Public

Transitional Regional Energy Strategic Plan Consultation

September 2025

NESO
National Energy System Operator

Public

Contents

How should you engage with this consultation?

Getting insight and feedback from a wide range of customers and stakeholders will be key to the successful delivery of Regional Energy Strategic Planning (RESP). Whether this be customers and stakeholders who are traditionally part of the energy industry, such as network operators, developers, or manufacturers, or those that have broader priorities, but increasingly see energy as a key part of achieving their objectives, such as local authorities, large energy users, or community groups.

Given this, we have designed this consultation with this broad range of customers and stakeholders in mind. Key examples of this include the creation of a digital output which allows readers to zoom in and out of maps to see the area's most of interest to them, as well as creating a combination of broad and technical consultation questions.

Included in this consultation are the following publications hosted in NESO.energy, and we have included recommendations as to how to engage with them, if you are short on time, or have a particular focus.

1. This document, which sets out what our scope is, the progress we've made to date, as well as our consultation questions.
2. A digital output, containing nations and regions contexts for all 11 RESPs, an emerging view of Strategic Investment Need, as well as how we intend to visualise pathways.
3. Methodologies and detailed design documents. These will be added to our website before the end of September, starting with Consistent Planning Assumptions.
4. A list of the building blocks used to create our Pathways.
5. A workbook on values for Consistent Planning Assumptions (CPA).

I would like…	**You should read…**
An overview of RESP and what tRESP is	Executive Summary & Introduction
To understand what NESO has produced so far for tRESP	The digital output
To understand on a high-level why NESO made certain decisions and what was in / out of scope	Chapters 1 – 4 of this document
To understand the mechanics of the tRESP components and how they were built	Methodologies and detailed design documents, as well as list of building blocks / CPA workbook

Executive Summary

The Regional Energy Strategic Planning (RESP) role was developed to support energy security and resilience, net zero and economic growth. Ofgem directed the National Energy System Operator (NESO) to undertake the RESP role, which was formalised in April 2025. Through this role, a new approach to strategic energy planning at a distribution level is being created, with NESO producing 11 regional energy strategic plans (RESPs) for Scotland, Wales and nine English regions. These plans will provide key inputs to the business plans developed by gas and electricity distribution networks, enhancing network consistency and reflecting local priorities. The RESPs will complement other Great Britain-wide NESO strategic plans, such as the Strategic Spatial Energy Plan and the Centralised Strategic National Plan.

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."* This consultation sets out what we have achieved to date and our progress towards the January deadline. We are continuing to work on the components of tRESP alongside this consultation, including assessing the responses to our request for information on strategic investment need.

To provide a quality, value adding output by January 2026, we have taken a collaborative approach to the development of tRESP. This has involved our Technical Working Group, made up of the electricity and gas distribution networks and Ofgem, regular one-to-one meetings with each of the electricity distribution networks (DNOs) and our quarterly RESP Forums, which have had over 2,000 attendees to date.

We are continuing this approach for this consultation, using it as an opportunity to share and invite comments on our latest work. We are asking for feedback on:

1. **Nations and Regions Contexts** – We have produced an initial view of the conditions and priorities for each RESP nation and region, focusing on nationally available datasets, with accompanying narrative on the bottom-up detail for comparison and further exploration.

2. **Pathways and Consistent Planning Assumptions (CPAs)** - We are creating short-term and long-term pathways down to Grid Supply Point (GSP) level for each RESP nation and region. The Pathways include the main technologies that will drive the demand and supply for energy out to 2050. The DNOs will use the Pathways alongside our CPAs and their own data to calculate future network headroom, to inform their ED3 investment plans. This is a complicated area of work; for tRESP we are dependent on inputs from NESO's Future Energy Scenarios and the local planning work undertaken by the DNOs. As a result, we still have work to do to align our outputs with recent and upcoming publications (for example, NESO's work on connections reform) and so are not consulting on the data underpinning our Pathways at

this stage. We provided DNOs with a first view of the detailed pathways in July 2025 and are currently working through their feedback.

3. **Strategic Investment Need -** We will identify areas where investment ahead of need could be required by DNOs in the ED3 price control period. These areas are not yet in the connections process, the tRESP Pathways, or the Distribution Future Energy Scenarios (DFES) produced by each DNO. For this consultation, we are sharing our emerging view of strategic investment need. This is based on over 1,700 responses we received to our request for information. To date we have assessed the submissions from the electricity and gas distribution networks. We have also processed, at a high-level, the submissions from other customers and stakeholders, indicating areas where DNO network investments may be required. We will use our October 2025 RESP Forums to provide an update on our work on strategic investment need.

After we've published the final tRESP document in January 2026, the six DNOs will use the tRESP outputs alongside Ofgem business planning guidance to inform their business plans for the ED3 period, 2028-33. We are currently talking to Ofgem about the requirements for NESO's tRESP 'technical coordination' role, to help assure each DNO's proposed business plan in relation to tRESP.

The scope of tRESP is limited to what we, as a new RESP team, could deliver in tight timescales to support the electricity distribution networks price control for 2028-33. Our full RESP role will deliver a significantly enhanced capability for the nations and regions of Great Britain. We will consult on our proposed approach for this in our RESP methodology consultation in November this year.

Introduction

Introduction from Bridget Hartley, Head of RESP

Great Britain's energy system is transforming. The pace of this transformation to date has been significant, but further changes are now needed to ensure our energy system develops in line with the needs of local communities and Great Britian's goals for energy security and resilience, net zero and economic growth. NESO is at the centre of this change. With the responsibility for establishing an overarching strategic energy plan for Great Britain, NESO is providing a strategic view on what energy we need, where we need it, and when.

Our new regional energy strategic planning (RESP) role is a key part of this new approach.

Through RESP, we will be producing nine English Regional Energy Strategic Plans and two national plans for Scotland and Wales. The purpose of these plans is to inform strategic co-ordination and accountability within the energy distribution networks, ensuring local areas get the energy system they need to help meet local and national goals, whilst minimising costs to energy bill payers.

We will start to fully deliver our new RESP role from 2026, resulting in the first set of 11 RESPs being published by the end of 2027. To start to make the shift to this new approach and to support the upcoming electricity distribution price control,[1] Ofgem asked NESO to deliver the transitional RESP, or tRESP, during 2025/26:

> *"A transitional RESP output by January 2026 that aims to deliver as much benefit as is practicable to support the ED3 price controls setting process while the RESP function develops to full capability".* [2]

This also marks the first step towards delivering on NESO's ambitions to deliver an integrated, whole-system approach to strategic energy planning. This includes the Regional Energy Strategic Plans (RESPs), the Strategic Spatial Energy Plan (SSEP) as well as the Centralised Strategic Network Plan (CSNP). Given timescales, tRESP will be unable to take outputs from SSEP or CSNP due to them still being in development at this time, but these will inform the full RESPs in 2027.

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[1] A "price control" is the policy mechanism that Ofgem uses to set the business plans for regulated private businesses in the energy sector. "ED" stands for "electricity distribution", meaning that it relates to the business plans of the electricity distribution network operators (DNOs). And "3" meaning this is the third time DNO business plans have been set within this framework, this time covering the five-year period starting in 2028. For more information consult Ofgem Framework decision: electricity distribution price control (ED3)

[2] Ofgem: February 2025 Open Letter regarding the scope of the transitional Regional Energy Strategic Plan

Throughout 2025, we have been working closely with Ofgem to determine the scope and methodology for tRESP, with Ofgem publishing the scope in February 2025. NESO then provided further detail in its response in March[3].

We are now at the point where we are consulting on our latest progress and approach to the various components of tRESP. This iterative, collaborative approach is how we've been delivering tRESP throughout 2025, sharing, inviting and taking on board comments from our customers and stakeholders. Through the RESP forums, which have had over 2,000 attendees to date, the Technical Working Groups, made up of the Distribution Network Operators (DNOs), gas distribution networks (GDNs), Independent Distribution Network Operators (IDNOs)[4] and Ofgem, and bilateral conversations with the DNOs, we have tried to engage with our customers and stakeholders as much as possible with the time and resources available.

There are three key components to tRESP: 1) Nations and Regions Contexts, 2) Pathways and Consistent Planning Assumptions (CPAs) and 3) Strategic Investment Needs. Each of these are produced for the 11 RESP nations and regions, except for CPAs. CPAs will be produced as a common component across all nations and regions that captures relevant differences across areas.

