Public

January 2025

NESO RIIO-2 Business Plan 3 Digital, Data, and Technology Annex

Annex B

NESO
National Energy System Operator

Public

Executive Summary

Digital, Data, and Technology (DD&T) are critical enablers for our vision of a future where everyone has access to reliable, clean and affordable energy, with our work being a catalyst for change across the global community.

To achieve this, we are investing in our architecture, developing customer-centric products, modernising our technology stack and providing greater transparency and access to our data. Our latest plan continues to drive our core transformation themes, building upon and refining the investments proposed in our previous RIIO-2 Business Plan, BP2, and detailing additional investments required to fulfil our role as NESO.

Overall, our technology investments can be categorised into three broad groups:

- **Continuing Investments** that were previously reported on in BP2 and will continue to be delivered and closed out over the course of the BP3 period.
- **New investments**, which are standalone IT investments that are not associated with any pre-existing in-flight IT investment and have not been reported previously.
- **Technology Enhancements** that are required to pre-existing solutions, software or infrastructure delivered since BP2.

Technology enhancements are for work aligned to pre-existing investments and are for delivery conducted post the conclusion of the previous investment line, they cannot start until that scope has been delivered. They refer only to enhancements to the existing solutions, software or infrastructure developed for BP2 requirements to maintain operational and/or customer needs e.g. maintenance of CRM systems and workflows. If new scope is required in line with different objectives to those from BP2, a new investment will be raised rather than an enhancement.

This annex contains an overview of our technology portfolio with a summary of our overall costs as well as details of each of our technology investments in the BP3 period.

Cost Summary

- For the BP3 period we are forecasting a budget of £198.1m, which includes a risk contingency of £10.2m.
- Across our BP2 continuing investments we remain on track to deliver within the original budget envelope outlined within our BP2 submission.
- Within our continuing investments portfolio, we are forecasting an underspend of £52.5m which can be attributed to the descoping of requirements and lower than expected throughput of regulatory changes across the following investments:
    - Role in Europe (270)
    - GB Regulations (280)

- RDP Implementation & Extension (340)
- Future Innovation Productionisation (450), and
- Restoration Decision Support Tool (510).

- For the BP3 period we have deferred £7m of scope to be delivered in FY27 owing to portfolio re-prioritisation as we seek to accommodate delivery associated with our new NESO roles and Cost to Achieve portfolio.
- Following our sanction process and governance, we have leveraged our sanctioned underspend of £26.7m and reallocated this to Customer as well as DD&T Shared Investments (legacy Technical Debt remediation, Customer Platform Improvements and Digital, Data and AI enablement).
- Further details of our broader DD&T investments are summarised in the dedicated **Enabling Functions Annex**.

£ Million (18/19 Prices)		**FY 22-25**	**FY26 Forecasts**	**BP3 Submission Total**	**BP2 Submission Total**	**Variance**
BP2 Continuing Investments	CapEx	349.0	87.9	429.9	460.8	- 30.9
	OpEx	39.6	12.8	52.3	73.9	- 21.6
	TotEx	388.5	100.6	482.2	534.7	- 52.5
Enhancements to BP2 Investments	CapEx	-	8.8	8.8	-	8.8
	OpEx	-	1.8	1.8	-	1.8
	TotEx	-	10.6	10.6	-	10.6
New Investments	CapEx	0.7	23.7	24.5	-	24.5
	OpEx	0.5	0.8	1.3	-	1.3
	TotEx	1.3	24.5	25.7	-	25.7
Cost to Achieve	CapEx	30.0	27.7	57.6	21.8	35.9
	OpEx	12.8	10.8	23.6	40.3	- 16.7
	TotEx	42.8	38.4	81.3	62.1	19.2
DD&T Shared Investments	**CapEx**	-	21.5	21.5	-	21.5
	OpEx	-	13.5	13.5	-	13.5
	TotEx	-	35.1	35.1	-	35.1
Sub Total		**432.6**	**209.2**	**634.9**	**596.8**	**38.1**
Continuing Investments to pre-existing BP2 (Customer, Digital, Data & AI Enablement)	TotEx	26.7	-	26.7	-	26.7
Potentail Efficency saving Savings*	TotEx	-	- 4.1	- 4.1	-	- 4.1
Deffered Scope to FY27**	TotEx	-	- 7.0	- 7.0	-	- 7.0
Pre-Risk Total	**TotEx**	**459.3**	**198.1**	**650.5**	**596.8**	**53.7**
Risk Contingency		-	10.2	10.2	-	10.2
Total		**459.3**	**208.4**	**660.7**	**596.8**	**63.9**

Table 1 – Overall Cost Summary

Part 1 follows this section of the document and presents an overview of our Digital, Data and Technology ambitions and ways of working that underpin our delivery. It also provides a summary of our overall portfolio governance, controls and assurance.

A deeper view of our direct investments for the RIIO-2 period is provided in **Parts 3-5**.

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Part 1 - Digital, Data and Technology overview

Our Technology investments enable a significant proportion of our RIIO-2 proposals, and we are committed to ensuring that they are delivered effectively and efficiently. As shared in our main business plan, digital, data, and technology are vital enablers to modernising the NESO. Hence, these investments are critical for meeting our current ambitions, with many of them establishing the technology foundations to unlock our transformation to NESO.

This section summarises NESO's technology landscape at the portfolio level, outlining the technology capabilities we will deliver over the course of BP3 and the supporting governance and controls we will have in place to assure and monitor our delivery.

1.1 Digital, Data and Technology capabilities supporting our business ambition

As referenced in Business Plan 3, NESO have strategic priorities across Clean Power, Decarbonising Energy, Consumer Value, Customer Centricity, People Value and Digital Mindset. The delivery of these priorities is supported by eight Performance Objectives:

- Clean Power 2030 implementation
- Strategic whole energy plans
- Connections reform
- Fit for purpose markets
- Secure and resilient systems
- Operating the system
- Digitalisation and data sharing
- Independent NESO systems, processes and services

The technology capabilities that we will deliver in BP3 will support NESO in delivering against the strategic Performance Objectives, whilst supporting us on our journey to become a digital leader, driving collaborative digitalisation of the whole energy system, as outlined in our Digitalisation Strategy and Action Plan (DSAP) [1].

For us 'digital' means that we will review and reimagine our processes, products and services without constraint or bias to understand the needs of the people we serve and the future scenarios we will encounter. To encapsulate our NESO responsibilities and advisory position, we

[1] https://www.neso.energy/news/digitalisation-strategy-and-action-plan-published#:~:text=NESO%20will%20bring%20together%20data,carbon%2C%20flexible%20and%20affordable%20future.

have a Digitalisation Strategy vision: Utilising the power of data and innovation, we will become a Digital Leader and drive collaborative digitalisation of the whole energy system.

We bring our Digitalisation vision to life through a set of guiding principles that inform our investment and prioritisation of technology decisions. Digital culture is at the heart of our principles as we align our NESO culture on reinvention through digitalisation. We embrace and harness emerging technologies, such as developments in Artificial Intelligence, to shape the energy future and leverage the power of our Data and Information Ecosystem to make informed decisions. We are focused on delivering an exceptional Digital Customer Experience whilst also setting the standard for digital excellence across the energy sector, including cybersecurity and resilient digital infrastructure. We take an agile and adaptive approach to enable us to respond to changing demands and evolving landscapes with flexibility and speed.

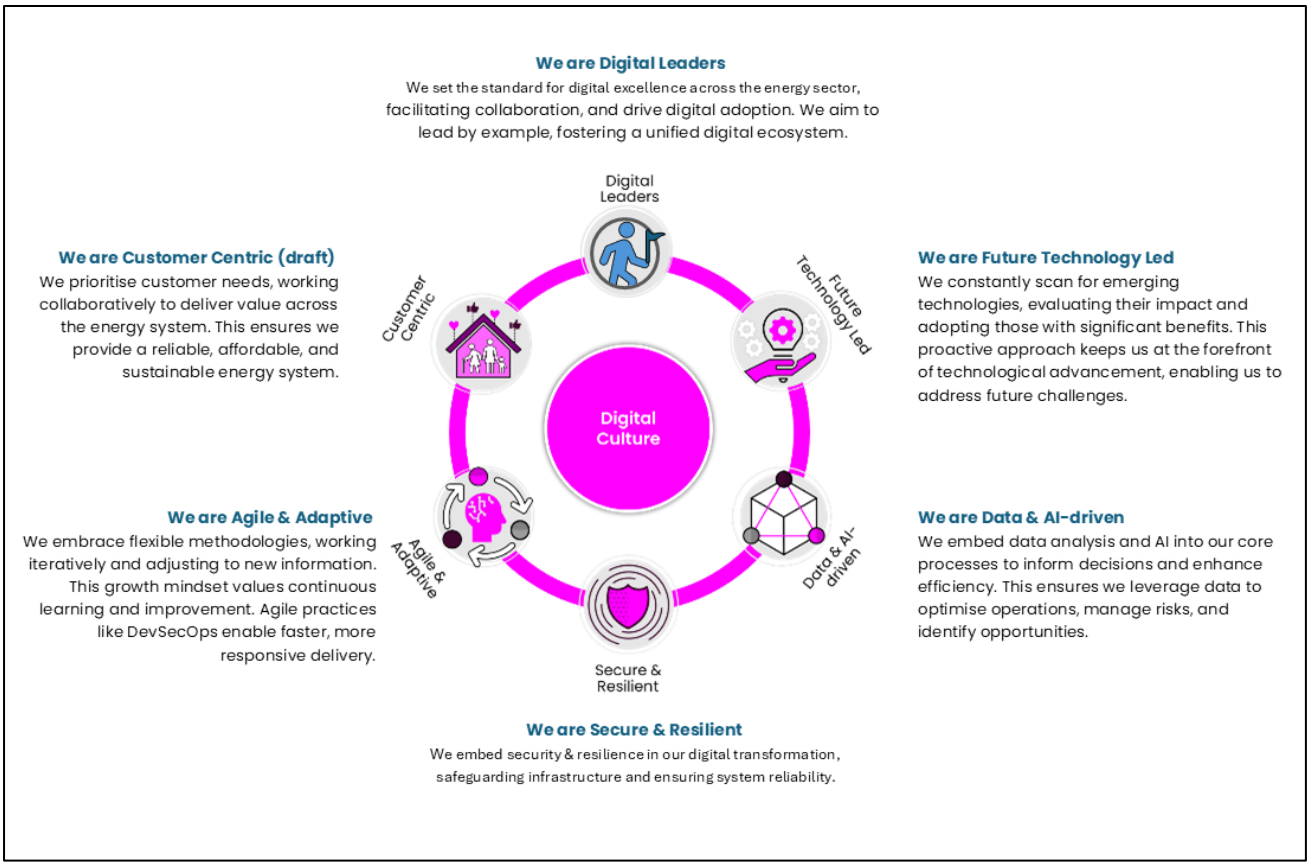

Figure 1 - Digital Culture Guiding Principles

Further details on our Digitalisation Strategy[1] Principles and the evolution of our Digitalisation Strategy can be found in DSAP, which is regularly updated.

1.2 Capability, Structure, and Governance

To align with our Digitalisation Strategy, we have reshaped our organisation, structuring it around the following capabilities: Innovation, Security, Artificial Intelligence, Data, Digital Mindset and Technical Modernisation.

Our NESO Technology leadership team is led by our Chief Information Officer (CIO), who sits on the NESO Executive Team and provides strategic direction, management, decision making and empowerment to the team to own the digital, data and technology strategy to deliver our short and long-term business and technology investment plans.

We operate a blended resource delivery model, primarily comprising NESO personnel and supplemented by third party partners. Our technology investments are delivered by dedicated technology resources formed by our blended delivery teams.

To ensure a smooth transition to NESO with minimal disruption, some general technology services that were previously delivered through shared services with National Grid are currently delivered under Transition Service Agreements (TSA) and Operating Service Agreements (OSA). Please see the BP3 Enabling Functions Annex for further details on these services.

We continue to grow our leadership and deep expertise across the following areas:

- **Innovation** – Enable and manage a balanced portfolio of innovative projects to drive value and impact for NESO, enabling the organisation to fulfil its core duties and accelerate the energy transition through innovative collaboration, leadership and subject matter expertise.
- **Security** – Ensure a resilient and secure organisation focused on keeping energy flowing, protecting our consumers, people and their data. Provide leadership and subject matter expertise to identify security risks and opportunities for the Energy sector, ensuring a secure and resilient supply and enabling delivery of net zero targets.
- **AI** – Transform NESO into a world leading AI organisation by harnessing the power of AI to transform its processes and by enabling its people to focus on higher value activity. Share and collaborate with the Industry on AI best practice and be an active partner in helping the GB Energy Industry move towards net zero.
- **Data** – Build and operate data capabilities to ensure a base of available, high quality, standardised data and analytical tools to enable NESO and the industry to access and share data as well as glean necessary insight for decision making and transformation towards industry net zero, security and affordability goals.
- **Digital Strategy & Mindset** – Create a seamless end state view where we have integrated systems built on modern architecture, this is key for accommodating changes in the external and internal environment at pace. Build capability focused on agile delivery and DevSecOps to create a long-term sustainable environment embedded through delivery roles such as Senior Delivery Managers who hold end to end (Design to run) accountability of our Digital products.
- **Technical Modernisation** – Ensure that the products we deliver are embedded into our existing landscape and focus on smooth transition from development to operations. Reflect the critical role this capability plays by ensuring that our current landscape is managed with 24/7 support to Critical National Infrastructure (CNI) applications.

- **Digital Capability** – Ensure we have technical skills and growth mindset that we require today and in the future through an active Technical Capability Development program.

DD&T governs its portfolio across several forums:

- **Project Checkpoint** – weekly or fortnightly check-ins for proactive management of key product artifacts, RAID and to check progress against KPIs and Management Information.
- **Programme Management Board** (PMB) – monthly review of programme health, designed to guide and steer direction of the programme and constituent projects. This includes the reviews of budget, impact and change and RAID.

DD&T forums feed into NESO's overall governance i.e. **Portfolio Review Board** (PRB), **Sanctioning Committee**, **Executive Committee** (ExCo) and **Operations Executive Committee** (OpCo).

We are also working on new ways to manage our DD&T cost. We have defined a **Technology Business Management (TBM)** Capability, that will deliver Fit-For-Future Digital, Data & Technology Cost transparency, empowering leaders with the insight required to optimise spend, create value and deliver regulatory assurance. TBM enables insights into cost and value for NESO along with cost compliance for Ofgem through insight buckets and resulting key initiatives to deliver desired outcomes. NESO, in collaboration with Ofgem, has built a TBM Roadmap to cover the BP3 period and beyond into FY27 to deliver its defined outcomes and continues to progress towards Digital Leadership in Cost and Value. TBM will help NESO to ensure that it is delivering value across its Digital, Data and Technology portfolio, allowing greater cost optimisation and robust alignment of DD&T IT cost to NESO strategic objectives and business outcomes.

1.3 Stakeholder Engagement

Since BP2, we have improved our transparency and data sharing in between business plans and have received positive feedback since the implementation of the Cost Monitoring Framework (CMF). We will continue our drive to maintain transparency during the BP3 period. The CMF provides visibility to Ofgem on our overall delivery plans, achievements, decisions, risks and dependencies as well as an overview of our costs. To provide industry stakeholders with the same level of transparency, we have increased our support in various NESO stakeholder events and have provided an update on all our investments through an appendix to our incentives reporting.

Our digital, data and technology plans and in-flight investments are reviewed and assessed through different lenses, reflective of the full range of our stakeholders, including regulatory, operational and advisory. Following our customer-first principle, we want our stakeholders to be informed and come with us on this implementation journey. We already engage with our stakeholders and will continue to do so via various forums, reports, and publications, adapting these as the industry itself changes.

Below are the DD&T specific vehicles used for engagement and providing transparency to both Ofgem and industry, these are in addition to engagement that is broader than DD&T.

Forum/Report/ Publication	Objective	Frequency
Digitalisation Strategy and Action Plan (DSAP)	Shares our approach to digitalisation and how we deliver products and services to meet our customers' needs and create consumer and public interest benefits. Our Digitalisation Action Plan contains roadmaps for crosscutting efforts and deliverables for the Business Plan period.	6 months
Technology Advisory Council (TAC)	Advises NESO on its digital, data and technology related innovation and transformations, including cross-industry initiatives. TAC is made up of a diverse range of experts including participants from network companies, market participants, consumer groups, academia and technology companies. It ensures we work closely with the industry on the development of new systems and provides transparency and accountability for their development.	Quarterly
Cost Monitoring Framework (CMF)	NESO's CMF is a tool that tracks the progress and cost management of DD&T delivery, providing Ofgem with a transparent view of the value delivered by the DD&T investment portfolio, as well as the key achievements, risks and strategic decisions that have been made within the quarter. A summary of the CMF report is shared with the industry every 6 months via the Incentives report.	Quarterly
Specific Investment engagement	Individual investments each adopt an appropriate approach for engaging with external stakeholders, allowing clarification of stakeholder needs, collaboration sessions and updates on delivery plans that impact industry and/or market participants.	Determined by each Investment

Table 2 -A summary of our key engagement touchpoints across our stakeholders

We welcome feedback from the industry and Ofgem on our engagement levels and will continue to periodically review and refine our engagement approach as necessary.

1.4 Portfolio Risks

We have identified six portfolio level risks that apply to some or all of our technology investment lines. Risks that apply to a single investment are captured in the narrative for that investment in parts 3-5 of this document.

The scoring mechanism that we have applied for both our portfolio and individual investment risks is based on a standard NESO risk scoring methodology and an overview of this methodology can be found in Appendix B.

Risk	Mitigation(s)	Likelihood	Impact
Dynamic Market Conditions and regulatory changes introduce disruption to our investments which may prompt rework.	• Proactive stakeholder engagement • Portfolio level prioritisation through remaining RIIO-2 period • Monitor adjustments to government / regulatory targets	3	2
Relationships with third party providers are not aligned to NESO priorities leading to lower NESO service and capability provision.	• Maintain regular engagement cadence with third party providers • Provide early visibility of service and capability requirements • Seek alternative or appropriate contractual arrangements with third-party providers	2	4
RIIO-2 benefits realisation is delayed if dependencies that exist across directorates and investments are not managed.	• Maintain robust dependency management with portfolio level RAID reviews • Clear alignment and engagement across dependent investments	4	2
Delivery is delayed or costs increase due to a lack of internal resources and capability onboarded in time to align to delivery plans.	• Continue to review and maintain resource capability requirements for IT investments, identifying skills gaps quickly • Continuation of current internal staff development in line with Digitalisation Strategy to address key skill areas • Continue to utilise existing established partners and drive early engagement on resource support requirements	3	2
NESO Separation activities may lead to impact on BP3 delivery plans	• Impact assess BP3 and NESO delivery plans for areas of potential challenge • Identify delivery mitigations (if appropriate) and agree with Ofgem, maintain close engagement throughout	4	2

A delay to standing up the new delivery partner contracting framework (ADAM) may have an impact on BP3 delivery progress	• Ensure new framework process is aligned to required timelines to prevent a gap in third party engagement • Work with third parties for clarity in process and expectations	2	4

Table 3 - A summary of our portfolio level risks and corresponding likelihood and impact scoring

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Part 2 – Technology Investments

This chapter provides a summary of our Direct Investments from a Technology perspective.

Our investment summaries outline the latest statuses and delivery forecast for our programmes of work, with high-level views provided on the associated market and customer outcomes that will be delivered.

The technology investments proposed in our original Business Plan formed part of a five-year roadmap, although many investments were estimated to run beyond the original two-year business plan, spanning across BP1, BP2 and BP3. In this submission, we are updating the forecast status for where they will be at the conclusion of the BP2 period (see 'Current State' narrative in the investment summaries) and where they will be at the end of BP3 (see 'Future State' summary).

At the top of our technology investment narrative a ribbon is displayed which outlines summary information for each investment:

- **Strategic Alignment** - outlining which of the NESO strategic priorities the investment delivers against.
- **Delivery Method** – summarising whether an investments intended delivery approach is either Waterfall, Agile or Scaled Agile. Our definition for these methodologies is as follows:
    - **Waterfall** – Investments for which customer need and architecture are not likely to change and a credible long-term plan can be made, value delivery is likely at the end of the project.
    - **Agile** – Investments for which the customer need is likely to be uncovered progressively, and iterative planning and delivery will be required as a result.
    - **Scaled Agile** – Investments that are Agile but have complex collaboration and communication patterns as more than 3 teams are involved.

2.1 How to read the investment summaries

Our investment summaries in Part 2 are broken down into several sections, each with a different structure to ensure that an appropriate level of detail is provided based upon what was included in BP2 and the feedback that we received on that submission.

For continuing investments, we have provided a slimmed down report when compared with BP2, given that much of the information has already been provided:

Section	Description
Investment Overview	A high level summary of what each investment is looking to achieve, its key business outcomes, and mapping to our RIIO-2 delivery schedule and associated sub-activities.
Current State	An overview of the delivery outcomes we intend to achieve for each investment by the conclusion of the BP2 period (March 2025).
Future State	An overview of the delivery outcomes we intend to achieve by the end of the BP3 Period (March 2026), and how each investment relates to NESO's Target Enterprise Architecture.
Roadmap	A summary of the key milestones each investment will deliver against. The roadmaps also vary depending on delivery methodology employed by each investment.
Costs	A summary breakdown of each investments spend forecast (Capex, Opex and Totex) for FY '22-'25, FY '26, the BP2 submission total, the BP3 submission total, and the variance from BP2. **These reflect 18/19 prices**

Table 4 - A breakdown of the investment summary structure for our continuing investments

Where we have over or underspent against the original BP2 cost, we have continued to provide a view of our cost drivers. Cost drivers have been categorised to enable us to identify commonalities across our technology portfolio.

The categories we have adopted are as follows:

Cost Driver Theme	Description
Forecasted Efficiencies	Additional cost saving efficiencies identified for remaining delivery period following internal strategic review
Phasing	Re-phasing of delivery scope, moving non-essential items out to FY27 to maximise delivery capacity and spend efficiency following internal strategic review.
Efficiencies	Efficiencies driving over or underspend, with specific details provided within the cost driver table.
Evolving or redefined scope since BP2	Evolving or redefined scope since BP2, with specific details provided within the cost driver table.

Table 5 - A high-level view of the cost driver themes across our investments

For **new investments**, we have provided additional detail, similar to the structure of the BP2 submission:

Section	Description
Overview & Purpose	A high level summary of what each investment is looking to achieve, its key business outcomes, and mapping to our RIIO-2 delivery schedule and associated sub-activities.
Current State	An overview of the delivery outcomes we intend to achieve for each investment by the conclusion of the BP2 period (March 2025).
Future State	An overview of the delivery outcomes we intend to achieve by the end of the BP3 Period (March 2026), and how each investment relates to NESO's Target Enterprise Architecture.
Roadmap	A summary of the key milestones each investment will deliver against. The roadmaps also vary depending on delivery methodology employed by each investment.
Approach	An overview of the intended solution approach that this investment will adopt.
Solution Options	A summary of the solution options considered by each investment and the rationale for why a particular option has been selected.
Costs	A summary of the FY'26 costs broken down in Capex, Opex and Totex expenditure. **These reflect 18/19 prices**
Assumptions	The assumptions underpinning each investments delivery.
Risks	The key risks outlined by each investment and their respective probability and impact score.

Table 6 - A breakdown of the investment summary structure for our new investments

We will of course continue to maintain our investments once they enter business as usual. However, where we believe there is a need to enhance the scope for a continuing investment beyond that which was approved in BP2, we have summarised this in a brief table. For these **technology enhancements** we provide:

Section	Description
Associated Investment	A reference to the overarching investment
Enhancement Description	A description of the enhancement we are proposing to make
Enhancement Rational	The rationale behind the investment
Costs	The totex cost required for the investment. **These reflect 18/19 prices**

Table 7 - A breakdown of our structure for technology enhancements

2.2 Updates to Continuous investments

Some of our existing investments have been integrated or combined into other investments. The table below summaries where this applies and why for the BP3 submission.

BP2 Investment #s	Change to Investment	Explanation
130	Split into two- Inertia Monitoring (130) and Network Services Procurement (720)	For BP3 we are splitting this investment into Inertia Monitoring and Network Services Procurement (NSP) (previously known as pathfinders) and will report them as two distinct investments to reflect the distinct requirements and objectives of these two elements.
150, 170	Integrated into 110	In BP2, synergies were highlighted between 150 and 110, the investments have now been merged with an integrated delivery plan. Also included are the WAMS oscillation and disturbance monitoring capabilities from 170.
290, 300, 410	Integrated into 610	As per BP2, milestones stated for investment 610 (Settlements, Charging & Billing) are an amalgamation of milestones previously associated with 290, 390 and 410, which have been merged into one investment.
320	The CfD scope from the EMR and CfD Investment (320) will be delivered by a new investment- Contracts for Difference (820)	The CfD scope from EMR & CfD was descoped in BP2 and now delivers just EMR outcomes. However, we will now deliver the CfD scope via a new investment, Contracts for Difference (820).
460	Combined with 510	Investments 460 and 510 merged with an integrated delivery plan due to synergies.
650	Split into two – DER/CER Visibility & Access (650) and Primacy(710)	Formerly 650 (AWEF) comprised of two workstreams, these two workstreams have now been separated into two investments.

Table 8 - A summary of our updates to in-flight investments

2.3 Overall cost position

The DD&T portfolio cost is split across a mix of continuous investments, new investments and enhancements. Since BP2 there has been an underspend in the forecast, this is predominantly related to 4 areas (5 investments):

- **Role in Europe and GB Regulations** – a lower than anticipated throughput of regulatory change has meant that there has been less requirement to deliver change within the BP2 period and therefore the anticipated cost has not been realised.
- **Future Training Simulator & Tools** – It is now understood that the Future Training Simulator is dependent on the delivery of the Open Balancing Platform (OBP) and Network control. We know more about training requirements than when our roadmaps were developed at BP1 and need to push out training timelines until after OBP and Network Control are delivered.
- **Future Innovation Productionisation** – No innovation products have currently transitioned into BAU operations, meaning we have not yet needed to spend on productionisation, driving an area of underspend compared to forecasts.
- **Restoration & Restoration Decision Support Tool** – Upgraded Optel and telephony scope has been removed due to NESO's separation from NGET, leading to a reduction in spend. There is also a phasing component as the Restoration Decision Support Tool (RDST) integration to NCMS has deferred elements of RDST delivery and enhancement to FY27 and FY28.

We are also committed to continuing to manage our portfolio strategically and we continuously assess and prioritise delivery based on benefits realisation, priorities and capacity. As part of this this ongoing management of our portfolio, we have identified 4 investments for which a portion of the delivery can be re-phased into FY27 to enable us to focus our resources on more near-term priorities. The investments that contain some re-phasing are:

- ENCC Operator Console
- Future Training Simulator
- Single Markets Platform (SMP)
- Restoration Decision Support

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Part 3 - Continuing Investments

3.1 Network Control (110)

Delivery Method	Strategic Priority Alignment
Waterfall	Decarbonised Energy

Investment Overview

Our Network Control investment delivers our real-time situational awareness capability providing control centre operators capability to manage the electricity network as we move to zero carbon grid operations. With the increasing complexity of the transmission network and a shift towards whole system operation we require greater visibility of current system conditions and predicted future conditions to enhance decision making.

In BP2 we highlighted the strong synergies between this investment and investment 150 Operational Awareness and Decision Support, these investments are now fully merged with an integrated delivery plan. Additionally, we have merged Wide Area Monitoring System (WAMS) oscillation and disturbance monitoring capabilities from investment 170 Frequency Visibility under this investment as we were able to procure this capability as part of the Network Control Management System (NCMS).

This investment will deliver a Network Control Management System (NCMS) that supports our Network Control transformation ambition and will enable full separation from National Grid Electricity Transmission (NGET) by replacing the existing Integrated Electricity Management System (iEMS), which we currently share with NGET. Our priority for Network Control is to maintain an efficient, safe, and reliable electricity network.

Current State

[Information Redacted]

In May 2023 our supplier, GE Vernova, formally launched a new platform called GridOS that will replace their existing legacy products. We took the decision to pivot towards the new GridOS platform on the basis it presents the opportunity to move to a more modern architecture and an improved integration capability while also promoting more rapid deployment of future products/features. Product feature developments are complex and have seen challenges in terms of delivery to timescales, also impacted by the GridOS pivot. We are working side-by-side with GE Vernova to prioritise critical day 1 features as well as providing expertise in the design of key product areas.

We continue to align and plan integration, change management and service transition activities. Our focus remains to deliver a secure NCMS that will replace IEMS as well as enabling a step change to control centre operators.

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Future State

Enhanced Situational Awareness capability has been delivered to support zero carbon grid operations. Network issues are visualised quickly and supported by system-provided guidance enabling users to make informed decisions. The new NCMS will be delivered into our on-premise data centres meeting compliance requirements, replacing the current IEMS and separating the capability from NGET. The establishment of enduring practices will support incremental provision of new live features, safeguarding current operations, to control centre operations. We will continue to work closely with NGET to provide ongoing support to IEMS, maintaining the health of the system, until their SCADA system replacement becomes operational in 2027. Only at this stage can we then commence decommissioning of the IEMS and full separation can be realised.

Roadmap

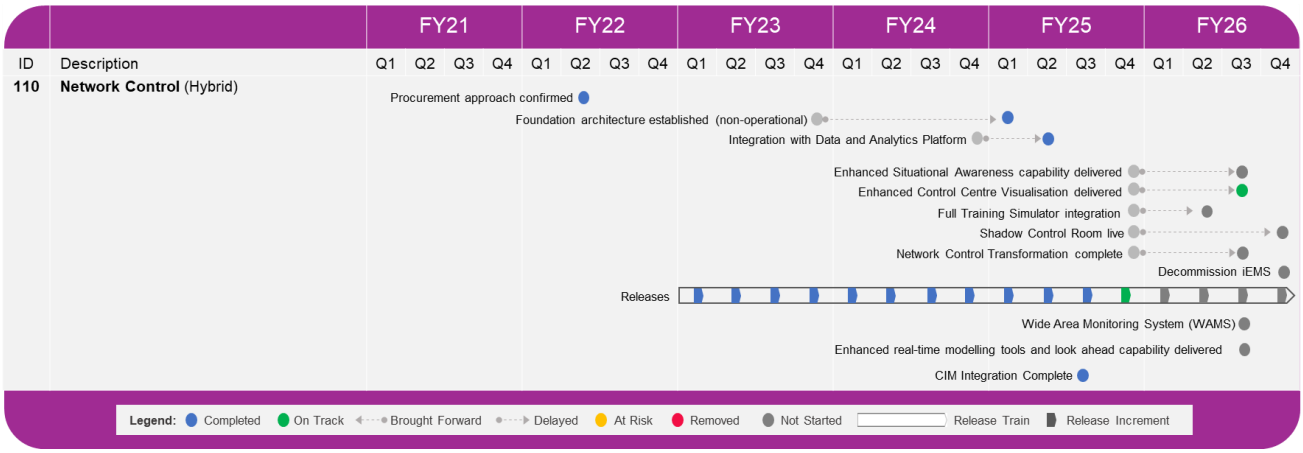


Figure 2 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Quarterly Release Train	Network Control	Q3 FY25 Q4 FY25 Q1 FY26 Q2 FY26 Q3 FY26 Q4 FY26
Milestone	CIM Integration Complete – **previously part of investment 150**	Leveraging CIM to unify our online and offline models, as well as potentially linking equipment/asset data	Q3 FY25

		between disparate 56 internal and external systems (e.g., eNAMS, NGET EMS)	
Milestone	Foundation architecture established (non-operational)	First tranche of networking, hardware and software infrastructure deployed within our new Data Centres	Q1 FY25
Milestone	Shadow Control Room Live	NCMS delivery team can test the new systems in a realistic control environment to feed back into the project backlog and real time operations.	Q3 FY25
Milestone	Training simulator	Control room engineers can run more realistic training scenarios across all features offered through NCMS and feed back into the NCMS product backlog.	Q2 FY26
Milestone	Network Control Cutover Complete	Our new NCMS has been successfully accepted into production service, replacing the existing iEMS	Q3 FY26
Milestone	Enhanced situational awareness capability delivered	Control room engineers can make more informed decisions and manage the network more effectively, providing higher confidence of running the system closer to agreed tolerances	Q3 FY26
Milestone	Enhanced control centre visualisation	Control room engineers can access data from multiple systems in a single platform to solve real-time issues (in conjunction with the 140 ENCC Operator Console)	Q3 FY26

Milestone	Enhanced real-time modelling tools and look ahead capability delivered **– previously part of investment 150**	Provides a more accurate representation of the network, allowing for all types of devices and dynamic tripping schemes to be represented. Look-ahead implementation will allow control room engineers visibility of any potential system issues they may encounter in the timeframe of 0-24hrs ahead.	Q3 FY26
Milestone	Wide Area Monitoring System (WAMS) – **previously part of investment 150**	Provides additional information and situational awareness of regional variations in frequency and stability. It receives information from Transmission Operator phasor measurement units (PMUs).	Q3 FY26
Milestone	Decommission iEMS	Decommissioning of IEMS completed including secure infrastructure removal and disposal	Q4 FY26
Feature	ET SCADA Integration	Integration with new NGET replacement system will enable full separation of the systems. Following system separation, ESO and NGET will no longer use the IEMS and will decommission the old platform	Q3 FY25
Feature	Non-Production Environment Deployment	Non-Production Environment deployment of release R2024.1	Q3 FY25

Table 9 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	44.4	8.0	52.4	54.3	- 1.9
OpEx	1.2	0.9	2.1	3.8	- 1.7
TotEx	45.6	8.9	54.5	58.1	- 3.6

Table 10 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Efficiencies	Forecast Efficiencies	TotEx	Actual costs and remaining forecast leading to an outturn were lower than initially forecast at the beginning of the RIIO-2 (2021) period. This related to infrastructure and network costs which have resulted in lower actuals than originally forecast.	-3.6m
Cost Changes Since BP2				-3.6m

Table 11 - Investment cost change summary

Dependencies

Upstream: DAP (**220**) – delivery of Data Historian replacement. Frequency Visibility (**170**) – integration with NGET for PMU data.

Downstream: Operator Console (**140**) requires NCMS visualisation, Future Training Simulator (**200**) – NCMS Simulation tools, Restoration (**510**) – delivery of the GridOS platform. OBP (**180**) – future requirement for integration with NCMS.

3.2 Interconnectors (120)

Delivery Method	Strategic Priority Alignment
Agile	Clean Power & Consumer value

Investment Overview

Interconnectors are high-voltage cables that run under the sea, underground or via overhead cabling that connect the electricity systems of neighbouring countries to one another. Interconnectors allow excess power on the system to be traded and shared between countries. By sharing excess power, we can maximise the benefits and reduce waste associated with renewable energy sources and ensure constraint payments are minimised. Interconnectors play a significant role in the import and export of electricity to help us manage the peaks and troughs in our renewable energy generation and in providing services that enable us to transport electricity around the grid in a stable, efficient, and safe way.

To implement or operate an Interconnector the two electricity system operators as well as the interconnector operator need to be able to communicate and agree planned energy transfers through an industry standard solution called the Energy Communication Platform (ECP). In NESO we have implemented ECP and developed a supporting platform called IFLO to allow us greater capability to automate communications as well as provide real time data to other NESO control room systems. This investment delivers three things 1) the ongoing development of future interconnector control room to control connection is through ECP and IFLO, at the point of writing there are further 16 interconnectors being tracked by NESO with the next new interconnector expected to be operational in 2028. 2) the ability to manage and deliver regular system enhancements required to meet ongoing operational, regulatory and industry demands. 3) the capability to react to and deliver interconnector system platform changes in relation to other investment areas such as the development of the new balancing platform.

