Regional Energy System Planning (RESP) Methodology Consultation – Pathways, Consistent Planning Assumptions and Spatial Context

25th November 2025

- Jonny Sadler - RESP Engagement & Communications Manager
- Katie Harrison – RESP Methodology Projects Lead
- Nick Smith - RESP Strategic Lead
- Anis Yaakob – RESP Project Lead
- Rob Smart – RESP Lead Gas Planner

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Agenda

1. Welcome & Introduction – Jonny Sadler
2. Methodology Consultation - Katie Harrison
3. Pathways Overview – Rob Smart
   - Poll Survey
4. Consistent Planning Assumptions (CPAs) Overview - Anis Yaakob
   - Poll Survey
5. Spatial Context Overview – Nick Smith
   - Poll Survey
6. Q&A – All
7. Next Steps & How to get involved – Jonny Sadler

Methodology Consultation Document

https://www.neso.energy/document/372156/download

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2. Methodology Consultation

Katie Harrison
RESP Methodology Projects Lead

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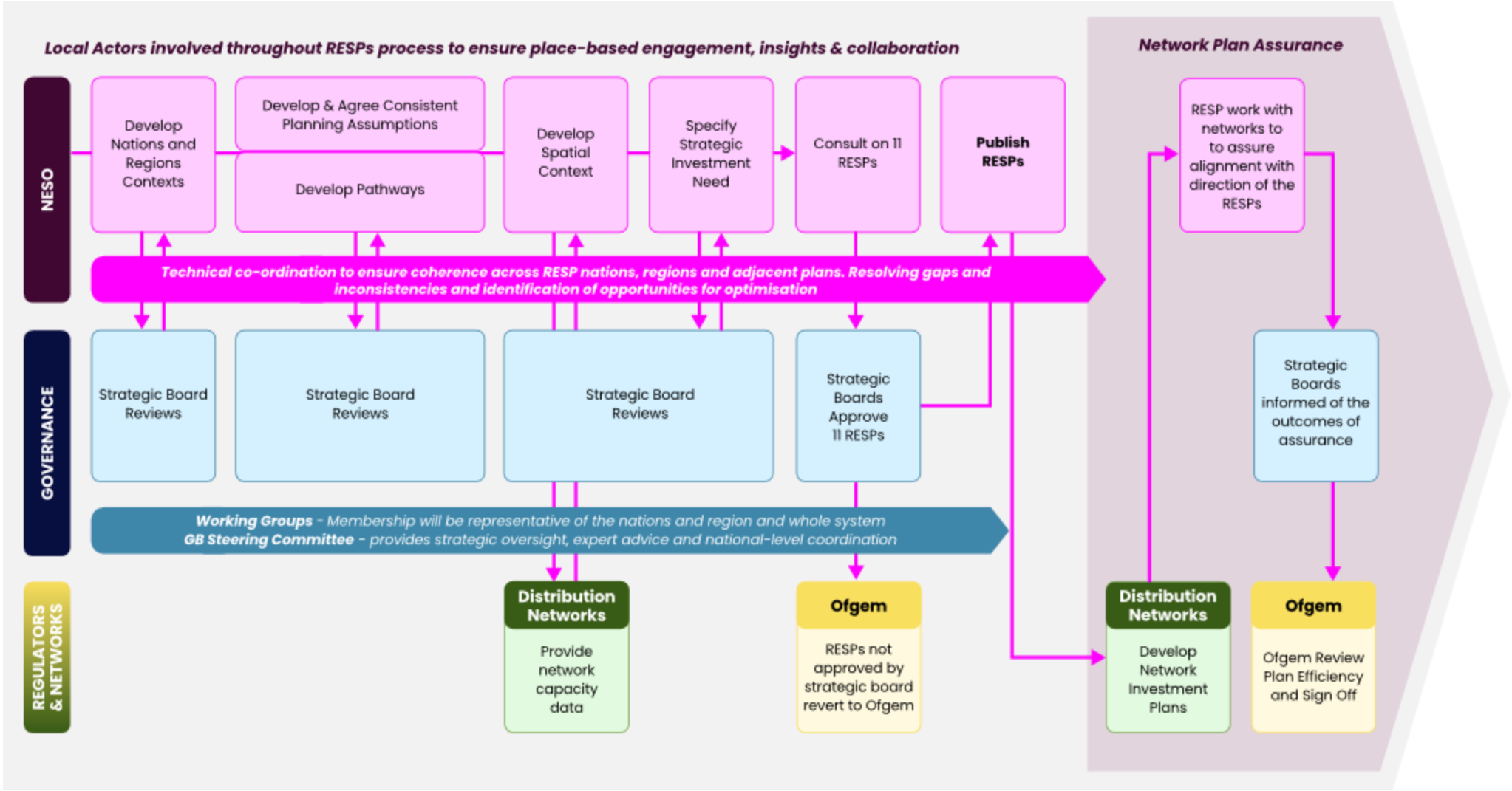
Five components of a RESP

End-to-end Process



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3. Pathways Overview

Rob Smart
RESP Lead Gas Planner

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Pathways Content

Webinar content:	Consultation document pages:
• Overview & Whole Energy Scope	p55-57
• Spatial granularity of the outputs & Developing the RESP pathways	p58-59
• The RESP Pathways Framework (including Short- and long-term pathways)	p60-61, 62
• Demand, supply and whole system modelling	p63-67
• Using constraints to bound the Pathways	p65
• Decision making as we develop Pathways	p60-61
• Communicating Pathways and consultation questions	p68

Overview of the RESP Pathways

A **single short-term** Pathway covering a 10-year period
Multiple long-term pathways covering at least 25 years
All Pathways will set credible routes to deliver **net zero** and legally binding emissions targets.
A **counterfactual** pathway where progress is made but emission targets are not met

Whole energy: RESP pathways will cover energy supply, demand, storage and flexibility across different vectors that affect distribution networks.

