November 2025

Regional Energy Strategic Planning

Draft methodology for consultation

NESO
National Energy System Operator

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1. Introduction and Approach

Executive Summary

What is RESP and why is it needed?

The Regional Energy Strategic Plans (RESPs) will be first of a kind, whole energy strategic plans that will shape the future energy systems across each nation and region. These plans will be developed locally and collaboratively by our dedicated team members living within the nations and regions. Together with the other NESO strategic plans, these will create a consistent and aligned energy plan across distribution and transmission, methane, hydrogen and electricity for the first time for the whole of Great Britain (GB).

The Regional Energy Strategic Planning (RESP) role was developed to support wider strategic priorities to ensure the delivery of a secure energy system, enable economic growth and help pave the way towards a sustainable energy future for everyone. Ofgem directed the National Energy System Operator (NESO) to undertake the RESP role in November 2023, which was formalised in April 2025[1]. Through this role, a new approach to strategic energy planning at the distribution level is being created, with NESO producing RESPs for Scotland, Wales and nine English regions. For the first time ever in GB we will be taking a strategic, whole energy and bottom-up approach to how our future energy systems are planned. This new approach will enhance consistency, transparency and coordination of whole energy system planning at the distribution level, providing confidence in system requirements and enabling proactive, cost-effective infrastructure investment to support the transition to net zero. The RESPs will provide key inputs both to the business plans developed by electricity and gas distribution networks, as well as to anyone involved in energy infrastructure planning and development. The RESPs will complement other GB-wide NESO strategic plans, such as the Strategic Spatial Energy Plan (SSEP) and the Centralised Strategic Network Plan (CSNP).

The wider strategic energy planning and energy policy landscape

RESPs are a fundamental part of NESO's ambitions to deliver an integrated, whole system approach to strategic energy planning. At their core, our strategic energy plans are designed to provide long-term certainty, promote economic growth and investment, and support the development of the supply chain, skills, and capabilities needed for the energy transition. These plans will be developed as distinct but interconnected parts of one coherent plan and will each operate on a three-year cycle. Each plan will contribute a unique perspective – SSEP for electricity and hydrogen generation and storage infrastructure, CSNP for national transmission networks, and RESPs for more localised distribution level planning – as summarised in Figure 1.

[1] Ofgem, Decision on the *RESP policy framework (April 2025)* - https://www.ofgem.gov.uk/sites/default/files/2025-04/RESP-policy-framework-decision.pdf

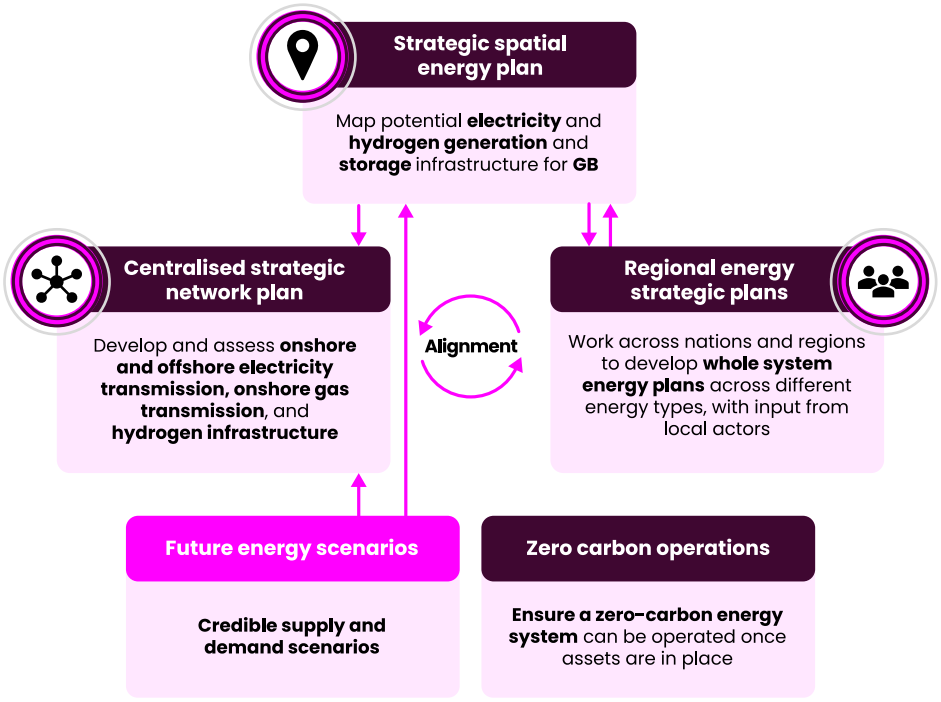

Figure 1: Interactions between NESO's strategic energy plans

From a broader perspective, the CSNP, SSEP, and RESPs will interact with wider policies, regulations, and planning frameworks. They will also consider plans, policy objectives and targets set at national, regional and local levels. These include publications such as the Connections Action Plan (CAP)[2], the Review of Electricity Market Arrangements (REMA) Update on Reformed National Pricing[3], the Industrial Strategy Sector Plans[4], the Hydrogen Strategy 2025[5], the Artificial Intelligence (AI) Opportunities Action Plan[6], the Warm Homes Plan[7], as well as planning and consenting systems across the UK, Scottish and Welsh governments. Alongside these publications, the NESO strategic energy plans will be shaped by locally-sourced data and stakeholder engagement. We will draw on inputs such as local growth plans, local transport and housing data, industrial decarbonisation plans, community energy initiatives, Local Area Energy Plans (LAEPs) and Local Heat and Energy Efficiency Strategies (LHEES) where they exist. This will ensure that local priorities,

[2] Department for Energy Security and Net Zero, *Connections Action Plan* (November 2023) - https://assets.publishing.service.gov.uk/media/6581730523b70a000d234bb0/connections-action-plan-desnz-ofgem.pdf
[3] Department for Energy Security and Net Zero, *Review of Electricity Markets Arrangements (REMA)* (July 2025) - https://assets.publishing.service.gov.uk/media/686f71412557debd867cbeff/review-of-electricity-market-arrangements-rema-summer-update-2025.pdf
[4] Department for Business and Trade, *Industrial Strategy Sector Plans* (September 2025) - https://www.gov.uk/government/publications/industrial-strategy-sector-plans/sector-plans
[5] Department for Energy Security and Net Zero, Hydrogen update to the market (July 2025) - https://assets.publishing.service.gov.uk/media/6880b2139fab8e2e86160efe/hydrogen-update-to-the-market-2025.pdf
[6] Department for Science, Innovation and Technology, *AI Opportunities Action Plan* (January 2025) - https://www.gov.uk/government/publications/ai-opportunities-action-plan/ai-opportunities-action-plan
[7] Department for Energy Security and Net Zero, *Warm Homes Plan press release* (November 2024) - https://www.gov.uk/government/news/help-to-save-households-money-and-deliver-cleaner-heat-to-homes

community ambitions, and place-specific energy needs are meaningfully reflected in each plan.

The transitional RESP

Ahead of the full RESP role being set up, Ofgem asked NESO to develop: "A transitional RESP output by January 2026 to deliver as much benefit as is practicable to support the ED3 price controls setting process while the RESP function develops to full capability"[8]. Focusing primarily on the electricity distribution investment plans, this has a more limited scope than the full methodology described here, although there are common elements which this methodology develops further. The tRESP consultation opened on 23 September 2025 and closed on 3 November 2025 with the final tRESP outputs to be published in January 2026[9].

External engagement and governance

Our external engagement and governance proposals are built on the RESP guiding principles, as laid out by Ofgem in their Decision on the RESP Policy Framework, of being place-based, transparent and collaborative, and fair. We will deliver against these principles through our teams based in the nations and regions of GB and through the engagement and governance mechanisms put in place to support the development of the RESPs.

In this consultation we set out our proposed approach to engagement with customers and stakeholders. RESP engagement will form part of the wider programme of engagement undertaken to support the development of NESO's strategic energy plans. More than ever before local people are set to play a key role in helping shape future energy systems to enable delivery of local ambitions and priorities. We are proposing a range of engagement mechanisms to maximise the opportunities for our customers and stakeholders to engage with RESP.

In addition, we will be providing additional support for local authorities and local energy representatives to enable them to engage with and influence their RESPs effectively. This support will evolve over time, initially focusing on ensuring that our governance forums are set up effectively and starting to provide digital tools. This will lead to more specific advice and digital support designed to maximise the value of the RESPs for wider stakeholders. We are consulting on which aspects of support need prioritisation.

NESO will be setting up Strategic Boards and working groups to support the development of the RESPs. Strategic Boards will be made up of local authority representatives, electricity and gas distribution network representatives, relevant cross-sector bodies and the Scottish and Welsh governments, with a maximum of 16 members. In this consultation, we set out our proposals for the selection of board members. This includes working with existing local authority groups and organisations to identify appropriate board members

[8] Ofgem, *Open Letter regarding the scope of the transitional Regional Energy Strategic Plan* (February 2025) - https://www.ofgem.gov.uk/sites/default/files/2025-02/open-letter-scope-of-transitional-regional-energy-strategic-plan.pdf

[9] National Energy System Operator, *transitional Regional Energy Plan Consultation* (September 2025) - https://www.neso.energy/what-we-do/strategic-planning/regional-energy-strategic-planning-resp/transitional-regional-energy-strategic-plan-tresp-consultation

and an application process for cross-sector board members. Each Strategic Board will be asked to approve their RESP. We are proposing a block voting mechanism and an approval threshold of two-thirds for the approval of each of the RESPs. This is to ensure consistency and integrity of voting across the Strategic Boards, who by design will have different balances of membership.

The working groups will be set up to provide input into RESP development and to advise the Strategic Boards. We set out our proposals for specific thematic working groups and their membership.

In addition to the Strategic Boards and working groups, we will set up a GB Steering Committee (GBSC) to provide oversight, expert advice and GB-level coordination of all the RESPs. The GBSC will support alignment with GB-wide plans, including the SSEP and CSNP, and will help ensure coherence and efficiency across nations and regions. The GBSC will not hold decision-making authority for individual RESPs; that responsibility will remain with the relevant Strategic Boards.

The RESP components

For each nation and region, NESO will produce five components that together form each of the RESPs. The components deliver against the RESP principles of being place-based, whole energy system focused, vision-led and proactive. Some of the areas are complex to deliver and, in this consultation, we set out the detail of how we expect to build the models and capability we will need. We recognise that for many of the components there are already models, data and capabilities in existence that could help to deliver some of the outputs we need to develop. We are starting to explore using existing models and data to avoid duplicating work already done, and welcome feedback on other models and data sources we could explore. We also welcome feedback on how stakeholders could use the outputs from these components in applications beyond distribution network planning. A summary of the five components is provided below.

1. **Nations and Regions Contexts:** A view of local conditions and priorities, informed by engagement in the nations and regions and datasets. These are designed to reflect – rather than supersede – local plans and ambitions.

2. **Pathways:** Spatially modelled projections of future energy supply and demand in each nation and region. These will consist of one short-term Pathway covering the next ten years, and multiple long-term Pathways to reflect uncertainty, over a period of no less than 25 years. Pathways will be modelled to sufficient granularity to support local planning and provide a detailed basis to underpin network planning by electricity and gas distribution networks.

3. **Consistent Planning Assumptions:** These are a complex area of RESP. They are focused on helping electricity and gas distribution networks plan consistently and translate the pathways into peak demand forecasts, which is essential to network planning. They will therefore drive consistency in assessment of network impacts across GB, and hence future investment, while allowing for variation to reflect

differences across nations and regions (for example, climatic differences). These will be presented as a single output across all of the RESPs, to be used consistently by electricity and gas distribution networks.

4. **Spatial Context:** A spatial view of energy pathways overlaid against distribution network capacity data to highlight areas of system need where investment might be required. This will incorporate whole system spatial data to support coordinated and informed planning across nations and regions.

5. **Specification of Strategic Investment Need:** Identifying areas of energy need in each nation and region which are strategically significant and more complex due to timescales, geography, or required trade-offs between energy types, priorities or stakeholders. These needs, enabled through the appropriate network investment, will unlock system-wide value, accelerate decarbonisation, and support long-term economic development.

Digital and data approach

Our approach to digital and data is fundamental to producing credible RESPs that are both accessible and transparent to users. We are putting digital and data capability development at the core of how we design and deliver the RESPs, supporting both the delivery of RESP components and our capabilities in engagement, local actor support and governance.

Digital and data capability will enable us to work collaboratively and transparently, minimising duplication and making best use of existing information. We will build on established datasets and analytical systems within and external to NESO, aiming to avoid unnecessary duplication of modelling and data requests, and ensuring efficient information flow as we develop the RESPs.

Digital tools will make the RESP process more accessible. A digital-first approach supports live engagement with data, enables iterative improvements, and helps stakeholders to interact directly with analytical outputs. There will be challenges in this area as we develop the RESPs, particularly in that available data sources will not always be complete or of sufficient quality to use. We will put in place robust data validation to mitigate these risks.

NESO will follow recognised best practice in digital design, prioritising accessibility, usability, and reliability. A stakeholder-centric, iterative delivery model will reduce risk and improve product quality. Co-creation with stakeholders will ensure digital tools meet real-world needs. The key digital components of RESP will include: an interactive data visualisation platform, a secure data submission portal, and an online repository of RESP outputs and supporting documentation.

Our digital delivery will evolve over time, guided by user feedback and technological advancements, ensuring that NESO's platforms are intuitive, informative and inclusive.

Network Planning Assurance

Network Planning Assurance (NPA) is a key activity we will undertake after the creation of the RESPs. This involves conducting a targeted review of distribution networks' load-related and strategic investment plans to ensure alignment with the direction of each of the RESPs.

Our proposed approach comprises three activities: Align, Resolve, and Review. The distribution networks will align their load-related and strategic network planning to the RESPs. Where they cannot do this, the RESP team will work proactively and collaboratively with the distribution networks to understand and resolve misalignments. We will then undertake a targeted review of each distribution network's investment plans and provide a report to Ofgem to aid their business plan evaluations.

Assurance of RESP outputs

Due to the complexity of RESP development and the potential impact of the results on GB consumers, the RESPs will be subject to high levels of assurance across all aspects of delivery. The approach used to assure the RESP methodology and RESP outputs will be consistent with that used across NESO, and for both SSEP and CSNP, and is aligned with the UK government's Aqua Book[10]. We encompass both programme delivery and technical assurance in our approach, which will be delivered by a 'three lines of defence' model. The first line defence will be delivered by the NESO RESP team, the second line by another NESO team, and the third line by an independent third party.

Timescales for RESP

This consultation closes on 16 January 2026. The final methodology will be published in summer 2026, subject to approval from Ofgem and the Department of Energy Security and Net Zero (DESNZ). Following approval, we expect to be holding the first Strategic Boards later in 2026.

We are currently working through the timescales for delivering the first RESPs and have ongoing conversations with both Ofgem and DESNZ to finalise the timeline. In this consultation we set out some of the challenges in delivering the Spatial Context element of RESP within the original December 2027 timeline. However, there are other influences on our delivery which are less within our control, such as the decision making of Strategic Boards, policy decisions by the UK, Scottish and Welsh governments, and Ofgem, and the dependency of the RESPs on other strategic plans and data. To inform the next gas distribution price control we will need to publish the full RESPs by December 2028. We expect any changes agreed to the delivery timescales to be reflected in NESOs licence.

Summary

This consultation represents a significant step forward in strategic energy planning, bringing together both GB-wide and local energy plans. For the first time ever in GB, we will be taking a strategic, whole energy and bottom-up approach to how our future energy systems are planned. It takes learnings from the work done on tRESP, embedding further the RESP guiding principles, to deliver plans that will enable the nations and regions to achieve their economic growth and sustainability ambitions efficiently. We look forward to

[10] Government Analysis Function, *The Aqua Book* (July 2025) - https://www.gov.uk/guidance/the-aqua-book

hearing from you on how we can improve our proposals for developing and delivering the RESPs.

Introduction

Introduction from Bridget Hartley, Head of RESP

Great Britain's (GB's) energy system is changing. The pace of this change has been significant, but further changes are needed. We need to ensure our energy system develops in a way that meets the needs of local communities and supports GB's goals for energy security, sustainability and economic growth. NESO is at the centre of this change, responsible for establishing an overarching strategic energy plan for GB and providing a strategic view on what energy we need, where we need it, and when we need it.

Our new Regional Energy Strategic Planning (RESP) role is a key part of the overarching strategic energy plan. Through RESP, NESO will produce Regional Energy Strategic Plans (RESPs) for the nations of Scotland and Wales, and for the nine regions of England. These plans will provide strategic co-ordination of the future development of energy distribution networks, to ensure local areas get the energy system they need to help meet local and national goals, whilst delivering value for consumers.

The RESPs are part of a set of whole energy strategic plans being developed by NESO, with customer and stakeholder input throughout. These include the Strategic Spatial Energy Plan (SSEP) and the Centralised Strategic Network Plan (CSNP), which are GB-wide strategic plans. NESO has recently consulted on the methodologies associated with these plans[11].

It is a NESO licence condition that we deliver the RESP role[12]. Since November 2023, we have been building the RESP capability. We now have 11 RESP teams set up in the RESP nations and regions, supported by a hub team. We have opened a new office in Manchester, adding to our locations in Glasgow, Warwick, Wokingham, and London. Further offices are planned across GB to support our dispersed place-based RESP teams. We are already delivering on our transitional RESP (tRESP) outputs and are now consulting on the full RESP methodology.

This full RESP methodology consultation takes learnings from what we are delivering for tRESP. It describes the extension of the key tRESP components to full RESP and outlines proposals for RESP governance and Spatial Context. We have structured this consultation to enable readers to focus their attention and responses on areas most relevant to their interests.

[11] National Energy System Operator, *Strategic Spatial Energy Plan methodology* (May 2025) - https://www.neso.energy/document/360501/download, *Centralised Strategic Network Plan, draft methodology for consultation* (June 2025) - https://www.neso.energy/document/363521/download

[12] Ofgem, *Decision on future of local energy institutions and governance* (November 2023) - https://www.ofgem.gov.uk/decision/decision-future-local-energy-institutions-and-governance

NESO is developing RESP in a rapidly changing energy landscape. As well as the other strategic energy plans NESO is developing, there is the UK government's Clean Power 2030 Action Plan[13], the Industrial Strategy Sector Plans, connections reform and market reform work. These all have implications for electricity and gas distribution networks. We are working internally and with the UK government to ensure we have clear and coherent plans and methodologies that can adapt to this changing energy landscape.

As I've read through this document I've reflected on the breadth and complexity of the RESP deliverables and the extensive work that my new RESP team has already undertaken in understanding how we will deliver against the Ofgem RESP Policy Framework decision and the recent licence conditions and guidance for RESP.

Thank you in advance for responding to this consultation and helping us develop the RESP methodology. I am also grateful to those who have already engaged with us through RESP Forums and Technical Working Group meetings, and through inviting my team and I to your meetings and events. My sincere thanks for joining us on the RESP journey, I look forward to continuing to work with you.

About this consultation

The term RESP is used in different ways throughout this methodology. In some places, it refers to the RESP role, undertaken by NESO as directed by Ofgem. Elsewhere, it describes the RESP Team delivering that role, or the individual RESP plans we will publish for each nation and region. The intended meaning will always be clear from the context, but we are using a single acronym for consistency, reflecting the close relationship between the role, the team and the plans we are producing.

We use the term 'customers and stakeholders' throughout this document on the basis that every organisation and individual in GB is a stakeholder in RESP. A smaller subset of these stakeholders has been identified as 'customers', as they will be direct users of RESP outputs and activities. Examples of customers include local authorities and other local energy representatives who will use local actor support, and electricity and gas distribution networks who will use the RESPs in developing their network plans.

NESO has published this consultation document to seek your feedback on the draft methodology for our first RESPs. The Ofgem RESP policy framework decision and draft RESP guidance[14] are the starting point for the development of this RESP methodology. Each chapter sets out the Ofgem expectations at the start for ease of reference. Below is a summary of the structure of the methodology consultation:

- **Section 1: Introduction and Approach** – presents an overview of RESP, our guiding principles and how to respond to this consultation.
- **Section 2: RESP and Strategic Energy Planning** – provides detail on how RESP interacts with the SSEP and CSNP, to form a single strategic whole energy plan for GB. It also presents an overview of what each of the RESPs will include, the

[13] Department for Energy Security and Net Zero, *Clean Power 2030 Action Plan* (December 2024) - https://www.gov.uk/government/publications/clean-power-2030-action-plan
[14] Ofgem, *Draft RESP guidance* (October 2025) - https://www.ofgem.gov.uk/sites/default/files/2025-10/Annex-E-Proposed-RESP-Guidance-Associated-Document-%28Clean%20version%29.pdf

proposed RESP end-to-end process and our decision-making approach as we develop the RESPs.

- **Section 3: Engagement and Local Actor Support** – provides detail on how each of the RESPs will be developed through customer and stakeholder engagement and local actor support.
- **Section 4: Governance** – provides detail on the proposed approach to setting up Strategic Boards, working groups and a GB Steering Committee (GBSC) to support the development of the RESPs.
- **Section 5**: **The RESP Components** – provides detail on each RESP component, its purpose and how it will be developed.
- **Section 6: Supporting Functions and Considerations** – provides details on our key support functions, such as technical coordination, Network Planning Assurance, innovation and assurance. It also presents an overview of societal and environmental considerations, and our digital and data approach that is fundamental to how we will develop the RESPs.
- **Section 7: Timelines and Next Steps** – including upcoming methodology webinars and areas which need to be developed further in the full methodology next year.

These sections are followed by a section on timelines and next steps, a glossary of terms and acronyms, and the appendices.

How to respond to this consultation

The consultation is open to all members of the public and runs from Monday 17 November 2025 and will close at 11:59pm GMT on Friday 16 January 2026.

To respond to the consultation please access

English: Regional Energy Strategic Plan (RESP) Methodology Consultation

Cymraeg: Methodoleg y Cynllun Strategol Ynni Rhanbarthol (RESP)

You will be given the option to mark your response as confidential at the beginning of the form. For confidential responses, we will not publish your response or your feedback in an identifiable form. All responses will be shared in full with Ofgem and DESNZ, as per the tRESP approach, even if marked as confidential. If you have any questions about the consultation process, other additional comments or queries, please contact us at box.consultations.resp@neso.energy.

What happens next?

The publication of this draft methodology launches a nine-week consultation period, after which we will refine the methodology based on stakeholder feedback. Artificial Intelligence (AI) will be used as an aid to help summarise the responses we receive and identify actionable insights. Our approach to the use of AI is available in Appendix 7 – Use of AI.

The final RESP methodology will be published following approval from Ofgem and the UK Secretary of State for Energy and Net Zero. We currently expect this to be summer 2026.

Changes in terminology

As we have been developing the RESP methodology in detail, we have changed some terminology from the original Ofgem RESP Policy Framework decision. These have been developed based on stakeholder feedback and in some instances to better reflect the intent of the outputs.

Table 1: Changes in terminology

Ofgem RESP Policy Framework decision (April 25)	**Ofgem Draft Guidance (October 25)**	**RESP methodology**
National Steering Group	National Steering Committee	GB Steering Committee
North East, Yorkshire and Humber	North East, Yorkshire and Humber	North East and Yorkshire – reflecting the changes to the RESP boundaries made by Ofgem in their framework decision.

Terminology for aspects related to Scotland and Wales

We recognise that 'region' or 'regional' are not the correct terms to use when referring to the nations of Scotland and Wales. On that basis we are proposing to establish four terms for use throughout full RESP:

1. We will continue to use the term 'regional energy strategic planning role', and 'RESP role' when referring to the role that Ofgem has asked NESO to deliver, as defined by Ofgem's RESP Policy Framework.
2. We will use the term 'nations and regions' when referring to Scotland, Wales and the nine English regions.
3. We will use the term 'RESP Scotland Team' or 'RESP Wales Team' when referring to the NESO RESP teams focused on Scotland and Wales, respectively. This is consistent with the naming of the NESO RESP teams for the nine English regions, for example 'RESP South West Team'.

We propose to use the term 'RESP' to refer to the regional energy strategic plans themselves, including within Scotland and Wales. For example, the Scotland RESP, the South West RESP, etc. We have considered using other names to refer to the plans in the nations. For example, the National Energy Strategic Plan, or the Strategic Energy Plan for Scotland/Wales. However, we consider these terms may lead to a lack of clarity amongst stakeholders on the scope of RESP versus the SSEP and CSNP.

Consultation Question:

Do you agree that in Scotland and Wales the strategic plans outlined in this methodology should be known as the Scotland RESP and Wales RESP respectively? If not, what alternative should be used?

RESP guiding principles

Our RESP methodology is aligned with the guiding principles from the Ofgem RESP policy decision:

1. Be place-based: ensure energy system planning processes identify and account for the diversity of energy needs within each RESP nation or region.
2. Be whole system: develop a comprehensive view of factors influencing the trajectory of energy supply and demand in the nation or region
3. Be vision-led: Set a clear long-term objective for energy system development that takes into account the specific characteristics and priorities of a nation or region, while maintaining consistency with broader GB-wide goals.
4. Be proactive: enable proactive development of the energy system and investment in network infrastructure to ensure it enables net zero, while remaining agile and taking an adaptive approach to account for uncertainty.
5. Be transparent and collaborative: develop open, accessible and inclusive processes for stakeholder to have sight of and participate in energy planning.
6. Be fair: establish processes to objectively and fairly assess trade-offs between options.

2. RESP and Strategic Energy Planning

Interaction with other Strategic Energy Plans

Ofgem expectations in Draft RESP Guidance:

- Section 2.20: "The RESP Methodology must indicate which adjacent plans will be considered, and these must at a minimum include SSEP and CSNP".

The Energy Act 2023 set the legislative framework for an independent system operator and planner to help accelerate GB's energy transition, leading to the establishment of the National Energy System Operator (NESO).

We are an independent public corporation at the centre of the energy system and take a whole system view to create a world where everyone has access to reliable, clean and affordable energy.

Our primary duties are:

- **Net zero** - enabling the government to deliver on its legally binding emissions targets.
- **Efficiency and economy** - promoting efficient, coordinated, and economic electricity and gas networks.
- **Security of supply** - ensuring security of supply for current and future consumers of electricity and gas.

We also must facilitate competition and innovation and consider impacts on consumers and the whole system.

RESPs are a fundamental part of NESO's ambitions to deliver an integrated, whole energy system approach to strategic energy planning. NESO will develop a single strategic whole-energy plan for Great Britain (GB), consisting of the SSEP (Strategic Spatial Energy Plan), the CSNP (Centralised Strategic Network Plan), and the RESPs (Regional Energy Strategic Plans).

These components will be developed as distinct but interconnected parts of one coherent plan and will each operate on a three-year cycle. Each plan will contribute a unique perspective - SSEP for electricity and hydrogen generation and storage infrastructure, CSNP for national transmission networks, and RESPs for more localised distribution level planning as summarised in Figure 2.

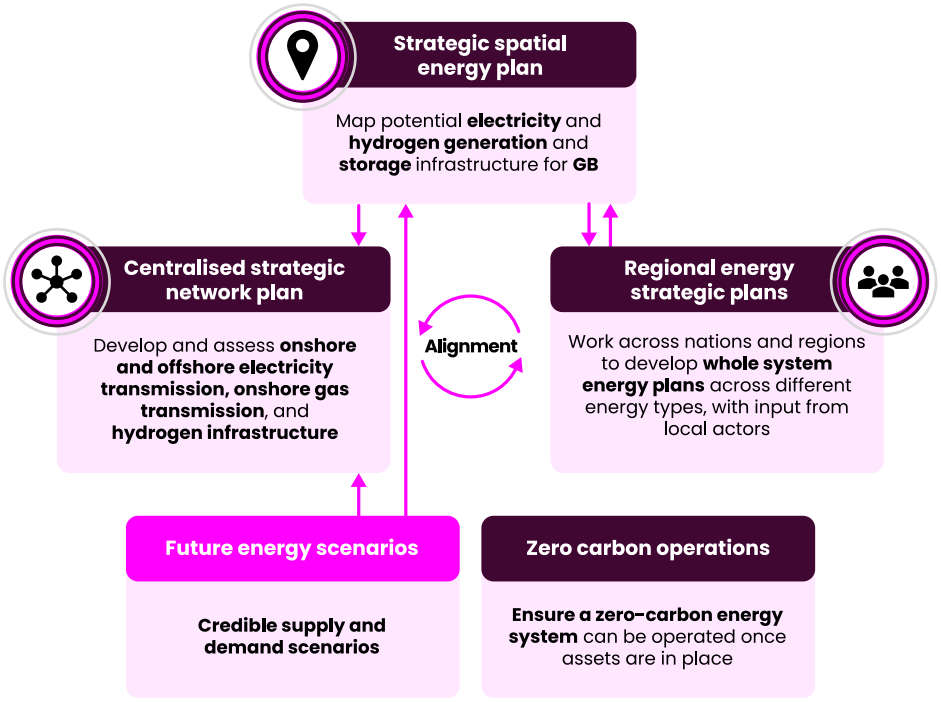

Figure 2: Interactions between NESO's strategic energy plans

Building on clean power 2030, the three plans will do the following:

- The **Strategic Spatial Energy Plan (SSEP)** will provide more certainty on the location of electricity and hydrogen generation and storage infrastructure, providing certainty on the need for network infrastructure. The SSEP will focus on energy technology capacities on a zonal basis to support the future economic growth and decarbonisation of society and will consider the complex interactions of different components in the future energy system, optimising across the complex trade-offs of location, utility, impact, time and certainty. It will be a primary input into the CSNP which will consider how to transfer energy across GB. As the SSEP will assess the trade-offs between the vectors, the CSNP does not need to consider inter vector trade-offs. In order to maintain coherence in strategic energy planning, the SSEP will be a primary input as we develop the RESP pathways in addition to the bottom-up priorities of the RESP nations and regions.
- The **Centralised Strategic Network Plan (CSNP)** will provide an independent, coordinated, and long-term whole system approach to planning the electricity and natural gas transmission network, as well as hydrogen transport and storage networks across Great Britain (GB). Using input primarily from the SSEP and Future Energy Scenarios (FES), the CSNP will guide transmission network planning in the best interests of consumers to enable GB's transition to net zero. Unlike previous incremental approaches, we will begin with a long-term vision and use this as the foundation to inform the decisions needed today. Specific outputs will be released on a three-year cycle.
- The **Regional Energy Strategic Plan (RESP)** brings together nations and regions around a shared view of how the distribution energy system should evolve to meet both local priorities and national objectives. By enabling whole energy system

planning across electricity, gas, heat, and hydrogen at a distribution level, RESP supports confident and efficient investment in the infrastructure needed for the energy transition.

How the strategic plans feed into each other

We are developing a suite of strategic plans that are designed to be coherent and complement one another. Each plan will contribute a distinct perspective while remaining strategically unified under NESO's statutory role as the independent system operator and planner. We will apply consistent processes across plans where appropriate and transparently justify any differences. Figure 3 shows an illustrative example of the interactions between the three strategic plans over two cycles. As we develop these plans, we expect the RESPs to inform the development of the next SSEP, which will in turn inform the CSNP and subsequent RESPs, respectively. Together, this will foster coordination, consistency, and collaboration in support of an integrated, sustainable energy system.

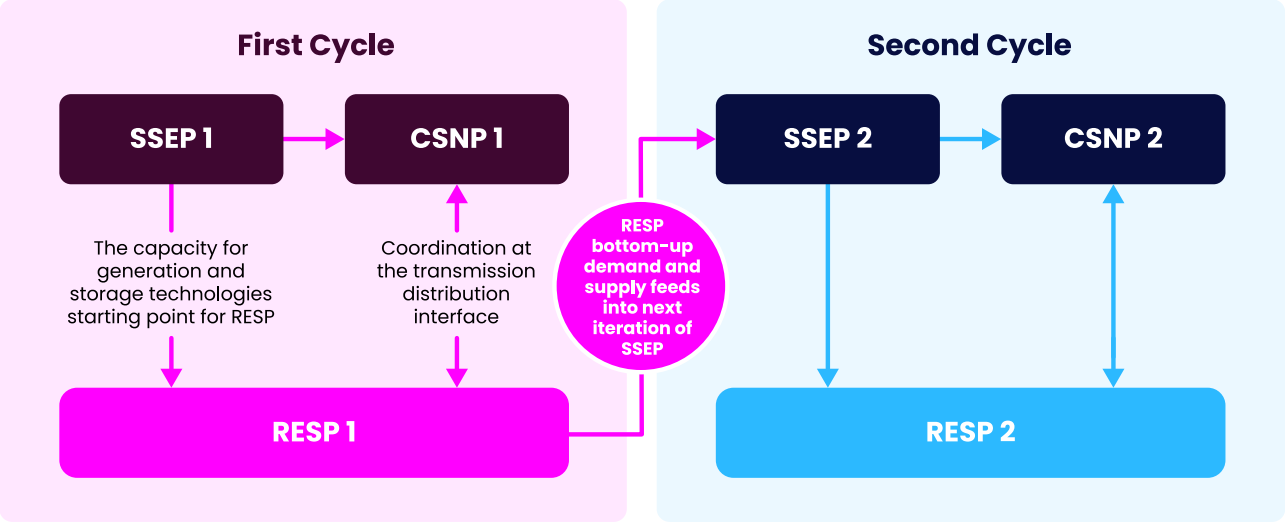

Figure 3: Interactions between SSEP, RESP and CSNP over two planning cycles

SSEP and RESP

In the first cycle, together with clean power 2030, we expect the SSEP to provide the capacity for generation, storage and hydrogen as inputs into RESP. As we develop the Nations and Regions Contexts, we expect to provide SSEP outputs to the nations and regions to enable early visibility and consideration of the approved SSEP pathway as nations and regions review and develop their priorities. As we develop the RESP Pathways, we will compare the SSEP capacities with those resulting from the RESP nation and region priorities. For technologies included in the SSEP, we expect the RESP pathway capacities to fall within the approved SSEP ranges for generation, storage and hydrogen capacities. We will work collaboratively with stakeholders to understand and address differences or inconsistencies as we seek to maintain coherence across our energy plans. The RESP bottom-up demand and supply outputs will be fed back into the next iteration of

the SSEP to enable our national demand modelling to start to reflect our more locally informed insights. Given the dependency of RESP on the SSEP, any changes to the SSEP directly impact the RESP.

RESP and CSNP

RESP, together with the distribution networks, will coordinate with CSNP at the transmission and distribution interface to ensure that options to unlock capacity at the interface are adequately considered.

Connections

Connections Reform represents a major step forward in improving how future projects connect to the GB electricity network[15]. Following approval by Ofgem we will shortly be reordering the connection queue based on readiness and need. This includes distribution connected projects that have a material impact on the transmission system and therefore require a Transmission Impact Assessment (TIA). A TIA is a process used to assess the potential effect of distribution-level connections on the wider transmission network, ensuring that upstream system constraints are properly understood and can be managed appropriately. The connections process outputs will provide key inputs into the RESP process.

Developing the RESPs

NESO is creating a new approach to strategic energy planning at the distribution level through RESP. NESO will produce Regional Energy Strategic Plans for the nations of Scotland and Wales, and for each of the nine English regions. These plans will provide key inputs to the business plans of electricity and gas distribution networks, improving consistency while reflecting local priorities. The RESPs will complement other Great Britain (GB)-wide NESO strategic plans, including the Strategic Spatial Energy Plan (SSEP) and the Centralised Strategic Network Plan (CSNP).

