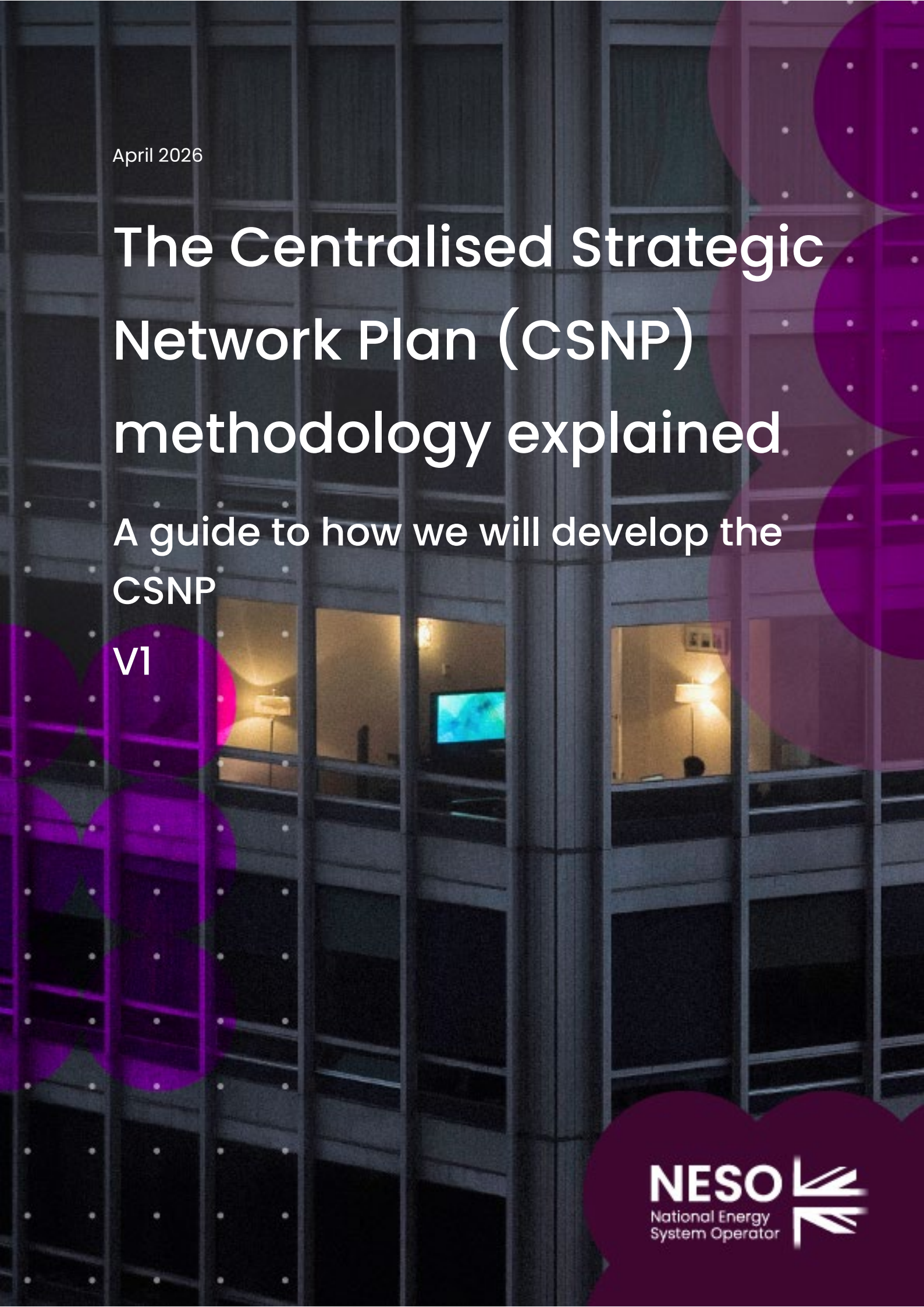


April 2026

The Centralised Strategic Network Plan (CSNP) methodology explained

A guide to how we will develop the CSNP

V1

NESO
National Energy System Operator

Purpose of this document

This document explains the methodology we will use to develop the Centralised Strategic Network Plan (CSNP).

This document is written for a general audience. It explains what the CSNP is, why it is needed, how it will be developed, including how people can get involved. It does not replace the full CSNP methodology[1], which sets out the detailed technical approach.