In BP1 and BP2 this investment has enabled implementation of new Interconnectors alongside delivering functional, architectural, and technical service improvements. We will continue to improve the capability of the control room to manage the GB system with increasing volumes of Interconnectors.

Current State

During the current period we have embedded our standardised approach to interconnector deployment which helps minimise architectural and technology changes in the future. We have migrated most of our interconnector management functionality for legacy interconnectors, from our Balancing Mechanism application to our Interconnector Flow Manager application (IFLO) and updated them to use our standard interconnector architecture bringing them in-line with the standard model used on our newer interconnectors.

The current systems supporting Interconnectors remain, Interconnector Flow manager (IFLO), Electronic Dispatch and Logging / Electronic Data Transfer (EDL/EDT) and Balancing Mechanism (BM) systems but with our move of legacy interconnectors from BM to IFLO we continue to reduce our reliance on the BM system which will be replaced by the Open Balancing Platform (OBP).

We have deployed the following interconnectors in the BP2 period:

- **Viking Link Interconnector:** A 1400 MW high voltage direct current (DC) electricity link connecting the British and Danish transmission systems. It went into operation in December 2023 and to support its operation we delivered the functional and architectural features to manage the receipt of operational flow data and the use of ancillary services on it.
- **GreenLink Interconnector**: This interconnector links the existing electricity grids in Ireland and Great Britain (GB) and has a nominal capacity of 500MW.We have completed the technical implementation of the Greenlink interconnector in association with Eirgrid and other impacted organisations ahead of its planned commission in December 2024. We have delivered the features required to manage and operate this interconnector when it commissions in Q3/ Q4 2025.

We have made significant updates to the EWIC and Moyle Interconnectors, completed the migration of both interconnectors from our legacy BM application to IFLO and updated them to our standardised interconnector architecture utilising the latest standards for the exchange of information.

During the current period we have also responded to the requirements from external stakeholders like Ofgem and implemented system and processes which enhance our transparency obligations around data publication. This includes further enhancement of the information we publish with regards to Net Transfer Capacity restrictions proposed by us in our role as the system operator. We continue to work with other system operators and interconnector owners to further extend this capability to those interconnectors where current process or technology do not support this.

We have continued to improve our system architecture in line with a growing list of interconnectors and continue to add resilience to our overall solution design. With interconnector service improvements, both hardware and software upgrade for the IDX IFLO and ECP platforms have been carried out. By the end of the BP2 period to further support our transparency obligations, we anticipate that we would have completed the standardisation of the Intraday Transfer Limit (ITL)/ Net Transfer Capacity (NTC) process on the IFA and IFA2 interconnectors, which will facilitate the electronic exchange of ITL/ NTC information enabling us to further enhance our transparency reporting. We are also working with the Britned Interconnector to rollout a similar service.

Future State

We expect to continue to bring enhancements and features to our IFLO application which improve usability and help our control room better respond to the multiple and increased data flows due to the increasing number of interconnectors. We anticipate further increase to current data flows and information exchanges driven by, for example, the current drive by interconnectors to move to a 30-minute Market Time Unit (MTU). Changes such as this will increase the need to ensure our systems are resilient, robust and operate with a high availability.

The Open Balancing Platform (OBP) will introduce a new integration platform as part of the drive towards common Consistent Data Services. This platform will provide data exchange and orchestration services across platforms. Our interconnector services will utilise this platform to integrate with OBP. EDL and EDT will also make use of these services to support modernisation of the end-to-end Interconnector service.

We have commenced engagement with TenneT (Germany) and other interconnector parties to design the framework for the 1400 MW HVDC Neu connect interconnector, connecting the British and German electricity transmission systems. We expect that this work will continue through the BP2, BP3 and extend beyond it until the currently forecast commissioning date of 2028.

We will continue to enhance the functionality on our existing interconnectors and will be looking to further enhance features on interconnectors like Moyle, Britned based on stakeholder feedback and where opportunities are identified to improve the value of the service. Beyond the BP3 period we expect to support the development of between 4 to 16 interconnectors which are either being built or under consideration for implementation.

In BP3 we will continue to demonstrate value through:

- Continuing to develop the future interconnectors
- React to situational and market changes
- Continue to provide a programme of 8-10 regular quarterly service improvement releases to deliver transparency, operational performance, security, and safety enhancements

Public

Roadmap

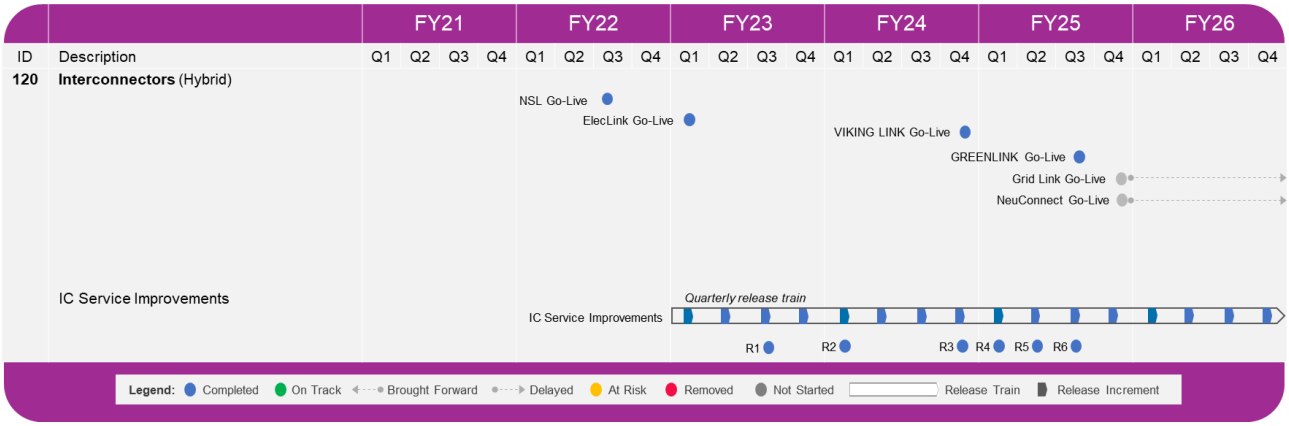


Figure 3 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	GreenLink Go-Live	Business final commissioning and operational usage of GreenLink interconnector	Q3 FY25
Milestone	IC Service Improvements R6	Automation of NTC Process of IFA & IFA2 – Process to automate the current annual process towards NTC used by Control room for IFA & IFA2	Q3 FY25
Milestone **CR677**	NeuConnect Go-live (Post RIIO2)	The NeuConnect interconnector will create the first direct power link between Germany and Great Britain, connecting two of Europe's largest energy markets for the first time. When operational it will allow up to 1.5GW of bi-directional capacity, enough to power up to 1.5 million homes over the life of the project.	FY27
Milestone **CR678**	GridLink Go-live (Post RIIO2)	GridLink interconnector is a proposed 1.4GW high voltage electricity interconnector between UK and France. Once operational, GridLink will transport sufficient electricity to supply 2.2 million households in France and the UK.	FY27
Feature	Interconnector Service Improvements (Quarterly Service Improvements Fy25/Fy26)	Outcomes to delivered during BP3: • Helping our control room users to better manage the energy flow across the Interconnectors by introducing features within IFLO, which help manage increased volumes and data flows.	Q3 FY25 Q4 FY25 Q1 FY26 Q2 FY26

		• Introduction of features which enhance application & service monitoring levels • Continuous updates and process improvements with the connected TSOs, which include the automation of manual process • Helping the interconnectors to facilitate changes to their mode of operation which include, e.g., changes to their reporting platforms or the introduction of new processes e.g. the move to 30-minute MTU's • Migration of interconnector features from our BM application to IFLO • Further enhancements to our Interconnector reporting in support of transparency obligations • Continuous upgrades, updates and enhancement of our interconnector architecture and platform • Updates to support arrangements in place to manage queries and system issues should they occur thereby improving response time and consequentially reducing system downtime or speed for dealing with queries	Q3 FY26 Q4 FY26
Feature	IC Services Improvements	Automation of NTC Process of IFA & IFA2 – Process to automate the current anual process towards NTC used by Control room for IFA & IFA2	Q3 FY25
Feature	IC Service Improvements	EWIC & Moyle – Decom in PM – Phase 3 – Final decommission of old infrastructure (logical & physical decom), which would result in reduction of RTB and maintenance / support costs	Q3 FY25

Table 12 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	5.6	1.4	7.0	10.9	- 3.9
OpEx	0.1	-	0.1	0.0	0.1
TotEx	5.8	1.4	7.1	10.9	- 3.8

Table 13 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Efficiencies	Better formed team	Capex	An improved throughput on development activities through stability of the team an increase in team knowledge and decoupling from BM system enabled us to recover efficiencies in actual costs compared to the BP2 forecast.	-0.5m
Evolved or refined scope since BP1	Change in scope	Capex	A decrease in the number of interconnectors coming online during the RIIO2 period led to a reduced scope for the investment across the period and therefore lower actual costs than forecast.	-2.9m
Technology market exposure	Standard / customised features on Interconnectors	Capex	A reduction in bespoke developments required for individual interconnectors led to a reduction in actual costs compared to forecast.	-0.4m
Cost Changes Since BP2				-3.8m

Table 14 - Investment cost change summary

3.3 Inertia Monitoring (Formerly Emergent Technology & System Management) (130)

Delivery Method	Strategic Priority Alignment
Waterfall	Decarbonised Energy

Investment Overview

We will implement a new Monitoring and Control System (MCS) capability to supplement Network Control and Situational Awareness delivery. Control room users will benefit from enhanced monitoring of the energy grid in real time and decision-making capability to respond to critical grid events.

In our BP2 plan we referred to how the operability strategy report explains the future challenges we face in maintaining an operable electricity system and our corresponding response. Specifically, this investment articulated capabilities we will deliver to register, settle, instruct and report new services arising from Network Services Procurement[1].

For BP3 we split this investment between Inertia Monitoring and Network Services Procurement (NSP) (previously known as pathfinders) and will report them as two distinct investments. Investment 130 is renamed to Inertia Monitoring, covering the Inertia Monitoring capabilities being delivered, whilst a new investment, will continue to deliver the capabilities for NSP.

Current State

We have implemented two innovative tools to measure system inertia in real-time. This significantly improves the accuracy and optimisation of our real-time operation with the increasing number of embedded generators. The tools provide essential monitoring of both transmission and distribution side inertia, both in real-time and forecasting up to 24 hours ahead.

These tools, from GE Vernova and Reactive Technologies, are the first major operational installation of tools that have arisen from innovation. They use very different methodologies and monitoring devices, and we continue to expand these tools to incorporate in our operational processes. Both tools have been handed over to the business for dual running with operations who routinely assess the viability of the outputs being received and work with both vendors to deploy operational enhancements. Moreover, we have collaborated with 220 Data & Analytics platform (DAP) to integrate these products and provide a seamless user interface, developed in-house, for improved analytics.

Future State

This programme was initially experimental, trialling different solutions for Inertia Monitoring and Management. We have delivered on our inertia monitoring goals; however, we wish to build upon

this by continuing to work with suppliers to deliver enhancements to the control centre aiding our situational awareness tools. Although we have delivered our inertia monitoring tools independently of NCMS and Balancing, our integration with DAP is a key enabler to integrate the tools with our Balancing and Network Control tools.

Roadmap

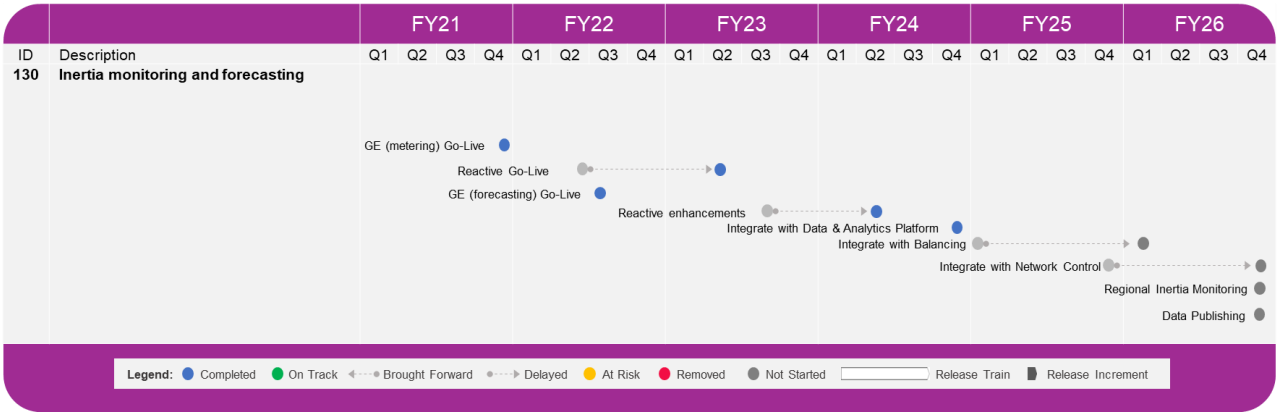


Figure 4 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Integrate with Balancing	Incorporate the inertia data into our Balancing tools to improve user experience with the Control Room and ensure that inertia analysis is included within optimising the operating plan.	Q1 FY26
Milestone	Integrate with Network Control	Improving user experience by integrating inertia data into situational awareness tools and our single operator console.	Q4 FY26
Milestone	Regional Inertia Monitoring	Extend regional inertia monitoring using GE Inertia Grid Analytics including forecasting for England & Wales with the introduction of PMU data from NGET	Q4 FY26

Milestone	Data Publishing	Enhance the API provision from both inertia tools to enable data to be pushed. This will increase the data resilience for integration to downstream systems and reduce risk of data gaps.	Q4 FY26

Table 15 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	0.8	-	0.8	1.8	- 1.0
OpEx	0.2	0.4	0.6	0.3	0.3
TotEx	1.0	0.4	1.4	2.1	- 0.7

Table 16 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Efficiencies	Forecast Efficiencies	TotEx	There was an initial assumption that Data and Analytics Platform (220) integration costs for Inertia tools would be covered under this investment; however, the integration costs have been covered directly by investment 220. Therefore, there is a lower outturn than forecast.	-0.7m
Cost Changes Since BP2				-0.7m

Table 17 - Investment cost change summary

Dependencies

Upstream: There is a dependency on Data & Analytics Platform (**220**) to continue to be up to date with enhancements from the core Inertia applications.

3.4 ENCC Operator Console (140)

Delivery Method	Strategic Priority Alignment
Waterfall	Digital Mindset

Investment Overview

We are delivering a single capability to manage the user interface/experience for our control room systems. Operator Console aims to renew the desktop experience of operators at the Electricity National Control Centre (ENCC) sites and training facilities to give a seamless user experience (UX), considering human factors, future system growth and the need to cater for future organisational and operational change.

Our ambition is to provide a single personalised control room graphical user interface (GUI) with the ability to interact across all relevant applications and present data from different networks. This capability is classed as Critical National Infrastructure and as such is vital for the control of the electricity network. It benefits the Electricity National Control Centre (ENCC) and associated operational support teams.

Current State

Control centre users access many data sources and different applications to do their job. They use multiple individual displays and a video wall that shows a limited set of relevant operational data. As the control centre operational team is split over two sites, some data is shared over phone or email, as is also the case with our silver command room (used to manage emergency situations).

The ENCC Operator Console delivery team have undertaken a series of design thinking workshops with key stakeholders to capture user requirements, agree scope of delivery and determine the technical delivery approach. These engagements have also considered the capabilities and user experience being delivered through 110 Network Control, 180 Enhanced Balancing Capability and 220 Data and Analytics Platform, to ensure delineation of the ENCC Operator Console solution.

Having evaluated technical delivery options, we launched a procurement event in Q2 FY25 initiated by issuing a pre-qualification questionnaire (PQQ). The scope of procurement is to design, build, deploy and operate a console solution that provides a “single pane of glass”, with the ability to place, move and operate any application / window independently across the whole operator workspace. This capability will enable control room engineers to seamlessly interact with all applications and personalise their desktop layouts. PQQ responses have been reviewed, assessed, and scored. Shortlisted vendors will be taken through to the next round for Request for Proposal (RFP).

Future State

Our control rooms users will seamlessly navigate multiple applications, both critical and non-critical, through a single mouse and keyboard across the whole landscape of the Operator Workspace area.

Control room users will have capability to personalise layouts and present by independent movement of an application 'view' from within one monitor area to another monitor area. This enables support for different roles in the control room to access the views they need.

Personal video wall overview functionality at desk level will form part of the overall Operator Console design, to be used in conjunction with the existing Control Room video wall.

Additional application linkage and user experience integration will be extended as the delivery continues through BP3 and into future years.

Roadmap

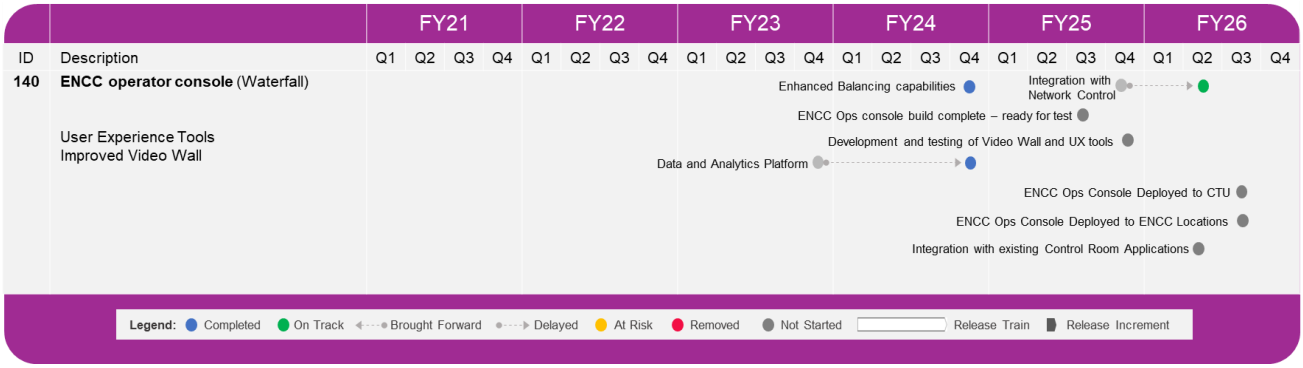


Figure 5 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	ENCC Ops console Build complete and ready for test	Newly designed and built infrastructure required for the ENCC Operator Console has been configured and ready to start testing	Q3 FY25
Milestone	Development and testing of video walls and UX tools	Newly delivered video wall and User Experience tooling has been delivered, tested and is ready for acceptance into service (AIS)	Q4 FY25
Milestone	Integration with Network Control	Integration with the Network Control Management System	Q2 FY26

		allowing control access to the tools	
Milestone	Integration with existing Control Room Applications	Existing control room applications are able to be visualised and controlled through the newly configured Operator Console	Q2 FY26
Milestone	ENCC Ops Console Deployed to Control Training Unit (CTU)	Operator Console infrastructure and configuration has been deployed to CTU enabling Control Room training to be undertaken	Q3 FY26
Milestone	ENCC Ops Console Deployed to ENCC Locations	Operator Console has been deployed to ENCC sites	Q3 FY26
Feature	Desk IT Hardware – Effective & efficient desktop console infrastructure	Deployment of single Operator Console Desktop Management Environment (DEM), monitor and peripheral device infrastructure to demonstrate Ops Console equipment setup	Q3 FY25
Feature	Individual Desktop Workspace – Seamless view and operation of ENCC systems	Access of ENCC operational systems demonstrated through the Operator Console equipment	Q3 FY25
Feature	Information Cascade & Reporting – Integrated tools to manage, log and report data across systems	Integration of Data Analytics Platform (DAP) and logging tools to Operator Console to provide reporting and logging capabilities. DAP element also inclusive of Data Historian replacement	Q3 FY25

Table 18 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	0.6	2.8	3.4	5.0	- 1.6
OpEx	0.2	0.0	0.2	0.5	- 0.3
TotEx	0.8	2.8	3.6	5.5	- 1.9

Table 19 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolving or redefined scope since BP2	Phasing	TotEx	Following an internal strategic review, the decision has been taken to re-phase the delivery scope for this investment to move non-essential items (i.e. the consolidation of networking and infrastructure) out to FY27. This enables us to maximise delivery capacity and spend efficiency, resulting in a lower actual spend than forecasted at the start of BP2.	-1.9m
Cost Changes Since BP2				-1.9m

Table 20 - Investment cost change summary

Dependencies

- Future Training Simulator & Tools (**200**) - control room user experience

3.5 Frequency Visibility (170)

Delivery Method	Strategic Priority Alignment
Waterfall	Decarbonised Energy

Investment Overview

This investment delivers Frequency Visibility capability into the control room to improve access to Transmission Owner (TO), Distribution Network Operator (DNO) / Distribution System Operator (DSO) and smaller embedded generator frequency measurements. To maintain control of the power system we must monitor system frequency at high resolution in real time. Frequency monitoring is also critical for system restoration. As the amount of distributed generation increases, changes will be needed in the way the transmission system is monitored in real time. Purely monitoring frequency is no longer sufficient and we will need more information on regional conditions to maintain stability. We will also need better capability to monitor emerging issues such as harmonics and flicker. The TOs are continuing to roll out Phasor Measurement Units (PMUs) and accessing data from these will greatly enhance our capability to monitor the state of the system.

Dynamic System Monitoring (DSM) equipment is required to be installed by all large generators; however, we do not have direct access to these DSMs. Access is restricted to providers that are directly connected to a National Grid Electricity Transmission (NGET) substation. This access is currently managed via an NGET application. The changing generation profile has resulted in an increase in the number of new, smaller providers who are unable to connect to the existing tool, requiring data to be requested manually following a system event or fault. This results in delays, and often missing data when investigating system issues as well as customer frustrations due to us being unable to directly access the data.

Current State

Our frequency monitoring capability is provided by a bespoke system, known as Frequency and Time Error (FATE). This system collects frequency information from a limited number of locations on the transmission network.

In May 2024 we went live with our new FATE replacement system, we plan to parallel run with the existing FATE system until such time we can receive PMU data from all TOs, to give GB wide visibility. It is at this point we will commence decommissioning the legacy FATE system. In our BP2 submission this investment planned on supplementing FATE with GE Vernova's Wide Area Monitoring System (WAMS) product, to provide additional information and situational awareness of regional variations in frequency and stability to ENCC. Investment 110 Network Strategy will now deliver the WAMS capabilities as this was aligned with the objectives and product scope of the NCMS delivery.

We have undertaken a discovery phase for Dynamic System Monitoring (DSM) to determine the best approach to consume generator data and migrate away from the NGET application. In the

immediate term we have adopted a tactical approach that will; 1) continue to receive data via email, 2) continue with the existing NGET platform, and 3) run a proof of concept to develop a portal solution to pull data from DSMs. The third element will focus on engagement with a small number of generators and, if successful, be expanded and rolled out as the enduring strategic solution for all data consumption.

Future State

We have delivered enhanced capability to monitor and assess PMU data. We would have decommissioned the legacy FATE system following the enhanced availability of PMU data into 'new' FATE.

We will replace the products used for Dynamic System Monitoring (DSM) to enable connectivity to all service providers who are required to install DSM equipment as part of their Connection Agreements. This will provide us with direct access to data collected following system events, reducing balancing costs, improving customer relations, and reducing the time to resolve generator compliance issues.

Roadmap

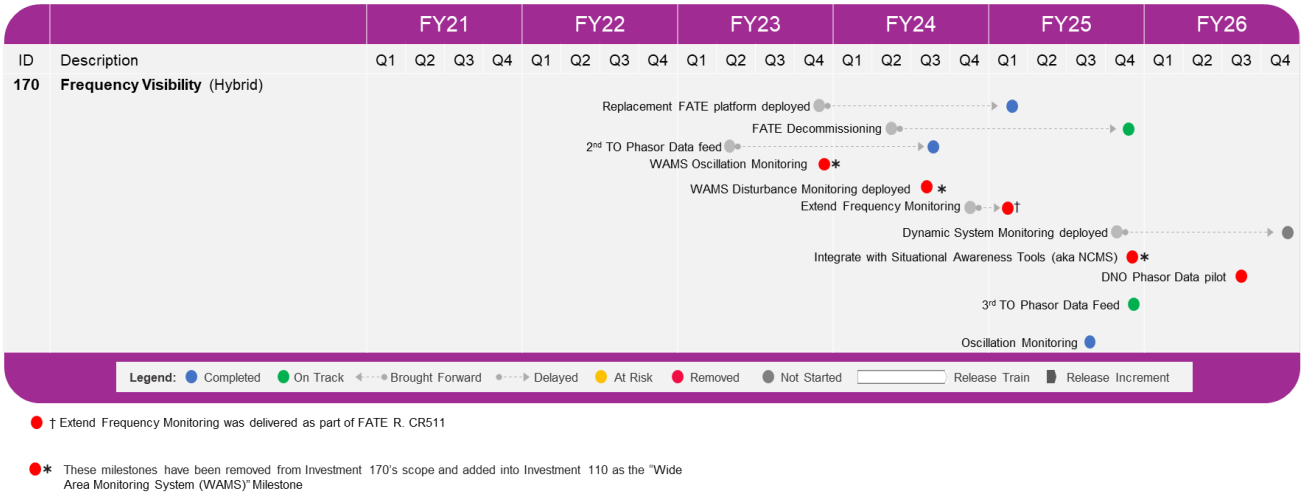


Figure 6 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Replacement FATE Platform deployed	The replacement Frequency and Time Error system has been successfully deployed and is operational. This will replace the existing platform and provide enhanced visualisation and early warning of system issues	Q1 FY25

Milestone	Extend Frequency Monitoring	Increased coverage of the transmission network providing visibility for Restoration	Q1 FY25
Milestone	Oscillation Monitoring	Provision of analysis and visualisation to monitor the stability of the network to enable control engineers to be able to manage system issues	Q3 FY25
Milestone	3rd TO Phasor data feed	Access to high resolution phasor measurement unit data for NGET to increase the area of the network we are monitoring	Q4 FY25
Milestone	FATE Decommissioning	Decommissioning the legacy FATE system, following a period of parallel running with the new solution	Q4 FY25
Milestone	DNO Phasor Data pilot	Understanding of the requirements to obtain PMU data from the distribution networks	Q3 FY26
Milestone	Dynamic System Monitoring deployed	New products to enable service providers to connect their DSM kit and provide NESO with high resolution generator data post event and for compliance validation	Q4 FY26
Feature	National Grid Electricity Transmission (NGET) Data Links to Non-Production	Implementation of NGET Data Links to Non-Production	Q3 FY25
Feature	National Grid Electricity Transmission (NGET) Data Links to Production	Implementation of NGET Data Links to Production	Q3 FY25

Table 21 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	3.3	2.5	5.8	6.6	- 0.7
OpEx	- 0.0	-	- 0.0	0.2	- 0.2
TotEx	3.3	2.5	5.8	6.8	- 0.9

Table 22 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolving or redefined scope since BP2	Phasing	TotEx	Following an internal strategic review, the decision has been taken to re-phase the delivery scope of the DSM strategic roll-out to conclude in FY27. This has resulted in a lower actual cost than forecast at the start of BP2.	-0.4m
Efficiencies	Forecast Efficiencies	TotEx	A decision was taken to transfer the WAMS scope from this investment to Network Control (110). Following the scope transfer, the additional scope of Oscillation Monitoring was delivered within this investment and a further 0.5m saving was achieved.	-0.5m
Cost Changes Since BP2				-0.9m

Table 23 - Investment cost change summary

Dependencies

There is a downstream dependency, with Network Control (**110**) dependent on this investment for integration with NGET for PMU data.

3.6 Enhanced Balancing Capability (180)

Delivery Method	Strategic Priority Alignment
Scaled Agile	Clean Power

Investment Overview

This investment delivers the Open Balancing Platform (OBP), a new real-time balancing capability (aligning supply and demand)[1] to replace legacy NESO balancing systems and processes. Our existing balancing systems architecture cannot be adapted to support zero-carbon grid operations. The new balancing system is designed and built flexibly to provide access for smaller generation units and enable new energy services far more quickly and at lower risk.

Our vision for the investment is to facilitate the operation of end-to-end balancing in the Electricity National Control Centre (ENCC) with a digital-first mindset in a robust and agile manner. This approach aims to enable efficient operations and be adaptable to ongoing and future industry-wide changes, meeting the needs of our customers.

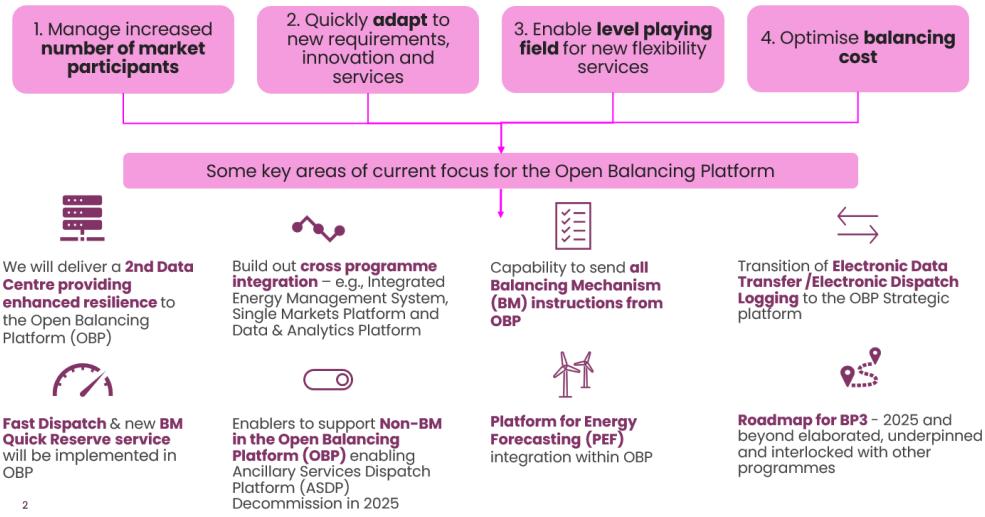


Figure 7 - An overview of the key areas of focus for the Open Balancing Platform

We work collaboratively with our customers to determine the priority ordering of the required capabilities through regular, transparent, and collaborative engagement[2] to ensure that the effective needs of both our customers and stakeholders are met.

The roadmap is aligned to the revised agreement we have had with the industry on prioritisation of features based on business value. Some of the change requests that align delivery are in various stages of governance in NESO and will be continued to be shared through the CMF process.

Current State

We successfully delivered the first release of the Open Balancing Platform (OBP) in December 2023. This release provides enhanced dispatch capability within the control room for two "zones" - Batteries and Small Balancing Mechanism Units (BMUs). The battery zone delivery was accelerated following customer feedback through our balancing industry engagement events[3]. The release also delivers the foundational platform for all future system developments and sets up a continuous delivery framework. The platform is built to support a modular, highly available architecture that simplifies operations, enables faster change, and reduces deployment risk. Delivery occurs on a hybrid cloud platform to replace legacy hardware, offering versatility and cost-effective development and testing.

The enhanced dispatch capability allows control room users to meet their balancing requirements within the Small and Battery Zones with a few clicks instead of individually sending instructions to each BMU. This reduces the workload for the energy desks by decreasing the number of user inputs by 90% - a typical 30-minute and 600 mouse clicks/keyboard input operation can now be completed with 10 clicks in 3 minutes. It improves situational awareness for users by allowing easy viewing of zone profiles and instruction states for the BMUs along with their dispatch status, while automatically applying relevant technical limitation rules. In March 2024, we enabled enhanced battery management through a new Fast Dispatch user journey that allows users to control frequency quickly using a target profile. Since then, we have established new integrations with the SCADA platform - Integrated Energy Management System (IEMS) and Single Markets Platform (SMP). These integrations unlock further user journeys like constraint management and Ancillary Services Dispatch. We enabled additional dispatch user journeys including the capability to issue manual instructions to individual BMUs and instructing BMUs through a price stack.

Since December 2023 release, we have established a fortnightly release cadence to deliver capabilities and value incrementally, comprising planned scope, enhancements, and defect fixes. Work is underway to set up major architectural and data foundations to support a highly resilient system for the Balancing Mechanism (BM) and non-BM market services with minimal market outage.

To date, the benefits created from these deliveries include an increase in the number of instructions that the ENCC can issue and a noticeable increase in the dispatched volume of energy for the battery and small BMU zones. Comparing the three months before OBP went live to the three months of June, July, and August 2024, the average dispatch volume (MWh per day) of batteries has increased from 659 to 2,527 (a 283% increase). The number of daily instructions has increased from 217 to 1,867 (a 760% increase). The average dispatch volume (MWh per day) of small BMUs in the BM has increased from 953 to 1,585 (a 66% increase). The number of daily instructions for small BMUs has increased from 187 to 232 (a 24% increase). An increase in battery dispatches saves equivalent CO2 generated by traditional electricity generation plant and help

deliver clean power. It is estimated that since go-live in December 2023, OBP has saved an estimated 37400 Metric Tonnes of carbon emission.

Future State

We will enhance the OBP to be highly resilient and available across two geographically separate data centres. This allows us to reduce outages on the balancing mechanism market, scale to and support increased numbers of units and remove the need to have a contingency service, enabling us to decommission CLOGS (Contingency Logger). We also brought forward mastering the vast majority of balancing data including data submissions via Electronic Data Transfer (EDT) and Electronic Dispatch Logging (EDL) within the OBP. This allows us to reduce the risk on the legacy BM systems caused by increased frequency and number of market submissions. That also improves the organisation ability and speed to support new types of data like the new storage parameters. We will have delivered multiple market reserve services like Quick and Slow Reserve, and response services like Dynamic Containment, Dynamic Moderation and Dynamic Regulation on OBP allowing us to decommission Ancillary Services Dispatch Platform (ASDP). By bringing forward mastering and management of almost all balancing data from future timescales into BP3 and integrating OBP with the newly transformed Network Control Management System (NCMS) and the Platform for Energy Forecasting (PEF), we will have built a robust foundation that allows us to harmonise and co-optimise balancing actions across both BM and non-BM units, create service flexibility and reduce balancing costs. As agreed with industry, the priorities for BP3 are targeting mainly our dispatch processes and building enabling capabilities to support scheduling functions like enhanced margin analysis and unit commitment. The transformation of these user journeys and integration with the interconnector flow management system (iFlo) are moved to FY27. These are of lower value in terms of dispatch efficiency and balancing costs. We are still on target to decommission the legacy BM systems in 2027.

With our new role as National Energy System Operator (NESO), we have enhanced security requirements to support and build the new market services through an internet gateway terminating within our datacentres. This adds a risk of additional funding needs of around £3.1million to support deployment of a new Demilitarised Zone (DMZ).