RESP will be developed in line with the boundaries defined by Ofgem, as stated in the RESP Guidance: one RESP for Scotland, one for Wales and nine for England (see Figure 4). To maintain familiarity and consistency, changes to boundaries will only be considered at the transition between RESP cycles. At the end of a cycle, NESO may revisit boundary arrangements if a strong case for change is identified or presented. As set out in the RESP External Governance section, the GB Steering Committee will consider any proposals for boundary evolution on a case-by-case basis and may update the RESP Guidance to change the boundaries.

[15] National Energy System Operator, *About Connections Reform* - https://www.neso.energy/industry-information/connections-reform/about-connections-reform

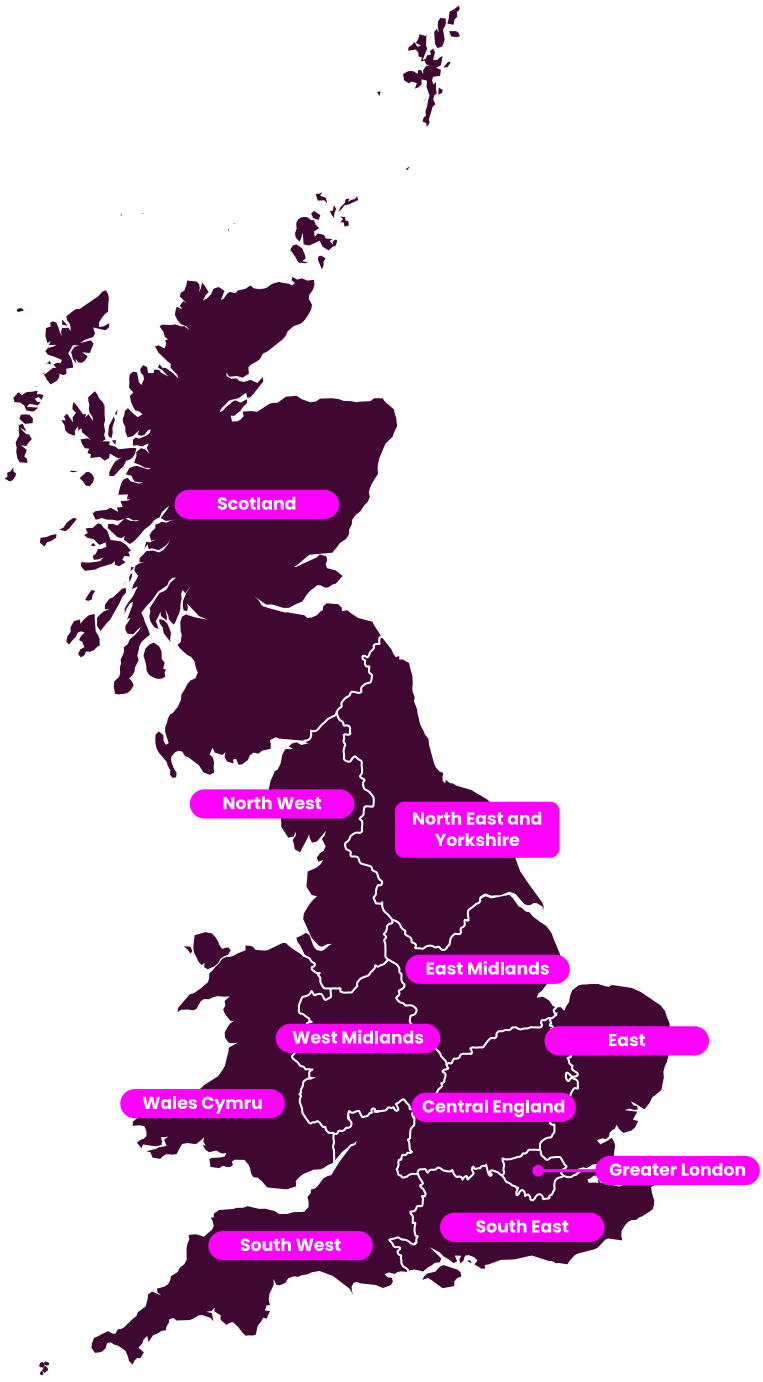

Figure 4: Map of RESP nations and regions

What each of the RESPs includes

Each RESP will include the following key components (see Figure 5). Each is defined in its own section of this methodology.

For each nation or region, NESO will produce five components that together form the RESP:

1. **Nations and Regions Contexts**: a view of local conditions and priorities, informed by engagement in the nations and regions and datasets. These are designed to reflect—rather than supersede local plans and ambitions.

2. **Pathways**: spatially modelled projections of future energy supply and demand in each nation and region. These will consist of one short-term Pathway covering the next 10 years, and multiple long-term Pathways to reflect uncertainty, over a period of no less than 25 years. Pathways will be modelled to sufficient granularity to support local planning and provide a detailed basis to underpin network planning by distribution networks.
3. **Consistent Planning Assumptions:** These are a complex area of RESP, focused on helping distribution networks plan consistently, and translate the pathways into peak demand forecasts essential to network planning. They will therefore drive consistency in assessment of network impacts across GB and hence future investment, while allowing for variation to reflect differences across nations and regions (for example, climatic differences). These will be presented as a single output across all RESPs to be used consistently by distribution networks.
4. **Spatial Context**: a spatial view of energy Pathways overlaid against network capacity data to highlight areas of system need where investment might be required. This will incorporate whole energy system spatial data to support coordinated and informed planning across nations and regions.
5. **Specification of Strategic Investment Need:** Identifying areas of energy need in each nation and region which are strategically significant and more complex due to timescales, geography, or required trade-offs between energy types, priorities or stakeholders. These needs enabled through the appropriate network investment, will unlock system-wide value, accelerate decarbonisation, and support long-term economic development.

Figure 5: The RESP Components

Delivery of each of the RESPs will be enabled through our key RESP delivery functions:

- **Engagement:** This is essential and foundational to developing the RESPs. Our embedded teams in the nations and regions will ensure we develop outputs collaboratively, drawing on local insight and building a shared understanding of how the energy system should develop to support nation and region priorities. We will establish structured, transparent, and accessible routes to enable our customers and stakeholders across GB to be able to influence their RESPs.
- **Local Actor Support:** This section describes how NESO will provide structure and support for local actors to participate effectively.

- **Technical coordination:** This ensures coherence across RESP nations, regions and adjacent plans. It enables early identification and resolution of gaps and inconsistencies and opportunities for whole system optimisation.
- **Network Planning Assurance:** Following the creation of the RESPs, NESO will undertake some key assurance activities to conduct targeted reviews of distribution network investment plans. This will assure alignment with the direction of the RESPs which overlap with their licence areas. This is covered in the Network Planning Assurance section.
- **Governance:** We will also establish GB-wide and nations and regions governance to ensure accountability, coordination, and transparency as we develop our plans. This will ensure that voices within the nations and regions are reflected in the plans created.

The end-to-end process

The RESPs will be developed with customers and stakeholders. This will begin with the development of a Nations and Regions Context which will ensure local priorities and ambitions are reflected. The energy needs drawn out of the Nations and Regions Contexts, are a key input to the development of the RESP Pathways. The Consistent Planning Assumptions will be developed alongside the Pathways to drive the consistent assessment of network impact. The spatial context will highlight areas of need and will be a key input in the identification and specification of areas of Strategic Investment Need (SI Need). The RESPs include all the 5 components will be consulted on publicly and provided to the Strategic Boards for approval before final publication. We will undertake our technical coordination role throughout the end-to-end process. After the RESPs are published, the distribution networks will undertake detailed network planning and RESP will undertake Network Planning Assurance to assure alignment with the direction of the RESPs.

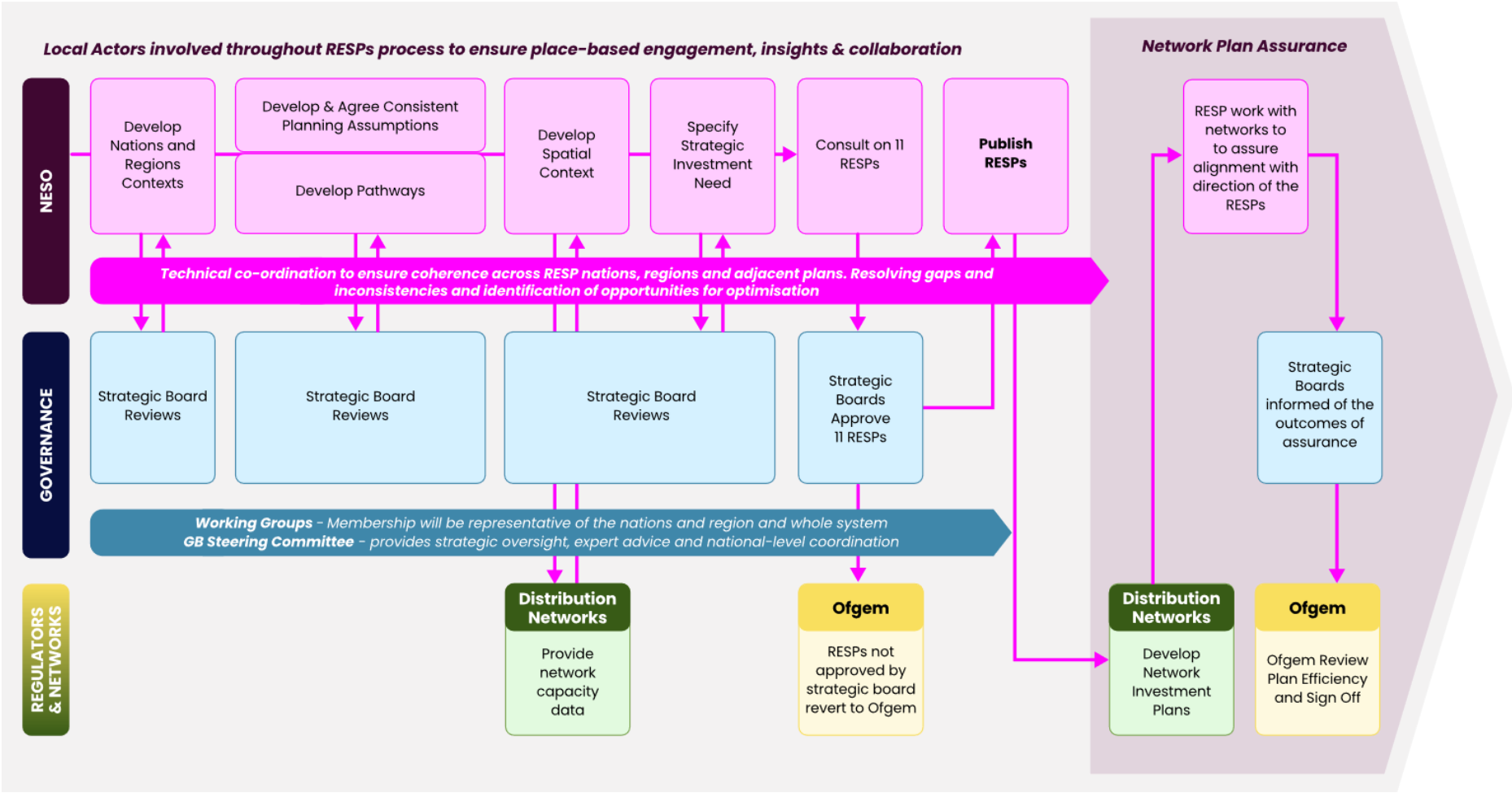

Figure 6: The RESP end-to-end process

Decision making as we develop the RESPs

RESP development requires clear, proportionate decisions at each stage. Our decision-making approach provides a transparent basis to evaluate options and explain decisions to customers, stakeholders and Strategic Boards. Our decision making will be grounded in NESO's statutory duties[16] and will be further guided by the following key principles:

- Be economic by minimising costs
- Maintain coherence with the SSEP and CSNP
- Enable priorities identified in the Nations and Regions Contexts
- Supporting future policy ambitions and national decarbonisation goals.

Alongside these principles, we will make societal and environmental considerations as we develop the RESPs. We describe the decision-making approaches within each relevant section of the RESP components. To find out more about our decision-making approach please read the following sections:

Table 2: Section overview

Nations and Regions Contexts	Sets the nation and region priorities that inform decisions as we develop the RESP pathways and identify and specify areas of strategic investment need. Provides the societal considerations valued in each nation and region.
Pathways	In this section we explain how the development and appraisal of pathways will require trade-offs across types of energy, maintain coherence with the SSEP and CSNP, and reflect national and regional priorities. We will work collaboratively with stakeholders to develop a detailed multi-criteria decision-making approach to appraise the RESP pathways in accordance with HM Treasury Green Book[17].
Consistent Planning Assumptions	In this section we explain the criteria used to justify selected values and how assumptions are evaluated.
Spatial Context	This is a spatial output that overlays pathways with network capacity information from networks. Decisions are made within pathways and specification of SI needs.
Specification of Strategic Investment Need	In this section we explain the criteria to identify and specify Strategic Investment need. Sets out how nation and region

[16] Department for Energy Security and Net Zero, *NESO framework document* (January 2025) - https://www.gov.uk/government/publications/national-energy-system-operator-framework-document/national-energy-system-operator-neso-framework-document#functions-duties-and-objectives
[17] HM Treasury Green Book and accompanying guidance - https://www.gov.uk/government/collections/the-green-book-and-accompanying-guidance-and-documents

	significance is assessed, how we assess system value, uncertainty and complexity.

3. Engagement and Local Actor Support

Engagement

Ofgem expectations in Draft RESP Guidance:

- Section 2.12: "NESO must develop structured, transparent and accessible routes for stakeholder engagement in each of the RESP nations and regions and provide proportionate forms of support for local authority representatives engaged in local energy planning."
- Section 2.13: "The engagement processes must aim to be accessible to stakeholders with varying interests and levels of energy system knowledge."
- Section 2.14: "NESO must set out in the RESP Methodology how it will develop targeted support for local authorities to remove barriers to engagement and enable local energy plans and relevant spatial plans to inform the RESPs."

This section sets out our proposed approach to engaging with our customers and stakeholders. It is integrated with the Local Actor Support and RESP External Governance sections. This is to enable customers and stakeholders to engage in the development of RESPs through a range of structured, transparent and accessible routes.

This section covers 'what' we want to achieve from our engagement, 'who' we will engage with, 'how' we will engage, and 'what' we will do with the insights we gather.

What we want to achieve

The purpose of RESP engagement is to support the development of the RESPs. We will be working to achieve a specific RESP outcome each time we engage. These outcomes are outlined below:

- **Inform**: Tell our customers and stakeholders about specific RESP topics.
- **Consult**: Ask, listen to and consider the views of our customers and stakeholders on specific RESP topics. This will include gathering insights and data to help inform the RESPs.
- **Involve**: Include customers and stakeholders in the process of addressing a specific RESP question, problem or topic.
- **Collaborate**: Work with customers and stakeholders on common RESP questions, problems or topics, to develop each aspect of the decision or solution together.
- **Empower**: Involve customers and stakeholders in RESP decision-making.

RESP engagement forms part of the wider programme of engagement carried out to support the development of NESO's strategic energy plans. RESP engagement activities will be designed to meet six engagement principles. These principles incorporate the four engagement principles set out in Ofgem's RESP Policy Framework: transparent, accountable, representative, and coordinated.

- Timely and transparent
- Proactive
- Accountable – action feedback and inform customers and stakeholders
- Coordinated
- Representative, inclusive, tailored and accessible
- Place-based

Further detail on these principles is provided in Appendix 5 - Engagement Principles and Mechanisms.

Who we will engage

To enable us to engage with our customers and stakeholders in a coordinated way, we propose to group our customers and stakeholders into five categories. This aligns with the approach being taken across NESO's strategic energy planning activities, to ensure joined-up conversations.

National Governments and Ofgem: This includes the UK, Scottish and Welsh governments, and Ofgem as the body responsible for defining NESO's RESP role.

Local actors: Are those that have a role, interest or influence in a specific RESP nation or region, whether the full nation/region or a smaller geographical area. For RESP, relevant local actors are those that are, within a nation or region, involved in energy system planning or heavily influenced by its outcomes. They include stakeholders involved in energy system planning, spatial planning, and those representing community interests. They exclude stakeholders that do not engage at a local level or those focused solely on broader topics that do not consider the energy or spatial planning system. A subset of these relevant local actors has been identified as needing support to enable them to participate in the development of RESPs. This is set out in more detail in the Local Actor Support section.

Wider actors: Are those that have a role or interest in multiple RESP nations and regions, including those that work across GB. For example, consumer interest groups, trade associations for businesses outside the energy sector, and research and innovation organisations. There will be some stakeholders that have an interest or role in locally specific issues, whilst operating at a scale wider than a single RESP nation or region. We will engage with these stakeholders through local and wider channels, as needed.

Energy distribution networks: The electricity distribution network operators (DNOs) and gas distribution networks (GDNs) have significant roles in the development and implementation of RESPs. NESO will continue to work collaboratively with the DNOs and GDNs, whilst also ensuring we maintain our position as an independent organisation. The independent electricity distribution network operators (IDNOs) and independent gas transporters (IGTs) also have important roles to play and will be engaged in the development and delivery of RESPs.

Energy industry: In addition to the DNOs, GDNs, IDNOs and IGTs, many organisations in the energy industry will have significant roles and interest in RESP. This includes the electricity

and gas transmission networks who connect to the distribution networks, consultancies that carry out energy planning work, flexibility providers, and many others.

How we will engage

Across the five engagement categories, we propose to use a range of new and existing channels, as set out in Figure 7, below. For the UK Government, Scottish Government, Welsh Government and Ofgem, NESO will work with them through the GB Steering Committee and associated meetings, as set out in in the RESP External Governance section.

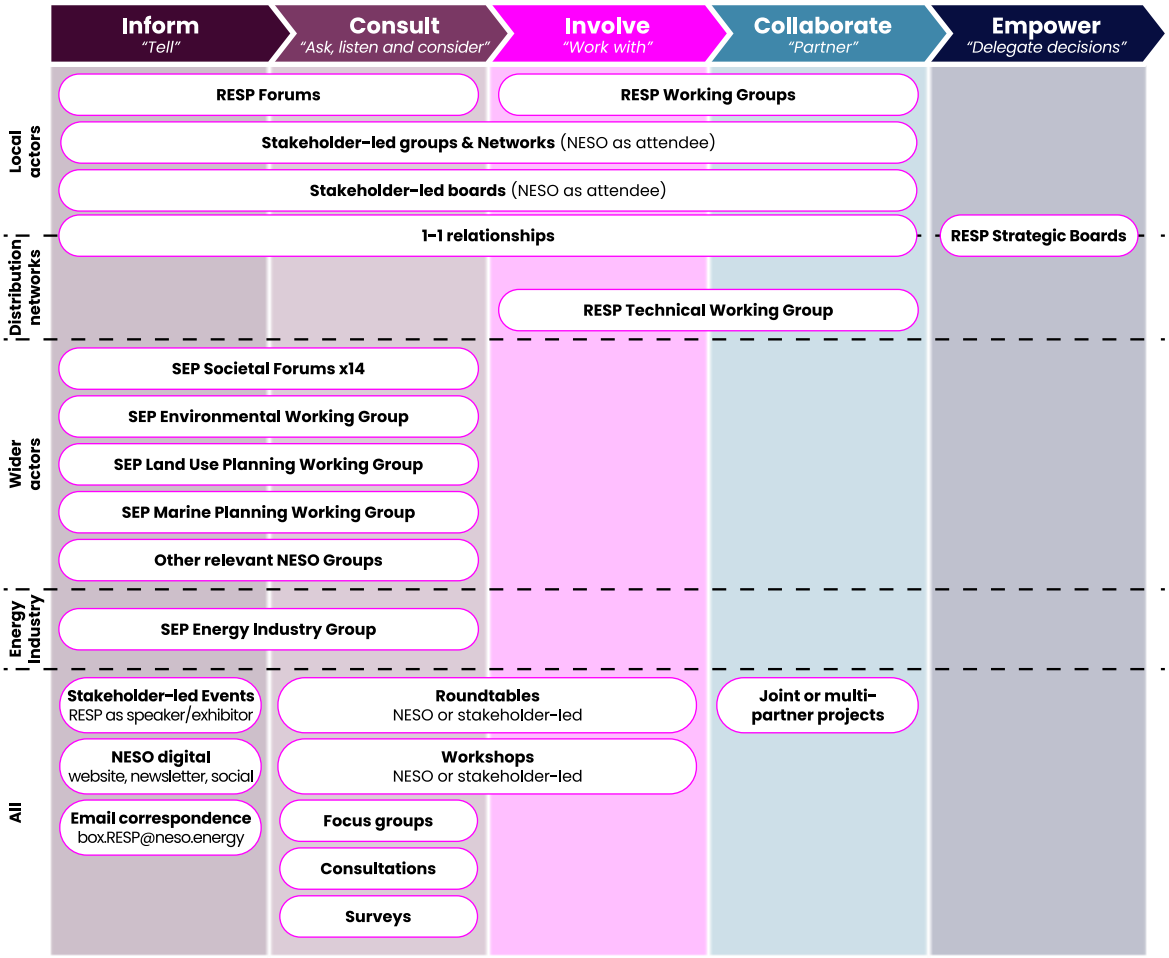

Figure 7: How we will engage as we develop the RESPs

We are proposing a wide range of engagement channels to increase opportunities for our customers and stakeholders to engage with RESP. These are a combination of RESP-specific activities, existing NESO groups, and stakeholder-led activities. Further detail on these channels is provided in Appendix 5 – Engagement Principles and Mechanisms. Detail on the three formal governance channels (Strategic Boards, working groups, and the GB Steering Committee) is provided in the RESP External Governance section.

What we will do with the insights

In line with our engagement principles of being timely, transparent, and accountable, we propose the following process:

1. Gather insights and views from our customers and stakeholders
2. Log insights and views in a digital system compliant with relevant data protection law
3. Identify common insights and views using digital tools, including AI, where appropriate (see Appendix 7 – Use of AI)
4. Seek additional information to better understand insights and views, where appropriate
5. Determine the most appropriate route(s) for the common insights and views to be actioned
6. Provide a summary of the insights and views we have gathered, the actions we have taken, and why

By setting up this process, we aim to be fully transparent with our customers and stakeholders.

The relevant parts of the above process are also reflected in the RESP External Governance section.

Approach to consultations and publication of RESPs

The Ofgem RESP Policy Framework decision and Draft RESP guidance set out that NESO must undertake a public consultation on each RESP, to ensure all interested parties have an opportunity to review and provide feedback before they are finalised.

The consultations will be delivered as part of the end-to-end process set out in the Developing the RESPs section. For more information on the timelines for the first RESPs, please read our Timelines and Next Steps section.

In order to reach the different stakeholder groups that will be interested in responding to consultations, and those stakeholders interested in RESP more widely, NESO will promote the consultations using the channels set out under the subheading 'how we will engage', above.

The consultations will follow the six-step process outlined under the subheading 'what we will do with the insights'. The findings will be shared with the Strategic Boards for them to consider as part of the RESP approval process.

The final RESPs will be published in a transparent and accessible manner, reflecting the varying needs of different stakeholder groups, including energy consumers audience. This will be achieved by following the NESO guidelines for document style, design and publishing. These guidelines have been developed to ensure consistency across all NESO publications.

Consultation Question:

Do you agree with our approach to engagement as we develop the RESPs? Please provide your reasoning.

Local Actor Support

Ofgem expectations in Draft RESP Guidance

- Section 2.12: NESO should "provide proportionate forms of support for local authority representatives engaged in local energy planning".

Overview of local actor support

The purpose of local actor support is to enable all participants to engage with RESP by providing additional support to those that need it and particularly local government and local energy representatives. This might be in the form of energy literacy training, sharing best practice or support using digital tools. By providing this support this increases the credibility of the RESP as inputs, both in terms of data and insight, will be more robust.

It is not within the scope of local actor support to provide funding or personnel for local projects or spatial planning bodies, as this would be an overreach of strategic energy planning which is ultimately funded by consumers through their energy bills.

How we will support local actors to aid the development of the RESP

Purpose and objectives

Some local actors will require support to ensure they can participate in RESP activities and better consider energy planning and RESP in their own activities. Aligned with the RESP principles and Ofgem's RESP policy framework decision, these are the key objectives for local actor support:

1. **Enable engagement with RESP:** Equip local actors with the knowledge and coordination mechanisms needed to contribute effectively to RESP. Support will be proportionate to each actor's needs and relevance, with a focus on uplifting those that currently have limited resources but significant impact to ensure credible bottom-up inputs for the RESPs.
2. **Facilitate collaboration:** Enable stronger collaboration among local actors to drive cohesive, efficient energy strategies and leverage shared learning across nations, regions and GB-wide.
3. **Enhance technical and data capabilities:** Ensure local actors have access to standardised, reliable and up-to-date data, along with the necessary analytical and coordination tools to enable effective and improved local energy planning without duplicating existing resources.
4. **Strengthen local planning capabilities:** Provide guidance and frameworks to enhance local actors' energy planning and implementation efforts.

5. **Ensure long-term sustainability:** Create a support structure that is adaptable, and fosters continued participation and responsiveness to the evolving energy landscape at both local and regional levels.

Who are local actors and how will their support be prioritised?

Local actors are defined in the Engagement section. A subset of these actors has been identified as being suitable for support to enable them to participate in the development of RESPs.

NESO does not have capacity to provide the same level of support to all stakeholders. A clear definition of local actors and how NESO will prioritise support is needed to ensure targeted, proportionate and effective assistance.

For clarity, Local actors are those that have a role, interest or influence in a specific RESP nation or region, whether the full nation/region or a smaller geographical area. The local actors that are considered most relevant to RESP activities are those that are directly involved in, or heavily influenced by, local energy system planning. They include stakeholders involved in energy system planning, spatial planning, and those representing community interests.

Local actor support will be considered for those who meet both the following criteria:

- local actors who are vital for the successful delivery of RESP and play a key role in the energy planning and/or spatial planning landscape of their nation or region
- whose capacity or capability to participate in the RESP process is limited

This takes into account the capacity that will be available in NESO during this first planning period. Supporting these actors ensures they can contribute critical insights and bottom-up data that inform and enable the RESP process, while also providing support to enable local actors to harness the outputs as part of their day-to-day work.

Access to local actor support will be determined at the RESP nation or region level. Based on the definition above, support will be prioritised to local government and community energy groups including (but not limited to):

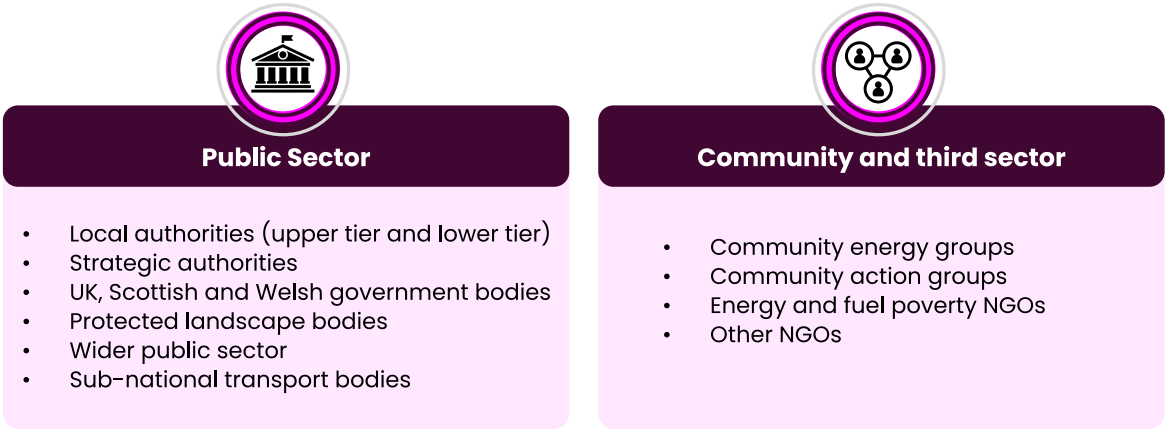

Figure 8: Local actor support

Risks and challenges

Our engagement with stakeholders and responses to Ofgem's RESP Framework Consultation have identified several risks and challenges faced by local actors in engaging with RESP. In designing and implementing local actor support, we will seek to address these challenges where they are impacting the ability of local actors to effectively engage with RESP and within the scope of the policy framework set by Ofgem.

- **Resource constraints:** Lack of staff and funding. Lack of technical expertise. Funding cycles making long term resource management challenging.
- **Data and analytical challenges:** Issues with data accessibility, quality, transparency, and consistency. Dependence on models without observed evidence or with inconsistent assumptions. Tools useful for one organisation may not be fit for purpose for another.
- **Engagement inequity**: Smaller, less well-resourced, or less vocal actors are often overshadowed by more established organisations, resulting in unequal participation.
- **Collaboration barriers**: Ineffective communication and siloed information sharing within or between organisations. Competing aims among stakeholders can impede progress. Fatigue from multiple engagements.
- **Lack of awareness**: Stakeholders may be unaware of the benefits of engaging in energy planning.
- **Policy misalignment and uncertainty:** Complexity, inconsistency, and change in political and organisational policy creates uncertainty and misalignment, including for project delivery. High staff turnover, reorganisation, and siloed working contributes to planning uncertainty.

Research and gap analysis

Research has been completed to understand existing support for local actors, enabling RESP to build upon and avoid repetition of existing offerings. The research identified more than 40 support offerings already available from other providers, in the areas of:

- Local Area Energy Planning tools and guidance
- collaborative platforms and support networks
- data access, visualisation tools, and technical assistance

In designing local actor support, we will seek to build on and collaborate with existing support mechanisms, including signposting to relevant services, networks and tools when appropriate.

Our approach to local actor support

Support needs

The needs of local actor support will evolve along the journey of RESP. Some support will be essential to enable implementation of the initial RESP steps, while other products and services will not be needed until later in the RESP cycle. For these reasons, we are

proposing to implement local actor support in three waves, as illustrated in Figure 9. The following paragraphs provide more detail on each wave and include tables listing specific support needs and products.

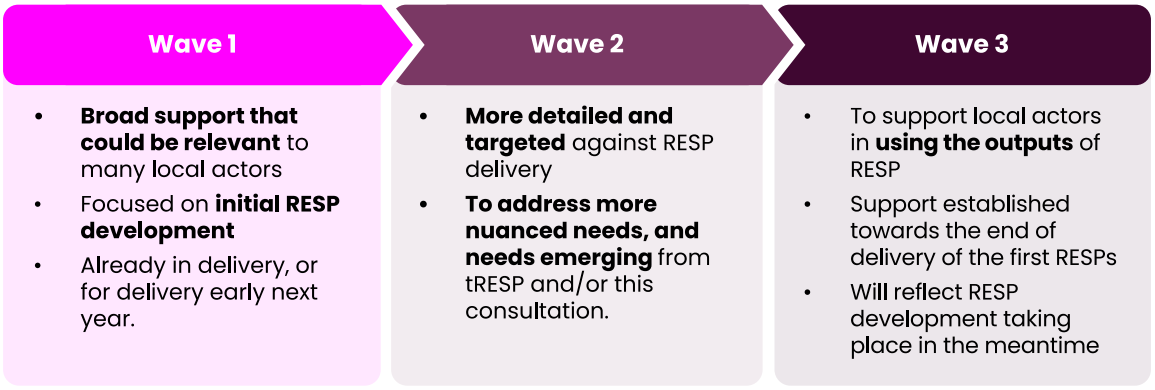

Figure 9: Local actor support delivery waves

Local actor support wave 1:

Some local actor support is needed as we commence RESP. In fact, some support has already been sought and delivered as we have begun engaging across nations and regions in developing tRESP and gaining input into the full RESP methodology. This first wave of local actor support is targeted towards enabling local actors to feed into RESP and tRESP via the RESP forums, targeted bi-laterals or through data submission. The content is purposefully broad and inclusive to support local actors in the first stages of RESP.

Table 3: Local Actor Support Wave 1

Support Need/Product	Description
Strategic energy planning literacy	• Building broad strategic energy planning literacy in nations and regions will enable more informed discussions. • This will take the form of written briefings and online sessions initially. • Topics include NESO, Strategic Energy Planning and the whole energy system. • To be provided proportionately, with a focus on targeted local actors as described above. • Materials will be made available on our website for broader dissemination.
Signposting to external resources	• A library of external resources to support stakeholders in energy planning. • Provided as an accessible online database, with RESP teams providing tailored guidance as required. We expect this library to build up over time.
Supporting input into RESP	• Targeted and tailored guidance for inputting into RESP including Nations and Regions Contexts, Strategic Investment and other data collection exercises run as part of RESP. • Best practise guidance for data quality (for example., cleansing, standardisation, naming conventions) to improve quality of inputs; including toolkits and training delivery to support this. • Targeted 1:1 support available in nations and regions as appropriate.

Local actor support wave 2:

As we develop the RESPs and work collaboratively with local actors (for instance as we develop digital platforms), we acknowledge that local actors may identify additional support needs. We will adjust our approach to meet these needs as they arise. The second wave of local actor support will be informed by the responses to this consultation, through the ongoing delivery of tRESP and engagement of the RESP teams in the nations and regions. We expect our support in this wave to be more detailed and targeted against the RESP steps to include:

Table 4: Local Actor Support Wave 2

Support Need/Product	Description
Technical advice on aspects of RESP	• Targeting local actors engaging in governance forums. In particular, providing technical guidance on modelling and energy forecasting associated with RESP development. • Toolkits will be developed that reflect different stakeholders and geographic needs. For example, where a nation or region is likely to see hydrogen production, we will seek to support key stakeholders in building out their knowledge.
Data portal support	• Guidance and support in using the data portal • Dissemination of success stories and lessons learned between local actors.
Integration between RESP and local energy plans	• Guidance and support on local and regional energy plan alignment and spatial planning activities. • Whilst RESP will provide guidance, it will not undertake these activities for local actors.

Local actor support wave 3:

We envisage setting up the third wave of local actor support towards the end of delivery of the first RESPs to support with the translation and adoption of RESPs. As with the second wave, this needs to reflect the outcome of this consultation and further collaborative design, testing the outputs and digital/data tools with local actors and designing the support to maximise the benefits of RESP.

Table 5: Local Actor Support Wave 3

Support Need/Product	Description

Tools and methodologies on use of the RESP outputs	• Guidance on how RESP outputs can inform:
	  ○ Planning or investment decisions
	  ○ Planning for high energy demand (for example, industrial areas), storage and generation
	  ○ Network upgrades and connections;
	Online sessions could be available within nations and regions if needed:

Sharing best practise	• Building upon the data portal, NESO and other users could share best-practice (for example, strategic investment projects; or how community benefits can be realised). • Including both specific projects and proposals, as well as tools and suggested uses of RESP.

Next steps

To ensure local actor support products and services are available when needed we will be developing the detailed design and implementation plan for the first wave of local actor support in parallel with the consultation. This will continue to be done in close collaboration with local actors to ensure the products and services are relevant, fit for purpose and meet their support needs.

Consultation feedback will be essential in enabling us to refine any products and services introduced in wave 1 to ensure they are fit for purpose, as well as to support the design and implementation of further local actor support offerings associated with the specifics of the RESP methodology outlined in this consultation (resulting in a second wave, see previous section).

We will also be keeping local actor support needs integrated into the design of RESP outputs, including data portals and other digital tools – designing, testing and delivering a third wave of local actor support later in the RESP journey.