We have published the first approved methodology and the development and delivery of the CSNP will be done in a three-year cycle. It will be updated in line with the cycle, informed by public consultation and feedback on how the process works in practice.

Strategic Energy Planning and our role

We play a central role in planning how Great Britain's energy system develops. By taking a whole system view, we help identify what networks are needed to support clean, reliable and affordable energy.

We support delivery of the future energy system by providing independent, whole system planning; infrastructure is delivered by network companies and industry.

The CSNP is one of three plans that together help shape Great Britain's future energy system.

The Strategic Spatial Energy Plan (SSEP) looks at where electricity and hydrogen generation and storage are likely to be needed. This allows the CSNP to focus on how energy is moved around the country.

Regional Energy Strategic Plans (RESPs) will provide strategic direction to inform the development of electricity and gas distribution networks. They will be underpinned by local, regional and national goals, to help ensure that local areas get the energy infrastructure they need for secure, affordable and sustainable supplies of energy.

To support understanding of the methodology we have also provided videos that help explain the CSNP and our other Strategic Energy Plans (SEP).[2]

The CSNP

The CSNP is a long-term plan for how Great Britain's electricity and gas transmission networks, and the hydrogen system, may need to develop over the next 25 years.

[1] NESO, neso.energy/document/379771/download

[2] NESO, neso.energy/what-we-do/strategic-planning/centralised-strategic-network-plan-csnp

Electricity and gas networks are already established – these networks move large volumes of energy across regions and form the backbone of the energy system. Hydrogen is at an earlier stage in its development and is planned as an emerging system, rather than a fully established network.

Whole energy system planning means planning the different energy systems together to ensure interactions are captured, in an efficient, cost-effective way, rather than planning components like overhead power lines or gas pipes separately.

In the future, a decarbonised energy system could see electricity and hydrogen networks working closely together. Sometimes, electricity could be used to make hydrogen, and at other times, hydrogen could be used to make electricity. This means both systems should be planned together.

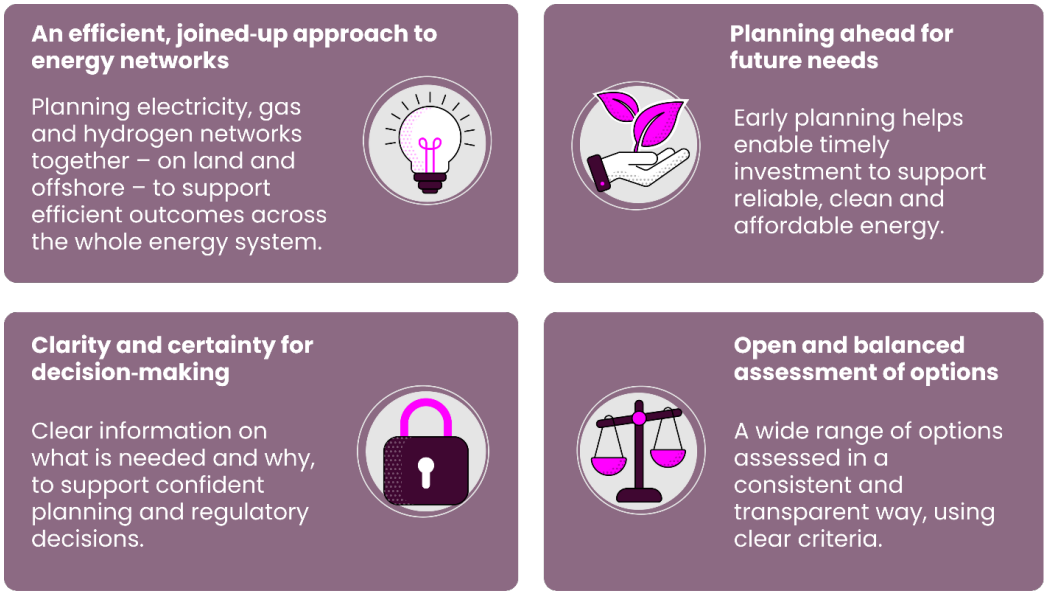
Why we need the CSNP

Homes, businesses and communities need the right energy infrastructure to support everyday life and future growth. The CSNP will ensure that, as we further electrify our energy system and build renewable energy systems to power it, our national energy networks are sized correctly so that the energy system is reliable, clean and affordable.