Public

Roadmap

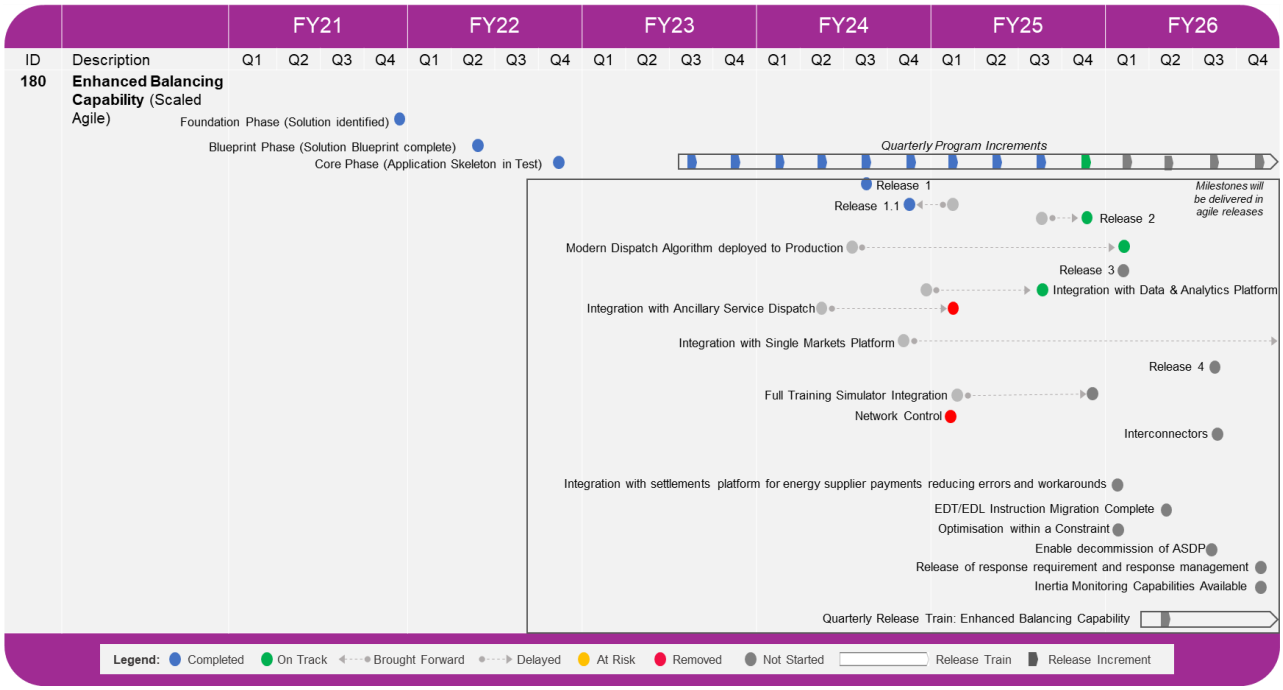


Figure 8 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone CR618 approved (change from Q3 FY25 to Q4 FY25)	Core Phase Release 2	Highly resilient OBP	Q4 FY25
Milestone	Integration with DAP	Initial integration with the Data and Analytics Platform (DAP) which will replace our long-term retention and analytics capability.	Q3 FY25
Milestone CR683 awaiting approval (milestone to be removed)	Full Training Simulator Integration	Full integration with the training simulator, increasing effectiveness in the Control Room	Q4 FY25
Milestone	Integration with settlements platform for energy	Provide data to new settlement capability	Q1 FY26

CR623 awaiting approval	supplier payments, reducing errors and workarounds		
Milestone CR623 awaiting approval (milestone to be removed)	Core Phase Release 3	Release of response requirement and response management. Inertia monitoring capabilities available. Integration with Settlements Platform for energy supplier payments, reducing errors and workarounds Enables decommission of ASDP	Q1 FY26
Milestone CR623 awaiting approval	Optimisation within a Constraint	Use optimiser to resolve a constraint	Q1 FY26
Milestone CR619 awaiting approval (change from Q1 FY26 to Q2 FY26)	Modern Dispatch Algorithm deployed to production	Release of a new National Optimiser, reducing energy balancing costs.	Q1 FY26
Milestone CR623 awaiting approval	EDT/EDL Instruction Migration Complete	All EDT/EDL data directly lands in OBP and OBP sends instructions directly to the BMUs	Q2 FY26
Milestone CR691 awaiting approval (milestone to be removed)	Quarterly Release Train: Enhanced Balancing Capability	Agile programme increments	Q2 FY26
Milestone CR623 awaiting approval (milestone to be removed)	Core Phase Release 4	Enhanced Margin analysis completed, Unit commitment and EDT/EDL instruction underway	Q3 FY26

Milestone CR623 awaiting approval	Enable decommission of ASDP	Services such as Dynamic Response (DC/DM/DR) and MW Dispatch now on OBP allowing ASDP to be retired	Q3 FY26
Milestone CR624 awaiting approval (milestone to be removed)	Interconnectors	Integration with Interconnector Manager IFLO, reducing risk on BM.	Q3 FY26
Milestone CR623 awaiting approval	Release of response requirement and response management	All functionality supporting response now in OBP providing enhanced visualisation and monitoring across BMU and non-BMU so reducing balancing costs	Q4 FY26
Milestone CR623 awaiting approval	Inertia monitoring capabilities available	Interface to NCMS project to receive real-time metered values and forecast estimates of inertia to ensure correct levels of response are procured	Q4 FY26
Milestone CR615 awaiting approval (milestone to be removed)	Integration with Single Markets Platform	Integration of unit contract data with the OBP to ensure procured services are scheduled, optimised and available for dispatch	Q1 FY27
Feature	Aggregated units	This milestone will provide support for issuing instructions to aggregated Balancing Mechanism Units	Q3 FY25
Feature CR617 approved (from Q3 FY25 to Q1 FY26)	Enhanced Long term forecasting	Synchronises data between the Opening Balancing Platform and the Platform for Electricity Forecasting so that the former can use new forecasts based on machine learning	Q1 FY26
Feature CR615 awaiting approval (feature to be removed)	Interface to SMP	As part of this milestone there will be a new interface established between the Open Balancing Platform and the SMP so that contract data and the results of day ahead auctions can be used by the former	Q3 FY25

Feature	Replication to EDT/EDL	- EDT and EDL are the primary components used to send messages between the ESO and trading points and control points. After this milestone EDT/EDL will be replicated on the new Open Balancing Platform	Q3 FY25
Feature	Issue instructions to Aggregated units	This milestone will provide support for issuing instructions to aggregated Balancing Mechanism Units	Q3 FY25
Feature CR618 approved	Highly Resilient OBP	The new Open Balancing Platform will now be deployed across two geographically separate data centres so giving a high resilient service	Q4 FY25
Feature	Enhanced Optimisation	A new optimiser will be deployed on the Open Balancing Platform with improved modelling of wind units	Q1 FY26
Feature	All BMU instruction types from OBP	From this milestone control engineers will be able to use the Open Balancing Platform to issue all types of Balancing Mechanism Unit instructions (ancillary services, pumped storage)	Q1 FY26
Feature	Retire CLOGS	Enough functionality will be in the new Open Balancing Platform that we can decommission the backup IT system for the legacy BM system which is called CLOGS	Q1 FY26
Feature CR626 awaiting approval (feature to be deleted)	Provide services to NCMS enabling inertia forecasting	Synchronises data between investment 180 (OBP) and investment 110 (NCMS) so that the latter can carry out inertia forecasting	Q1 FY26

Table 24 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	89.0	13.8	102.9	99.2	3.7
OpEx	0.6	-	0.6	3.6	- 3.0
TotEx	89.6	13.8	103.5	102.8	0.7

Table 25 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolved or refined scope since BP2	Better understanding since BP2	Totex	As a result of detailed design, we accepted an increase in cost for additional resources and an increase in timeframes to deliver the more complex requirements identified to meet the needs of a highly resilient infrastructure and platform.	0.7m
Cost Changes Since BP2				0.7m

Table 26 - Investment cost change summary

Dependencies

Upstream:

- Platform for Energy Forecasting (Forecasting Enhancements, **260**) –receiving forecasting data from PEF and dependent on the completion of forecasting models
- Data and Analytics Platform (**220**) – this investment needs an integrated plan with DAP in order to complete audit, archive, reporting and settlement requirements
- Network Control Management System (Network Control, **110**) – need to integrate to receive metering data once IEMS is replaced

Downstream:

- Ancillary Services Reform (Single Markets Platform, **400**) – Quick Reserve and Slow Reserve
- DAP (**220**) – this investment is providing data for NED and MODIS replacement
- Settlements, Charging & Billing (**610**) – requires data from OBP for settlement calculations
- Deliver the core application simulators which will need integrating in CTU
- Real-Time Prediction (**670**) is delivered on Enhanced Balancing Capability platform

3.7 Workforce & Change Management Tools (190)

Delivery Method	Strategic Priority Alignment
Agile	People Value

Investment Overview

This investment enables effective publication of operational updates and learning materials and provides enhanced training and operational decision-making capability in relation to the controls room. Enhancements in this areas tools will support management of workforce planning, shifts, change and contracts/documents with tailoring to individual user profile settings.

We are investing in our workforce and the technologies required to support more frequent updates to policies and standards. Our current processes and tools are not designed to support the rapidly changing workforce knowledge and awareness requirements for massive effort to move to zero carbon grid operations. We must replace and improve these capabilities to avoid introducing safety, compliance, and wellbeing risks.

With the continuing decarbonisation of the power system and the transformation of operationally critical and supporting systems we expect a significant amount of change to our processes and procedures. We need to automate our change processes and ensure accurate, timely updates are provided to our control centre users in an appropriate format. Our ambition for 2026 is to operate a training repository system, with automated linkage between training options and our staff development plans.

Current State

We have fully implemented our central workforce management system with end users accessing, reviewing, and requesting shift changes through web and mobile phone applications. A single repository with advanced analytics capability allows the workforce and change management team to develop better and more cohesive strategies based on working time and HR directives. Additional benefits included less time spent on rotas and improved overtime reporting.

We have also developed and deployed the first tranche of training functionality into our ROTA tool which will allow us to integrate training more easily with working shifts and better plan the complex onboarding process. We have deployed a self-service reporting tool for transparency purposes and to provide easy access to shift information for control room staff as well as significantly simplified the process of shift overtime and expenses reporting.

Future State

Our current and BP3 focus will be to continue to deliver on further automation of workforce related processes which will allow for more flexible rota planning, as well as ensuring users have the most up-to-date information to do their job. This will include leveraging our recent deployments relating to training planning to deliver deeper insights into onboarding activities and timelines and develop clearer analysis on training compliance.

Roadmap

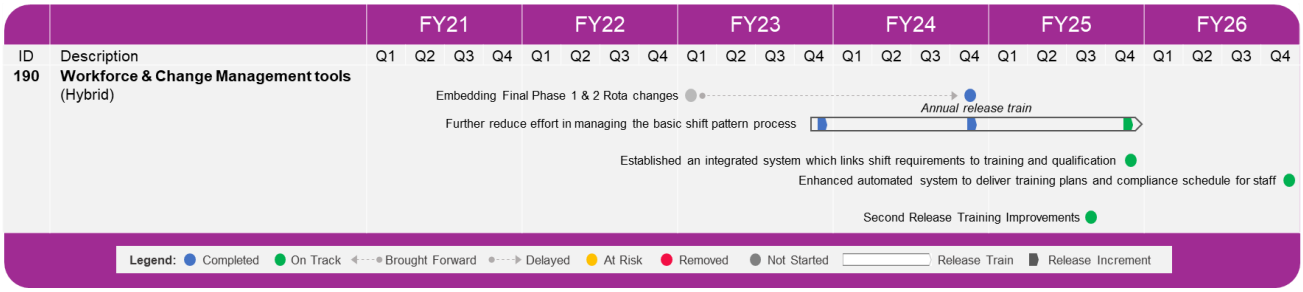


Figure 9 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone **CR 657**	Second Release Training Improvements	Utilise lessons learned to optimise training process further through new reporting and small system changes	Q3 FY25
Milestone	Further reduced effort in managing the basic shift pattern process	Utilise lessons learned to optimise shift management process further through new reporting and small system changes	Q4 FY25
Milestone	Established an integrated system which links shift requirement to training and qualification	Integration of training and qualifications tracking into shift management processes	Q4 FY25
Milestone	Enhanced automated system to deliver training plans and compliance schedule for staff	Deliver full compliance and automated training scheduling through a single tool, automated to such a degree that maintenance of data is located with the end user and minimal oversight is required by a central operations team	Q4 FY26

Table 27 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	0.0	-	0.0	0.2	-0.2
OpEx	0.5	0.3	0.8	3.6	-2.8
TotEx	0.5	0.3	0.8	3.8	-3.0

Table 28 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolved or refined scope since BP1	Delayed Investment	Opex	A decision was made to use off-the-shelf Azure based technologies (SharePoint) with negligible development costs while AI technologies matured. The technologies implemented were determined to meet current control room requirements.	-3.0m
Costs change since BP2				-3.0m

Table 29 - Investment cost change summary

3.8 Future Training Simulator & Tools (200)

Delivery Method	Strategic Priority Alignment
Waterfall	Digital Mindset

Investment Overview

This investment delivers the Electricity National Control Centre (ENCC) training simulator. Scope of delivery includes training for refresher and upskill sessions, special events, introduction of changes, feedback, and authorisation exams.

Our ambition is to provide a single training simulation capability for the ENCC. We will enable simulation tools to accurately reflect the changing energy landscape with real-time data. This

will allow us to train Control Centre engineers on a range of past and future scenarios. This investment will align 140 Operator Console to roll out console equipment to our training facilities to emulate the ENCC user experience.

Current State

During BP2 we have engaged extensively with training delivery and ENCC stakeholders to assess current training capabilities (people, process and systems) and determine future needs. The core scope of this investment remains true, simulation and emulation of our core control room applications and environment. What has also become apparent is the need to complement the operational environment with a strengthened capability to manage training, specifically the logging, recording and monitoring of training delivery.

We have aligned with 110 Network Control and 180 Enhanced Balancing Capability and identified the dependencies required to deliver an end-to-end integrated training simulator. Network Control Management System (NCMS) and Balancing will deliver standalone simulator capabilities during BP3. The availability of these simulators does not provide sufficient time to progress with the integration of these simulators within our training environment, as a result we have decided to defer this activity beyond BP3. We will continue to evolve the integration requirements/design, simulator scenarios and training tool needs in readiness for delivering both an integrated simulator capability and training simulator suite.

Future State

Our end-to-end simulation and training capability, representative of our live operational systems has been implemented, supported by the necessary training tools that make up a comprehensive training simulator suite. Control Room and support teams will use an Integrated Network Control Simulator built on the NCMS platform. The core simulation capability is extended to include Balancing, NCMS enhancements and other integrated control systems.

Roadmap

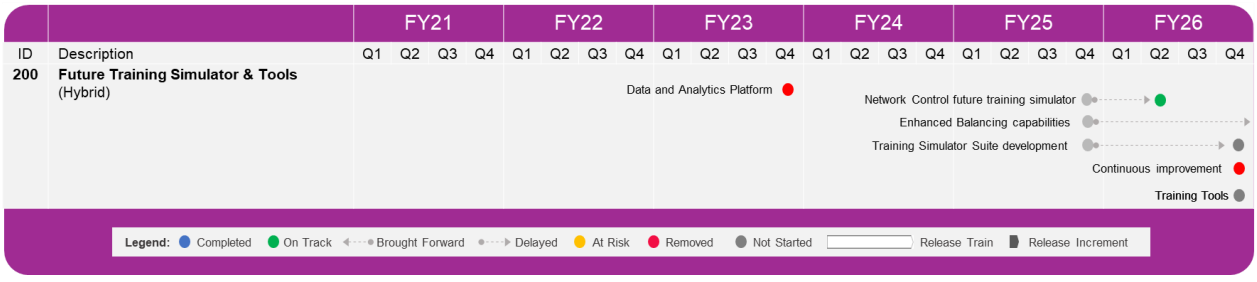


Figure 10 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Network Control future training simulator	Allows control engineers to run training scenarios to mimic real system events experienced on the Network Control Management System (NCMS)	Q2 FY26
Milestone	Training Tools	Engage with peer organisations to assess Training Tool usage and capabilities. In addition, high level assessment of vendor products.	Q4 FY26
Milestone	Training simulator suite development	A training suite that encompasses training scenarios, control room application simulators (NCMS - 110 and OBP - 180) and control room desktop setup (delivered by 140 Operator Console)	Q4 FY26
Milestone	Enhanced Balancing Capabilities	Provide access to an accurate representation of future scenarios (i.e., Generation and Demand predictions) Allows to integrate the NCMS training simulator with Enhanced Balancing Simulator for engineers to run end to end training scenarios to mimic real system events	FY27

Table 30 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	0.1	-	0.1	5.8	- 5.7
OpEx	0.1	0.3	0.4	1.5	- 1.1
TotEx	0.3	0.3	0.5	7.3	- 6.8

Table 31 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Deferred Scope due to dependencies	Phasing	TotEx	Following an internal strategic review, a decision was taken to re-phase the delivery scope of this investment to align with critical dependencies (110 Network Control and 180 Balancing). As a result, NCMS and OBP simulator integration and implementation of training tools will commence in FY27. This results in a lower than forecast actual cost in the current period.	-6.8m
Cost Changes Since BP2				-6.8m

Table 32 - Investment cost change summary

Dependencies

- Network Control (**110**) and Enhanced Balancing Capability (**180**) to deliver the core application simulators which will need integrating in CTU.
- Operator Console (**140**) – control room user experience

3.9 Balancing Asset Health (210)

Delivery Method	Strategic Priority Alignment
Waterfall	Clean Power, Decarbonised Future, Consumer value & People Value

Investment Overview

This investment allows us to maintain our existing Balancing Mechanism (BM) systems and services. Whilst we transform the balancing capabilities under 180 Enhanced Balancing Capability, we need to maintain and enhance our legacy systems to continue operating the electricity system safely and economically. We need to maintain a viable delivery capability for our legacy systems to maintain and improve system performance and stability. Investing in this capability enables us to deliver safe and secure balancing systems, support short-term market value and prepare for transforming our balancing capability.

The 210 investment comprises of two areas: Balancing Mechanism Asset Health (BMAH) and Electricity Balancing System (EBS) Migration project.

Balancing Mechanism Asset Health

The Electricity National Control Centre needs to deliver reliable and secure system operation, facilitate market competition and meet our ambition to operate in a world of clean power and decarbonised energy. In BP2, this funding enabled us to maintain a robust BM delivery capability, ensuring the reliability and continued performance of the systems, and enhancing key areas of the BM to effectively address the challenges posed by an ever evolving and diverse energy market. We continue to maintain and optimise the legacy BM system, while actively transitioning to our new modern Open Balancing Platform (OBP). The ongoing investment in the BM serves as a critical bridge towards the successful integration and adoption of the OBP.

EBS Migration Project (Complete)

The value of our scheduling capability provided by EBS had significantly diminished in recent years, and the infrastructure investment required to sustain this capability outweighed the operational value it provided. BP2 funding enabled implementation of the necessary process transitions, disconnection of various interfaces, retiring EBS from operational use, and ultimately decommissioning it. This initiative prevented further investment in the system and reduced workload in the Control Room, streamlining our transition plans to the OBP.

Current State

We have successfully achieved all milestones for the 210-investment line's BP2 implementation. The enhancements made have resulted in improved asset health and performance, increased dispatch efficiency, enhanced control room functionality, and improved situational awareness

capabilities. Furthermore, we have worked significantly with the OBP team on integration activities to allow for the eventual migration of functionality from the BM to OBP.

Balancing Mechanism Asset Health

In BP2, we have successfully completed three major and two minor releases, delivering the following capabilities:

- **Release 3:** Asset health and performance improvements, control room functionality enhancements, and situational awareness improvements for the utilisation of bi-directional units. Additionally, fixes were implemented around bulk instruction and sending of reason codes.
- **Interim Release 4:** Asset health and performance improvements, including upgrades and security patches. Inertia data integration was carried out in preparation for the decommissioning of EBS.
- **Release 4:** Asset health and performance improvements, control room functionality enhancements, improved unit and constraint visibility and navigation, nuisance alarm resolution, and process automation. Interfaces between BM and OBP were established, changes to dispatch were made to enable the Balancing Reserve (BR) service, and processes were implemented in BM to support the decommissioning of EBS.
- **Interim Release 5:** Asset health and performance improvements, control room functionality enhancements, code and hardware performance improvements, final process changes for EBS decommissioning and further changes to support BR dispatch.
- **BM Release 5:** Asset health and performance improvements, control room functionality enhancements, dynamic response enhancements for disarming, Greenlink Interconnector integration, and Constraint Management Pathfinder pricing changes.
- **Interim Release 6:** Asset health and performance improvements, control room functionality enhancements including improvements to Dispatch Advice to create advice for the battery zone, which removes the need for manual process. Also, additional enhancements to OBP interfaces, providing additional data feeds to support OBP development.
- **Release 6 (Drops 1 & 2):** Asset health and performance improvements, control room functionality enhancements. New data feed for OBP.

EBS Migration Project

The EBS Migration project successfully completed the migration of all required functionality to the existing BM system or reverted to a fallback/pre-EBS method where appropriate. All EBS interfaces were identified and closed with the necessary controls.

Collaborating with Vodafone, we have successfully removed all hardware from our operational sites. Reusable hardware was removed and logged, while the remaining hardware was disposed

of or destroyed. The EBS project successfully delivered EBS decommissioning in Q3 FY 2024, as per our BP2 milestone.

Future State

As we continue to develop the Open Balancing Platform (OBP), we will concurrently maintain the current Balancing Mechanism (BM) platform. In line with the 180 Enhanced Balancing Capability investment milestones, discrete BM functions will be gradually replaced by OBP capabilities as they are developed. This transition will occur in multiple phases, and we will coordinate our efforts and align our plans accordingly.

To ensure efficient delivery of asset health, we will utilise agile requirements discovery, capture, and build methodologies whenever possible. Release management is implemented in phases, with sequential releases of capability to the control room. The BM Retirement strategy will be actively progressed and concluded with clear milestones. We will collaborate with all key stakeholders to ensure a well-defined path towards retirement, facilitating a smooth transition from the BM to OBP.

Roadmap

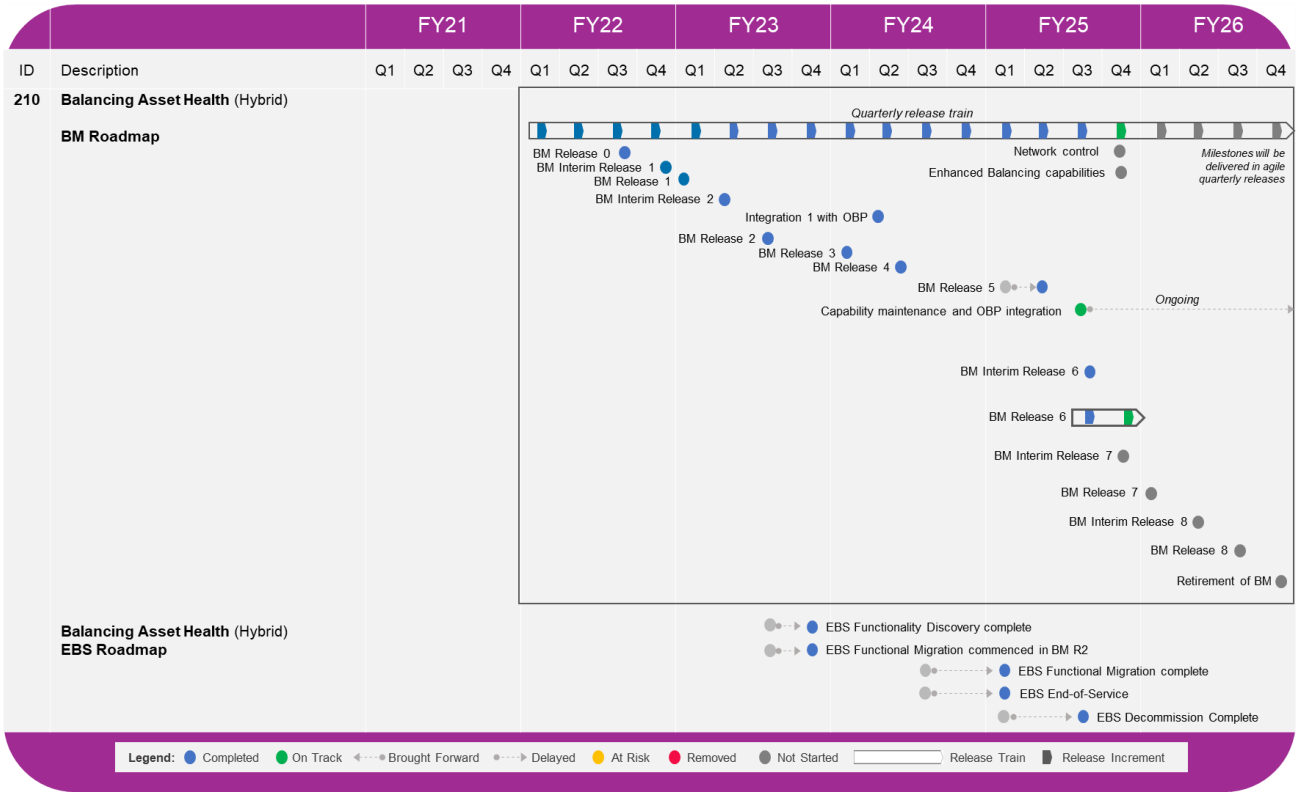


Figure 11 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	EBS Decommission Complete	Infrastructure decommission	Q3 FY 25
Milestone	BM Interim Release 6	Priority control room enhancements and priority asset health, performance and stability enhancements.	Q3 FY 25
Milestone **CR650**	BM Release 6 – To be delivered in Q3&Q4	Priority control room enhancements Priority asset health, performance and stability enhancements Continued OBP interface enhancements Generation data extracts for NCMS Look Ahead Analysis	Q3 FY25 Q4 FY25
Milestone	BM Interim Release 7 (Q4, FY25)	CLOGS window server and oracle upgrade Priority asset health, performance and stability enhancements Continued OBP interface enhancements	Q4 FY25
Milestone	Release 7 (Q1, FY26)	Priority asset health, performance and stability enhancements Continued OBP interface enhancements	Q1 FY 26
Milestone	BM Interim Release 8 (Q2, FY26)	Priority asset health, performance and stability enhancements Continued OBP interface enhancements	Q2 FY 26
Milestone	Release 8 (Q3, FY26)	Priority asset health, performance and stability enhancements Continued OBP interface enhancements	Q3 FY26
Milestone	Retirement of BM	Disconnection of the legacy balancing platform from the NESO network, end of support.	Q4 FY26
Feature	Continued OBP interface enhancements	New data feeds to aid the overall migration to OBP	Q3 FY 25 Q4 FY25
Feature	Generation data extracts for NCMS Look Ahead Analysis	Data extracts provided to Network Control Management System to support look ahead analysis as per investment line 110	Q3 FY25

Feature	OBP State of Charge Parameters for Storage	Integration of new parameters for limited duration assets as introduced by GC0166	Q3 FY25
Feature	Priority Asset Health, performance and stability enhancements	Already delivered as mentioned in the 'current state'	Q3 FY25
Feature	Priority control room enhancements	Reducing workarounds and improving dispatch efficiency	Q3 FY25
Feature	CLOGS window server and oracle upgrade	Server upgrades to maintain the Balancing Mechanism DR system	Q4 FY25

Table 33 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	20.8	4.1	24.9	17.1	7.8
OpEx	2.0	-	2.0	10.4	- 8.4
TotEx	22.8	4.1	26.9	27.5	- 0.6

Table 34 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolved or Refined scope since BP2	Data capacity increase	CAPEX	In order to continue running the BM servers we needed an additional hardware infrastructure upgrade that was not factored into the original BP2 forecast.	0.1m
Evolved or Refined scope since BP2	Delivery capability	CAPEX	To support the gradual transition to Balancing Transformation we incurred some cost to deliver and accommodate scope changes.	0.1m

Efficiencies	Cost efficiencies	CAPEX	Reduced spend relating to resource– we have been able to identify opportunities for resourcing efficiencies in some areas across the investment, reducing the actual costs compared with the original BP2 forecast.	-0.5m
Efficiencies	Cost efficiencies	OPEX	Due to the decommissioning of EBS, the resources allocated to EBS have been reallocated, resulting in lower costs for resourcing within this investment than forecast in BP2.	-0.2m
Efficiencies	Cost efficiencies	CAPEX	We have been able to identify better prices than provisioned for in the forecast for software licenses within the BM environment.	-0.1m
Costs Changes Since BP2				-0.6m

Table 35 - Investment cost change summary

3.10 Data and Analytics Platform (220)

Delivery Method	Strategic Priority Alignment
Scaled Agile	Digital Mindset

Investment Overview

The Data and Analytics Platform (DAP) equips NESO with the necessary tools to develop data products for analytics and insights. It ensures that relevant data within DAP is discoverable and accessible to both internal and external stakeholders. DAP enhances analytical capabilities essential for data-driven decision-making. The platform seamlessly integrates datasets and provides intuitive visualisations and actionable intelligence, enabling stakeholders to make well-informed decisions.

At the commencement of the BP2 period, our objective was to establish a robust platform that served as a repository for trusted, transparent, and high-quality data. This data can be modelled within our Advanced Analytics Environments (AAE) for comprehensive analysis. As we transition into the BP3 period, our emphasis will shift towards enhancing and expanding these platform capabilities to further democratise insights and propel NESO towards a digital future. This progression will enable us to make informed decisions, meet our clean energy objectives, and fulfil our broader organisational goals.

Current State

Over the course of the BP2 period, we have delivered against the priorities set out at the time of submission. We delivered replacement foundational capabilities for our legacy data systems, providing us with the capability to ingest data at pace which has enabled higher quality, greater capability, auditable data for analytics, insights and reporting. This will ultimately enable us to replace legacy data systems with strategic platforms in future. We have enhanced the platform with new capabilities, automated source to ingestion, ontology and semantics layer creating the pathways to increased pace of data ingestion and improved user interaction and experience DAP has enabled the development of a central capability that provides an advanced analytics environment. This environment has an established route to access data in the DAP lake house, whilst having all the tools required for data scientists to write Machine Learning models.

As part of this investment, we decentralised regulatory compliance reporting and drove the consistent use of Application Programme Interfaces (APIs) across our platform architecture, enabling us to access data in the DAP Lakehouse and drive analytics and reporting using visualisation tools, i.e. PowerBI. In response to our Open Data commitments, we will be replacing our existing capability with one in line with our enterprise data architecture, which will be enabled as we transition into NESO Azure tenancy during the late BP2 and early BP3 period.

In addition to delivering our foundational lake house capability we have matured our Data Historian strategy and roadmap. NESO currently utilises an ‘on-premises’ Data Historian (DH) to aggregate and manage time series data generated by our SCADA and Operational IT (OT) systems.

The current DH is reaching end of life and can no longer be supported or evolved to meet the changing needs of the business and the future expectations of storing, administering, and accessing data. Therefore, we will replace this existing DH with a new cloud-based system that will maintain our current capabilities while better aligning with our business strategy of providing time-series data to internal business users and external partners.

Public

Future State

We will continue to enhance and expand the platform capabilities, provide a seamless user interface and experience, enabling availability and accessibility to meet our organisational requirements. We will deliver outcomes that will create interoperable data between our strategic technology, complete the removal of legacy data applications and strengthen our analytical modelling and insight capabilities. In parallel we will deliver platform maintenance, self-serve consumption and continue our data ingestion work, increasing the volume of centralised data, encapsulating our data governance and management approach to ensure that DAP data is governed and compliant to NESO data policies.

Our new Time series Data Historian (TSDH) will connect, receive and ingest high-volume, real-time, time-series data in a performant way, and transfer this data to other downstream applications. Additionally, TSDH will have the ability to ingest, update and validate Common Information Model (CIM) data. The CIM data model provides a consolidated view of energy network infrastructure equipment (e.g. transformers, circuit breakers, wires and cables) and their connectivity allowing the model to be used in power system tools.

This will be underpinned by continuing to develop our DevSecOps maturity, which has already provided numerous transformative improvements through BP2 period.

Roadmap

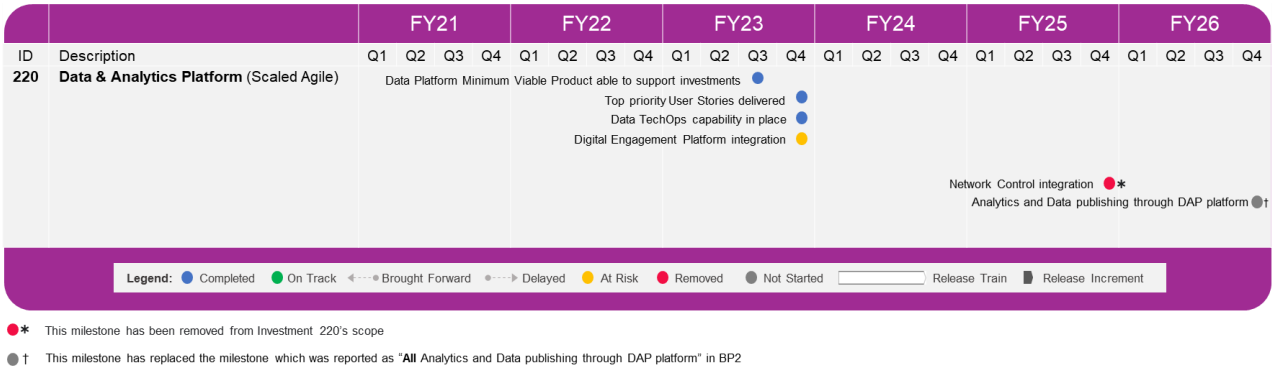


Figure 12 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	All Analytics & data publishing through DAP platform	Critical energy data which requires publication will be made available via the data portal. Critical energy data required for analytics by	Q4 FY26

		targeted teams will be added to DAP Lakehouse	
Feature **CR666**	DAP data and visualisations operator consoles and video walls	Initial integration with DAP which will ultimately feed data through to our operator consoles and video wall	Q3 FY25
Feature	Unified Network Model Access	There is a dependency on DAP to get access to unified network model/data strategy for modelling and NCMS data	Q4 FY25
Feature	Remediation of FES 39 EUDAs	Remediation of EUDAs and sharing the FES EUDAs source data (39s) for modelling to AAE	Q2 FY26
Feature **CR662**	Connecting people & data	Focus on connecting people with data & investing in data skills for our teams	Q4 FY26
Feature	Discoverable technology for internal & external stakeholders	Provide the technology underpinning the management of all our data, making it discoverable and accessible to internal and external stakeholders	Q4 FY26
Feature	Foundational Platform	Act as a foundational component for our target platforms architecture	Q4 FY26
Feature	Modelling Capability	Provide consistent services for our modelling and simulation capabilities	Q4 FY26
Feature	Open Balancing Platform (OBP) Integration	Follow up on current requirements for OBP and DAP integration	Q4 FY26
Feature	Provision of Data Analytics Capability	Provide analytical capability to deliver insights. This allows quicker, accurate operational	Q4 FY26

		decisions and gives our customers value added information	
Feature	Seamless architectural integration for new systems	Create a new architecture that allows new systems to be integrated seamlessly in a 'plug-and-play' or 'app-like' way. This allows our future system upgrades to flex as needed	Q4 FY26
Feature **CR395**	Replacement of legacy systems	Replace our data legacy systems and implement modern data services for ESO and external customer	Q4 FY26

Table 36 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	11.0	2.9	13.9	26.0	- 12.1
OpEx	13.5	5.8	19.3	3.9	15.4
TotEx	24.4	8.7	33.2	29.9	3.2

Table 37 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolved or refined scope since BP2	Enhancement of platform capabilities	Capex	The transition from ESO to NESO during the RIIO-2 period has resulted in increased modelling needs to fulfil the new NESO roles. To cater for this, the scope of this investment has evolved to include	2.0m

			enhancements to platform automation in the data engineering space. This enhanced scope has resulted in increased cost compared to the original BP2 forecast.	
New Scope	Additional high priority requirements	Capex	To fulfil NESO's remit, additional datasets will need ingesting to enable wider modelling needs than were forecast for the ESO remit at the start of BP2. As a result the actual cost of this investment increases to cover the additional requirements.	£1.2m
Cost Changes Since BP2				£3.2m

Table 38 - Investment cost change summary

Dependencies

There are a number of upstream and downstream dependencies for the Data and Analytics Platform (**220**) in line with the quarterly CMF Report that is shared with Ofgem.

3.11 ENCC Asset Health (240)

Delivery Method	Strategic Priority Alignment
Agile	Consumer Value

Investment Overview

This investment delivers operational systems stability to the Electricity National Control Room (ENCC) and maintains the health of our control room IT systems. We need to invest in maintaining our systems and communication links to handle unforeseen events and to ensure we continue to operate the system safely, economically, and efficiently. It is necessary to maintain the reliability and usability of these tools, and to keep them up to date to minimise cyber security risks. As the market and technology continues to evolve, we need to be able to respond to these changes quickly through the delivery of small operational enhancements.