Consultation Question:

Do you agree with the approach we have outlined on local actor support, and how we have phased the delivery? Please provide your reasoning.

4. Governance

RESP External Governance

RESP External Governance

Ofgem expectations in Draft RESP Guidance:

- Section 4.1: "NESO must establish GB-wide and nation/region governance processes. The governance mechanisms must be transparent, robust, and facilitate engagement from key stakeholders."

This section sets out NESO's proposed design for the governance mechanisms that will support RESP delivery: the Strategic Boards, working groups and the GB Steering Committee. Together, these structures will provide coordinated oversight, ensure that plans reflect local needs, and support alignment with national policy. We are also consulting on the draft Terms of References which contain more detail than what is summarised below. See Appendix 8 – Draft Strategic Board Terms of Reference, Appendix 9 – Draft GB Steering Committee Terms of Reference and Appendix 10 – Indicative Working Group Committee Terms of Reference.

This section should be read alongside the Engagement section, which describes how NESO will engage openly and widely with communities, including through a public consultation on each of the RESPs. Insights from this engagement will feed directly into the governance processes described here.

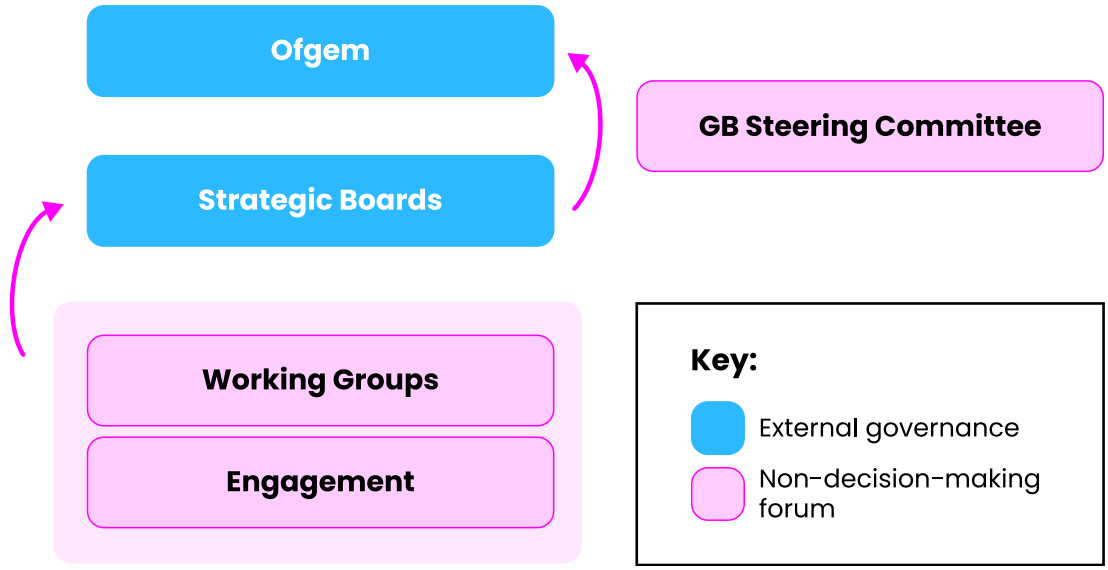

Figure 10: Proposed RESP Governance structure

Strategic Boards

This section sets out our proposed composition and decision-making approach for the Strategic Boards that will be established in each nation and region.

The purpose of the Strategic Boards, in line with Ofgem's Guidance Document, is to provide oversight, coordination and strategic steer throughout RESP development. The Strategic Board will act as a forum that brings together key stakeholders, supports open discussion, addresses differences in perspective, and helps guide whole system planning for each nation and region. Where a significant majority consensus is reached, the Strategic Board will approve the RESP for its area. If a plan cannot be approved, sign-off will revert to Ofgem.

Strategic Board composition

Ofgem's Guidance Document set out a number of guardrails for composition design, stating that Strategic Boards:

- are chaired by NESO
- members will be drawn from DNOs, GDNs, local governments (including Scottish and Welsh governments), and relevant cross-sector bodies
- should balance the need for appropriate representation with a need to remain lean and purposeful

In designing our proposed composition, NESO has been guided by these expectations, by existing governance arrangements, and by a review of effective practice in collaborative decision-making.

We propose up to 16 seats for each Strategic Board, made up of:

- DNOs and GDNs who operate in a nation or region
- Up to six representatives of local government
- Up to four cross-sector actors which could, for example include representatives from industry, transport, consumer or community energy (note this is not an exhaustive list, and we anticipate different nations and regions to have different parties based on their situations)
- The Scottish and Welsh Governments, on their respective boards

Ofgem expects Strategic Board members to be empowered to represent the interests of their network, place or sector, and to have the authority and experience needed to support strategic planning.

Local government representation

To maintain lean and effective Strategic Boards, it will not be possible for all local authorities in each area to sit on the Strategic Board. Members will therefore represent the local government sector across each nation and region rather than an individual authority. All local authorities will be invited to participate in working groups, as indicated in the Ofgem Guidance Document, which will feed insights into the Strategic Board through their sector representatives.

In line with Ofgem's Policy Decision, where they exist all Strategic Authorities in a region will be invited to sit on the Strategic Board. Where this does not provide full geographic coverage, remaining seats will be allocated to other authorities to ensure balanced

representation. Up to six of the unitary authorities in Scotland and Wales will participate in those Strategic Boards.

It is anticipated that, whilst local government structures evolve during the course of RESP development, representation on the Strategic Board will remain stable through each RESP cycle. A full review of governance will be carried out ahead of each RESP cycle. NESO will not prescribe whether local government representatives should be elected members or officers but would not expect a mix of both on a single board.

Strategic Board approval

Ofgem has introduced a role for Strategic Boards in approving their respective RESPs. Approval confirms that a plan is credible, reflects stakeholder input, and is consistent with each boards' view on how the energy system in their nation or region should develop.

In the event that one or some of the RESPs are not approved by the board, sign-off will revert to Ofgem, who will take the vote and views of the Strategic Board into account. We have set out in the Terms of Reference (Appendix 8) provisions for abstaining from voting, how voting rights may be impacted by participation of members, and quorum rules.

Ofgem set out a starting threshold of 80% positive votes for approval of the RESPs and asked NESO to consider the risk of any unreasonable outcomes in setting the final threshold for approval. Within our design, we have been mindful of both Ofgem's policy decision and the need to ensure fair and balanced design making across the different Strategic Boards, that will vary in the numbers of representatives from different sectors.

We propose that each member of the Strategic Board receives one vote and that each sector will have a consolidated vote share as set out in Table 6.

Table 6: Strategic Board Vote Share

Group	Sub-Group	Vote Share
Energy Networks	Electricity Networks	20%
	Gas Networks	20%
Local Government	-	50%
Cross Sector Actors	-	10%

We propose that a two-thirds majority constitutes approval while always seeking the broadest possible consensus. This proposal avoids situations where a single organisation could exert disproportionate influence over the outcome. For example, if there were an 80% threshold, this could occur in nations or regions with a single DNO or GDN. The proposal still ensures that network, government, and cross-sector voices are meaningfully reflected in decision-making.

In Scotland and Wales, approval from the Scottish Government or Welsh Government would also be required in addition to the two-thirds majority vote from the remaining members.

Prior to voting on approval, as articulated in the Ofgem guidance, each of the RESPs will go to a public consultation. The outcomes of the consultation, alongside insights from stakeholder engagement throughout the process, will form a key piece of evidence considered by the Strategic Board in the final approval.

Consultation Questions:

- Do you agree that Local authorities should be able to decide whether to send a political representative or officer to the Strategic Board? Please provide your reasoning.
- Do you agree with our proposed voting structure for Strategic Boards? If you think we should change it, please provide your reasoning.
- Do you feel any changes should be made to the proposed terms of reference? Please provide us with details.

Appointment of Members to Strategic Boards

NESO will run a nomination process inviting relevant organisations to put forward individuals to sit on the boards. NESO will make final decisions on board appointments, to ensure balanced boards that represent the whole energy system

NESO will write to the leadership of DNOs and GDNs operating in the RESP area, inviting them to nominate a suitable representative. Likewise, NESO will write to local government within each RESP Area inviting them to nominate individuals to represent the sector on the board, in line with the principles of local government representation noted previously. Where possible we will seek to work with existing partnership bodies of local government to assist in supporting the process of identifying nominations.

For cross-vector actors we will carry out a targeted application process, including requesting candidates to specify of why they are a good fit for the Strategic Board and aligned to the criteria in the candidate pack.

Consultation Question:

Do you agree with our proposals for appointing members of the Strategic Boards? If you think we should change it, please provide your reasoning.

Working groups

The purpose of the working groups, as set out in Ofgem's Policy Decision, is to provide input to RESP development and formally advise the Strategic Boards.

This section sets out our proposals for the role of the working groups, the structure of working groups across GB and within each nation and region, and how they will connect with other governance mechanisms.

Role

At different stages during RESP development, working groups will:

- support NESO to develop recommendations for the Strategic Boards and the GB Steering Committee
- test content and gather insights to inform updates to RESP products
- consider options, including ambition and feasibility, and explore potential approaches to address challenges
- support alignment with relevant stakeholders within nations and regions, and help surface trade-offs where they exist
- review the completeness of inputs and highlight issues or additional information that NESO should consider

The working groups will not:

- author or directly work on RESP outputs
- scrutinise or approve specific datasets
- approve RESP options or final outputs, as decision-making authority sits with the Strategic Boards

We expect working groups to meet quarterly as a minimum, with flexibility to meet more frequently at key points in RESP development.

Proposed working groups

Ofgem's Policy Decision requires NESO to establish working groups in each RESP area, representing diverse stakeholder interests. NESO proposes to establish:

- **A Technical Working Group at a national level**: To consider cross-cutting technical issues and input to Consistent Planning Assumptions.
- **Four thematic Working Groups within each nation and region.**

The four proposed thematic Working Groups within the nations and regions are:

- **Local Government Working Group (LGWG):** Open to Strategic, county, district, metropolitan and unitary councils (depending on the landscape of the nation or region in question). This group will ensure that all authorities have a formal role in RESP governance and can contribute to sector-wide positions.
- **Consumer and Commercial Demand Working Group:** Covering residential and commercial demand including flexibility, heat networks, fuel poverty and community energy considerations.
- **Generation Working Group:** Covering generation connecting directly to the distribution network, as well as storage, community and distributed energy.
- **Industrial Decarbonisation and Transport Working Group:** Covering decarbonisation of industry and transport, including clusters and dispersed sites.

NESO will work with stakeholders in each nation and region to determine whether already established means of collaboration can be used by NESO to gather required inputs for RESP, or whether new groups are needed.

We do not propose to establish multiple functional working groups as set out in the Ofgem RESP Policy decision within each nation or region for each RESP product, as this would increase burden on stakeholders and risk duplication. This is because, for example, it is feasible similar stakeholders could find themselves invited to working groups for the Nations and Regions Contexts, Pathways, Strategic Investment Need as well as a thematic group, all occurring simultaneously.

To support coordination across sectors, NESO will convene roundtables bringing together representatives from each thematic working group. The roundtables will act as a forum to resolve issues before escalation and bring together stakeholders from different areas of the energy system to consider the RESP outputs as a whole, particularly any trade-offs considered between sectors.

Where viewpoints cannot be reconciled, issues will be escalated to the Strategic Board in line with the established conflict resolution process.

Working group membership

We are not proposing an explicit cap on working group members but acknowledge that too many attendees can inhibit their effectiveness, and we also expect members to commit for the full RESP cycle where possible. We believe that working groups can have more members than the Strategic Boards and remain effective, but that beyond 24 members is challenging to manage as a single group.

Membership will remain under review to ensure that the groups remain effective and representative.

Consultation Question:

Do you agree with our proposed design for working groups? If not, what changes would you propose and why?

GB Steering Committee

This section sets out our proposed composition for the GB Steering Committee (GBSC). We are also consulting on the draft Terms of Reference for the GBSC in Appendix 9.

The purpose of the GBSC, as set out in Ofgem's Policy Decision, is to provide strategic oversight, expert advice and national-level coordination during development of the RESP methodology. This would include providing steer on and approving any changes to the RESP methodology outside the normal 3-year cycle. This could include circumstances where the RESP methodology is found to have gaps that need to be addressed urgently or where material errors are found in the RESP methodology. We do not expect to undertake any major updates to the methodology out of cycle as this may materially impact RESP delivery timelines.

The GBSC will support alignment with national plans, including the SSEP and CSNP, and will help ensure coherence and efficiency across nations and regions. The GBSC will not hold decision-making authority for individual RESPs; that responsibility will remain with the relevant Strategic Boards.

GBSC composition

NESO proposes that the GBSC includes around 12–15 members. This allows the group to remain lean and effective whilst ensuring appropriate representation.

NESO will be responsible for chairing the GBSC. Ofgem has stated that, as a minimum, the GBSC must include NESO, Ofgem and DESNZ.

NESO also proposes that representation is expanded to include the below, but we are open to feedback as part of this consultation:

- the Scottish Government and Welsh Government
- organisations to represent local government such as the Local Government Association (LGA) and UK100
- organisations to represent electricity distribution network operators, gas distribution networks and independent networks, specifically the Energy Networks Association (ENA); Future Energy Networks (FEN) and Independent Networks Association (INA)
- Citizens Advice and Consumer Scotland as the statutory consumer representatives
- cross-sector organisations operating at a GB level and able to advocate on behalf of a wide breadth of system actors, such as advocates for business interests, community energy and appropriate trade organisations representing the whole energy system,

This composition provides a balanced mix of policy, delivery and stakeholder perspectives, supporting a whole system view at the national level.

Consultation Questions:

- Do you agree with the proposed representation for the GB Steering Committee? If not, are there other participants you feel we should consider?
- Do you agree that we should not be making major changes to the RESP methodology within cycle? If not, please can you give examples of circumstances where you think this may be necessary?

Conflict resolution mechanisms

This section sets out the escalation routes for resolving disagreements through the RESP governance framework. Conflict may arise where:

- there are strongly held but differing views between and within working groups, stakeholder groups or sectors
- there are differing views between NESO and external governance members on a specific issue

Ofgem requires NESO to put in place a clear and transparent escalation route. NESO therefore proposes the following pathway, moving from localised discussion to national-level resolution where required:

1. **Working groups:** First point for discussion and alignment within the themes articulated above, among stakeholders of similar interests to understand the preferred approaches within the sector, before potentially considering at a RESP Roundtable if the nature of the conflict is between different sectors.
2. **NESO:** Provide system-level and technical expertise and analysis to propose resolutions, and advise working groups, and where appropriate bring proposals and advice to Strategic Boards.
3. **Strategic Boards:** Where a resolution isn't possible between working groups, consider different options and perspectives, and their impacts, and come to a preferred position as a collective to provide direction.
4. **GBSC:** This serves as the final forum for escalation, specifically in the case of conflicts between multiple nations and / or regions, or where there are common points of difference observed among similar stakeholder groups across various nations and regions.
5. **Ofgem:** In the event that material differences of opinion result in a RESP output not being able to be approved, NESO will provide the evidence from the governance forums for consideration alongside the RESP for final approval by Ofgem.

NESO recognises that differences in perspective are a natural part of a collaborative planning process. This framework provides the structure required to resolve them in a fair, proportionate and timely way.

NESO's ambition is to achieve consensus and resolve misalignments at working group or Strategic Board level, as these forums are closest to the subject matter. The escalation route is designed to provide clarity, maintain momentum and ensure transparent decision-making across all nations and regions.

Remuneration

NESO does not propose to remunerate members of Strategic Boards or working groups, other than covering reasonable expenses where required.

NESO does not propose any remuneration for members of the GBSC.

5. The RESP Components

Nations and Regions Contexts

Pathways

Consistent Planning Assumptions

Spatial Context

Specification of Strategic Investment Need

Nations and Regions Contexts

Ofgem expectations in Draft RESP Guidance:

- Section 3.3: NESO must "develop a Nations and Regions Context for each the RESP nations and regions, drawing on relevant datasets as well as insights from nation and region stakeholder engagement."
- Section 3.4: "The RESP Methodology must set out how NESO will develop the Nations and Regions Contexts to ensure it provides a comprehensive view of nation and region conditions and priorities, including key challenges, opportunities and implications for strategic energy planning in the RESP nations and regions."

Overview of the Nations and Regions Contexts

The Nations and Regions Contexts are the foundation for the development of each of the RESPs. They will give a comprehensive, long-term and whole system view of the overarching conditions and priorities in Scotland, Wales and the nine English regions. NESO will develop a Context for each nation and region using both public data and information provided to us by customers and stakeholders.

The Nations and Regions Contexts will help guide the evolution of the energy system. For stakeholders, they will provide clarity and direction, highlight local challenges and provide timely signals to supply chains. The Nations and Regions Contexts identify the key challenges, opportunities and implications for each of the RESPs. In addition to providing a clear view of the factors that will shape future energy needs across each nation and region, they will:

- Reflect local priorities and evidence, highlighting gaps or inconsistencies and where they can be addressed.
- Provide a coherent basis for the development of other RESP components, such as Pathways and Specification of Strategic Investment Need (SI Need) to support alignment across stakeholders by presenting a shared picture of conditions and priorities.

The Nations and Regions Contexts will respect and reflect local plans and ambitions. GB-wide information will be used to provide essential context and ensure coherence across nations and regions. In producing the Nations and Regions Contexts, NESO will:

- Draw on robust locally sourced datasets, such as Local plans, Local Area Energy Plans (LAEPs), Local Heat and Energy Efficiency Strategies (LHEES) where available, as well as data related to transport infrastructure, generation and storage, demographics, industry, and energy infrastructure. This data will be sourced from a variety of local actors including (but not limited to) local authorities, strategic

authorities, the Welsh and Scottish governments, community groups and industry. The approach to data credibility outlined in the Digital and Data Approach section, demonstrates how we will ensure the data we use is robust.

- Draw on GB-wide datasets where appropriate including the SSEP. By using both local and national data we will be able to ensure our work is comprehensive and consistent nationally, whilst taking into account local and national intricacies and needs.
- Understand stakeholders' priorities, aspirations and supporting plans through the Strategic Boards and working groups and other embedded engagement.
- Consolidate inputs into an overarching set of priorities for each nation or region, working with local actors to surface common ground and address inconsistencies
- Provide appropriate channels for stakeholder feedback on the Contexts throughout development, on all components of the drafts. This will include discussion of trade-offs and, where possible, consensus-building though the Strategic Boards and working groups. We will develop processes to ensure that we can transparently and equitably manage any trade-offs or conflicts by building consensus and reflecting common ground, but where this is not possible then we will take our steer from the working groups and Strategic Boards.

How does this relate to the tRESP output?

Our tRESP Nations and Regions Contexts provided an initial view of conditions and priorities for each RESP nation and region. We have produced visualisations and charts which provide a current view of the landscape, whilst adding a qualitative, unconsolidated view of stakeholder priorities.

For the Full RESP, we will take learnings from the tRESP Nations and Regions Contexts component, particularly in relation to:

- including additional datasets specific to the RESP nations and regions – whereas the tRESP utilises only GB-wide, publicly available data, Full RESP will utilise additional data gathered from local actors, to develop a bottom-up view of conditions and priorities in each nation or region
- gaining insights through direct engagement with local actors within the nations and regions
- gathering, analysing and consolidating stakeholders' priorities for the future, both quantitative and qualitative, to provide an overall view for the nation or region

Key elements of the Nations and Regions Contexts

The Nations and Regions Contexts will include a set of geospatial visualisations alongside written narrative. It will provide information on two areas:

- Current view of the landscape for each nation and region. This will include energy and related topics such as economic and social factors.

- Local priorities that guide long-term energy development across, and within, each nation or region. Individual organisations' priorities will be brought together into consolidated priorities for how local actors anticipate their nation or region developing.

The local priorities will be a key input into our decision-making approach as we develop each of the RESPs. They will provide a clear view of what nations and regions value and help inform decision making as we identify energy needs of significance to the nation or region and develop the RESP Pathways.

Developing the Nations and Regions Contexts

The Nations and Regions Contexts will be produced from various quantitative and qualitative data sources. This data will be collected and consolidated via a structured process to ensure it meets NESO requirements for data quality and availability. NESO will provide independent assurance of technical data inputs and outputs so that each Nations and Regions Contexts credibly represents the relevant nation or region. We will use the RESP Strategic Boards and working groups as well as other engagement channels to gain insights and feedback from local actors.

The Nations and Regions Contexts for the 11 RESPs will follow a similar format and contain similar content to each other (such as data sources for key metrics). However, it is important that we reflect differences in ambition and/or priority between nations and regions. Therefore, whilst there will be a degree of standardisation, there could be considerable variation in the content, priorities and emphasis placed on different topics.

As part of our technical coordination function, we will provide the outputs of the SSEP, so the RESP nations and regions are aware of the total prioritised energy volumes in each of the RESPs. The Nations and Regions Contexts will be produced once per RESP cycle and will be published in each RESP, alongside other the RESP components, unless otherwise directed by Ofgem.

Developing the Nations and Regions Contexts

Figure 11 outlines the steps we will follow to create the Nations and Regions Contexts, alongside the roles and responsibilities at each stage.

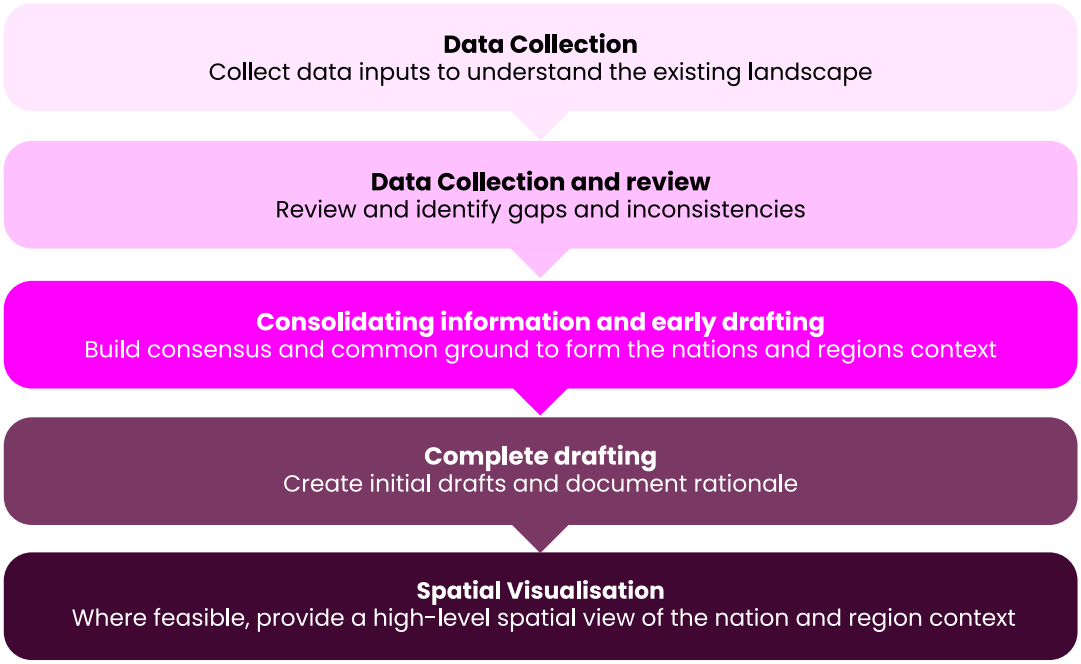

Figure 11: Nations and Regions Context development steps

To develop the Nations and Regions Contexts we will undertake the following activities:

Data collection:

Firstly, we will collect data inputs to understand the existing landscape. The SSEP at a national and regional level will be an initial input, complemented and built upon by local datasets. Secondly, we will collate priorities for the future, including local aspirations and plans. We will engage with customers and stakeholders to identify data, collect it, and assess its credibility through processes explained in the Digital and Data Approach section.

Data collations and review:

We will review whether all data needed for the Nations and Regions Contexts has been obtained and identify where there may be gaps or inconsistencies. Our proposed approach for how we identify and address gaps in bottom-up data for RESP overall is described in the Digital and Data Approach section.

Consolidating information and early drafting:

We will consolidate this information to form an initial draft of the Nations and Regions Contexts. To consolidate the information, we will analyse and compare data and stakeholder priorities to identify common themes.

Processes will be developed and enacted to ensure that we can transparently and equitably manage any trade-offs or conflicts, for example between stakeholder priorities. We will aim to reflect common ground and build consensus, though if this is not possible then we will take our steer from the working groups and Strategic Boards.

The initial drafts of the Nations and Regions Contexts will include:

- A description of the current landscape in each nation or region, regarding energy and related factors. For example, installed renewable generation capacity or levels of fuel poverty.
- A consolidated view of customer and stakeholder priorities for the future. This will give a clear picture of the future energy system landscape in each nation or region. As we develop the RESP Pathways, enabling the consolidated priorities will be one of the guiding principles in our decision-making process.

This analysis will be documented and shared with stakeholders, working groups, and Strategic Boards, allowing for feedback and discussion. Stakeholders will be invited to provide input as to whether the regional or national landscape is well articulated, whether the identified priorities appropriately reflect the nation or region, and whether there are any substantial gaps in our understanding.

Complete drafting

We will create initial drafts of the Nations and Regions Contexts. We will include feedback from customers and stakeholders and address any outstanding inconsistencies, including, but not limited to, consistency with the SSEP and adjacent nations or regions' drafts. To address inconsistencies, we will facilitate discussions with stakeholders to identify gaps or conflicts and explore potential solutions, all whilst ensuring we transparently document rationale. We will share these documents with the Strategic Boards and working groups.

Spatial visualisation

Where relevant and feasible, we will provide a high-level geospatial view of where key energy developments are proposed. This will provide an initial illustrative view of where energy developments identified as priorities could take place. It will focus on showing rough locations for the user, for example areas of a region which have potential for onshore wind deployment. This high-level view would not consider practicalities such as grid connection capacity, and more precise geospatial granularity will be provided under the Pathways and Spatial Context.

Strategic Board review and approval

The Strategic Boards will review the draft Nations and Regions Contexts and provide feedback. We will use this feedback to make changes prior to the Nations and Regions Contexts being used as the foundation for other RESP components such as Pathways and specification of SI needs. Following the development of the Pathways and SI needs, the Nations and Regions Contexts will be reviewed for consistency and provided to the Strategic Boards for approval as part of the overall RESPs.

Roles and responsibilities

Customer and stakeholder engagement will consist of structured interactions via the working groups, the Strategic Board and with wider local actors via the place-based engagement channels set out in the Engagement section. Their roles are summarised in Table 7. The roles of the Strategic Board and working groups are expanded on in the RESP External Governance section.

Table 7: Roles within Nations and Regions Contexts development and production

Group	Key roles and responsibilities for development of Nations and Regions Contexts
NESO	• Responsible for developing the Nations and Regions Contexts, for the data underpinning the context and for ensuring it appropriately reflects each nation or region.
Local Actors	• Local actors are those that have a role, interest or influence in a specific RESP nation or region, whether the full nation or region or a smaller geographical area. • Provide local data and details of local, organisational, or national and regional ambitions (for example, demographics, decarbonisation goals, industrial areas, local priorities and policies). • Share insights through place-based engagement, such as coordinating across energy types and sectors, or testing emerging outputs.
Strategic Boards	• Approve the Nations and Regions Contexts when the final RESPs are submitted.
Working groups	• The working groups will guide and provide input into Nations and Regions Contexts production. • They will assist with developing options, identifying gaps, addressing inconsistencies and forming the priorities for the nation or region.

Consultation Questions:

- Do you agree with the approach for the Nations and Regions Contexts? Please provide your reasoning.
- How do you envisage using the Nations and Regions Contexts and what would make the output work best for your needs?

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Pathways

Ofgem expectations in Draft RESP Guidance:

- Section 3.8: NESO "must develop a single short-term RESP Pathway and multiple long-term RESP Pathways for each of the RESP nations and region."
- NESO Section 3.9: NESO "must provide a clear and detailed articulation of the RESP Pathways modelling approach."
- Section 3.10: "The RESP Methodology must indicate the spatial granularity, on both network asset and geographical bases, and the temporal granularity of the RESP Pathways."
- Section 3.16: "The RESP Methodology must ensure that all RESP Pathways will meet the Scottish Government's and the UK and Welsh Governments' requirements of Net Zero by 2045 and 2050, respectively."
- Section 3.16: NESO "must establish transparent processes for identifying conflicts between top-down and bottom-up plans and objectives for managing these conflicts throughout the RESP Pathways development."

Overview of the RESP Pathways

RESP Pathways are a core component of the RESPs, designed to provide a whole system, long-term view of energy needs across RESP nations and regions. They serve as a strategic blueprint for how the future net zero energy system should evolve, enabling a proactive and coordinated approach to network investment. The RESP pathways will include:

- A single short-term Pathway covering a 10-year period, supporting investment over multiple price control cycles. We will provide information on how we consider uncertainty associated with this Pathway.
- Multiple long-term Pathways each associated with a distinct narrative to reflect future uncertainty and covering a period of no less than 25 years from the start of RESP.
- All Pathways will set credible routes to deliver net zero and legally binding emissions targets. The exception is a counterfactual Pathway which will explore the credible slowest rate of decarbonisation, showing a world where progress is made but emissions targets are not achieved.

The Pathways build on what we've learnt developing the transitional RESP (tRESP) while expanding on tRESP's scope and purpose. The RESP pathways will be:

- Whole energy: Whilst the tRESP focuses on electricity distribution networks for the 2028–2033 price control period, the full RESP will take a whole energy approach. This will include bottom-up demand and supply options across electricity and gas distribution networks.

- Bottom-up: Using local data sources and ambitions identified in the Nations and Regions Contexts to create a bottom-up approach to modelling the Pathways.
- Coherent with national plans: Given the timescales, tRESP cannot use outputs from the Strategic Spatial Energy Plan (SSEP) or the Centralised Strategic Network Plan (CSNP), as these are still being developed. For the full RESP, both will be key inputs into the RESP Pathways. The Pathways will incorporate individual demand and supply models into an integrated whole system model and apply the principles and levers set out in the Pathways Framework section.

To ensure coherence with how we explore future uncertainty, particularly as we develop multiple long-term Pathways, we propose the same number of long-term RESP Pathways as there are Future Energy Scenarios (FES). The SSEP will provide the starting point for distribution-level modelling of generation and storage.

Whole energy scope for the RESP Pathways

The RESP Pathways will reflect all electricity and gas distribution network supply and demand categories, where relevant. Table 8 sets out the proposed scope for the first RESP cycle based on the building blocks from FES and tRESP, expanded to reflect whole energy requirements for distribution networks.

Although RESP Pathways will focus on distribution level planning, they will also consider interactions at the transmission–distribution boundary, ensuring interface issues are anticipated and managed.

Table 8: Proposed scope for first RESP Cycle

	Categories	Energy types
Distribution level energy demand	1. Residential 2. Commercial 3. Industry 4. Transport (Road, rail, maritime and aviation) 5. Data centres 6. Energy producing other energy types (for example, gas for electricity, electricity for hydrogen)	Electricity Hydrogen Biomethane Natural gas Heat[18]
Distribution level energy supply	1. Front-of-the-meter generation/production 2. Behind-the-meter generation/production	
Distribution level energy storage and flexibility	Front-of-the-meter energy storage Behind-the-meter energy storage Supply-side flexibility Demand-side flexibility	

Consultation Question:

Do you agree with the scope of 'Whole Energy' for RESP outputs?

Spatial granularity of the outputs

Ofgem requires the RESP Pathways to be presented spatially down to Lower Layer Super Output Area (LSOA) level in England and Wales, and Data Zone level in Scotland, and to be modelled to these levels where practicable.

Stakeholders have told us that a consistent approach across energy types is important. Where possible, RESP will provide:

- energy outputs at LSOA and Data Zone level. We expect to provide annual demand and supply data for each energy type
- different spatial granularities for certain technologies where appropriate. For example, identifying locations for new onshore wind farms or biomethane supply may occur at a lower spatial granularity than locations of electric vehicle charging points
- coherence checks with national plans, the output of which may be compared at the Grid Supply Point (GSP) and National Transmission System offtake level (hydrogen will differ and is still to be defined)

[18] Heat networks are considered within the residential, commercial and industrial categories. "Heat" refers to heat energy delivered by heat networks.

- outputs at specific network granularities, for example at the primary substation level for electricity DNOs, to support network planning and the creation of Spatial Context. We are also engaging with GDNs to identify what level of granularity is appropriate for them

For GDNs, our Pathways will include information related to the use of low-pressure assets, such as the number of residential consumers transitioning to electricity for heating and hydrogen for heating. We will also consider the location and capacity of biomethane injection sites on the medium and higher-pressure networks.

We will also take a pragmatic approach to ensure that:

- Where data granularity varies or is limited, we will use the best available information while seeking opportunities to improve granularity over time.
- We will use the most appropriate spatial resolution for each task, aiming for consistency where it adds value.

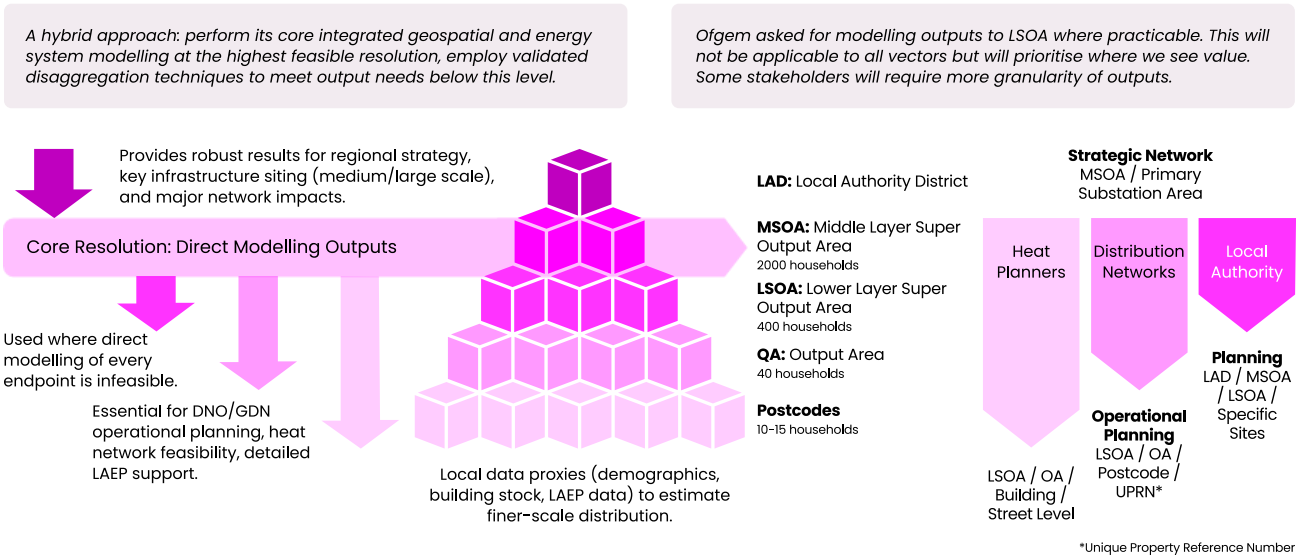


Figure 12: Indicative approach for how and why different spatial granularities may be required

Developing the RESP Pathways

The Aqua Book[19] sets out a recognised approach for analytical best practice. We have adopted this cycle for developing the RESP Pathways[20].