As the energy system changes, electricity networks will need to expand, gas transmission will continue to provide capability, and the hydrogen system will develop based on need. Planning these elements together helps manage impacts more effectively and avoid unnecessary cost.

We need to design the energy networks of the future ensuring we properly consider its impact on the environment, on communities, and on consumers.

The diagram below provides an overview of the areas that will enable delivery of the CSNP.



The output of the CSNP

The CSNP is a consistent plan covering the three energy networks. For each network it will consist of a set of projects that will be completed over time and that will provide for the future. To do this there will be a series of analysis, assessment, design, optioneering and consultation carried out to create the CSNP, and further detailed design and consultation will be carried out by those delivering the projects.

How the CSNP will be developed

The CSNP follows a clear, structured process. While the detail differs across electricity, gas and hydrogen, the same five steps are used throughout.

The five CSNP steps can be found below.

1 – Drive: setting the direction

Understanding future energy needs

The Drive stage builds an evidence-based view of future energy needs.

The CSNP uses outputs from the Spatial Strategic Energy Plan (SSEP). These provide a whole system view of future supply and demand, alongside network design standards and security of supply considerations. The consistent use of the SSEP across electricity, gas and hydrogen allows the energy networks to be planned on a consistent basis.

The SSEP is supplemented by additional input data in some areas, including from the Future Energy Scenarios[3] (FES). For gas, FES data is used to explore a wider range of uncertainty for demand on the National Transmission System, with SSEP outputs used to understand interactions with electricity and hydrogen.

For the hydrogen system, due to the greater uncertainty in the development of hydrogen, Drive incorporates a wider range of more granular data. Sources include FES, industry data, government sources and stakeholder engagement; these are used to build assumptions about future supply, demand, storage and geography.

2 – Identify: understanding the system's needs

Where change may be needed

The Identify stage assesses whether future needs can be met by existing networks and systems.

For electricity, this includes identifying:

- bulk power flow needs where large volumes of electricity must move across the network
- the residual technical needs for the electricity system

For gas, Identify assesses network capability – how much gas can safely enter and leave different parts of the system. Where capability cannot meet expected supply or demand, constraints may arise, with associated cost and system impacts.

For the hydrogen system, Identify turns scenario evidence into high level system requirements. This includes indicative pipeline sizes, pressures and storage needs, which help guide later option development.

3 – Develop: creating possible options

Exploring possible options

[3] NESO, neso.energy/publications/future-energy-scenarios-fes

The Develop stage brings together a wide range of options that could address the needs identified earlier.

Across electricity, gas and hydrogen, options to meet future energy needs are developed by network operators, NESO and other organisations. This helps make sure the best choices are considered across the whole energy system.

For electricity, this could include grid upgrades and offshore connections. For gas, it could mean new pipes, changes to existing assets, and potentially considering repurposing parts of the network.

For hydrogen, options may come from network operators, storage providers and developers. NESO may also create extra options to compare choices and find the best overall solution. At this stage, it's important to note that options are explored, not chosen.

4 – Appraise: choosing the best options

Comparing options and identifying preferred approaches

The Appraise stage assesses options using a consistent and transparent set of criteria, helping to understand how options perform across different impacts before moving to delivery.

Across the CSNP, appraisal considers:

- value for money and affordability
- system impacts and operability
- environmental and community impacts
- deliverability, including technology readiness and supply chains

For electricity, Appraise is used to select a preferred electricity network design that best meets future needs while managing impacts.

For gas, Appraise supports recommendations on proportionate investments or changes to maintain gas network capability and security of supply. These recommendations are provided to Ofgem.

For the hydrogen system, Appraise compares different system configurations to understand impacts, flexibility and longer-term value, without locking in solutions too early.

Environmental and community impacts are considered throughout the CSNP process.

National level environmental assessments will be undertaken alongside the CSNP and will be consulted on with the public. These will help identify potential impacts on wildlife, habitats, landscapes and communities, and inform how impacts could be avoided or reduced.

