Balancing Costs Strategy

2025



Strategy Roadmap

Our Balancing Cost Strategy will need to adapt over time to meet the needs of an evolving energy landscape. We are now coming to the end of Phase I of the strategy (Development Phase) where we have mapped the balancing costs landscape and built NESO capabilities to deliver cost reductions.

This document recaps our Phase I strategy and introduces our Phase 2 strategy (Monitoring and Implementation Phase), starting from 2025. We also consider how this strategy will need to evolve over the longer term to accommodate the future power system.

The energy landscape of 2030 will be significantly different from today. A Phase 4 Phase 2 reassessment of our strategy at this time will allow us to revaluate the 2031 - 2040 2025 - 2029Phase 1 is now complete cost landscape and re-focus our New World Monitoring & strategy as needed. Monitoring & Implementation Phase Implementation Phase Phase 1 We still need to monitor and reduce

2023 - 2024

Development Phase / Understanding the **Balancing Cost Landscape**

Our 2025 strategy covers Phase 2. We will closely monitor balancing costs and savings and implement evidence-based decisions on the development and prioritisation of initiatives in collaboration with industry.

Phase 3

2030

Reassessment Phase

costs over the 2030s. This will continue following our 2030 strategy reset.



Phase I (Recap)

Development Phase / Understanding the Balancing Cost Landscape





NESO 2023 Balancing Costs Strategy

In 2023 we set out our first dedicated Balancing Costs Strategy. This outlined four key levers to minimise balancing costs and plans to utilise this leverage to deliver cost savings across a strategic timeline, while also increasing visibility of balancing costs through enhanced reporting and analysis.

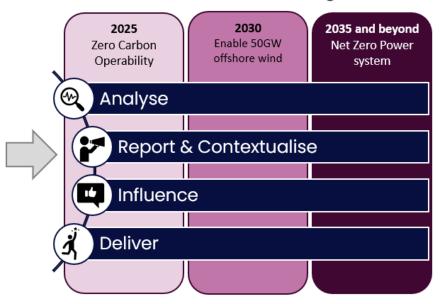
Since this strategy was developed, we have made significant progress towards these goals, having established a dedicated Balancing Costs Team within NESO that provides a voice and advocacy to spearhead cost initiatives and contextualise balancing cost. Over the BP2 period we have progressed a significant number of initiatives, some of which are already delivering large savings in balancing costs. Through our enhanced analysis capabilities, we are now also able to more closely track savings delivered by these initiatives, providing strategic insight for further savings development.

2023 Balancing Costs Strategy

Levers to minimise balancing costs

Network Planning & Commercial Optimisation Mechanisms Designing and Procuring Designing the GB new services, with network and managing greater competition at an delivery of changes to optimised price. optimise availability and reduce Constraints. Research, Innovation, **Control Room Engagement** Processes Experimenting with first in Using enhanced products sector approaches and and services provided to technologies, the Control Room. collaborating with optimising security, Industry and Academia. supply and cost.

How we use this leverage



How have we delivered change across BP2?

Our work on PN Inaccuracy improvements provides an example of how we have progressed change for balancing costs:

(PN Inaccuracy causes significant operational risk and adds to balancing costs due to BM payments being misaligned to delivered output)

Analysis

Analysis of FPN data to quantify misalignment and associated impact on balancing costs

Engagement

Discussions with Ofgem and DESNZ, and engagement with industry via OTF and WAG on issue and proposed solutions

Solution development

Establish acceptable threshold for PN Inaccuracy based on Control Room needs and generator capabilities

Change

Guidance Note published on 'Good Industry Practice' in August 2024 in relation to FPN accuracy in accordance with the Grid Code



Delivery across Phase 1

Balancing Costs Analysis

Phase 1 has supported the development of NESO's understanding and expertise of Balancing Costs. Analysis completed over Phase 1 includes:

- · Detailed analysis on outturn balancing costs and trends across cost categories
- Drivers of balancing costs
- Savings calculations for cost savings initiatives, including Network Service Procurement (NSP) projects, DFS, reductions to inertia requirements, outage optimisation, and trading.

Industry Engagement

Throughout Phase I we have provided training, context, and upskilling to key industry players to better understand the causes of high costs. We are also expanding our coverage of balancing costs at industry events, including the Operational Transparency Forum and delivery of specific industry webinars and workshops on balancing costs. Our expanding suite of Balancing Cost reports additionally aims to provide the industry with greater transparency on balancing costs and the work we are doing at NESO to reduce costs.

