Public

Transitional Regional Energy Strategic Plan Strategic Investment Need Methodology

September 2025

NESO
National Energy System Operator

Public

Contents

1. Context

This detailed methodology will focus on Strategic Investment (SI) Need. NESO will work with stakeholders collaboratively to identify and position areas of SI Need for progression within the Revenue = Incentives + Innovation + Outputs Electricity Distribution Three (RIIO-ED3) price control period, 2028-2033. Noting that investments may extend beyond 2033, whereby the scope set out here considers energy needs looking to connect, up until 2040.

1.1 What is Strategic Investment Need?

SI Need refers to investment into the network that is in advance of certain need which has both a high system value (across social, economic and environmental factors) and is necessary to the delivery of key national and regional priorities.

This represents a step-change from previous approaches to network investment to ensure that the ongoing electrification of large parts of the economy are not held back by the distribution infrastructure. SI Need will seek to identify new or emerging areas of network investment required to support hotspots of planned activity. Investing ahead of certain need in these areas will be worthwhile given the anticipated electrification and growth that will utilise the network investment one way or another.

SI Need is not about:

- the maintenance of networks to ensure safety, resilience and security of supply
- straightforward, lower value load-related expenditure, such as unlooping of domestic supplies
- 'shovel ready' projects already within the tRESP Pathways

1.2 What value will this bring to RIIO-ED3?

NESO's determination of proposed areas of SI Need will provide independent, consistent evaluation of specified energy needs to support justification of additional network investment within the associated Regional Energy Strategic Planning (RESP) area.

SI Need will complement the tRESP Pathways by providing insights on specific areas of investment need not covered by the pathway building blocks, such as across ports, industrial growth or decarbonisation.

1.3 Alignment to other Transitional Regional Energy Strategic Planning component parts

SI Need is one of four interrelated parts of the Transitional RESP (tRESP) deliverable. SI Need is particularly closely linked to Nations and Regions Context. Through its horizon scanning analysis,

Nations and Regions Context will inform how NESO seeks to understand where areas of SI Need are likely to exist and the makeup of energy needs (defined as projects, programmes, initiatives etc.) within those areas. This insight will enable NESO to engage relevant stakeholders (discussed in section 4) to better understand the pipeline of energy needs.

Furthermore, upon completion of NESO's assessments to identify areas of SI Need, the outcomes will be compared against what was set out within the Nations and Regions Context to determine whether any key gaps exist (in terms of areas of activity, or energy need typology) and to inform future updates to the Nations and Regions Context based on additional analysis and engagement through SI Need.

SI Need will also align closely to the pathways work, which seeks to model the changes to supply and demand within a given RESP area. For tRESP, some of the focus of alignment between SI Need and pathways will be to minimise and avoid duplication of the energy needs or projects being considered within the two areas to ensure that SI Need is highlighting areas of additional investment beyond the pathways. SI Need and pathways will also have a spatial relationship within tRESP to reinforce the need for network investment, which is explored in more detail within section 5.

1.4 Distribution Network Operator (DNO) application

Areas of SI Need specified by NESO will be positioned for further assessment by DNOs to determine possible technical or network options for these areas of investment within ED3. Specifically, how NESO's work on SI Need is to be integrated into the development of DNO business plans is to be set out by Ofgem through their business planning guidance.

2. Scope

2.1 Ofgem specifications

The tRESP Open Letter[1] details that each RESP area will include "specification of identified areas of Strategic Investment Need within each region," and that there should be an "associated commentary summarising the application of locational information in the development of the pathways and assessment of strategic investment need".

To ensure alignment with these points, NESO will be identifying areas of SI Need through assessment of energy needs and representing the resulting areas spatially on static maps.

[1] Open Letter regarding the scope of the transitional Regional Energy Strategic Plan

As noted in NESO's open letter regarding the scope of tRESP[2], NESO will work collaboratively with stakeholders to proactively identify energy needs for consideration to inform areas of SI Need. NESO will also utilise insights captured within the Nations and Regions Context, as well as engagement delivered by our RESP teams. Our approach to stakeholder engagement for SI Need is detailed within section 4.2.