- For the Nations and Regions Contexts, we will produce an initial view of conditions and priorities for each RESP nation and region, focusing on nationally available datasets, with accompanying narrative on the bottom-up detail for comparison and further exploration.
- For Pathways and Consistent Planning Assumptions, we are creating modelled short-term and long-term pathways down to Grid Supply Point (GSP) level - the transmission-distribution interface points - and for each RESP nation and region. The Pathways include the main technologies that will drive the demand and supply of electricity at distribution level out to 2050. The DNOs will use the Pathways alongside our CPAs and their own data to calculate future network headroom, to inform their ED3 investment plans.
- For Strategic Investment Need, we will identify areas where investment ahead of need could be required by DNOs in the ED3 price control period, but that are not yet in the connections process, the tRESP Pathways or the distribution future energy scenarios produced by each DNO.

The delivery of tRESP to date has been complex. At this stage of the RESP team development, we have built on existing NESO capabilities. For example, for the Pathways we have worked with our

[3] NESO: 3 March 2025 Re. Open Letter regarding the scope of the transitional Regional Energy Strategic Plan

[4] IDNOs were represented by the Independent Network Association (INA)

Future Energy Scenarios team, as well as using DNO inputs from their stakeholder engagement which they use to underpin their own distribution future energy scenarios (DFES).

Our assessment of strategic investment need will be informed by both DNOs and local customers and stakeholders, through the responses we received to our request for information (RFI) this Summer. We've had a significant response to our request, with over 1,700 separate pieces of information from organisations across Great Britain (GB). In this consultation, we are sharing our emerging view of strategic investment need. This is based on the responses we received to our RFI to date. In particular, the information we've assessed from electricity and gas distribution networks, as well as project submission clusters that show where other customers and stakeholders may require DNOs to invest in their networks. The Strategic Investment Need component of tRESP will also identify major developments not covered by the tRESP Pathways, such as industrial decarbonisation and data centres. We will update our customers and stakeholders on how we will process the remaining responses to our strategic investment need RFI in our RESP forums in October 2025. The information shared in this consultation does not indicate that projects have been confirmed as being a strategic investment need.

We are developing tRESP in a rapidly changing energy landscape, with the UK Government's Clean Power 2030 Action Plan, and connections reform work ongoing, both of which have implications for electricity distribution networks. We will work to align with these activities, but timescales involved mean that we won't be able to incorporate their outputs into our tRESP Pathways until later in 2025. We shared our initial draft Pathways[5] with the DNOs in July 2025 and are currently reviewing and implementing their feedback, with a plan to include updated inputs to our Pathways data in late November 2025.

The tRESP Pathways and Consistent Planning Assumptions prioritise those technologies that significantly impact future DNO investment and where NESO can add value now by bringing consistent approaches between DNOs, such as electric vehicles and heat pumps. The tRESP Pathways do not cover all electrical demand and generation. Underlying demand and major connections activity, where this is not covered by Pathways or Strategic Investment Need, will both continue to be modelled by DNOs based on their granular local inputs and their consideration of the impact of Government strategies and policies published after this consultation. The DNOs will do this alongside considering all the components of tRESP, as part of the work to develop their investment plans for ED3.

Following this consultation, we will produce the final tRESP publication in January 2026. For those of you wanting to input on the RESP topics not within the scope of this consultation, our consultation on the full RESP Methodology, will be published in November 2025.

Thank you for taking the time to respond to this consultation. And thank you to those of you that have engaged with us through RESP Forums, Technical Working Group meetings, by inviting me

[5] In tRESP, pathways are defined as volumes of prioritised building blocks of technologies.

my team to your meetings and events, and through the many other channels we've used this year. My sincere thanks for joining us on the RESP journey, I look forward to continuing to work with you.

tRESP foundations

Given the eleven-month time frame to complete tRESP, it has been necessary to design and deliver simultaneously. As such, at the beginning of the process we created three foundations to underpin our approach. These are:

- *We are here to create value. To do this, we will prioritise key areas, be transparent about why we've chosen them and what we will deliver to support ED3.*
- *A no surprises approach. We will have milestones along the way, and meaningful routes for collaboration with the energy networks and our customers and stakeholders.*
- *Our work will be place-based. We will design our work to pull out wider insights from our local stakeholders that can inform the setting of ED3.*

How have we engaged to date

Extensive and accessible engagement with our customers and stakeholders has been critical to ensure the tRESP considers a wide range of views. We have delivered a no surprises approach that has allowed a broad range of stakeholders to understand, shape and feed into tRESP.[6]

We have been carrying out extensive engagement including through the RESP forums, Technical Working Group, and bilateral meetings.

The RESP forums started in March 2025 and are held quarterly in each nation and region. They are open-to-all customers and stakeholders with an interest in RESP and are intended to provide a meaningful way for individuals, groups and organisations to have their say on tRESP. In them we've sought external input and steer on strategic direction, and provided information on the latest tRESP progress and next steps. In the two rounds of forums that took place in March-April and June-July 2025, over 2,000 people attended. We sought attendees' feedback at both rounds of meetings. Attendees at the March-April meetings rated them 7.5 out of 10 for relevance to themselves, their group or their organisation, At the June-July sessions, 72% of attendees felt the content was even more relevant than at the first round. We will continue to gather feedback from forum attendees to ensure the sessions are engaging and relevant to their interests. The next round of forums is planned for October 2025.

[6] NESO: 14 April 2025 tRESP Engagement Transparency Statement

Technical Working Group meetings started in April 2025, taking place at least monthly and were targeted at DNO, IDNO, and GDN representatives. The objective was to socialise the tRESP methodology and components for early expert stakeholder feedback and input.

Starting in December 2024, we began engaging bi-laterally with customers and stakeholders on tRESP. This included exploring the tRESP scope with DNOs and GDNs, prior to Technical Working Group meetings. We also briefed as many upper-tier local authorities as we could engage ahead of our first round of RESP forums in March-April 2025.

Structure of this consultation

The tRESP consultation consists of:

- This consultation document
- The digital platform hosted on NESO.energy[7]
- The consultation questions (English version and Welsh version)

This consultation document is structured as follows:

Section one provides an overview of the tRESP, its foundations and our approach to engaging our customers and stakeholders.

Sections two to five cover each tRESP component; Nations and Regions Contexts, Pathways, Consistent Planning Assumptions, and Strategic Investment Need. In each section, we include the scope of the component, what and how we have delivered to date, how to access the tRESP preliminary outputs, and the questions we are consulting on.

In addition, for transparency, we are publishing full detailed methodologies for all the tRESP components, although we are not consulting on these. All methodologies will be available via the NESO website before the end of September.[8]

We are not consulting on how tRESP or its individual components will be used by the DNOs or Ofgem in the setting of the ED3 price control. These are matters for Ofgem, who will be publishing their ED3 sector specific methodology consultation (SSMC) shortly, in advance of the ED3 methodology decision and business plan guidance in 2026.

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[7] Nations and Regions Context Digital Platform
Pathways Digital Platform
Strategic Investment Need Digital Platform

[8] tRESP Consistent Planning Assumptions Methodology and Detailed Design (available from 23rd Sep 2025)
tRESP Pathways Methodology and Detailed Design (available before 30th Sep)
tRESP Nations and Regions Context Methodology and Detailed Design (available before 30th Sep)
tRESP Strategic Investment Need Methodology and Detailed Design (available before 30th Sep)

How to respond to this consultation

The consultation runs from 23rd September 2025 and will close at 23:59pm BST on 3rd November 2025.

To respond to this consultation please access the tRESP consultation questions and provide your response by 23:59pm BST on 3rd November 2025.

If you would like to read and respond in Welsh, access tRESP consultation questions in Welsh.

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 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

1. Nations and Regions Contexts

Scope

1.1 In March 2025, we published an open letter on tRESP, in which we committed to providing an initial view of conditions and priorities for each RESP nation and region across Great Britain (GB). This would take two forms. Firstly, we would produce qualitative reports that would set out this initial view. Secondly, we would consider how this context informed other tRESP components, namely Pathways and Strategic Investment Need.

1.2 This section refers to the reports that we are publishing for each nation and region, with the remaining commitments being delivered through other components, as described in subsequent sections of this consultation.

1.3 This consultation has been informed by the engagement we have undertaken and external data sources. In it, we are presenting an initial version of these reports for each nation and region. These are available on the NESO website. Balancing impact and the effort to develop national and regional context, the following areas were prioritised:

i. Demographics and socioeconomics
ii. Energy infrastructure
iii. Transport and heating
iv. Industry and economy
v. Generation and storage
vi. National and regional targets and ambitions

1.4 In these areas, we have produced a mixture of geospatial visualisations, charts and qualitative narratives, for each nation and region, aligned to key qualitative and quantitative themes and elements. These are hosted on a digital platform available via the NESO website, to enhance accessibility and usability.