Failure to undertake these types of investment would put at risk our capability to maintain electricity system security, and our ability to exchange real time data with other parties, along with increasing our cyber security risk and would leave operationally critical tools unsupported.

Current State

By March 2025 in BP2 we will have completed over 115+ small projects under the ENCC Asset Health investment line. These projects delivered the following:

- 40+ Market participant onboarding activities
- 25+ Cases of remedial actions to address issues with business supported applications and bespoke systems.
- 25+ Activities focusing on upgrading underpinning components of applications to ensure ongoing support.
- 25+ operational improvements through the deployment of small apps or hardware / software refreshes
- Delivering a solution to allow for the retirement of fax machine usage in the control room

We are continuing to develop, evolve, and prioritise a list of asset health needs which we will continue to mobilise on a quarterly basis. We have also replaced, upgraded, and taken maintenance actions for systems as required. We continue to plan and prepare tools to meet external demands, such as increased numbers of market participants or new performance reporting requirements. Ongoing general software and hardware patching maintenance continues to be delivered reducing security and technical debt risk.

BP1 & BP2 has proved that flexibility in delivery is important to maintaining and upgrading our ENCC systems. Through this investment and our strong understanding of ENCC Asset Health needs we can manage planned and priority requirements arising during BP3.

Future State

Over the course of BP3 we will continue to focus on the 4 key areas of this investment. Our tools needed to support ENCC activities will be patched, updated, and maintained. We will remediate any issues with these systems to protect the integrity and transparency of the service and data we provide. We will continue to have the capability to quickly implement small solutions and operational enhancements through our Rapid Development Team. We will continue to Connect new market participants electronically to our core platforms and systems.

Roadmap

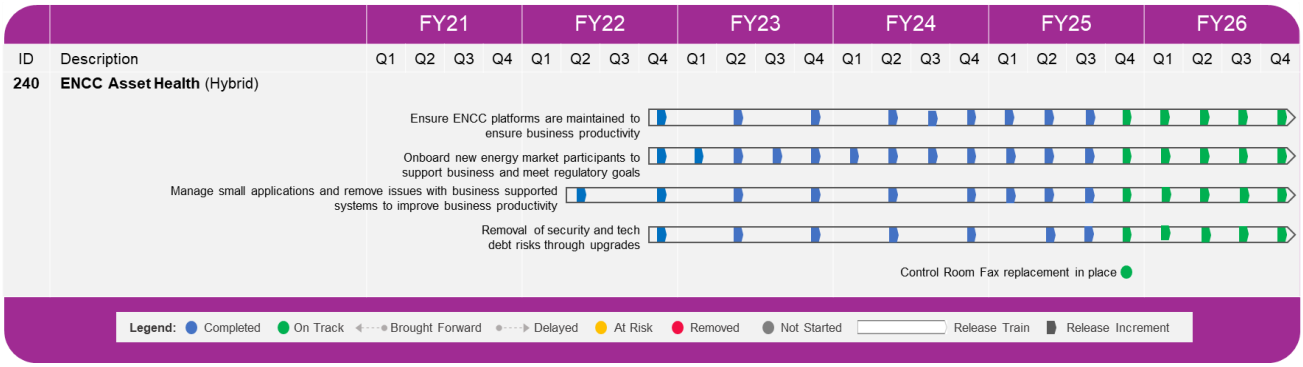


Figure 13 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Quarterly Release Train: Ensure ENCC platforms are maintained to ensure business productivity	Operational impacts from maintenance or end of life are minimised for systems outside of transformation investments.	Q3 FY25 Q4 FY25 Q1 FY26 Q2 FY26 Q3 FY26 Q4 FY26
Milestone	Quarterly Release Train: Onboard new energy market participants to support business and meet regulatory goals	New participants receive the correct levels of support and can technically connect to participate in our markets.	Q3 FY25 Q4 FY25 Q1 FY26 Q2 FY26

			Q3 FY26 Q4 FY26
Milestone	Quarterly Release Train: Manage small applications and remove issues with business supported systems to improve business productivity	Small business-built tools and information management sources can be correctly maintained ahead of ESO target architecture platforms implementation.	Q3 FY25 Q4 FY25 Q1 FY26 Q2 FY26 Q3 FY26 Q4 FY26
Milestone	Quarterly Release Train: Removal of security and tech debt risks through upgrades	Small business-built tools and information management sources can be correctly maintained ahead of ESO target architecture platforms implementation.	Q3 FY25 Q4 FY25 Q1 FY26 Q2 FY26 Q3 FY26 Q4 FY26
Milestone **CR 658**	Control Room Fax replacement in place	Provide a digital solution for the submission and retention of communications from external parties to the control room covered under the current Grid Code rules as requiring submission by Fax	Q4 FY25

Table 39 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	7.9	1.7	9.6	11.3	- 1.7
OpEx	2.3	0.5	2.9	2.9	0.0
TotEx	10.2	2.3	12.5	14.2	- 1.7

Table 40 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolved or refined scope since BP1	Change in scope	Capex	The financial projection is based on a model to provide general funding for the four key activities covered under this programme. The demand is variable based on the number of activities that can be undertaken in an annual period and subsequently the cost variance indicates a lower level of activities than the initial model projection.	-1.7m
Cost Changes Since BP2				-1.7m

Table 41 - Investment cost change summary

Dependencies

RDP Implementation and Extension (**340**) as reported through CMF.

3.12 Digital Engagement Platform (250)

Delivery Method	Strategic Priority Alignment
Agile DevSecOps	Customer Centricity and Digital Mindset

Investment Overview

This investment delivers engagement platform technology services to connect NESO with our customers.

Our Digital Engagement Platform (DEP) sits at the heart of our vision to provide a common engagement channel and great experience for everyone who engages with NESO. The DEP provides a single point of access to NESO systems and external-facing processes via the NESO website (NESO.energy). NESO.energy replaces the current nationalgrideso.com website and provides management capability for all internet facing channels of engagement. DEP also provides secure access to our customers via CIAM (Customer Identity and access management) and visualisation of open and subscribed content and data, compliant with data classification policies and standards.

As part of our vision, the DEP has enabled external customers and stakeholders to access NESO data and services in a simple, intuitive, predictable, personalised, and seamless manner, offering a frictionless user experience and making it easier to do business with the NESO. It serves as a "digital concierge" providing accessibility to our markets, data and new insights as well as enabling more engaging ways to collaborate and participate in our journey to net zero.

250 DEP is split into two key areas of delivery: Digital Experience Platform (DXP) and Customer Identity Access Management (CIAM). DEP has delivered functionality that enables single sign on security through Customer Identity and Access Management (CIAM) giving our end users a secure and intuitive journey. In addition, DXP (Digital Experience Platform) provides integration with several other platforms: Data Analytics platform (DAP), Single Markets Platform (SMP), Digitalised Code Management (DCM), Connections, Electricity Network Access Management System (ENAMS), Electricity Generator Availability and Margin Analysis (EGAMA), Planning and Outage Data Exchange (PODE) and Enduring Auction Capability (EAC). Integration with down-stream applications allows Customers access to a wealth of data and functionality via a single point of access, whether they are businesses or every day individual users.

Current State

250 Digital Engagement Platform (DEP) is on track to deliver all direct BP2 milestones by Q4 FY25. This includes integration with a number of downstream applications including Single Markets platform (SMP), Connections, Enduring Auction Capability (EAC), Planning and Outage Data Exchange (PODE), Electricity Network Access Management System (ENAMS), Electricity Generator Availability and Margin Analysis (EGAMA) and Digitalised Code Management (DCM), as well as provision of authentication services (CIAM). DEP-DCM integration allows the end user to access the new digitalised Grid Code with enhanced searchability and GenAI navigation. During the BP2 timeframes, DEP has deployed enhanced security monitoring and alerting technology for defacement and threat monitoring and alerting. DEP has also been fully rebranded including domain to reflect the change to National Energy System Operator (NESO).

The Digital Engagement Platform (DEP) to Data Analytics Platform (DAP) integration milestone was delivered via CKAN in FY24, however the replacement of the CKAN tool via DAP to provide the end user with access to the Single Source of Data for NESO and analytical capability is a DAP milestone that will be included in BP3. DEP is due to deliver its final milestones on the 31st of March 2025. These will include CIAM to Electricity Markets Reform (EMR) integration which will ensure secure authentication and access for users to the EMR platform.

Future State

In BP3, we aim to re-imagine our Digital Experience platform to reflect NESO as an independent organisation and in alignment with our customer strategy that encompasses customer operation, customer engagement and customer management. BP3 will cover the

implementation of enhancements for the website to improve the end user experience, whilst continuing to support business as usual activities in the 250 DEP Enhancements initiative. Please see Part 5 (Enhancement section) see details on 250 DEP initiative. Enhancements initiative, however for completeness these include:

- Design and content review and refresh of NESO.energy.
- Enhancements to the Search Capability.
- Open data (integration with DAP and new GIS capability)
- MyNESO account management enhancements
- Interactive content – Balancing the Grid Game development and support.
- Targeted campaigns through automation

Roadmap

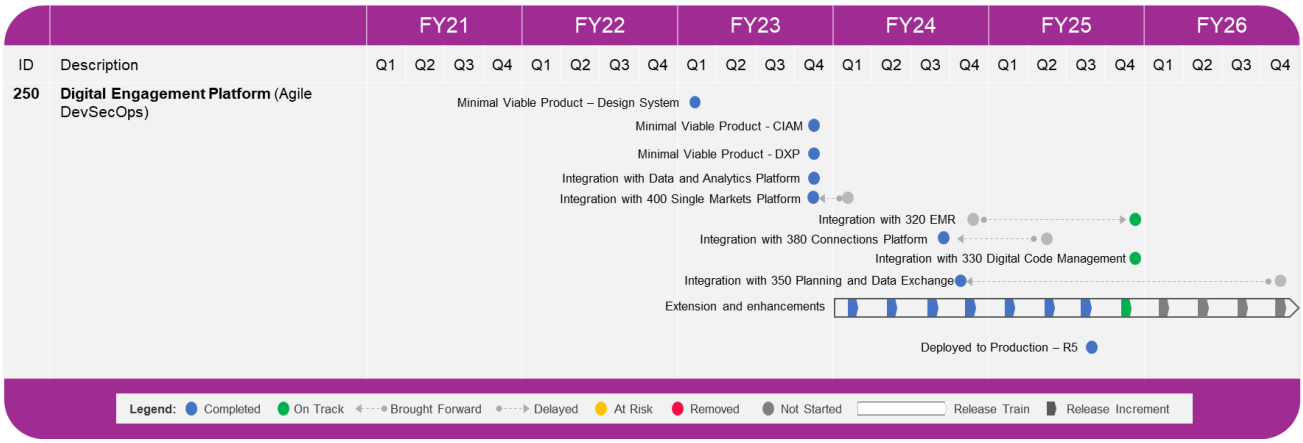


Figure 14 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	FSO: Deployed to Production – R5	Rebranding in line with NESO, new content and new Help centre capability	Q3 FY25
Milestone	Integration with 320 EMR	CIAM integration with EMR to provide secure authentication and access for users to the EMR platform.	Q4 FY25
Milestone	Integration with 330 Digital Code Management	To allow the end user to access the new digitalised Grid Code with enhanced	Q4 FY25

		searchability and GenAI navigation.	
Milestone	Quarterly Release Train DEP Extension and Enhancements	Incremental delivery of features and enhancements as listed here.	Q3 FY25 Q4 FY25
Feature – CR 659 raised to move to BP3	DEP – CKAN Dependency Removal	CKAN DEP Dependency removal and directly getting data from DAP than CKAN	Moved to BP3
Feature	DXP Customer Support – Help Centre	Consolidated searchable help centre on EDO website	Q3 FY25
Feature	Enhance Data Visualisation	Data visualisation to be made consistent as other website style and to be improved	Q3 FY25
Feature	Site Search	This epic implements the website search and integrates data portal search into it	Q3 FY25
Feature from PMO Master list	CIAM EMR Integration	Integration with the EMR to ensure single sign on with multi-factor authentication for all salesforce platform application including PODE	Q4 FY25
Feature from PMO Master list	Digital Code Management	Integration with Digital Code Management. End user to have access to the new digitalised Grid Code with enhanced searchability and navigation	Q4 FY25
Feature from PMO Master list	DXP Customer Support – query management	Customers can raise and track queries from DXP user account. Integration with Salesforce and business process improvements to case management	Q4 FY25

Table 42 - Outcome summary descriptions

Costs

Note: DEP is forecasting to deliver in line with BP2 sanction values. However, at the time of presenting the finance table, there were outstanding reimbursements to the programme which have displayed as a variance in the following table and were awaiting transfer. These transfers have now taken place, there are no dependencies on other programmes and the variance TotEx is now zero Details below.

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	10.1	-	10.1	9.7	0.4
OpEx	1.8	-	1.8	1.7	0.2
TotEx	11.9	-	11.9	11.4	0.6

Table 43 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolving or redefined scope since BP2	Scope	Totex	FSO rebranding - **Transferred November 2024**	0.4m
Evolving or redefined scope since BP2	Support	RTB	RTB costs Licensing and support costs – **Transferred November 2024**	0.1m
Evolving or redefined scope since BP2	Scope	Totex	Other Project charges – incurred cost for PODE, Help Centre, Palentir – **Transferred November 2024**	0.1m
Cost Changes Since BP2				£0 (see note above)

Table 44 - Investment cost change summary

3.13 Forecasting Enhancements (260)

Delivery Method	Strategic Priority Alignment
Agile	Consumer Value, Clean Power, Decarbonised Future, Digital Mindset

Investment Overview

The Forecasting Enhancements investment aims to improve our Energy Forecasting capability, which is essential for achieving clean power, decarbonised energy, and net zero grid operations. This investment focuses on accurate, frequent, and granular forecasts delivered in a timely manner enabling informed balancing decisions, reducing uncertainty, more economic dispatch, and reduced balancing costs. The forecast models will be optimised to meet the needs of future balancing products and services.

Current State

Since the last BP2 submission, the Forecasting Enhancements investment has undertaken a strategic review of our forecasting estate and has implemented new Platform for Energy Forecasting (PEF) design principles. These principles enable the eventual reduction of technical debt by de-coupling from legacy Energy Forecasting System (EFS) and the Operational Platform for Energy Forecasting (Operational PEF). Incremental improvements and new features have been delivered, enhancing the forecasting products. Furthermore, the establishment of the strategic Azure platform has been completed, and the migration of models onto this platform has begun. This migration allows for the realisation of associated benefits, such as improved performance, scalability, and integration capabilities. The investment will deliver enhanced forecasting capabilities and drive value for customers.

The Forecasting Enhancements investment has achieved the following outcomes:

- Incremental Improvements and New Features: Enhancement of the performance metrics for Wind Power generation forecasts. This enhancement has resulted in improved forecasting quality across all timescales, providing more accurate and reliable forecasts.
- Strategic Cloud Platform: Established a fully supported strategic cloud platform. This transition has decreased reliance on the Legacy Energy Forecasting Systems (EFS) for wind forecasting, ensuring a more efficient, reliable, and resilient forecasting system.
- Additional Data Sources: Enhanced forecasting performance incorporated additional data sources into our wind forecasting models. These new data sources compared to limited data sources on legacy EFS have provided valuable insights and improved the accuracy of our wind forecasts.

- Frequent and Granular Forecasting: Provided frequent (hourly updates) and granular (half-hourly resolutions) forecasts ranging up to 14 days ahead timescales for Wind. This has enabled better planning and decision-making for balancing operations.
- Automated Processes: Implementation of automated processes (Including outage data as part of our strategic platform and programmatically retraining the models with historic data rather than manually retraining them like we do in OCI) have reduced manual workarounds in the energy forecasting team. This has streamlined operations, improved efficiency, and enabled better utilisation of resources.

Future State

During BP3 period we will continue and complete the following deliverables that were committed to at BP2 submission. Continuous improvement of existing forecasting capability providing more accurate and reliable forecasts. Remove the dependency of critical downstream systems on EFS and decommission EFS.

- Integration with Data Analytics Platform (DAP) AAE.
- Migration of GSP, National demand and Solar models onto strategic Platform.

Roadmap

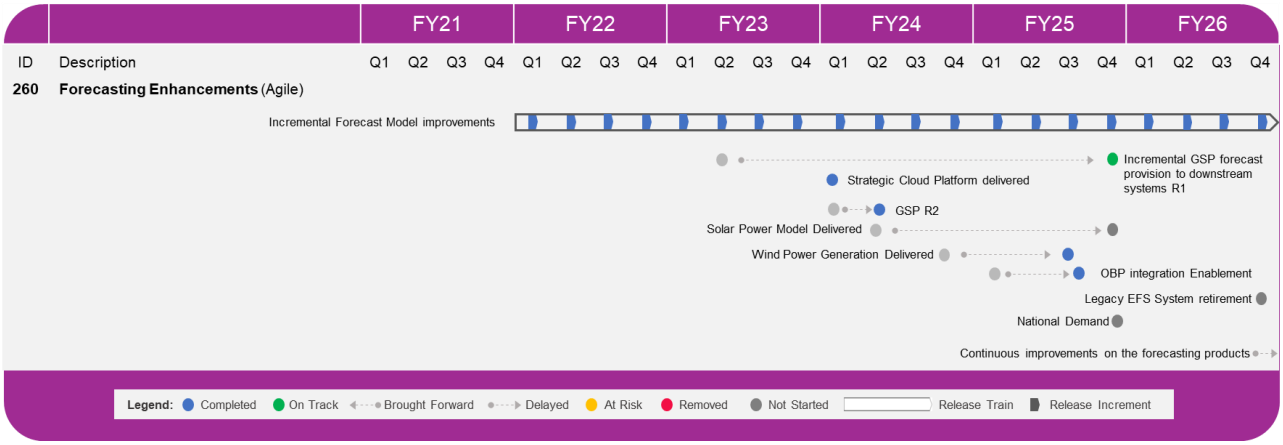


Figure 15 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	National Demand	Implementation of National Demand product on the strategic platform	Q4 FY25
Milestone	Solar Power Model Delivered	Implementation of solar power product on the strategic platform	Q4 FY25

Milestone	Legacy EFS system retirement	Removal of legacy forecasting solution, reducing technical debt and Run the Business (RTB) costs	Q4 FY 26
Milestone	Continuous improvements on the forecasting products	Continued improved accuracy of forecasts and adoption of digital mindset including analysis and diagnostic tools for forecasting, data driven improvements.	Q4 FY 27

Table 45 - Outcome summary descriptions

Costs

We are currently on target against our spend committed at BP2 and are on target to spend the remaining budget to deliver the remaining milestones. While the project is on target against BP2 estimates as of BP3 Submission (Q2 FY25), as we go through the BP3 period we will continue to refine the team size which may result in some forecast vs actuals variance which would be reported through the CMF). This is particularly relevant as we prepare ourselves for the next phase of the project.

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	11.2	2.2	13.4	13.0	0.4
OpEx	- 0.0	-	- 0.0	0.4	- 0.5
TotEx	11.1	2.2	13.4	13.4	- 0.0

Table 46 - Investment cost summary

Dependencies

Downstream: Enhanced Balancing Capability (**180**) - receiving forecasting data from PEF and dependent on the completion of forecasting models.

3.14 Role in Europe (270)

Delivery Method	Strategic Priority Alignment
Agile	Decarbonised Energy

Investment Overview

This investment enables us to deliver regulatory change arising from our Trade and Cooperation Agreement (TCA) obligations. With the UK leaving the European Union (EU) and European Network of Transmission System Operators for Electricity (ENTSO-E), our relationship with our European counterparts has fundamentally changed. The Trade and Cooperation Agreement (TCA) now provides the framework governing our future energy trading relationship with Europe.

This investment includes the resource required to support options development, planning, design, and implementation of solutions for:

- Funding for initiatives that enable future integration and collaboration with European Transmission System Operators (TSOs) and European Network of Transmission System Operators for Electricity (ENTSO-E) such as Physical Communications Network (PCN).
- Maintenance of current Regional Security Coordination (RSC) services to maintain security and adequacy reporting plus enable options for coordinated capacity calculation.

The Role in Europe (RiE) investment has the potential to interact with various investments across the entire IT portfolio, including but not limited to **110** Network Control, **120** Interconnectors, **180** Enhanced Balancing Capability, **350** Planning and Data Outage Exchange, **610** Settlements, Charging and Billing. These interactions are managed through early engagement with each investment area as the regulatory requirements and its impact become clearer.

During BP3 we will consolidate our regulatory investments by combining Role in Europe (RiE) (270) with GB Regulations (280); a change that will reduce management overheads, administration costs and reflects the cessation of European-initiated change. Regulatory changes affecting the NESO Settlements and Charging system are captured under investment **610,** Settlements, Charging and Billing. Any regulatory changes affecting the Open Balancing Platform (OBP) will be funded by **180**, Enhanced Balancing Capability.

Current State

Over the BP2 period, we have continued to manage the backlog of regulatory change, helping to ensure NESO remains compliant to regulatory requirements and avoids fines and reputational damage. The backlog process includes high-level 'discovery' analysis carried out as early as possible during the consultation process for a proposed modification or regulation. The discovery documents are refined to provide indicative delivery timescales helping us to understand

potential IT implications and assist discussions with the working group and/or regulator during the code modification process.

If required, this is followed by a more detailed impact assessment. This impact assessment is completed when there is an expectation that the proposed regulatory change is likely to result in implementation or where industry requires this more detailed assessment for making a decision. It provides the business with a high-level solution design for the modification and associated costs to deliver the change. This information helps inform the regulator's decision and the associated cost/benefit. It also significantly reduces project start-up time if/when a proposal is approved.

This work is done in partnership with our Market Frameworks team, and it provides a better understanding of any proposed regulatory change early-on in its lifecycle. It is a key role in facilitating externally and internally driven change. Spend in these areas – particularly in Discovery – is a key enabler for the market. Examples of RiE regulatory and market driven regulatory change delivered over BP2 included:

- Continued implementation of the Physical Communications Network (PCN) - a secure wide-area communications network used to exchange data securely between European TSOs and RSCs. This network has gone live, but work will continue into BP3 (see Future state section).
- Maintenance of Regional Security Coordination (RSC) services.

The RiE Regulatory Team also conducted discovery activity and/or impact assessments for regulatory proposals including:

- Cross Border Balancing interim and enduring solutions.
- Cross Border Capacity Management technical procedure across all relevant timescales.
- Various Clean Energy Package (CEP) Articles produced under the European Union (EU) policy framework and subsequently written into GB law; CEP 6.4, CEP 6.9 MFR and CEP 6.5.

Future State

During the BP3 period and beyond, we expect new European-initiated regulatory changes to slow further or cease entirely and be replaced by GB Regulations and the Trade and Cooperation Agreement (TCA).

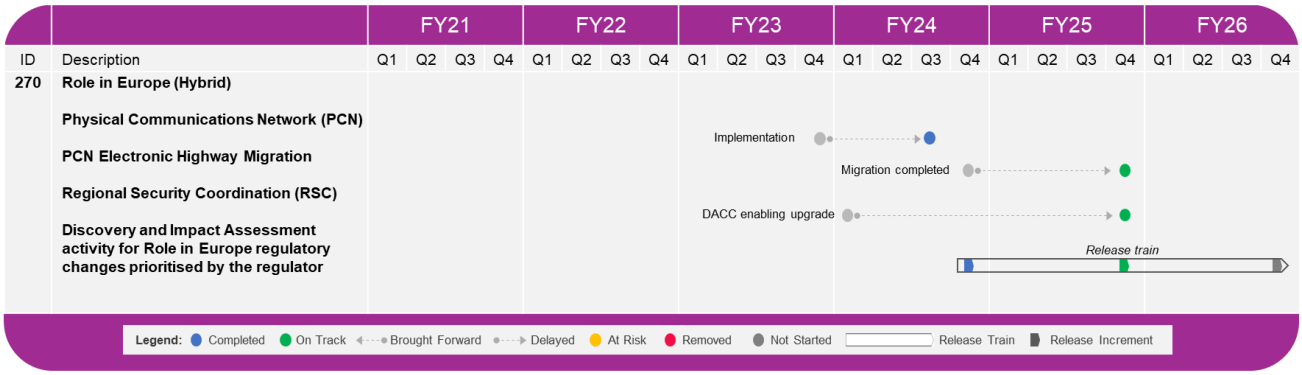
We expect to continue the implementation of the following projects under the newly merged Regulatory Investment:

- Continued implementation of PCN, enabling NESO to continue to exchange data securely with our TSO partners, including the implementation of the satellite-based out-of-band service to make the PCN based exchanges more resilient.
- Maintenance of current Regional Security Coordination (RSC) services integration to enable future TCA compliance for coordinated capacity calculation.

This will help ensure NESOs continued compliance with legal obligations arising from TCA, Memorandum of Understanding and Multi-Lateral Agreements.

At this point in time our assumption is that Clean Energy Package (CEP) Articles (6.4, 6.5 and 6.9 MFR), GC0154 System Operator Guidelines (SOGL), Cross Border Balancing interim and enduring solutions and Cross Border Capacity Management technical procedure across all relevant timescales, will remain on hold during BP3 and our forecasts have been adjusted to reflect this. Pass-through will be used to fund these or any other changes should they be required during BP3. During BP3 we will consolidate the regulatory investments by combining Role in Europe (RiE) (**270**) with GB Regulations (**280**).

Roadmap



The following milestones which were part of 270 Role in Europe in BP2 have been removed:

- Cross Border Balancing interim solution
- Cross Border Balancing enduring solution
- Day Ahead Capacity Calculation
- Intra-Day Capacity Calculation
- Forwards Capacity Calculation
- Clean Energy Package article 6
- SoGL 118/119 (GC0154)
- Remedial actions and RDCT

Figure 16 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Regional Security Coordination (RSC): DACC enabling update	Continued access to applicable RSC services and to enable options for coordinated capacity calculation.	Q4 FY25
Milestone	Annual Release Train: Discovery and Impact Assessment activity for Role in Europe regulatory	To be merged with GB Regulations (280) Release Train Milestones. This will ensure completion of the discovery and impact assessments to	Q4 FY25 Q4 FY26

	changes prioritised by the regulator	support the ongoing Ofgem regulatory code changes	
Milestone **CR661 approved**	PCN Electronic Highway migration completion	PCN supports compliance to TCA by providing NESO with the ability to securely connect to and transfer data between European partners.	Q1 FY26
Feature **CR661 approved**	Epic – Applications Migration to PCN	Migrate applications traffic from EH to PCN	Q1 FY26
Feature	Epic – Handover of RSC Services to BAU	OPDE Services and annual MVS Audits handover to BAU	Q4 FY25

Table 47 - Outcome summary descriptions

Costs

The approach to forecasting regulatory cost during BP3 has been refined since BP2 and reflects the lower than anticipated throughput of change and the associated underspend against approved spend.

The revised forecast assumptions for BP3 comprise the following three elements:

1. Costs for in-flight projects; RSC Services & PCN.
2. Estimated costs for projects we believe are highly likely to proceed during BP3
3. The cost of the Regulatory Team required to perform 'Discovery' and 'Assessment' activity throughout FY26.

Pass-through will be used to fund anything that is unplanned or unexpected.

Role in Europe (RiE) (**270**) costs will be merged with GB Regulation (**280**) and form one investment. Regulatory changes affecting the NESO Settlements and Charging system are captured under investment (**610**), Settlements, Charging and Billing. Any regulatory changes affecting the OBP will be funded by (**180**), Enhanced Balancing Capability.

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	6.0	2.9	8.9	16.6	- 7.7
OpEx	0.7	0.2	0.9	5.7	- 4.8
TotEx	6.8	1.5	8.3	22.3	- 14.0

Table 48 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolving or redefined scope since BP2	Scope	TotEx	The approach to forecasting regulatory cost has been refined in recent years and it now reflects the lower than anticipated throughput of change, for example the postponement of CEP Articles 6.4, 6.5 and 6.9MFR, hence the significant reduction in cost for BP2	-14.0m
Cost Changes Since BP2				-14.0m*

Table 49 - Investment cost change summary

** Underspend has been re-allocated to other DD&T investments, as outlined in the introduction section to this document.*

Dependencies

The Role in Europe (RiE) investment has the potential to interact with various investments across the entire IT portfolio, including but not limited to Network Control (**110**), Interconnectors (**120**), Enhanced Balancing Capability (**180**), Planning and Data Outage Exchange (**350**), Settlements, Charging and Billing (**610**).

3.15 GB Regulations (280)

Delivery Method	Strategic Priority Alignment
Agile	Clean Power

Investment Overview

This investment enables us to deliver regulatory change arising from our GB regulatory obligations. We anticipate that over the BP3 period the volume of GB regulatory driven change will increase, underpinned by the NESO and Energy Industry's drive to reform markets and to support the UK government's commitment to a fully decarbonised power system. We anticipate Ofgem will request system changes relating to GB Grid Code, Balancing and Settlement Code, Connection and Use of Systems Code.

During BP3 we will consolidate our regulatory investments by combining GB Regulations (280) with Role in Europe (RiE) (**270**), a change that will provide efficiencies, reduce costs and management overhead and reflects the cessation of European-initiated change. Regulatory changes affecting the NESO Settlements and Charging system are captured under investment **610**, Settlements, Charging and Billing. Any regulatory changes affecting the Open Balancing Platform (OBP) will be funded by **180**, Enhanced Balancing Capability.

Current State

Over the BP2 period, we have continued to manage the backlog of regulatory change, helping to ensure NESO remains compliant to regulatory requirements and avoids fines and reputational damage. The backlog process includes high-level 'discovery' analysis carried out as early as possible during the consultation process for a proposed modification or regulation. The discovery documents are refined to provide indicative delivery timescales helping us to understand potential IT implications and assist discussions with the working group and/or regulator during the code modification process.

This is followed by a more detailed impact assessment if it is required. This impact assessment is completed when there is an expectation that the proposed regulatory change is likely to result in implementation or where industry require this more detailed assessment for making a decision. It provides the business with a high-level solution design for the modification and associated costs to deliver the change. This information helps inform the regulator's decision and the associated cost/benefit. It also significantly reduces project start-up time if/when a proposal is approved.

This work is done in partnership with our Market Frameworks team, and it provides a better understanding of any proposed regulatory change early-on in its lifecycle. It is a key role in facilitating externally and internally driven change. Spend in these areas – particularly in Discovery – is a key enabler for the market.

Examples of GB Regulatory and market driven regulatory change delivered over BP2 included:

- Implementation of changes associated with P376 'Utilising a Baselining Methodology to set Physical Notifications'
- Implementation of GC0109: Publication of the various GB electricity Warnings, Notices, Alerts, Declarations, Instructions or Directions etc.
- Implementation of Issue 95 'Assessing the continued use of TIBCO (The Information Bus Company) service as a source of data for market participants'.
- Planning, design and start of development in support of Market Wide Half Hour Settlement (MHHS) Programme.

The GB Regulatory Team also conducted discovery activity and/or impact assessments for regulatory proposals including:

- Various Balancing and Settlement Code (BSC) proposals
- Numerous Grid Code (GC) changes,
- Issue 95 and Issue 92
- Market Wide Half Hour Settlement (MHHS)
- Offshore Coordination
- Net Zero Market Reform (including Locational Marginal Pricing) (REMA)
- TNUoS task force
- The assessment of c40 Connection and Use of System Code (CUSC) modifications.

Further details of these proposals are available publicly. We will continue to evolve the process of regulatory change discovery and impact assessment, and team over the BP3 period, enabling regulatory change representation during design and backlog prioritisation, reducing potential rework and cost as the regulatory changes have been considered early in the product roadmap.

Future State

During the BP3 period and beyond, we expect GB regulatory changes resulting from:

- Industry wide, transformation initiatives such as Market Wide Half Hour Settlement (MHHS) – changes to the settlement periods and billing changes. It is also likely changes to reporting and forecasting platforms will be required. Funding for this follow-on activity has been included in the MHHS forecast though the implementation might be managed by different investments.
- Ad-hoc, industry participant led initiatives:
    - Begin the implementation of GC0117: Improving transparency and consistency of access arrangements across GB by the creation of a pan-GB commonality of PGM requirements.

- Periodic changes to settlement files to support Elexon and remain compliant.

The investment line will also continue to support our Market Frameworks team with discovery and impact assessment as-and-when required, thereby helping to ensure NESO remains compliant to regulatory requirements and avoid fines and reputational damage.

Most of the regulatory changes outlined in the plan are in discussion with industry and Ofgem. We have based this investment on assumptions relating to the potential solutions for each regulatory change, using the best information available at the time of writing. Consequently, depending on the nature of the change, implementation costs may increase or decrease over the BP3 period. During BP3 we will consolidate the regulatory investments by combining GB Regulations (280) with Role in Europe (RiE) (270).

Roadmap

Ofgem Milestones for delivery are confirmed once a project has been mobilised and it has proceeded through our start-up stage. Existing GB Regulation Milestones will be merged with Role in Europe (RiE) (270) to form one investment.

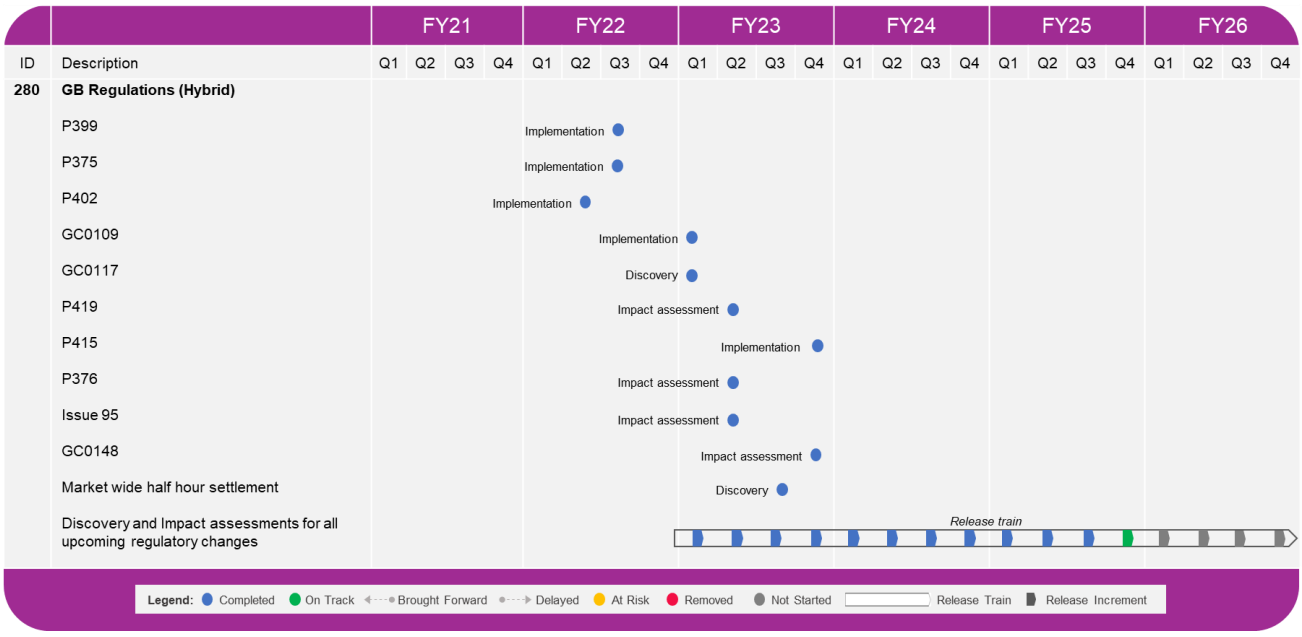


Figure 17 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Quarterly Release Train: Q1 - Q4FY26 Discovery and Impact assessment activity for	Completion of the discovery and impact assessments to support the ongoing Ofgem regulatory code changes	Q3 FY25 Q4 FY25 Q1/FY26

	regulatory changes prioritised by industry workgroups and Ofgem	Q2/FY26 Q3/FY26 Q4/FY26

Table 50 - Outcome summary descriptions

Please note: Milestone changes for Market Wide Half Hour Settlement (MHHS) were approved by Ofgem (MHHS Programme CR55) on the 29th of November 2024. New MHHS milestones will soon be added.