Bottom-up: Using local data sources* and ambitions identified in the nations and regions context to create a bottom-up approach to modelling the pathways.

Coherent with national plans: The outputs from the Strategic Spatial Energy Plan (SSEP) For the full RESP, SSEP will be a key input into the Pathways

** We are committed to minimising duplicative requests to stakeholders and work with networks to understand the best way to coordinate engagements to get inputs once*

Creating Pathways that are whole energy

RESP Pathways will cover:

Categories		Energy vectors
Distribution-level energy demand	• Residential • Commercial • Industry • Transport (Road, rail, maritime and aviation) • Data centres • Producing other vectors (e.g., gas for electricity, electricity for hydrogen)	• Electricity • Hydrogen • Biomethane • Natural gas • Heat
Distribution-level energy supply	• Front-of-the-meter generation/production • Behind-the-meter generation/production	
Distribution-level energy storage and flexibility	• Front-of-the-meter energy storage • Behind-the-meter energy storage • Supply-side flexibility • Demand-side flexibility	

RESP Pathways will also consider interactions at the transmission-distribution boundary

***Consultation Question**: Do you agree with the scope of 'Whole Energy' for RESP outputs?*

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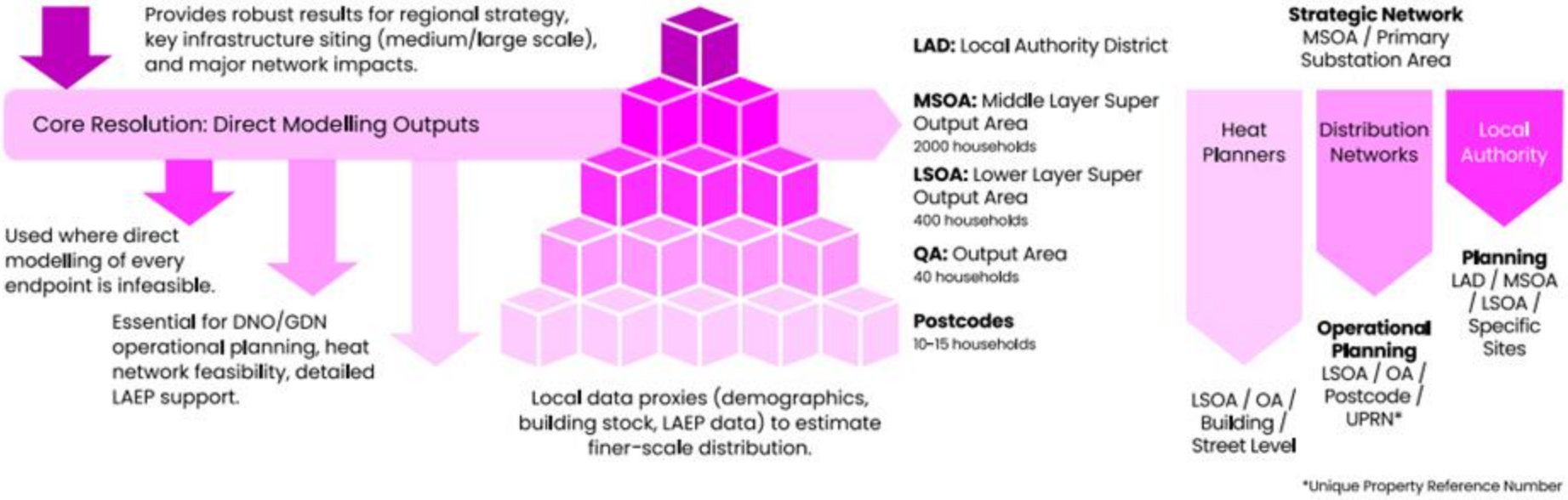
Spatial granularity of the outputs

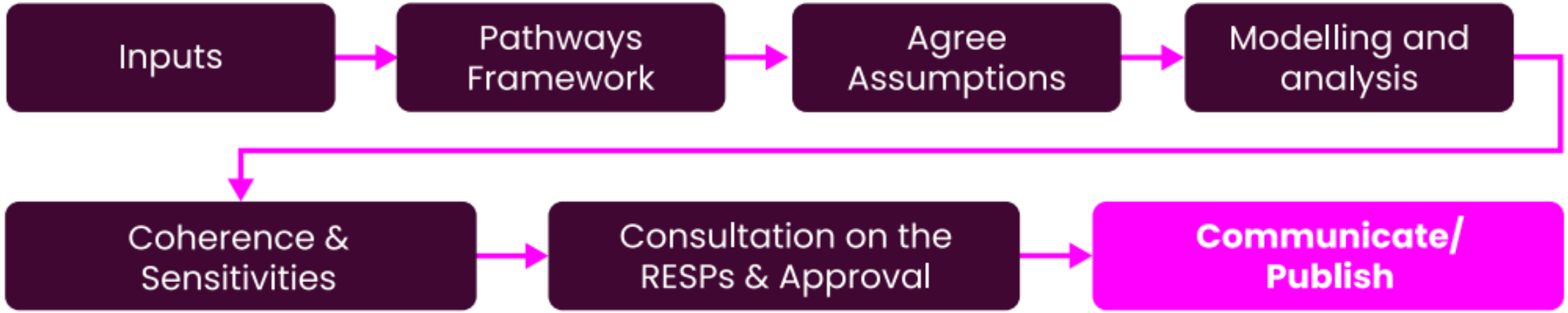
A hybrid approach: perform its core integrated geospatial and energy system modelling at the highest feasible resolution, employ validated disaggregation techniques to meet output needs below this level.

