks described in the 'Drive' section. Sensitivities should include fluctuations in supply chain constraints, labour availability, differing assumptions for reductions in cost due to technological development and innovation, differing assumptions on the level of demand uptake based on speed and level of LCT uptake and data centre development, and differing assumptions about the level of DSR uptake.

24. Do you agree with the proposed scoring approach for environmental and community?

This stage should be harmonised with the geospatial exclusion process being pursued under the SSEP, learning lessons from the process of its development.

It is notable that this stage of environmental and community assessment is conducted by networks, whilst the input of developers on the community and environmental exclusions for developers is being led by NESO. To deliver consistent and fair processes for input, developers should be given a greater role in inputting geospatial exclusion data into the SSEP, something that has been lacking up until now.

Additionally, the Stage 1 data inputs are broadly correct, but should also account for differing technology types that are 'non-network' to assess boundary solutions broadly.

The analysis of community impact on the local economy should also consider positive impacts of the given solutions, not just the negatives.

Overall, the scoring system itself is quite unclear. A clearer explanation of the weighting of 'uniqueness, adaptability, replacement and recovery potential' in the sensitivity factor is needed. The proposed justification for ratings by indicator, based on a 'policy review' of aspects like 'natural capital values', is very vague.

Furthermore, clarity on how the limits of the 'scale factor study will be determined in the calculation needs clarification.

Finally, clarity on the solution feature factor on how a solution, like an overhead line, would be considered in terms of its impact on a natural environmental risk, like biodiversity, is needed.

25. Do you agree with the proposed flag system for highlighting when an individual indicator within an impact category has reached the maximum possible score?

Further clarity on the flag system for risk scoring is needed. For instance:

- What determines where a flag is raised when a score is beyond a certain limit?
- Will the scoring limits be the same across all reinforcement areas in GB?

The needs and risks in each area are not equal and should not be considered as such.

It is positive that NESO intends to consult on the risk matrix and flag system. From the way the consultation reads, it would appear that environmental and community information is preferred to be obtained by the reinforcement developers (the networks). NESO should ensure wider input is sought, not just from those in the relevant CSNP forum.

Energy UK agrees there is a need for scoring and the flag thresholds' justifications to be supplemented by qualitative explanations.

26. Do you agree with the deliverability and operability sub-criteria listed and their scoring characteristics (Appendix C2 and C3)?

Generally, Energy UK supports the sub-criteria.

One addition would be on complexity. Firstly, this assessment should account for the role that non-network solutions could play in reducing the complexity of a solution. There is a need for complexity not to be seen as a barrier to a network solution, instead considering the cost implications of that complexity.

On supply chain deliverability scoring, we stress the need for this scoring to account for likely changes in lead times and costs, as these are subject to rapid change.

Energy UK is pleased to see that the scalability and adaptability of the network solution are considered in the scoring.

27. Are there any new criteria you believe should be included, or any existing criteria that you think could be removed?

NESO might consider adding labour availability to the deliverability scoring criteria.

Further, adaptability for the environmental criteria will be a necessity for the long term. This is due to a certain amount of flux in the space of environmental regulation at the current time, with mooted reforms for aspects of Habitats Regulation and Environmental Impact Assessments. These will naturally have impacts on areas such as SEAs, and therefore any framework must be sufficiently adaptable to support future regulatory changes.

28. Do you agree with our approach to the GB design decision-making framework?

Generally speaking, the sequencing of decision-making is sensible. Applying a CBA based on Green Book criteria appears sensible.

As stated in answers to previous questions, more aspects should be added to the economic and environmental and community impact assessment stages (ECDO). Namely, the economic opportunities created by a network solution should be considered.

Energy UK appreciates that the economic assessment is done before the application of the ECDO filter, something that is not clear is being done currently with the SSEP.

Alignment between the lessons learned from the development of the SSEP and the CSNP is key.

How “the most important ECDO sub-criteria” will be considered for each ECDO rank needs more spelling out, and how each aspect will be weighed against each other.

Deliver (electricity)

29. Do you agree with the approach to progressing required reinforcements into the delivery pipeline?

Overall, Energy UK supports this approach.