5 – Deliver: consulting, refining and publishing

Moving from plan to action

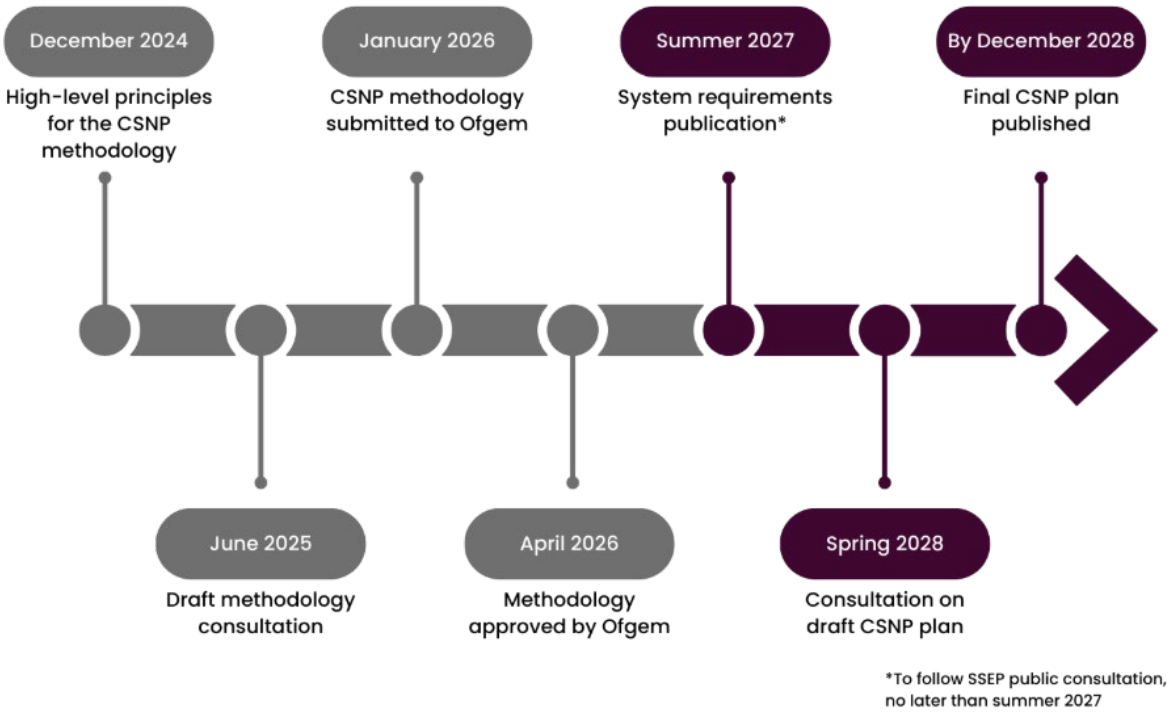
Energy needs vary across places and industries. The CSNP will be shaped by engagement with a wide range of stakeholders, including communities, businesses, industry groups and public bodies.

Throughout the process, NESO will:

- involve stakeholders early
- explain technical topics clearly
- collect views through consultations, workshops and forums
- explain how feedback has influenced the final plan

We will publish a draft CSNP and invite views from stakeholders and the public. Supporting environmental information will be published alongside the draft, so potential impacts can be considered together. Feedback will be used to refine the plan where appropriate.

The final CSNP will provide clear direction to Ofgem and the network businesses on the investments that need to happen on gas and electricity networks enabling them to be delivered. It provides a clear vision of the future hydrogen system, providing key analysis to DESNZ for granting funding. The first CSNP is due to be published by the end of 2028, as outlined in the timeline below.



Taking CSNP outcomes forward

The Deliver stage sets out how CSNP outcomes are taken forward.

NESO's role is to provide independent, evidence-based analysis and advice. NESO does not design or build infrastructure.

For electricity and gas, options identified through Appraise may move into existing delivery processes. Delivery is taken forward by the relevant parties and can include detailed design, planning and consenting, procurement, construction and commissioning.

Options expected to be needed in the near term are prioritised. Other options remain under review and may be reassessed in future CSNP cycles.

For the hydrogen system, Deliver focuses on informing future decisions and sequencing. Progress is tracked and reflected in future CSNP publications so planning remains flexible and proportionate.

Should you have any questions about the process, please contact us by emailing us at Box.SEP-Portfolio@neso.energy.

Legal notice

For the purposes of this report, the terms "NESO", "we", "our", "us" etc. are used to refer to National Energy System Operator Limited (company number 11014226).

NESO has prepared this report pursuant to its statutory duties in good faith and has endeavoured to prepare the report in a manner which is, as far as reasonably possible, objective, using information collected and compiled from users of the gas and electricity systems in Great Britain, together with its own forecasts of the future development of those systems.

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