Ofgem asked for modelling outputs to LSOA where practicable. This will not be applicable to all vectors but will prioritise where we see value. Some stakeholders will require more granularity of outputs.



- **Spatial Granularity:** Pathways presented spatially down to **Lower Layer Super Output Areas (LSOAs)** in England and Wales and **Data Zone** level in Scotland *where practicable*.
- **Temporal granularity:** We expect to provide **annual** demand and supply data for each energy type

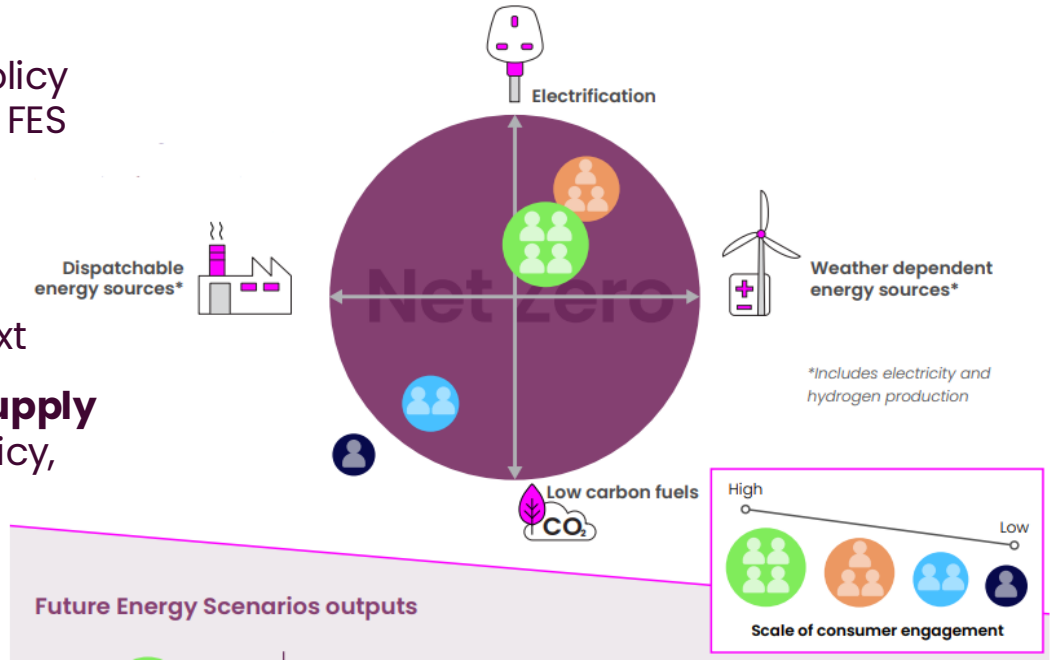
Developing the RESP pathways



Engaging with: Working groups, Strategic boards.
Abide by: RESP decision-making principles
Coherence with: National plans

The RESP Pathways Framework

- Acts as a structured approach to explore uncertainty
- Utilises similar approach to FES pathways framework and SSEP policy framework. The same number of long-term Pathways as used in FES
- Develops a set of **narratives** that will
  - Ensure credible routes to net zero
  - Reflect priorities identified in the Nations and Regions Context
  - The narratives can be shaped by **levers** that **affect future supply and demand by sector and energy type across** GB, e.g., policy, behavioural levers