1.5 Whilst deciding what was in-scope for this consultation, we also had to consider what to exclude for the purposes of tRESP. This was guided by our desire to set a consistent starting point, whereby the full RESP from 2026 could build and introduce greater levels of granularity and local flavour.

Table 1 Excluded data from tRESP Nations and Regions Contexts

Excluded from tRESP nations and regions contexts	Reason for exclusion
Additional data from local actors to develop a detailed bottom-up view of conditions	The need for consistency between and within nations and regions across selected data topics and themes has meant that nationally available sources, which have been fully validated have been prioritised. Area-specific datasets would have risked consistency

and priorities for the nations and regions	issues, requiring greater levels of data processing and validation. Where appropriate, we have referenced additional data or information in our accompanying narratives. Area-specific datasets will be considered in the full RESP Nations and Regions Contexts.
Embedded engagement in nations and regions and coordination with local stakeholders	In the full RESP, the Nations and Regions Contexts will be the starting point of our cycle and will be based on wide-spread place-based engagement. This was not fully achievable for tRESP given the time constraints. Therefore, engagement has been delivered primarily through our newly recruited RESP teams across England, Scotland and Wales. They have carried out engagement in their respective nations and regions, including through our RESP forums. We recognise that local customers and stakeholders possess a wealth of relevant additional knowledge. Many have developed and collated a number of data sources relevant to specific nations and regions. These will feature more prominently in the full RESP.

Our approach

Principles for delivery

1.6 The development process that guided the prioritisation of topics for the overall methodology, and ultimately for inclusion in the Nations and Regions Contexts was broken down into three key principles. These align to our tRESP foundations as explained in the introduction.

1.7 **First, it should add value to tRESP and its overarching aims.** We evaluated whether each identified topic provided additional value to the overall tRESP output, as well as whether it had a clear link to enhancing regulatory outcomes and supporting investment decisions. For instance, providing a consistent understanding of historic trends on demographics for the nations and regions alongside low-carbon technology uptake rates provided clear background to complement our Pathways, which set the future direction.

1.8 **Second, it should be deliverable**. It was essential to recognise that data availability and quality might differ across nations and regions, which could impact the consistency of the analysis. By prioritising topics that could be reliably sourced and analysed in a consistent way, the methodology ensured that the final reports would be both impactful and achievable.

1.9 **Third, it should provide a holistic and representative overview** of each RESP nation and region. The assessment aims to capture the unique characteristics and challenges of

different areas, so that the output reflects the local nuance across the RESP nations and regions, whilst balancing this with the need for consistency across tRESP.

What has been delivered and how?

1.10 These principles have underpinned our approach to delivery in several ways, including data sourcing and engagement. The output presented in this consultation is an initial view of the majority of data topics outlined in the methodology, with accompanying narrative. As outlined in the introduction, this is hosted on the NESO website. The methodology document will be available via the NESO website before the end of September.[9]

1.11 This output focuses on nationally available datasets as a starting point, utilising data collected by the UK Government, the Scottish Government and the Welsh Government. This includes Energy Performance Certificates, the Heat Networks and Renewable Energy Planning Databases and information collected by GB wide organisations such as Energy Systems Catapult on Local Area Energy Planning (LAEP).

1.12 Our customer and stakeholder engagement has primarily been conducted through the quarterly RESP forums. Our summer 2025 forums featured a first look at some of the tRESP Nations and Regions Contexts outputs. Within the forums, we focused on gathering feedback on a priority list of topics for inclusion in the final tRESP, asking customers and stakeholders what else they would like to see included in the context for their nation or region, alongside feedback on emerging content on specific topics. Additionally, in recognition that a lot of customers and stakeholders already feed insights into the DNOs' distribution future energy scenarios process, we shared the draft Nations and Regions Contexts with the DNOs in July 2025 to help ensure that we identified any gaps.

1.13 While the tRESP Nations and Regions Contexts has produced an initial view of the conditions relevant to the full RESP, our focus remains primarily on supporting the ED3 price control. This means that some aspects of nations and regions' dynamics, particularly those extending beyond the immediate scope of ED3, have not yet been fully explored.

What will change in the final tRESP in January 2026?

1.14 The final release of tRESP in January 2026 will include a finalised digital output, supporting nations and regions reports with additional detail, data governance documentations and full data sources.

[9] tRESP Nations and Regions Context Methodology and Detailed Design (available before 30th Sep)

What are we consulting on?

Consultation questions

1. Are the Nations and Regions Contexts accessible, clear and easy to interpret? What improvements would you like to see?
2. How well do the Nations and Regions Contexts reflect your understanding of your nation or region?
3. Do you agree with the elements and topics included in the Nations and Regions Context and is there anything missing that you would have expected to see?
4. How do you envisage using the Nations and Regions Context(s)?
5. Do you have any feedback on the data selected for the specific topics included for the Nations and Regions Contexts?
6. Do you have any feedback on how the data was presented visually?
7. What additional data do you think we should be considering either for tRESP or full RESP?

2. Pathways

Scope

2.1. In our March 2025 open letter on tRESP, we stated we would model future supply and demand projections of volumes of low-carbon technologies ('building blocks'), for each RESP nation and region, and support DNO planning. We stated we would create a whole energy system pathway for the period covering at least the length of the ED3 price control and multiple long-term pathways to 2050. These pathways would reflect the NESO Future Energy Scenarios (FES) 2025 pathways[10] and the UK Government's Clean Power 2030 Action Plan, as well as utilise DNO building block data and other bottom-up data sources to account for regional variances.

2.2. The tRESP Pathway outputs are volume predictions of selected technologies (expressed as numbers, capacity or energy). They are required to inform the scale, timing and location of network capacity requirements in DNOs' long term network plans and business plan submission to Ofgem in 2026. The output in this consultation has been informed by the engagement we have undertaken and external data sources.

2.3. Consistent with Ofgem's requirements for the full RESP, with tRESP there is a single short-term pathway of ten years. The purpose of a single pathway is to help enable efficient investment decisions over more than one regulatory period. The tRESP short-term Pathway is informed by the DNOs' local interpretation of the FES Holistic Transition Pathway (from their respective distribution future energy scenarios (DFES)). NESO then adjusts that scenario for baseline consistency and alignment to create the single pathway. Holistic Transition is a FES pathway with high renewables and high consumer engagement and was the pathway that Ofgem previously advised the electricity and gas transmission networks to use for their business planning in ED3[11].

2.4. As shown in Figure 1, the end of the short-term pathway in 2035 becomes the starting point for three long-term pathways. Having three long-term pathways recognises there is uncertainty from 2035 to 2050. They are informed by the other FES pathways: Holistic Transition, Electric Engagement and Hydrogen Evolution. For further detail, please see our Methodology and Detailed Design,[12] to be published by the end of September.

[10] Future Energy Scenarios (FES) | National Energy System Operator

[11] RIIO-3 Business Plan Guidance, Ofgem

[12] tRESP Pathways Methodology and Detailed Design

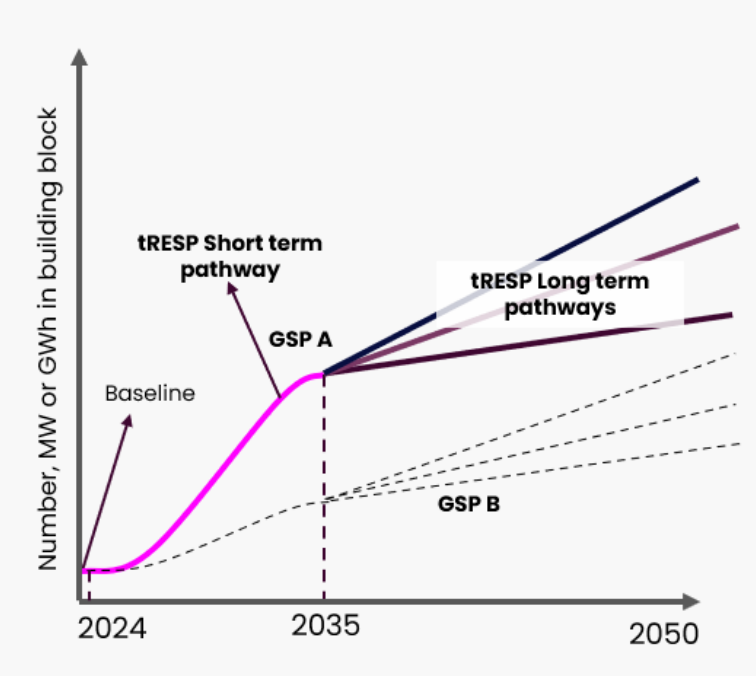

Figure 1 tRESP short-term and long-term Pathways

2.5. We have structured the tRESP Pathways by selecting from the building block outputs defined from FES. The building block definitions were developed some years ago for shared use with DNOs collaboratively by an Energy Networks Association (ENA) working group. The list of 33 building blocks covered in the tRESP Pathways is being shared for visibility in this consultation.[13] Each building block represents an individual component of demand or generation, which, in combination, form a view of the changing energy landscape up to 2050.