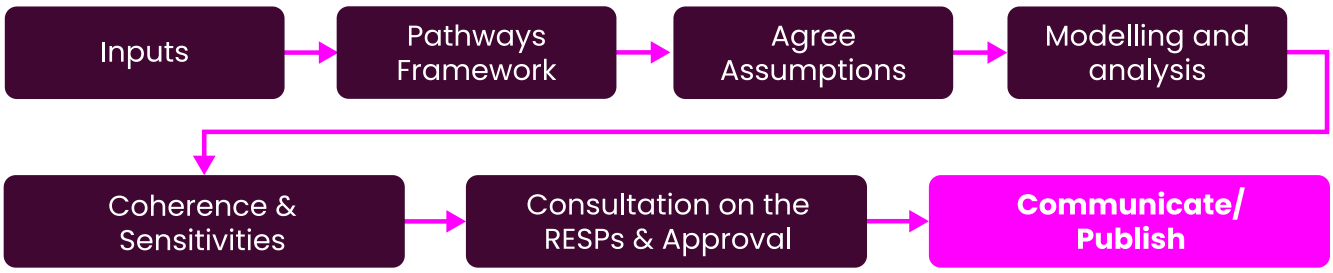


Figure 13: High-level process flow for RESP Pathways development

Data inputs in Pathways

Our approach to digital and data is fundamental to producing credible Pathways. The processes for data ingestion, transparency, validation and governance are set out in the Digital and Data Approach section. These processes cover:

- how we ingest data from third parties and stakeholders
- how data will flow between RESP components, including from Nations and Regions Contexts to Pathways
- how we ensure transparency in data collection and handling
- how we will continuously validate input data to test credibility

NESO has existing data available to support RESP development through FES development work, as well as emerging datasets being created by the SSEP. We will supplement this by engaging with transmission owners and DNOs to identify additional datasets and build a data library that supports Pathways development.

To create the Pathways, we will use both national inputs and more granular "bottom-up" local data. These include:

- data from the Nations and Regions Contexts and local actor data collection
- connections data
- SSEP and CP2030 Pathways, with the SSEP capacity outlook for generation and storage forming a key starting point for RESP modelling
- national policy, net zero targets and national plans for England, Scotland and Wales

The energy needs of significance to the nation or region, identified in tRESP and drawn out of the Nations and Regions Contexts, are a key input to Pathways. Some of these energy needs that are more complex may result in a SI Need as described in the Specification of Strategic Investment Need section. We will account for all energy needs of significance in

[19] Government Analysis Function, *The Aqua Book* (July 2025) - https://www.gov.uk/guidance/the-aqua-book
[20] Note: this is likely to be an iterative process with interactions across the different RESP components.

the inputs to Pathways to ensure the overall energy need is accounted for in the Pathway modelling.

All this data will feed into the Pathways development from the beginning, to help inform the Pathways Framework.

The RESP Pathways Framework

The RESP Pathways Framework provides a structured approach to explore uncertainty and provides the foundation for how we model, structure and test different Pathways. The RESP Pathways Framework will be built on the following:

- To ensure coherence with how we explore future uncertainty, we expect to take an approach similar to the FES and SSEP. We will leverage the existing approaches to develop narratives that explore routes to net zero, while considering key policy levers and areas of uncertainty that are critical to consider when developing multiple Pathways. These narratives will consider both the demand side and supply side levers, and we will build on the FES frameworks to understand what additional considerations are needed to reflect the unique characteristics of each nation and region.
- For our multiple long-term pathways, we propose to develop the same number of long-term RESP Pathways as there are in FES[21]. This will enable us to have consistent consideration of uncertainty across both transmission and distribution, and make it easy to see the implications of a narrative across both the transmission and distribution level.
- Pathway narratives are subject to change during the analytical process as we explore the impact of different levers and assumptions in uptakes of different technologies. We will engage with stakeholders as we develop the RESP Pathways Framework through the forums, working groups and Strategic Boards.

Decision-making as we develop Pathways

We will apply the decision-making principles described in the Developing the RESPs section, to evaluate Pathway options as we develop whole energy RESP Pathways. We will work collaboratively with stakeholders to develop the detailed multi-criteria decision-making approach required to appraise the RESP Pathways. This will be in accordance with the HM Treasury Green Book[22] where appropriate. This will provide a transparent basis for decision-making and allow us to test, compare and explain how different Pathway options perform.
Through modelling, analysis and stakeholder input, we will develop draft Pathways for review and approval by the RESP Strategic Boards.

Decision making process during Pathways modelling

During Pathway development we will evaluate the outcomes of sector-based and whole system modelling to identify where significant trade-offs are required. These may be

[21] In 2025 FES produced 3 pathways and a counter factual.
[22] HM Treasury Green Book and accompanying guidance - https://www.gov.uk/government/collections/the-green-book-and-accompanying-guidance-and-documents

needed to meet policy ambitions, resolve cross-energy or cross-regional issues, or to maintain coherence with the SSEP.

Where trade-offs arise within and across nations or regions, they will be reviewed through RESP governance. Working groups, including the RESP Technical Working Group and thematic groups, will be a central part of NESO's engagement approach as we develop the Pathways. They will provide a structured forum for collaboration with customers and stakeholders throughout the process.

Modelling outputs will be shared with the relevant RESP working groups, whose members represent a broad range of technical, social and community perspectives. Their feedback will inform refinements to ensure a balanced appraisal of credible options.

As part of our environmental approach, working groups will support us in considering environmental impacts throughout Pathway development.

We will communicate the societal impact associated with the RESP Pathways to support Strategic Board decision-making. During the development of Pathways, where conflicts arise between nations or regions, these will be dealt with following the conflict resolution approach outlined in the RESP External Governance section. The Strategic Boards will approve the RESPs for each nation and region, which will include the final RESP Pathways.

Modelling and analysis approach

Modelling and analysis provide the analytical foundation for the RESPs. They enable us to develop the Pathways through a structured approach that examines how energy demand, supply, storage and flexibility may change over time, under different assumptions and policy scenarios. This includes establishing a clear starting point, projecting credible future developments and analysing sector-specific trends. A whole system approach is essential to understand how different types of energy interact, influence each other and shape future outcomes.

We will use separate models in our analysis of demand, supply and type of energy. We will then combine model outputs in a whole system model that resolves emission and system balance constraints. Where possible, we will build on existing models, modifying as needed to meet RESP Pathways requirements.

Creating the baseline

The baseline is the starting point for Pathways modelling. It must reflect existing supply, demand and storage at a single agreed point in time, including the installed capacity or number of units for each technology.

The baseline will draw on a wide range of data sources, including local, national, regional and GB-wide datasets, public registers, connections registers and network data.

Where Pathways modelling builds on existing models, we will take care to ensure that they correspond to a consistent baseline year and baseline approach.

Short and long-term Pathways

Developing future Pathways requires us to project changes in demand, supply and flexibility across different types of energy. We will build these projections through detailed modelling, grounded in the Nations and Regions Contexts, and through data gained during engagement with customers and stakeholders. The RESP Pathways Framework serves as a foundation for developing multiple Pathways that reflect different narratives for the future and address associated long-term uncertainties across various influencing supply and demand. These factors will be represented by levers, which can be pulled when creating the narratives to show the sensitivity to different changes. The levers will cover multiple lenses, including:

- economic (for example, commodity costs)
- policy (for example, subsidy policy)
- societal (for example, population change)
- technological (for example, technology development)
- behavioural (for example, flexible behaviours)
- environmental (for example, weather patterns)

Levers may relate to timing (when change happens), location (where it happens) or scale (how large the change is).

Each Pathway will explore a different credible route to net zero, except for the counterfactual Pathway. Every nation and region will follow a consistent analytical approach, to ensure the same number of long-term Pathways are produced.

Figure 14 indicates how uncertainty will be accounted for in the short-term Pathway. This does not include the counterfactual pathway.

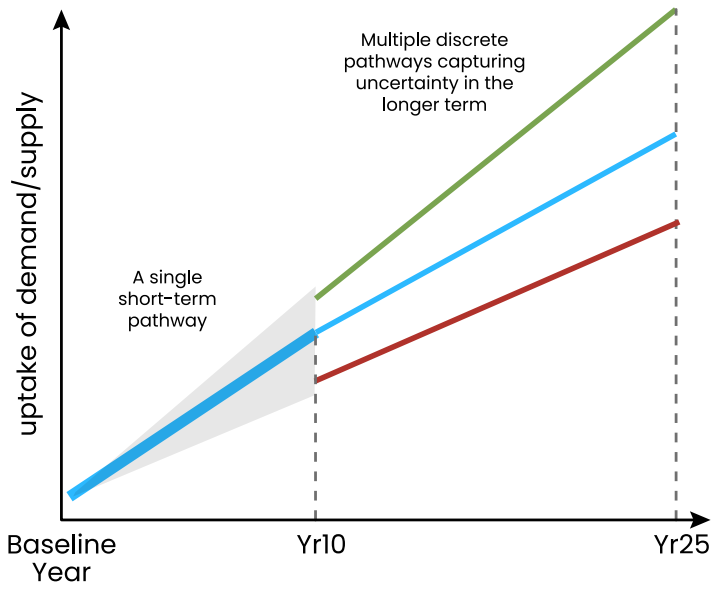


Figure 14: Illustration of short and long-term pathways

The assumptions feeding into the modelling play a critical role in Pathways development as they:

- define the parameters and boundaries within which the modelling takes place
- allow us to communicate some of the assumptions such as growth rates

We will document our modelling assumptions and share preliminary assumptions with the Technical Working Group for review. We will publish final assumptions alongside the Pathways.

Determining the short-term Pathway

We will produce a single 10-year short-term Pathway that provides a strategic view for investment over two price control cycles. Internally, we will model all Pathways starting from the baseline year, out to the end of the long-term time range. This ensures that every Pathway we consider represents a coherent possible future, applying the RESP Pathways Framework to test multiple futures. In order to create the long-term multiple pathways, we need to consider uncertainty in the 10-year timeframe and beyond. We will then determine and publish a single 10-year short-term, evidence-based Pathway for each nation and region, considering the following:

- coherence with national plans, including the SSEP and the UK government's Clean Power 2030 Action Plan
- deliverability of Pathways
- alignment with the decision-making principles outlined in the Developing the RESPs section.

We will work closely with relevant working groups and the Strategic Boards throughout the development of the Pathways. This will ensure Pathways are shaped by expert input and align with the objectives of the energy transition.

Demand modelling

RESP will produce projections of energy demand for electricity, natural gas, hydrogen and heat at a level of spatial detail that supports effective network planning. To do this RESP will use a suite of demand models, including

- heating (and heat networks)
- residential and commercial buildings (non-heating)
- industry demand
- road transport
- other transport (maritime, aviation, rail)
- data centres

To avoid duplication, we will apply clear, distinct definitions of demand and ensure each category is assigned to the appropriate demand model. We will also explore interactions across sectors, where this provides a more credible picture of future demand.

Where possible we will use and build on existing models developed for this purpose, ensuring they can input the bottom-up data sets required for the Pathways and model to the required granularity.

We have identified three priority sectors for demand modelling: industry, heating and transport.

- Industry: We will model industrial demand by considering both large industrial clusters and dispersed industrial sites to understand future energy needs.
- Heating: We will model future heating demand across homes and non-domestic buildings, covering both space heating and hot water. This includes technologies such as gas boilers, electric heat pumps, resistive heating, hybrid systems and storage-based systems. The modelling will also consider opportunities to use heat via heat networks, for example waste heat from industrial facilities, where potential opportunities are identified with consumers. DESNZ will actively share pipeline development and National Zoning Model outputs for England to support their consideration and integration into the RESPs.
- Transport: We will model energy demand for all relevant transport modes, prioritising road (light, medium and heavy-duty) and accounting for rail, aviation and maritime. Fuelling networks for fuels such as petrol and diesel, that fall outside distribution networks, will not be within the scope of RESP.

Supply modelling

The supply sectors modelled as part of RESP include electricity production, natural gas, biomethane, hydrogen and heat at the distribution level, along with the transmission level supply from SSEP, CSNP and Clean Power 2030. This allows us to check our Pathways for emission compliance and energy balance constraints.

Our modelling of supply Pathways will be informed by several data sources, including:

- historical trends
- customer and stakeholder input, including input from DNOs
- the connections queue for future sources of generation to be connected to the networks
- electricity and biomethane capacity registers
- Local Area Energy Plans (LAEPs) where available
- Local Heat and Energy Efficiency Strategies (LHEES) where available
- the in-development project register, outlined in the Digital and Data Approach section
- locations identified from SSEP outputs, Clean Power 2030 projections and other relevant analyses and studies.

NESO will use the supply project information to help shape both short-term and long-term supply Pathways. This will include determining the timing, capacity, and location of future energy supply. The principle sources of distribution energy sources are electricity and natural gas, biomethane and hydrogen.

For electricity, RESP will develop a baseline view of current distribution-connected electricity supply. This will come from several sources including the Feed-in-Tariff (FiT)

register, Embedded Capacity Registers (ECR) from the DNOs, the Capacity Market (CM) register, the MCS Database, amongst other sources. We will then develop projections of future electricity supply by considering stakeholder input, the Nations and Regions Contexts, SSEP and Clean Power 2030 pathways, recent growth trends from the Embedded Capacity Registers, LAEPs and LHEES (where available), the connections queue, historical trends and other data sources.

For natural gas, biomethane and hydrogen, the supply that takes place on the transmission system and that is covered by SSEP and CSNP will be used as supply inputs to the RESP Pathways.

Hydrogen supply within nations and regions that do not connect directly to the National Gas Transmission System will also be identified by SSEP and CSNP and will form the starting point for any RESP modelling. The baseline for current biomethane capacity will be developed using GDN data and wider industry sources. Future biomethane projections will be informed by industry growth trends, planned project pipelines, feedstock studies, historic patterns and developer input.

We are exploring methodologies for modelling local hydrogen production where it is expected to supply distribution networks, or be used within the nations and regions.

Whole systems modelling

RESP will take a whole system approach to modelling future energy demand and supply. This means capturing how different types of energy interact with one another, and how changes in one sector, such as industry, heating or transport, can affect the wider system.

Demand and supply interactions:

Key interactions that the modelling will need to capture include:

- the relationship between electricity and hydrogen, for example where electricity is used to produce hydrogen via electrolysers, or where hydrogen is used to generate electricity
- the production of electricity and hydrogen using natural gas or biomethane
- the production of heat using electricity, natural gas or biomethane

We will also consider interactions on the demand side, where activity in one sector can directly influence energy needs in another. For example, waste heat from energy-intensive industrial sectors, such as data centres, to supply nearby domestic and commercial buildings.

Constraints

All Pathways will be developed within a set of clear constraints. These constraints ensure that the RESPs remain credible, deliverable and aligned with GB-wide objectives. Constraints will be considered between RESP nations and regions and between transmission and distribution levels.

- Emissions constraints: With the exception of the counterfactual Pathway, all Pathways must meet legislated national emissions targets, including net zero by 2050 and interim Carbon Budgets. This does not mean that every nation and

region must individually reach net zero by 2050. Some areas may progress faster than others, provided that any nation with its own statutory target—such as Scotland's 2045 target—is fully compliant, and that the national position remains on track overall.

- System balance constraints: Because RESP takes a whole system approach, the energy system must remain balanced across all nations and regions, and across all types of energy included in scope. Maintaining system balance is a core part of our modelling and analysis, and is essential for developing realistic and deliverable Pathways.

As part of Pathways, we will derive an indicative peak demand at the primary substation level. This will be calculated using a simplified approach compared to that employed by the electricity DNOs. We will use this indicative peak to validate that the Pathways meet the system balancing constraints for electricity, aggregating up to GSP, SSEP zone and/or nationally. This will confirm that these demands can be balanced via supply, storage, and flexibility options[23].

Electricity flexibility in RESP Pathways:

Electricity flexibility will play an increasingly important role in how the electricity system is planned and operated, both locally and nationally. Flexibility sits at the intersection of several customer and market factors, including:

- changes in consumer behaviour
- the uptake of smart technologies, such as smart electric vehicle chargers
- the continued development of flexibility services and markets

Because the RESP focuses on distribution-level planning, our analysis of electricity flexibility will concentrate on:

- residential, industrial and commercial demand-side response, electric vehicles and storage
- distribution-connected generation and storage, including batteries and electrolysers

Demand and supply electricity flexibility

We will model electricity flexibility across both demand and supply. For example:

- flexibility from heat pumps and electric vehicles will be included in heating and transport modelling
- industrial demand-side response will be reflected in industrial demand modelling

Our flexibility assumptions will be documented in the Consistent Planning Assumptions. Wherever appropriate, we will develop standard half-hourly profiles for as many

[23] We will also use the indicative peak to calibrate our supply and demand models against historical data from the electricity DNOs.

generation, demand and storage technologies as practicable, regionalised where appropriate. These profiles will show both “normal” and “flexible” operation.

We will also develop approaches to diversify these profiles across Pathways, nations and regions, time periods and representative days.

Deliverability of Pathways

To ensure the RESP Pathways are credible and deliverable, we expect to assess various factors that could impact the deliverability of our Pathways. These could include assessing technology uptake rates against practical benchmarks and expert insight, reviewing technology readiness, and supply chain considerations. This will allow us to check whether the expected pace and scale of change is achievable, considering the different starting points and characteristics of each nation and region.

Interactions with SSEP

The first SSEP will set out a Pathway for electricity and hydrogen generation and storage, showing technology types, locations, capacities, volumes and deployment timelines.

This output will play two important roles in developing the RESP Pathways:

- Supply: It will provide the starting point for electricity generation and storage volumes in the selected SSEP Pathway. This will ensure RESP Pathways are coherent with GB level planning.
- Demand: It will provide coherence between RESP’s bottom-up demand analysis and the GB-wide, top-down view. The approach to maintaining coherence is outlined in the ‘coherence checks with SSEP and other NESO strategic outputs’ part of this section.

The SSEP, FES and RESP will all be updated on three-year cycles. As SSEP and FES will publish data in annual timesteps, we plan for RESP Pathways to do the same to support coherence checks.

The bottom-up approach taken in RESP may result in differences from the demand projections used in the SSEP. Where this occurs, and where RESP data is assessed to be credible, we will feed this into the next SSEP cycle to inform future iterations.

The first SSEP will not cover all energy types in scope for RESP, which takes a whole system approach. For the first RESPs, we plan to use the technologies in the FES Pathways to provide the GB-wide view of those technologies that are not in scope of the first SSEP. Over time, we expect to build a feedback loop in which the bottom-up RESP informs future SSEP updates, and SSEP outputs then provide the starting point for the next RESP cycle.

Coherence checks with SSEP and other NESO strategic outputs

The structure of the SSEP will allow us to view SSEP data at transmission level at RESP nation and region level, as well as SSEP zonal level. This will enable us to compare the bottom-up distribution level data in RESP with the SSEP GB-wide view. We expect to do this for demand volumes, as well as generation and storage capacity, across shared energy types.

The FES Pathways will provide the top-down view for technologies not covered in the first SSEP. We will apply a similar process to compare data at transmission level, recognising this may vary by sector and technology.

The Centralised Strategic Network Plan (CSNP) will develop GB-wide- strategic views, drawing on the SSEP. We plan to use the CSNP outputs to provide a framework for potential hydrogen infrastructure and supply. This will drive consistency in an environment which does not currently differentiate between the transmission and distribution of hydrogen, as it does for natural gas.

RESP will use this framework to assess the credibility of distribution-level hydrogen projects and to understand where additional infrastructure may be required. This approach will support two-way improvements across both RESP and CSNP.

Coherence checks will take place throughout the development of the Pathways, including:

- after baselines and frameworks are established, to confirm initial direction
- during whole system modelling, as a sense-check on credibility
- where inconsistencies are identified, to understand the root causes and work with the Strategic Boards, working groups and NESO's SSEP, CSNP and FES teams to agree resolutions.

Communicating Pathways

NESO will publish the Pathways in formats that are clear, visual and accessible. This will include geospatial views. We will communicate by distribution network area for the electricity DNOs and GDNs, and by nation and region for place-based customers and stakeholders.

We welcome your views on the most appropriate ways we should communicate and share Pathway outputs with you as part of the full RESPs.

Consultation Questions:

- How do you envisage using the RESP Pathways and how can we communicate Pathways to support you to use them effectively?
- Do you agree with the approach for the RESP Pathways? If not, please provide your reasoning.

Consistent Planning Assumptions

Ofgem expectations in Draft RESP Guidance:

- Section 3.29: NESO "must develop a set of Consistent Planning Assumptions to drive consistent derivation of network impacts from the RESP outputs."
- Section 3.30: "The RESP Methodology must set out how NESO will develop a single set of Consistent Planning Assumptions to be used across all RESP nations and regions."
- Section 3.33: Ofgem "expect NESO to develop and review the Consistent Planning Assumptions transparently, drawing on stakeholder expertise and using the best available data."
- Section 3.34: Ofgem expect NESO "to develop guidance for stakeholders, including DNOs and GDNs, on how to apply the Consistent Planning Assumptions to translate projected changes in supply and demand into predicted network impacts."

Overview of Consistent Planning Assumptions

Consistent Planning Assumptions are essential for securing a common basis for planning across distribution networks. By defining a shared set of planning assumptions for key technologies and sectors, we can enable consistent assessment of network impact - supporting coordinated and efficient investment across distribution networks. This will improve consistency, and hence confidence, in identifying investment needs and ensure that network plans are consistently aligned to each of the RESPs.

NESO recognises that the nations and regions have different characteristics and conditions. To reflect this, we will structure our Consistent Planning Assumptions in a way that allows for geographic variation rather than imposing a single uniform value. For example, this means that the values used in weather dependent Consistent Planning Assumptions will vary across RESP nations and regions.

The Consistent Planning Assumptions will set out a common modelling approach and a shared set of assumptions for estimating supply and demand impacts on distribution networks. Although Pathways and Consistent Planning Assumptions are separate RESP components, they are closely connected and will be developed in parallel.

We will develop the Consistent Planning Assumptions collaboratively with electricity and gas distribution network operators through the Technical Working Group. This approach supports transparency and consistency, and it allows distribution networks to propose the use of their existing best practices in developing the Consistent Planning Assumptions.

How does this relate to the tRESP output?

In tRESP, we prioritised and developed Consistent Planning Assumptions for electric vehicles and residential heat pumps. We also developed Consistent Planning Assumptions for energy efficiency, specifically regarding changes in residential appliance and lighting demand from existing premises. These Consistent Planning Assumptions will form the starting point for the full RESP and be extended to cover other priority technologies.

Developing Consistent Planning Assumptions

The Consistent Planning Assumptions can be grouped into categories, based on the technology and energy type to which they apply. For example, we will define a number of Consistent Planning Assumptions that relate to electric vehicles and the impact they have on electricity distribution networks. This may include half-hourly demand profiles for different charger types and flexibility behaviours, the proportion of consumers with each behaviour, and assumptions related to evaluating the impact of different levels of load diversity.

For each of these Consistent Planning Assumptions, we will then define values, referring to the numerical value of the assumption. These values can be a single value, a range of values or a set of values, depending on the complexity of the Consistent Planning Assumption. For example, some Consistent Planning Assumptions will be sensitive to geographical variation, and we will therefore define location-specific values where appropriate. Others will have different values depending on weather conditions or time of year and will be defined by representative day or temperature.

Figure 15 describes the process we will follow to develop the Consistent Planning Assumptions. First, we will identify and prioritise assumption categories, then we will define the Consistent Planning Assumptions required to assess network impact for each category before determining the values for each of the defined Consistent Planning Assumptions.

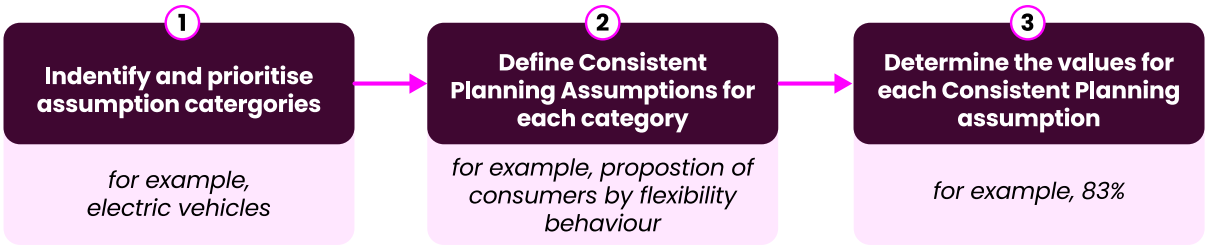


Figure 15: Overview of the process for developing Consistent Planning Assumptions

Identify and prioritise assumption categories

To develop the Consistent Planning Assumptions, we will review and refine a list of categories to prioritise (see Table 9 for examples). At the start of each RESP cycle, we will update this list to reflect changes in the energy landscape. For example, by adding new categories or removing those that are no longer relevant.

In line with the Ofgem guidance that prioritisation should focus on assumptions most material to deriving consistent network impacts and diversity assumptions, we propose the following criteria to identify priority assumptions that could materially influence the analysis and maximise value. The criteria include:

- categories that represent a large share of total energy demand or supply
- categories expected to grow significantly or materially impact peak demand or supply
- categories with high uncertainty or low consistency between network areas

Electric vehicles and domestic heat pumps were the categories for the Consistent Planning Assumptions prioritised in tRESP, as they are the biggest drivers for increased peak demand in FES 2025.

Table 9: Example of categories for RESP Consistent Planning Assumptions (not exhaustive)

Air conditioning	District heating	Hydrogen blending
Home appliances	Electric heating	Industrial processes
Biomethane production	Electrical vehicles	Hydroelectric plants
Boilers	Electrolysers	Solar farms
Combined heat and powers (CHPs)	Energy storage	Tidal power plants
Data centres	Geothermal power plants	Wave power plants
Deman flexibility	Heat pumps	Wind farms

Consultation Question:

Do you agree with our prioritisation approach and criteria set out to evaluate the validity of the Consistent Planning Assumptions values? Please provide your reasoning.

Flexibility

As part of the Clean Flexibility Roadmap[24], we are committed to embedding flexibility as we develop the RESPs. Flexibility and consumer behaviour will influence the shape of energy demand and supply profiles, including peak usage. To support consistent planning, NESO will set assumptions on flexibility and consumer behaviour so that distribution networks can apply a common basis when modelling future needs.

Flexibility is currently a greater consideration for electricity distribution networks than for gas. This reflects limited expected growth in residential gas demand and the inherent flexibility provided by linepack storage in higher-pressure gas networks.

Contracted flexibility will not be included within the RESPs. Distribution networks will remain responsible for assessing the need for, and impact of, contracted flexibility services as

[24] Clean flexibility roadmap - https://www.gov.uk/government/publications/clean-flexibility-roadmap

part of their investment planning. RESP will not prescribe how networks should quantify the impact of contracted flexibility.

Define Consistent Planning Assumptions for each category

As the Pathways and Consistent Planning Assumptions are closely linked, we need a clear understanding of the end-to-end modelling approach for each energy type. This allows us to identify which calculations are required to model supply and demand impacts on distribution systems, and therefore which assumptions must be defined.

We will map the end-to-end modelling process for each assumption category and identify the Consistent Planning Assumptions needed at each stage. Examples of potential Consistent Planning Assumptions include:

- half-hourly electricity demand profiles for a household on a flexible tariff
- proportion of electric vehicle charging by charger type
- percentage of hydrogen available for blending into the gas network
- reduction in gas demand from switching industrial processes to low-carbon fuels
- demand available for Demand Side Response (kW)

Determine the values for Consistent Planning Assumptions

Once we have defined a list of Consistent Planning Assumptions for each category, we will determine their values, including their spatial and temporal granularity, meaning whether the Consistent Planning Assumptions can be defined by a single value, a range of values, or a distinct set of values (for example, a table of values, defined for a set of geographies and future years). Where possible, we will leverage existing research and data, including reviewing assumptions documented in published reports and models alongside public data sources. In some cases, it will be necessary to perform our own analysis and processing of this existing data. For new technologies, we may need to set up innovation projects to develop appropriate values.

To ensure appropriate scope and granularity of values for the Consistent Planning Assumptions, sensitivity analyses may be appropriate to test:

- The sensitivity of the modelled network impact to the Consistent Planning Assumptions.
- The impact of geographic variation within the Consistent Planning Assumptions on the modelled network impact.

This approach enables identification of the appropriate range for Consistent Planning Assumptions, clarifies where geographic differences should be considered, and indicates where variations in values could cause inconsistencies.

Throughout this process, we will be engaging with electricity and gas distribution network operators and seeking input from other stakeholders and industry subject matter experts.

Criteria for validating values for Consistent Planning Assumptions

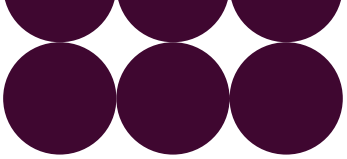
To support the selection of values for the Consistent Planning Assumptions, we have designed a list of overarching criteria to evaluate the selected values. These serve as a foundational guide to ensure all values are evaluated consistently across factors such as data reliability, relevance and locationality (see Table 10). These criteria can be applied to the Consistent Planning Assumptions across a range of technologies, ensuring a uniform approach across various contexts.

Table 10: Criteria used to evaluate the reliability of values for Consistent Planning Assumptions.

Criteria	Definition
Based on reliable source	Based on a credible, reliable source, for example, government sources, consumer trials, peer-reviewed journals.
Be relevant	Based on data/assumption pertaining directly to the technology and/or impact in question.
Be up to date	Source data was gathered as recently as possible (considering reliability and relevance), with the latest version of the data is being used. Technological advancements or changes in consumer behaviour in recent years have not made the assumption out of date.
Be location specific	The assumption is location specific and relates to a Great Britain (GB) specific study. Where data quality justifies and implementation is practicable, it may be available by Scotland, Wales and the UK government-defined English regions[25], by local authority, and appropriate granularity for electricity and gas networks.
Considers changes through time	Where technological advancements or changes in efficiency or performance are expected to influence an assumption over time, this impact should be quantified.
Considers weather and climate impact	If weather or climate change are expected to impact this assumption, this should be quantified.

Considering geographic variation

[25] Noting that the English RESP regions are different to the UK Government-defined English regions



A key objective of the Consistent Planning Assumptions is to drive consistency in network planning. However, there is a trade-off to consider between consistency and reflecting variation in network impacts based on geography.

For example, outdoor air temperature varies significantly across GB and as a result, the impact of heat pumps on distribution networks may vary by location. Therefore, the value for a Consistent Planning Assumption on heat pump performance may be a curve that reflects how the Coefficient of Performance (CoP) changes with outdoor temperature.

In addition to temperature-dependent Consistent Planning Assumptions, geographic variation could be considered for weather-dependent Consistent Planning Assumptions, for example, wind generation profiles, and demand or generation profiles influenced by daylight hours.

In general, where validated datasets clearly show geographic variation in values, we will aim to reflect these differences (within pragmatic limits). While assigning a unique value to each Lower Super Output Area (LSOA) may not be feasible, using geographically distinct values for each electricity and gas distribution network licence area may be appropriate.

Geographic variation in Consistent Planning Assumption values may be represented using one of the following formats:

- a default value with a defined deviation range (minimum and maximum)
- a table of values for a set of defined geospatial areas
- a curve that varies according to a specific factor
- a formula that incorporates a geography variation factor

Consistent Planning Assumptions publication

The Consistent Planning Assumptions will be developed collaboratively with the Technical Working Group. Once the values for the Consistent Planning Assumptions are determined, they will be presented to the GB steering committee for review and feedback. Following this NESO will hold external webinars to gain wider insights before updating and publishing a single document on the NESO website. The Strategic Boards will also be able to provide feedback on the Consistent Planning Assumptions relating to their nation or region.

We intend to publish the Consistent Planning Assumptions, including an explanation for how the assumptions should be applied, the values (including units), geographical variation (where relevant), and references to the relevant source data. We intend to include a RAG rating of each Consistent Planning Assumption value against the criteria outlined in Table 10.

We will work with the electricity and gas distribution networks on the most appropriate data sharing approach (for example, a workbook, or a data platform), and Consistent Planning Assumptions will be available to the general public.

The Consistent Planning Assumptions publication will align with the Aqua Book's guidance on documenting assumptions, specifically its "assumptions log" framework.

Roles and responsibilities

Table 11: Roles and responsibilities for the development of Consistent Planning Assumptions

Group	Key roles and responsibilities for the development of Consistent Planning Assumptions
NESO	• Lead the development of the Consistent Planning Assumptions. • Manage and organise the Technical Working Group for collaborative development of Consistent Planning Assumptions.
Electricity DNOs and GDNs	• Provide relevant data and information on previous modelling of Consistent Planning Assumptions, including existing best practice. • Actively participate and contribute to the Technical Working Group to support development of the Consistent Planning Assumptions. • Provide feedback on the Consistent Planning Assumptions.
Industrial subject matter experts	• Provide relevant data. • Provide feedback on the Consistent Planning Assumptions' categories and values.
GB Steering Committee	• Review and provide steer to the Consistent Planning Assumptions.

Consultation Question:

Do you agree with our approach for the Consistent Planning Assumptions? Please provide your reasoning?

Spatial Context

Ofgem expectations in Draft RESP Guidance:

- Section 3.19: "The RESP Methodology must set out the approach to developing an accessible digital geospatial mapping tool that presents the RESP Pathways against electricity and gas distribution network capacity availability and whole-system data to show the resulting system need."
- Section 3.20: "The tool must present data using both a geographical and network asset basis to allow users to interrogate system needs, including where potential constraints may emerge, spatially and temporally."
- Section 3.21: NESO "must develop a formalised coordination process with all DNOs and GDNs, outlining how relevant network data will be exchanged to inform the geospatial tool."

Overview of the Spatial Context

The Spatial Context is a key geospatial component of the RESPs. It will provide an accessible digital mapping tool that visualises RESP Pathways (future demand and generation scenarios) alongside existing and planned electricity and gas distribution network capacities, as well as broader whole system data.

It offers an integrated, place-based representation of the energy system by bringing together data across electricity, gas, and other energy types into a single geospatial platform. This enables stakeholders to explore how future scenarios interact with infrastructure and to interrogate system needs both spatially and temporally. The tool will support more coordinated whole system planning and complement existing single-energy type approaches.

By combining Pathway data with distribution network capacity information through both geographic and asset-based views, the Spatial Context reveals where system needs and potential constraints may arise. This insight lays the foundation for identifying Strategic Investment Needs (SI Needs) and should support transparent, whole system planning and strengthen collaboration across the energy sector.

How does this relate to the tRESP output?

The Spatial Context component that overlays Pathways against network capacity is not included in the scope of the tRESP Output.

Developing the Spatial Context

The Spatial Context will integrate distribution network capacity data with future energy Pathways to produce a multi-energy type view of system needs at an appropriate spatial granularity relevant to each energy type. This is likely to be at the level of Lower Super Output Area (LSOA) or Data Zone.

A whole energy Spatial Context

We will work collaboratively electricity and gas networks, and wider stakeholders to develop the Spatial Context component, ensuring it meets user needs and delivers meaningful value. A key focus will be on how system needs are identified across different energy types, to support whole system planning. Table 12 outlines what the Spatial Context will include for the different energy types.

Table 12: What spatial Context will include for different energy types

Energy type	Identifying system needs
Electricity	Overlay peak demand projections against current and forecast headroom capacity at primary substation level to identify where substation capacity is exceeded by RESP Pathways.

