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Gas Network Capability Needs Report webinar FAQs

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Purpose: This document summarises the frequently asked questions (FAQs), and subsequent answers, from the webinar held on 6 February 2025 to support the publication of the [Gas Network Capability Needs Report](#).

Structure The FAQs are based on the most asked questions during the webinar. If you require further information that has not been answered in the webinar or here, and is not included in our methodology document, please contact us via gwend@nationalenergyso.com.

1. Why did you not consider hydrogen transportation or repurposing of existing NTS assets in the GNCNR?

- The first iteration of the Gas Network Capability Needs Report (GNCNR) focuses solely on natural gas (or methane) analysis.
- Hydrogen blending into the National Transmission System (NTS) has not been specifically assessed within this report.
- Creating a hydrogen transportation backbone via repurposing of existing assets is one of a range of potential options to solving our future energy transportation needs. This would require further investigation to understand the impact on the NTS.
- We will investigate the impact on the NTS due to repurposing of assets when there are clear, firm proposals set out by National Gas Transmission (NGT) that identify the parts of the NTS that they would seek to repurpose.
- The Department for Energy Security and Net Zero (DESNZ) is expected to consult in Spring 2025 on NESO's scope of activities for strategic planning for hydrogen transport and storage infrastructure. This will provide further clarity on future developments with regards to a hydrogen network planning role.

2. What is NESO doing to provide advice to Ofgem?

- As a trusted expert advisor to government, we are undertaking a request from Ofgem to review NGT's business plan submission for RII0-GT3 period.
- We continue to engage with both Ofgem and NGT on the process and details of our assessment and are on track to provide our insight to Ofgem by their requested deadline.

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3. What software did you use for the analysis shown in the GNCNR?

- We use hydraulic modelling software to assess current and future network planning requirements of the NTS.
- Hydraulic modelling is a process that uses computer simulations to predict the behaviour of gas in a piped network.
- At NESO, we use a software called SIMONE, provided via LIWACOM, to analyse the gas network. This is the same software used by NGT and equivalent Transmission Owners (TOs) in Europe.

4. How do you ensure the data you use is an accurate representation of the NTS?

- Both our and NGT’s licence conditions ensure that we use the most accurate representation of the NTS. This provides us with access to the current version of the NTS and all operational assumptions of the NTS assets.
- The analysis carried out for the GNCNR 2024 uses an offline version of the NTS, meaning that the model does not include real-time operations of the NTS regarding leakage and it does not take into consideration the physical condition of assets.

5. What assumptions did you use for the analysis carried out in the GNCNR?

- The analysis of the physical capability of the NTS has been carried out using the [Future Energy Scenarios \(FES\)](#), with three net zero pathways and a Counterfactual.
- There is a requirement for NGT to design the NTS as stated in their Transmission Planning Code (TPC). We use the relevant technical definitions detailed in the TPC and currently there are no plans for NESO to develop an equivalent document.
- A detailed view of our network capability methods and assumptions is available in our [GNCNR Methodology document](#).

6. Why were LNG and continent considered in the same group in your supply assumptions?

- As part of the FES forecasts, a minimum level of supply from both LNG (liquified natural gas) and continent is assumed, the remaining LNG/continent supply being made up of generic import which could be made up of either. This is due to the uncertainty in global supply.
- In the modelling we use scenarios that separately assume a high LNG and high continent flow to ensure all eventualities are considered.

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7. How is gas injected in to a GDN considered in your supply assumptions?

- The only gas that is injected into the Gas Distribution Networks (GDNs) is biomethane, which is accounted for as part of the overall supply outlook rather than being modelled as negative demand.

8. How did you consider biomethane in the GNCNR?

- Biomethane can be injected into the gas network to replace methane, enhancing energy security through domestic, sustainable production and steady volumes, given that there is a stable feedstock supply.
- Biomethane does not specifically feature in our GNCNR analysis due to its dispersed production across GB, meaning that it is typically absorbed by local demand.
- The FES pathways present varying ranges for biomethane, thus making it difficult to capture specific requirements for long-term planning.
- For more information on our base assumptions, you can review the detailed [FES 2024 documents](#).

9. How do you manage constraints on the NTS, and will these impact power stations?

- A constraint occurs when the pressure or flow required to meet customer needs cannot be met by the physical capability of the network.
- Managing constraints, whether operationally or commercially, is a responsibility that is undertaken by NGT as part of their role as the NTS System Operator.
- Should there be a potential for an increase in constraints in a zone, this may be resolved by a range of commercial, physical, and combined solutions that we expect to be assessed by NGT in their Strategic Planning Options Proposal (SPOP) due later this year, as well as their RIIO-BP3 (RIIO-Business Plan 3) submission. NESO will then analyse any options as part of the Gas Options Advice (GOA).
- Our analysis does not indicate constraints for individual power stations. A very localised constraint such as this would only ever be a feature of short-term operations managed by NGT.

10. How do you see constraints impacting gas prices?

- Local transportation constraints are very unlikely to influence overall gas prices, which are primarily affected by national and international supply and demand factors.

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11. What is the role of gas for energy of security?

- Transitioning to net zero while maintaining a secure and affordable electricity system will require gas to play a continued role as a bridge to a net zero power system and to compliment GB’s renewables, via plants used with carbon capture and storage technology.
- We see gas providing an important role for security purposes, although reduced in 2030.
- One of our new responsibilities as NESO relates to security of supply and, as part of this, we will publish our Gas Supply Security Assessment by the end of 2025. This assessment will look at security of supply, including storage capacity and deliverability to meet demand.

12. Your forecasts show that UKCS will decline over time. How will this happen?

- Over time UKCS (UK Continental Shelf) supplies are predicted to consistently decline at all terminals, however the rate of decline will differ between terminals.
- There are various reasons that influence the decline of UKCS, making long term forecasting challenging. For this reason, we use the FES pathways to explore a different range of options.

13. How do your models deal with future uncertainties in global supplies?

- Modelling the gas network beyond 2035 is challenging due to uncertainties around technology, policy, and market development, as well as societal expectations.
- The gas supply landscape has changed in recent years. Notably, there has been an increased flow from GB LNG terminals to the continent via the GB market and Dutch and Belgian interconnectors due to the reduction in Russian flows to Europe.
- Europe has now substantially increased its regasification capability (i.e. its ability to convert LNG back into its gaseous state), leading to less reliance from the continent on these ‘transit’ flows to the GB LNG terminals.
- Due to the ongoing uncertainty, our analysis focuses on evaluating the range of supplies provided through the FES pathways.