Some clarity on the eligibility process for reinforcements may be needed, such as the assessment framework for whether a solution can be/should be separated or bundled with others. We would welcome further clarity that the “Full Project funding assessment” effectively serves as the point of Final Investment Decision on network reinforcements, beyond which points network projects cannot be reassessed.

30. Do you agree with the change control process?

In the change control process, we have concerns that a delay to delivery should trigger reassessment as this is likely to lead to even more delay. At the very least, progress on a project under reassessment is liable to slow down while the assessment takes place. If a project is then cancelled and replaced with an alternative (possibly larger) reinforcement, this will prolong the knock-on effects of an already late reinforcement.

Key here will be to involve wider stakeholders in updates as part of the change control process displayed and described on page 157.

We support the proposal for data on progress of network reinforcement progress to be compiled and shared with NESO, OFGEM, DESNZ and delivery bodies. However, this must also be made publicly available so developers are able to assess the risk of delay to reinforcements affecting their projects.

The CSNP for Gas

31. Are there any additional processes or analyses you believe should be considered in gas network planning?

Timelines and implications for key policy uncertainties, such as the rate of electricity demand pick up and the rate of conversion of the network to hydrogen, need serious consideration and harmonisation with the electricity and hydrogen CSNPs. Gas and hydrogen CSNP need to be developed as one to allow for repurposing.

Further, NESO should join-up policy on hydrogen & biomethane - Gas DNOs are increasingly looking at feeding biomethane into the legacy gas distribution network. NESO should consider what this means for their conversion to hydrogen, especially the interfaces between the future hydrogen and biomethane system.

Another additional consideration would be the implications of network plans in light of the within-day flexibility of gas networks to support greater within-day variability / more ramping up and down as overall load factors decline. Other analyses should focus on the fact that gas capacity requirements are going up, capacity requirements for power stations are stable, net gas capacity requirements are increasing, and blending is much less energy dense and therefore needs more pipeline capacity.

32. Should gas network planning align with electricity and hydrogen by publishing proposed options before assessment?

Energy UK would agree with this. Early sight for stakeholders is essential. It is also essential that the gas and hydrogen system planning is integrated into the options assessment process for electricity networks, as described in previous answers, rather than having the process done separately.

33. Do you agree with our approach to base gas planning activities within the CSNP on needs from the SSEP, supplemented by FES net zero pathways and the counterfactual?

Clarity on what parts of FES will be utilised for gas networks planning, separate to what the SSEP suggests is needed, especially considering the Gas Ten Year Statement and latest FES appear misaligned on key areas concerning gas. A consistent data set is needed.

As stated previously, our understanding is that assumptions on future hydrogen supply & demand will come from DESNZ, but will be tested by NESO's FES to evaluate lower and higher demand scenarios, but we would welcome more information about how this process will work in practice; in particular does it mean that NESO's planning for hydrogen will be sufficiently flexible to support different levels of demand? Or will it inform NESO's options from which DESNZ will pick one option and use that to determine the which networks it supports? If the latter, it will be crucial for industry to have the opportunity to engage on NESO's options to ensure that certain regions for potential network developed are not overlooked.

34. Do you agree with using the GNCNR methodology for CSNP system requirements analysis in gas transmission network planning?

Generally speaking, using the established framework for the gas CSNP seems sensible.

Some consideration of changes may be needed in light of the electricity and hydrogen CSNP is needed, especially considering uncertainties around the speed of transition from gas heating. Contingencies for this in the scenarios are needed.

35. Do you agree with using the GOA methodology for CSNP options development in gas transmission network planning?

Energy UK agrees in principle.

Given the need for comprehensive whole-system planning, a similar level of detail seen in the electricity CSNP methodology for options development for gas is needed, especially given the complexity and need for coordination of the timings of

decommissioning and repurposing of networks. At minimum, a similar level of detail for the consideration of third-party proposals for reinforcement or decommissioning is required.

36. Do you agree with using the current GOA methodology for the 2027 CSNP, or should there be another consultation for the next GOA cycle?