NESO has strengthened their approach to assess energy needs, used to inform areas of SI Need, by drawing on the Ofgem RESP decision document[3], bringing forward elements of this document that underpin the full RESP. To determine whether energy needs should be considered in or out of scope for informing areas of SI Need, NESO will be assessing against a framework of 'Strategic Value' and 'Uncertainty' which are referenced in the Ofgem RESP decision document. Furthermore, the majority of the "direction-setting specification" noted in this document has informed the content for NESO's output on SI Need. Both the assessment approach and anticipated content of the output are explored further within sections 3.3, and 5 respectively.

The overarching outcomes for SI Need are as follows:

1. Identifying areas of SI Need, underpinned by a justification of energy needs within that area, which have been identified by proactive stakeholder engagement and assessed against a framework of Strategic Value and Uncertainty.
2. Capturing high-level information which will enable further exploration and analysis by DNOs in ED3 – who, what, where, when and why.
3. Enable early development of approaches which can be expanded further for an full RESP methodology.
4. Starting to develop the "In Development Register", which will record the pipeline of energy needs for a RESP area.

2.2 Connections reform

Ongoing Connections Reform overlaps with the development timescales of tRESP, meaning tRESP will not have the outcomes for supply, generation or storage projects to integrate into the process at the time of the initial SI Need assessment.

Throughout the process of assessing SI Need, NESO will initially be requesting information relating to both supply and demand projects. However, only once outcomes have been realised for Connections Reform will NESO be able to fully assess supply, generation or storage projects against the SI Need framework of Strategic Value and Uncertainty. Therefore, the September public consultation will focus primarily on demand-side energy needs to await outcomes from

[2] download

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

Connections Reform to determine if or how they can be integrated in the final tRESP publication in Quarter 1 (Q1) 2026.

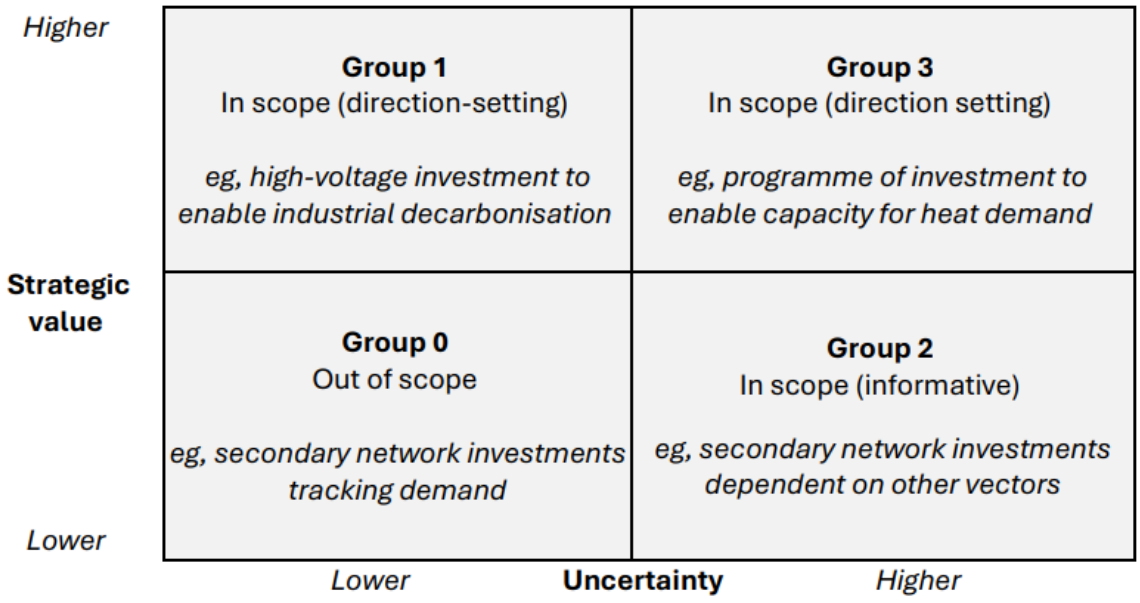
2.3 Whole energy system analysis

Whilst the tRESP is inherently focused on electricity distribution, given its application for RIIO-ED3, NESO is keen to integrate opportunities for whole energy system analysis into our work. As a result, for SI Need, NESO will be engaging stakeholders with interests across all energy vectors and assessing energy needs in a consistent manner.