2.6. For demand pathways, we prioritised our pathways work on electrical technologies projected to grow significantly in the coming years, such as electric vehicles (EVs), heat pumps and district heating. Based on analysis of FES 2025 Holistic Transition, EVs, heat pumps and district heating are expected to account for 93% of the peak demand increase by 2035 and over 80% by 2050. Electricity distribution networks in their analysis also confirm EVs and heat pumps are contributing to a 99.5% increase in residential peak demand by 2050. The scope of the building blocks included for demand pathways includes:

1. Domestic heat pumps
2. Industrial and commercial heat pumps
3. EVs
4. Air conditioning

[13] tRESP Pathways Building Blocks List

5. Domestic district heating

2.7. The scope of the generation pathways again aligns to generation building blocks from NESO's FES. For tRESP, we prioritised building blocks relevant to electricity distribution networks. Solar photovoltaic (PV) systems, wind energy, and energy storage were identified as the major contributors to the capacity required at the electricity distribution level. According to FES 2025 (which reflects the UK Government's Clean Power 2030 Action Plan), solar PV, onshore wind and storage account for 83% of the electricity distribution generation capacity in the Holistic Transition pathway in 2030 and 91% in 2050. The building blocks for generation pathways include the following technologies:

1. Solar PV (small and large)
2. Wind (onshore)
3. Storage (battery)
4. Power plants (including combined heat and power)
5. Hydro
6. Geothermal
7. Hydrogen/fuel cells

2.8. Some building blocks in the FES are not included in the tRESP Pathways or could be further subdivided at distribution level.

Table 2 Excluded building blocks from tRESP Pathways

Excluded from tRESP Pathways	Reason for exclusion
Offshore wind, marine and nuclear	They connect primarily to electricity transmission networks
Rail electrification and industrial decarbonisation projects within non-domestic demand	They are highly location-specific projects, which would either come through as connections requests for each DNO (for projects that have already progressed and are likely to connect) or through the Strategic Investment Needs (for more uncertain, less developed projects)
Certain baseload sources of demand, e.g. appliances	As the demand from these is not anticipated to increase significantly in the future, coupled with inconsistent data availability

2.9. The tRESP Pathways standardise a subset of the DNOs' demand projections. DNOs will create their full forecasts per network asset by combining the tRESP Pathways with other inputs. Those other inputs will include additional forecasting methodologies and site-specific inputs related to the underlying domestic and non-domestic demand at specific network assets. Examples include domestic and non-domestic demand levels in a

baseline year and trends, customer mix and connection requests per network asset. This also includes large connections projects such as data centres and for major transport or industrial infrastructure. These will continue to be based on DNOs' local data including connections activity, with the tRESP building blocks covering areas where national approaches reflecting regional variations would add value.

Our approach

Principles for delivery

2.10. It was not feasible for tRESP to produce robust pathways of total power demand and supply by January 2026, either at Grid Supply Point level or for the electricity distribution assets below that. This was due to the extent, availability and quality of the required datasets, the level of analysis required of baseline and future power demands, and the integration with stakeholder/connection plans across all distribution voltage levels. Replicating the local engagement work that DNOs have done to inform their planning would be inefficient and beyond the capacity of the RESP team to undertake in these timescales.

2.11. Given this, we focused on being pragmatic and driving value within the time available. So, in the tRESP Pathways, we have leveraged local inputs shared with DNOs and incorporated in their projections, so those inputs are reflected in the tRESP Pathways that the DNOs will use to develop their ED3 plans.

2.12. Acknowledging that context, our March 2025 open letter stated that the tRESP Pathways would be produced utilising data from the 2025 Future Energy Scenarios (FES), data from the DNOs' DFES which interpret FES with other local inputs, the outcome of the UK Government's Clean Power 2030 Action Plan and other bottom-up data sources to account for variances across the nations and regions.

2.13. Pathways modelling, alongside the Consistent Planning Assumption inputs described in the next section, are the most technically complex of the tRESP deliverables. In the last six months we have made significant progress in developing a consistent approach to pathways modelling.

2.14. Our engagement plan has also sought to stay true to our tRESP foundations of "no surprises and keeping stakeholders informed" and seeking their feedback throughout. We have run Technical Working Groups (TWGs) since April 2025 with the DNOs and GDNs, where we have sought feedback on the technical development of pathways. Similarly, we have used our RESP forums to present pathways and explain to stakeholders the process, as well as get their feedback on priority areas.

2.15. As DNOs will be the key users of the pathways data book in Grid Supply Point (GSP) format to inform their ED3 network planning, we shared an early version with them in July 2025 for feedback. This feedback is informing our next iteration of our Pathways, alongside significant data updates planned for later in 2025. Therefore, we have decided not to

share the data workbook itself at this point. For this consultation, we are presenting an initial view of pathway visualisations and associated narratives. These are available on our digital platform, via our website. We have aggregated selected building block projections from our Pathways at the RESP nations and regions levels. This is as an illustration of the type of visualisation and pathways data that will be made available in future. We note that these data are not final and will be updated before the final tRESP publication in January 2026.

What has been delivered and how

2.16. The first step of creating the Pathways has been to establish the baseline year values of each building block. Initially, the tRESP baseline year was set at the end of 2024, to align with the baseline of FES 2025. However, we will be updating the baseline date to 2025 for the final version of the tRESP Pathways. Through engagements with DNOs, we have identified that the DNOs' detailed methodologies to derive volumes in the baseline year within their distribution future energy scenarios (DFES) data was different from DNO to DNO. To bring consistency, we have developed a bottom-up methodology for each building block that can be applied to all GSPs. This provides an independent view of the baseline, using granular primary datasets.

2.17. The methodology used for creating short-term and long-term pathways is based on leveraging DFES outputs for all the building blocks that are covered by DFES and FES. This approach was informed by the need to reflect local characteristics which is currently done by DNOs in DFES through their modelling and stakeholder engagement. Where DFES data is unavailable, we use FES data and where neither are available, we have created bespoke solutions.

2.18. GSPs are at the interface between the transmission and distribution network, and this was agreed as the granularity for tRESP. The outputs of the Pathways are being produced for the feeding area of each GSP in Great Britain and will also be provided aggregated to DNO licence area. The feeding area identifies which customers and network assets on the distribution network are associated with the GSP, so provides the link between the Pathways input and distribution network planning. DNOs will use the Pathways inputs and allocate the volumes spatially within their GSP feeding area. There are 348 registered GSPs in GB. The interpretation of feeding areas used for tRESP was published on 9 January 2025[14].

2.19. A GSP feeding area can serve multiple RESP nations and regions. For example, GSP A within one DNO licence area could be 100% in a RESP nation/region, such as Greater London. Or it could serve parts of two or more RESP nations/regions, such as Greater London and East. This occurs because although GSPs can be subdivided per DNO licence area, the RESP boundaries are not identical to the DNO licence areas. So, to present the Pathways according to the RESP nations and regions, the GSP feeding areas were mapped

[14] GIS Boundaries for GB Grid Supply Points | National Energy System Operator

approximately to the nations and regions. For the electric vehicle and heat pump pathways, the mapping from GSP feeding area to nation/region was done based on dwelling numbers from the latest census data. For the generation and storage capacity pathways, the mapping from GSP feeding area to nation/region was done based on spatial area.

2.20. **Alignment review framework.** To produce the tRESP Pathways, our final step will be to apply an alignment review framework to produce a consistent set of pathways across Great Britain. We have developed an alignment review framework comprising of three elements to ensure key trends in the tRESP Pathways are checked for consistency, and that the tRESP Pathways also reflect the UK Government's targets.