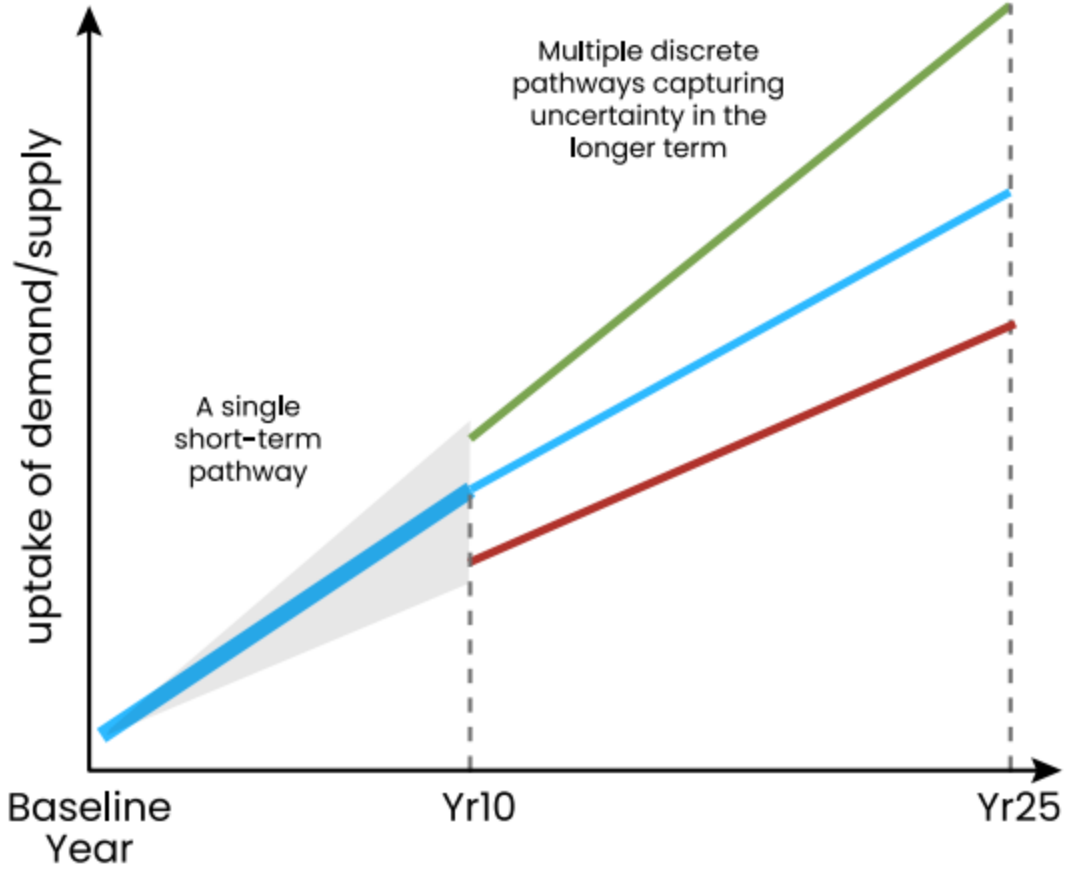


Example framework from FES 2025

We will engage with stakeholders as we develop the RESP Pathways Framework through the forums, working groups and Strategic Boards.

Modelling and analysis approach: Short- and long-term pathways

- One short-term Pathway covering ten years from the baseline year.
- Multiple long-term Pathways extending to 25 years from baseline year to account for uncertainty
- We will model all pathways from the baseline year for coherence.
- We will publish a single short-term pathway
- Complying with national net zero targets.
- A counterfactual where progress is made but emission targets are not met



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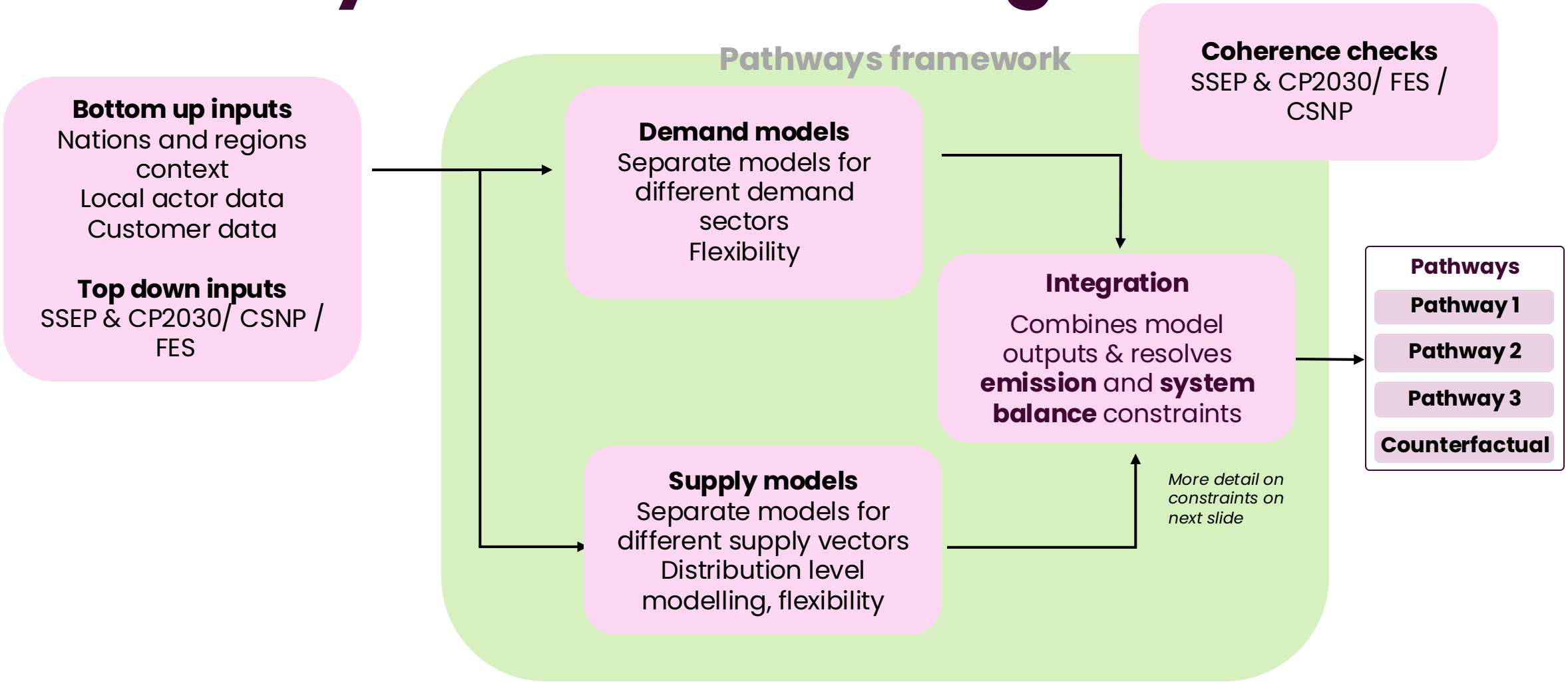
Whole systems modelling