3. Assessment

To develop the assessment approach for SI Need, NESO began by drawing on the matrix set out by Ofgem in their RESP decision document, which is shown in Figure 1 below:

Figure 1: Ofgem SI Need categorisation matrix based on Strategic Value and Uncertainty



By working with Ofgem and the distribution networks, including electricity DNOs and Gas Distribution Networks (GDNs), notably through tRESP technical working groups, NESO has been able to expand on this foundation to establish the basis for assessment within tRESP.

3.1 Assessment terminology

The assessment of Uncertainty has been considered through the following four lenses:

- **Consenting Status** – uncertainty surrounding key consenting components such as land development agreements, planning permission assumptions and alignment with local land development strategies.
- **Policy Stability** - uncertainty associated with enabling policies which the energy need aligns with.
- **Technology Maturity** - utilising the Technology Readiness Level (TRL) framework, the assessment aims to establish the uncertainty associated with the core technology being deployed by the energy need at the time of assessment.
- **Funding Status** - uncertainty associated with the financial investment required for the energy need to be developed to a point whereby it is ready to connect to the energy system.

The assessment of Strategic Value has been considered through two component parts, which are defined as follows:

- **Regional Significance** – the alignment of an energy need with national and regional policies, strategies and ambitions (i.e. Growth Plans, Decarbonisation Strategies, Carbon Reduction Pathways etc.).
- **System Value** - based upon the World Economic Forum's Definition: "System Value is a holistic framework that evaluates economic, environmental, social, and technical outcomes of potential energy solutions".

3.2 Assessment matrices

Using the detail noted within the assessment terminologies in section 3.1, NESO has defined qualitative assessment matrices for both Strategic Value and Uncertainty (captured overleaf) which will provide scores that can be plotted onto a final, adapted version of Ofgem's original matrix to determine where energy needs will be considered as in or out of scope for informing potential areas of SI Need.

Figure 2: Assessment and rating tables for Uncertainty

Uncertainty Matrix				
Rating	**Consenting Status**	**Policy Stability**	**Technology Maturity**	**Funding Status**
High	Project consenting requirements and authorisations undefined and speculative (Planning/Land)	Policies yet to be defined or initiated (e.g. pilot programme, no regulatory clarity)	Experimental, pre-commercial or basic validated technology (TRL 1<6)	Project funding undefined & speculative
Medium	Project consenting requirements and relevant authorisations identified and engaged (Planning/Land)	Policies evolving or under consultation, with key topics established. National or Regional Policy established, but not jointly	Prototyped through UK pilots/innovation projects in relevant or operational environment. (TRL 6<7)	Project funding identified and ongoing
Low	Project consenting requirements and relevant authorisations secured (Planning/Land)	Supported by long-term, stable national and regional policy	Qualified, proven & implemented technology at commercial scale. (TRL 8<9)	Project funding secured

Figure 3: Assessment and rating tables for Strategic Value

Strategic Value Matrix		
Rating	**National and Regional Significance**	**System Value**
High	Prospective anchor project directly aligned with national and regional policies	Enables key national and regional benefits (e.g. Societal, Economic, Environmental)
Medium	Project indirectly aligns with national and regional policies	Supports aspects of growth/ energy/ sustainability benefits
Low	Minimal alignment with national and regional priorities and/or very localised alignment only	Does not support /or align with national and regional benefits

As per the original Ofgem matrix, to ensure equal weighting between Strategic Value and Uncertainty, the scores awarded for high, medium and low in the Strategic Value matrix (Figure 3) are weighted to match the possible maximum score that can be achieved from the Uncertainty matrix (Figure 2).