Natural gas and biomethane	Mapping future gas demand across all gas distribution networks to provide a spatial view of how gas demand could change over time. Mapping future biomethane injections into the gas distribution network.
Hydrogen	Mapping future hydrogen demand across nations and regions and leveraging inputs from the Strategic Spatial Energy Plan (SSEP) and Centralised Strategic Network Plan (CSNP).
Heat networks	Mapping existing and planned heat network zones.

Spatial Context for electricity

Developing the Spatial Context for electricity requires the calculation of peak demand at primary substation level and comparing this to the substation headroom capacity. We have considered two options for developing the Spatial Context for electricity, one that uses a NESO derived indicative peak demand and another based on the more detailed peak demand calculations by DNOs. These two options have timing implications on when the RESPs can be published.

Option 1: Spatial Context for electricity developed using a NESO-derived indicative peak demand and published as part of the full RESPs

NESO would produce an indicative view of peak demand using a simplified approach compared to DNOs. This view would be calculated using outputs from the RESP Pathways and Consistent Planning Assumptions.

Benefits:

- This would allow an indicative Spatial Context for electricity to be published as part of the whole energy Spatial Context in the original timescales.
- It offers a consistent approach to deriving and visualising system needs. It allows us to identify areas of SI Need and present these as part of the full RESPs.
- We can compare this indicative view with the more-detailed DNO process and assess the materiality between the two approaches. The insights can then be used to refine the approach for future RESPs.

Limitations:

- This approach could result in system needs being over or underestimated as it does not account for non-thermal network constraints, such as voltage and fault-level load transfer between assets.
- Contrasting outputs between NESO and DNOs may lead to confusion among stakeholders.

- DNOs would still be required to conduct peak demand modelling on the RESP Pathways and Consistent Planning Assumptions.
- It duplicates some of the activity that DNOs undertake as part of the annual Network Scenario Headroom Report (NSHR).

Option 2: Spatial Context for electricity developed using a DNO-derived detailed peak demand, DNO process timings, included within RESP timelines, to allow Spatial Context to be published as part of the full RESPs

NESO would provide the pre-consultation RESP Pathways and Consistent Planning Assumptions data to the DNOs. The DNOs would calculate more accurate peak demands and overlay these against their current and forecast headroom, as part of the NSHR process. DNOs would then provide these outputs back to NESO for inclusion in the geospatial tool. Timelines would need to be extended to allow for the DNO process.

Benefits:

- This Spatial Context uses the more accurate peak demand and headroom that accounts for all network constraints, load transfer and local flexibility solutions. This ensures the resulting system need hotspots are based on an accurate network view.
- It avoids duplication of the existing DNO NSHR process and enables RESP components to feed directly into existing network planning activity.

Limitations:

- This approach would require DNOs to have access to the RESP pathways and Consistent Planning Assumptions before public consultation.
- Delivering this element of the RESP within the original December 2027 timeline is not considered possible.

Consultation Question:

Our preferred approach is to move the RESP delivery dates back to enable option 2. Do you support this approach and are there any other wider factors we should consider?

Spatial Context for gas and biomethane

We are still developing our approach to the Spatial Context for natural gas and biomethane. Integrating a view on gas and biomethane ensures that we provide a whole energy view to enable multi-energy type planning. For natural gas, we expect the spatial output to focus on providing a view of projected changes in gas demand over time, across all gas distribution networks (GDNs). We will also overlay a spatial view of future biomethane supply injections into the GDNs.

We will work collaboratively with the GDNs to agree the appropriate gas demands to integrate into our geospatial tool. We will consider the role of the detailed GDN forecasts

developed as part of their Long-Term Development Statements (LTDS) and seek to develop a coherent view on the future uptake of biomethane.

Spatial Context for hydrogen

The Spatial Context for hydrogen will visualise areas where hydrogen demand is expected across the nations and regions. We will leverage the outputs from the SSEP and CSNP particularly as there is currently no clear distinction between transmission and distribution network infrastructure for hydrogen. We will consider which outputs might be relevant for consideration as we develop the Spatial Context for hydrogen. As we understand the local hydrogen needs of stakeholders and industries in the nations and regions, we expect to incorporate this into the future national hydrogen modelling by the SSEP and CSNP.

Spatial Context for heat networks

The Spatial Context for heat networks will map established and planned heat network zones within the RESP nations and regions. We will work collaboratively with both the Department for Energy Security and Net Zero (DESNZ) and local authorities to understand the location and sizing of future heat network zones and how these can be integrated into our geospatial tool to communicate future heat network needs.

The geospatial tool: visual components and granularity

We will work collaboratively with customers and stakeholders to develop the Spatial Context geospatial tool. We are taking a product-based approach to the development of all the RESP components and will engage with customers and stakeholders to understand their needs.

The digital geospatial tool will present data using a dual approach: 1) a geographical basis and 2) a network asset basis. It is expected to offer distinct, layers that users can toggle and interrogate to understand system needs both spatially and temporally. As we develop the geospatial tool, we will adhere to any restrictions on assets classified as National Critical Infrastructure (CNI) which are not publicly available on maps.

Table 13: Examples of what the different geospatial layers could visualise.

Geospatial Layer	**Content Focus**	**Visualisation and Granularity examples**
RESP Pathways (demand and supply)	Spatial view of Pathways including whole system data (for example, existing heat networks, hydrogen demand, biomethane supply injection).	Heatmaps or polygon mapping at the LSOA/Data Zone level. Location of biomethane supply.
Network asset basis[26]	Network licence areas, locations of major distribution assets	Points, areas and lines on the map, could be colour-

[26] We will adhere to any restrictions on CNI

	(substations, gas off-takes, primary feeders).	coded or sized based on capacity or headroom.
System needs / constraints	The resulting comparison of demand vs. network capacity, identifying areas of system need.	Constraint hotspots colour coded heat maps identifying areas where network capacity is expected to be exceeded.
Geographical context	Base layers for orientation and administrative boundaries (RESP nations and regions, DNO/GDN licence areas, local authorities).	Administrative and network boundaries.

Data exchange coordination

We will work with all DNOs and GDNs to develop a formalised coordination process on how network data will be exchanged to inform the development of the geospatial tool. This will include standardised processes for input data submissions and agreed timelines. We will leverage all relevant datasets already publicly provided by networks through their open data portals. Where additional datasets are required, we will work with DNOs and GDNs to establish formal data exchange and standardisation. The Spatial Context will be developed in collaboration with stakeholders, leveraging appropriate working groups. The Spatial Context will be approved by the Strategic Boards alongside the full RESPs.

Consultation Questions:

- Do you agree with our proposed approach for the Spatial Context? Please provide your reasoning.
- How do you envisage using the Spatial Context and how can we communicate these outputs to support you to use it effectively?

Specification of Strategic Investment Need

Ofgem expectations in Draft RESP Guidance:

- Section 3.22: "NESO must set out its approach to identifying, categorising, and providing appropriately detailed specifications of areas of Strategic Investment Need within each of the RESP nations and regions."
- Section 3.23: "The RESP methodology must describe how potential areas of Strategic Investment Need in each of the RESP nations and regions will be identified through structured nation and region stakeholder engagement, including the production of the Nations and Regions Contexts, and through analysis of the RESP Pathways and Spatial Context outputs."

Overview of Specification of Strategic Investment Need

Strategic Investment Need (SI Need) is an important part of the RESP approach. It enables proactive investment in the whole energy system to support economic growth and decarbonisation goals.

The specification of areas of SI Need is intended to support coordinated network development (between electricity and gas and distribution and transmission) and provide justification of energy need for use in the periodic regulatory business plan submissions of distribution networks. This means that these are likely to be areas where "business as usual" approaches will not deliver the right or more efficient investment in the optimum timescales.

It is important to note that the role of RESP role is to highlight areas where investment may be needed. However, undertaking network analysis and thus determining the specific network investments required in response to these needs remains the responsibility of the network operators.

SI Need focuses on energy needs that are:

- of significance to the nation or region (necessary to deliver key nation and region values and priorities – as set in the Nations and Regions Contexts)
- of high system value
- more complex to assess due to timescales, geography, or required trade-offs between energy types, priorities or stakeholders
- those requiring network investment ahead of certain needs

Areas of SI Need will be derived from a coherent, whole system view of national and regional priorities.

SI Need is not about:

- straight forward (non-complex) energy needs of significance to the nation or region that will be met by "business as usual" approaches to network planning
- the maintenance of networks to ensure safety, resilience and security of supply
- straight forward, lower-value, load-related expenses resulting from single-energy-type network planning
- energy needs that are currently well provided for through the current connections processes run by energy networks including those already

Key definitions

We have defined these key terms, used throughout this section.

Table 14: Key definitions, SI Need

Term	Definition
Nation and region significance	Demonstrating alignment with nation and region policies, strategies and key priorities.
System value	Overall benefit that strategic energy need brings to the entire energy system – demonstrated through how they align to: net zero contribution, economic, technical and societal values.
Complex strategic energy need	Energy needs (supply or demand) that are of significance in the nation or region, of high system value and are complex to assess due to timescales, geography, or required trade-offs between energy types, priorities or stakeholders. These needs cannot be met by "business as usual" approaches to network planning.
RESP Strategic Investment Need	Areas in which the identified complex strategic energy need cannot be met by the networks without further investment.
Uncertainty	The degree to which the energy need is subject to variability or lack of clarity in its scope, external risks and data.
Energy need insight	A structured summary of a specific energy need within a nation or region. Designed to capture the essential details and supporting information that inform the assessment process for SI Need, for example, scope of the energy need and details relating to system value and uncertainty.

How does this relate to the tRESP output?

For the full RESP, we will build on the tRESP SI Need, particularly in relation to these areas:

- **Identifying complex strategic energy needs:** We are taking a different approach to tRESP by drawing from priorities and complexities identified in the Nations and Regions Contexts, pathway modelling and spatial context. We will be using digital tools to improve efficiency and collaboration with external stakeholders including an RFI playing a supporting role.
- **System value and uncertainty assessment:** We will build on the assessment process used for tRESP by extending the use of quantitative and qualitative data to understand the impact of the energy need against key criteria, as well as uncertainties related to the scope of the energy need.
- **In development register:** An initial in-development register will be populated with the out-of-scope energy needs from the tRESP SI Needs process. This will be a key input into the full RESP SI Need assessment process. There is more information on the in-development register in the Digital and Data Approach section.

Developing the Specification of Strategic Investment Need

Key elements of the SI Need component

The four elements required to determine a complex SI Need are illustrated in Figure 16. The first two elements determine whether the energy need can be considered a strategic energy need. The third and fourth elements indicates whether the energy need is considered complex and additional investment is needed in the distribution networks to enable the energy need. If all four elements are met, we will specify the area for SI Need. These elements are explained in more detail in the section on identifying SI Need.

Figure 16: Key elements of the RESP Strategic Investment Need

The bullet points below provide a brief description and potential examples of complex energy needs:

- **Timescale complexities:** Areas of strategic energy need that are likely to be complex in terms of delivery over time. For example, the energy needs for an economic growth area such as AI growth zones, freeports or investment zones.

- **Geographical complexities:** Areas of strategic energy need that span more than one network operator. For example, a strategic development area identified within a local government plan with significant energy needs that spans the boundary of two network license areas.
- **Trade-off complexities:** Areas of strategic energy need that may have conflicting objectives when it comes to energy types, priorities and stakeholders. For example, the decarbonisation of an industrial cluster involving more than one energy type and stakeholders with potentially conflicting objectives or require coordination between vectors.

Consultation Question:

Do you agree with our description of the three types of complexity and the examples indicated? What additional considerations should we take to categorise complex strategic energy needs? Please provide your reasoning.

Developing the SI Need component

A clear, step-by-step process is proposed for identifying SI Need. This methodology is designed to be vision-led, aligning investment in the energy distribution networks with long-term decarbonisation and development goals. The step-by-step process is illustrated in Figure 17 and explained further in the subsequent sections.

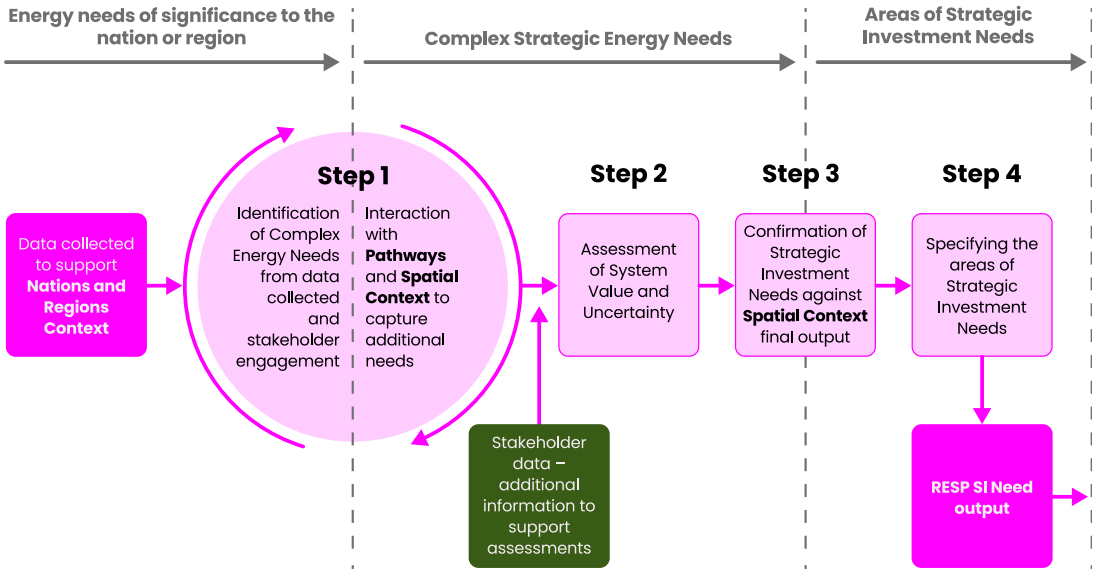


Figure 17: Key process steps for specification of areas of Strategic Investment Need

Identifying SI Need – proposed approach

Step 1: Identification of complex energy needs

We will identify complex energy needs using a range of data sources and engagement inputs. Key inputs include:

- **Nations and Regions Contexts:** We will use data included in the Nations and Regions Contexts to identify key energy priorities that are of significance to the nation or region. The energy need will be considered of significance when aligned with national or regional priorities and is expected to make a significant contribution to one or more of these priorities. We are exploring automation and other digital tools to support this process and get useful insights from the data. See the Digital and Data Approach section for more on RESP data governance.
- **In-development register:** This captures early-stage projects that might evolve or combine into complex areas of energy need that could lead to SI Need.
- **Spatial context:** Will show constraints ('hotspots') and other geographical or trade-off complexities when mapping pathways against network data – this input will be considered once pathways have been spatially modelled against network data, but prior to the product being finalised. The final output of Spatial Context will be used later in the SI Need process to confirm an investment need.

In addition to data, the RESP team will engage with place-based customers and stakeholders to gather bottom-up insights. This engagement will help us to identify complex energy needs. Engagement activities include:

- **Working Groups:** These sessions provide opportunities to gather input and perspectives from a broad range of customers and stakeholders.
- **Place-based engagement:** We will engage with place-based customers and stakeholders on both an ad-hoc and ongoing basis. This may be through industry events and/or one-to-one meetings. This engagement is likely to signpost us towards potential complex energy needs for us to explore and gather data on.

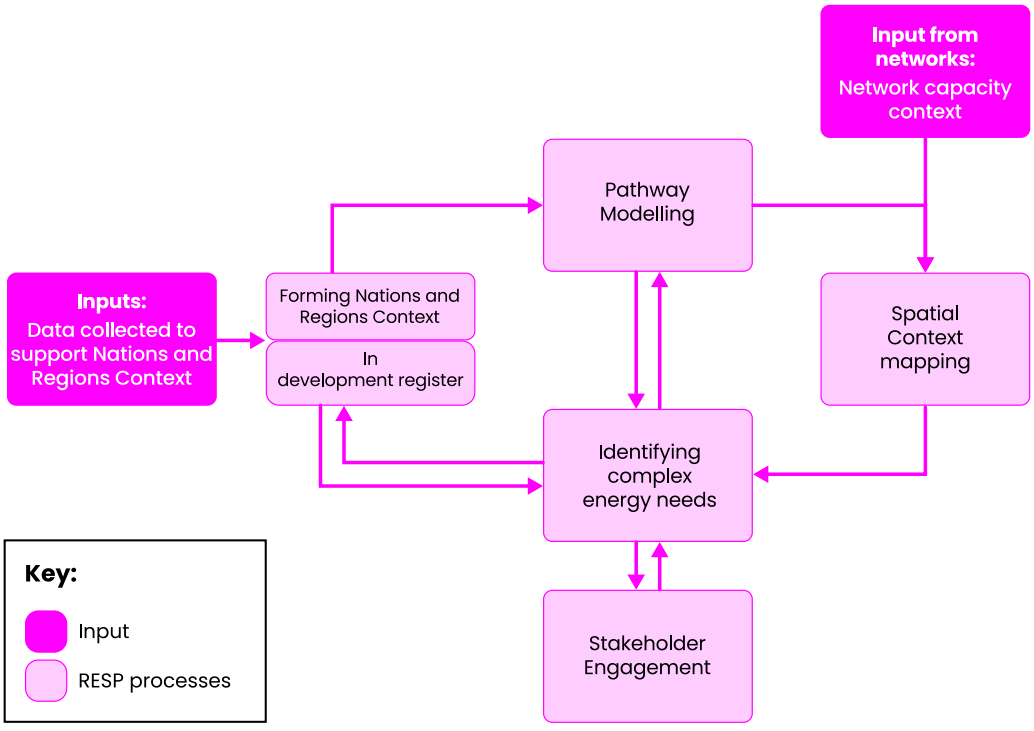


Figure 18: Identifying complex energy needs

Establishing complexity of energy need

The energy needs that are of significance to the nation or region will be checked to establish whether they are likely to be complex. This check is intended to be relatively high-level to screen out ones that are clearly not complex. The uncertainty assessment during step 2 will provide a more detail view of the complexities.

Complex energy needs are likely to be complex in terms of delivery over time (timescale complexities), spanning more than one network operator (geographical complexities), or have conflicting objectives when it comes to energy types, priorities and stakeholders (trade-off complexities).

These complex energy needs will move to a more detailed system value assessment in the next stage. Energy needs not considered complex will continue to be used to support the development of Pathways and the in-development register.

Requesting additional information to support assessments (RFI)

Our aim is to build as much of our knowledge of the complex energy needs as we can by using insights from data already collected to inform the Nations and Regions Contexts. We will also draw from the data included in the in-development register that will start to be populated during the tRESP process.

Once we identify the energy need and confirm it is complex, we will ask the stakeholders who hold detailed knowledge of the complex energy need for more information. This is an opportunity for customers and stakeholders to verify the information held on the existing energy needs, fill any gaps in our knowledge, inform us of any sensitivities and data confidentiality, and provide supporting evidence where requested. The aim is to reduce the resource requirement for this activity by being more targeted in our approach to the RFI and pre-populating the 'energy need insights' before we request further information from customers and stakeholders.

What will be included in the 'energy need insight'?

The 'energy need insight' will include general information about the energy need which, at a minimum, will be the information required to inform our final specification and the uncertainty relating to that information: location, capacity, expected demand growth, energy type. We will need the information to assess and validate system value and uncertainty.

Step 2: Assessment of system value and uncertainty

We will use a framework based on system value and uncertainty to assess the energy needs. This will allow us to decide whether the need is complex and strategic and therefore in scope for the RESP Strategic Investment Need output. It will also provide a whole system view of energy needs and support a fair and objective evaluation of investment options. Lastly, this framework will form the basis of potential trade-offs needed between energy types, priorities or actors.

Approach to assessing system value

The system value assessment will align with the decision-making principles set out in the Developing the RESPs section. This is to ensure consistency and coherence in our approach. Our proposed approach to system value scoring is in Appendix 11.

This is a complex area and the specific criteria, method of quantification, tools for analysis weightings, and implementation of the framework are still being developed by NESO. We will continue to engage with Ofgem, networks and other stakeholders to further develop this. The values chosen align with:

- the approach taken in wider Strategic Energy Plan methodologies developed by NESO
- Ofgem's definition of place-based engagement factors
- the tRESP Values
- the World Economic Forum's definition of system value

Uncertainty of complex energy needs

The assessment of uncertainty follows the guidance in the Aqua Book, which gives advice on how to produce quality analysis. In particular, Chapter 8 'Analysing Uncertainty' in the Aqua Book suggests identifying sources of uncertainty (factors that might influence the expected outcome of analysis) and then assessing their potential impact.

In line with this guidance, the following approach has been developed to identify and assess uncertainty within the strategic investment needs process.

Identification of uncertainty

During the tRESP SI Need assessment, four key sources of uncertainty were identified:

- consenting status
- policy stability
- technology maturity
- funding status

We have built upon these foundations for the full RESP methodology by incorporating additional uncertainty factors relevant to assessing energy needs.

The Aqua Book also describes how uncertainty, risk and error can be identified and assessed. An aligned approach has been taken here, with sources of uncertainty grouped into three main categories:

i. **Scope-related**: These factors relate to the definition and characteristics of the energy need:
    - location
    - capacity/scale
    - energy type
    - timescales

    These elements help clarify what the energy need is and how certain these aspects are, and they are essential for informing the specification for strategic investment needs.

ii. **Risk-related**: These factors influence the likelihood of the energy need being realised:
    - planning certainty
    - funding certainty
    - Technology Readiness Level (TRL)
    - policy stability

    These factors were part of the tRESP SI Need uncertainty assessment criteria.

iii. **Data and analytical structure:** This category addresses how confident we are in the data used to assess the complex energy need submissions. We will check the credibility of the data when it is first submitted, as outlined in the Digital and Data Approach, and evaluate it against specific uncertainty criteria. This was not part of the tRESP SI Need uncertainty assessment.

We will gather information from three main sources to identify relevant uncertainties; local data, customer and stakeholder engagement, and responses to the request for additional information to complete the energy need insight. The energy need insight will gather data that allows NESO to assess the uncertainty of complex energy needs.

Assessing uncertainty

We will use the framework outlined in McKinsey & Company's 'Strategy Under Uncertainty'[27] to assign the level of uncertainty for each source. This framework defines four levels of uncertainty (see Figure 19).

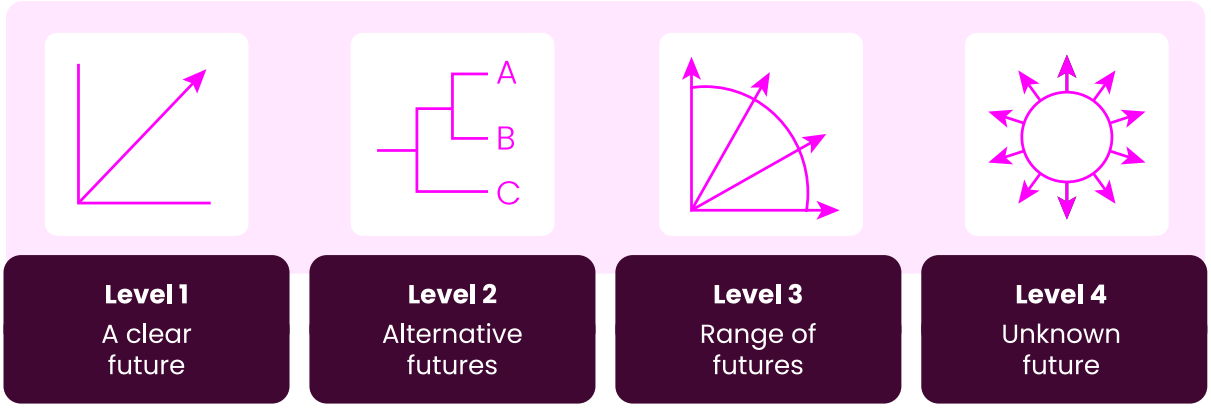


Figure 19: Levels of uncertainty

This represents a change from the tRESP SI Need assessment, which used a qualitative matrix to score uncertainty as 'High', 'Medium' or 'Low'. The full RESP methodology supports a more detailed assessment. This allows for more consistency and makes it easier to compare complex energy needs across a broader set of criteria. Table 15 shows example assessment criteria for location, capacity and timescale. We will work with networks, Ofgem and other stakeholders to further develop the criteria.

Table 15: Example uncertainty assessment criteria.

Assessment Criteria	Level 1 A clear future [High certainty]	Level 2 Alternative futures [Medium certainty]	Level 3 Range of futures [Low certainty]	Level 4 Unknown future [Very low certainty]
Location	There is a specific location identified for the energy need, with no viable alternatives being considered.	There are distinct options for possible sites for the energy need. For example, those that could connect to more than one distribution network.	The location options are not fixed and could be anywhere within a broad area, for example, Middle layer Super Output area (MSOAs) or local authority area.	It is not known where this energy need will be met. No specific site, nation or region has been identified.

[27] McKinsey & Company, *Strategy Under Uncertainty* (June 2000) - https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/strategy-under-uncertainty

Capacity	The required capacity of the energy need is well-defined and agreed upon.	There is more than one potential distinct capacity outcome for the energy need.	The capacity of the energy need could fall anywhere within a wider range.	The size of the energy need is unknown, with there not being enough information to provide a reasonable range.
Timescale	The energy need has a fixed and agreed delivery date or timeframe.	The delivery date or timeframe is not yet confirmed, but a short delivery window has been proposed and is awaiting confirmation.	The delivery timeframe is not confirmed; only a broad delivery window has been identified.	There is no indication of when the energy need will arise.

We propose using a Multi-Criteria Analysis (MCA) approach to evaluate complex energy needs in relation to uncertainties, risks and data structures within scope. MCA provides a structured framework for comparing and appraising different options, supporting more informed and transparent decision-making. Each criterion will be clearly defined and scored from level 1 to 4. For more subjective criteria, such as customer and stakeholder engagement or political stability, experts from relevant working groups may help with scoring. Where this occurs NESO will put in place processes to ensure consistency of scoring across the different nations and regions.

Each uncertainty level will get a numeric score. We will work closely with the networks, Ofgem and other stakeholders to establish suitable weightings for each factor to result in an overall uncertainty score.

Determining if in or out of scope

Once the assessments are complete, we will classify each complex energy need as either in scope or out of scope, using the matrix in Figure 20. This matrix is based on strategic value and overall uncertainty scores. Those classified as in scope will be considered complex strategic energy needs that require more detailed specification and included in the RESP SI Need output. Those classified as in scope will be considered complex strategic energy needs that require more detailed specification and included in the RESP Strategic Investment Need output.

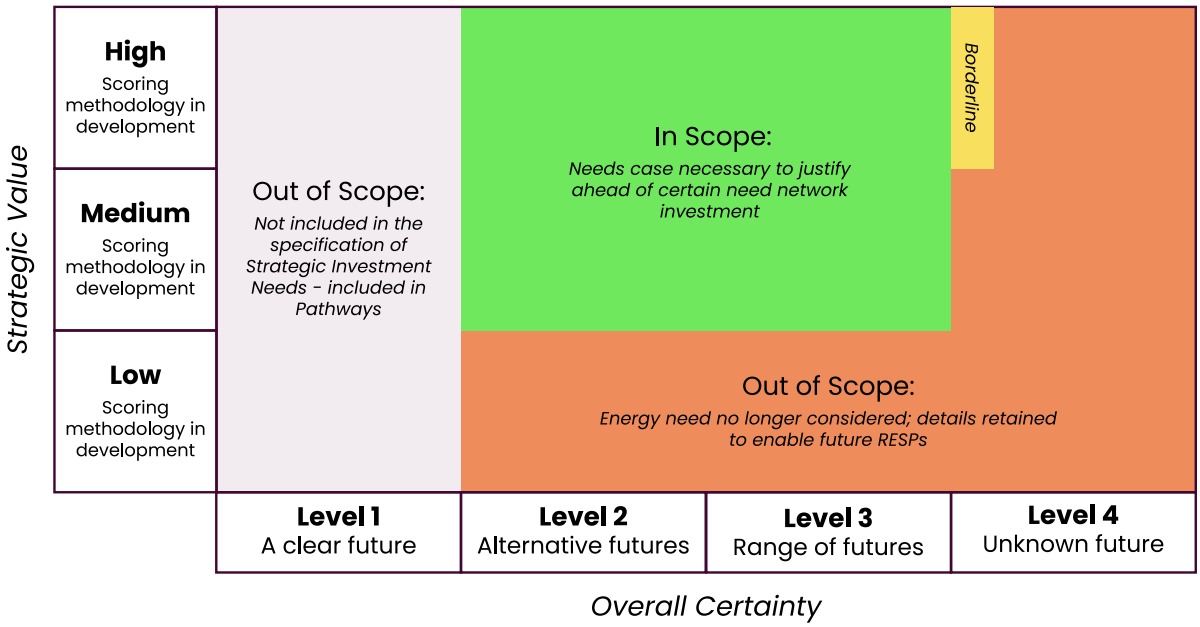
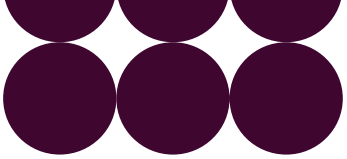


Figure 20: In or out scope matrix

This approach has developed from the matrix outlined in Ofgem's policy decision document and the framework used in tRESP, improving the way we will identify complex strategic energy needs.

The rationale for how each classification in the matrix has been defined is described below:

- **Out of scope (Grey) – not included in the specification of SI Need:** Where there is a high level of certainty (level 1 - a clear future) - meaning the energy need is highly likely to be realised – it will be included in the Pathway as a certain energy need, and no further justification is needed. In this instance, the Pathway will guide the investment needed in the network, regardless of the strategic value. It is important to note that because we have screened out non-complex energy needs earlier in the process, we do not expect many to fall within this category as most, if not all, complex energy needs being assessed will have some uncertainty associated with them. This classification allows for the scenario where a strategic energy need was deemed complex, but upon assessment is concluded to be highly certain.
- **In scope (Green) – justification is needed ahead of certain network investment:** Where energy needs fall within the ranges of level 2 to level 3 uncertainty and of medium or high strategic value, the energy need is considered strategic and should inform SI Need. Even when there are lower levels of certainty, the high strategic value means energy needs should still be considered for SI Need. Importantly, in scope energy needs will be included in the Pathway (as set out in the out of scope (Grey) classification). However, these energy needs are treated differently, as investment will be specified where uncertainties remain. These energy needs will move to the next step to confirm if strategic investment is needed in the network. These energy needs will move to the next step to confirm if strategic investment is needed in the network.



- **Out of scope (Orange) – no longer considered:** Where levels 2 to 4 of uncertainty exist for a low strategic value energy need, or level 4 uncertainty for a medium to high strategic value energy need, these energy needs will be out of scope. Out-of-scope energy needs will be retained with all other the RESP data or as part of the in-development register. Future data refreshes or further insights from stakeholders may trigger a re-assessment for future RESP cycles.
- **Borderline (Yellow) - further to out of scope – no longer considered:** Where strategic value is high and uncertainty is level 4 but close to level 3 in terms of scoring, the energy need could be considered borderline. In this instance, we will ask the customer or stakeholder that leads on the energy need if they can provide further information to increase the certainty. For example, further information about a single factor of uncertainty, such as energy capacity need, could swing the overall level of certainty from level 4 to level 3. If suitable information is provided, a reassessment will be triggered. Scoring tolerance to be considered as borderline is yet to be developed.

Our treatment of energy needs with very high uncertainty (level 4 - unknown future) has evolved from the tRESP methodology consultation and energy needs falling into this category will now be considered out of scope.

Step 3: Confirmation of SI Need

Following the assessments and determination of whether the complex energy need is in or out of scope, the in-scope energy needs will be checked against the final Spatial Context output to confirm if a specification for strategic investment need is required. This maps Pathway data, which will include in-scope strategic energy needs, against network capacity data. Through this process, NESO will work with networks to highlight areas where network capacity cannot support future growth and meet strategic objectives. This is set out in more detail in the Spatial Context section.

Step 4: Specifying the SI Needs

Approach To confidentiality

To support the specification of SI Need, NESO is developing an approach that balances transparency with the need to protect commercially sensitive data. Many early-stage projects are likely to contain confidential elements, limiting what can be shared publicly.

To address this, we will:

- aggregate data to avoid disclosing sensitive project-level information.
- exclude specific project details from public RESP outputs.
- provide more detailed technical outputs confidentially to network operators and Ofgem to support optioneering and price control processes.

Our RFI will include questions to assess the sensitivity of submitted data and clarify whether it can be shared with: a) networks and Ofgem, and b) the general public.

Where possible, we will seek agreement from third parties to share detailed information confidentially with network operators and Ofgem to enable coordinated planning.

The public RESP output will highlight areas of SI Need, with high-level aggregated information on energy requirements. This will include substation or pressure reduction station area, energy capacity, mode (demand, storage, or generation), energy type, and timescales. Specific energy need details will not be published. While this approach may limit the granularity of public outputs, it helps safeguard confidentiality.

Categorisation of in-scope energy

We are working closely with Ofgem, networks and stakeholders to develop an approach to categorisation that will refine the scope of the RESP SI Need output and ensure a common approach to regulatory treatment for investments with similar levels and/or types of risk.

The categorisation will aim to enable some variation in the degree of network alignment with the RESPs' direction, for example allowing variation in the degree of directiveness of the specification by categorising in-scope energy needs as either direction setting or informative specification.

Specification

Each area of SI Need identified through this process will be specified by NESO will include the following:

- location (spatially mapped area of strategic energy need)
- network licence area
- categorisation (in development)
- capacity (demand or supply – scale of capacity needed to meet the identified strategic energy need and expected growth in demand or supply)
- energy type (relevant energy type(s) involved (electricity, gas, hydrogen, heat))
- network level (for SI Needs we expect this to be primary network level and above for electricity distribution and medium pressure and above for gas distribution)
- connection date (expected date for when a connection is likely to be needed, including uncertainty bounds)
- needs case

These factors ensure that each SI Need is based on national and regional evidence and suitable for directing network planning where energy needs are both considered strategic and complex.

Needs case structure

Each SI Need will have a clear and robust needs case, structured around:

- **Strategic value:** Contribution to priorities and targets of each nation and region as well as GB.
- **Certainty:** Degree of certainty associated with the strategic energy need.

This structure ensures that each SI Need is not only technically justified but also strategically framed for regulatory treatment. The needs case will be further developed in parallel with our approach to categorisation.

Consultation Question:

What further considerations should we take as we develop the approach for specifying and categorising Strategic Investment Needs to ensure consistent regulatory treatment of network investments? Please provide your reasoning.

Roles and responsibilities:

Table 16: Roles and responsibilities for the development of SI Need

Group	Key roles and responsibilities for development of SI Need
NESO	• Develop and maintain a robust process for evaluating future energy requirements. • Provide evidence-based specifications for areas of SI Need.
Energy networks	• Support the development of the frameworks and guidance to ensure clarity for stakeholders. • Contribute data and relevant insights to support the process.
Local actors	• Inform where strategic investments are made in the energy networks by contributing data, delivery timelines, and relevant insights. • Engage with the request for additional information to provide deeper insights into energy needs and priorities.
Strategic Boards	• Review and approve the in-scope SI Needs during the final RESP plan submission.
Working groups	• Provide insights and recommendations to support identifying complex strategic energy needs.