Using constraints to bound the Pathways

Pathways must meet these two core constraints:

Emissions constraints

All Pathways except counterfactual must meet **2050 net zero** and interim **Carbon Budgets** GB-wide

- This does not mean each nation and region must **individually** reach net zero by 2050
- Some will reach it **sooner** (e.g., Scotland with its 2045 target)

System balance constraints

Energy system must remain balanced across **all nations and regions** across **all energy vectors**

- Balancing supply and demand, transmission and distribution
- Indicative demand calculations to validate pathways

Decision making as we develop Pathways

Abide by RESP decision-making principles

- Be economic by minimising costs
- Maintain coherence with SSEP & CSNP
- Enable priorities from Nations and Regions Context
- Support future policy ambitions & decarbonisation goals

Develop detailed multi-criteria decision-making approach required to appraise Pathways

- Collaborative endeavour with stakeholders and customers
- In accordance with Treasury Green Book where appropriate
- Offers transparent basis for decision-making

Evaluate outcomes of modelling to identify trade offs

May be needed to meet:

- Policy ambitions
- Constraints
- Cross-energy or cross-regional issues

Review trade-offs through RESP governance

Working groups like the RESP Technical Working Group and thematic groups will be a central part of NESO's engagement approach

Share modelling outputs with relevant working groups

Feedback informs refinements to ensure balanced appraisal of credible options

Final approval for each region's RESP comes from the regional Strategic boards

*Feeding into final approval is an assessment against various factors that could impact the **deliverability** of each Pathway.*

- *E.g., technology uptake rates against practical benchmarks and expert insight to confirm whether expected pace and scale of change is achievable*

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Communicating Pathways and Consultation Questions

Communicating Pathways. NESO will:

- Publish the Pathways in formats that are clear, visual and accessible.
- Include geospatial views.
- Communicate by:
  - distribution network area for the DNOs and GDNs
  - nations and regions for place-based customers and stakeholders

Consultation questions:

How do you envisage using the RESP Pathways and how can we communicate Pathways to support you to use them effectively?

Do you agree with the approach for the RESP Pathways? If not, please provide your reasoning.

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Poll Survey

Pathways

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4. Consistent Planning Assumptions (CPAs) Overview

Anis Yaakob
RESP Project Lead

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Consistent Planning Assumptions

The Purpose:

- Securing a common basis for planning across distribution networks
- Enable consistent assessment of network impact
- Supporting coordinated and efficient investment across distribution networks

Developing Consistent Planning Assumptions

1. **Identify and prioritise assumption categories**

   e.g., electric vehicles, hydrogen

2. **Define Consistent Planning Assumptions for each category**

   e.g., annual mileage, efficiency of hydrogen residential boilers

3. **Determine the values for each Consistent Planning Assumption**

   e.g., 10000 miles, 83%

Category Priority Criteria:

- Represent large share of total energy demand or supply
- Expected to grow significantly or materially impact peak demand or supply
- High uncertainty or low consistency between network areas

Value Validation Criteria:

- Reliable & Relevant
- Up to date
- Location specific
- Consider changes through time
- Weather and climate impact

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Consistent Planning Assumptions Format

Modelling Approach

- outlining the end-to-end process of each CPA Category modelling
- how each assumption in the CPA Workbook feeds into the modelling

CPA Workbook

- in line with the Aqua Book's "assumptions log"
- containing the CPA list, values, geographical variation details, reference to source data

Roles and Responsibilities

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

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Consistent Planning Assumptions

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5. Spatial Context Overview

Nick Smith
RESP Strategic Lead

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What is Spatial Context?

Spatial Context Vision

The Spatial Context is a key geospatial component of the RESP. It provides a whole energy visualisation based on RESP Pathways through an accessible digital mapping tool. Additionally, impacts of RESP Pathways on existing and planned electricity and gas distribution network capacities are presented alongside broader whole energy system data.

Spatial Context Objectives

Provide an integrated, multi-vector, place-based representation of the energy system by bringing together data across electricity, gas, and other vectors into a single geospatial platform.

Provide an accessible digital mapping tool that visualises future demand and supply scenarios alongside existing and planned electricity and gas distribution network capacities, as well as broader whole-system data.

Provide a foundation for identifying Strategic Investment Needs (SI Needs) and should support transparent, whole system planning and strengthen collaboration across the energy sector.

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Methodology Approach

Data

- Co-ordination & standardisation via formalised framework, including timelines

Accessibility & Functionality

- Designed to meet user requirements through stakeholder collaboration, enabling insights into Pathways, whole system data and network capacity

Spatial

- Present outputs at most appropriate granularity (LSOA*/Data Zone/MSOA**/Network Asset) across geographic, network and temporal views

Whole Energy

- Visualise data across multiple energy vectors, leveraging existing network datasets where available

* Lower Super Output Area (LSOA)
** Middle Super Output Area (MSOA)

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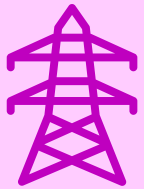
Whole Energy Approach

Electricity



A spatial view of peak demand projections against current and forecast network headroom capacity.