Costs

The approach to forecasting regulatory cost during BP3 has been refined since BP2 and reflects the lower than anticipated throughput of change and underspend against approved spend.

The revised forecast assumptions for BP3 comprise the following three elements:

- Costs for in-flight projects, like Market Wide Half Hour Settlement (MHHS),
- Estimated costs for projects we believe are highly likely to proceed during BP3, i.e., an allowance for GC0117 and for minor industry changes, such as upgrades to settlement files.
- The cost of the regulatory team required to perform 'Discovery' and 'Assessment' activity throughout FY26.

Additionally, the following assumptions have also been made when producing this BP3 forecast:

- Costs for unknown changes, contingency funding, and costs for known changes that we believe are less likely to proceed, have all been removed from the BP3 forecasts.
- Pass-through will be used to fund any other unconfirmed or unknown changes.
- Funding for discovery and assessment activity in support of Net Zero Market reform (REMA) will transfer to Investment **810** during BP3.
- Regulatory changes affecting the Settlements and Charging system are captured under investment **610**, Settlements, Charging and Billing (including STAR costs for GC0117 and CUSC changes).
- All regulatory changes affecting the Open Balancing Platform (OBP) will be funded by **180**, Enhanced Balancing Capability (including OBP costs for GC0117).

GB Regulation (**280**) costs will be merged with Role in Europe (RiE) (**270**) and form one investment.

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	2.9	3.4	6.4	13.0	- 6.6
OpEx	2.9	1.0	3.9	6.4	- 2.5
TotEx	5.8	1.9	7.7	19.4	- 11.7

Table 51 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolving or redefined scope since BP2	Scope	TotEx	The approach to forecasting regulatory cost has been refined in recent years and it now reflects the lower than anticipated throughput of change, for example Ofgem's postponement of GC0117 and lower than expected spend on MHHS.	-11.7m
Cost Changes Since BP2				-11.7m*

Table 52 - Investment cost change summary

** Underspend has been re-allocated to other DD&T investments, as outlined in the introduction section to this document.*

3.16 EMR and CfD Improvements (320)

Delivery Method	Strategic Priority Alignment
Agile	Customer Centricity and Consumer Value

Investment Overview

This investment aimed to deliver a new platform for Electricity Market Reform (EMR) to enhance EMR customer experience, enabling increased market participation and deliver future regulatory change at pace and cost-effectively. The new platform was to be completed by the end of the BP1 period covering capabilities required for both the Capacity Market (CM) and Contracts for Difference (CfD) schemes. However, due to internal and external factors, we experienced delays. Having consulted the industry, Ofgem and DESNZ, we co-created a new roadmap for the CM scheme which was to deliver the Minimum Viable Product (MVP) by FY25 Q1. CfD replacement was de-scoped in light of the high level of uncertainty driven by the ongoing DESNZ led REMA (Review of Electricity Market Reform) workstream. As part of the reworked roadmap, it was agreed that after CM MVP release quarterly releases would be delivered comprising of continuous improvement based on stakeholder feedback and regulatory changes. CfD is still being maintained on the legacy EMR portal, with the delivery of regulatory changes for upcoming allocation rounds.

The New EMR Portal was fully launched in June 2024, comprising of the MVP delivery, to enable industry use for the Capacity Market scheme, including 2024 pre-qualification, auction readiness and agreement management processes.

Current State

The remainder of FY25 is focused on the adoption and stabilisation of the new EMR portal, through the first annual cycle of use, for the Capacity Market scheme. Continued engagement with our customers has allowed us to collate key feedback to shape and prioritise the backlog further. This engagement loop has resulted in the backlog significantly increasing, as well as shifting the delivery timeline of items, due to the prioritisation. Our key continuous improvement deliveries in the remainder of FY25 are based on customer feedback following the launch, which are the single user id to access multiple company portfolios. This will result in a reduced number of user accounts for individual customers to manage their companies more efficiently across multiple portfolios, as well as remove the current manual workarounds managed by the delivery body. This is an enabler for CIAM (Customer Identity and Access Management) which will allow customers to access multiple NESO applications via a single profile. The introduction of CMU and applications validations could enable increased quality of application submissions and a reduction in rejected applications and disputes as part of the prequalification process.

To enable the successful delivery of CfD AR7 (Allocation Round), regulatory changes are being scoped to deliver in the legacy EMR portal as the CfD replacement has been descoped within the BP2 period. The replacement solution for EMR Capacity Market (CM) Auction capabilities will be delivered by "420 - Auction capability" investment.

Future State

The early assessment from the ongoing Ofgem and DESNZ consultations and the inputs from the newly formed Capacity Market Advisory Group (CMAG) indicates that a higher volume of regulatory change is anticipated during BP3 and beyond. In addition, there is a significant amount of work required to re-integrate the partially developed regulatory changes that were not laid in parliament, due to the general election in FY25.

Given the current backlog volume for continuous improvements related to customer and operational efficiencies, as well as the anticipated regulatory changes, NESO intends to find efficiencies to deliver as many of the continuous improvements as possible while delivering the large amounts of regulatory commitments. The delivery outcomes are dependent on the OFGEM and DESNZ consultations.

Roadmap

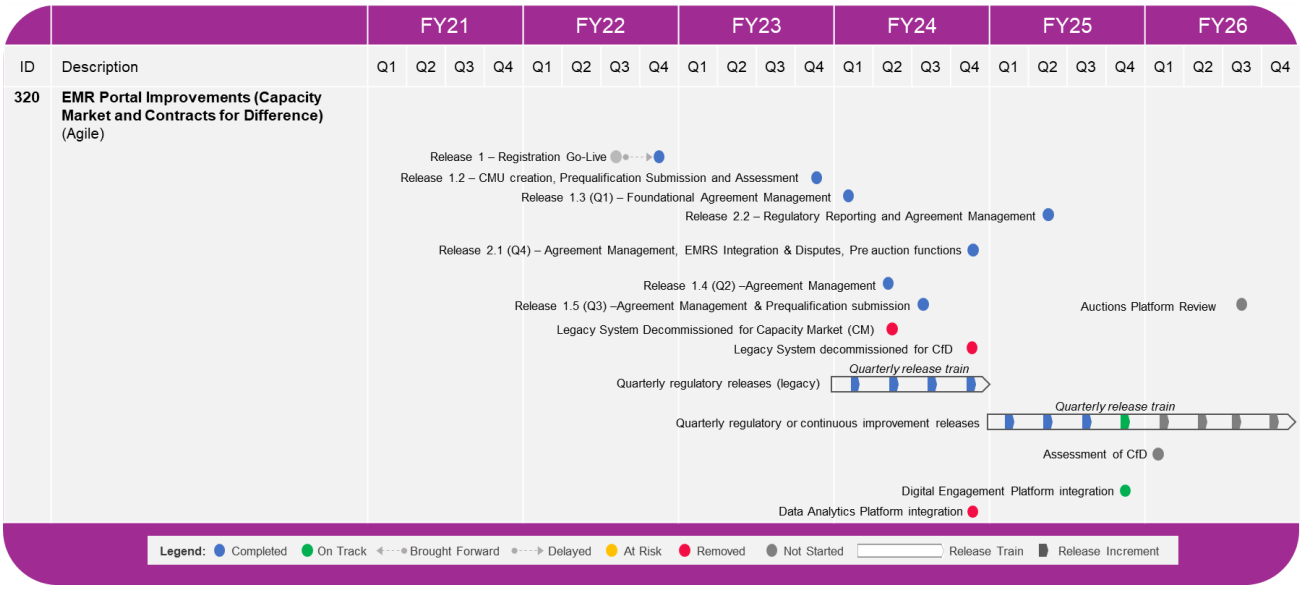


Figure 18 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Quarterly Regulatory or continuous	Deliver required regulatory change or continuous improvement, which is created and prioritised via engagement	Q3 FY25 Q4 FY25 Q1 FY26

	improvement release	with stakeholders across industry, including the Capacity Market User Group, ensuring regulatory compliance, operational effectiveness and maintaining a mature level of technology health.	Q2 FY26 Q3 FY26 Q4 FY26
Milestone	Digital Engagement Platform Integration	To enable a seamless ESO user experience for customers and delivery partner(s)	Q4 FY25
Milestone	Assessment of CFD	Assessment of CFD- Provides enhanced capability and an improved experience for EMR Business Unit, Customer and Delivery Partner users to manage CfD related activities.	Q1 FY26
Milestone	Auctions Platform Review	Review of capability and an improved experience for EMR Business Unit and customers to manage and track pre-auction activities also review any capability automated integration with the Power Auctions system to enable seamless transfer of data between the systems and reduce assurance overheads.	Q3 FY26
Feature	CMU, Component & application rule validation	- Capability for system to validate rules related to CMU, Component and Applications	Q4 FY25
Feature	Reports	Capability for the Delivery Body and registered Capacity Providers to generate and view specific reports	Q4 FY25

Table 53 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	25.1	3.5	28.6	21.0	7.6
OpEx	0.4	0.0	0.4	0.3	0.1
TotEx	25.5	3.6	29.0	21.3	7.7

Table 54 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolved or refined scope since BP2	Better understanding since BP2	Capex	The requirements for delivering this programme were more complex than initially expected. The complexity was significantly heightened due to the independent nature of processes within the scope. Low level dependencies, particularly on data, introduced unforeseen challenges and critical blockers to progress. Additional resources were required to deliver the work, resulting in a higher actual cost than forecast at the start of BP2.	7.6m
Evolved or refined scope since BP2	Better understanding since BP2	Opex	Additional training requirements and delivery times to deliver the more complex requirements.	0.1m
Cost Changes Since BP2				7.7m

Table 55 - Investment cost change summary

3.17 Digitalised Code Management (330)

Delivery Method	Strategic Priority Alignment
Agile DevSecOps	Digital Mindset

Investment Overview

This investment has delivered a Digital capability to make industry codes accessible and consumable for customers. We have enhanced the customer experience for the code management process through the digitalisation of codes away from PDF versions with manual workflow processes, delivering improved navigation capabilities and tooling, and greater clarity on relevant sections using metadata tagging, document and workflow management. Digitalising The Grid Code has provided a more streamlined, self-serve and user-friendly experience tailored to the diverse needs of our customers, especially as it is integrated seamlessly with the Digital Engagement Platform (DEP).

The benefits of digitalising code are:

- **Simplification:** a simpler whole system Grid Code which has decreased the time taken for important decisions throughout the connection journey.
- **Targeted Information:** Provides more customised information when needed, aiding new smaller entrants and supporting market innovation.
- **Efficiency:** New parties can deliver efficiencies and lower costs for consumers in the long term.

These enhancements have increased transparency and fostered collaboration between NESO and external stakeholders. Through Gen-AI integration, we have enabled a smarter way to explore the digitalised Grid Code. As part of NESO's commitment to transparency and innovation, the generative AI has enabled everyone across the industry to search the Grid Code effortlessly, helping navigate complex content with ease and empower everyone – from industry experts to new users.

This investment line interacts with 250 Digital Engagement Platform in the IT portfolio. Integration with DEP has enhanced the customer experience by providing easy access to The Grid Code via NESO.energy and an authentication service (CIAM) to support customer identification and ultimately provide tailored responses.

Current State

In BP2, The Grid Code was converted from a 1000 page PDF to a digitalised version with navigation and Glossary (Keyword, Alphabetic and Keyword Search, Expanded view of Glossary page) and integrated into the ESO Website (DEP/DCM Integration). End user Panels and Working groups were engaged and positive feedback was received. The digitalised version was rebranded to NESO and relaunched with GenAI capability in October 2024. Workflow Management capability is scheduled

for completion in March/April 2025, which will accelerate governance processes and provide resource efficiencies, ultimately leading to cost savings and an enhanced customer experience.

Future State

Digitalisation of the code benefits our stakeholders by simplifying the Grid Code, which in turn speeds up how important decisions are taken throughout the connection journey. It also provides more targeted information to customers, aids new smaller entrants and supports market innovation, delivering efficiencies and lower costs for consumers in the long term. DCM will conclude in BP2.

Roadmap

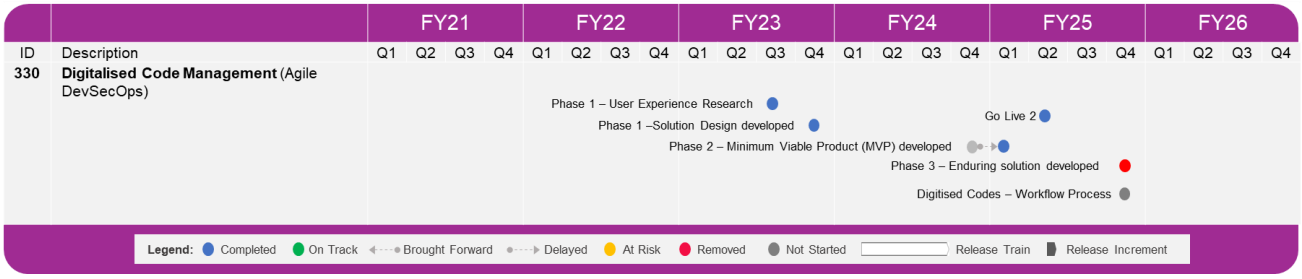


Figure 19 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Digitised Codes – Workflow Process	Workflow – delivery of a digitised workflow management process away from a manual email process	Q4 FY25

Table 56 - Outcome summary descriptions

Costs

DCM is forecasting to deliver in line with BP2 sanction values. However, at the time of presenting the finance table, there was an outstanding reimbursement to the programme which is displayed as a variance in the following table and was awaiting transfer. These transfers have now taken place, there are no dependencies on other programmes and the variance TotEx is now zero. Details below.

There is also a likelihood of overspend in Q4 FY25 due to the complexity of delivery of workflow management, as referenced by the milestone above. Forecasts will be updated and provided in the next CMF report.

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	2.2	-	2.2	1.7	0.5
OpEx	0.6	-	0.6	1.0	- 0.4
TotEx	2.8	-	2.8	2.7	0.1

Table 57 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolving or redefined scope since BP2	Scope	TotEx	Overspend due to requirement for Fixed Price contract with associated allocation of risk.	0.06m
Evolving or redefined scope since BP2	Scope	TotEx	FSO rebranding – **Transferred November 2024.**	0.04m
Cost Changes Since BP2				0.1m

Table 58 - Investment cost change summary

3.18 RDP Implementation & Extension (340)

Delivery Method	Strategic Priority Alignment
Agile	Clean Power

Investment Overview

This investment plans to deliver our NESO technology capability to support net zero operations for electricity transmission and distribution networks. We plan to implement an integrated data exchange and situational awareness capability with Distribution Network Operators (DNOs) and Distribution System Operators (DSOs), enabling coordinated access to Distributed Energy Resources (DER) and management of service conflicts, via extension of regional development programmes (RDPs).

As the number of service providers embedded in the distribution networks increases, this can create more issues at the transmission/distribution interface. This in turn can delay the connection of DER to the network. The proposed approach allows RDPs to be developed in response to specific network issues as they arise. Greater control room interaction and sharing of information with Transmission Owners (TOs), DNOs and DSOs is required to enable operation across boundaries and understanding of the impacts of actions on other parties.

We are aligning to the Energy Data Taskforce (EDTF) key finding in operational optimisation, enabling operational data to support system optimisation, and facilitating network access at all levels across the system. It is expected that this investment will inform elements of the cross-role activity 650 Accelerating Whole Electricity Flexibility (AWEF) including delivery of GB wide service co-ordination and DER visibility. The RDP investment will continue to deliver whole electricity system regional solutions at the Transmission-Distribution interface, based on the applicable operability needs case.

Current State

During the BP2 period we have delivered several initiatives to allow connection of DER and manage network constraints. This has resulted in the availability of more zero carbon generation and a reduction in constraint costs. The N-3 intertripping for UK Power Networks (UKPN), National Grid Electricity Distribution (NGED) and Scottish and Southern Electricity Networks (SSEN) has been delivered. N-3 intertripping is a capability that has been introduced to ensure that the transmission network remains operable during an N-3 event, which is defined as a post fault scenario of a planned transmission outage (N-1) followed by a double circuit fault (N-3).

Through MegaWatt (MW) Dispatch we have provided the Electricity National Control Centre (ENCC) with the ability to manually select and directly instruct DERs to manage thermal boundary constraints. This instruction is facilitated through the connection of NESO's Ancillary Service Dispatch Platform (ASDP) and the DNO's Distributed Energy Resource Management System (DERMS). During BP2 we engaged with Ofgem and agreed to discontinue the Generation Export Management System (GEMS) project under this investment. It was agreed with Scottish

Power Transmission (SPT) that investment 180 Enhanced Balancing Capability would be best placed to achieve the original intention of GEMS dispatch automation.

Future State

Through continuous review and refinement, we have scoped the remaining phases of RDP with a focus on achieving the following:

- MW Dispatch (MWD) Enhancements will bring alignments across both DNOs (NGED and UKPN) in how we share data to support the MWD processes, particularly around ahead of time unavailability reports ensuring that we have consistency across our MWD solutions.
- Enhancements to the Network Access Planning (NAP) and Control Room processes resulting in more efficient and effective management of the MWD service, processes and participants.
- Increased growth of DERs across DNOs in England & Wales, by accelerating the connection of their customers, by allowing non-firm DERs to utilise the Grid Supply Points (GSP) Technical Limit headroom. This will also result in improved visibility of DERs to NESO across GSPs.
- Deliver a whole system operation which will enable a coordinated approach to managing transmission network constraints between NESO and each partner DNO.
- Continued regional operability of the transmission system, the dispatch of non-Balancing Mechanism DER in real time will be developed to provide a curtailment service to manage transmission thermal constraints.

Roadmap

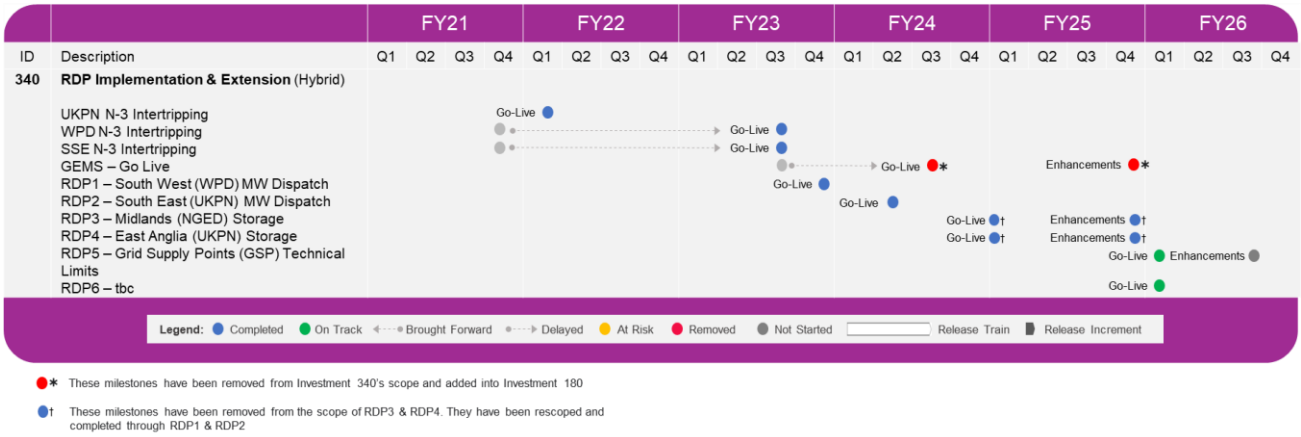


Figure 20 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone **CR520 Approved** **CR655 Approved**	RDP3 - Midlands (NGED) Storage Enhancements	Align data sharing with NGED to support the MWD processes, particularly around ahead of time unavailability reports ensuring	Q4 FY25

		that we have consistency across our MWD solutions	
Milestone **CR520 Approved** **CR655 Approved**	RDP4 - East Anglia (UKPN) Storage Enhancements	Align data sharing with UKPN to support the MWD processes, particularly around ahead of time unavailability reports ensuring that we have consistency across our MWD solutions	Q4 FY25
Milestone	RDP5 - Grid Supply Points (GSP) Technical Limits – Go Live	Economic and operable solution/s delivered across all DNOs to manage growth of distribution storage in England & Wales achieved through The Grid Supply Points (GSP) Technical Limits	Q1 FY26
Milestone	RDP6	Economic and operable solution/s delivered, in co-ordination with the DNO - Scottish Power Distribution (SPD) on delivering a MW Dispatch type solution	Q1 FY26
Milestone	RPD5 Enhancements	Develop, design, and deliver necessary screens in iEMS to monitor DER compliance Construct the necessary configurations in SCADA and associated systems to receive, store and share data from and to the DNOs' control centres (Project to utilise ICCP Links provisioned as part of restoration project, currently 3 DNOs have ICCP link)	Q3 FY26
Feature	(RDP3 & RDP4) Add GSP column to unavailability data in NAP	Rounding oof in study output table and Ability to enter 0% Scaling factor	Q3 FY25
Feature	(RDP3 & RDP4) ASDP Dispatch Tool – Permission model changes	ASDP Dispatch Tool - Permission model changes	Q3 FY25

Feature	(RDP3 & RDP4) ASDP Dispatch Tool – UI changes to enhance end User Customer experience	ASDP Dispatch Tool – UI changes to enhance end User Customer experience	Q3 FY25
Feature	(RDP3 & RDP4) Automate notification to various stakeholders (internal, DNOs, & DERs) during stages of registration	Automate notification to various stakeholders (internal, DNOs, & DERs) during stages of registration	Q3 FY25
Feature	(RDP3 & RDP4) Create a solution / process which willenable ENCC to execute offline dispatch / Cease in certain predefined situations	Create a solution / process which will enable ENCC to execute offline dispatch / Cease in certain predefined situations	Q3 FY25
Feature	(RDP3 & RDP4) Enable Deregistration for service providers & participate in other services	Enable Deregistration for service providers & participate in other services	Q3 FY25
Feature	(RDP3 & RDP4) Enable National Constrain boundary view to enable Dispatch at National Boundary level & move away from GSP level dispatch	This will be enabled as part of planning (NAP), scheduling (S&BB) and Dispatch (ASDP)	Q3 FY25
Feature	(RDP3 & RDP4) Enable Service Providers to submit the Operational Parameters as part of Registration	Enable Deregistration for service providers & participate in other services	Q3 FY25
Feature	(RDP3 & RDP4) Enhance Data Sharing between below systems SMP-Connections Connections	Enhance Data Sharing between below systems SMP- Connections Connections -NAP	Q3 FY25

	– NAP ASDP – S&BB NAP tool – OLTA SMP – DNO	ASDP- S&BB NAP Tool - OLTA SMP- DNO	
Feature	(RDP3 & RDP4) Enhance Digital Form B submission customer experience	Enhance Digital Form B submission customer experience.	Q3 FY25
Feature	(RDP3 & RDP4) Handling of DNO actions taken in specific scenarios at ASDP end	Handling of DNO actions taken in specific scenarios at ASDP end	Q3 FY25
Feature	(RDP3 & RDP4) Include filters and additional columns on SMP reports for MWD service	Include filters and additional columns on SMP reports for MWD service	Q3 FY25
Feature	(RDP3 & RDP4) Modify the tool tip messages for few SMP fields for better user experience	Various UI updates for User awareness and better user experience.	Q3 FY25
Feature	(RDP3 & RDP4) MPAN ID changes to facilitate ABSVD Reporting process	MPAN ID changes to facilitate ABSVD Reporting process.	Q3 FY25
Feature	(RDP3 & RDP4) Unavailability Report changes in planning (NAP), scheduling (S&BB), and Dispatch (ASDP)	Unavailability Report changes in planning (NAP) , scheduling(S&BB) and Dispatch(ASDP)	Q3 FY25
Feature **CR655 Approved**	(RDP3 & RDP4) Create an enduring compliance tool for use when registering new untils onto the MWD service	Create an enduring compliance tool for use when registering new units onto the MWD service	Q4 FY25

Feature **CR655 Approved**	(RDP3 & RDP4) Day ahead Potential Merit order view for NGED to align with UKPN solution	Day ahead Potential Merit order view for NGED to align with UKPN solution	Q4 FY25
Feature **CR655 Approved**	(RDP3 & RDP4) Logic to display forecasted available units to meet a given volume starting from cheapest available units	Logic to display forecasted available units to meet a given volume starting from cheapest available units	Q4 FY25
Feature **CR655 Approved**	(RDP3 & RDP4) Open Market to smaller participants (.5 MW to 1 MW) and for Providers with non Visibility and Control terms	Open Market to smaller participants (0.5 MW to 1 MW) and for Providers with non-Visibility and Control terms	Q4 FY25
Feature **CR655 Approved**	(RDP3 & RDP4) Report of units that are MWD mandated but have not registered	Report of units that are MWD mandated but have not registered	Q4 FY25
Feature **CR655 Approved**	(RDP3 & RDP4) S&BB tool – UI changes to enhance end User Customer experience	S&BB tool - UI changes to enhance end User Customer experience	Q4 FY25
Feature	Compliance reporting process	NESO to build new IEMS screens to monitor the relevant GSP flows in real time	Q1 FY26
Feature	Data exchange for visibility	Data exchange between DNO-ESO via ICCP link per GSP of the DER's to enhance visibility and Operational decision making	Q1 FY26

Table 59 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	10.2	2.0	12.2	16.3	- 4.0
OpEx	0.2	-	0.2	0.9	- 0.6
TotEx	10.5	2.0	12.5	17.1	- 4.6

Table 60 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolving or redefined scope since BP2	Scope Transfer	TotEx	Following an internal strategic review, the decision was taken to remove GEMS from this investment and transfer the scope to 180 Enhanced Balancing. This resulted in lower actual costs for this investment than forecast at the start of BP2.	-4.6m
Costs change since BP2				-4.6m*

Table 61 - Investment cost change summary

** Underspend has been re-allocated to other DD&T investments, as outlined in the introduction section to this document.*

Dependencies

Network Control (**110**), ENCC Asset Health (**240**), Settlements, Charging & Billing (**610**) as tracked through the quarterly CMF report shared with Ofgem.

3.19 Planning & Outage Data Exchange (350)

Delivery Method	Strategic Priority Alignment
Agile	Digital Mindset

Investment Overview

This investment plans to deliver and enhance the electricity network outage planning and data exchange capability. We will enhance NESO's outage planning and data exchange services across transmission and distribution networks.

Our delivery consists of 3 workstreams:

- Improve and extend the outage planning process - enhancements to our Network Access Management System. This enables Transmission Owners (TOs) to undertake work on their assets, liaising with customers where access arrangements impact them.
- Enable deeper access planning with Distribution Network Operators (DNOs) as they transition to become Distribution System Operators (DSOs) - giving all parties greater visibility of changes on other networks and enabling Distributed Energy Resource (DER) to provide services to facilitate outages.
- Enable bi-directional data exchange and automated data checking – replacement of the legacy External Data Exchange (EDE) to manage significantly increased volumes, types, and frequency of data.

Current State

We have continued to provide enhancements to the outage management tool (eNAMS) to further improve the customer/user experience and laid the foundation for Deeper Access Planning. Such enhancements include; user single-sign on and multi factor authentication (MFA), circa 1,500 users incorporated across the industry; new interfaces to share outage management data; access to Key Performance Indicator (KPI) reports; and provided the Electricity System Restoration Standard (ESRS) team the ability to retrieve outage details to allow them to meet their new obligations to consider the impact of outages in their management of restoration routes.

To enable deeper access planning with DNOs, as they transition to become DSOs, we have: established ways of working with customers / industry to streamline DSO process; captured end to end customer journeys and personas; published an IT solution blueprint and roadmap for solution delivery; and completed IT solutions enablement work within our NESO landscape to enable DNO/DSOs to start their development work for end-to-end systems integration.

To enable bi-directional data exchange we have: delivered a portal for UK Network License owners to collaboratively specify and agree real world connections with GC0139 digital requirements and established a strategy and roadmap to replace External Data Exchange (EDE).

Future State

We expect a significant increase in the frequency, complexity and volumes of data exchanged between the NESO, DSOs and TOs as the need for whole-system coordination increases and competition emerges in transmission. We will move from simply collecting winter peak data to exchanging data more frequently. We will need greater volumes of information about distributed energy resources, e.g., their capacity, location, and type. To enable this change, we will have replaced the legacy External Data Exchange (EDE) with a modern system that is integrated with the NESO IT Strategic platforms. This solution has been designed based on CIM (Common Information Model) standards to aid data collection and exchange with relevant industry parties.

Roadmap

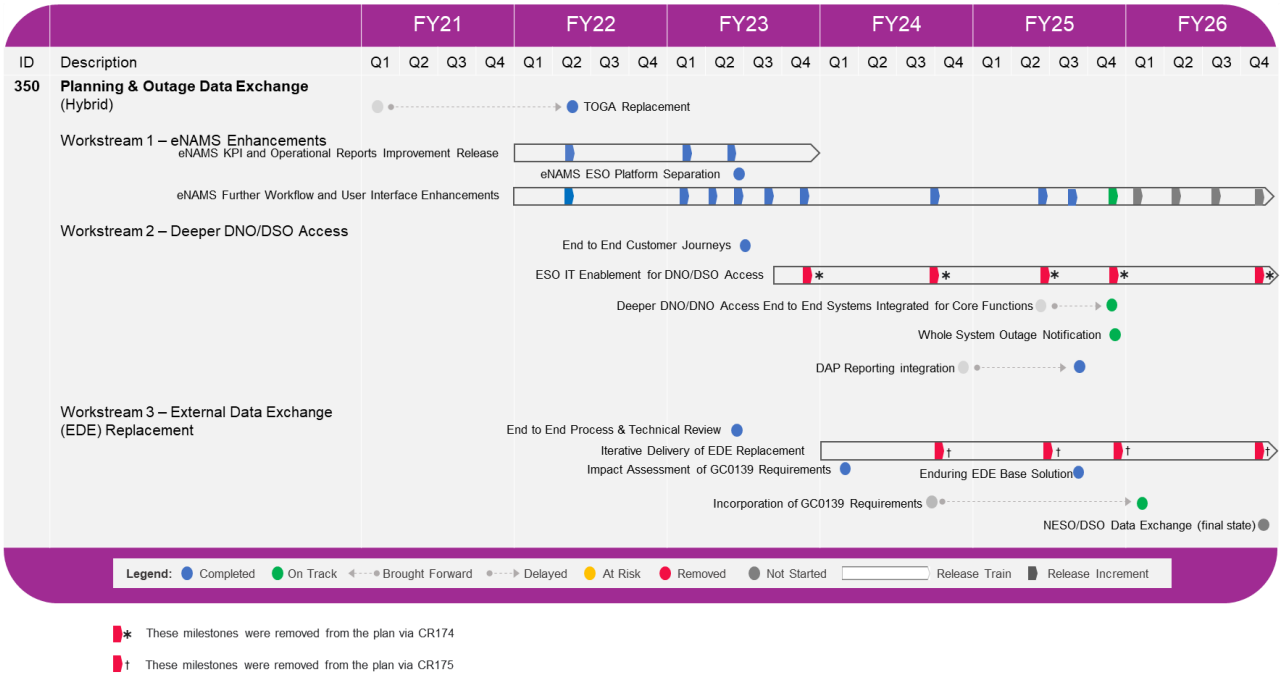


Figure 21 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	eNAMS further workflow and User Interface Enhancements	Iterative productivity and user experience improvements	Q3 FY25 Q4 FY25 Q1 FY26 Q2 FY26 Q3 FY26 Q4 FY26

Milestone	Whole System Outage Notification	Stakeholders better informed of outages, through enhanced digital communication	Q4 FY25
Milestone	Deeper DNO/DSO Access	End to end systems integrated for core functions	Q4 FY25
Milestone	Incorporation of GC0139 Requirements	Design for enduring EDE system agreed with external stakeholders	Q1 FY26
Milestone	NESO/DSO Data Exchange (final state)	As the DSO transition is better understood, implement 2-way data exchange, and add functionality to get to final state	Q4 FY26
Milestone	DAP Reporting Integration	Integration of DIP with DAP so business can use a single data platform. Post successful integration, decommission DIP to save costs	Q3 FY25
Milestone	Enduring EDE Base Solution	Replacement EDE base solution integrated with the Data & Analytics Platform and Digital Experience Platform and available for DNOs to connect to	Q3 FY25
Feature	DAP/DIP integration – DAP/DIP Integration (if DAP/DIP are ready and require data from eNAMS & eGAMA)	Integration of DIP with DAP so business can use a single data platform. Post successful integration, decommission DIP to save costs	Q3 FY25
Feature	Enduring EDE Base Solution	Replacement EDE base solution integrated with the Data & Analytics Platform and Digital Experience Platform and	Q3 FY25

		available for DNOs to connect to	
Feature	Deeper DNO/DSO Access: End to end systems integrated for core functions. Extension of outage planning systems to all	Extension of outage planning systems to all DNOs	Q4 FY25
Feature	Whole system outage notification	Stakeholders better informed of outages through enhanced digital communication	Q4 FY25

Table 62 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	5.8	1.9	7.7	7.2	0.5
OpEx	0.3	0.1	0.4	1.2	- 0.8
TotEx	6.1	2.0	8.1	8.4	- 0.3

Table 63 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Efficiencies	Forecast Efficiencies	TotEx	Actual costs and remaining forecast leading to an outturn were lower than initially forecast at the beginning of the RIIO-2 (2021) period as requirements were better understood across the delivery of the investment. This resulted in lower actuals than originally forecast.	-0.3m
Cost Changes Since BP2				-0.3m

Table 64 - Investment cost change summary

3.20 Offline Network Modelling (360)

Delivery Method	Strategic Priority Alignment
Scaled Agile	Clean Power

Investment Overview

This investment supports the development of a comprehensive energy system approach to achieving zero carbon operability, enhancing NESO's network capabilities and addressing the complex modelling challenges associated with a decarbonised system. Our Offline Network Modelling tools deliver the day-to-day analysis required to operate the transmission system in a safe and secure manner and are essential for producing the Electricity Ten Year Statement and regulatory reporting.

This investment includes upgrades to the Offline Transmission Analysis (OLTA), enhancements to NESO's network analysis through the use of Electromagnetic Transient (EMT) modelling tools, co-simulation capabilities to provide further comprehensive voltage and frequency control strategies, and ongoing automation development.

Current State

To date OLTA have delivered upgrades to support complex RMS models of the GB Network (e.g. the introduction for new HVDC connections), along with upgrades to PowerFactory 2023 to enable model submission with the Transmission Operators (TO's). We have also introduced the EMT Modelling capability to enable faster system transient simulation for compliance and event impact assessments, and co-simulation feasibility has confirmed that it is possible to co-simulate RMS with EMT models. It has however, also identified complexities regarding how we validate the co-simulation outcomes. The development of a new digital service for Data Registration Code (DRC) Portal for generator submissions has received positive customer feedback during User Acceptance Testing and will be delivered in Q1 FY26 as planned.