Supporting functions and considerations

Technical Coordination

Network Planning Assurance

Societal Considerations

Environmental Approach

Digital and Data Approach

Innovation

Assurance

Technical Coordination

Ofgem expectations in Draft RESP Guidance:

- Section 2.15: NESO is "obligated to undertake activity to ensure coherent energy system planning through: (1) the resolution of gaps and inconsistencies in plans within and between RESP nations and regions (2) the identification of opportunities for whole system optimisation".
- Section 2.18: "The RESP Methodology must establish how and when technical coordination will support the development of each of the RESP outputs to allow early identification of gaps, inconsistencies and opportunities for optimisation".
- Section 2.20: The RESP Methodology must set out where in the end-to-end process of RESP output development the licensee will undertake technical coordination activities to review and assure the coherence of each of the RESPs with adjacent plans".

Technical Coordination is an essential delivery function of RESP. Its objective is to ensure coherent energy system planning by resolving gaps and inconsistencies in plans and identifying opportunities for whole system optimisation across the RESPs. Our approach to technical coordination is summarised below:

Table 17: Proposed approach to Technical Coordination

Technical Coordination	Proposed Approach
Within and between nations and regions	We undertake a systematic, cross-check review of all Nations and Regions Contexts, pathways and areas of Strategic Investment Need (SI Need) to identify and reconcile gaps, inconsistencies, and opportunities for shared learning. Identify opportunities for whole system optimisation. Check coherence with the Strategic Spatial Energy Plan (SSEP) outputs is also assessed.
Upward to transmission network planning and with adjacent strategic plans	Relevant RESP components are reviewed against the SSEP and the Centralised Strategic Network Plan (CSNP). NESO coordinates across the transmission/distribution interface to ensure coherent investment planning and identify opportunities for whole system optimisation.
Across energy types	During Pathways development, we will use integrated modelling to make trade-offs and find the optimal mix of electricity, gas, hydrogen and heat, considering generation, demand, storage, and flexibility across all types.
With nation, region, and spatial priorities	Nations and Regions Contexts are developed using input aligned with local and national priorities and spatial plans.

Technical coordination as we develop the RESP components

NESO will undertake technical coordination across all phases of RESP development, as summarised in the Figure 21 below:

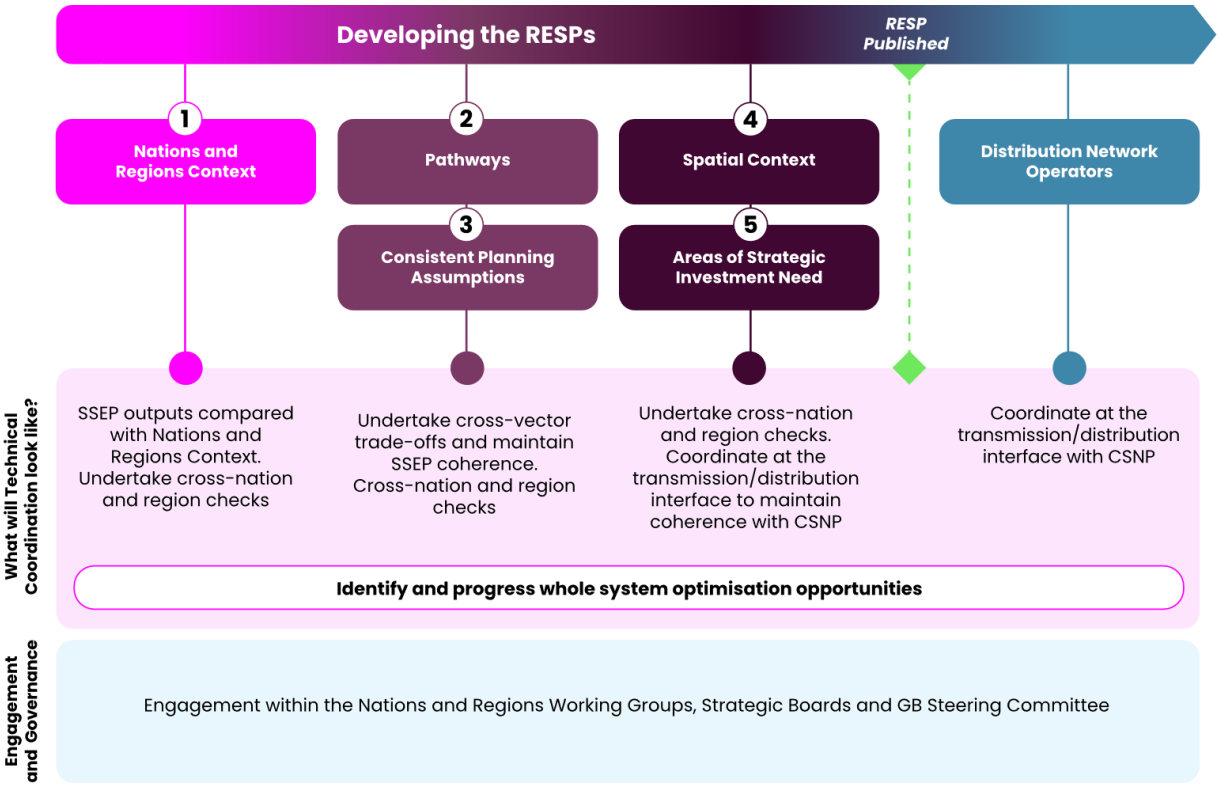


Figure 21: Technical coordination as we develop the RESPs

The following is a summary of what technical coordination function looks like as we develop the RESP components. Stakeholders' input and engagement will be vital throughout the technical coordination process. Any trade-offs, gaps or inconsistencies will be reviewed and resolved through our engagement and governance mechanisms detailed in our RESP External Governance section.

Nations and Regions Contexts

- Contexts are developed in line with local priorities and consider spatial plans and other key local inputs.
- SSEP Pathways are used to check coherence with nation and region priorities for electricity and hydrogen generation and storage.
- Cross-nation and region context reviews are undertaken to identify gaps or inconsistencies. Any insights or learnings are shared across the nations and regions.
- Local actors, networks and other stakeholders share insights on any known areas requiring whole system optimisation.

RESP Pathways

- Developing whole energy pathways will require us to make trade-offs between different energy types to find the optimal mix of electricity, gas, hydrogen and heat. This includes considering generation, demand, storage and flexibility as appropriate across each energy type.
- We will check for gaps or inconsistencies within and across the RESP Pathways for the nations and regions.
- Pathway development will be guided by key principles to enable the nation and region priorities while maintaining coherence with SSEP and CSNP. To maintain coherence with the national plans, the RESP Pathway capacities resulting from the nation and region priorities are expected to fall within approved SSEP ranges.
- As we develop RESPs for the first time, we expect to develop a good view of bottom-up energy needs. Gaps and inconsistencies will be identified and reviewed transparently with stakeholders through the engagement and governance mechanisms. We expect our RESP modelling outputs to feedback into future iterations of the SSEP.

Spatial Context and areas of Strategic Investment Needs (SI Needs)

- Spatial Context and SI Needs will allow us to identify areas of need across the whole energy system. This will enable us to identify opportunities for whole system coordination and optioneering, including where there is need for coordination across the transmission/distribution interface.
- Cross-nation and region reviews are undertaken to identify gaps or inconsistencies. Any insights or learnings are shared across the nations and regions.

Opportunities for Whole System Optimisation

The RESP teams will proactively identify and progress opportunities for whole system optimisation across energy types, at distribution level and at the transmission/distribution interface. We will work collaboratively with customers and stakeholders to identify and progress these opportunities:

- **Identification**: Opportunities are identified through engagement with customers and stakeholders in the nations and regions including networks (distribution and transmission), and cross-vector actors.
- **Stakeholder review**: Opportunities are reviewed with stakeholders and presented to relevant working groups and Strategic Boards for validation and input.
- **Collaborative development**: NESO will convene relevant stakeholders to co-develop coordinated solutions.
- **Optimisation approach**: We will develop the approach to whole system optimisation with stakeholders and in line with our statutory duties and decision-making principles.

Consultation Question:

What examples of whole system optimisation opportunities are you are aware of and what considerations should we take to identify, prioritise and develop these collaboratively with you?

Coordination between transmission and distribution systems

To maintain upstream coherence with transmission planning, it is essential that RESP development includes active coordination at the interface between transmission and distribution systems. In certain cases, unlocking capacity at the distribution level may depend on corresponding capacity being available or unlocked at the transmission level.

RESP teams will work collaboratively with both distribution and transmission network operators to identify areas where such coordination is required. This will occur during the development of RESP Pathways and in parallel with network operators' detailed network analysis activities.

During Pathway development, we will proactively review supply and demand projections at the transmission–distribution interface, considering the inputs from the SSEP. This includes identifying where coordination is needed to maintain coherence with the CSNP, which determines transmission network capacity.

As distribution networks conduct their detailed analyses, they may identify constraints at the interface. NESO expects to work collaboratively with networks to surface these constraints early, particularly during the development of the spatial context component. This coordination is critical to ensuring that RESP outputs remain coherent with both distribution-level realities and transmission-level planning.

Protocols for Technical Coordination

To ensure coherence and transparency as we manage trade-offs, NESO will implement the following protocols:

- Input assumptions: We expect to share our key assumptions transparently with stakeholders so they can understand the underlying drivers of results.
- Data exchange: We will work with stakeholders and actors in the nations and regions to develop appropriate approaches to data exchange, as highlighted in our Digital and Data Approach section.
- Conflict resolution: Our approach to resolve trade-offs, inconsistencies and conflict will be consistent across the RESP process and components, and in accordance with the conflict resolution approach outlined in the RESP External Governance section. Our decision-making principles will guide our decision making particularly when we need to make trade-offs.

Stakeholder roles and responsibilities

Table 18: Roles and responsibilities for Technical Coordination

Stakeholder Group	Role
Local actors	Participate in engagement to enable coherence between the nation/region priorities and the SSEP and CSNP. Provide insights and data on any known areas requiring whole system optimisation.
Networks (distribution and transmission)	Provide network capacity and data inputs, highlight gaps/inconsistencies, and collaborate on the transmission/distribution interface. Provide insights and data on any known opportunities for whole system optimisation and participate in collaborative process to develop these.
Working groups	Assist in developing options, guide, review, and provide input to enable the resolution of gaps, inconsistencies, across nation/region priorities and maintain coherence with SSEP and CSNP.
Strategic Boards	Approve all components as part of the final RESPs.

Network Planning Assurance

Ofgem expectations in Draft RESP Guidance:

- Section 5.1: NESO must conduct a targeted review of distribution networks' strategic investment plans to assure alignment with the direction of the RESP or RESPs which overlap their licence areas.
- Section 5.2: Ofgem will trigger the timing of the review, at the appropriate interval following the publication of the RESPs. The purpose of this review is to ensure whole system coherence and optimisation of the RESP is maintained through the development of single-vector network plans. The scope of the review should be limited to that necessary for this purpose.
- Section 5.3: In the RESP Methodology, NESO must articulate its approach to assuring network investment plan alignment to the direction of the RESP, when required by Ofgem.

Network Planning Assurance (NPA) is a key activity we will undertake after the creation of the RESPs to conduct a targeted review of distribution networks' strategic and load-related investment plans to assure alignment with the direction of the 11 RESPs. In undertaking the NPA process, NESO will assure that network plans deliver network capacity in line with the direction of the RESP Pathways and Strategic Investment Need (SI Need).

NPA will consider what network capacity is required to meet the regional energy needs. NPA will not consider how this capacity is met (for example, reinforcement and/or flexibility) and will focus on those activities that networks conduct before 'optioneering' as part of their network planning process. For the avoidance of doubt, NESO will consider whole system optimisation opportunities as part of our technical coordination function, this is distinct and different from the defined 'optioneering' stage that networks undertake as part of their network planning process.

NPA background

Our approach to NPA comprises three activities: 'Align', 'Resolve', 'Review', as summarised below and detailed later in this section.

- **Align:** We expect that networks (DNOs and GDNs) will be required to Align their load-related network planning to RESP, noting that RESP does not supersede any other licence obligations[1]. Specific provision is made by Ofgem for a time delay in the gas networks' alignment to RESP to allow RESP to drive development in gas networks which responds to rather than precedes the projected changes in demand[28].
- **Resolve:** NESO will work proactively with the networks to Resolve misalignments. This starts with engagement during the creation of RESP and continues through the subsequent business planning process to reduce misalignment and mitigate early where possible.
- **Review:** NESO will conduct a targeted Review of each network's load-related plans to ensure their alignment to RESP. The outcomes will be reported to Ofgem to aid their business plan evaluation.

Network planning approaches

NPA is designed to support Ofgem in evaluating the distribution network's business plans. While DNOs and GDNs forecast capacity requirements for licence and regulatory purposes beyond business planning, NPA focuses on how networks demonstrate long-term investment plans to align with the direction of RESP. We do however recognise key differences between electricity and gas.

For electricity DNOs, there is expected to be significant load-related investment to meet increased generation from renewables and uptake in low carbon technologies for heat and transport as the move toward electrification continues. Network plan assurance will focus on alignment across the Pathways and RESP SI Need components.

Feedback from the GDNs highlight that their business planning process has different objectives to that of the electricity distribution network. Whilst some investment could be required to support changing use of the gas network (for example, biomethane connections), there is not the same expectation of significant load growth on the gas distribution network. Instead, there is a key focus on meeting the '1 in 20' licence

[28] Ofgem, *Decision on the RESP Policy* Framework (April 2025) - https://www.ofgem.gov.uk/sites/default/files/2025-04/RESP-policy-framework-decision.pdf

obligation[29]. This requires GDNs to ensure that the network has sufficient capacity to meet peak demand on a winter day that is statistically expected to be exceeded only once in 20 years. Energy pathways are therefore not the primary driver of network planning, instead GDNs require probabilistic and historic data to retain security of supply to the level specified in their licence conditions.

At the time of writing, Ofgem does not regulate hydrogen as part of GDN business planning. To that end, the current scope of NPA for gas distribution networks includes only those investments related to natural gas (including biomethane).

NPA in practice for electricity distribution networks

NPA will take place when requested by Ofgem[30]. We expect this to occur when Ofgem requests that the networks refresh their business plans, including price control business planning and any mid-cycle mechanisms.

The NPA high-level process presented in Figure 22 sets out how, in principle, NESO could ensure that network plans (both DNO and GDN) follow the direction of RESP outputs.

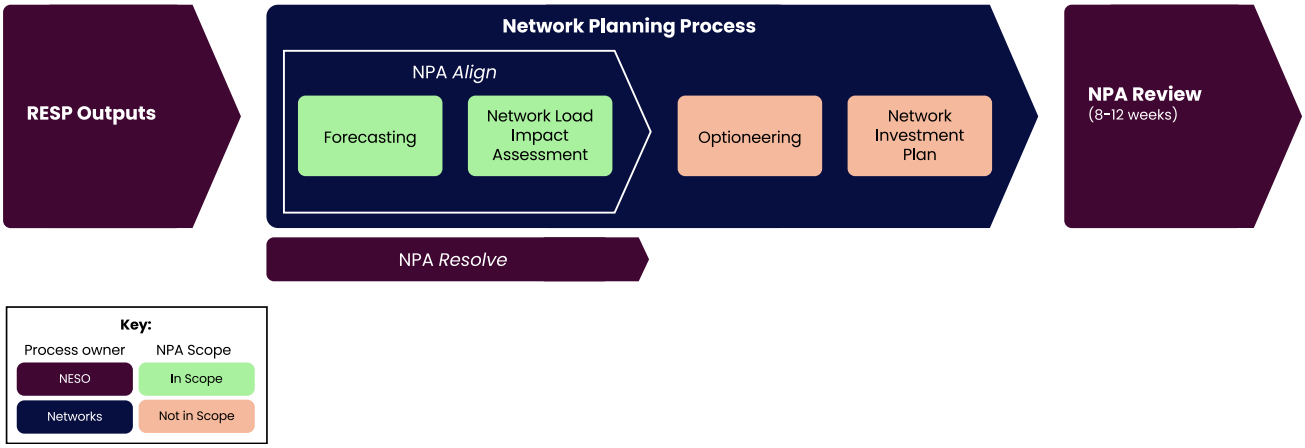


Figure 22: NPA high-level process

As previously set out, NPA comprises three activities: 'Align', 'Resolve' and 'Review'. Figure 1 shows how RESP outputs, produced by NESO, feed the NPA 'Align' stage, owned by Networks. The NPA 'Align' stage runs concurrently with the NPA 'Resolve' stage, owned by NESO. The final stage is NESO's 'Review' of network plans.

NESO will ensure that the principles of RESP are adopted throughout NPA. Specifically, NPA must be fair, transparent and collaborative.

NPA for electricity distribution network plans

This section sets out an approach as to how NPA could be applied to electricity distribution network plans to ensure that there is alignment with the direction of the RESPs.

[29] Ofgem, *Standard Special Condition A9: Pipe-Line System Security Standards* (October 2024) - https://www.ofgem.gov.uk/sites/default/files/2023-03/Standard%20Special%20Condition%20-%20PART%20A%20Consolidated%20-%20Current.pdf

[30] As set out in the RESP statutory consultation on licence modifications sections C19.9 and C13.9 - https://www.ofgem.gov.uk/consultation/regional-energy-strategic-plan-licence-modifications-and-guidance-document

Detail is provided for the activities conducted in each of the three stages; align, resolve, review. A corresponding approach for gas distribution network plans has also been considered separately.

NPA stage: Align

Alignment begins during the development of RESP with network companies having the opportunity to shape RESP outputs during the RESP cycle.

When conducting their business planning, networks will be responsible for aligning to RESP relevant to their licence areas. Ofgem will trigger the timing of NPA, at the appropriate interval following the publication of the RESPs, taking account of the price control process and existing regulatory reporting processes.

It is expected that Ofgem's business planning guidance will specify which RESP version the networks are required to align to. The information and data required to conduct an effective and efficient NPA should also be specified by Ofgem in the business planning guidance. NESO will work with Ofgem to supply detailed guidance and any templates, such as Business Plan Data Templates (BPDTs) that are required from network companies to allow them to demonstrate alignment and identify deviations from the direction of the RESPs.

Throughout the business planning cycle, NESO will work with networks as required to address challenges around alignment. This will take place during their network planning process rather than at the NPA review stage.

Throughout engagement, networks have consistently highlighted challenges with regards to the potential lack of synchronisation between RESP publication and network planning. Specifically, the potential need to realign to RESP at the end of each RESP cycle in addition to their usual price control cycle planning period. The DNOs expressed that any need to frequently realign, mid-price control period, presents a disruption to network planning and investment. Furthermore, uncertainty as to whether a replan is required and to what extent (for example, minor or major changes) is unfavourable.

Ofgem will confirm when networks need to align to RESP in the Sector Specific Methodology Decision (SSMD) which details how the price control period will be regulated, and the resulting requirements placed on the networks.

NPA stage: Resolve

Where possible any misalignments should be identified by networks as part of their work in the 'Align' stage and prior to the NPA 'Review' stage. In these instances, networks and NESO can seek to mitigate any material misalignments within the 'Resolve' stage and understand the reasons for misalignment where they cannot be resolved. Resolution of significant misalignments should be agreed prior to the NPA 'Review' stage.

NPA stage: Review

NESO has considered the network planning process at high-level following technical discussions with stakeholders to help set out details of the proposed NPA 'Review' stage. This will focus on capturing the state of alignment between RESP and the network plans, reporting details of any unresolved misalignments to Ofgem. It is expected that this review

process will take between 8-12 weeks to support Ofgem's evaluation of business plans in a timely manner.

Figure 23 illustrates the interactions between RESP outputs, the network planning process and NPA. It also shows the evidence that networks will need to provide to NESO to enable the NPA 'Review'; further details are described in the following sections.

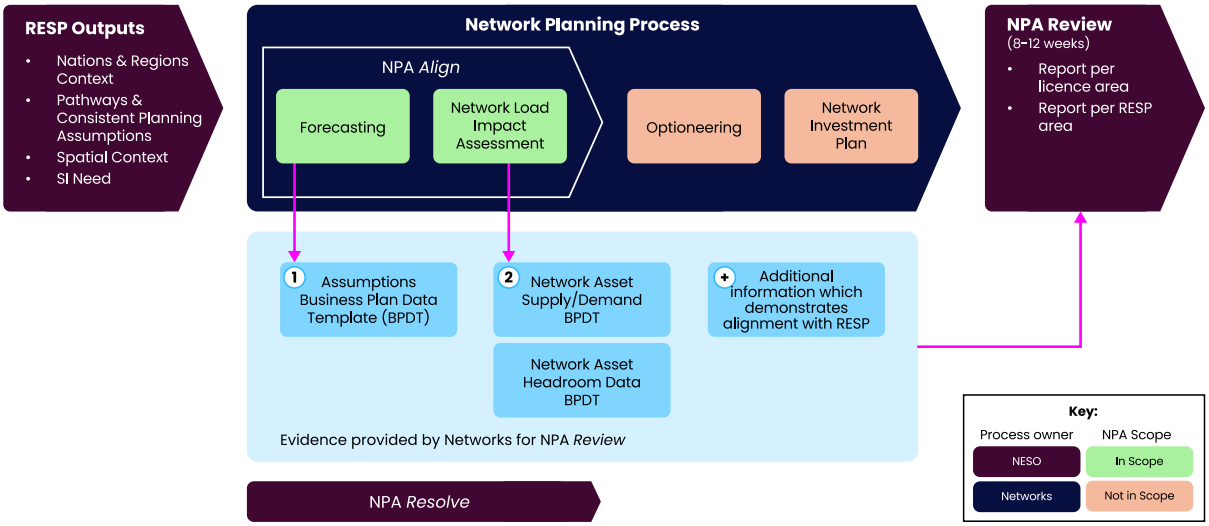


Figure 23: The interactions between RESP outputs, the DNO network planning process and NPA stages

Evidence 1 – Forecasting assumptions

The first network planning process is forecasting. DNOs use a catalogue of assumptions and input data to understand how their customers might use the network in future.

Proposed NPA check:

- DNOs will need to demonstrate that their forecasting assumptions align to RESP outputs, identifying where material misalignment occurs. It is expected that evidence would be provided to NESO via Business Plan Data Templates (BPDTs). The BPDT will be agreed with Ofgem during preparations for the price control.

Evidence 2 - Network Load Impact Assessment

The second network planning process is Network Load Impact Assessment (or similar). DNOs conduct detailed network analysis to understand the network capability required based on those future customer needs identified in forecasting. DNOs produce a peak supply/demand need and current/projected headroom data per network asset.

Proposed NPA check:

- NESO will provide DNOs with equivalent RESP-derived peak supply/demand benchmarks to primary substation level (see the Pathways section on indicative peak load). NESO will also identify where a network asset falls into an area of SI Need so that any misalignments in these areas can be identified. DNOs will be expected to provide NESO with network asset peak supply/demand data from their network load impact assessment and identify where misalignment occurs and

provide justification. It is expected that evidence would be provided to NESO via BPDTs.

- NESO expects DNOs to provide current and projected network asset headroom data to identify when extra capacity to facilitate projected peak loads is required. If more capacity is necessary, DNOs will need to confirm whether an intervention is planned to meet this need. It is expected that evidence would be provided to NESO via BPDTs.

Further evidence

NESO may request additional information from DNOs on a case-by-case basis where Ofgem seeks further reassurance that network investments are aligned to RESP. The request for additional information might be triggered in the following instances (not exhaustive):

- multiple DNOs proposing an intervention for the same network capacity need, where this is not already mitigated in the development of RESP outputs
- unresolved discrepancy (oversizing or under sizing) between RESP and DNO supply/peak demand data
- unresolved discrepancy (lag or lead) between when an intervention is required and the planned intervention date
- to ensure whole energy system coherence and optimisation

Extent of reviews

The above narrative explains the potential NESO touch points on the network planning process. Appendix 12 sets out the options considered with regards to the extent of review that could take place at these touch points.

NESO recommends option 2, on the basis that it strikes the right balance between providing assurance to Ofgem that the network plans align with RESP, without being overly burdensome and risk stalling Ofgem's decision making process unnecessarily. The process will likely develop iteratively and improve over time and in each RESP cycle.

Consultation Question:

Do you support the selection of Option 2 as delivering best value in assuring alignment? If not, please provide your reasoning.

It is understood that the NPA 'Review' stage should take 8-12 weeks from when network plans and supporting data are received. NESO expects this to be a GB-wide activity covering all RESP and DNO licence areas; reviews of individual licence areas can be conducted on a case-by-case basis.

NPA for gas distribution network plans

NESO has considered how NPA could be applied to gas distribution network planning, based on our knowledge of gas network planning processes and engagement with GDNs.

Ofgem's decision states: "Electricity and gas networks will undergo fundamentally different transformations through the energy transition." It recognises that electricity networks will likely need to rapidly expand over the coming decades compared to gas networks, which may need to evolve due to significantly lower levels of load-related expenditure. Ofgem confirms that gas network plans will be expected to align to the pathways, and the alignment for gas networks is expected to integrate a time delay to allow the RESP to drive development which responds to, rather than precedes, changes in demand.

The decommissioning of gas distribution networks is subject to a government policy decision and is therefore out of scope in this version of the RESP methodology.

NESO understands that gas demand reductions are broadly uncoupled from the size of the gas network, meaning a decrease in demand will not proportionately decrease the size of the network. Furthermore, the proposed time delay means that gas network plans will lag RESP Pathways to ensure that the plans respond to observed changes in demand, for example, a five-year delay would mean RESP published in 2027 would need to be reflected in gas network plans in 2032.

Alongside this is the GDNs key focus of adhering to the '1 in 20' licence obligation**Error! Bookmark not defined.**, to ensure resilience of the network. This requires GDNs to ensure that the network has sufficient capacity to meet peak demand on a winter day that is statistically expected to be exceeded only once in 20 years.

For these reasons NESO recommends a separate and bespoke assurance process for gas distribution networks which reflects GDN licence obligations and is proportionate to the level of load-related investment. This could include:

- NESO reviewing load-related investments on a case-by-case basis to ensure that they align with RESP. It is our understanding that load-related investment will likely be limited to a small proportion of gas network plans. Where investment in the network is required ahead of need, and is funded through the price control mechanism, this could be reviewed against alignment to the RESP Pathways. The principal example of what could drive these investments in the network is the connection of biomethane but could also include, power generation sites and data centres where network reinforcement is required.
- NESO work with gas networks to align key assumptions used across all GDNs to improve consistency through consistent planning assumptions. NPA could then check that GDNs are using these assumptions in there planning processes where they are relevant.
- NESO gather, and make available, data to inform GDNs about potential trends that could impact their network plans (for example, geospatial heat pump deployment figures).

We will continue to work with networks, Ofgem and stakeholders to develop the network assurance process for gas distribution network plans.

Consultation Question:

What further considerations should we take as we develop the approach to Network Planning Assurance for gas distribution networks? Please provide your reasoning

The outputs of NPA

- A report per network licence area submitted to Ofgem to provide an overview of network data with annexed data tables, reviews and resolution where appropriate. This would be delivered within the 'Review' stage.
- A summary report per RESP nation and region submitted to Strategic Boards explaining how electricity network plans reflect their respective RESP, collating the relevant network licence area plans to the corresponding nation or region. This would be delivered outside of the 'Review' stage.
- A report summarising all RESP nation and region reports, identifying how RESP is being delivered through the electricity networks and identifying any GB-wide trends. This would be delivered outside of the 'Review' stage.

Societal Considerations

We recognise that the energy needs of nations and regions will be inherently shaped by key societal considerations. Energy is vital to enabling national, regional and local priorities such as economic growth, job creation, social programmes and community initiatives. Effective energy planning unlocks planning and development in housing, transportation and industry, and can lead to improved health and wellbeing. For example, adequate heating systems can reduce fuel poverty and electrification initiatives will lead to less pollution and cleaner air. These societal considerations, embedded in the Nations and Regions Contexts, will help inform the development of the RESP components.

We will provide a range of opportunities for customers and stakeholders to share key societal considerations throughout the development of the RESPs. The views we gather from customers and stakeholders will feed into the working groups and Strategic Boards. This will ensure societal considerations are included in the development of the RESPs.

Our societal approach will focus on supporting the decision making of Strategic Boards. As we develop RESP components, we may need to make trade-offs that may affect communities differently across, and within, the nations and regions.

It is important that we can explain how these decisions are made and demonstrate to nations and regions how their energy plans reflect their priorities and values. To support this, we propose translating the outputs of the RESPs – particularly the Pathways and areas of SI Need – into indicative societal impacts. This could provide indicative societal

impact of different pathways or investment needs by for example considering employment opportunities associated with community solar or wind projects, fuel poverty implications of decarbonised heat for affordable housing developments, or improved air quality in communities with road transport corridors.

We expect this to involve developing approaches and tools that integrate national and regional priorities into bottom-up data and criteria. This will be used to contextualise Pathways and areas of SI Need. By communicating indicative societal impacts, we aim to support transparency and provide valuable context for all customers and stakeholders. We are still developing our proposed approach and welcome your feedback. It is our intention that any future evaluation approach would look to be informed by industry best practice and government guidance, such as the Magenta Book.

The Public Sector Equality Duty

Throughout the course of developing and delivering the RESPs, we will work with customers and stakeholders to consider how our activities affect people with different protected characteristics. We will have due regard to the objectives of the Public Sector Equality Duty (PSED) as we develop the RESPs.

Consultation Question:

Do you agree with our approach to societal considerations? What additional considerations should we make on PSED as we develop the RESPs? Please provide your reasoning.

Environmental Approach

Ofgem expectations in Draft RESP Guidance:

- Section 2.34: NESO "must detail in the RESP Methodology how it will effectively consider and assess the environmental impacts associated with the RESPs and seek to ensure that negative environmental impacts are mitigated where possible. It should detail how areas of environmental significance will be considered in the RESP development."

The UK, Scottish, and Welsh governments are committed to the protection and enhancement of the environment and the preservation of the unique natural, cultural and heritage characteristics it offers. Achieving this and meeting net zero targets go hand in hand.

We have publicly set out our intentions to carry out a Habitats Regulations Assessment (HRA), Strategic Environmental Assessment (SEA), and assessments of Marine Conservation Zones (MCZs) for the Strategic Spatial Energy Plan (SSEP) and Centralised

Strategic Network Plan (CSNP), including Offshore Coordination. For the SSEP, this will be the largest SEA ever conducted in Great Britain (GB).

RESP is being developed to both complement and be coherent with our other strategic plans, particularly the SSEP, where the capacity for generation and storage technologies function as the key starting point for the modelling of the RESPs.

We have reviewed current environmental approaches and legislation to understand what is required for the RESPs.

What RESP does and doesn't do

Having reviewed what environmental considerations will be needed for the RESPs, we believe it is useful to articulate what RESP does and doesn't do:

- RESP will be developing bottom-up demand and supply Pathways that will be used by distribution networks to drive proactive investments. The distribution networks remain accountable for identifying network investment infrastructure. This will need to satisfy the Pathways and specification of strategic investment needs provided by the RESPs.
- RESP will use the supply and storage outputs from the SSEP as a starting point for the Pathways modelling.
- RESP will be leveraging bottom-up data and plans, to develop the Nations and Regions Contexts, as well as the specification of Strategic Investment Need (SI Need). In some instances, environmental considerations will already exist, or be considered, in some bottom-up plans, such as Local plans, Local Area Energy Plans (LAEPs) and Local Heat and Energy Efficiency Strategies (LHEES) where available. As noted previously, these will be considered in the development of the RESPs.
- Ofgem's decision[31] states: "The introduction of RESP does not change the accountabilities of local government or any actor with responsibility for spatial planning. That is a matter for Government. There is no requirement for those undertaking spatial planning or local energy planning to adhere to the direction of the RESPs. Instead, the RESP framework provides a structured approach and governance for how spatial planning should be integrated into energy system planning on a consistent basis. It will provide a focal point of information for how the energy system will develop." Unlike the SSEP and CSNP, which may have formal status as a material consideration in the planning process, RESP will not have such status.

Approach to environmental assessments in RESP

Habitats Regulations Assessment (HRA)

An HRA is required for certain 'projects' and 'plans' that are likely to have a significant effect on a protected habitat or species. The RESPs do not prescribe specific 'projects' and

[31] Ofgem, *Decision on the RESP Policy* Framework (April 2025) - https://www.ofgem.gov.uk/sites/default/files/2025-04/RESP-policy-framework-decision.pdf

despite being named 'plans', the RESPs are not prescriptive. The RESPs do not create presumptions in favour of certain routes and locations in the same way local plans do.

As noted above, Ofgem has decided that: "RESP does not change the accountabilities of local government or any actor with responsibility for spatial planning" and "there is no requirement for those undertaking spatial planning or local energy planning to adhere to the direction of the RESPs". Our current understanding is that RESPs themselves will not have a formal status over and above a material consideration in planning. NESO's role is not to adopt the plans, or give any consent, permission or other authorisation for the plans. Instead, our role is to propose the RESPs for adoption by other competent authorities.

In summary, we have determined that an HRA is not required for the RESPs and an HRA will apply to other competent authorities who are either adopting their own plans or consenting specific projects.

Strategic Environmental Assessment (SEA)

An SEA is required for certain public plans and programmes that are likely to have significant environmental effects. While the RESPs are likely to be considered as plans for the purposes of an SEA, we understand from Ofgem that the RESPs are unlikely to set the framework for future development consent. After considering the content, flexibility, planning status, and prescriptiveness of the RESPs, as outlined throughout this methodology, we have determined that an SEA is not required for the RESPs. This is because they will not be prescriptive enough to constrain future decision-making, they will only influence it.

However, we are mindful that an SEA is being undertaken for the SSEP and CSNP, which will leverage the Holistic Network Design Follow-Up Exercise (HNDFUE). Therefore, we are proposing for the first RESPs to leverage the relevant geospatial datasets from the SSEP. This approach will help us to coordinate and evolve how environmental considerations are considered in future iterations of the SSEP, CSNP and the RESPs.

Embedding environmental considerations in the RESPs

We are committed to ensuring that environmental considerations will be carried through the process of developing the RESPs. To deliver this we will:

- Identify existing environmental assessments and other public plans at national, regional and local level, including LAEPs and LHEES where available. These will be gathered and reviewed during the development of the Nations and Regions Contexts.
- Consider key environmental designations, regulations and commitments, and their potential relationship with proposals set out in the RESP Pathways.
- Consider the environmental outcomes or commitments from existing environmental reports within the RESP nations and regions. These will be considered as part of the Strategic Investment Need component and will include impacts on air quality, local biodiversity, landscape and Greenhouse Gas Emissions (GHG), as well as proposed mitigation measures.

- Ensure environmental considerations are an integral part of our societal approach, detailed in the Societal Considerations section.
- Enable representation of relevant statutory bodies to ensure that environmental perspectives are embedded in governance working groups.

Consultation Question:

Do you agree with our proposed environmental approach? Please provide your reasoning if you think we should be doing this differently.

Digital and Data Approach

Ofgem expectations in Draft RESP Guidance:

- Section 2.23: "The RESP Methodology must establish a framework for data and information inputs which will underpin the development of the RESPs. In the RESP Methodology NESO must outline:
  - how it will establish protocols for data and information sharing by stakeholders
  - how the credibility of data and information sources will be assessed
  - how datasets and information will be kept up-to-date
  - how principles of transparency and accessibility will be balanced with legitimate requirements to maintain confidentiality".
- Section 2.26: NESO "must outline how stakeholders will be engaged during the data and information collection process."
- Section 2.26: "Throughout RESP development, NESO must ensure that data and information requests are reasonable and clearly specified, and that it works with stakeholders to agree a suitable deadline to allow sufficient time to respond."