Electricity Peak Demand* Primary Substation

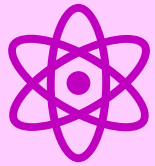
*DNO-Derived

Gas and Biomethane

A spatial view of how gas demand could change over time. Mapping future biomethane injections into the gas distribution network.

Gas Demand & Biomethane Supply

Hydrogen



A spatial view of where hydrogen demand is expected across the nations and regions, based on RESP Pathways.

Leveraging inputs from the SSEP* and CSNP**

*Strategic Spatial Energy Plan (SSEP)
**Centralised Strategic Network Plan (CSNP)

Heat

A spatial view of existing and planned heat network zones, integrated with RESP Pathways.

Integration with Heat Network Zones

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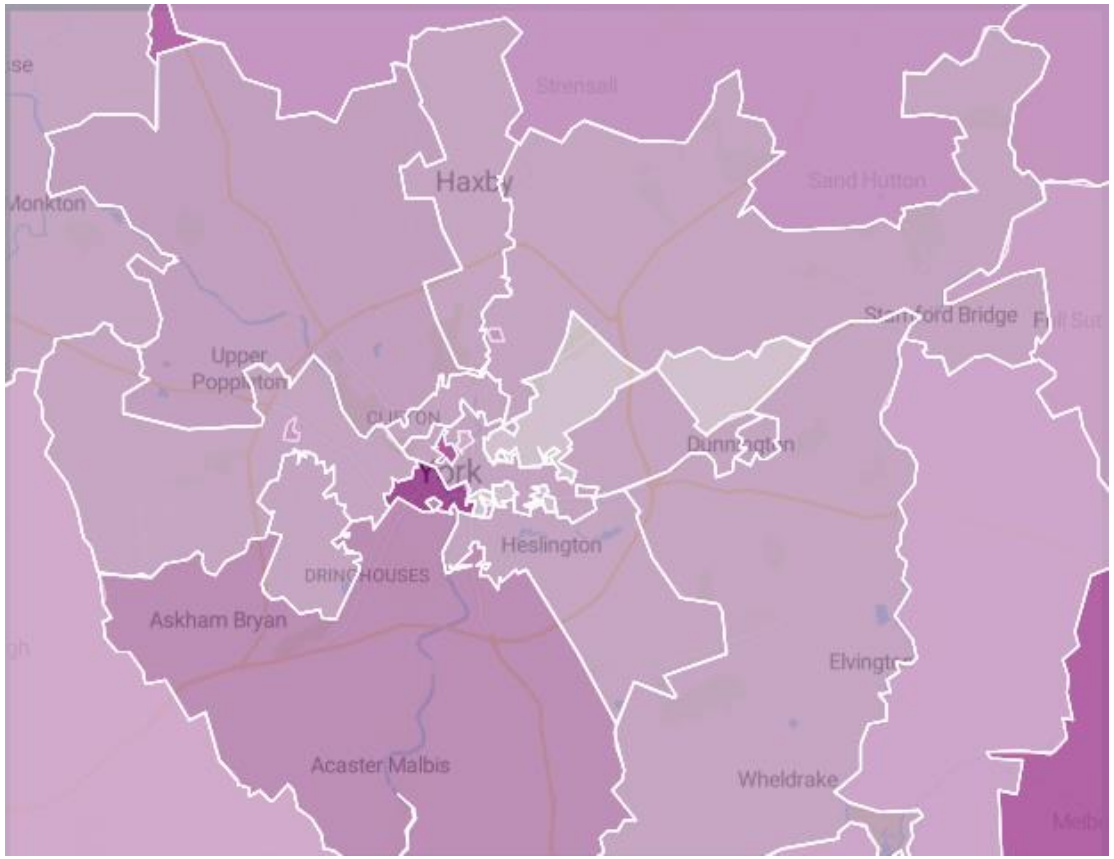
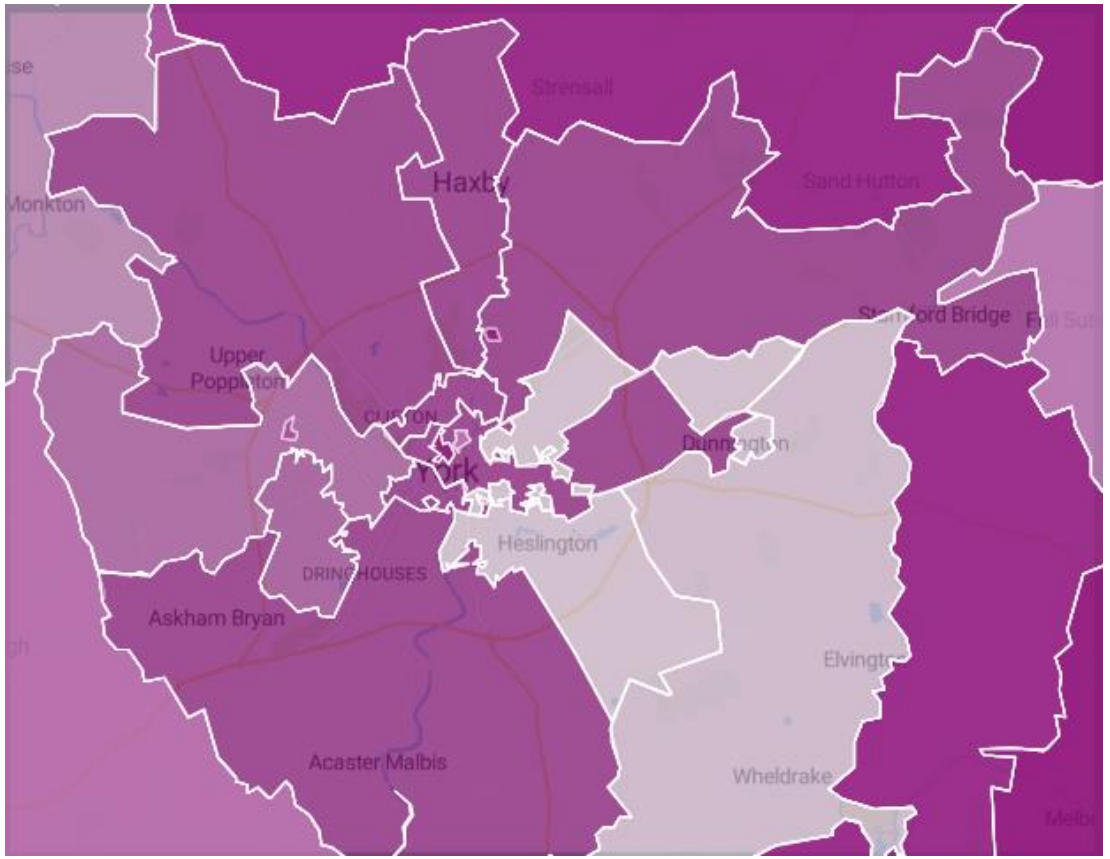
RESP Pathways Visualisation