1. We will review trends per GSP for EVs and low carbon heating in the short-term and long-term Pathways to 2050. Specifically, this will review the magnitude and shape (changes in uptake per year), as well as similarities and differences between GSPs, to facilitate an informed discussion of the underlying reasons and whether any corrective adjustments in the DNO or NESO inputs or their application should be applied. This validation will be performed for those building blocks which can be made comparable by normalising by number of dwellings. This will be done using the domestic customer number projections provided by the DNO. Thus, this check will be performed only for EVs and domestic low carbon heating.
2. We will check the alignment between the tRESP Pathways and the UK Carbon Budgets by comparing the uptake of the tRESP building blocks related to low carbon transport and heating with the relevant numbers from FES 2025. Specifically, this is because FES 2025 is aligned with the 6th Carbon Budget and advice on the 7th UK Carbon Budget[15] and therefore its data will be used as a proxy for this alignment review check, reviewing 2035 and 2042 respectively.
3. We will check the alignment between the tRESP Pathways and the targets from the UK Government's Clean Power 2030 Action Plan for generation and storage connected at the electricity distribution network level. It is our intention that this will include small and large-scale onshore wind and solar generation, as well as battery storage. At the end of 2025 it will also include the outcome of the connections reform process.

2.21. GSPs in Scotland are connected to transmission at a lower voltage than in England and Wales and are smaller and more numerous. Therefore, based on feedback from the Scottish DNOs, the tRESP Pathways will also be provided in a version which aggregates Scottish GSPs to form GSP groups at 132 kV, to provide a more appropriate granularity for the alignment review.

[15] Sixth Carbon Budget
Seventh Carbon Budget

What will change in the final tRESP in January 2026?

2.22. No significant changes are planned to the overall data structure of pathways for supply and demand, or to the methodology for processing data in the final tRESP Pathways.

2.23. However, there will be data updates. The DNOs' local interpretations of FES 2024 (in their DFES 2024 publications) could not reflect changes to the outlook for onshore wind, solar and battery storage arising from the UK Government's Clean Power 2030 Action Plan and connections reform. Additional details per site and per GSP will be available later in 2025 as an outcome of the Connections Gate 2 Process[16]. In addition, DFES 2024 publications could not reflect changes in the transmission impact assessment threshold, forthcoming Future Homes Standard, as well as the publication of FES 2025 in July 2025 demonstrating achievement of carbon budgets, or updates in connections activity or in local plans since mid-2024.

2.24. As a result, we have agreed with DNOs and Ofgem that DNOs will provide updated building block projections in November 2025 to reflect the updates listed in the previous paragraph. As part of the data update, we will also be updating the baseline date to 2025 for the final version of the tRESP Pathways.

2.25. Thus, in addition to addressing detailed issues with the early draft Pathways shared with DNOs, identified by DNOs and the NESO, the November 2025 data update means that there will be material changes between the data shared with DNOs in July 2025 and the final release of Pathways in January 2026.

2.26. We have planned two updates to be shared with DNOs. The October 2025 version will address the issues identified so far and provide the learnings from a trial of the alignment review framework. The December 2025 version will incorporate the updated inputs from DNOs received in November 2025, transmission connections reform, and the alignment review framework.

2.27. We plan to publish the full pathways data books for all GSPs and all building blocks in our January 2026 publication. We will also update the visualisations of pathways at the RESP nations and regions level that are presented in this consultation.

[16] Clean Power 2030 Action Plan: connections reform annex (updated April 2025)

What are we consulting on?

Alongside this consultation, we are publishing the methodology and detailed design document for the tRESP Pathways, and the list of building blocks covered within the Pathways. These are for reference and context alongside this consultation. However, we are not consulting on the already-approved methodology or list of building blocks.

Consultation questions

8. The purpose of the tRESP Pathways is to drive consistency across DNO forecasting, as part of their business plans for 2028-2033 (ED3). Are the steps we are taking to drive consistency, via the baselining and alignment, clear and proportionate? Are the set of tRESP building blocks and the approach to creating Pathways fit for purpose?

9. Will your organisation use the Pathways? If yes, which of the building blocks and for what purpose?

10. Pathways will be published for each building block, down to Grid Supply Point feeding area, and for each RESP nation/region. What is your preferred format to receive the Pathways?

3. Consistent Planning Assumptions (CPAs)

Scope

3.1. In our March 2025 open letter on tRESP, we stated we would ensure a consistent approach is taken by the Distribution Network Operators (DNOs) in the treatment of the tRESP Pathways and their translation to network impacts. And that we would do this by producing a set of common planning assumptions. Ensuring that peak demand is calculated consistently from the tRESP Pathways is important because peak demand is the key driver of network growth. The development of these Consistent Planning Assumptions (CPAs) has been supported by close engagement with DNOs in both Technical Working Group meetings and bilateral discussions, to ensure that the impact on network forecasting and planning processes is understood.

3.2. CPAs are a critical component in driving consistency of approach across the DNO plans. The tRESP CPAs are expected to work alongside the tRESP Pathways, with the Pathways providing the scale of low-carbon technologies expected in the short- and the long-term, and the CPAs describing the network impact from these low-carbon technologies. It is expected that both will be used by the DNOs to inform their business planning for 2028-33 (ED3).

3.3. CPAs encompass both the set of modelling assumptions for estimating demand on a distribution network asset, and the associated modelling approach. Whilst the aim of CPAs is to drive consistency, we recognise the importance of reflecting differences between the nations and regions. We have therefore designed a consistent methodology that accommodates variation and provides specific values for each nation and region for CPAs, where this is relevant.

3.4. In this consultation we present a draft set of CPAs in a workbook,[17] and an associated methodology and detailed design document.[18] Alongside Pathways, CPAs are the most technically complex of the tRESP components, so we have needed to prioritise efforts to focus on the most impactful assumptions. The following areas have been developed:

1. End-to-end processes and default values for assumptions for modelling peak distribution network demand from:
    - Electric vehicles
    - Residential heat pumps
2. Assumptions regarding changes in residential appliance and lighting demand from existing premises, reflecting energy efficiency

[17] tRESP Consistent Planning Assumptions Value Workbook V2.01

[18] tRESP Consistent Planning Assumptions Methodology and Detailed Design

Our values workbook and methodology also set guidance for DNOs to use the end-to-end processes (for example, on granularity of assumptions) and the criteria used to select data sources for the assumptions.

3.5. As listed above, we have delivered CPAs in three areas. These areas were identified building on insights gained from the ED2 period to date (2023-2028), where variances among DNOs were observed[19]. The focus of CPAs for ED3 is on areas that most significantly influence demand growth and future DNO investment. According to FES 2025, electric vehicles (EVs) and residential heat pumps are the biggest drivers for increased peak demand by 2050, contributing to 54% of the increase between 2024 and 2050 in Holistic Transition. For a typical primary or low-voltage substation without a large non-domestic connection, the proportion of the increase from these factors will be higher. Ofgem also asked us to consider residential energy efficiency.

Our approach

Principles for delivery

3.6. Defining a consistent set of planning assumptions for these three key areas (EVs, residential heat pumps, residential energy efficiency) enables consistent derivation of network impact by DNOs, providing confidence of network plans to Ofgem and other stakeholders. This pragmatic approach focuses on establishing a robust foundation in key areas with the greatest uncertainty and impact, rather than attempting to address all areas simultaneously.

3.7. Due to the nature of tRESP, the development has been iterative., but with a set of principles applied to guide our delivery. As set out in our methodology, criteria have been used to evaluate the reliability of planning assumptions; specifically, that CPAs must:

- Be based on a reliable source
- Be relevant
- Be up-to-date
- Be location-specific
- Consider changes through time, and
- Consider weather and climate impact.

We have provided a confidence rating for each of the data sources by evaluating against these criteria.

3.8. The scope, temporal granularity and spatial granularity differ depending on the nature of the CPA. For example, some CPAs have been provided as nation or region-specific values. While others apply to the whole of GB, such as temperature differences affecting heating, or vehicle mileages affecting electric vehicle charging. For each CPA, this choice has been

[19] Ofgem, *RIIO-ED2 Final Determinations Core Methodology* (November 2022).

made based on the materiality, complexity and quality of available data. It is important to balance the drive to define highly granular and precise CPAs with the need to consider i) the materiality of the additional detail, ii) the complexity of implementation for DNOs in ED3, iii) the accuracy of the data available and iv) the timescales available for sourcing the tRESP CPA data.