Overview

The digital and data approach is central to delivering the RESPs. It provides the trusted, transparent, and repeatable foundation required for evidence-based decision making. As we develop RESPs for the first time, we will need to integrate a wide range of top-down national planning data with bottom-up, place-based data from local actors across the nations and regions of Great Britain (GB). The RESP digital and data approach will leverage NESO's policies and enterprise systems, including adoption of capabilities from our new DSI role and capabilities used in the production of FES, SSEP, or CSNP.

NESO's role is to ensure that RESP outputs are built from consistent data, robust processes, and clearly traceable assumptions, enabling proportionate and whole system decisions for every nation and region.

NESO will deliver this through a core digital capability which will ingest, process, verify and govern data from multiple sources, while maintaining clear lineage and supporting transparent decision-making, with automation and artificial intelligence embedded at the relevant stages.

Given the novelty of this engagement and the early state of data standardisation, the first RESP cycle will be evolutionary. Its primary objectives are to:

1. Discover the landscape: Understand what relevant data is available or has already been developed (for example, by networks, local actors and national datasets) and identify critical gaps across the nations and regions.
2. Assess value and criticality: Determine which data inputs have a meaningful impact on the whole system plan.
3. Establish the value proposition: Demonstrate the value provided by sharing local data, and by also leveraging established datasets to drive whole system value.
4. Define future standards: Use the learnings from the first RESP cycle to define the data standards, assessment methodologies, and thresholds required for subsequent cycles.

During the first RESP cycle we will prioritise flexibility and collaboration with the wide range of stakeholders providing data to develop the RESPs. NESO will use a Human-in-the-Loop (HITL) approach, combining automated digital processes with expert judgment and assessment. This ensures that RESP outputs remain robust while we develop a clear and structured approach that enables further automation and ultimate integration with the forthcoming Data Sharing Infrastructure (DSI).

How stakeholders will be engaged during the RESP data and information collection process

Stakeholder engagement is embedded throughout the data lifecycle and our overall approach to engagement is detailed within the Engagement section of this methodology. The working groups will be the primary mechanism for detailed technical scrutiny, providing critical input and challenge regarding data quality, assumptions, and credibility assessments.

Establishing protocols for information sharing by stakeholders

NESO will establish clear, consistent, and equitable processes for data sharing. This framework will streamline governance, minimise administrative overhead, and recognise the varying capabilities and sensitivities of stakeholders.

As we develop the RESPs for the first time, NESO will adopt a differentiated approach that reflects the varying levels of data maturity across stakeholders. We recognise that there

will be differences across, and within, nations and regions, and we expect to work with stakeholders to develop inclusive approaches to information sharing that build on existing approaches in the nations and regions.

Where mature data sharing approaches exist, such as open data portals and data exchange using Application Programming Interfaces (APIs), we will leverage these. For areas where gaps exist in data exchange maturity, we will work collaboratively to discover and utilise as much data as possible and that local actors with fewer resources are not disadvantaged. Through our Local Actor Support function, over time we aim to improve overall levels of data maturity, initially focusing on stakeholders with less developed data maturity.

RESP data management will follow the principle of inherited compliance. NESO will apply its existing corporate governance policies, ensuring compliance with GDPR, government standards, and Ofgem's Data Best Practice Guidance[32]. NESO will review and, where necessary, enhance existing approaches to accommodate the wider engagement with local actors.

Data inputs will be guided by principles of spatial awareness, transparency, and pragmatism, to maximise value in how data is discovered, acquired, and curated. The discovery process in the first RESP cycle is designed to systematically identify gaps in data availability. Where gaps exist, or primary data is unavailable or insufficiently credible, NESO will employ transparent gap-filling methodologies and assumptions.

Protocols to gather the necessary bottom-up data within each of the RESP nations and regions

Our approach to sourcing data will first seek to identify and leverage existing datasets, for example, those that are already made publicly available, or provided to other parties, such as networks. We recognise the need to limit multiple data requests for the same datasets across multiple stakeholders, and we will work with the nations and regions to determine appropriate approaches to source the data inputs required across the RESP components.

In the first RESP cycle, NESO is seeking accurate and credible data inputs to support the development of each of the RESP components. While prescriptive templates will not be mandated, data providers will be encouraged to include essential attributes including but not limited to: location identification, delivery timeframes, local context (including socio-economic factors), justifications, expected outcomes, trade-offs, and evidence of certainty (permissions, investments).

Protocols to gather necessary information from networks and national actors as inputs to all the RESP components

NESO will gather information from networks and national actors by leveraging existing relationships and mature data standards. Regulated entities have established mechanisms for providing data to NESO and we will work collaboratively with networks to

[32] Ofgem, *Data Best Practice* (June 2025) - https://www.ofgem.gov.uk/consultation/data-best-practice-code-obligation

enhance these where appropriate to support the development of the RESPs. RESP will seek to minimise duplication of requests by utilising internal data already received across all operational functions.

RESP will only request new data after internal and stakeholder consultation confirms its value and quality. Furthermore, NESO is working with industry to move to utilising the Data Sharing Infrastructure (DSI) (including scheme adherence and automated quality controls), starting with networks and expecting to expand to include other entities to streamline and digitise future data exchange.

How the data sources will be identified, assessed and selected for inclusion in developing the RESP components

The identification, assessment, and selection of data sources will be developed collaboratively through our engagement with stakeholders in the nations and regions and through our governance working group arrangements. Given the diversity of data, the process focuses on capturing interactions and assessments in real-time to determine coherence and criticality.

1. Onboarding and partitioning: Data will be onboarded from the broad data sources RESP will consider. Where appropriate, the framework allows for granular partitioning of each actor's data, including commercial, legal and confidentiality rules, making it available for assessment by all within the RESP.
2. Collaborative assessment: NESO will leverage the ability to assess the whole continuum of national and local energy actor data in parallel, taking stakeholder inputs via the regional working groups.
3. Emergent transparent view across datasets: Data traceability will be important and we expect to develop approaches to trace emerging views of the data as it is processed in the RESP components.
4. Selection and transformation: Raw datasets will be transformed and where possible standardised for use in RESP activities.

We will develop formal data definitions, dictionaries, and taxonomies. NESO intends to align these definitions with the current onboarding guidance for the DSI, ensuring these definitions can flow into the DSI backlog for full automation in future cycles.

The integration and harmonisation of RESP data inputs with national strategic plans, including the SSEP and CSNP, are addressed in detail in the Pathways section.

Consultation Questions:

- Do you have any observations or suggestions on our proposed approach to managing RESP data?

Approach to assess the credibility of data and information sources.

NESO will establish a rigorous, yet pragmatic, framework for assessing data credibility, aligned with Aqua Book principles for Analytical Quality Assurance (AQA). RESP will apply a structured credibility framework, to assess and classify data based on two dimensions:

1. **Data quality:** The inherent quality of the data (accuracy, completeness, timeliness, validity, and relevance).
2. **Data criticality:** How materially the data influences modelling or decision-making with these assessment outcomes and decisions relating to them being recorded for transparency.

This two-layer classification ensures that the most critical data is subject to the strongest assurance.

Operationalising credibility

In the first RESP cycle, NESO do not expect to employ predefined scorecards or rigid thresholds for bottom-up data but seek to develop these collaboratively with stakeholders. A threshold presupposes that the consequence of acceptance is clearly known. As data definitions and assessment methodologies are emergent in this cycle, thresholds cannot be predefined; they can only be determined through testing and validation cycles.

The scorecards and thresholds will be developed and refined with Working Groups and through engagement with stakeholders in the nations and regions. In the same way that focused data definitions will emerge from the initial RESP, we will employ the same approach to evolving a comprehensive scorecard based on emerging best practice, which can be implemented in future cycles and ensuring continual.

The outcomes of data credibility checks will be recorded in a data log and proportionate checks and independent review will be applied.

Balancing transparency with confidentiality

As we develop the RESPs we will need to balance how we maintain transparency and accessibility with the need to maintain confidentiality. We recognise that some of the data provided to develop the RESPs may include commercially sensitive information requiring careful handling to protect confidentiality. This will apply across to how we utilise, share and visualise data outputs as we develop the RESP components.

To balance transparency with commercial sensitivity, we propose the following approach:

- We will comply with the relevant data policies to protect confidentiality and seek to introduce standardised data sharing agreements to support efficient and secure sharing. This would set clear expectations for how RESP data will be used, protected and governed and shared with key actors such as the distribution networks to support coordinated planning (within the terms of a Data Sharing Agreement).
- Where we identify material risk in disclosing individual confidential datasets, we will seek to aggregate datasets.

We welcome your feedback on how best to strike the right balance between transparency and confidentiality as we develop the RESPs.

How datasets and information will be kept up to date

NESO will implement structured processes for refreshing data, ensuring the RESP is based on the most current available data particularly as we are developing RESPs every three years. NESO will prioritize refreshing datasets that are highly critical the development of the RESPs and subject to high volatility.

We expect to have a data refresh ahead of each RESP three-yearly cycle at a minimum and we will agree a fixed data snapshot (or data freeze) that forms the basis of all modelling for that cycle. Ahead of any refresh, NESO will work with stakeholders through engagement and working groups to confirm the necessity, scope, and timing of updates, ensuring the process reflects industry needs and expectations.

Consultation Questions:

- How frequently do you believe data refreshes should occur to ensure the RESP remains accurate and useful? What criteria should trigger a data refresh? Please provide your reasoning.

The in-development register

Ofgem expectations in Draft RESP Guidance:

- The RESP Methodology must outline how NESO will establish and maintain an up-to-date in-development register of early-stage projects in each of the RESP nations and regions.
- Ofgem expect the in-development register to collate information which provides insight into material future energy system needs which may arise but are not yet sufficiently developed and/or definitive to be directly included in the RESP inputs.
- While we expect that the in-development register may be most relevant to the development of the RESP Pathways and specification of Strategic Investment Need NESO must articulate its function and scope in the RESP Methodology.

Overview of the in-development register

The in-development register will collate information on early-stage projects that may indicate future energy system needs, but are not yet sufficiently developed or certain for direct inclusion in RESP. The register will provide visibility of emerging activity within the nations and regions that may need to be included in future RESPs.

Building the in-development register

- Each RESP nation and region will have an in-development register populated with early-stage projects, identified as we develop the RESPs.
- We will identify early-stage projects from the wide range of inputs into RESP, and particularly as we develop the Nations and Regions Contexts.
- Any projects that are not yet sufficiently developed for inclusion in the RESPs, will be included in the register. An initial in-development register will be populated with the out-of-scope energy needs from the tRESP SI Need process.
- We propose that early-stage projects should not only reflect increases in generation or demand, but seek to also capture where there might be future reductions as well.

Keeping the register updated

- We expect this register to be updated as part of our data refresh process, proactively requesting stakeholders to inform NESO where there are changes in capacity or location, and where there are material changes that could influence the uncertainty and strategic value of the project.

Visibility of the register

We recognise that many of the projects captured in the register are at an early stage of development and may involve commercially sensitive information. As such, we expect a significant proportion of entries to require careful handling to protect confidentiality.

To balance transparency with commercial sensitivity, we propose the following approach:

- **Aggregated data**: To anonymise particular projects we could consider aggregating data together. Although this may limit the usefulness of a public version, it would protect confidentiality whilst avoiding unintended consequences that could undermine early-stage projects.
- **Confidential sharing with distribution networks**: We will seek agreement from data providers to share detailed information confidentially and transparently with distribution networks, to support coordinated planning.

We welcome your feedback on how best to strike the right balance between transparency and confidentiality. In particular, we are keen to understand whether commercial sensitivities might discourage stakeholders from contributing to the register, and what measures could help build confidence in sharing information securely.

Consultation Question:

Will commercial sensitivities discourage you or other stakeholders from contributing to the in-development register? What measures could help build confidence in sharing information?

Innovation

NESO's secondary duty under the Energy Act 2023 includes having regard to the desirability of facilitating innovation - to create an environment that enables others to help solve energy challenges. RESPs are being developed in a period of rapid change, where the pace of technological advancement, policy development, and regional ambition is accelerating. Innovation plays a critical role to enable us to take more deliberate, forward-looking steps testing new technologies, exploring novel planning methods and building capabilities that go beyond what exists today.

NESO supports a range of innovation-funded initiatives that inform the development of RESPs. These projects sit within a broader ecosystem of regulated funding, strategic partnerships, and system-level coordination. The NESO Innovation Team works closely with the RESP Team to identify emerging system needs and assess opportunities. Proposals are reviewed based on criteria such as strategic alignment with RESP objectives, feasibility, scalability, and likely system impact.

We are particularly focused on RESP-related innovation that supports:

- improved access to, and use of, energy data
- advanced planning capabilities across energy types
- new approaches to stakeholder and community engagement
- greater consistency and coordination across RESP nations and regions

As RESP continues to evolve, so too will our approach to supporting innovation. NESO is committed to ensuring that the innovation pipeline remains aligned with the practical needs of nations and regions, as well as the wider transition to a net zero energy system. For more information on ongoing innovation projects see Appendix 6 - Innovation.

Assurance

Due to its complexity and the potential impact of the results, the RESPs will be subject to high levels of assurance across all aspects of the programme. This will encompass both programme delivery and technical assurance which will be delivered by a 'three lines of defence model', described in Appendix 1 - Assurance. These will show the boundaries between different roles and responsibilities in the delivery of assurance and risk management.

6. Timelines and Next Steps

Timescales for RESP

This consultation closes on 16 January 2026. The final methodology will be published in summer 2026, subject to approval from Ofgem and the Department of Energy Security and Net Zero (DESNZ). Following approval, we expect to be holding the first Strategic Boards in late 2026.

We are currently working through the timescales for delivering the first RESPs and have ongoing conversations on this with both Ofgem and DESNZ to finalise the timeline. In this consultation we set out some of the challenges in delivering the Spatial Context element of RESP within the original December 2027 timeline. However, there are other influences on our delivery which are less within our control, such as the decision making of the Strategic Boards, policy decisions by the UK, Scottish and Welsh governments, and Ofgem, and the dependency of the RESPs on other strategic plans and data. To inform the next gas distribution price control we will need to publish the full RESPs by December 2028. We expect any changes agreed to the delivery timescales to be reflected in NESOs licence.

Next steps

Following the launch webinar for this consultation, we will be holding a series of deep dive methodology webinars. We are also working with the Local Government Association (LGA), Welsh LGA, and COSLA (Scotland) to organise local authority focused webinars on this consultation.

We have identified a few areas in this consultation where the methodology is not as well developed as it will need to be for approval of the full methodology next year. These areas include whole energy system optimisation, specification of Strategic Investment Need and Gas Network Planning Assurance. Additionally, the responses provided to this consultation may raise further areas for deeper development. We are committed to doing this transparently and collaboratively using the already established Technical Working Group, focussed webinars on key topic areas, and future RESP Forums.

Consultation Question:

Overall, do you agree with the approaches proposed across the RESP methodology? Are there any elements of the methodology that you would like to see in more detail?

7. 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 document 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 electricity and gas systems in Great Britain, together with its own forecasts of the future development of those systems.

While NESO has not sought to mislead any person as to the contents of this report and whilst such contents represent its best view as at the time of publication, readers of this document should not place any reliance in law on the contents of this report.

The contents of this report must be considered as illustrative only and no warranty can be or is made as to the accuracy and completeness of such contents, nor shall anything within this report constitute an offer capable of acceptance or form the basis of any contract.

Other than in the event of fraudulent misstatement or fraudulent misrepresentation, NESO does not accept any responsibility for any use which is made of the information contained within this report.

8. Glossary

Glossary of terms and acronyms

Glossary of terms and acronyms

Table 19: Glossary of terms and acronyms

Term	Definition
Behind-the-meter (BTM)	Systems that enable consumers to generate, and often store, electricity on their own premises, reducing dependence on traditional utility providers, and enabling them to have greater control over their energy usage.
Business Plan Data Template (BPDT)	Template documents populated by network companies when submitting business plans.
Capacity Market Registers (CMRs)	A record of all applications made to the Electricity Market Reform Delivery Body ahead of the relevant Capacity Auction, as well as details of those who were successful in obtaining a Capacity Agreement and any enduring obligations.
Centralised Strategic Network Plan (CSNP)	A single, whole system plan for GB's energy networks that ensures security and drives efficient solutions across electricity, gas and hydrogen.
Connections Action Plan (CAP)	An action plan published by DESNZ and Ofgem in 2023 setting out expectations for the scale and pace of grid connections reform.
Combined Heat and Power (CHPs)	Plants that provide energy for industrial process heat requirements or for space heating requirements in heat networks.
Complex strategic energy needs	Energy needs (supply or demand) that are of significance in the nation or region, of high system value and are complex to assess due to timescales, geography, or required trade-offs between energy types, priorities or stakeholders. These needs cannot be met by "business as usual" approaches to network planning.
Consistent Planning Assumptions	One of the five components that together form each of the RESPs. Consistent Planning Assumptions will be focused on helping distribution networks plan consistently, driving consistency in assessment of network impacts across GB and hence future investment, whilst allowing for differences across nations and regions.

Cross-energy type	Interdependencies between energy types, such as electricity, gas, heat and hydrogen.
Cross-sector	A broad set of interdependencies which impact energy system planning, such as heat networks, transport, water and housing.
Cross-sector actors	For the purpose of RESP, representatives from sectors impacting energy system planning, such as industry, transport, consumer or community energy, invited to join the Strategic Boards.
Customers	For the purpose of RESP, stakeholders who will be using the RESP outputs and activities, such as local authorities and other local energy representatives, those who will use local actor support, and electricity and gas distribution networks who will use the RESPs in developing their network plans.
Decentralisation	Refers both to the general trend of distributed sources of generation and storage, but also a trend towards decisions being made at a local scale when it comes to the energy transition.
Department for Energy Security and Net Zero (DESNZ)	The UK government department responsible for delivering security of energy supply, ensuring properly functioning energy markets, encouraging greater energy efficiency and seizing the opportunities of net zero to lead the world in new green industries.
Digitalisation	Integration of data tools into energy system planning and operations.
Distribution networks	Networks that distribute electricity and gas from the transmission network to where it is needed.
Distribution network operators (DNOs)	Companies licensed by Ofgem that own and operate the electricity distribution networks. There are 14 geographically defined regions for electricity distribution, each with its own licensed DNO.
Distribution Future Energy Scenarios (DFES)	A range of credible futures for the growth of the distribution network, developed annually by the Distribution System Operators (DSO) within NESO's FES framework, as part of their investment planning process.
Data Sharing Infrastructure (DSI)	Digital infrastructure and trust frameworks being developed, as part of a NESO-led programme, to enable secure and seamless data sharing within the energy sectors.

Data Zone	The key geography used for producing small area statistics in Scotland with a resident population of 375 to 1,125 people.
Demand Side Response (DSR)	Balancing the demand on the grid by encouraging customers to shift their demand to times when electricity is more plentiful or other demand is lower, typically through prices or monetary incentives.
Distribution System Operator (DSO)	A method of operation to actively balance power inputs and outputs by integrating a diverse range of distributed energy resources into the grid.
ED3 price controls setting process	A process whereby Ofgem sets price controls on the companies that run the electricity distribution networks in GB to ensure that current and future consumers get the network services they require at a fair price. The current price control for the electricity distribution sector (RIIO-ED2) is due to finish in March 2028. The ED3 price controls will then start on 1 April 2028 and run for 5 years up to 31 March 2033.
Electric Vehicles (EVs)	Vehicles wholly driven by an electric motor that is wholly powered through a battery and does not produce any tailpipe emissions.
Energy Networks Association (ENA)	A not-for-profit industry body representing the companies which operate the energy networks in the UK and Ireland.
Energy network	Interconnected infrastructure used for the transmission and distribution of energy and/or energy sources.
Embedded Capacity Registers (ECR)	A register that provides information to electricity network stakeholders on generation and storage resources (equal or up to 50kW) that are connected, or accepted to connect, to the distribution network, plus information about Flexibility Services that are being provided by connected resources.
Feed-in-Tariff (FiT) register	A database of installations accredited for the Feed-in-Tariff scheme which requires some electricity suppliers to pay fixed tariffs to FIT generators for the electricity their accredited installation generates and exports to the grid.
Flexibility	In an energy context, the ability to shift in time or location the demand or supply of electricity, over hours, days or seasons. It includes storing energy for times when demand outstrips supply, offering rewards to consumers who choose to shift demand away from peak times, importing and exporting electricity, and generating dispatchable power (meaning

	energy sources that can be controlled and adjusted to meet demand).
Flexibility providers	Providers of services that help balance supply and demand for electricity.
Front-of-the-meter (FTM)	Energy-related activities that occur on the utility side of the grid, typically involving large-scale generation, transmission and distribution infrastructure. These activities are primarily managed by utility companies and are designed to meet the energy demand of a wide range of consumers.
Future Energy Scenarios (FES)	A range of credible pathways for the future of energy which form the starting point for our transmission network and investment planning and are used to identify future operability challenges and potential solutions out to 2050.
GB Steering Committee (GBSC)	A GB-level Committee that NESO will set up as part of the RESP governance arrangements to provide oversight, expert advice and coordination across the RESPs.
Gas Distribution Networks (GDNs)	The networks that take gas from the National Transmission System (NTS) and deliver it safely to homes and businesses.
Grid Supply Point (GSP)	The point at which energy is taken from the transmission system into the distribution system.
Greenhouse gases	A gas in the atmosphere that absorbs and emits radiation within the thermal infrared range. The gases contributing most to the Earth's greenhouse effect are water vapour (H_2O), carbon dioxide (CO_2), nitrous oxide (N_2), methane (CH_4) and ozone (O_3).
Heat networks	Systems that provide heating, cooling and hot water to multiple properties in a building or to multiple buildings from a single source.
In-development registers	Registers that will be developed for each RESP nation and region to collate information on early-stage projects that may indicate future energy system needs, but which are not yet sufficiently developed or certain for direct inclusion in the RESPs.
Independent Gas Transporters (IGTs)	Companies licensed to design, develop, operate and maintain local gas transportation networks connected directly or indirectly to the GDN. Unlike the GNDs, they can operate UK-wide.
Independent Distribution Network Operators (IDNOs)	Companies licensed to design, develop, operate and maintain local electricity distribution networks connected to the DNO

	network – historically providing the 'last mile' to domestic consumers (for example, in new housing developments) but now serving a more diverse range of customers. Unlike the DNOs, they can operate UK-wide.
Kilowatt (kW)	A unit of power.
Local actors	For the purpose of RESP, relevant local actors are those with a role, interest or influence in a specific RESP nation or region (in its entirety or part), and who are involved in energy system planning or heavily influenced by its outcomes.
Local Actor Support	The support that NESO will provide to enable local actors who need it to engage effectively with RESP, particularly local government and local energy representatives.
Local Area Energy Plans (LAEPs)	Place-based whole energy system plans for net zero, usually coordinated by local or combined authorities.
Local Heat and Energy Efficiency Strategies (LHEES)	Plans that underpin an area-based approach to heat and energy efficiency planning and delivery in Scotland.
Low Carbon Technology	A collective term for the following technologies: • Heat pumps at existing connections that do not lead to a new or modified connection. • EV chargers, both slow and fast charging, at existing connections that do not lead to a new or modified connection. • Photovoltaics (PV) connected under Engineering Recommendation G98. • Other renewable Distributed Generation (DG), excluding PV, connected under Engineering Recommendation G98. • Renewable DG not connected under Engineering Recommendation G98.
Lower Layer Super Output Area (LSOA)	A geographical area used for census statistics comprising between 400 and 1,200 households and usually with a resident population of between 1,000 and 3,000 persons.
MCS Database	An online database of MCS certified small scale, low carbon installations.
National Energy System Operator (NESO)	An independent public corporation with responsibility for planning Britain's electricity and gas systems and operating the electricity system, taking a whole system view, to create a

	world where everyone has access to reliable, clean, affordable energy.
RESP nations and regions	In a RESP context, Scotland, Wales and nine English RESP regions. These areas are sufficiently granular to enable an understanding of place-based conditions and priorities, yet sizeable enough to establish a coherent approach across GB, in terms of different energy types and sectors. The geographical and administrative foundations for RESP nations and regions vary across GB, reflecting the Scottish and Welsh governments, local government arrangements in England, functional economic areas, spatial planning and infrastructure planning.
Nations and Regions Contexts	One of the five components that together form each of the RESPs. They will provide a view of local conditions ('where we are now') and priorities ('where we are trying to get to') and set a benchmark from which to measure progress. They will include energy and related topics such as economic and social factors like housing and transportation. They will be informed by engagement in the RESP nations and regions and datasets, and will reflect, rather than supersede, local plans and ambitions.
Network Innovation Allowance (NIA)	An amount of funding specified by Ofgem that each network licensee receives as part of their price control allowance. This enables them to take forward innovation projects that have the potential to address consumer vulnerability and/or deliver longer-term financial and environmental benefits for consumers.
Network Planning Assurance (NPA)	A key activity that NESO will undertake after the creation of the RESPs to provide assurance to Ofgem that DNO and GDN network plans will deliver network capacity in line with the RESPs.
Ofgem	The UK's independent National Regulatory Authority, a non-ministerial government department. Its principal objective is to protect the interests of existing and future electricity and gas consumers. It considers how the UK economy is affected by its decisions, and works with government departments, NESO, the energy industry and others to achieve net zero by 2050.
Pathways	One of the five components that together form each of the RESPs. They will be spatially-modelled projections of future energy supply and demand in each RESP nation and region. They will consist of one short-term 10-year pathway and multiple long-term pathways to reflect uncertainty, over a period of no less than 25 years. They will be modelled to

	sufficient granularity to support local planning and provide a detailed basis to underpin network planning by the DNOs.
Place-based	In a RESP context, this refers to areas and stakeholders with a role or interest at a Scotland, Wales or English RESP region scale, or lower. It refers to the bottom-up approach adopted in RESP, to ensure that local, regional and national needs and requirements are used as key inputs to the development of the 11 RESPs.
Planning Regional Infrastructure in a Digital Environment (PRIDE)	An innovation project that explores how a digital tool can support more interactive energy and net zero planning for local authorities, energy networks and regions.
Powering Wales Renewably (PRW)	An innovation project to support the delivery of the Welsh Government's decarbonisation plans and deliver net benefits to Welsh communities. The project is delivering a "digital twin" of the Welsh energy transmission and distribution systems, providing a common digital interface to accelerate the integration of renewable generation.
Regional Energy Strategic Planning (RESP)	The role given to NESO by Ofgem (as defined by Ofgem's RESP Policy Framework decision) to ensure the delivery of a secure energy system, enable economic growth and help pave the way towards a sustainable energy future for everyone.
Regional Energy Strategic Plans (RESPs)	The "whole energy" strategic plans that NESO will produce for Scotland, Wales and nine English RESP regions. They will be achieved through working with stakeholders, as part of a bottom-up approach, to how our future energy systems are planned.
RESP Team	The team within NESO delivering NESO's RESP role including dedicated teams embedded within each of the RESP nations and regions.
RESP Forums	One of several engagement mechanisms used by NESO to engage customers and stakeholders in each of the RESP nations and regions with RESP.
Renewable generation	Production of electricity from sources that are naturally replenished and do not run out.
Review of Electricity Market Arrangements (REMA)	A review launched by DESNZ in 2022 to identify reforms needed to create a fair, affordable, secure, efficient system and maximise benefits of clean power for consumers.

Societal Considerations	In the context of RESP, the consideration of national, regional and local priorities such as economic growth, job creation, social programmes and community initiatives.
Spatial Context	One of the five components that together form each of the RESPs. This will provide a spatial view of energy pathways overlaid against distribution network capacity data to highlight areas of system need where investment might be required. This will incorporate whole system spatial data to support coordinated and informed planning across the RESP nations and regions.
Strategic Authorities	A new category of authority in England being created by the English Devolution and Community Empowerment Bill for the purpose of devolution which will include: • Combined Authorities – a group of two or more councils that collaborate and take collective decisions across council boundaries on matters devolved to them by government, and which typically cover a single-tier area. • Combined County Authorities – similar to Combined Authorities but comprised of upper-tier councils covering two-tier areas. • The Greater London Authority (GLA). • In rare cases, a single council which reached an agreement with government to access non-mayoral devolution.
Strategic Boards	Governance bodies that will be established for each RESP nation and region to provide oversight, coordination and steer throughout the RESPs' development.
Strategic investment	For the purpose of RESP, investment that is in advance of certain need and both a) of high economic and/or system value and b) necessary to the delivery of key regional priorities.
Strategic Investment Need	One of the five components that together form each of the RESPs. This will be a specification of identified areas of energy need in each RESP nation and region which are strategically significant and more complex due to timescales, geography or required trade-offs between energy types, priorities or stakeholders. If enabled through appropriate network investment, they will unlock system-wide value, accelerate decarbonisation, and support long-term economic development.

Strategic Innovation Fund (SIF)	A fund delivered in partnership between Ofgem and Innovate UK, as part of the price control system, to drive innovation and transformation in energy networks.
Strategic planning	A coordinated whole system approach to spatial planning that will allow a more holistic understanding of the long-term changes across the whole energy system.
Strategic Spatial Energy Plan (SSEP)	A holistic approach to GB-level planning for electricity and hydrogen generation and storage infrastructure being developed by NESO to identify potential zonal locations for these assets.
System need	The amount of energy needed (MWh) dependent on national and regional customers and stakeholders and economic, net zero and cross-energy type plans.
Technical coordination	An essential delivery function that NESO will undertake as part of its RESP role to ensure coherence across RESP nations, regions and adjacent plans. It enables early identification and resolution of gaps and inconsistencies and opportunities for whole system optimisation.
Technical Working Group (TWG)	Refers to both the existing group established to support the delivery of tRESP by January 2026 and a new group to be established as part of the RESP governance arrangements. This new group will span all RESP nations and regions.
Thematic Working Group	A working group within the nations and regions that interrogates RESPs from the perspective of a particular theme, such as Industry and Transport, and involves stakeholders within those sectors.
Transmission Impact Assessment (TIA)	A process used to assess the potential effect of distribution-level connections on the wider transmission network.
Transmission networks	The networks that carry huge amounts of electricity over long distance. There are three transmission network operators in GB – National Grid in England and Wales, SP Energy Networks in the south of Scotland, and Scottish and Southern Electricity Networks in the north of Scotland.
Transitional RESP (tRESP)	A transitional RESP output being delivered by NESO at Ofgem's request by January 2026 "to deliver as much benefit as is practicable to support the ED3 price controls setting process while the RESP function develops to full capability".
Transmission Owners (TOs)	Companies that own the electricity transmission system.

Unitary authority	A single-tier type of local government providing all local government services. In Scotland and Wales there is a single tier system of local government. In England, unitary authorities are one of five types of local authorities alongside county councils, district councils, metropolitan districts and London boroughs.
Vehicle-to-grid (V2G)	A system which enables EVs to send stored energy back to the grid through bidirectional charging infrastructure.

9. Appendices

Appendix 1 – Assurance

Risk based approach

A proportionate risk-based assurance approach will be performed based upon the levels of complexity and impact identified across RESP. For example, those areas which are considered higher risk with higher levels of complexity and impact will require higher levels of assurance and related controls to ensure the risks identified are mitigated appropriately. This will form the basis of Analytical Rigour in ensuring the right level of controls are in place commensurate to the levels of risk identified. For example, risk assessments will be performed as appropriate for analysis performed by RESP to identify the level of controls required. The controls required will be aligned to good practise guidance such as the Aqua Book guidelines.

Three lines of defence

The programme follows the NESO three lines of defence model approach as follows:

- First line of defence: Front-line programme and operational staff and management who manage the RESP programme related activities. This includes internal programme and RESP operational team activity to ensure plans, processes and deliverables follow good practice standards, are consistently applied, and are appropriately documented.
- Second line of defence: Oversight from the NESO Strategic Energy Planning (SEP) portfolio and other NESO subject matter experts.
- Third line of defence: Oversight from an independent third party.

Assurance scope

Assurance includes both the programme management and technical delivery of the RESP programme. Programme management ensures the programme achieves its objectives by reviewing its progress, plans, and processes. Technical delivery assurance will cover the design, implementation, and performance of key processes, such as the modelling and Pathways development process, drawing principally upon the guidance in the Aqua Book. These processes include engagement with different stakeholders to provide check and challenge for areas such as Consistent Planning Assumptions (see the Consistent Planning Assumptions section for stakeholder roles and responsibilities).

These assurance processes will provide regular feedback to RESP management to ensure appropriate good practise continues to be effectively maintained and performed.

Integrated assurance plan

An integrated assurance plan will be used to co-ordinate and monitor the required levels of assurance across the RESP programme. This will be part of the programme delivery plans and aligned to the programme assurance and governance framework.

Programme management assurance

First line assurance will be delivered by the RESP team. They are responsible for programme management processes and aligning these to NESO and relevant wider good practice standards. Key assurance processes within the programme include:

- scope management and planning
- risk, assumption, issues, dependencies (RAID)
- procurement and cost control
- programme governance and reporting

For example, the programme RAID logs will be used to monitor and track required actions for successful resolution of risks and issues identified.

Second line assurance will be delivered from outside of the RESP team, by other bodies within NESO. The wider SEP Portfolio Office, which is responsible for managing teams across our strategic energy planning initiatives, will lead and provide assurance of:

- programme management controls
- quality assurance of key deliverables
- governance oversight

As per our governance framework there will be specified milestones incorporated in the schedule; this includes:

- specified stage gates throughout the programme life cycle with defined entry and exit criteria
- assurance checks prior to the release of key deliverables, including quality control of these deliverables

The SEP Portfolio Office has the option to conduct deep dives into areas identified as a concern or develop treatment plans for identified risks or issues. Other NESO functions, such as NESO Assurance, may also support. in performing additional assurance reviews, NESO Major Projects Department performing additional programme management QA reviews, Chief Economists Office performing additional Check and Challenge across analysis performed.

Risks and issues identified by the second line activities will be reported to RESP management as appropriate including individual RESP Boards, product management teams, RESP Programme Management Board and escalated through the governance structure as required.

Third line assurance is being provided by an independent third party. They have performed a programme management review of the RESP Programme and recommendation actions have been completed by the Programme. The need for any future independent third line assurance programme management review will continue to be assessed, and additional programme management assurance performed as required.

Technical assurance

Technical assurance will be delivered through the three lines of defence structure, with the addition of external peer review and audit. This is encouraged as part of the Aqua Book guidance for programmes with the highest degree of risk and complexity, which is determined based on a structured risk matrix that considers business risk and complexity.

NESO will also have clearly defined roles during this process, in line with the Aqua Book's guidance, such as Commissioner, Analyst, Assurer and Approver.

First line assurance will maintain good practice controls aligned with relevant standards with particular focus on the Aqua Book and NESO Analytical Rigour standards. This will include key controls such as, but not limited to, maintaining:

- assumptions logs
- decision logs
- data quality logs
- peer reviews of analysis
- modelling risks and issues log
- analysis documentation, traceability and version control
- Quality reviews performed by the relevant assurance lead and recorded through established governance checkpoints as appropriate

Second line assurance will utilise internal subject matter experts from our assurance team and across the NESO organisation. This may include:

- ongoing oversight across the programme key deliverables by Strategic Energy Planning portfolio assurance
- deep dives as required over key deliverables
- check and challenge sessions from SMEs from across the NESO organisation
- Technical SMEs will review modelling assumptions, data integrity, and reproducibility of analytical outputs, providing challenge against NESO Analytical Rigour standards. Related approaches to managing data are included in the Digital and Data Approach section.