Energy UK broadly agrees, though it is important to implement feedback from the GOA consultation and have the actions from that feedback harmonised with the wider CSNP for other energy vectors.

37. Do you agree with using the GOA methodology for carrying out the CSNP options assessment for planning of the gas transmission network?

Some additions to the use of the GOA methodology may be necessary which may require a consultation on changes. This would notably be the case should NESO decide to integrate options assessment with the other energy vector CSNPs to ensure harmonisation, something Energy UK supports.

Furthermore, there is mention of the N-1 standard in this section, which is the pipeline from Milford Haven. This is capacity-based, but it is important to ensure that there are sufficient molecules available in other locations if this pipe is not available, as GB becomes more dependent on this pipeline for imports in the future as GB production declines.

38. Are there other elements of social impact we should consider?

Given the prominence of decommissioning of the gas grid expected, the level of disruption to consumers and costs to them needs careful consideration.

The CSNP for Hydrogen

39. Do you agree that the hydrogen CSNP should follow an approach consistent with the gas and electricity transmission network planning process where possible?

Energy UK agrees.

Consistent harmonisation is essential to enabling a truly whole system plan. At the same time, it must be recognised that in the first iteration, the hydrogen network will be a small fraction of the scale of the other networks.

This could be delivered by greater integration of the options assessment processes between the electricity and low-carbon gas CSNPs.

40. Do you agree that the modelling of initial hydrogen networks growing out of industrial clusters should be included within the CSNP?

Energy UK agrees. This is where the network development is most likely to begin, building nascent infrastructure capable of being expanded into a national. Once NESO has a clear picture of the network development plans currently being developed by the gas DNOs / National Gas & Cadent's work on HyNet, the next logical step is to plan for how these industrial clusters could be joined up - for example a triangle between HyNet, East Coast Cluster & Grangemouth.

There is also a clear case for basing the initial hydrogen network model on other low-regret options. For instance, hydrogen transport from Scotland to Northeast England and on to Northwest England to enable wind in Scotland to produce electrolytic hydrogen and send it via pipe to storage in salt caverns in England for use in dispatchable power. The CSNP hydrogen modelling should also include this and other no-regrets infrastructure, which may happen separately from the clusters.

Harmonisation of the timelines for cluster development, decision-making of Government support and the CSNP is essential. In particular, this section mentions that the SSEP and CSNP will inform decisions on the hydrogen transport business model (HTBM). This implies that the sequencing of policy decisions will be hydrogen cluster, then SSEP, then CSNP and then the HTBM. Can NESO confirm that this is the case? If so, there may be issues as the clusters themselves are partly dependent on awards from the HTBM.

41. Do you agree that the modelling of this broader industrial view should be included within the CSNP?

Energy UK agrees that broader strategic needs must be assessed.

It is essential to consider, as with electricity, interaction opportunities for hydrogen export and import as part of this wider approach.

42. Do you agree with our three-tiered approach for hydrogen network planning?

Energy UK generally agrees with the three-tiered approach.

However, more clarity is needed on the third tier regarding broader strategic needs for a hydrogen network. Notably, more clarity is needed on the role of future international trade of hydrogen will be accounted for in the CSNP.

43. Do you agree with the need to limit the scope of hydrogen network planning within the CSNP primarily to projects supported under the hydrogen transport and storage business models?

Energy UK broadly agrees.

However, clarity on how smaller hydrogen projects in the future that are not supported by Government mechanisms will be integrated in the CSNP through local planning structures like the RESPs.

44. Do you agree with our approach to engage further with industry on the detail of the hydrogen network planning methodology in winter 2025/2026 subsequent to further policy detail being set out?

Energy UK agrees. Early engagement is essential, especially in understanding how the hydrogen CSNP will inform the hydrogen transport and storage business models.

Engagement must be transparent and intelligible. Most notably, lessons must be learned from the SSEP engagement process so far.

45. Do you agree with our treatment of hydrogen storage within the CSNP?

Broadly speaking, Energy UK agrees. It is good to hear some detail on the holistic treatment of hydrogen, gas and electricity through the SSEP but this must be seen also in the specific design and sequencing of the CSNP modelling.