*Mock-up visualisations; for illustrative purposes only.



RESP Pathway X
Year 2030
Demand Technology Volume



RESP Pathway X
Year 2048
Demand Technology Volume

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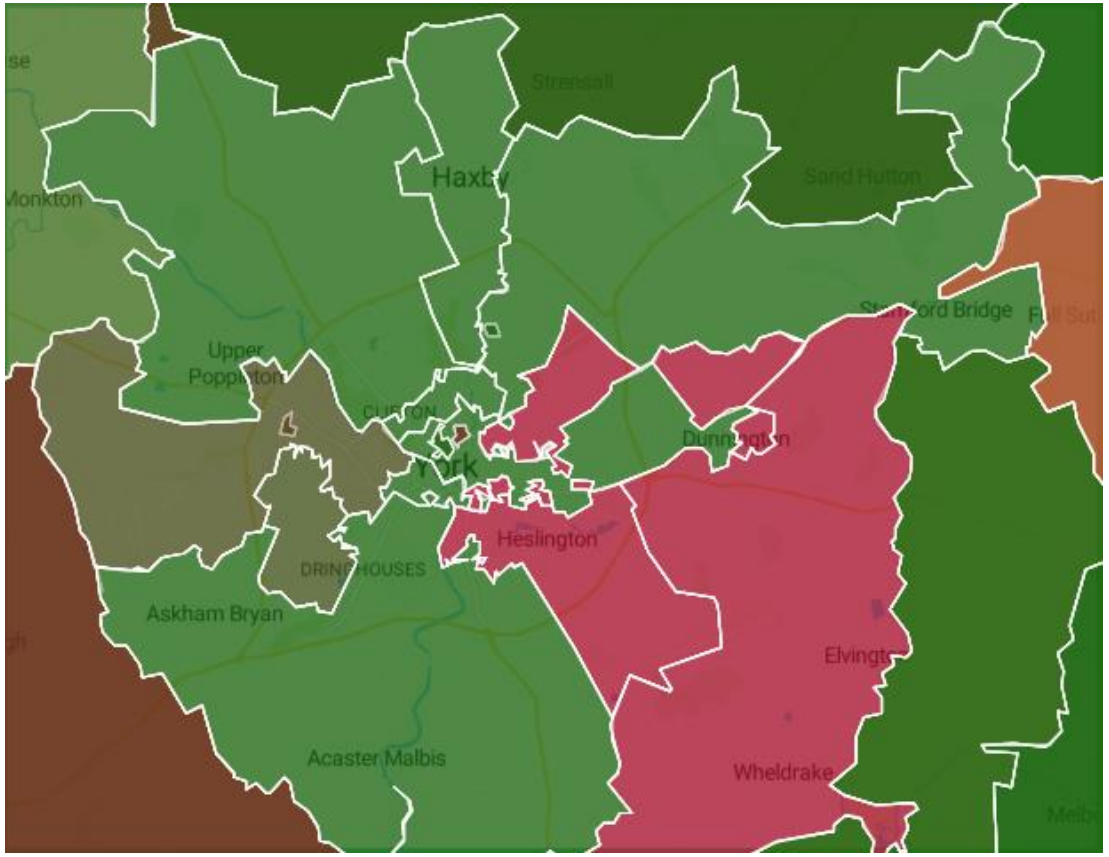
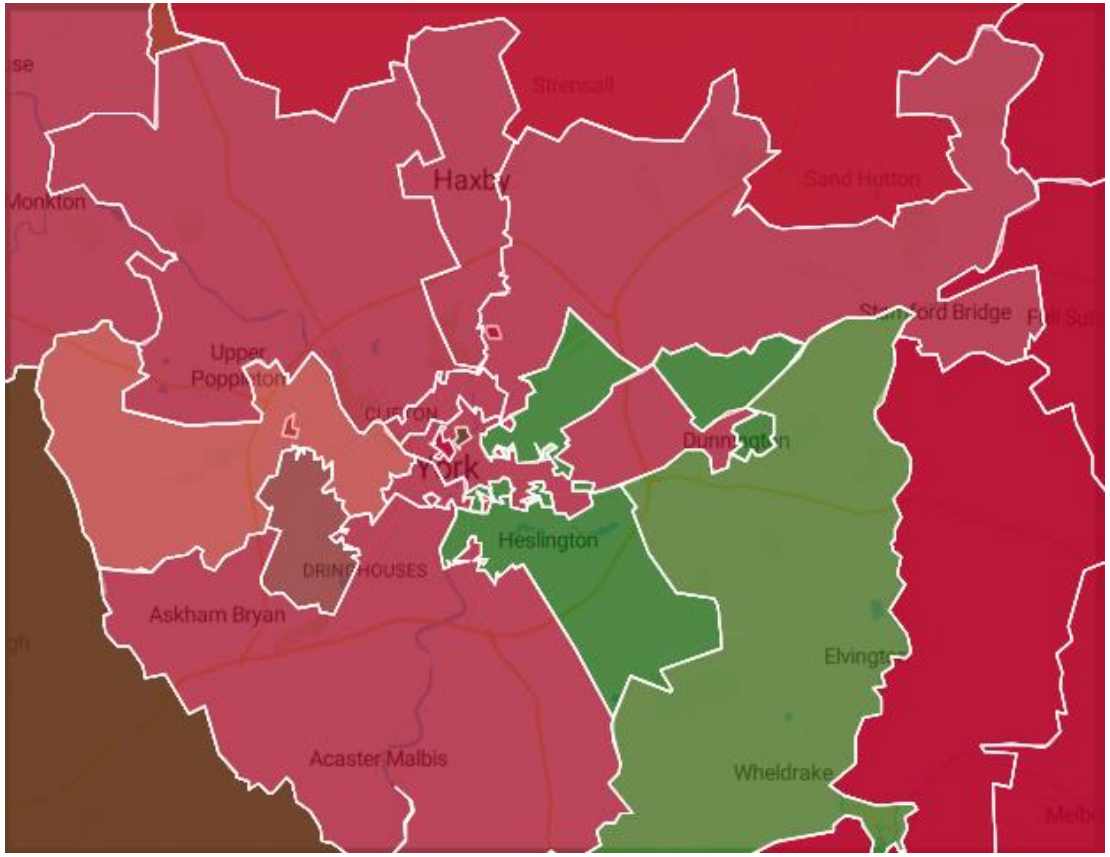
RESP System Impacts