Future State

The Offline Network Modelling programme will continue to enhance the capabilities of the OLTA and EMT platforms, aligned with key NESO strategic data technologies. These enhancements will improve GB network modelling capabilities, enabling us to better analyse the impact of new connections and event scenarios, such as the behaviours of new inverter-based resources. Maintenance of the standardised version of tools enable quicker and more accurate responses to NESO customers, including:

- Ongoing enhancements including changes required as part of Grid Code 139 adoption
- Compliance improvements aligning with Investment 380 Connections Platform
- Strategic integrations including Investment 220 Data and Analytics Platform

Roadmap

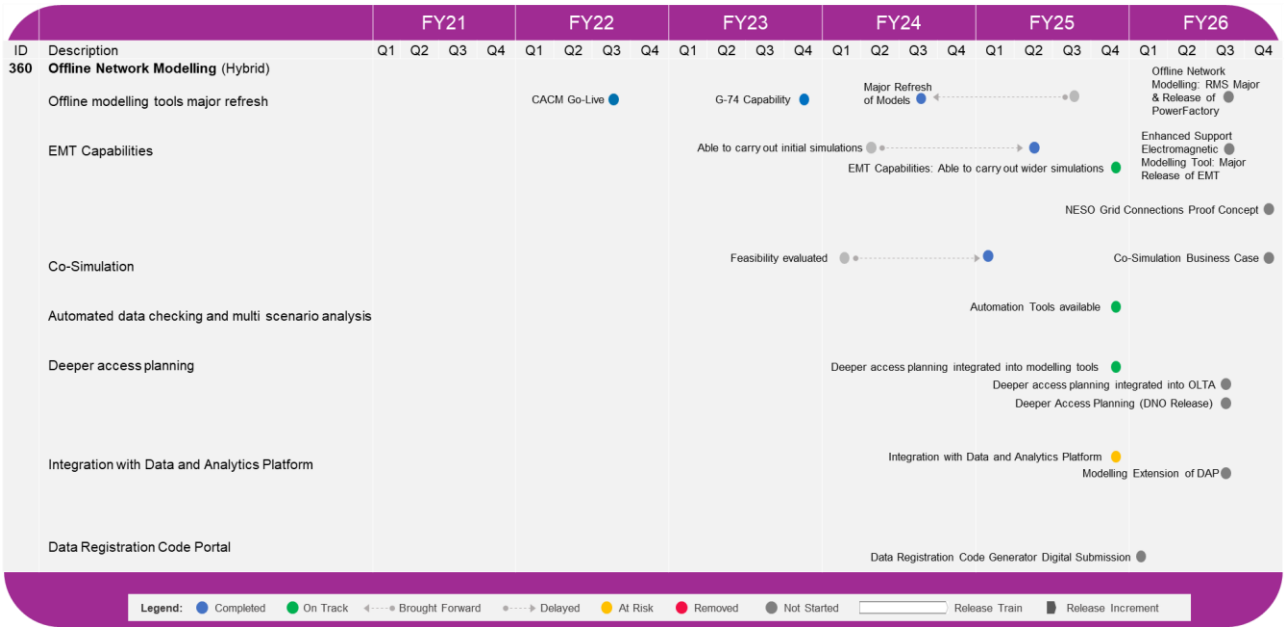


Figure 22 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Automation Tools Available	Automation tools available implementation of Automation scripts on OLTA Platform	Q4 FY25
Milestone	Deeper Access Planning integrated into modelling tools	Deeper Access Planning integrated into modelling tools by implementing Grid Code 139 updates to the OLTA model	Q4 FY25
Milestone	EMT Capabilities: Able to carry out wider simulations	EMT capabilities: able to carry out wider simulations of the GB Network	Q4 FY25
Milestone	Integration with Data and Analytics Platform	Modelling extension into Data and Analytics Platform	Q4 FY25

Milestone	Data Registration Code Generator Digital Submission	A live Digital DRC submission service for Generators to complete Week 24 submissions online.	Q1 FY26
Milestone	Enhanced Support Electromagnetic Modelling Tool: Major Release of EMT	Increase ESO Networks capability to carry out system analysis using EMT tools, providing greater planning confidence for voltage oscillations by extending the infrastructure and enhancing the automation support when modelling	Q3 FY26
Milestone	Deeper access planning integrated into OLTA	Enhance DNO Processed with implementation of Grid Code 139	Q3 FY26
Milestone	Offline Network Modelling: RMS Major & Release of PowerFactory	Upgrades to offline modelling capability to analyse a more complex power system, address operability challenges and enable more efficient exchange of data	Q3 FY26
Milestone	Co-simulation Business Case	Define the high-level design and processes for NESO co-simulation capability for RMS and EMT co-simulation	Q4 FY26
Milestone	NESO Grid Connections Proof of Concept	Confirm external parties can submit their local EMT models to be validated against a regional EMT model	Q4 FY26
Feature	ONM Offline Tooling_ ONM Automation Go-Live	Enhance the automation of the transmission system stability & contingency analysis	Q4 FY25
Feature	ONM Offline Tooling_ONM	Enabling the capability to include Deeper Access	Q4 FY25

	Deeper Access Go-Live	Planning in the OLTA Models and in the integration with PODE if required	
Feature	ONM-OLTA DAP Go-Live	Replace existing interfaces into the OLTA with the use the single Data Analytics Platform - ensure integration with DAP to facilitate an interchangeable suite of tools using a common data set and seamless exchange…	Q4 FY25
Feature	ONM Offline Tooling_ONM-OLIA SAP Go Live	Replace existing interfaces into the OLTA with the use the single Data Analytics Platform – ensure integration with DAP to facilitate an interchangeable suit of tools using a common data set & seamless exchange	Q4 FY25
Feature	ONM PSCAD Go-Live External	Enable external transmission owners (TOs) & generators to submit EMT Simulations to validate with the ESO centralised model	Q4 FY25

Table 65 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	5.4	1.7	7.1	6.3	0.7
OpEx	0.5	0.2	0.6	1.8	- 1.2
TotEx	5.9	1.9	7.7	8.1	- 0.4

Table 66 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolved Scope from BP2	Scope Clarification	Capex	Additional compliance and regulatory changes that were not included in the initial BP2 forecast were introduced and accepted within the BP2 period, therefore resources required to support these changes have resulted in increased costs.	0.8m
Evolving or redefined scope since BP2	Scope Clarification	Opex	A strategic decision was taken to focus on critical CAPEX delivery during the RIIO-2 period and to reduce OPEX spending on Feasibility POC's within this investment. As a result, OLTA and EMT did not require as much funding as forecast at the start of BP2.	-1.2m
Costs change since BP2				-0.4m

Table 67 - Investment cost change summary

Assumptions

Category	Assumption	Investment Impact Areas	Review Frequency
Scope	NIA Grid connections solution can be set-up in the NESO Azure environment for external collaboration	ONM	Quarterly

Table 68 - Investment assumption summary

Risks/ Issues

Risk	Mitigation	Likelihood	Impact
Completion of NIA innovation cos-simulation project will delay the decision on co-simulation roadmap	ONM project team engage and support the NIA innovation project with NESO co-simulation requirements	3	3
[Information Redacted]			

Table 69 – Investment risks/issues summary

Dependencies

Upstream: There is a dependency on DAP (**220**) to enable and host non-proprietary modelling capability of GB Network for future analytics capability as current OLTA models are held in the proprietary Powerfactory. By sharing an open model export of OLTA with DAP this can be transformed into analytical case study within DAP. There is a dependency on SEP (**700**) to confirm future modelling changes required for design and modelling on OLTA and EMT applications. The output is that SEP could change GB Network models held on OLTA and EMT and will have an impact on the design and offline modelling business processes.

3.21 Connections Platform (380)

Delivery Method	Strategic Priority Alignment
Scaled Agile	Clean Power

Investment Overview

NESO manages the connection and generation contracts that impact on the transmission system for Great Britain. We work closely with Transmission Owners (TOs) to support customer connections, which are a critical part of our decarbonisation strategy. We ensure customers can connect to the energy network where and when the need is crucial for achieving net zero, delivering affordability for consumers and maintaining security of supply.

This investment delivers capability for customers to engage with NESO services for energy grid connections. The changes in UK Government environmental targets have driven significant changes in the types of customers seeking connection to or making use of the energy network in GB. The shift towards smaller and more flexible generation has seen an unprecedented and continued increase in the number of connection applications coming into the NESO. As the number of connection applications increases, we must address and improve the efficiency and effectiveness of our processes to deal with the sustained volume. The introduction of the connection's portal has digitalised the connections application process and introduced automation for NESO and our customers. This has led to more efficient use of industry resources, consequently leading to consumer savings and enabling similar efficiencies to additional connections processes.

The Customer Connections Platform has provided a single 'hub' capability for guiding customers through connection to the energy transmission network and online account management functionality for all live projects. This has also enabled customers to see regular updates on the progress of their active applications as well as information on other projects already contracted. The platform facilitates enduring contract management during the delivery phase of the project as well as providing a source of information for customers who are researching opportunities for connection.

Current State

During BP2, we delivered the Connections 360 Portal Suite, a solution that centralises the end-to-end connection management process. The portal also supports priority modelling on Future Energy Scenarios, enabling agile modelling and diverse scenario configurations, reducing manual effort and aiding Clean Power decisions, providing greater insight into the GB

connections landscape. A customer-centric, digital-first approach was also adopted for the Connections Reform process. We delivered user experience enhancements, such as integration with the Customer Identity and Access Management (CIAM) solution, delivered by DEP, to provide a Single Sign-On (SSO) experience for all customer interactions. Our customers now have the capability to provide live updates to their projects via the portal, which is made simpler by the new centralised document storage solution to manage customer contracts, with documents including archival management.

Future State

GB's existing connections process requires reform due to the increase in applications, resulting from the country's progress in decarbonisation. The current process, which was designed 20 years ago, was meant for a time when connections were made by a small number of large fossil fuel generators. Our investment into the Connections Platform will address the current challenges and ensure that customers can connect to the energy network in a timely manner. There is a strong demand from the industry and government for transparency in the connections queue and the identification of bottlenecks in the GB network infrastructure. NESO's investment will expedite connections and address these challenges, mitigating the risk of delays in the decarbonisation of the energy system.

To achieve a fully customer centric digital approach for Connections, we will require further technological investment, with updated milestones to be defined post prototype delivery. This investment is likely to include:

- Operational improvements and workflow automations to improve efficiency, visualisation and transparency for internal and external stakeholders,
- The ability to track and plan energy capacity, ensuring a reliable and sustainable energy supply, thus optimising resource utilisation,
- Integration with the Data and Analytics Platform (DAP) to develop internal reports and APIs to handle data exchange with third parties.

Public

Roadmap

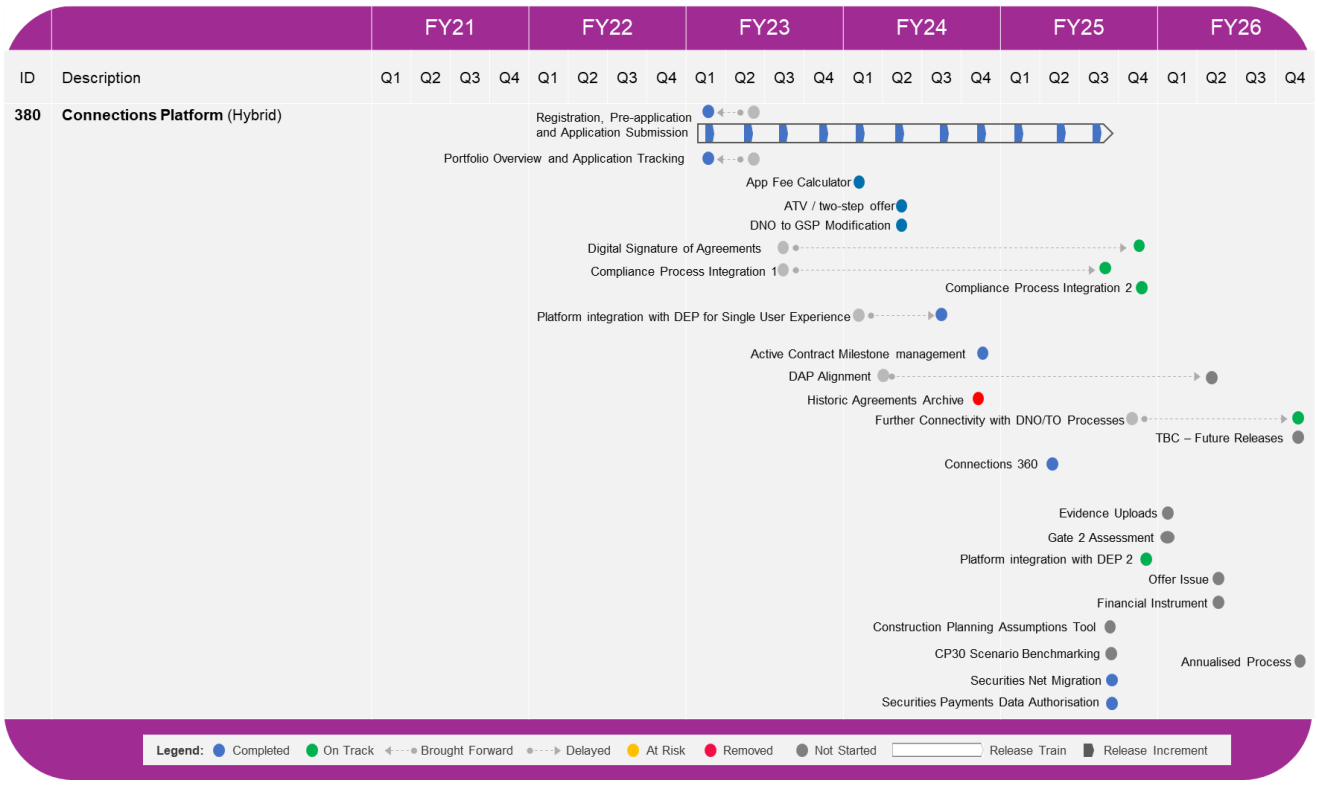


Figure 23 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Securities Net Migration	To replace the existing.Net application (Calculation tool) and migration into Salesforce	Q3 FY25
Milestone	Securities Payments Data Authorisation	To provide an automated approach in managing the security statements process	Q3 FY25
Milestone	Quarterly release Train: Registration, Pre-application and Application Submission	Customer driven ongoing enhancements to digitise the connections process including Connections 360	Q3 FY25
Milestone	Compliance Process Integration 1	Deploy an automated solution	Q3 FY25

Milestone	Construction Planning Assumption Tools	Refine and deploy project attrition models developed as part of the work with the NESO Network Operability team within the CPA creation process	Q3 FY25
Milestone	CP30 Scenario Benchmarking	Reduce the risk of any energy deficit and balance current ambitions to future targets	Q3 FY25
Milestone	Compliance Process Integration 2	Deploy an automated solution	Q4 FY25
Milestone	Digital Signature of Agreements (offers e-signing)	Enabling the customers to digitally sign agreements via the portal.	Q4 FY25
Milestone	Platform integration with DEP 2	Connections Portal pages aligned with NESO Branding	Q4 FY25
Milestone	Evidence uploads	Functionality for users to submit evidence to meet reformed assessment criteria	Q1 FY26
Milestone	Gate 2 assessment	Ability to re-assess existing applications and filter queue based on reformed criteria	Q1 FY26
Milestone	Offer issue	Ability to issues offers following Gate 2 assessment	Q2 FY26
Milestone	Financial instrument	Ability to process financial instrument as part of reformed process	Q2 FY26
Milestone	DAP alignment	Integrate with the Data and Analytics Platform (DAP) to develop internal reports and APIs to handle data exchange with third parties DAP Alignment.	Q2 FY26
Milestone	Annualised process	Implementation of annualised gated process for Connections applications	Q4 FY26

Milestone	Further connectivity with DNO / TO process	Rolling out the automation of application data between NESO and DNO/TO's	Q4 FY26
Milestone	TBC Future releases	Reforms? We may to raise a change to remove this as it doesn't really mean anything.	Q4 FY26
Feature	DAP Alignment – Integration with DAP and data exchange	Integrate with the Data and Analytics Platform (DAP) to develop internal reports and APIs to handle data exchange with third parties DAP Alignment.	Q3 FY25
Feature	DEP Design System – Ensuring the connections portal is fully aligned with DEP design systems	To update all Connections Portal pages with NESO branding	Q3 FY25
Feature	Compliance check list & milestone	Compliance milestones and digitised checklists required on the front end	Q4 FY25
Feature	Contract provision	Automated email notification of offer and contract documents being available in the portal and the ability to e-sign via DocuSign add-in for Salesforce	Q4 FY25
Feature	Contracts backend	Upload to db and make them available on portal - Contract functionality in Salesforce needs to be developed in a way that is consistent with what and how we want customers to see on the front end.	Q4 FY25
Feature	Operational Notification	Provide Operational notifications to customers based on the Compliance milestone	Q4 FY25

Feature	Customer Contract Signing	digital signature - Issuing of offers and contracts via the portal including the ability for e-signing.	Q4 FY25
Feature	DEP Query Management & Complaints Alignment	ESO product alignment focusing on Query management and Complaints	Q4 FY25
Feature	Digital Signature Governance (sign-off)	either docsign or conga esign - Issuing of offers and contracts via the portal including the ability for e-signing.	Q4 FY25
Feature	DRC form / datasheet / project progression ; statements of work; BEGA ; BELLA ; Directly Connected ; DRC form modification ;	Embedded digital data collector form on portal front end	Q4 FY25
Feature	TO Platform Integration	Integration with TO platform for data exchange will start with a POC	Q4 FY25
Feature	UDFS Submission	Compliance milestones and digitalised checklist required on the front end as well as the ability to issue operational notifications	Q4 FY25
Feature	Repeat Customer Feedback/Portal improvement	Customer Feedback/Portal improvement/Backend improvement features which enables additional automation and guidance to make sure customers are having seamless experiencing and necessary guidance…	Q4 FY25
Feature	Ongoing enhancements	Customer driven ongoing enhancements to digitise the connections process inc Connections 360	Q2 FY26 Q3 FY26 Q4 FY26
Feature	DNO Appendix G submissions (discovery)	(updated tshirt sizing based on chat with GH) - Digital form required on front end related to GSP / Project object with	Q4 FY26

		automated creation of relevant Salesforce records.	
Feature	DNO data sheet	Embedded digital DNO data sheet with the application process	Q4 FY26

Table 70 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	7.6	2.6	10.2	6.4	3.8
OpEx	0.1	-	0.1	0.6	- 0.5
TotEx	7.7	2.6	10.3	7.0	3.3

Table 71 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolved Scope from BP2	New Scope	Capex	The Connections Reform requires the implementation of technology changes to deliver the necessary updates to the Connections Platform that were not part of the original BP2 scope. As a result, there is an increase to the actual cost of delivering this investment compared to the BP2 forecast.	2.0m
Evolved Scope from BP2	New Scope	CapEx	To support the reformed Connections process there are Data and Analytics changes, including the validation of required data to support the queue reordering process. This	3.7m

			additional scope results in increased actual cost compared to the BP2 forecast.	
Efficiencies	Scope clarification	OpEx	Licence costs that were included in the original forecast for this investment were able to be covered at platform level across multiple products, this enabled efficiencies resulting in a reduction to the actual cost compared with the BP2 forecast.	-0.4m
Cost Changes Since BP2				3.3m

Table 72 - Investment cost change summary

Dependencies

Upstream: External dependencies on DNOs e.g. data requirements such as red line boundary validation. No internal dependencies between investments.

3.22 Electricity Network Development Tools (Formerly NOA Enhancements) (390)

Delivery Method	Strategic Priority Alignment
Agile	Decarbonised Energy

Investment Overview

This investment significantly enhances our capability to plan and optimise the assets of both the transmission and distribution electricity networks, aligning them with the goal of achieving a zero-carbon grid operation. As we transition towards a net zero future, it is crucial that we model and analyse an increasingly diverse range of scenarios to ensure efficient investment decisions.

Before RIIO-2, our analytical tools had limited ability to meet the thermal needs and certain voltage issues within the network. This investment enables us to expand and enhance our modelling tools, allowing for a comprehensive understanding of the interactions between different network requirements. By integrating these advanced capabilities, we can optimise our

economic decision-making processes and ensure investments are aligned to the objective of achieving a net zero-carbon grid. These advancements have enabled us to analyse the complex electricity network, especially with the additional complexities that renewables introduce. We possess the tools to examine all network constraints, including thermal, voltage (both over and under voltage), and stability (inertia, short circuit, and rotor angle). These innovative tools significantly enhance the way we access, operate, and analyse the network as we transition to net zero.

Furthermore, the tools developed for this investment are being utilised in delivering NESO new roles, across Strategic Energy Planning, adding extra and early value in this area above what was planned for RIIO-2.

Current State

Since the original Business Plan was created, there have been four active workstreams within BP2:

- **Economic Assessment Tool Refresh**: The dispatch and redispatch process within the Economic Assessment tool (Plexos) has been successfully delivered and is now being utilised by the relevant teams.
- **Probabilistic Modelling of Thermal Issues**: The Thermal Probabilistic tool (Pouya), which enables the identification of year-round thermal constraints and planning for circuit overloads under different conditions, was delivered in Q1 FY24 and is currently being used by the relevant teams. This new product enables our engineers to conduct more comprehensive network and cost-benefit analyses. For the first time, we can understand network capacity and thermal capability needs throughout the year, allowing us to adopt a more strategic approach to planning the transmission network infrastructure to support the UK's net-zero ambitions. We can assess hundreds of outages in less than an hour, aiding in outage planning and potentially reducing constraint costs. Additionally, it has helped us evaluate the locational impact of new technologies such as hydrogen and storage on future operational constraint costs. Using this new tool, we published locational intelligence in our "Beyond 2030" publication, focusing on hydrogen and demand demonstrating how we could save consumers £5 billion.
- **Voltage Optimisation**: The Automated Voltage Optimisation Tool (AVAT) and the Network Access Planning (NAP) automation was completed in Q4 FY24. Our automated voltage analysis and optimisation tools enable our engineers to conduct multi-scenario analysis in short and long term. By consistently applying this approach, we can identify and address low and high voltage requirements, ensuring a compliant and operational network and reducing constraint cost while maintaining the grid security.

- **Stability Assessment**: The Stability Assessment tools for Inertia, Short Circuit and Rotor Angle were completed by Q3 FY25 as planned:
    - The inertia has been developed with two main functions: calculating and visualizing inertia and Rate of Change of Frequency (RoCoF) while saving time and reducing complexity. The tool enables businesses to make informed decisions on long-term investment needs during stability pathfinder assessment, ensuring stability on the transmission network, and maintaining an efficient and secure network.
    - Short Circuit tool is a system strength monitoring tool (the first of its kind tool at the NESO) that plays a vital role in ensuring day-to-day network stability enabling our engineers to monitor system strength on a daily and weekly basis and helping us maintain an operable network and make efficient investments.
    - Rotor angle stability tool enables our engineer in the network planning to monitor this network security criteria against future energy scenarios.

In the 2024-25 period, we have made significant progress on most of our FY25 plans. We delivered enhancements to the Economic Assessment tool (Plexos) for Ancillary Services and implemented BID3 historical data storage options, enabling decommissioning of BID3. We also delivered additional scope for demand discrepancy as part of the BP2 investment, which allowed us to visualise the discrepancy between the actual demand and demand forecast at GSP level, and we removed an EUDA by automation onto a supported platform.

Future State

No material alterations have been made to the original design outlined in BP2. However, in line with our objectives, we have identified additional initiatives to be delivered in BP3 including enhancements to our thermal probabilistic tool, voltage tools (year-round, high volt, and short-term assessment tools), and stability (inertia, short-circuit, and rotor angle stability). The benefits include a more accurate forecast of technical requirements for reactive power market tenders, enabling multi-snapshot analysis within the operational timescale (from two weeks ahead to day-ahead), enabling our engineers to address risks attached to the uncertain nature of interconnectors and renewables. These result in a reduced risk of overspending related to high voltage, thermal limits, and operability constraints issues and enhances the security of supply and grid security in accordance with Security of Supply Standards (SQSS).

By Q4 FY26, we will align with our data architectural technology strategy, enabling data integration between the data platform, Plexos and the Probabilistic Modelling Tool (Power Uncertainty Year-round Analyser, POUYA), supporting inclusion of the Voltage Optimisation and Stability Assessment tools in the future. Thus, enabling us to add further value through

interoperable energy data and in support of Strategic Energy Planning directorate via investment **700** Strategic Energy Planning.

We will also decommission BID3 and migrate Plexos Connect functionality into Plexos, to save on RTB and licensing costs.

Roadmap

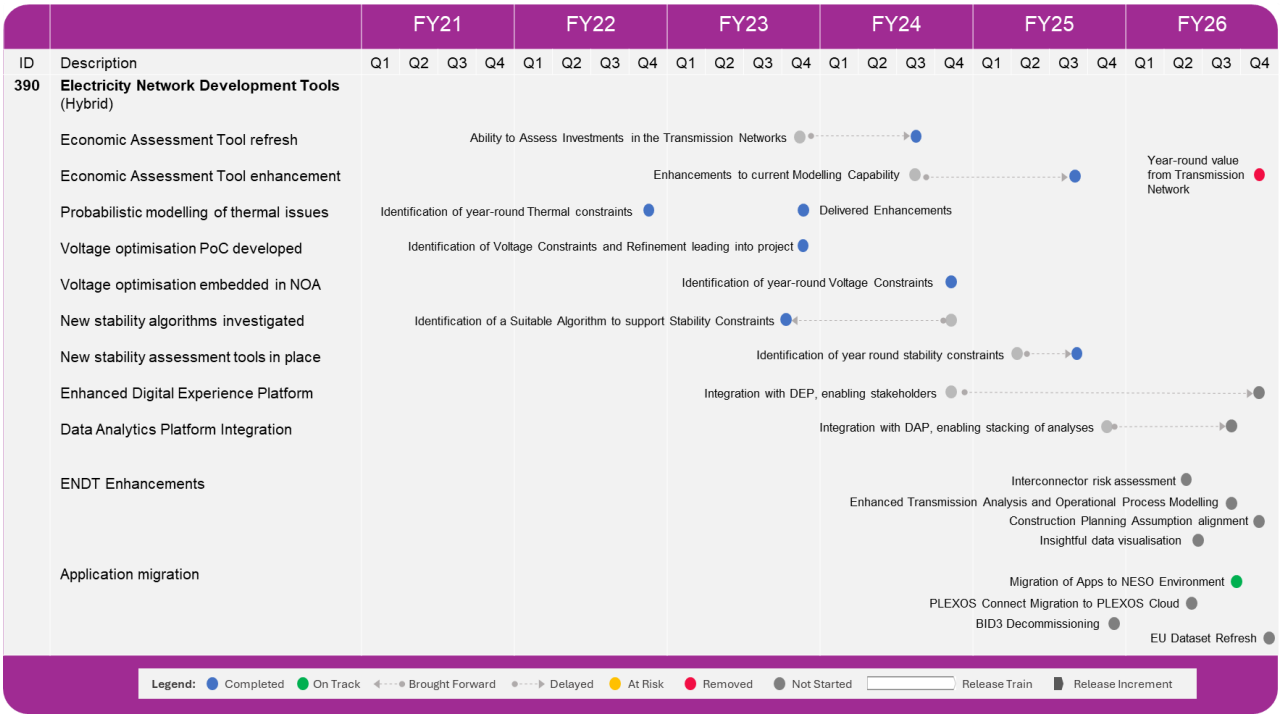


Figure 24 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Enhancements to current modelling capabilities	Ancillary Services enhancements to enable estimation of inertia provision level from a generation dispatch, co-optimised with thermal boundary constraints in PLEXOS, allowing users to accurately investigate differences between scenarios.	Q3 FY25

Milestone	Identification of Year-Round Stability Constraints	Identification of year-round stability constraints and delivery of a clustering algorithm for automated Rotor Angle tool unstable identification.	Q3 FY25
Milestone	BID3 Decommissioning	Archival of historical dispatch modelling studies after BID3 license expiry, as part of the implementation of a new dispatch modelling tool, Plexos.	Q4 FY25
Milestone	EU Dataset Refresh	Supplier provision of European central scenario dataset for Plexos dispatch modelling, which reflects a 10-year market intelligence-driven near-term view, and FES-aligned scenario datasets which map to the FES25 pathways.	Q4 FY25
Milestone	Interconnector risk assessment	Enhance POUYA and AVAT for interconnector risk assessment to enhance the system's ability to analyse and mitigate potential risks associated with interconnector flow variations, ensuring improved system security.	Q2 FY26
Milestone	Insightful Data Visualisation	Enhance the data visualisation capabilities of POUYA, enabling users to gain valuable insights and make informed decisions based on the visualised data and results. This will enhance the overall usability and effectiveness of the application.	Q2 FY26

Milestone	Plexos Connect migration to Plexos Cloud	Migrating the on-premise dispatch modelling tool, Plexos Connect, to the Plexos SaaS solution hosted and supported by Energy Exemplar, to leverage the benefits of cloud infrastructure and enhance the scalability and flexibility of the application.	Q2 FY26
Milestone	Migration of Apps to NESO Environment	Migration of ENDT related modelling apps from NG Azure tenant to the new NESO infrastructure.	Q3 FY26
Milestone	Enhanced Transmission Analysis and Operational Process Modelling	Upgrade POUYA and AVAT to support and model operational processes, new technologies, and commercial solutions enhancing functionalities for comprehensive transmission analysis, facilitating more efficient and effective decision-making within the transmission domain.	Q3 FY26
Milestone	Integration with DAP, enabling stacking of analysis	Data acquisition from Plexos and POUYA into DAP to enable stacking of analysis and reuse of data in other processes and building of custom reporting dashboards.	Q3 FY26
Milestone	Integration with DEP, enabling stakeholders	Integration of AVAT results with an interactive map, providing valuable insights for external stakeholders.	Q4 FY26
Milestone	Construction Planning Assumption Alignment	Updating the probabilistic tool (POUYA), to align with the connection reform. This enhancement aims to enhance	Q4 FY26

		the tool's capabilities for Construction Planning Assumption.	
Milestone CR663 awaiting approval (milestone to be removed)	Economic Assessment Tool Enhancement: Year-round value from transmission network	Milestone to be removed on the approval of CR663.	Q4 FY26
Feature	Develop & Implement an automated Rotor Angle Analysis Tool	This feature has been delivered as part of "Identification of Year-Round Stability Constraints."	Q3 FY25

Table 73 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	4.2	1.1	5.2	7.7	- 2.5
OpEx	2.4	0.3	2.6	1.5	1.1
TotEx	6.5	1.3	7.9	9.3	- 1.4

Table 74 - Investment cost summary

Cost Driver Theme		Cost Type	Description	Cost change variance (£)
Efficiencies	Supplier and development costs	Capex	A new modelling tools contract and efforts from NESO to develop new ENDT in-house tools resulted in lower actual costs than forecasted at the start of BP2.	-2.5m

Evolved or Redefined Scope since BP2	Additional scope and usage	Opex	There was an increase in teams within NESO using Plexos that was not considered in BP2 plans. Additional requirements, e.g. for CP30 modelling and SSEP, led to increased storage, licensing and computing usage and therefore increased cost.	1.1m
Cost Changes Since BP2				-1.4m

Table 75 - Investment cost change summary

Dependencies

Data and Analytics Platform (**220**) – dependency for integration , Strategic Energy Planning (**700**) – dependency for licensing, usage levels and potential enhancements to tools.

3.23 Single Markets Platform (400)

Delivery Method	Strategic Priority Alignment
Scaled Agile	Digital Mindset, Customer Centricity and Consumer Value

Investment Overview

This investment delivers access for all balancing services market participants into NESO market and energy services. The original RIIO-2 plan for Single Markets Platform (SMP) considered the development of customer-facing services such as user and asset onboarding, contract tendering as well as performance monitoring. The intention was to onboard all new reformed market services (such as new dynamic response products) via SMP and to integrate these with downstream processes and systems to provide control room availability and dispatch where appropriate.

This investment encompasses two projects – Single Markets Platform (SMP) and Ancillary Services Reform (ASR), which delivers not just access for all the market participants into NESO market and energy services, but also funds the implementation of any new ancillary services in this area.

The Single Markets Platform investment will engage and deliver alongside most investments in our portfolio, including **220** Data and Analytics Platform, Planning and Data Outage Exchange, **380** Connections **610** Settlements, Charging and Billing. The investment will enable the ongoing

enhancements of the Balancing Mechanism (BM) registration process, focus on longer term tendered balancing services (i.e., not simply Day Ahead markets), support existing Balancing Services Market Reform, enhance user experience and integrate with the wider NESO IT infrastructure.

The ASR investment delivers the necessary changes required to downstream systems and our control room processes to support the introduction of new services into the market. ASR develops legacy and interim platforms to support the introduction of new reserve and response services, whilst replacement strategic systems such as the Open Balancing Platform (OBP) and Settlements and Revenue (STAR) are introduced.

The ASR investment will engage and deliver alongside most investments in our portfolio, including **420** Auction Capability, **220** Data and Analytics Platform, **180** Enhanced Balancing Capability and **610** Settlements, Charging and Billing.

Current State

Single Markets Platform (SMP) seeks to provide a single point of entry for market participants to transact on all NESO balancing services markets. All market related processes including onboarding, registration, pre-qualification and contracting processes will be accessible through this platform. As part of BP2 commitments, SMP was released as a live application. As part of committed milestones, SMP now delivers enhancement releases. The application delivery team works to add new services, new features, integrations and enhances existing features.

The business and technical teams are stable, enabling delivery of significant volumes of functionality across 17 releases from the start of BP2.

- SMP has onboarded the following services.
    - Balancing Reserve
    - Quick Reserve (nBM units only)
    - Demand flexibility Service (Day 2)
- By the end of BP2 the Balancing Mechanism registration process will have migrated to SMP
- The application integrated with downstream systems such the Enduring Auction Capability (EAC) platform, the Open Balancing Platform (OBP), Data and Analytics Platform (DAP), introduced change control to units in the system,
- The application has enabled updates to units and assets via APIs and integrated with the single sign on solution implemented by the Digital Engagement Platform (DEP) programme.

During the BP2 period ASR delivered the following:

1. The Enduring Auction Capability (EAC) platform has significantly enhanced the efficiency and customer experience of the market participants in Dynamic Containment (DC), Dynamic Moderation (DM), and Dynamic Regulation (DR) frequency response service auctions.
2. To facilitate Quick Reserve (QR) services, SMP, EAC, and OBP have been augmented to efficiently manage registration, prequalification, procurement, and balancing processes for market participants.
3. The Control Room visibility of the real-time behaviour of non-Balancing Mechanism units (nBMU) has improved through the implementation of the Operational Metering Graph. This graph provides baseline and real time operational metering data enabling cost savings for consumers.
4. The user experience of market participants has been improved by allowing them to adjust Performance Metering data beyond the cut-off period using a streamlined and automated process.
5. To mitigate the risk that a frequency service delivered by single a market participant creates a single point of failure, Max Bid Size on response sell orders has been implemented.
6. The delivery of Monitoring, Reporting and Penalties allows identification of market participants who have not submitted the required quantity or quality of data and highlights instances where they are not meeting their Service Terms.
7. The Balancing Reserve service was launched on the EAC platform introducing a new day-ahead reserve market in half-hourly settlement periods.

Future State

SMP will deliver prioritised functional capabilities based on value to the customer, informed by user research, industry consultation and stakeholder engagement (e.g., show and listen seminars).

We expect to continue the integration across platforms and onboard other market services such as Restoration Services onto SMP to increase market participation and improve consumer benefits through the increased liquidity of the markets. SMP enables significant value to be realised and contributes to a range of benefits such as reducing barrier to user participation, facilitating closer to real time procurement and taking a whole electricity system approach through integration with DSOs and DERs.

The SMP roadmap will deliver additional ancillary service markets onto the platform as described below in addition to providing capacity for additional services and bug enhancements as required. The calendar is “less full” later in FY25 and in FY26 to ensure that we have flexibility and agility to prioritise as required including the consideration of functionality suggested by SMP users.