46. Do you agree with our proposal to use the outputs from the SSEP and the Future Energy Scenarios to model a potential national strategic hydrogen network?

Further clarity is needed on which aspects of the FES, and which guidance from the SSEP will inform the hydrogen CSNP. It appears currently that NESO's FES will use DESNZ data on projected hydrogen supply and demand. If so, we would welcome more information about how this process will work in practice; in particular does it

mean that NESO's planning for hydrogen will be sufficiently flexible to support different levels of demand.

It is not clear at what point in time these assumptions will be 'locked in'. DESNZ is currently developing an updated H2 Strategy that industry expects to revise ambitions/targets from the levels set out since the 2021 Strategy - namely "up to 10GW" of H2 production capacity by 2030. DESNZ has been clear that the 2025 Strategy will be demand-led. That may mean DESNZ opts to not specify levels of ambition, especially for production. How would NESO handle that scenario?

As stated in answers in previous questions, consideration of optimal locations for hydrogen requires early considerations of hydrogen network costs on sensitivities as well as geospatial constraints for the routing of the hydrogen network to ensure optimal design. There is currently an issue with sequencing.

47. Are there any other data sources or pathways that we should consider?

Energy UK see it as broadly sensible to consider the FES pathways.

48. Do you agree that boundary zones for hydrogen network analysis should be initially based on SSEP boundaries?

This may make sense but clear consideration of gas system constraints separate from the SSEP and industrial demand centres may mean the zoning needs to be nuanced for hydrogen.

It is important the electricity and hydrogen CSNPs are considered in harmony but that one is not led by another. There may be adverse outcomes from zoning hydrogen entirely based on the SSEP which is primarily focussed on electricity.

49. Do you have any other comments or feedback on our approach to establishing hydrogen network needs?

Energy UK has few additional comments beyond those already stated in previous answers.

50. Do you think there should be any restrictions on who should be able to propose options to meet hydrogen network needs?

The types of stakeholders that can input on network needs should be as broad as possible to give NESO the widest range of possible options.

51. Should NESO undertake pre-filtering of proposed hydrogen network options?

Energy UK believes NESO should undertake pre-filtering, but further detail on this is needed on the same level as that shown for the electricity CSNP.

52. Do you agree with our approach outlined above to establish suitable technical requirements?

Energy UK agrees.

53. Should we always consider new build asset options as an alternative to proposed repurposed assets?

Both options should be considered equally against each other where possible.

54. Do you have any other comments or feedback on the approach to hydrogen network options development?

Energy UK has no additional comments beyond those already mentioned in this response. The important thing is to have the same level of detail as the CSNP.

55. Do you agree with our proposed decision-making framework?

Energy UK broadly agrees. Though, as with electricity, it is also important to have the positive economic impact of projects within the assessment criteria.

56. Given the lack of a market framework within which to quantify the commercial impact of a network that is too small, are there other economic factors or costs that you consider we should be including in the economic assessment?

Integrating information from industrial parties and developers of electrolysers and hydrogen generators looking to convert to hydrogen may help supplement information in the economic assessment.

57. Do you have any other questions on the hydrogen network options assessment?

Energy UK has no additional comments beyond those that have already been mentioned.

58. Do you agree with taking a consistent approach to environmental and community assessment to that followed for gas network planning?

Energy UK agrees.

59. Do you have any other comments or feedback on our approach to environmental and community assessment?

More detail on the environmental and community assessment is required. Ideally, the level of detail should be the same as that seen for electricity.

60. Do you have a view on how we should engage stakeholders when further developing our methodology and approach to hydrogen network planning?

Energy UK welcomes NESO's plans to engage industry further on the development of H2 network options, noting the nascence of the industry. We would strongly advise that engagement between now and December 2025 is organised in such a way that each part of the H2 value chain is given the opportunity to inform modelling.

Energy UK would stress the need to learn lessons from the SSEP engagement process thus far. This means starting early on engagement, avoiding classifying materials unnecessarily and involving parties early on and more directly in the development of the hydrogen CSNP.