Initiative Support

In Phase 1 we prioritised and gave a spotlight to the most effective initiatives to reduce costs. Some of the initiatives directly supported over this period include:

- PN Inaccuracy Improvements
- Reactive equipment network outages
- Demand Flexibility Service
- Local Constraints Market
- Balancing Reserve
- Constraints collaboration project

During Phase 1 we have developed our reporting capabilities and now deliver a suite of external publications supporting transparency on Balancing Costs and NESO's work to reduce costs

Reporting delivered in Phase 1

Metric 1A Incentives Reporting

Monthly reporting on outturn balancing costs

Annual Balancing Costs Report

 Our first Annual Report covering historic Balancing Cost trends and future projections

Balancing Costs Reduction Portfolio

 Portfolio of initiatives to cut expenses in our balancing cost strategy

Seasonal Balancing Cost Reports

 Summer and winter reports providing details of outturn balancing costs and associated market dynamics from the preceding 6-month period

<u>Balancing Costs in Consumer Bills</u> Dashboard

 A visualisation of balancing costs in a typical household electricity bill and how these costs have changed over time



Phase 2

Monitoring & Implementation Phase





Factors that impact Balancing Costs with influence level NESO has over these factors

- These 15 factors are not mutually exclusive; they directly or indirectly influence each other
- NESO has different levels of influence on these factors
- The level of influence may change as NESO develops into new roles

UK Government Policy

CP30 Action Plan

e.g. Connections reform, pathways to clean power

EU Policy

e.g. Clean Energy Package, Cannot buy more than 30% reserve and response at day ahead

Grid code changes

FRCR, Grid Forming, Fixed BSUoS

Interconnectors

New interconnectors imminent, flow on interconnectors depends on market price

Wholesale electricity prices

Set entirely by wholesale market but directly drives BM prices

Network outages

We optimise when outage take place but still has a significant impact on balancing costs

Generator Outages

Balancing options more limited when these are significant

Transmission Network build

What, where and when new transmission networks coming online alleviates constraints

New Products and Services

NESO can design new ancillary services and procure them according to our license conditions.

New Generator Connections

When and where new generators connect to the transmission network

Electricity Market Design

REMA: Incentives on market actors to schedule and trade in a way that respects system security

Operating Margin

The level of operating margin required to cover demand changes or generation breakdowns is defined by NESO

Market Monitoring

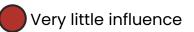
NESO will notify Ofgem of potential market misuse or identify potential market changes required

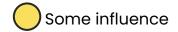
System Modelling and Data

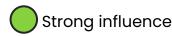
We build system models that result in published data e.g. demand forecasting and transmission constraints