By combining the scores assessed for a given energy need across the Strategic Value and Uncertainty matrices, an energy need will be concluded as either in or out of scope based on where it resides within the final assessment matrix, which has been adapted from the original Ofgem matrix shown in Figure 1.

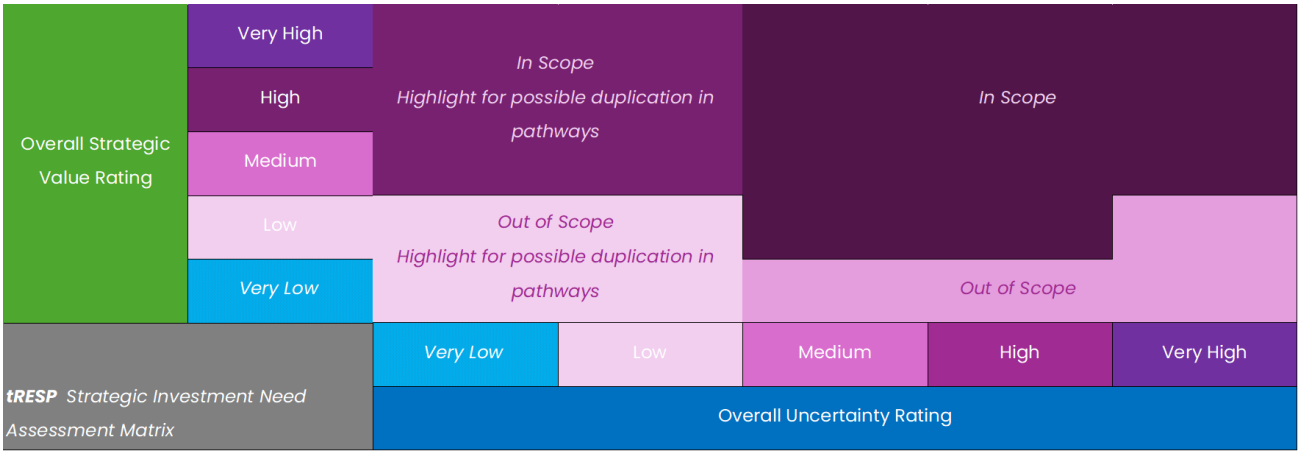


Figure 4: tRESP SI Need Categorisation Matrix

NESO's categorisation matrix has several similarities to Ofgem's, notably four quadrants of in or out of scope considered against axes of Strategic Value and Uncertainty. The rationale for how each of the four categories have been defined is set out below:

- **In Scope (Highlight for possible duplication in pathways)** – Where there is a very low-low level of Uncertainty, i.e. the energy need is likely to be realised, as well as a medium-very high level of Strategic Value, then it has been determined that the energy need should be in scope to inform SI Need due to the value it will bring, anticipated impact on the network and likelihood of being delivered. Given the high level of certainty that surrounds energy needs in this category, NESO will highlight these against the pathways work to mitigate duplication risks. NESO has taken mitigation measures to reduce this risk, which are noted within sections 4 and 5 of Request for Information and Output.
- **Out of Scope (Highlight for possible duplication in pathways)** – Where energy needs are assessed to have very low-low levels of Strategic Value, NESO believes this is not strategic enough to inform SI Need. Regarding the level of Uncertainty and potential duplication risk with pathways, this category can be considered the same as the category above
- **In Scope** – Where energy needs fall within the ranges of medium-very high levels of Strategic Value and medium-very high levels of Uncertainty, NESO believes these cases to be clear examples of where energy needs should inform SI Need. The higher levels of

Strategic Value mean that higher levels of Uncertainty should not rule energy needs out of scope due to the likely larger network impacts from these energy needs and thus the need for consideration within SI Need. NESO has chosen to include energy needs that fall within low Strategic Value and medium-high levels of Uncertainty on the basis that these likely smaller energy needs could cluster together on a geographical basis to create an area of proposed SI Need. This will ensure NESO considers how specified areas of energy need may interact and potentially represent a larger or more complex area of SI Need.