3.9. For example, as data availability is very limited for hybrid heat pump system behaviour, we have provided only non-hybrid heat pump assumptions, which should be used by DNOs to model both non-hybrid and hybrid systems. In general, when faced with these choices we have opted for a more conservative approach (in this example, using non-hybrid heat pump assumptions offers a conservative approach given the expected smaller capacity of hybrid heat pumps) to avoid driving under-estimations in peak demand. Further potential technical nuances (for example, a more robust consideration of diversity impacts) have also been identified during the design process, but cannot feasibly be captured within tRESP. We acknowledge that an expanded methodology and set of values should be considered for the full RESP.

What has been delivered and how

3.10. To develop the tRESP CPAs, we first set out end-to-end modelling processes for EVs and residential heat pumps to outline how DNOs should translate the tRESP Pathway outputs into electricity network demand. Having established these processes, we identified the consistent planning assumptions required to enable these calculations. We then established proposed values for each of the assumptions based on literature reviews and our own analysis.

3.11. For the residential energy efficiency CPA, we have so far adopted the efficiency trend in electricity demand for appliances and lighting used in the Holistic Transition scenario in FES 2025. This trend is based on energy consumption in the UK. This is separate from electricity demand for space and water heating. However, we are open to adopting an alternative data source for efficiency improvements in the residential sector, which would need to be assessed against our CPA criteria.

3.12. The processes set out as part of the tRESP CPAs establish the default approach and minimum standard for DNOs for ED3. This approach allows for further details to be defined by individual DNOs, leveraging the detailed design efforts undertaken in recent years through their distribution future energy scenarios (DFESs). That is, the use of different EV categories, such as separate analysis for cars and vans, would still be appropriate if the modelling process is aligned with the methodology and detailed design document.

3.13. All of the CPAs defined for the tRESP are encompassed in the CPA value workbook.[20] The workbook contains:

[20] tRESP Consistent Planning Assumptions Value Workbook V2.01

- summary tables for electric vehicles, heat pumps and energy efficiency – including a description of each of the CPAs, the data sources and a brief description of the data processing approach
- full lists of all of the CPAs provided for electric vehicles, heat pumps and energy efficiency, illustrating the level of granularity provided for each CPA
- individual data tabs for each CPA, containing the default values/ ranges

All CPAs have a unique identifier based on the technology, scope, representative day, behaviour category, spatial granularity.

3.14. The primary users of the tRESP CPAs are expected to be DNOs, who should use the described processes and values to inform their demand forecasting as an input to network planning for ED3. The full modelling processes guiding the intended use of CPAs by DNOs for ED3 can be found in the accompanying methodology and detailed design document.[21]

3.15. To determine the values selected for the tRESP CPAs, we have drawn on publicly-available sources and carried out our own data processing to align the public data with the CPA formats required in the end-to-end processes. We have conducted sensitivity analysis to test the suitability of the end-to-end processes and the chosen values. Sensitivity analysis has also been used to understand and contextualise the balance between national/ regional variation and overall consistency. Engagement with DNOs has been valuable in supporting our analysis when testing and refining the processes and assumptions.

3.16. DNOs will apply the individual CPAs to reflect variations by location, time and type of EV and residential heat pump demand. However, for common understanding of the aggregate impact of the individual CPAs, we have calculated an indicative diversified peak demand increase. This is based on the default values of the set of CPAs detailed in the CPA values workbook (noting that actual increase may be lower if the technology's peak is not coincident with the time of the existing demand peak). These indicative figures are not themselves CPAs, but are a representation on average of the consequences of the CPA values we have selected.

3.17. Based on the default CPAs, indicatively, the fully-diversified peak demand per EV would be 0.5 kW, averaged across GB, vehicle types and domestic charging behaviours. An equivalent indicative calculation can be performed for residential heat pumps, giving a fully-diversified winter peak demand per heat pump in 2030 of 1.3 kW, averaged across GB, dwelling categories and consumer space heating behaviours. The detailed assumptions behind these indicative values are provided in the CPA values workbook.

3.18. We are not seeking feedback on the indicative figures; feedback instead can be provided on the specific CPAs from which the values have been derived. However, the figures provide a useful sense check. Variability between DNOs in assumptions for peak kW was

[21] tRESP Consistent Planning Assumptions Methodology and Detailed Design

identified by Ofgem in the ED2 business plans, and Ofgem set benchmarks for its ED2 comparisons at 0.6 kW per EV and 0.8 kW per heat pump on the primary network (fully-diversified), and 1.3 kW per EV and 2.9 kW per heat pump at low voltage[22]. Similarly, the National Infrastructure Commission (NIC, now National Infrastructure and Service Transformation Authority) illustrated notable variation between DNOs in the demand profiles and peak demand of both domestic EV charge points and domestic heat pumps[23].

What will change in the final tRESP in January 2026

3.19. No significant changes will be made to the overall structure and methodology for the tRESP CPAs in the final publication. However, specific values or ranges may change if more appropriate sources are identified, or adjustments are recommended through the consultation process and continuing engagement with DNOs. Small updates to the scope and granularity of individual CPAs may also be considered.

[22] Ofgem, *RIIO-ED2 Final Determinations Core Methodology* (November 2022), p 258, 261-262

[23] Regen (for the National Infrastructure Commission and in partnership with EA Technology Ltd), *Work Package 1: Electricity Distribution Network Capacity Analysis* (November 2024), p 77 Figure 77 and p 99 Figure 44. The NIC is now the National Infrastructure and Service Transformation Authority.

What are we consulting on?

The methodology and detailed design document for CPAs is provided for context and reference alongside this consultation, but we are not consulting on the approved methodology. We are consulting on the CPA value workbook to identify opportunities to improve clarity, usability and the evidence base, and seeking to understand if organisations beyond DNOs would use the tRESP CPAs.

DNOs have already had opportunities to review and input on some of the CPAs, as DNOs will be the primary users of the CPAs. Our work to review the draft CPAs to address feedback and sensitivity analysis will continue to late 2025, informed by our own reviews, DNO feedback and responses to this consultation. DNOs' continued input on the technical detail is welcomed in parallel to this consultation.

Consultation questions

11. The objective of the tRESP CPAs is to drive consistency across DNO demand forecasting as an input to DNOs' network impact assessment to create their business plans for the ED3 period (2028-2033). Will your organisation use the tRESP CPAs for other purposes? If so, for what purpose? Is the format of the CPA value workbook usable for this purpose?
12. Are the definitions of the CPAs clear, as described in the tRESP methodology and detailed design document and the tRESP CPA value workbook?
13. Based on the methodology, do you agree with the values established as tRESP CPAs in the value workbook? If not, are there any additional or alternative data sources which are more appropriate? Answers should refer to specific CPA numbers e.g. EV01 and adhere to these criteria:
    - Be based on a reliable source
    - Be relevant
    - Be up-to-date
    - Be location-specific
    - Consider changes through time, and
    - Consider weather and climate impact.
14. Do you agree with the scope and granularity of the assumptions in the CPA value workbook, considering the materiality and complexity of implementation of a more detailed or granular approach? If not, can you provide evidence to support the use of a more or less detailed or granular approach? See the value workbook for an overview and further detail of the scope and granularity of the tRESP CPAs.

4. Strategic Investment (SI) Need

Scope

4.1. Our March 2025 open letter stated that we would work with stakeholders to identify areas within each nation and region where a strategic approach to investment is needed. As is set out in our approach below, this scope has been developed since March, and informed by our tRESP foundations and the engagement we undertook.

4.2. To support the development of SI Need as part of tRESP, we launched a GB-wide request for information (RFI) this Summer. This process invited local Authorities, distribution network companies, developers, and other stakeholders RESP nations and regions to submit evidence of current and emerging energy needs across different vectors.

4.3. Our aim through this consultation process is to identify energy needs, specifically demand and generation needs that are not already captured in the pathways (including Clean Power 2030[24]). Those that are strategically significant and which, if enabled through the appropriate network investment, could unlock system-wide value, accelerate decarbonisation, and support long-term economic development.

4.4. This consultation presents our emerging assessment of SI Need across each of the 11 RESP nations and regions. The purpose is not to list all known energy needs, nor to duplicate local or business-as-usual planning processes. Instead, it focuses on identifying locations or clusters where early signals suggest that system-wide coordination, cross-vector alignment, or whole-system investment planning could deliver additional value beyond existing delivery pathways. Importantly, this output does not represent a definitive view of investment need or priority. It reflects a point-in-time view based on network-led submissions and early responses to our request for information. At this stage, we have not categorically excluded any submissions, recognising that further evidence may emerge to strengthen individual or collective cases. Inclusion within this consultation indicates that a need may warrant further assessment within a strategic planning context particularly where scale, complexity, uncertainty or cross-boundary considerations are present.