During BP3 the ASR investment will continue to deliver enhanced response and reserve services, including Quick Reserve nBM (non-Balancing Mechanism) and Slow Reserve. Further Ancillary Service enhancements will see Buy Order Automation replace the manual process and represents a key enabler for future intra-day market capability. The delivery timelines for Reactive Power and Stability day-ahead markets are indicative and will be informed by the findings of discovery activities.

Roadmap

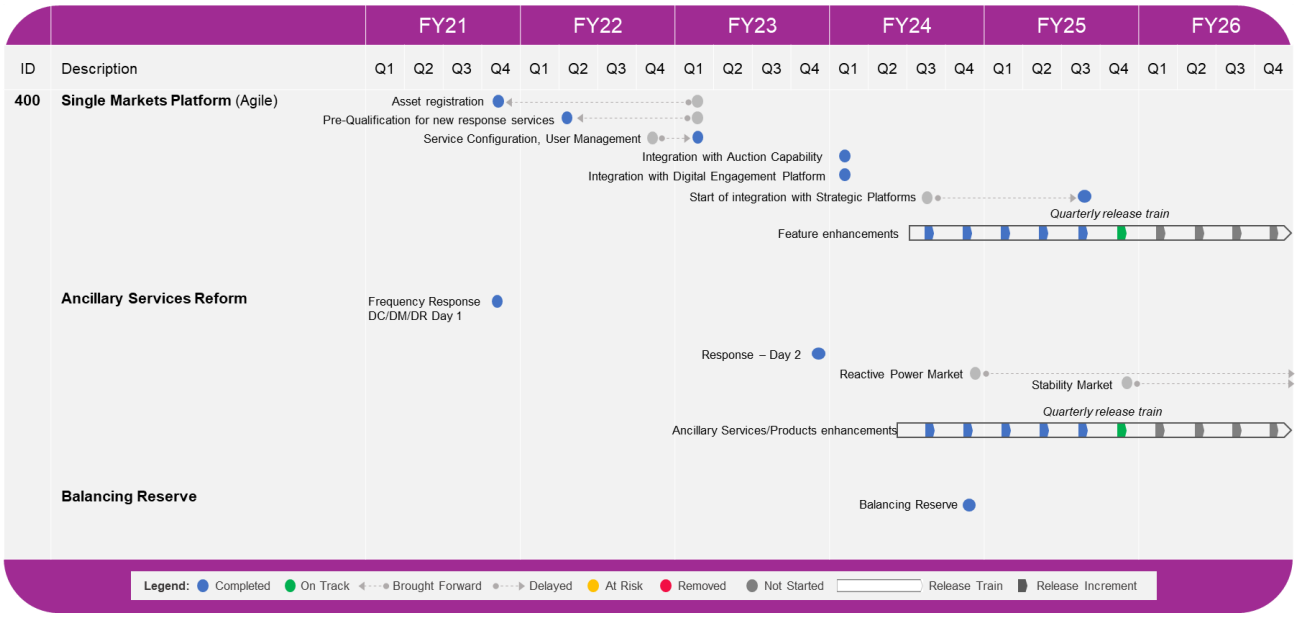


Figure 25 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Quarterly Release Train: SMP Feature enhancements	Completion of releases to enable the deployment to production for requisite new features to be added to the platform and to enhance existing features to enable improved customer experience, operational effectiveness, and application robustness	Q3 FY25 Q4 FY25 Q1 FY26 Q2 FY26 Q3 FY26 Q4 FY26
Milestone	Ancillary services enhancements E.g., Future changes to	Investment in IT will deliver new features and enhancements that will ensure ease of delivery	Q3 FY25 Q4 FY25

	Reserve and Response	for business and ease of use for the market participants, who can interact with the same system across the product suites with common and replicable customer experience for the various ancillary services.	Q1 FY26 Q2 FY26 Q3 FY26 Q4 FY26
Milestone	Start of integration with Strategic Platforms	Investment will look to integrate with NESO strategic platforms like EAC and OBP	Q3 FY25
Milestone	Reactive Power Market	Programme will raise a change request in Q3FY25 to remove this from the roadmap due to budgetary and other constraints	Q4 FY25
Milestone	Stability Market	Programme will raise a change request in Q3FY25 to remove this from the roadmap due to budgetary and other constraints	Q4 FY25
Milestone	DFS Mobilisation and Discovery	Initiate Discovery and Requirements work with supporting definition of business needs, impacts to platforms, change strategy with estimates of effort and costs for further work	TBD
Feature	Service Design for Quick Reserve - nBM	Defines the service terms and outlines how Quick Reserve nBM will function	Q3 FY25
Feature	Service Design for Slow Reserve - BM	Defines the service terms and outlines how Slow Reserve BM will function	Q3 FY25

Feature	STAR Integration phase 1	SMP data required by the STAR platform will be made available	Q3 FY25
Feature	RDP Enhancements Phase 6	Enhance the user experience for users of the RDP MW Dispatch Service	Q3 FY25
Feature	Service Design for Slow Reserve – nBM	Defines the service terms and outlines how Slow Reserve nBM will function	Q3 FY25
Feature	BM Registration Phase 1	A Unit Manager is able to register a Balancing Mechanism Unit on the Single Markets Platform portal	Q3 FY25
Feature	BM Registration Phase 2	Improve and transform the mechanism for registration data to feed downstream applications	Q3 FY25
Feature	DEP Query Mgmt. Integration Phase 1	Integrate with the Digital Engagement Platform to enable a Registered Service Provider to raise a query	Q3 FY25
Feature	Design System Phase 1	Application of the Design System to high usage screens in the Single Markets Platform	Q3 FY25
Feature	ENAMS/PODE Integration	Synergies of data and workflows standardised across platforms	Q3 FY25
Feature	Performance Monitoring Integration	Develop metrics and reporting for a Registered Service Provider to see their performance over a defined period of time	Q3 FY25
Feature	Pre-Qualification Dashboard	Enable registered Unit Manager / Entity Manager user to be get	Q3 FY25

	Enhancement Phase 2	meaningful insights from system data	
Feature	Connections Integration	Amalgamation of processes where similar data is captured across platforms	Q4 FY25
Feature	NetZero Reporting Metric Phase 2	Improvements and greater reporting for Day 2 Net Zero	Q4 FY25
Feature	Slow & Quick Reserve	Configure the Slow and Quick Reserve services onto the Single Markets Platform	Q4 FY25
Feature	NetZero Reporting Metric Phase 1	Identification and creation of metric for Net Zero.	Q4 FY25
Feature	Decommission RegDB	RegDB to be decommissioned and removed from the IT landscape	Q4 FY25
Feature	Design System Phase 2	Application of the Design System to medium usage screens in the Single Markets Platform	Q4 FY25
Feature	DSO Data Integration / Visibility	Sharing and connectivity of DNO and Asset data with DSOs	Q4 FY25
Feature	Response Reform Release 3a	Ops Metering Enhancements and 24/7 Data availability	Q1 FY26
Feature	Release Reform 3b	FY24 releases will be determined through internal and market engagement and the regulatory consultation process	Q1 FY26
Feature	Integration with Industry Asset Register	Sharing of Asset information with the Industry Asset Register	Q4 FY26

Feature	Response Reform Release 4a	FY25 releases will be determined through internal and market engagement and the regulatory consultation process	Q1 FY27
Feature	Response Reform 4b	FY25 releases will be determined through internal and market engagement and the regulatory consultation process	Q1 FY27

Table 76 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	23.5	4.1	27.6	31.8	- 4.2
OpEx	2.2	0.1	2.3	3.0	- 0.7
TotEx	25.7	4.2	30.0	34.9	- 4.9

Table 77 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolved or refined scope since BP2	Accelerating Scope	Capex	The project will look to accelerate delivery to cover current underspend and to fast-track this delivery of agreed scope including decommissioning of RegDB, implementing the revised Design System and QR nBM OBP delivery via specialist fixed outcome teams that will deliver this by end of BP2 Period.	-2.2m
Efficiencies	Better formed team	Capex	Efficiencies realised – the SMP Project Team is now a mature delivery team and has been able to leverage experience and learning to deliver a larger scope (higher velocity) with the same capacity, thus resulting in a	-1.0m

			reduced actual spend compared with the BP2 forecasted costs.	
Rephased scope since BP2	Rephased Stability and Reactive implementation post BP3	Capex	A strategic decision has been taken that the team will be conducting discovery work only for Stability and Reactive day ahead markets in BP3. However, the implementation of Stability and Reactive day ahead will be rephased after BP3. This results in a reduction in costs in the current period compared with the initial forecast.	-1.3m
Cost Changes Since BP2				-4.8m

Table 78 - Investment cost change summary

Dependencies

The ASR investment will engage and deliver alongside most investments in our portfolio, including Auction Capability (**420**), Data and Analytics Platform (**220**), Enhanced Balancing Capability (**180**) and Settlements, Charging and Billing (**610**).

3.24 Auction Capability (420)

Delivery Method	Strategic Priority Alignment
Agile	Consumer Value

Investment Overview

This investment delivers an Enduring Auction Capability (EAC) platform allowing our market participants to offer their energy services. The capability will improve the experience of parties participating in our energy markets by providing us with greater flexibility to support changes, such as enhanced bidding granularity and the ability to expand and facilitate integration of new services. Across the IT portfolio, this investment interacts with 400 Single Markets Platform, 180 Enhanced Balancing Capabilities, 610 Settlements, Charging and Billing, 220 Data and Analytics Platform and 250 Digital Engagement Platform.

Current State

Over the course of the BP2 period, we have delivered against the priorities set out at the time of submission. The EAC platform was procured, deployed, and integrated with other strategic IT assets, including Single Markets Platform (SMP), the Customer Identity & Access Management

(CIAM) platform and the Data Portal (DP). These integrations and enhancements have enabled connection and interaction with market participants seeking to sell and bid their energy services. Further to this point, over the course of BP2, there was a migration of Dynamic Containment (DC), Dynamic Moderation (DM), and Dynamic Regulation (DR) frequency response services onto the EAC platform. This migration delivered and enabled a more efficient market clearing algorithm which leads to a reduction in procurement costs. As part of this investment during the BP2 period, we also delivered on the Quick Reserve service for Balancing Mechanism (BM) which facilitates closer to real-time reserve procurement events and reduced procurement costs.

Future State

In the BP3 period the Quarterly Release Train for Auction Capability will deliver a Quick Reserve service for non-Balancing Mechanism (nBM) and a Slow Reserve service on the EAC platform. To support progressively complex auction scenarios and align to future ancillary products and services, such as Reactive Power and Stability, the Quarterly Release Train will continue to improve user experience, enhance automation and optimise market clearing algorithms.

Roadmap

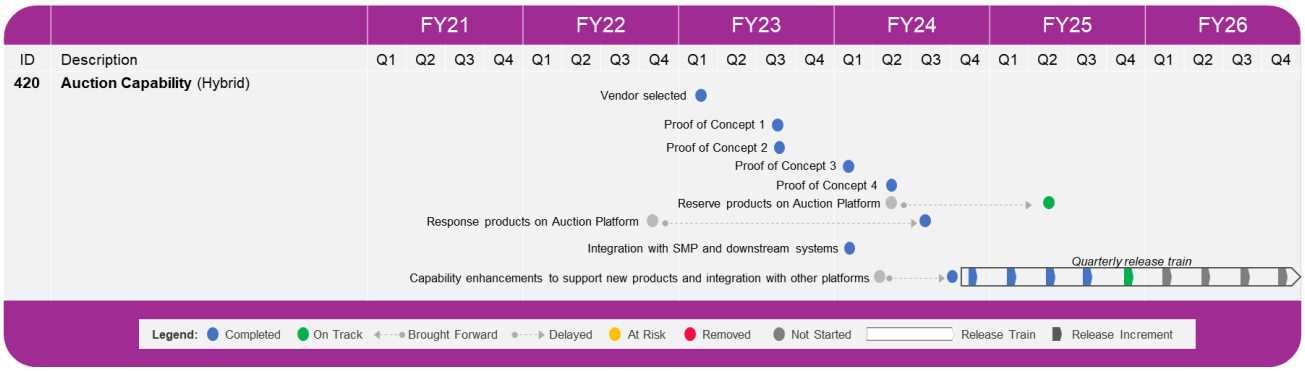


Figure 26 - Outcome roadmap

Event Type	Event Name	Outcome Description	Date
Milestone	Quarterly Release Train	Capability Enhancements to support new products and integration with other platforms 1. Integration with Data Analytics Platform (DAP) 2. Quick Reserve nBM 3. Linked Service Windows 4. Prevention of Over-bidding 5. Slow Reserve 6. Stacking and Splitting	Ongoing Q3 FY25 Q4 FY25 Q1 FY26 Q2 FY26 Q3 FY26 Q4 FY26

Table 79 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	2.0	1.0	3.0	0.8	2.2
OpEx	4.0	0.3	4.3	8.1	- 3.8
TotEx	6.0	1.3	7.3	8.9	- 1.6

Table 80 - Investment cost summary

Cost Drover Theme	Cost Driver	Cost Type	Description	Cost Change Variance (£)
Evolved or refined scope since BP2	Accelerating Scope	Opex	The project aims to accelerate delivery to cover current underspend and to fast-track this delivery of agreed scope by end of BP2 period.	-0.6m
Efficiencies	Refined estimates	Opex	Efficiencies realised – BP2 estimates were drafted before the RFP process for selection of the target platform and have subsequently been refined and reduced with input from the strategic vendor. As a result, the actual costs are lower than in the BP2 forecast.	-1.0m
Cost Changes Since BP2				-1.6m

Table 81 - Investment cost change summary

Dependencies

Downstream: The Ancillary Services Review (ASR), within Single Markets Platform (**400**), has dependencies upon the Auction Capability investment for delivery of auction capability as part of the end-to-end market services delivered by ASR.

3.25 Future Innovation Productionisation (450)

Delivery Method	Strategic Priority Alignment
Scaled Agile	Clean Power

Investment Overview

The purpose of this investment portfolio is to further develop innovation projects which have received Network Innovation Allowance (NIA) funding or Strategic Innovation Fund (SIF) funding through Ofgem to carry out the initial research, development and/or demonstration work, that are now ready to implement the proof of concept (POC). This investment delivers capability to take successful innovation schemes into operational NESO DD&T services, supporting future digital NESO innovation projects that have been recognised as having a wider benefit to the business and/or industry. Those that require formal IT "productionisation" will fit within this investment to ensure alignment with our technology strategy, commercial terms, support requirements and security standards.

This investment allows NESO to:

1. Engage with innovation projects to understand the transition between innovation and operational status
2. Identify and advise upon early innovation projects with common system/interface and security dependencies or constraints which may help to define the benefit of the implementation of the POC
3. Plan a project to implement the POC candidate into the wider IT infrastructure
4. Resource a team to deliver the implementation of the POC projects into IT service Delivery framework

Current State

The rules outlined in the funding governance for the Network Innovation Allowance (NIA) and Strategic Innovation Fund (SIF) do not currently allow for the transition of innovation projects into full operation upon completion. To fully realise the value of the innovative portfolio, funding for productionisation is essential to ensure that successful projects can be incubated and scaled up effectively prior to adoption as BAU activities. Historically, 7 projects (all aligned to RIIO-2 investments) were identified for productionisation and were included elsewhere in the BP2 submission. For BP3, all productionisation will be held centrally against this investment line. Some innovation projects identified in BP2 did not meet the success criteria for further development or are still under evaluation. The list of innovation projects detailed below is continually being

evaluated to better understand timelines and scope, should productionisation be required. There is also the potential for new innovation projects to be added to the list throughout BP3.

Future State

Investment is required to enable us to respond to challenges as they appear, and we will continue to evaluate several projects that may require funding in BP3. Due to the nature of Innovation POC trials, productionisation candidates are dynamic and subject to change. This investment also includes an Opex element to cover initial IT support for new innovation projects. NESO have shortlisted 13 suitable projects, which are on track to complete by 31 March 2025 or during the BP3 period, which are or will be ready to progress to pre-productionisation or productionisation. The anticipated investment for these projects is approximately £4.4m.

Innovation Productionisation: Probability of IT Implementation

Probability of IT Implementation	Description
	Innovation project identified as requiring Productionisation in RIIO-2. Funding request is included in other IT investment items (reference in brackets)
	High probability that budget for IT productionisation is required
	Some probability that budget for IT productionisation is required
	Unlikely to require budget for IT productionisation but may still require data integration with other ESO Technology services

Table 82 - Innovation Productionisation: Probability of IT Implementation Legend

Innovation Productionisation: Project Status Legend

Innovation Project Status	Description
Proposal	An innovation opportunity has been identified and going through viability studies, and contract negotiations where applicable. Trial/POC dates and exact scope not yet confirmed. IT Productionisation candidates are identified and monitored.
Project	The Innovation project is live and in delivery – IT Productionisation candidates' criteria can start to be developed further as the POC develops.
Completed	The Innovation trial/POC has completed and being evaluated with the business owner.

Table 83 - Innovation Productionisation: Project Status Legend

Public

Innovation Projects – Productionisation potential

Project Name	Project Status	Probability of IT Implementation	Estimated Productionisation Start Date	Estimated Productionisation End Date	Role
Model-driven Strategy for Balancing Optimisation	Complete	-	Q1 25/26	Q4 25/26	Major Projects
Course-correction Dispatch Instructor	Complete	-	Q1 25/26	Q4 25/26	Major Projects
Automated Identification of Sub-Synchronous Oscillations (SSO) Events	Complete	-	Q1 25/26	Q4 25/26	Engineering & Customer Solutions
FastPress	Project	-	Q1 25/26	Q4 25/26	SEP
REVEAL	Project	-	Q1 25/26	Q4 26/27	Major Projects
STARTZ	Project	-	Q1 25/26	Q4 26/27	Engineering & Customer Solutions
Solar PV Nowcasting	Project	-	Q1 25/26	Q4 25/26	System Operation
Consumer Building Blocks (Phase 2)	Project	-	Q1 25/26	Q4 25/26	Markets
Dispatch Transparency Methodology	Project	-	Q1 25/26	Q4 25/26	Major Projects

Battery Storage Modelling for Enhanced Connection Assessments (BaTSeC)	Project		Q1 25/26	Q4 25/26	Engineering & Customer Solutions
Grid Connection Simulator Tool (GridConnectX)	Project		Q2 25/26	Q4 26/27	Engineering & Customer Solutions
Regional Reserve	Project		Q3 25/26	Q4 26/27	Markets
Causal Analysis of Balancing Costs	Project		Q3 25/26	Q4 25/26	System Operation

Table 84 - Innovation portfolio

Roadmap

Innovation projects will be assessed for productionisation on a case-by-case basis.

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	-	1.8	1.8	4.2	- 2.4
OpEx	-	0.8	0.8	2.4	- 1.6
TotEx	-	2.6	2.6	6.6	- 4.0

Table 85 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance(£)
Evolved or refined scope since BP2	No productionisation requirements		Within the BP2 period, some candidate projects did not require productionisation or timescales were aligned to fit within other IT	-3.9m

	programmes. This reflected the maturity of the Innovation portfolio in the BP2 period as most projects were focused on research and only reached the development stage towards the end of BP2. As a result, there was a lower actual cost than forecast at the start of BP2.	
Costs change since BP1		-3.9m

Table 86 - Investment cost change summary

3.26 Ancillary Services Dispatch (480)

Delivery Method	Strategic Priority Alignment
Agile	Clean Power, Decarbonised Future, Consumer value & People Value

Investment Overview

The Ancillary Services Dispatch Platform (ASDP) plays a crucial role in balancing the Electricity System by managing the dispatch of Non-Balancing Mechanism (non-BM) units, Short Term Operating Reserve (STOR), and NBM Fast Reserve (FR). It also facilitates the arming and disarming of non-BM volumes for the new Dynamic Frequency Response services and supports regulatory reporting requirements for STOR and FR. Additionally, ASDP delivers the Regional Development Programme for National Grid Electricity Distribution (NGED) and UK Power distribution networks (UKPN), enabling earlier connections in these DNO areas.

This capability enables us to deliver safe and secure balancing systems, support short-term market value and prepare for transforming our balancing capability. Functional development on ASDP is expected to cease in FY 2024, with a Business-As-Usual (BAU) team in place through FY 2025 until the OBP becomes the primary platform.

Current State

In BP2, the ASDP product team has reliably delivered multiple releases, enhancing Electricity National Control Room (ENCC) features for the dispatch of non-BM units and adding new non-BM ancillary services. Our focus is to maintain the ASDP system, safeguarding the quality of the system while it is still in use by the ENCC and to support the retirement activities.

Achievements during BP2 include:

- Release 14a: Enhanced Dynamic Response capabilities to visualise contracted units' Physical Notification data.
- Release 15: Technical go-live of the MW Dispatch service for NGED, along with asset health and ENCC improvements.
- Release 16: Features of MW Dispatch for UK Power Network (UKPN), asset health and ENCC improvements.
- Release 17: Technical go-live of MW dispatch for UKPN, Dynamic Response enhancements for disarming, and further asset health and ENCC improvements.
- Release 18: Dynamic Response enhancements for disarming and MW Dispatch Service enhancements.
- Release 19: Technical and asset health improvements.
- Release 20: ASR Response enhancements and MW Dispatch enhancements.

Future State

During BP3 we will deliver any required key security patches and BAU deliverables to maintain the system leading to migration and then decommissioning.

The enduring ancillary services (ASR Response and MW Dispatch) that the platform supports will be migrated to the Open Balancing Platform (OBP), while retiring the ancillary services (STOR and FR) which will be replaced by the new Quick and Slow Reserve services directly implemented onto the OBP. This transition will facilitate the retirement of the Ancillary Services Dispatch Platform (ASDP) by the end of 2025. OBP will provide an advanced and integrated platform for managing ancillary services alongside the existing Balancing Mechanism (BM) services, resulting in improved efficiency and effectiveness in balancing the Electricity System. The migration of ASDP represents a significant milestone in our journey towards a more streamlined and future-ready energy ecosystem.

Once the new ancillary services have been deployed on OBP, the legacy services will be retained in a disconnected state until an extended acceptance test is completed and approved by the business. Following approval, we will remove the legacy ASDP services and complete decommissioning.

Public

Roadmap

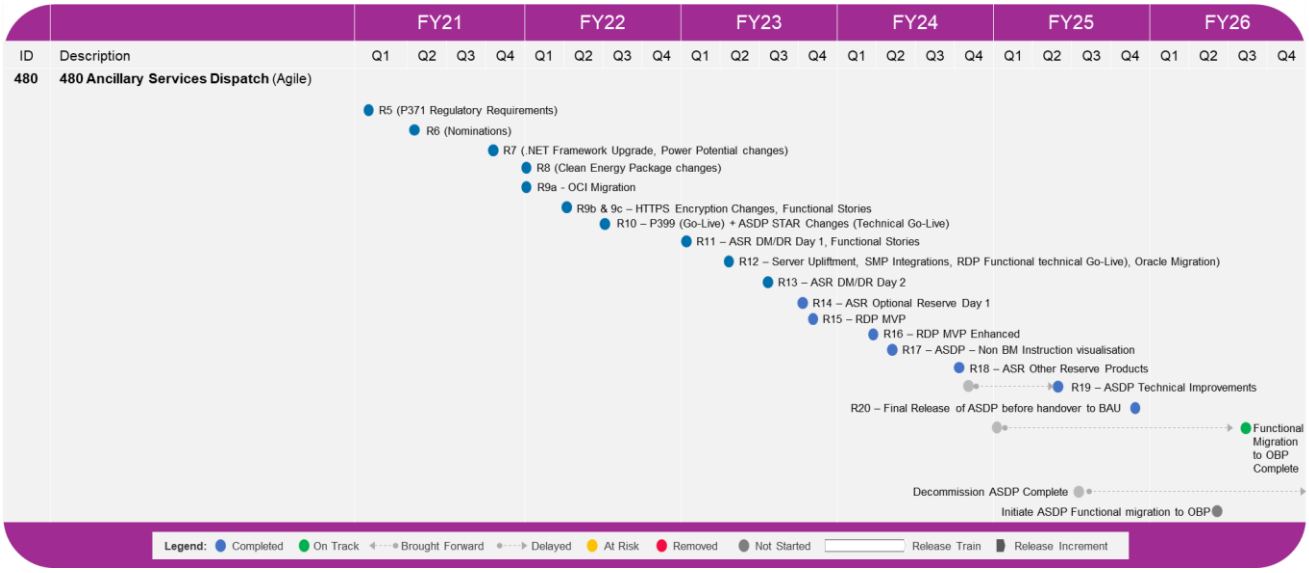


Figure 27 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Initiate ASDP Functional migration to OBP	Functional Migration to OBP Initiated	Q2 FY26
Milestone	Functional migration to OBP complete	ASDP functionalities will be migrated to OBP. All functionality will be migrated to OBP. Dispatch services will be initiated from OBP	Q3 FY26
Milestone	Initiate decommission of ASDP	Final integrations with the OBP, to prepare for decommission	Q1 FY27
Milestone	Decommission ASDP Complete	Decommission ASDP legacy application	Q3 FY27
Feature	Functional migration to OBP complete	ASDP functionalities will be migrated to OBP. All functionality will be migrated to OBP. Dispatch services will be initiated from OBP	Q1 FY26
Feature	Final Integration with the Open	Initiate decommission of ASDP	Q1 FY27

	Balancing platform to prepare for decommission		
Feature	Initiate decommission of ASDP – Final integrations with the Open Balancing Platform, to prepare for Decommission	Final integration with the OBP to prepare for decommissioning	Q1 FY27

Table 87 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	6.5	-	6.5	5.8	0.6
OpEx	0.8	0.7	1.4	2.7	- 1.3
TotEx	7.2	0.7	7.9	8.5	- 0.6

Table 88 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolved or Refined scope since BP2	Data capacity increase	Capex	Additional hardware upgrade to ASDP servers to maintain the running the of system	0.1m
Evolved or Refined scope since BP2	Support costs	Capex	Software support costs as part of the continued running of the ASDP application	0.0m
Efficiencies	Cost efficiencies	Opex	Reduced effort for ASDP supporting other investments resulting in lower actual cost	-0.1m
Efficiencies	Cost efficiencies	Capex	Reduced retirement activities based on transition to OBP	-0.2m

Efficiencies	Cost efficiencies Capex	Reduced hardware spend for ASDP based on the original forecast	-0.4m
Cost Changes Since BP2			-0.6m

Table 89 - Investment cost change summary

Work requested by other investments during BP2 was higher than expected, leading to a reduction in this investment's forecast as our ASDP team capacity was fully utilised and funded by other investments.

By the end of FY25 the ASDP delivery team will be reallocated to other initiatives. The maintenance of the ASDP application will be carried out by the ASDP support team.

We expect to maintain the ASDP system during FY26 until the transition to OBP has completed. This is part of the retirement process that sets the trajectory towards decommissioning.

3.27 Enhanced Frequency Control (500)

Delivery Method	Strategic Priority Alignment
Agile	Decarbonised Future

Investment Overview

This investment aimed to extend our capability to rollout out frequency monitoring from the transmission network into the distribution network. This includes the ability to implement a monitoring and control system (MCS) which provides fast and coordinated frequency response for low inertia zero carbon grid operation. By successfully demonstrating a proof of concept of the target latency (i.e. to trigger the required service responses within 500 m/s) and with the future implementation of an MCS system, we will be able to monitor the energy network at a regional level and coordinate regional frequency responses to maintain the system's frequency stability.

Current State

The proof of concept on the test systems have successfully demonstrated that the required service responses could be triggered within the 500 milliseconds. This was supported by industry resources and included end- to-end testing. These findings were published incrementally. This investment was completed as scheduled during BP2 and the supporting closure reports covering the business case for EFC/MCS services were published.

Future State

The findings of the Enhanced Frequency Control will support the implementation of future MCS solutions, primarily from the Wide Area Monitoring System (WAMS) and Network Control Management System (NCMS) perspective. As the EFC project was completed in BP2 there are no expected or planned deliveries in BP3.

Roadmap

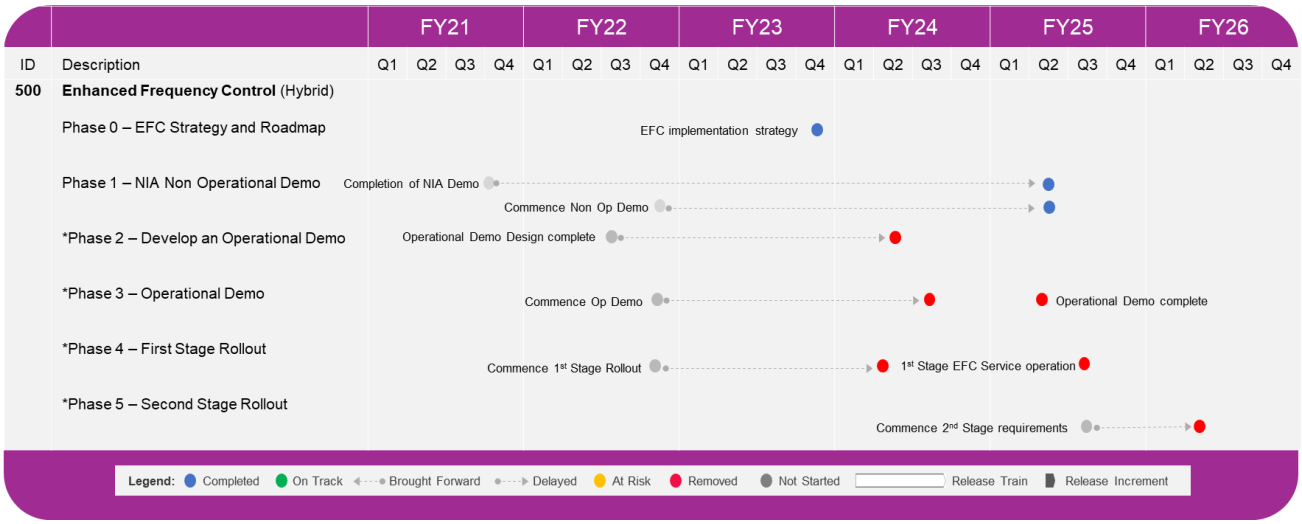


Figure 28 - Outcome roadmap

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	0.4	-	0.4	0.6	- 0.2
OpEx	0.8	-	0.8	0.6	0.2
TotEx	1.2	-	1.2	1.2	- 0.0

Table 90 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolved scope since BP2	Scope Clarification	Opex	To support the non-operational demonstration, we faced additional hardware,	0.2m

			connectivity & licencing costs which were not included in the initial forecasts. This led to an increase in Opex compared to the BP2 forecast. These lessons learnt have been captured for future projects.	
Efficiency	Efficiency	Capex	During the lifecycle of the non-operational demonstration, we were able to reduce the supporting resource costs by effectively applying our ongoing learnings and targeting the level & duration of resource engagement. This led to a reduction in actual Capex cost compared to the BP2 forecast.	-0.2m
Cost Changes Since BP2				-0.1m

Table 91 - Investment cost change summary

3.28 Restoration & Restoration Decision Support Tool (510)

Delivery Method	Strategic Priority Alignment
Waterfall	Digital Mindset

Investment Overview

This investment delivers our capability to manage emergency restart of the electricity network in the context of zero carbon operations. We will provide resilient communication infrastructure to new distribution-connected generators contracted for restoration services.

We will deliver a decision support tool based on real-time data to deliver a dynamic, feasible restoration plan to Government standards. The tool will support the decision making of the control centre engineers in a national power shutdown scenario on the best restoration route to implement based on a number of factors such as MW (Mega Watt), MVAr (megavolt ampere of reactive power), SCL (Short circuit level) of the network, availability, and response time of the restoration providers.

We will implement a tool that runs live with the latest network configuration, providing a dynamic decision tree for the best route to restoration. It will change its output every time the network configuration changes, and update live in a restoration situation if the initial recommendation is overruled. Due to synergies with investment 460 Restoration, these investments have been merged with an integrated delivery plan.

Current State

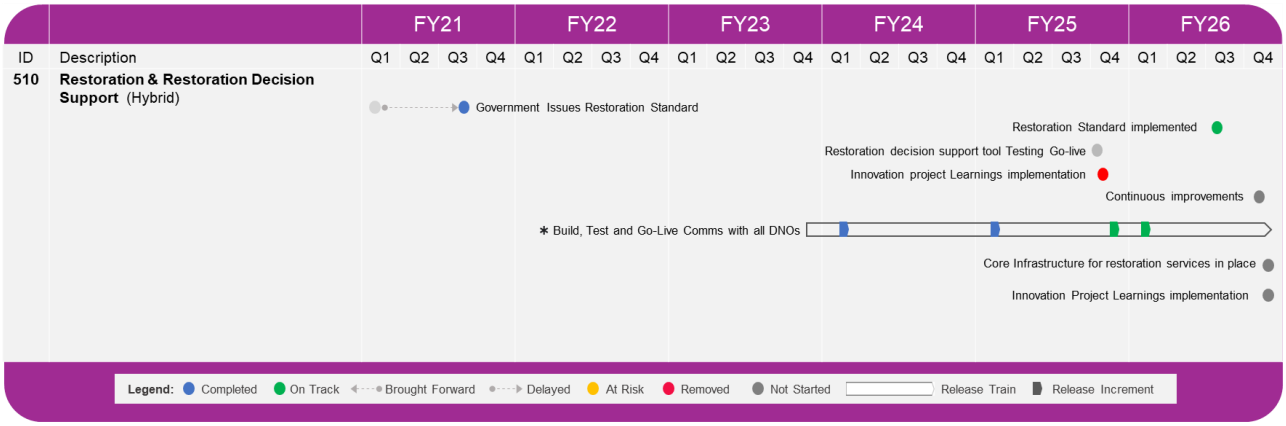
During BP2 we initiated a procurement event for the Restoration Decision Support Tool (RDST), the Pre-Qualification Questionnaire (PQQ) responses showed a mix of vendor capabilities which we categorised as either 'product' or 'build', noting that even the product based vendors would require significant feature developments to meet our full requirements. In parallel with the RDST procurement event, NESO continued to evolve its Digital First agenda, providing clarity on Digital Products and strategic Technical Platforms. Our platform strategy has matured in line with delivery of strategic investments from our business plan, most notably 180 Enhanced Balancing Capability and 110 Network Control.

We re-evaluated the RDST PQQ responses against our Strategic Technical Platforms and reached the conclusion to close-down the procurement event and progress with a vendor solution that aligns with our Network Control Management System (110 Network Control) platform, forming part of a wider whole system operation strategy. We have opted for a phased delivery approach with phase one leveraging the vendors base product with several enhancements to meet our day 1 core requirements. Moreover, we continue to progress the establishment of communication links with DNOs to facilitate data exchange, originally part of investment 460.

Future State

We will have built, commissioned, and enhanced resilient communication infrastructure to DNOs to facilitate participation of new distribution-connected generators contracted for Restoration services. By the end of BP3 we will have implemented the first phase of the Restoration Decision Support Tool (RDST) that runs live with the latest network configuration, providing a dynamic decision tree for the best route to Restoration across all seven regions of the UK. Beyond BP3 the RDST will be enhanced to support more complex restoration route algorithms, more accurate predictions of restoration timescales and unified technology platforms with Network Control Management System (NCMS).