- **Out of Scope** - Further to the 'In Scope' category, where very high levels of Uncertainty exist for a low Strategic Value energy need, then it is not worth considering these needs and these cases will be out of scope. Furthermore, energy needs that have very low Strategic Value will be considered out of scope regardless of the level of Uncertainty as these cases will not be strategic enough to inform SI Need.

3.3 NESO assessment process

Using the assessment matrixes set out in this document, alongside additional internal guidance and support in place to explore nuance and examples of SI Need, each of NESO's national and regional RESP teams will be assessing proposals of energy needs used to inform SI Need captured through a proactive Request for Information (RFI) process, which is detailed in section 4.

Following initial assessments, a NESO appointed central Review Panel (comprising senior managers from across RESP and wider NESO) will conduct an audit-style review across a sample of assessments from all RESP areas to drive greater levels of consistency in approach.

Upon completion of this two-stage assessment process, each RESP team will have concluded energy needs to be either in or out of scope for SI Need. Out of scope energy needs will be placed within an initial In Development Register, which will inform future work within the full RESP. In scope energy needs will then be used to develop the proposed areas of SI Need.

NESO will then evaluate all in scope energy needs spatially to determine the locational relationships between different energy needs and bound them accordingly where groups occur into proposed areas of SI Need.

Having established proposed areas of SI Need, NESO will be able to compare and contrast the findings both to and from the Nations and Regions Context. The outcomes from SI Need will be able to confirm findings within the Nations and Regions Context, such as whether a particular typology of energy need is growing within a RESP area, but also highlight gaps within the Nations and Regions Context which can then be captured in the full RESP. NESO will also be able to determine whether the RFI process (defined further in section 4) has captured all known areas of emerging energy need within a given RESP area, based on what was to be expected from the Nations and Regions Context. This comparison will also inform where the RFI process has been

unable to capture certain energy needs which NESO can seek to address with further, targeted stakeholder engagement.

3.4 Whole energy system analysis

As detailed further in the RFI section, NESO has approached the SI Need process from a whole energy system perspective and will be considering and assessing energy needs across all energy vectors.

4. Request For Information

To identify and assess energy needs that could inform areas of SI Need, NESO was keen to build on the existing information sharing between local stakeholders and the energy networks on local investments and economic growth priorities. In addition, NESO has issued an open invitation, through a Request for Information (RFI), to engage local stakeholders to provide further information on the pipeline of key growth and development areas.

4.1 What is the RFI Asking for?

The full RFI form itself is appended to this document to capture the detail, but notably the RFI is divided into four sections:

- **Pre-screening** – used to quickly determine whether a given energy need should be further considered based on some overarching but necessary criteria to ensure we do not waste stakeholder time. A key example of this is to check whether an existing connection agreement already exists, if it does, that particular energy need is likely to already be captured within the pathways and thus should not be considered further within SI Need.
- **General Information** – context setting for the energy need; who, what, when, where and why.
- **Strategic Value** – a series of questions aimed specifically at providing the necessary detail to assess an energy need against the assessment matrix for Strategic Value (Figure 3 above).
- **Uncertainty** - a series of questions aimed specifically at providing the necessary detail to assess an energy need against the assessment matrix for Uncertainty (Figure 2 above).

Furthermore, where NESO is specifying proposed areas of SI Need, our RFI has been structured to capture the majority of the "direction-setting specification" Ofgem have set out for the full RESP within their decision document for inclusion in our outputs, notably the following:

- Location and spatial context
- Network license area(s)

- Categorisation
- Energy need capacity
- Vector

4.2 Stakeholder engagement approach

NESO's stakeholder engagement began by briefing and issuing the RFI to the DNOs and GDNs on the basis that their respective stakeholder teams have been doing a lot of extensive work to engage stakeholders and understand the energy landscape within their license areas which NESO could learn from. Alongside an understanding of the energy landscape and key stakeholders formed in the Nations and Regions Context, the information captured from the DNOs and GDNs helped to structure the additional stakeholders NESO would engage, alongside key stakeholders such as local government, to proactively identify potential gaps in the stakeholder landscape not yet engaged by the DNOs and GDNs.