4.5. Ofgem's RESP Policy Framework Decision[25] notes that each RESP area should include a "specification of identified areas of strategic investment need within each region" and an "associated commentary summarising the application of locational information in the development of the pathways and assessment of strategic investment need." We have developed this output to fulfil those aims by presenting:

[24] Clean Power 2030 | National Energy System Operator

[25] Decision on the Regional Energy Strategic Plan Policy Framework

- A spatial view of where SI Needs may be emerging, based on energy needs submitted by DNOs and GDNs up to the end of June 2025
- A spatial view of all RFI responses received, including those that have not yet been assessed
- Accompanying national and regional narratives that summarise the types of energy needs being seen, common hotspot types, and early trends across each region and nation

4.6. This work is focused specifically on SI Needs in electricity distribution networks, rather than funding or endorsing individual projects. It seeks to highlight where infrastructure investment may be needed in the future to support national and regional ambitions for decarbonisation, growth, and system coordination, and importantly where such need is not already captured in the Pathways.

4.7. The maps accompanying this consultation reflect only those energy needs submitted in the correct format and with sufficient locational data to support spatial representation. We have received over 1,700 RFI submissions to date, and this number is expected to rise ahead of the final submission deadline on 30 September. Assessment of these submissions is ongoing, and as such, the maps presented here represent an interim view of emerging need.

4.8. This output reflects our current view of SI Needs that are not already captured within the transitional RESP Pathways. It highlights early signals of where anticipatory investment may be required to unlock wider system or regional value.

4.9. Please note that the maps presented do not yet include energy needs relating to hydrogen infrastructure or motorway service areas. These are being reviewed separately and will be considered for inclusion in the final tRESP output in Q1 2026. This consultation is therefore both a test of approach and an invitation to collaborate. We welcome feedback on the way in which needs have been presented, the types of information included, and how this work might evolve in future RESPs. Insights from this consultation will be used to refine our approach to identifying and presenting SI Need, to support network planning for ED3, and to inform the development of the full RESP methodology. This includes improving the ways energy needs are captured, assessed, and shared across the system to enable more proactive, place-based distribution network planning over time.

Our Approach

Objectives for delivery

4.10. Through this work, we aim to achieve four initial objectives:

i. Identify emerging areas of SI Need, underpinned by energy needs that have been assessed against our Strategic Value and Uncertainty frameworks as detailed below

ii. Capture high-level information to support further exploration and analysis by DNOs during ED3 planning

iii. Enable early testing and development of methods that can inform the future RESP approach

iv. Begin compiling an "In Development Register" – a pipeline of energy needs that may not require strategic investment now, but should be tracked over time to inform the development of full RESPs from 2026

What has been delivered and how

4.11. To assess RFI submissions, we built on the indicative two-dimensional assessment matrix suggested in Ofgem's Regional Energy Strategic Plan Policy Framework Decision (April 2025)[26], adapting it into a more detailed methodology. This enhanced framework considers an energy needs strategic value, the potential to support national and regional growth, decarbonisation and resilience alongside the level of delivery uncertainty, such as planning status, technical viability or policy dependency.

4.12. Each submission has been reviewed by the relevant RESP area team using this structured framework. To ensure fairness and national consistency, a central NESO review panel then reviewed a sample of assessments from each RESP nation and region, verifying that the framework was applied consistently across all teams.

4.13. Through this process, areas of strategic energy need have emerged that are additional to the pathways. These reflect areas of demand that, when viewed collectively, may indicate where a coordinated investment response could be warranted. These emerging areas are now being presented for consultation, alongside geographic mapping and supporting narratives that describes the potential system and societal value they could enable.

[26] Decision on the Regional Energy Strategic Plan Policy Framework

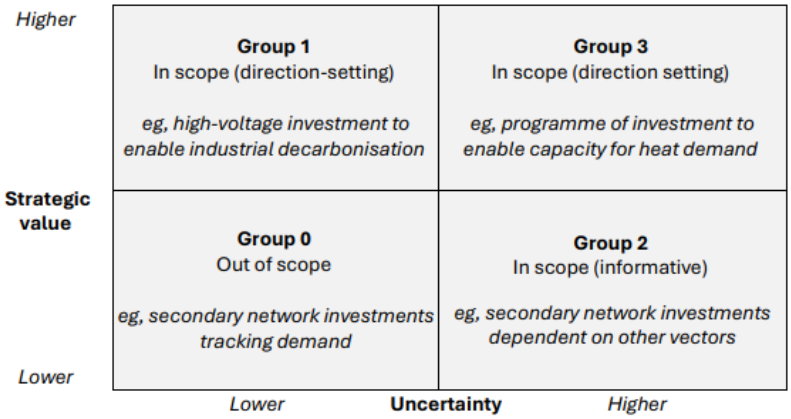

Figure 2 Indicative categorisation of areas of SI need by uncertainty and strategic value

Understanding SI Need Designation

4.14. Where we have identified energy needs that are considered in scope for SI Need, we have included them within the proposed areas presented in this consultation. These areas represent early clusters or locations where, based on current evidence, there may be a rationale to explore future anticipatory network investment in addition to those network needs that arise through the tRESP pathways and CPAs. This view reflects both the strategic value of the energy need and the degree of delivery uncertainty that may currently limit progress.

4.15. Importantly, inclusion in this consultation does not guarantee that investment will occur, nor does it imply that a delivery route has been confirmed. Rather, it indicates that the energy need appears to be strategically significant - whether through alignment with national or regional priorities, spatial concentration, cross-vector potential, or the opportunity to unlock wider system and societal value.

4.16. We have applied our Strategic Value and Uncertainty framework to guide these early assessments, ensuring that proposed SI Need areas reflect both credible near-term potential and longer-term system importance. Ofgem is expected to provide further guidance on network planning for ED3 through its SSMD and business plan guidance in 2026.

In development register

4.17. Where energy needs do not yet meet the threshold for early SI Need designation, whether due to uncertainty, timing, or gaps in available evidence, we have not disregarded them. Instead, we have created an In Development Register to ensure these submissions remain visible within our planning process and can be reconsidered as part of future RESP cycles.

4.18. The In Development Register serves three key functions:

- It provides a holding space for energy needs that may mature over time and become strategically significant in the first full and future RESP cycles

- It enables us to track patterns of emerging demand that, while currently uncertain, may inform longer-term system planning decisions
- It supports ongoing engagement with stakeholders on how best to refine and strengthen these needs

4.19. This approach helps us maintain a dynamic view of system needs that evolves as delivery confidence improves and new evidence becomes available. It also ensures that no valuable stakeholder insight is lost, even where an energy need is not yet at a stage to justify coordinated strategic investment.

4.20. Importantly, the SI Need process is not intended to delay or replace existing routes to network delivery. Where an energy need is progressing through the DNOs business-as-usual connections process, that pathway should continue independently of this assessment. NESOs role is to identify where additional whole-system coordination may be beneficial not to intervene in standard network planning or connection activities already underway.

4.21. The In Development Register is not being published as part of this consultation. This is because a significant number of stakeholder submissions, particularly from local authorities, developers, and wider stakeholders, are still being assessed. Publishing a partial register at this stage would risk omitting important information and providing an incomplete picture. Instead, we are prioritising a full and fair review of all submissions ahead of the final tRESP publication in January 2026.

4.22. We remain committed to working openly and collaboratively as we refine these early outputs. This consultation invites your feedback on the proposed areas of SI Need and the overall approach we have taken. Your insights will help shape the final tRESP.

Connections Reform

4.23. Connections Reform represents a major step forward in improving how future projects connect to the s the GB energy system. 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.

- As part of the ongoing reform process, the minimum threshold for requiring a TIA in England and Wales has recently been increased from 1 MW to 5 MW at most GSPs. This change was introduced to help unlock progress for smaller-scale projects by removing unnecessary barriers and expediting connection timelines, particularly where transmission impacts are expected to be minimal. Different thresholds remain in place in Scotland due to distinct system characteristics, but these are being kept under review by Transmission Owners.

4.24. However, the timing of these reforms, including the introduction of a reprioritised connections queue and the publication of forward-looking pipeline data, does not yet align with the development timeline for this initial SI Need consultation. This creates a temporary, but important, gap. While queue reform is progressing to support the advancement of ready and needed projects, SI Need is focused on identifying where strategic, often anticipatory, network capacity may be required to support national and regional priorities, irrespective of whether those needs currently appear in the formal connections pipeline.