Control Room/BM

Balance supply and demand at lowest costs whilst meeting security standards

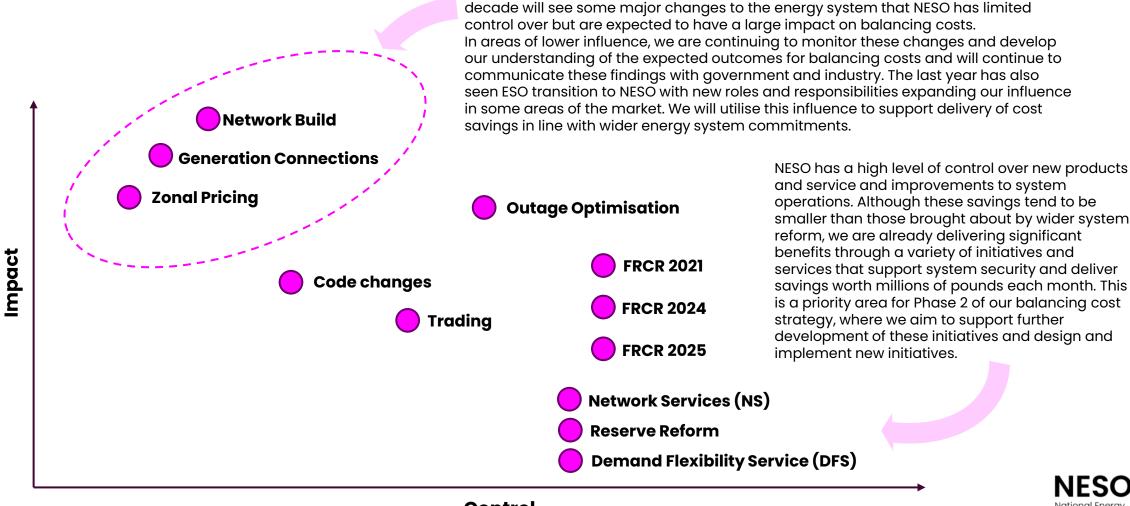








Impact / NESO Control Matrix

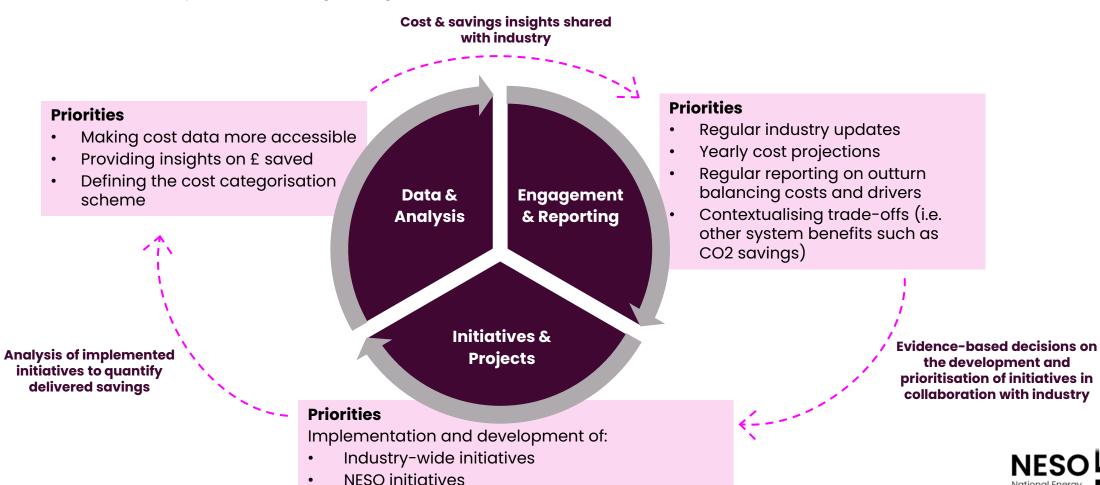


NESO has varying levels of control over factors that impact balancing costs. The next



Phase 2 Strategy

We have identified three key delivery commitments to our 2025 Strategy: **Data & Analysis**; **Engagement & Reporting**; and **Initiatives & Projects**. These components naturally support each other, providing flows of information and feedback to support ongoing improvements and adjustments to our delivery to meet evolving strategic needs.



Phase 3 & 4

Reassessment & New World Monitoring and Implementation



Changing energy landscape

The energy landscape of 2030 will be significantly different from today. Our long-term strategy will need to adapt to meet changing system conditions, which we will continue to track during Phase 2 of the strategy, with the aim to revaluate and refocus our strategy for the post-2030 energy system.

Clean Power 2030

In 2024 Government outlined the ambition for Great Britian to be supplied with clean power by 2030. This will require significant and fast paced change for the energy system, with knock-on effects for balancing costs.

What is changing?

- Generation mix: As more renewable, non-synchronous generation connects to the network and displaces synchronous generation, requirements to manage stability and voltage are expected to increase. Weather-driven generation and demand will also make balancing requirements more dynamic.
- Locational balancing requirements: New generation connections in constrained parts of the network can add to thermal constraints, especially as these outpace network reinforcement.
- Transmission network: Plans for network expansion will mitigate cost rises from new generation connections but takes time to deliver. Outages to enable access for network upgrade can also result in short term increases to balancing costs.

REMA

The outcome of Government's ongoing Review of Electricity Market Arrangements (REMA) is likely to result in some significant changes to the structure of the GB energy market. REMA is considering a wide range of reform options – some influential ones for Balancing costs are outlined below.

What might change?

- **Zonal pricing:** Strengthening locational signals in the wholesale market. This could be achieved through making changes to the existing national pricing framework, such as by strengthening TNUoS, or by introducing zonal pricing. These reforms would reduce thermal constraint costs by incentivising market participants to operate and locate in a way that aligns with the physical needs of the system.
- Dispatch arrangements: Changes to dispatch arrangements could reduce the need for re-dispatch which would help to lower consumer costs.
- Reforms to CfD: Contracts for Difference (CfD) payments currently cause some distortions in the BM. Reforms to CfD arrangements could support better cost reflectivity in bid prices.



The Bigger Picture

How we look after balancing costs

- Remove inefficiencies: Removing inefficiencies in system operations, energy markets, and physical infrastructure can all reduce the volume of actions we need to take as the system operator and thus reduce balancing costs.
- Incentives & disincentives: Having the right market incentives can help us cost
 effectively support operations. This includes ensuring that we have the right distribution
 of generation and demand across the system and that we receive clear and accurate
 information from market participants to support control room decisions.
- Industry engagement: NESO has limited influence over some factors impacting balancing costs. By working with industry, we can expand the reach of our work to minimise costs.
- Transparency: Our work to provide more transparency on balancing costs and associated drivers supports strategic decision making for actions NESO, the government, and industry can take to reduce costs over the long term.
- **Innovation:** We are continuously assessing new ways we can operate the system. By experimenting with first in sector approaches and technologies and collaborating with Industry and Academia we are tackling the toughest problems faced by industry to deliver change at minimal cost.

Although the future energy landscape may look very different from today, our core principles for managing balancing costs will remain the same.