Recognising that completion of the RFI is a time-consuming task, and being cognisant of the resource constraints that exist within many of NESO's stakeholders, notably local authorities, NESO has set out a suite of support mechanisms to drive greater levels of equity of opportunity for local actors to engage with the invitation:

1. NESO began by reaching out to stakeholders to set the context for SI Need and invite them to engage in the process.
2. Interested parties were then issued briefing documentation ahead of meeting with NESO.
3. NESO then presented the briefing documentation and formally issued the RFI information pack, which included a covering letter, shareable slides, and the RFI form itself.
4. During the briefing, NESO highlighted that their support is available throughout the RFI process to enable stakeholders to complete the RFI to the best of their ability.
5. Where appropriate, RESP teams hosted drop-in sessions for their nation or region.
6. NESO also collaborated with other well-networked stakeholders to spread the messaging and invitation further by developing podcasts, supporting papers and joining webinars to discuss and explore this topic in further detail with a wider audience.

4.3 RFI Timelines and Milestones

NESO is running the RFI process against two timelines:

- For DNOs and GDNs, the first wave of the process ran in early summer.
- For all other stakeholders, initial responses were captured before the end of July, with further iteration of submissions ongoing until 31 October.

The DNOs and GDNs were on an accelerated timeline to allow sufficient time for processing and assessment of RFI submissions, to ensure that some proposed areas of SI Need could be included within the September 2025 public consultation that NESO is running. Wider stakeholders were

granted additional time to reduce the resource requirements needed and ensure ample opportunity for engagement.

NESO will continue to accept new RFI responses from all stakeholders, including DNOs and GDNs, until 30 September 2025. Iteration of RFI submissions received on or before 30 September will be accepted until 31 October. This is to try and capture RFI responses in a timely manner to allow NESO's new RESP teams sufficient time to appropriately process and assess the responses which could amount to hundreds per RESP area.

Beyond September 30 2025, stakeholders will still be able to send RFI responses to NESO, however, these will be added to the In Development Register for consideration within the full RESP only and not progressed any further in tRESP. Where exceptional circumstances arise, NESO will retain the ability to assess a new RFI response received after 30 September 2025.

5. Output

For SI Need within tRESP, NESO intends to create maps for each RESP area. NESO expects they will spatially represent each proposed area of SI Need, bounded geographically by the energy needs within that particular area, i.e. developing proposed areas of SI Need based on locational proximity and density of energy needs within a given area.

Given tRESP is being used to inform Electricity Distribution 3 (ED3), the main tRESP deliverable is likely to feature proposed areas of electricity (DNO) SI Need only, with other proposed areas of SI Need for other energy vectors likely to be secondary to the main electricity focused output. For data confidentially reasons, the public output is likely to consist only of geographic locations and energy vectors.

An accompanying narrative will support each map or visualisation, drawing out the key value that would be realised by the RESP area should the underpinning energy needs for each proposed SI Need area be enabled. The analysis will also compare the findings against the Nations and Regions Context (as explained earlier in section 3.3) to explain where the results were anticipated as opposed to where new findings have been discovered which will inform future iterations of the Nations and Regions Context. NESO will group the outcomes from the SI Need assessment into typologies to highlight the themes within the pipeline.

5.1 Data sensitivity

To mitigate stakeholder concerns regarding sharing of sensitive information, no further details of the energy needs will be shared publicly. As noted earlier, within public facing tRESP publications NESO intends to include proposed areas of SI Need, featuring only the energy needs (and specified vector) within each area.

NESO is exploring secure ways of data sharing with DNO's to ensure that any confidentiality requirements are appropriately managed. This secure data sharing is likely to also capture the energy need categorisation from NESO's assessments to clearly highlight to DNOs where there is duplication with pathways work, as noted within section 3.2.

Appendix A – SI Need RFI Form

NESO's Excel-based SI Need RFI Form to be issued separately to this document.