Third line assurance is provided by an independent third party. Competitively procured on behalf of the SEP portfolio, this specialist provider is retained to perform an assurance role on RESP key processes and deliverables. They are intended to provide on-going independent third-party assurance over the RESPs key deliverables. Areas of focus initially will include:

- RESP methodology, including the consultation
- Modelling and Pathways

Future areas of focus will be considered in line with the RESP timeline of deliverables including areas such as Stakeholder Engagement, Publication Preparation and Readiness.

Appendix 2 – Interactions across RESP

There are a number of key interactions between different components of RESP, as well as with the functions which support RESP. This appendix summarises these interactions.

The Nations and Regions Contexts

The Nations and Regions Contexts will be a key input for the Pathways and Strategic Investment Needs.

Table 20: Interactions between Nations and Regions Contexts and the other RESP components.

RESP Component	Interaction
Pathways	• The Pathways will be based on the specific goals of the nations and regions. • Pathways should align with the Nations and Regions Contexts, building on the data and priorities within it. If there are discrepancies, this will be explained to the Strategic Board with rationale and proposed mitigations and implications, such as editing the Nations and Regions Contexts.
Strategic Investment Need	• The Nations and Regions Contexts outline local energy priorities, helping to pinpoint specific areas for strategic investments to meet future demands. • Priorities from the Nations and Regions Contexts will guide Strategic Investment Needs (SI Needs), ensuring investments align with local aspirations and broader strategic goals. • Insights from the Nations and Regions Contexts will inform the assessment of SI Needs, ensuring evidence-based investments.

Pathways

The Pathways will use the Nations and Regions Context and the complex energy needs identified as part of the SI Need process as an input. The Pathways will then form the basis for the Spatial Context component.

Table 21: Interactions between Pathways and the other RESP components.

RESP Component	Interaction
Nations and Regions Contexts	• The Nations and Regions Contexts are inputs to the Pathways. • The Pathways should be grounded in this context to ensure they reflect the nations and regions priorities. • Further details are provided in the Nations and Regions Contexts section.
Strategic Investment Need	• Complex strategic energy needs are an input into Pathways. • The RESP will identify certain projects, or groups of projects, as a potential complex strategic energy need and will carry out an assessment of the characteristics of these energy needs (for example, timing, capacity, energy types). • Through this assessment, RESP will determine the certainty of future energy needs and will, in turn, map and integrate them to specific Pathways. This assessment may also consider whether specific complex strategic energy needs align with the narrative of the long-term Pathways. • The Pathways output will be used as an input to the identification of areas of SI Need.
Consistent Planning Assumptions	• The Consistent Planning Assumptions are developed in parallel with the Pathways during the Pathways design and modelling activities. • The Consistent Planning Assumptions are provided to the networks alongside the Pathways to ensure consistent derivation of network impacts.
Spatial Context	• The Pathways output will be an input into the Spatial Context. • The Spatial Context will provide a spatial view of Pathways against network capacity availability to show areas of system need.

Spatial Context

The Spatial Context will take the Pathways as a key input and then support the identification of areas of Strategic Investment Need.

Table 22: Interactions between Spatial Context and the other RESP components.

RESP Component	Interaction
Strategic Investment Need	• The Spatial Context may highlight constraints or 'hotspots' on the networks not previously highlighted and this may lead to the identification of additional areas of SI Needs.
Pathways	• The Spatial Context will provide a spatial view of Pathways against network capacity availability to show areas of system need.

Strategic Investment Needs

The identification of Strategic Investment Needs will be fed by priorities identified in the Nations and Regions Contexts and the Pathways as well as by the geospatial view of the Pathways in the Spatial Context.

Table 23: Interactions between Strategic Investment Needs and the other RESP components.

RESP Component	Interaction
Nations and Regions Contexts	• We will use data included in the Nations and Regions Contexts to identify key energy priorities and determine energy needs of significance for each nation and region.
Pathways	• The pathways modelling will provide evidence of supply and demand needs and highlight sensitivities that need further investigation and assessment.
Spatial Context	• The Spatial Context output may show constraints ('hotspots') not visible during initial engagement, that could lead to recommendations for areas of SI Need.

Appendix 3 – Items for Pathways:

Data sources

As we progress through the full RESPs, we will continue to work with our stakeholders to leverage a range of continuous local and national inputs.

Table 24 provides an illustration of some of the data sources that will shape the inputs into RESP Pathways.

Table 24: Data sources in RESP Pathways

Top-down national inputs:	• UK, Scottish and Welsh Government net zero targets and plans, for example the UK government's Clean Power 2030 Action Plan and the Industrial Decarbonisation Strategy • Climate Change Committee scenarios • Strategic Spatial Energy Plan (SSEP) outputs
Network data:	• Gas distribution networks (GDN) and distribution network operators (DNO) data, including units distributed, network capacity, connections, and flexibility assumptions • Independent DNO (IDNO) and Independent Gas Transporter (IGT) data • Transmission Owner (TO) asset availability data

	• Local government data

Bottom-up local and regional inputs:	• Nations and Regions Contexts and priorities
	• Regional energy and industrial strategies
	• Heat network zoning data
	• Housing stock data
	• Investment plans
	• Local and community energy projects
	  • Local Area Energy Plans (LAEPs)
	  • Local plans
	  • Local Heat and Energy Efficiency Strategies (LHEES)
	  • Local transport plans
	  • Local net zero targets
	  • In-development register

Other sources:	• Electrical vehicle ownership data • Heat pump ownership data • Transport, water, and telecommunications strategies and plans

Appendix 4 – Local Actor Support: Understanding Support Needs

In developing local actor support, NESO has engaged with a cross section of relevant local government actors, community representatives, industry representatives and others to better understand their needs and priorities. Our nations and regions teams conducted structured interviews with around 40 local actors to understand their motivations, priorities, pain points, technical needs, collaboration barriers, and training needs; based on their concrete and lived experience. We also posed questions to attendees of the RESP forums across GB in June and July 2025. Local authorities were a key source of insight. Sub-national transport bodies, investors, and Scottish and Welsh governments also contributed insights on infrastructure and policy. Community energy groups, energy non-governmental organisations, and fuel poverty organisations also provided their perspectives. Additionally, utilities and non-statutory local government bodies were included to offer a comprehensive view of the energy sector's challenges and opportunities. These insights have been used to shape the proposals for local actor support.

Appendix 5 – Engagement Principles and Mechanisms

NESO's Strategic Energy Planning Engagement Principles

Introduction

NESO's strategic energy planning engagement principles underpin the approach to engaging stakeholders in the development of NESO's strategic energy plans. These plans include the Strategic Spatial Energy Plan (SSEP), the Centralised Strategic Energy Plan (CSNP), and the Regional Energy Strategic Plans (RESPs).

As our experience of applying the principles develops, we will review and update them, ensuring they remain fit for purpose. The latest version will be made available on the NESO website. The latest version, at the time of writing, is provided below.

Principles

Timely and transparent

- We will engage early, with a transparent process and stakeholder-focused approach. We will make it clear to stakeholders how we will consider their feedback and how they can shape the plan, while respecting the confidentiality of the work.
- We will clearly set out what stakeholders can (and cannot) shape, to manage expectations and build trust.

Proactive engagement

- We will work with a wide range of stakeholders with interest or expertise in energy planning. Their engagement will help us develop and evolve our plans and make sure we consider a broad range of societal views.
- This will include working with the representatives of communities that may experience development of energy infrastructure in the future.
- We will proactively update our stakeholders on new and changing information via our range of regular stakeholder groups and forums, alongside public communications.

Accountable - action feedback and inform stakeholders

- We will be accountable and consider all feedback from our stakeholders during our engagement activities.
- We will analyse feedback from stakeholders to identify themes, common views, and actionable insights.

- We will adopt a 'you said, we did / did not' approach, setting out what we have heard and what we have done as a result.
- We will not be able to take on board all views. This could be for a variety of reasons, including that some views will be conflicting or not aligned with the aims of NESO. Where this is the case, we will set out which views we have not taken on board and why. Finely balanced trade-offs will need to be made using policy and supporting information where possible, to inform decision-making where there are conflicting views.

Coordinated engagement

- We will work to align stakeholder engagement activities as much as possible, to reduce the time and effort required from stakeholders.
- We will work on this alignment across NESO, with Ofgem, with the UK, Scottish and Welsh governments, with the energy industry, and with other relevant stakeholders that undertake significant external engagement and consultation.
- We will build on relationships formed during other strategic planning activities, seeking to build a joined-up and well-coordinated conversation between NESO and our stakeholders.

Representative, inclusive, tailored and accessible

- We will ensure our engagement is representative, inclusive, tailored, and accessible.
- We will ensure it is pitched at the right level of detail for our diverse range of stakeholders, who all have different experiences of the energy sector, and energy and spatial planning.
- We will take on board feedback about our engagement activities, ensuring we adapt our style, approach, and level of detail in line with stakeholder needs.

Place-based

- Where relevant we will adopt a place-based approach, talking to stakeholders based on the geography they are interested in.
- The highest / largest geographical scale we will use for our place-based approach is the 11 RESP nations and regions; Scotland, Wales and nine English regions.
- We will also work at a lower spatial scale wherever practical, including for example, local authority boundaries, lower super output areas (LSOA) and other areas, as appropriate for specific communities, plans or projects.
- We will ensure we take the time to understand and consider key local differences and characterisations, to enable us to focus on issues that impact or matter locally.

Engagement mechanisms

This section provides outlines of each of the proposed RESP engagement mechanisms, as set out in the Engagement section. The governance mechanisms (RESP working groups, and RESP Strategic Boards) are covered separately, in the RESP External Governance section.

Local actors:

- RESP Forums: meetings held quarterly in each nation and region to share updates about RESP and relevant wider SEP activity, answer questions, and gain customer and stakeholder insights and feedback. The Forums are predominantly held online and are open to all interested parties. Details and registration links are available on NESO's website and promoted by the 11RESP national/regional teams.
- Stakeholder-led groups and networks: NESO as an attendee at a meeting organised by a stakeholder.
- Stakeholder-led boards: NESO as an attendee at board meetings organised by a stakeholder.
- 1-1 relationships: Meetings held between NESO and individual stakeholders.

Distribution networks:

- RESP Technical Working Group: A group designed to support the development of various technical aspects of RESP. This is an existing group that was originally established to support the delivery of tRESP.

Wider actors:

- 14 SEP Societal Forums: These forums provide unique perspectives on the energy sector from a broad spectrum of economic, demographic and environmental interests across GB. Membership is drawn from organisations, industry groups and associations that meet the following criteria: they have a GB or national focus or have participants/members spread across multiple geographies; they are non-statutory; they are non-decision-making; they have an interest in the future energy system; and they have an influence in discussions on the future energy system. There are 14 Forums covering the following societal sectors: older people; farming and land use; cost of living; business; charities and third sector; tourism and leisure; environment; housing; people with disabilities; sea communities; visual impact; transport; young people; large energy users.
- SSEP Environmental Working Group: This group brings together statutory and non-statutory environmental stakeholders representing GB's land and marine environments. The group determines the approach and methodology for appraising and assessing the environment for the SSEP, gathers environmental data and feedback, demonstrates how the SSEP minimises and mitigates environmental impact, and assists in meeting statutory consultation requirements for the SEA, HRA and MCZ assessments. This group is currently focused on the SSEP, but it is expected to be useful in informing the approach to environmental assessments for the RESPs.

- SEP Land Use Spatial Planning Working Group: This group brings together representatives from government departments, agencies, arm's length bodies and Scottish and Welsh governments with planning expertise and land use data to: gather data and feedback to support the development of the land use framework, support the approach and methodology for appraising and assessing land use, challenge and review Pathways to prioritise land uses, and provide spatial data modelling expertise.
- SEP Marine Planning Group: This group brings together representatives from government departments, agencies, arm's length bodies and the Scottish and Welsh governments with marine and planning expertise to; gather data and feedback to support the development of the marine use framework, support the approach and methodology for appraising and assessing marine use, challenge and review Pathways to prioritise marine uses and provide spatial data modelling expertise.

Energy industry:

- SEP Energy Industry Group: A group bringing together energy industry stakeholders, including Transmission Owners, distribution network operators, energy infrastructure developer representatives, original equipment manufacturers and academics to provide industry steer and expertise in both electricity and hydrogen. The group is a central communications channel to ensure the energy industry understands the aims and objectives of NESO's strategic energy plans and how they work together. They also provide an opportunity to test stakeholder understanding and gather data, insights and feedback on a range of strategic energy planning topics.

All:

- Stakeholder-led events: NESO as a speaker or exhibitor at an event organised by a stakeholder.
- NESO digital: Website, newsletter, social media and communication tools.
- Email correspondence: box.resp@neso.energy.
- Roundtables (NESO or stakeholder-led): Discussion forums held by NESO or where NESO is an attendee.
- Workshops (NESO or stakeholder-led): Input gathering or design sessions held by NESO or where NESO is an attendee.
- Focus groups: Insight and perspective gathering sessions.
- Consultations: NESO-led public consultations to gather feedback to help inform the final version of a plan, report, methodology, or other NESO document.
- Surveys: To gather feedback and insight, ranging from GB-wide surveys to surveys of smaller groups.
- Joint or multi-partner projects: NESO working alongside one or more organisations to jointly deliver a discrete project.

Appendix 6 – Innovation

Innovation projects

RESPs are already benefitting from a number of innovation-funded initiatives that are directly shaping its development. These projects are coordinated by NESO's Innovation Team and delivered through formal funding mechanisms such as the Network Innovation Allowance (NIA) and the Strategic Innovation Fund (SIF). They provide structured opportunities to test new ideas, technologies and ways of working that could be scaled through RESP.

The following examples highlight key past and current innovation projects.

Regional Whole Systems Strategic Planning (RWSSP) methodology – NIA funded innovation project with the Energy Systems Catapult

In November 2023, Ofgem announced the creation of the Regional Energy Strategic Planning (RESP) function, with NESO as the delivery body responsible for developing strategic energy plans across 10–13 regions. To support this, a consortium led by the Energy Systems Catapult—comprising Credera, ICS Consulting, Siemens, and TU Delft—worked with NESO to design a first-of-its-kind Regional Whole System Strategic Planning (RWSSP) methodology. The innovation project initiated in March 2024, focused on understanding and outcomes required from the RESP's , establishing an outline methodology, and de-risking future development of this first-of-a-kind approach to regional whole system planning. Key activities included reviewing Ofgem's vision, assessing the policy and planning landscape, conducting a literature review, and designing RWSSP principles to ensure plans are robust, adaptive, spatially detailed, and aligned with governance requirements. The project produced an outline methodology approach, proposed an end-to-end process, and identified critical next steps, such as digital requirements, modelling capabilities, stakeholder engagement, and a Whole System Service Value Framework. This work has provided a key foundation for the development of this first RESP methodology.

The following are current innovation projects.

Pweru Cymru yn adnewyddol (Powering Wales Renewably, PWR)

Powering Wales Renewably[33] is a NESO-led innovation project delivered in partnership with a consortium of national and regional stakeholders. As a Strategic Innovation Fund (SIF) Beta phase project, it is focused on strengthening regional energy planning in Wales and building the practical foundations for place-based, whole system planning.

The project brings together local authorities, network operators, the Welsh Government and wider NESO teams to develop consistent planning assumptions, aligned datasets,

[33] National Energy System Operator, *Powering Wales Renewably* - https://www.neso.energy/about/innovation/our-innovation-projects/sif-r2-beta-powering-wales-renewably

and regionally tailored planning tools. It is enabling regional stakeholders to define shared priorities and identify infrastructure and investment needs through a collaborative process. As the lead organisation, NESO is responsible for ensuring that the learning from PWR is embedded into development of all the RESPs. This includes piloting methodologies, understanding data requirements, and testing how stakeholder roles, governance and decision-making structures might work in Nations and Regions Contexts.

Planning Regional Infrastructure in a Digital Environment (PRIDE)

PRIDE[34] is a project led by National Grid Electricity Distribution (NGED), with NESO participating as a partner alongside Energy Systems Catapult and a wider consortium. The project aims to create a digital environment for regional infrastructure planning – bringing together data across multiple vectors and making it accessible in a coordinated format.

The platform being developed under PRIDE supports integrated planning across electricity, gas, heat and mobility. NESO's role is to help shape this platform so that it meets the real-world needs of RESP teams. This includes testing the functionality, exploring data availability and working with other partners to define how tools like PRIDE could be used at scale. PRIDE is providing valuable insight into how data integration and digital tooling can support regional collaboration and whole system analysis – core element of the RESP methodology.

Areas of ongoing exploration

In addition to formal innovation projects, NESO is also investing in a range of enabling capabilities that support continuous improvement across RESPs. These activities may not fall within the scope of standalone innovation funding, but they are directly linked to delivering RESPs and are essential to their ongoing development.

The following areas represent key focus points in this space, where NESO is exploring new tools, processes, and system enhancements to strengthen the planning framework over time.

Data Sharing Infrastructure (DSI)

Earlier this year, NESO was appointed by Ofgem as the interim coordinator for the national Data Sharing Infrastructure (DSI). This work is critical to enabling consistent, accessible and transparent use of energy system data across the country.

RESPs will benefit directly from the development of the DSI. By improving access to quality-assured data, and enabling better interoperability between systems and organisations, the DSI supports more informed, joined up and evidence-based regional planning.

NESO is working to ensure that RESP requirements help shape the DSI architecture and functionality. This includes identifying key datasets, aligning on data standards and

[34] National Grid Electricity Distribution, *Planning Regional Infrastructure in a Digital Environment* - https://commercial.nationalgrid.co.uk/innovation/projects/planning-regional-infrastructure-in-a-digital-environment-pride-beta

embedding user needs from local authorities, network companies and planning teams into the design process.

Artificial Intelligence (AI)

NESO is actively exploring how artificial intelligence can be used to support RESP's planning activities. AI techniques can help identify trends, analyse large and complex datasets, and support faster and more granular assessment of nations and regions needs.

RESPs will provide a real-world test bed for this work. From forecasting demand and modelling decarbonisation scenarios to identifying emerging system constraints, AI is being tested to support more responsive and robust decision making.

NESO's focus is on ensuring that AI tools are deployed responsibly, transparently and in ways that add practical value. We are working with partners across the sector to co-design and trial these approaches, ensuring alignment with RESP priorities and planning needs.

Tools, systems and processes

RESPs are a completely new approach to energy system planning. As such, NESO is designing the tools and systems that will support its delivery from the ground up. These tools must support coordination across the country while being easy to use and adaptable to different Nations and Regions Contexts.

We are working closely with DNOs, GDNs, local authorities and other delivery partners to review what systems already exist, and where RESPs can add value. The emphasis is on alignment, not duplication – building practical, consistent and interoperable solutions that support clear, comparable outputs. We recognise that RESPs are not static. As our planning framework evolves, so too will the tools and systems that support it. NESO is committed to continuous feedback and iteration, ensuring that what we build remains useful, relevant and responsive to the needs of those delivering it.

Innovation looking ahead

RESP marks a significant step forward in how strategic energy planning is approached in Great Britain (GB). As a whole system, regionally informed and nationally coordinated framework, it is designed to be iterative, collaborative and capable of evolving with the needs of the energy system.

By embedding both continuous improvement and structured innovation into its development, RESP is not only responsive to today's challenges but also prepares us for the opportunities and complexities of tomorrow. Through strong partnerships, thoughtful process design and investment in enabling capabilities, NESO is ensuring that RESP can deliver long-term value for regions, communities and the system as a whole.

Appendix 7 – Use of AI

The use of Artificial Intelligence (AI)

Artificial Intelligence (AI) will be used to help summarise the consultation responses we receive and identify actionable insights. All responses will also be read by a human in both its original and summarised form. AI's ability to handle diverse data sources and formats enhances our capacity to take on board responses from a wide range of customers and stakeholders. Additionally, AI can identify patterns and trends within the responses that might not be immediately apparent to human reviewers alone.

AI will not be used to make decisions autonomously, but serve as a tool to enhance, rather than replace, human judgement and support our decision-making. AI will help to highlight important issues and common themes. This approach will help ensure that the final RESP methodology is informed by the broad spectrum of views we expect to receive. We will regularly review our use of AI in interpreting consultation responses, and we will be able to track any insight identified by AI to its original source. We acknowledge the potential for biases in AI platforms and we will incorporate bias mitigation strategies into our AI planning processes. This proactive approach will help us to ensure that the actionable insights our AI systems provide are fair, unbiased and reflective of the diverse range of our customer's and stakeholders' views.

Additionally, we recognise our responsibility to maintain transparency and due diligence in all of our AI-related activities. Our use of AI will strictly adhere to NESO's relevant policies, including AI, data management, data privacy, data classification and data sharing. These policies ensure that our AI practices are aligned with our commitment to ethical standards and regulatory compliance.

Appendix 8 – Draft Strategic Board Terms of Reference

Purpose

Each Strategic Board will provide oversight and steer on the development of the Regional Energy Strategic Plans (RESPs). Approval of each RESP resides with the Strategic Boards, unless otherwise directed by Ofgem. The Strategic Boards are accountable for ensuring plans are based upon evidence that is representative of the nation or region and the whole system.

Membership

- Chair: As per the Ofgem Consultation on the Licence and Guidance Document, Ofgem are currently performing the role of chair, as this methodology is being developed. We are proposing that following approval of the methodology, that this role is undertaken by NESO
- Local government: Up to six representatives from across local government will sit on the board.
- Scottish Government and Welsh Government will sit on the board of their nations.
- Network companies: All network companies (up to six) in each nation or region will sit on the board, representing their licence areas only.
- Cross-sector actors: Up to four cross-sector actors who play a significant role in energy planning will sit on the board.

Scope

For their RESP, the Strategic Boards will:

- discuss and make recommendations on strategic questions and design decisions (based on options provided)
- review and provide feedback on interim RESP components as they are developed by the RESP team
- review and approve formal change requests pertaining to the scope, deliverables, and milestones
- review and approve the RESPs for final sign-off

Logistics

- Frequency: Quarterly or by exception.
- Duration: One full day.
- Location: In-person meetings will be the default, but meetings can be held online as required at the Chair's discretion.
- Submissions: Slides/papers with clear confirmation of input needed five business days in advance, to be read ahead of the meeting.
- Minutes: To be taken and circulated with the Action Log within five business days to participants. Outcomes of the meeting will be available publicly following agreement with board members.
- Remuneration: Board members are not expected to be remunerated; however, travel expenses may be claimed. This includes mileage at the approved rate by the UK government and by default second-class travel. Local actor support is available for any board members that would benefit from additional support to engage with the Strategic Board.

Quorum

Quorum is needed for the Strategic Board meetings where sign-off of the RESP outputs is required, but also for the preceding meetings to ensure that any voting is based on a comprehensive understanding of and familiarity with the RESP outputs.

Strategic Board meetings will require a minimum of two thirds of board members in attendance to achieve quorum, including at least one member of each representative group (local governments, devolved Scottish and Welsh governments, networks, and cross-sector actors).

Changes to membership

RESP Strategic Board members will be recruited process articulated in the main body of this document.

Following election to a RESP Strategic Board, members will be expected to remain consistent as representatives of their sector and should not delegate this responsibility to others in their organisation. If a board member is no longer able to participate in the Strategic Board, we expect suitable notice to be given to the Chair to then recommence the appointment process to identify a suitable replacement

Board members are expected to sit on the Strategic Board for one RESP cycle (typically three years although shorter for the first RESP) but this could extend to two cycles at the discretion of the Chair.

Conduct

The Seven Principles of Public Life[35] provide sound guidelines to the behaviours we are looking to embed not only in the Strategic Boards, but across all forms of RESP governance and engagement

Specific to RESP we believe it is critical that board members:

- are transparent about any conflicts of interest, or material differences in their organisational priorities relative to the aims of RESP
- engage constructively on the aims that RESP is trying to achieve, as objectively as is possible of their own organisational, political or commercial interests
- engage with, acknowledge and encourage the participation of organisations and individuals of different perspectives and priorities when considering the merits of different options
- participate meaningfully, attending required meetings, and that relevant internal conversations have taken place prior to relevant meetings
- ensure that inputs can be justified and are evidence-based

[35] UK Government, *The Seven Principles of Public Life* (May 1995) - https://www.gov.uk/government/publications/the-7-principles-of-public-life/the-7-principles-of-public-life--2

- collectively ensure all members feel comfortable to contribute, that no individual dominates discussion, and where disagreements take place, discussions are collaborative and constructive

Should there be instances of board members behaving in a manner that is not coherent with these principles, the Chair may suspend voting rights or dismiss and replace the member (again following the appointment process). As articulated above, we expect members to participate for the full cycle, and therefore non-attendance of meetings without prior notice or justifiable rationale may also result in following this process. Our view is that for a member to retain their voting rights, they should have attended at least two-thirds of meetings.

Proposed standing agenda

- Approve minutes of last meeting and matters arising
- Review RESP (including strategic questions, design decisions)
- Approvals (as required)
- Escalation (as required)
- AOB – outstanding issues and actions

Appendix 9 – Draft GB Steering Committee Terms of Reference

1. Purpose

The GB Steering Committee (GBSC) will assure national alignment and coordinate strategic plans across regions and nations whilst also supporting the continued development of the RESP methodology. It does not approve individual RESPs, as this resides with the Strategic Board.

2. Membership

- Chair: NESO will chair and perform all management functions for the GBSC.
- Ofgem and DESNZ will both sit on the GBSC. No further UK government departments will participate.
- Scottish Government and Welsh Government will sit on the GBSC.
- Citizens Advice, as statutory customer representative will sit on the GBSC.
- Local government: There will not be individual local government representation on the GBSC, however relevant organisations who can represent their interests, but with a broader geographical remit will be invited to join.

- Network Companies: Individual network companies will not sit on the GBSC however relevant organisations who can represent their interests, but with a broader geographical remit will be invited to join.
- Cross-s Sector organisations with a pan-GB remit will be invited to sit on the GBSC.
- The limit for the number of seats on the GBSC (excluding NESO) will be 16, as with Strategic Boards.

3. Scope

The GBSC will:

- review common issues that span multiple RESPs and make a recommendation on how to resolve these issues across the nations and regions where relevant (examples could be points of methodology, changes to objectives or policy)
- compare the outcome of aggregating across RESPs to National Objectives and Plans, and consider options to align (or agree differences are legitimate)
- act as a point of escalation where individual Nations and / or Regions cannot come to an agreement on how to resolve trade-offs or conflicts that span multiple Nations and / or Regions
- consider disparate approaches followed across nations and regions, and whether consistency is required
- consider as the GB landscape changes (for example, Local government devolution) any potential iterations or amendments to RESP boundaries that could be appropriate

4. Logistics

- Frequency: Quarterly or by exception.
- Submissions: Slides/papers with clear confirmation of input needed five business days in advance, to be read ahead of the meeting.
- Minutes: To be taken and circulated with the Action Log within five business days to participants. Outcomes will be made available publicly as agreed by participants.
- Remuneration: Members are not expected to be remunerated; however, travel expenses may be claimed. This includes mileage at the approved rate by the UK government and by default second-class travel.

5. Quorum

Quorum for the GB Steering Committee is a minimum of NESO, Ofgem and DESNZ attend the meeting.

6. Member recruitment

The GB Steering Committee is already running on an interim basis, and includes Ofgem, DESNZ, NESO and the Scottish and Welsh governments. We will agree the approach to approach and appoint further members with this forum.

Members are expected to sit on the GBSC for one RESP cycle (typically three years although shorter for the first RESP). At the end of the first cycle, we will review membership for this forum in an updated methodology.

7. Proposed standing agenda

This forum is expected to have a flexible agenda based on progress, discussion and engagement across RESP regions, and NESO will propose an agenda to members in advance of each meeting.

- Approve minutes of last meeting and matters arising
- Progress summary across all 11 RESPs and headlines for discussion for each where there may be wider relevance
- Escalation of cross-RESP issues (as required)
- AOB – outstanding issues and actions
- The Seven Principles of Public Life provide sound guidelines to the behaviours we are looking to embed across all forms of RESP governance and engagement
- Specific to RESP we believe it is critical that board members:
    - are transparent about any conflicts of interest, or material differences in their organisational priorities relative to the aims of RESP
    - engage constructively on the aims that RESP is trying to achieve, as objectively as is possible
    - engage with, acknowledge and encourage the participation of organisations and individuals of different perspectives and priorities when considering the merits of different options
    - participate meaningfully, attending required meetings, and that relevant internal conversations have taken place prior to relevant meetings
    - ensure that inputs can be justified and are evidence-based
    - collectively ensure all members feel comfortable to contribute, that no individual dominates discussion, and where disagreements take place, discussions are collaborative and constructive

Appendix 10 – Indicative Working Group Committee Terms of Reference

1. Purpose

The role of RESP working groups collectively are to provide structured, accessible, and transparent processes for stakeholders to advise the Strategic Board to steer each of the RESPs, particularly the consideration of options, trade-offs and constraints, to assure that recommendations reflect a range of priorities. Depending on the group, these aims could be from a technical or modelling perspective (Technical Working Group), aligned to a specific theme within RESP, or to consider the products as a whole (Roundtables).

2. Membership

Chair: NESO will chair and perform all management functions for the working groups.

- Participants will vary by different groups:
    - Local Government Working Group will be open to all upper tier local authorities.
    - Technical Working Group is expected to include as a minimum the DNOs, GDNs, as well as wider technical expertise.
    - Other thematic working groups will be drawn from stakeholders across different aspects of that theme, and could include Community Energy Groups, Industrial Clusters, Heat Networks, Networks (including independent network companies) and various others.

For working groups to be able to be ran in a collaborative manner, we expect a limit of around 24 members per working group, but this is expected to be more variable than for Strategic Boards.

3. Scope

Working groups will:

- provide insights and challenge the content within the RESP products, or in response to specific questions asked by NESO
- analyse trade-offs and decisions, and provide perspectives to be considered when coming to a way forward and provide recommendations on how to proceed
- scrutinise data credibility, or gaps cross the subject area being discussed, and different approaches and options to mitigate (although will not analyse individual datasets)
- provide a means for wider whole system representation in sub-questions or decisions needed

4. Logistics

- Frequency: At least quarterly but expected to vary, and vary and can be made more frequent if stakeholders are willing to participate on a more regular basis.
- Submissions: Where relevant pre-reading material will be made available in advance of the session.

- Minutes: Outcomes of discussion, that capture a range of perspectives will be summarised and made available to participants and wider RESP.
- Remuneration: Members are not expected to be remunerated; however, travel expenses may be claimed if these meetings are held in person.

5. Member recruitment and change of membership

For working groups, we will look to invite expressions of interest to participate following this consultation once we have finalised which groups will exist, which will include more information on how members will be selected from those expressing interest.

It is preferable for members to participate in working groups throughout one RESP cycle (typically three years although shorter for the first RESP cycle). However, there is more flexibility for members to be brought into discussions for specific sessions at a working group level. At the end of the first cycle, we will review the working group membership.

Appendix 11 – Assessing System Value

Table 25: Assessing system value

Value	Description	Proposed Method of Assessment and Criteria	Potential Scoring Approach
Net Zero Contribution	• Expected impact on Net Zero of the energy need – Greenhouse Gas Emissions (GHG) impacts.	Quantitative criteria • Expected GHG impact (reduction in CO2 vs the baseline scenario) – in line with UK Gov GHG reporting guidelines.	High / Medium / Low • Measuring expected impacts against the key criteria (positive, negative or uncertain). • Measuring whether the expected impact is direct or indirect. • Measuring confidence in evidence provided. • Specific weightings to be determined. • Expected to prioritise the most significant criteria – wider factors will be assessed via Pathways.

Technical Energy System	• Expected contribution to provide a more efficient, resilient and secure energy system, focused on whole system impacts and optimisation.	<u>Qualitative criteria</u> Expected contribution to providing whole energy system benefits, such as: • System integration and optimisation (for example, integrated generation and storage solutions). • Improved efficiency (for example, heat pumps/heat recovery). • Flexibility (for example, demand side response). • Clean generation (for example, deployment of renewables). Innovation (for example, Smart Local Energy Systems).	
Economic	• Expected national and regional economic impact / benefits of the energy need.	<u>Quantitative criteria</u> • Regional Gross Value Added. • Jobs created or safeguarded.	
Societal	• Expected societal impact of the energy need – including impact on national and regional societal objectives.	<u>Qualitative criteria</u> • Impacts on fuel poverty (expected reductions). • Impact on nationally and regionally defined objectives (linked to consolidated priorities).	

Appendix 12 – Network Planning Assurance Extent of Review Options

Table 26: Extent of review options

	Option 1: High-level	**Option 2: Focused**	**Option 3: Detailed**
Description	*NESO activity is limited to compiling DNO data and an output report.* Forecasting: DNOs flag and provide justification where misalignment occurs for technologies/variables that have the biggest impact on network load (for example, heat pumps, electric vehicles). Forecasting**:** DNOs flag and provide justification where misalignment occurs for technologies/varia	*NESO activity as per (1) but including targeted review to areas of misalignment.* Forecasting: DNOs flag and provide justification where misalignment occurs. NESO review responses and try to resolve, with focus on those technologies /variables that have biggest impact on network load (for example, heat pumps, electric vehicles). Network load impact assessment: DNOs flag and provide	*NESO activity as per (1) but including broader review than (2).* Forecasting: DNOs flag and provide justification where misalignment occurs. NESO review responses and try to resolve for all technologies/variables. Network load impact assessment: DNOs flag and provide justification where misalignment occurs. NESO review responses with narrower tolerance band for levels of discrepancy compared to (2). For robustness, where forecast assumptions do not align but are perhaps justified, NESO could consider recalculating RESP peak supply/demand using these revised assumptions to see how they then compare with DNO peak supply/demand.

	bles that have the biggest impact on network load (for example heat pumps, electric vehicles). No NESO review but presented in output report for Ofgem consideration. Network load impact assessment: DNOs flag and provide justification where misalignment occurs. No NESO review but presented in output report for Ofgem consideration.	justification where misalignment occurs. NESO review responses with focus on those data points with highest levels of discrepancy.	
Output	NESO compiles output reports which provide overview of DNO data with annexed data tables only.	NESO compiles output reports which provide overview of DNO data with annexed data tables. The report includes evidence of targeted forecasting and demand/supply data reviews, including misalignment and flagging where resolution has not been achieved.	NESO compiles output reports which provide overview of DNO data with annexed data tables. The report includes evidence of forecasting and demand/supply data reviews, including misalignment and flagging where resolution has not been achieved.
Pros	Lower NESO resource requirement,	Moderate NESO resource requirement, able to	More robust alignment process, greater insight can be provided

	easier to mobilise and complete at short notice. Simpler to scale across multiple network submissions.	target resources on areas of greatest network need. Option to use increased tooling with future RESP iterations.	into networks ability to meet future demand. More quantitative process can be more accountable and can be simpler to justify.
Cons	May overlook critical nuances or important details. Lack of interrogation and critical assurance will undermine the value and credibility of RESP.	Additional process to establish where targeted reviews take place will be required. Timescales to resolve misalignment could be challenging. Some misalignments will not be addressed.	High NESO resource required, difficult to mobilise and complete at short notice. Risk of duplicating DNOs activities.

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