4.25. To manage this timing gap, we have deliberately concentrated this phase of work on close engagement with DNOs. Their expertise, spatial insight and local knowledge have provided valuable context to help interpret emerging energy needs in line with existing planning assumptions and infrastructure constraints.

4.26. Throughout the RFI process, NESO has requested information on both supply and demand side projects. However, we recognise that most generation and storage projects already sit within the existing connections queue and are likely to be reflected in the tRESP Pathways. As such, we do not expect many supply side submissions to meet the additionality threshold required for inclusion as SI Need.

4.27. That said, we did not want to preclude the identification of exceptional supply side needs, particularly in light of potential movement within the queue due to reprioritisation or project fall-away. Our approach has therefore remained open. Each supply side submission has been reviewed on a case-by-case basis using the SI Need framework for Strategic Value and Uncertainty, with a view to identifying opportunities where anticipatory investment could unlock wider system, economic or policy value.

4.28. Given the ongoing implementation of connections reform, this consultation is primarily focused on demand side energy needs. However, NESO intends to revisit supply side opportunities for inclusion in the final tRESP output in Q1 2026, where these are not already captured within Pathways or existing delivery plans. This will be done in parallel with the publication of updated network planning data and the integration of DNO technology-specific UK Government's Clean Power 2030 Action Plan generation targets.

4.29. In all cases, NESO is working to ensure that SI Need outputs are additional to the existing Pathways and not duplicative of activity that is already planned, committed or covered under business-as-usual mechanisms. Our final transitional output will offer a more complete and tested view of where system value can be realised through anticipatory, coordinated investment, informed by a clearer picture of queue reform outcomes and a broader dataset of stakeholder needs.

What will change in the final tRESP outputs in January 2026

4.30. The outputs presented in this document reflect our emerging view of SI Need, based on the evidence and engagement available up to summer 2025. In the coming months, we will continue working closely with stakeholders to assess and integrate further information, including outstanding RFI submissions from wider stakeholders. We will also begin to incorporate insights from the evolving connections reform process, including enhanced queue transparency and forward pipeline data.

4.31. This ongoing analysis will inform the next iteration of SI Need, to be published as part of the final transitional RESP in Q1 2026. That version will present a more complete view of where anticipatory investment in addition to our pathways and existing connections may be required to support growth, decarbonisation and policy delivery. As the connections reform programme progresses, we expect future SI Need assessments to be increasingly informed by this improved dataset, strengthening the link between strategic planning and network delivery.

Ensuring Quality SI Need Outputs

4.32. To date, our assessment has primarily focused on submissions received from the distribution network companies, drawing on their local knowledge, planning insight and existing stakeholder engagement. This has enabled us to apply a consistent national framework and begin identifying initial signals of strategic investment need.

4.33. We acknowledge that the quality, depth and format of information submitted to date vary across nations and regions, and submission types. Establishing consistency across diverse data sources is a key focus as we refine our methodology and move towards the delivery of our full RESP role.

4.34. Importantly, this is not yet the complete picture. A significant number of the responses to our RFI from local authorities, developers and wider stakeholders are still being processed to ensure they are properly considered. As this broader evidence base is integrated, we expect the outputs to evolve and new or refined areas of SI Need may emerge. In some cases, further engagement may be required to strengthen supporting evidence or clarify strategic intent. We thank you for all of your efforts so far in feeding into this process.

4.35. We are committed to improving data quality and consistency over time. We will continue to work with all stakeholder groups to strengthen the evidence base and ensure that future iterations of this work provide a credible and transparent foundation for anticipatory investment planning across the energy system.

Final Call for Submissions

4.36. To ensure that all relevant evidence can be incorporated into the final tRESP, we are now issuing a final call for responses to our request for information.

4.37. The deadline for responses is 11:59pm on 30th September 2025.

4.38. We ask any stakeholder who wishes to submit further information to contact us as soon as possible via box.consultations.resp@neso.energy

4.39. We will send stakeholders an RFI pack with instructions and submission templates.

4.40. We recognise that timescales are short but strongly recommend that stakeholders sending any responses as soon as possible before the final deadline. This is to allow time for our RESP teams to follow up on any clarifications or data gaps.

4.41. Please note that there will be no further opportunity to submit additional information for inclusion in the final tRESP after the closure of the RFI. Any submissions received after the deadline will be held for consideration in our first full RESP cycle, starting in 2026.

What are we consulting on?

This consultation sets out our emerging view of SI Need as part of the tRESP process. It includes draft narratives, hotspot examples, and spatial illustrations intended to test our developing approach and gather feedback that will inform both the final Q1 tRESP outputs and our full RESP framework.

Consultation questions

15. Do you feel that the definition and framing of Strategic Investment Need (SI Need) is clear?
16. Are the emerging SI Need areas broadly aligned with the approach and framework we have set out, including the use of Strategic Value and Uncertainty as assessment criteria?
17. Does the combination of RESP area narratives, maps and hotspot descriptions provide a clear and helpful picture of where emerging needs are arising? Is the level of detail suitable for your purposes?
18. What level of geographic detail would be most useful in future versions? For example:
    - Local authority boundaries
    - Project-level details
    - Place-based clusters or zones
    - GSP (Grid Supply Point) boundaries
    - Thematic areas (e.g. heat networks, industrial clusters)
    - Lower layer super output area / data zone
19. Do you see a role for these outputs in supporting local planning, infrastructure alignment, investment proposals?
20. Are there any locations you would expect to see identified as SI Need that are not currently being assessed? Please highlight these and, where possible, provide supporting information.

We welcome feedback both on the specific examples included and the broader methodology that underpins them. The outputs shared are not final. They reflect an early and evolving picture based on the best available evidence up to summer 2025 including information received from network operators. We acknowledge that further refinement will be needed as new information becomes available, including queue reform data and additional RFI submissions from local authorities, developers and wider stakeholders.

By consulting now, we aim to ensure that the SI Need approach is transparent, meaningful, and shaped by the organisations and sectors who will engage with and act on these findings. All feedback will be used to inform the final version of the SI Need outputs, to be published alongside the full transitional RESP in early 2026.

Appendix

Glossary of terms and acronyms

Term / Acronym	Definition / Full Form
AI	Artificial intelligence
CAP	Connections Action Plan
CHPs	Combined heat and power
CPA	Consistent Planning Assumptions
CSNP	Centralised Strategic Network Plan
DNO	*Distribution Network Operator - Any Electricity Distributor in whose electricity distribution licence the requirements of Section B of the standard conditions of that licence have effect (whether in whole or in part).*
DFES	Distribution future energy scenarios
ED3	Electricity Distribution Three – the next electricity distribution price control, running from April 2028 to March 2033
Electric Engagement	One of the FES pathways to net zero
EVs	Electric vehicle - *vehicles wholly driven by an electric motor that is wholly powered through a battery and does not produce any tailpipe emissions*
EPC	Energy Performance Certificate
ENA	Energy Networks Association
FES	Future Energy Scenarios
GB	Great Britain
GDN	Gas Distribution Network
GSP	Grid Supply Point - interface between transmission and distribution
Holistic Transition	One of the FES pathways to net zero
Hydrogen Evolution	One of the FES pathways to net zero
I&C	Industrial and Commercial *e.g. electricity demand*
kW	Kilowatt (unit of power)
LAEP	Local Area Energy Plans
LHEES	Local Heat and Energy Efficiency Strategies
LCT	Low Carbon Technology: *LCTs is the collective term for the following technologies*: • *Heat pumps at existing connections that do not lead to a new or modified connection* • *Electric vehicle (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*
REMA	Reform of Electricity Market Arrangements
RESP(s)	Regional energy strategic plan(s)
RESP role	NESO's regional energy strategic planning role (as defined by the Ofgem RESP Policy Framework)
RESP team	NESO's regional energy strategic planning team in each nation and region
RFI	Request for information
SI Need	Strategic Investment Need
SSEP	Strategic Spatial Energy Plan
tRESP	Transitional Regional Energy Strategic Plan
TW or TWh	Terawatt (unit of power) or terawatt hours (unit of energy)

Use of Artificial Intelligence (AI)

Artificial Intelligence (AI) will be used to help summarise the 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 tRESP 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. We will incorporate bias mitigation strategies into our AI planning processes. This proactive approach will help us ensure that the actionable insights our AI systems provide are fair, unbiased and reflective of the diverse range of our customer stakeholders' views.

Additionally, we recognise our responsibility to maintain transparency and due diligence in all our AI-related activities. Our AI use 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.