*Mock-up visualisations; for illustrative purposes only.



RESP Pathway X
Year 2030
Network Demand Headroom



RESP Pathway X
Year 2048
Network Demand Headroom

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Spatial Context

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6. Q&A

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7. Next Steps & How to get involved

Jonny Sadler
RESP Engagement & Communications Manager

NESO
National Energy System Operator

Timeline

Nov 2025	Dec 2025	Jan 2026	Feb 2026	Mar 2026	Summer 2026

RESP Methodology

- 17th: consultation launch
- 16th: consultation closes
- End-March: proposed final Methodology submitted to Ofgem and DESNZ
- Final RESP Methodology + 'you said, we did report'

- Deep-dive Webinars - Round 1 (25th Nov -3rd Dec)
- Deep-dive Webinars - Round 2 (if required)

- RESP Forums – Winter 2025/26
- RESP Forums – Summer 2026

tRESP

- Final tRESP published

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How to respond to the consultation

1. Please submit your response by **11.59pm on 16 January 2026**
2. Please submit your response via the **Qualtrics platform:**

English: **Cymraeg:**

3. If you are not able to submit your response via Qualtrics, please contact box.consultations.resp@neso.energy by 9 January 2025, at the latest.
4. Responses are saved as you progress through the form, so you don't have to complete all questions at once. **Please note that they are only saved when you go to the next page of the survey.**
5. You will be able to download a copy of your responses as a PDF at the end.
6. FAQs will be published on the RESP Methodology consultation section of the NESO website
7. If you have any questions, please email: box.consultations.resp@neso.energy

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RESP Forums – Winter 2026

Nation / Region	Date	Time
North West	3rd February	13:00-14:30
South East	5th February	10:00-11:30
London	5th February	14:00-15:30
North East, Yorkshire & the Humber	9th February	14:00-15:30
South West	10th February	14:00-15:30
Wales	10th February	10:00-11:30
East of England	11th February	11:00-12:30
West Midlands	11th February	13:30-15:00
East Midlands	12th February	13:00-15:00
Central England	12th February	14:00-15:30
Scotland	12th February	11:00-12:30

Forum 4 Agenda

(subject to change)

- Updates on wider RESP activities
- Final tRESP
- RESP Methodology Update
- SSEP Update
- Next Steps

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Further information on RESP

Look out for future Forum dates

NESO newsletter sign up

RESP web pages

Contact the RESP team

box.resp@neso.energy

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Thank you

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