Roadmap



* This Release train has moved to Investment 510 from BP2's Investment 460

Figure 29 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Restoration Decision Support tool/testing/training Go-live	Recommends quick and efficient Restoration routes to Control Engineers, supporting NESO's capability of meeting the ESRS standard.	Q4 FY25
Milestone	Build, Test, and Go-Live comms with all DNOs	Establish communication link between NGESO and DNOs, namely: • Scottish Power Energy Networks • Electricity North West • Northern Power Grid	Q1 FY26
Milestone	Restoration Standards implemented	Quicker system Restoration with limited impact on the society following a partial or total shutdown	Q3 FY26

Milestone	Continuous Improvements	Improved restoration route algorithms, more accurate restoration time predictions and unified technology platforms with Network Control Management System (NCMS).	Q4 FY26
Milestone	Core Infrastructure for restoration services in place	New Restoration service providers have resilient communication and control infrastructure put in place with NGESO and/or relevant network owners to ensure Restoration service can be provided during a National Power Outage.	Q4 FY26
Milestone	Innovation Project Learnings implementation	The RDST tool will be flexible to accommodate learnings from Restoration innovation project and meet Government Restoration standards, including user defined scenarios for multiple Restoration strategies.	Q4 FY26
Feature **CR561 Approved**	Build, Test & Go-Live ENW	Establish communication link between NGESO and Electricity North West.	Q1 FY26
Feature **CR561 Approved**	Build, Test & Go-Live NPG	Establish communication link between NGESO and Northern Power Grid. Electricity North West	Q1 FY26
Feature **CR561 Approved**	Build, Test & Go-Live SSEN	Establish communication link between NGESO and Scottish Power Energy Networks.	Q1 FY26

Table 92 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	1.4	3.8	5.2	22.5	- 17.2
OpEx	0.2	-	0.2	2.5	- 2.3
TotEx	1.6	3.8	5.4	24.9	- 19.5

Table 93 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolving or redefined scope since BP2	Reduced Infrastructure	Totex	Due to the NESO separation from NGET, the upgraded Optel and telephony scope were removed, resulting in a large reduction in Totex cost compared to the forecast from BP2.	-15.4m
Evolving or redefined scope since BP2	Phasing	CapEx	The Restoration Decision Support Tool dependency on NCMS has led to a phased delivery approach with phase 1 being delivered within BP3 and subsequent phases being delivered throughout FY27 and FY28. This means there is a reduction in actual cost during the current period compared with forecasts.	-3.8m
Cost Changes Since BP2				-19.2m*

Table 94 - Investment cost change summary

** Underspend has been re-allocated to other DD&T investments, as outlined in the introduction section to this document.*

Dependencies

Network Control (**110**) to deliver GridOS platform upon which RDST GridOs app will reside.

3.29 Settlements, Charging & Billing (610)

Delivery Method	Strategic Priority Alignment
Scaled Agile	Consumer Value

Investment Overview

This investment underpins the development of NESO's strategic technology capability called STAR (Settlements and Revenue), which enables the management of industry charging and revenue collection, and the settlement of ancillary services. This capability will ultimately replace the obsolete and no longer fit-for-purpose legacy Charging and Billing (CAB) and Ancillary Services Business (ASB) systems.

STAR can be considered in two parts, settlements and revenue, and seeks to improve accuracy in charging, billing, and reporting, while ensuring compliance with controls and regulatory requirements. It also improves user experience and productivity by automating processes and eliminating EUDAs (End-User Developed Applications) and manual workarounds. STAR will provide efficiency, scalability, and flexibility needed to respond at pace to the evolving market and regulatory requirements and meet NESO's Net Zero goals.

Over the course of BP2, we have built on STAR foundational capability and completed the migration of all Revenue services, whilst accommodating mandatory regulatory requirements due to its configurable design. In Settlements, we are progressing the remainder of our roadmap into BP3, having had to adjust our timelines to reflect additional market demands and operational challenges.

Current State

Over the course of BP2, we have progressed the delivery of our milestones and the migration of Settlement services and Revenue streams from legacy systems onto STAR.

For Revenue, we successfully completed the migration of all Revenue streams (TNUoS, Connections, ITC, BSUoS) and related EUDAs onto STAR, as well as statutory, regulatory, customer and market-driven changes. Archiving and decommissioning of CAB will be completed by the end of BP2 period.

For Settlements, we successfully migrated the suite of Frequency Response (including FFR, Dynamic Services and MFR), onto STAR and we are progressing the migration of the remaining services. However, the dynamic evolution of market requirements and the need to remediate operational challenges, have required reprioritisation and iterative planning and have impacted

delivery timescales. To minimise delays, we have delivered efficiencies by adopting and maturing Agile DevSecops ways of working and constantly reviewing our approach to achieving outcome.

Future State

STAR strategic capability will provide NESO with the scalability and flexibility to underpin growing markets and liquidity. It will also enable changes to be implemented faster and more efficiently, ensure we remain compliant with regulatory demands. STAR will deliver process automation and quality data, which will improve user productivity and overall enhance user and customer experience. By the end of BP3, it will be fully hosted on NESO infrastructure as the strategic capability managing all Charging, Billing and the Settlement of Ancillary Services. Operated by a multi-disciplined product team using agile DevSecOps ways of working, it will manage a backlog of enhancements and prioritise changes for both settlement and revenue, to respond with agility to an ever-evolving regulatory environment and serve a diverse complex market.

To deliver this for the Revenue stream, we will complete the delivery of all required functionality enhancement features by the end of BP2. In BP3, a streamlined Product team will prioritise and maintain a high-value backlog of customer enhancements to meet NESO's needs, whilst responding to regulatory changes. To deliver for Settlement, we have brought forward the development of a new suite of three reserve services to meet industry commitments. The early delivery of Balancing Reserve in BP2 has led to the reprioritisation of our final BP2 milestone (Hydro) into BP3. As we build-on and configure STAR's capabilities to deliver our remaining BP2 milestones, we will continue to review and prioritise our roadmap to respond quickly to regulatory changes and market demands for enhancements and the need to introduce new services, such as Reserve or MFR batteries.

Dependencies

Upstream: Dependency on OBP (**180**) to provide some of the data for Reserve services that we use for calculating settlement payments, dependency on ASR (SMP, **400**) to provide the requirements for Quick Reserve and Slow Reserve.

Downstream: DER/CER Visibility and Access (**650**), RDP Implementation & Extension (**340**).

Public

Roadmap

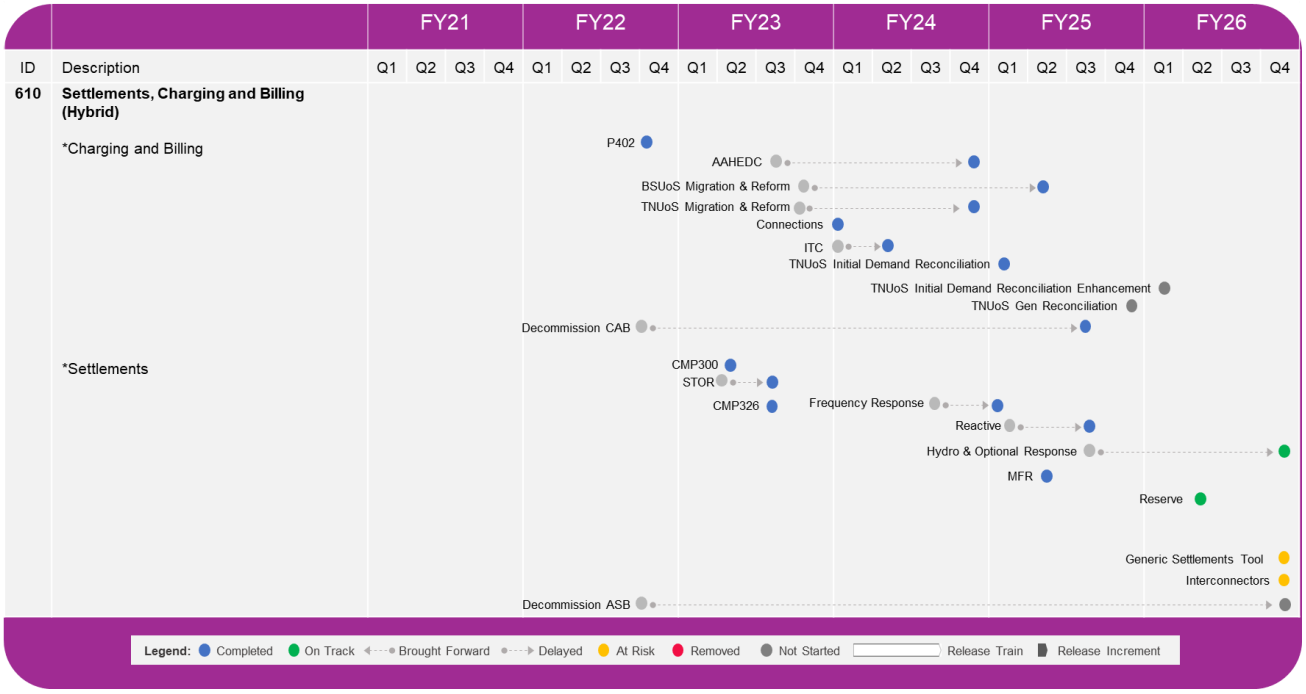


Figure 30 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	MFR	Implementation of the suite of Response Services onto STAR (inc. FFR, DC, DM, DR)	Q2 FY25 (Delivered in BP2)
Milestone	BSUoS Migration and Reform	Implementation of the BSUoS New Methodology Revenue workstream onto STAR	Q2 FY25 (delivered in BP2)
Milestone **CR 557**	Reactive	Reactive service migrated from ASB and implemented for settlement on STAR.	Q3 FY25 (Delivered in BP2)
Milestone	Decommission CAB	Archiving of required legacy data for potential queries and decommissioning of CAB	Q3 FY25 (should I raise CR about scope) (Deliver in BP2)
Milestone **CR 410**	TNUoS Gen Reconciliation	Implementation of TNUoS Generation Reconciliation	Q4 FY25 – existing (Deliver in BP2)

Milestone	TNUoS Initial Demand Reconciliation Enhancement	Enhancement to Initial Demand Reconciliation function	NEW: Q1 FY26 (Backlog Deliver in BP3)
Milestone	RESERVE	Delivery of the suite of Reserve sub-services (features) completes. (Balancing Reserve, Quick Reserve and Slow reserve)	Q2 FY26 (New scope Deliver in BP3)
Milestone **CR 653**	HYDRO & Optional Response	Hydro & Optional Response services migrated from ASB implemented for settlement on STAR	Q4 FY26 (Defer and Deliver in BP3)
Milestone	Generic Settlement Tool	Replacement of manual processes by the implementation of a standard settlement calculation on STAR, which can be applied with minimum customisation/ configuration to the suite of existing small services (e.g. BM Start up, GT fast start, Sync comp) and any new ancillary services to meet with flexibility and pace market future demands. This standard calculation automated from STAR ensures controls are in place to collate and extract data across multiple business processes.	Q4 FY26 – CHECK LATEST (Deliver in BP3)
Milestone	Interconnectors	International SO to SO services are provided mutually with other transmission system operators connected to	Q4 FY26

		Britain's transmission system via interconnectors. Assumption that payment calculations for Interconnectors will be standardised across all Interconnectors, and that this one standard calculation will be implemented on STAR.	
Milestone	Decommission ASB	Enablement of Archiving and Decommissioning of ASB legacy settlement application, now fully replaced by STAR.	Q4FY26
Feature **CR 654**	TNUoS Initial Demand Reconciliation	Implementation of Initial Demand Reconciliation on STAR	Q1 FY25
Feature **CR 410**	TNUoS Final Demand Reconciliation	Implementation of Final Demand Reconciliation solution to allow checks and validations before Reconciliation on STAR	Q3 FY25
Feature **CR 654**	RESERVE – Balancing Reserve	New ancillary Balancing Reserve sub-service (BM and nBM) implemented for Settlement on STAR. Foundational release for all other reserve services	Q1 FY26
Feature **CR 654**	RESERVE – Quick Reserve	New ancillary Quick Reserve sub-service (BM and nBM) implemented for Settlement on STAR.	Q1 FY26
Feature **CR 654**	RESERVE – Slow Reserve	New ancillary Slow reserve sub-service (BM and nBM) implemented for Settlement on STAR	Q2 FY26

Table 95 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	35.6	8.3	43.9	32.2	11.7
OpEx	0.2	-	0.2	1.3	- 1.0
TotEx	35.8	8.3	44.1	33.5	10.6

Table 96 - Investment cost summary

Financial commentary:

BP2 submission for STAR was £40m. We requested the sanction of £11.4m of additional funds in July 2023 to sustain the level of investment required to enable the migration of Revenue streams and Settlement services onto STAR, whilst reflecting the dynamic nature of Market demands and evolution of scope and terms of services scope in consideration. These £11.4m additional funds were accounted for and funded from efficiencies obtained across the portfolio.

By the end of BP2, we will have delivered about two thirds of our committed deliverables, at a run rate ~£10m p.a. The forecasted ~£10.8m spend to implement the remaining third of committed deliverables is commensurate with the annual spend profile to date. The forecast also includes budget to maintain a Revenue Product team, funded by efficiencies. The further £10.5m required for BP3 I represents an additional £2.27m above TOTEX lifetime sanction. Part of this additional forecast represents the additional scope required to cover markets requirements to settle a new set of Reserve Services, which will be partly funded by the ASR programme (£1.1m).

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolving or redefined scope since BP2	Change in scope	CAPEX	Mandatory regulatory changes and the requirement for new services led to an increase in cost. Cost increases were due to the lack of visibility of upcoming changes, the scope of changes and the approvals required. Implementing	0.9m

			resulting scope changes led to an increase in Capex cost compared to the BP2 forecast.	
Evolving or redefined scope since BP2	Scope clarification/ Increasing scope	CAPEX	As development progressed with this investment, there was a greater understanding of the complexity and uniqueness of each service which was not fully understood when the original forecasts were made in the BP2 submission. This additional complexity increased the scope of the investment, with a resulting increase in cost to cover the effort and time requirements to implement.	1.4m
Systems or Assets requiring unexpected spend	Performance remediation / resilience update	CAPEX	Complexity of the system led to system performance below business expectations, this had to be remediated before adding further services to STAR Improvements to system performance led to increased resource, infrastructure and licensing costs.	1.3m
Redefined scope since BP2	New scope	CAPEX	In order to meet new market directions towards net zero, a new set of Reserve sub-services were required that were not anticipated in the original BP2 submission. This	1.5m

			resulted in additional cost to deliver the new scope.	
Evolving or redefined scope since BP2	Scope clarification/ Increasing scope	CAPEX	To ensure data retention obligations are achieved, there were additional requirements for query capability on CAB legacy archived data that were not known at the time of the original BP2 submission, resulting in additional cost to implement.	0.2m
Understatement at BP2 submission		CAPEX	Actual costs and remaining forecast leading to an outturn were higher than initially forecast at the beginning of the RIIO-2 (2021) period. This was due to the complexity of services being migrated to STAR being underestimated in the original forecast, with the dynamic nature of services leading to a greater number of required changes. To fulfil the greater number of changes, more resources and test environments were required, leading to an increase in actual cost compared to the original forecast.	3.6m
Systems or Assets requiring unexpected spend	New scope	CAPEX	The transition of ESO to NESO has resulted in the additional scope requirement to migrate the STAR system to NESO infrastructure, resulting in	0.9m

			additional cost to complete the migration.	
Systems or Assets requiring unexpected spend	New scope	CAPEX	A strategic decision within NESO's architectural strategy required a transformation of middleware from the MuleSoft platform to Azure, resulting in additional cost not foreseen at the start of the BP2 period.	0.8m
Cost Changes Since BP2				10.6m

Table 97 - Investment cost change summary

Assumptions

Category	Assumption	Investment Impact Areas	Review Frequency
Delivery	The 5 Interconnectors on ASB can be standardised and migrated to STAR as a single service	Settlements, Charging & Billing	Quarterly
Delivery	Balancing Reserve provides building blocks for Quick Reserve and Slow Reserve which enables them to be developed incrementally	Settlements, Charging & Billing	Quarterly
Delivery	ASB decommissioning will be possible within 3 months of completing migration of all Settlements services to STAR	Settlements, Charging & Billing	Quarterly
Delivery	Generic Settlements Tool will be largely built using elements which have been developed for other Settlements services	Settlements, Charging & Billing	Quarterly

Table 98 - Investment assumption summary

Risks/ Issues

Risk	Mitigation	Likelihood	Impact
Migrating the STAR Application to NESO will be complicated due to number of integrated systems which may cause delays and disrupt roadmap delivery	Co-ordination of migration plans across integrated applications	3	4

Table 99 – Investment risks/issues summary

3.30 DER/CER Visibility and Access (Formerly AWEF) (650)

Delivery Method	Strategic Priority Alignment
Agile	Clean Power

Overview & Purpose

As we transition to Net Zero, we are seeing a proliferation in the volume of flexibility assets (wind, solar, Electric Vehicles (EV), batteries, etc.) connecting to distribution networks, changing how they behave and unlocking additional flexibility for NESO and DSOs. FES 2023 analysis identified 34GW of Distributed Energy Resource (DER) and CER (Consumer Energy Resource) connected to the GB distribution networks in 2022, representing c30% of total capacity, which NESO has limited or no visibility of. By 2030, this capacity could increase to as a much as 62 GW (Leading the Way Scenario).

As a result, NESO and DSOs need greater visibility of these DER and CER assets to better plan, connect, and operate networks, increase market liquidity, and maintain system resilience through greater co-ordination between NESO and DSO operational activities. Achieving these aims will become increasingly important as installation of DER accelerates. In BP2, NESO committed to working with industry to deliver visibility of DER across all timescales, improving real time operations, market facilitation and strategic planning. This investment was comprised of two separate workstreams, DER/CER Visibility and Access plus Primacy. Since BP2 publication, we have realised this investment should just focus on DER/CER Visibility and Access. Primacy can be found as a separate investment number 710.

Current State

We mobilised and finalised a DD&T discovery phase for DER Visibility in FY25 Q2. This provided us with initial business needs, impacts to platforms and change strategy with high level estimates of effort and costs for further work. This was done at a high level with various assumptions captured, requiring validation during next phase.

Next phase planning is under way, with recruiting and shaping the delivery team to enable next phase outcomes, our current priority. We made the decision to first fully understand the DER impact assessment and next phase plan outcomes before mobilising a discovery stage for CER, as constraints and assumptions captured during DER discovery would most probably manifest themselves for CER.

Future State

Apart from enhancing our current capabilities to handle new data volumes, we will also look at potential needs for new functionality in those same capabilities based on required amendments to current processes. Beyond RIIO-2, we will look at how DER data can be shared and ingested, for both operational and planning purposes to ensure alignment to other ongoing data sharing initiatives. All areas of the enterprise will be assessed from registration to settlements for needed changes to enable DER participation. The table below focuses on capabilities and target platforms from a DER Visibility perspective, and will be extended to cover CER required capabilities in a future revision.

Core Capability Domain	Target Platform
Forecasting	This is a key focus area for the DER Visibility initiative to enable improved forecasting capability to support NESO and market participants to make efficient system balancing decisions ahead of real time to deliver value to consumers. The Platform for Energy Forecasting (PEF) which NESO is currently implementing will be leveraged to improve forecasting models and methodologies, applying advanced statistical learning, machine learning modelling techniques and automation for operational decision making by NESO.
Balancing	Enhancement to the optimiser used for balancing demand versus supply, and determining the most cost-effective generation mix to meet the demands encompassing the anticipated circa 25000 DERs (as estimated by the DER Visibility project's analysis) over the next 10 years, across multiple energy vectors. Current balancing systems will not handle the significant increase in the number of generation units, requiring alternative optimisation techniques to be sought. We

	envisage this optimisation process to be implemented within the Open Balancing Platform (OBP) through the introduction of enhanced automation and machine learning capabilities, integrated with our Data and Analytics Platform (DAP), Advanced Analytics Environment (AAE) and Platform for Energy Forecasting (PEF).
Data	Data is a core capability domain that underpins the visibility of the DER (and CER) assets. NESO DAP platform will be leveraged for this initiative. Where possible, the Data Sharing Infrastructure and strategic integration platforms will be leveraged to enable the data sharing between NESO and Market Participants. We will work with colleagues across our Data, Data Architecture and DAP teams to ensure re-use and standardisation which can be utilised for the needs of the NESO organisation, and our wider stakeholder communities, be that industry or consumer related. We will follow an approach that enforces accurate and quality data to be exchanged across a wide range of parties in a secure yet accessible manner.
Settlements	The industry processes which will manage the settlement of increased volumes of DER Assets is yet to be finalised. Depending on the agreed process arrived at by the wider industry, the responsible party along with the technology platform providing the target solution to be utilised for settlement calculation will be determined. NESO's Strategic Settlements and Revenue Platform (STAR) is currently identified as a target platform to be leveraged for Settlement calculation of the DER assets for any NESO service. We envisage an enhancement of the STAR platform will be required to support the increased number of providers to be settled in the future.
Auctions	The vast increase of the DER assets in the energy market will significantly impact the complexity of the auctions capability across the industry. We envisage that utilisation of modern technologies such as AI being leveraged to enhance the current auctioning capabilities with providers. The strategic NESO auction platform, Enduring Auction Capability (EAC), will be leveraged with additional enhancements to support this initiative.
Registration	Ofgem consultation around Flexibility Market Asset Registration proposes a new centralised Asset Register where DER (and potentially CERs) providers register their assets. The Asset Register will then be accessed by various parties including NESO. Our Single Market Platform (SMP) will receive the required information from the Asset Register and send to other NESO downstream systems as necessary. Following the outcome and recommendation of the consultation, the target platform providing this capability will be determined.

Public

Roadmap

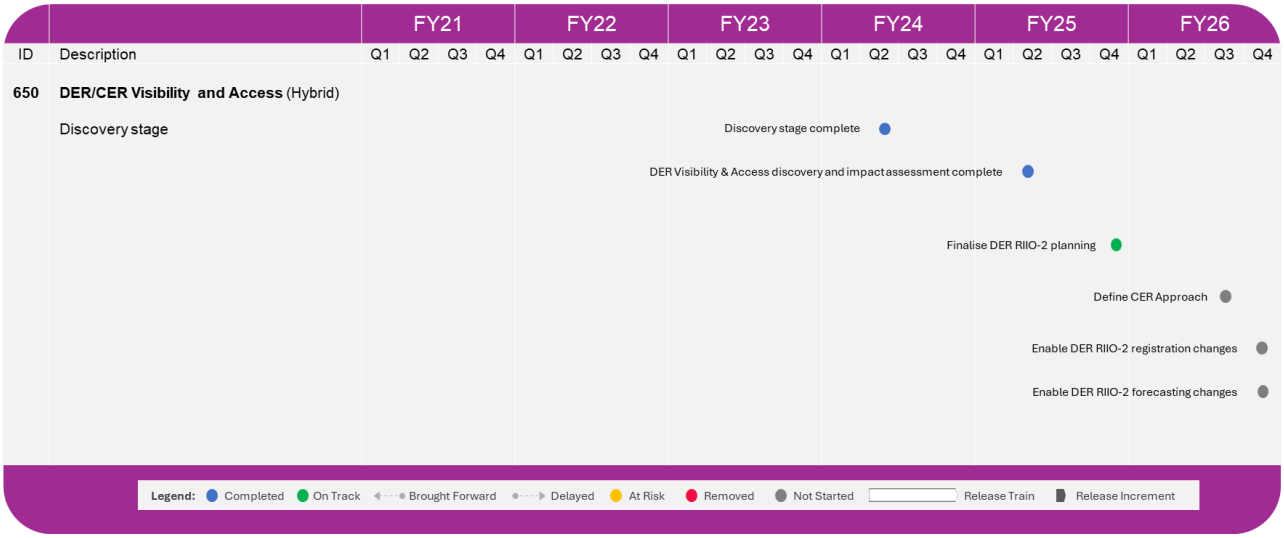


Figure 31 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	DER Visibility and Access: discovery and impact assessment complete	Definition of business needs, impacts to platforms, change strategy with estimates of effort and costs for further work	Q2 FY25
Milestone	Finalise DER RIIO-2 planning	Finalise planning of specific deliverables for FY26	Q4 FY25
Milestone	Define CER approach	Decide on how to implement CER changes based on DER implementation experience	Q3 FY26
Milestone	Enable DER RIIO-2 registration changes	Implement agreed changes from planning phase in registration area	Q4 FY26
Milestone	Enable DER RIIO-2 forecasting changes	Implement agreed changes from planning phase in forecasting area	Q4 FY26

Table 100 - Outcome summary descriptions

All Primacy milestones are being delivered as a separate investment (710) in BP3 and are therefore not in the scope of this investment.

Public

Approach

Given the number of assumptions raised during the DER discovery stage, our delivery plan will first focus on clarifying the most important assumptions and those that sit on the critical path to enable benefits. This will enable a pragmatic approach to delivering changes as early as possible and with least regret, also allowing for a CER delivery approach to be agreed. Based on the outcomes of the Discovery Phase we believe the areas we should focus on during the BP3 period are Registration and Forecasting.

Solution Options

The anticipated timeframes being worked towards for this initiative have determined that the solution should only be considered for delivery against our strategic architecture roadmap, using enduring platforms, rather than building further technical debt into applications and systems which are to be retired. The depth and breadth of this investment touches nearly all parts of our enterprise technology landscape, and as such a collaborative approach across the teams and functions within both the NESO organisation and wider industry will be fundamental to achieving success. Standard integration patterns will be required, with all parties being pragmatic in reaching standard data exchange methods. We will follow principles adopted in other investments to maximise platform reuse, make informed decisions around whether to build or buy, and avoid customisation of COTS or SaaS services, instead configuring features where necessary. We will leverage our Data and Analytics platform's data lakehouse and build the necessary data products within the platform to surface data in an open and accessible way.

Following NESO's DevSecOps delivery framework, the solution will be constructed in multiple iterative releases, continually refining and improving quality and functionality in each release cycle. Automated testing will be embedded within the solution delivery to accelerate pace and consistency throughout.

Costs

	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	0.1	-	0.1	-	0.1
OpEx	0.0	-	0.0	0.1	- 0.1
TotEx	0.1	-	0.1	0.1	0.0

Table 101 - Investment cost summary

The DER/CER Visibility & Access investment will be funded by a cost allocation from the Strategic Energy Planning Directorate, rather from BP3 budgets.

Assumptions

Category	Assumption	Investment Impact Areas	Review Frequency
Delivery	No DER changes can be made in balancing area until decommissioning of legacy systems due to data volume increase and an assumption that strategic platforms are available from 2027 for implementation to start	Balancing, Network control	Quarterly
Delivery	DERs will be treated like BMUs (i.e. mandatory to provide data and participate in markets)	Registration, Balancing, Settlements	Quarterly
Costs	We estimate there may be 25,000 new DERs within 10 years	All	Quarterly

Table 102 - Investment assumption summary

Risks/ Issues

Risk	Mitigation	Likelihood	Impact
Current processes may not be able to cope with significant increase on the circa 650 units that we currently have within our systems.	Apply digital first mindset Do proof of concepts	4	4
There isn't an optimal option available for connections to and of DERs.	Identify critical decision-making criteria Involve industry in discussions	5	3
Data accuracy from DERs may be limited, leading to benefits not being achieved.	Run industry tech in sessions and apply validation and penalty/reward rules	4	4

New products on Market Facilitator side may get created adding scope or changing levels of complexity in implementation of NESO changes	Engage directly with Market Facilitator	3	3

Table 103 – Investment risks/issues summary

Dependencies

This investment is dependent on Frequency Visibility (**170**), both Balancing Asset Health (**210**) and Enhanced Balancing Capability (**180**), Network Control (**110**), Connections Platform (**380**), Role in Europe (**270**), GB Regulations (**280**), Settlements, Charging and Billing (**610**), Data and Analytics Platform (**220**), and Auction Capability (**420**).

3.31 Real-Time Prediction (670)

Delivery Method	Strategic Priority Alignment
Agile	Clean Power

Investment Overview

The real-time prediction (RTP) investment aims to provide improved national demand forecasts at minute resolution to be used by the dispatch advisor for energy balancing. We are currently building a new and improved real time demand prediction capability to replace the existing national demand predictor used by energy desks within the Electricity National Control Centre (ENCC). This will enable better modelling of energy and security requirements of the power system resulting in reduced reserve requirements as well as reduced balancing costs.

Current State

We have set up our core-delivery team and kicked off long-range planning based on the discovery outcome. Our discovery outcome captures the as-is business process, user journeys and business logic within the legacy systems. We determined that the best approach to ensure user adoption would be to build an algorithm that mirrors current system output first and then incrementally improve it to solve business friction and user pain points. We have defined three major milestones based on our product strategy – Minimum Viable Product that delivers a foundational real-time prediction system with end-to-end data pipelines, Minimum Marketable Product that delivers functional real-time prediction system that users will be able to use

alongside the legacy demand prediction system, and Enhanced Real-time Prediction that has improved performance metrics and enhanced decision-making capabilities.

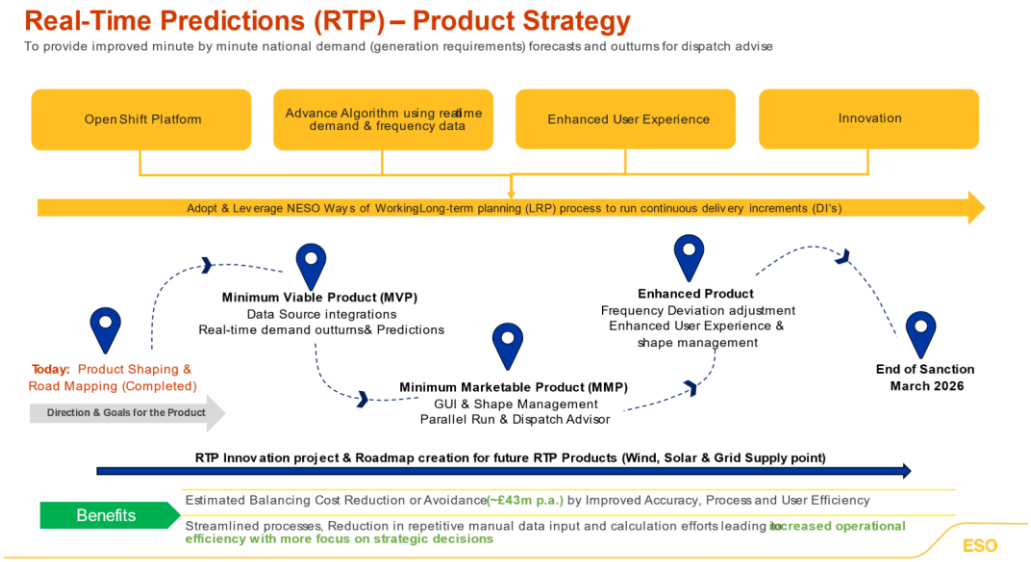


Figure 32 - Real-Time Predictions (RTP) - Product Strategy

Our first milestone, minimum viable product will focus on delivering a working product to the control room with all the foundational elements required to validate the prediction accuracy. We have set up the application foundation on the Open Balancing Platform (OBP), migrated historical outturn data from legacy Balancing Mechanism (BM) Systems and setup algorithms to calculate the demand outturn as well as demand prediction. We remain on track to deliver the real-time prediction capability by March 2026.

Future State

Our minimum marketable product will create user adoption by incrementally building features that builds confidence with the users. Control room users will be able to use a functional real-time prediction capability with improved performance metrics and an enhanced user experience. The real-time prediction application will be integrated with the OBP by consuming live metering data to calculate demand outturn and provide demand prediction to the National Optimiser as generation requirement. The product will continue to evolve by measuring and improving the prediction accuracy using newer technologies and models. During BP3, further discovery and architectural work will be done to determine scope for all forecasting products such as Grid Supply Point forecasting, Solar, Wind, and Distributed Energy Resources (DER/Embedded generation) allowing for further product improvements and integration beyond BP3.

Public

Roadmap

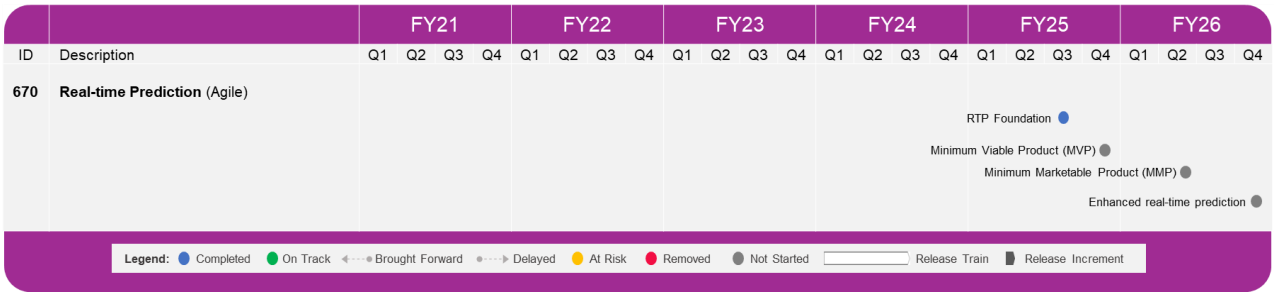


Figure 33 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	RTP foundation - Foundation of prediction algorithm and outturn calculation	Application will be set up on the Open Balancing Platform to establish foundational readiness and historical outturn data will be migrated as a pre-requisite for building foundational real-time demand prediction capabilities	Q3 FY25
Milestone	Minimum Viable Product (MVP) - Functional demand prediction algorithm and outturn manager with foundational visualisation framework to view prediction and outturn data	Users will be able to validate the output of the real-time demand predictor	Q4 FY25
Milestone	Minimum Marketable Product (MMP) - Functional real-time demand prediction capability with enhanced visualisation embedding historical demand profiles, performance metrics and configurable input	Users will be able to use a functional real-time prediction capability alongside the legacy demand predictor for energy balancing	Q2 FY26
Milestone	Enhanced real-time prediction - Enhanced real-time prediction capability with improved performance	Users will be able to use improved performance metrics and enhanced user experience for better decision making	Q4 FY26

	metrics and user experience		
Feature	Ability to build demand prediction based on multiple models	The system will have the capability to use multiple prediction models to improve the accuracy of national demand prediction	Q4 FY26
Feature	Ability to compute demand outturn	The system will have the capability to compute and store national demand outturn	Q4 FY25
Feature	Ability to compute demand prediction	The system will have the capability to compute and store national demand prediction	Q4 FY25
Feature	Ability to configure user input	Users will be able to update prediction algorithm's configuration on the common front end display	Q2 FY26
Feature	Ability to improve data processing and validation capabilities	The system will have improved data processing and validation capabilities	Q4 FY26
Feature	Ability to perform demand shape management	Users will be able to manage the shape of the demand curve on the common front end display	Q2 FY26
Feature	Ability to select historical profile	Users will be able to select a historical profile to feed to prediction algorithm for pattern matching	Q4 FY26
Feature	Ability to use basic performance metrics for decision making	Users will be able to use basic performance metrics for better decision making	Q2 FY26
Feature	Ability to use improved performance metrics	Users will be able to use improved performance metrics for better decision making	Q4 FY26
Feature	Ability to view the outturn and prediction on a graphic user interface	Users will be able to view outturn data and prediction data on the common display in the front end	Q4 FY25
Feature	Initiate development of MVP algorithm	Initiate development of MVP algorithm	Q3 FY25

Feature	Migrate historical outturn data	Migrate historical outturn data from BM SORT to RTP outturn manager in Azure	Q3 FY25
Feature	Set up RTP foundation on Open Balancing Platform	Build RTP foundational architecture and microservices on OBP	Q3 FY25

Table 104 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	2.2	2.4	4.6	N/A	4.6
OpEx	0.2	0.5	0.7	N/A	0.7
TotEx	2.4	2.9	5.3	N/A	5.3

Table 105 - Investment cost summary

This investment was at a formative stage at BP2 initiation, and thus we were unable to provide any forecast. During the BP2 period, this investment was initiated and mobilisation was communicated via our CMF process. NESO has continued to engage with Ofgem over the course of BP2 via the CMF reports, providing updates as the investment has continued to mature. The absence of a full BP2 submission explains the variance shown above.

Dependencies

Upstream: There is a dependency on Enhanced Balancing Capability (**180**) as this investment is delivered on that platform.

3.32 Local Constraints Market (680)

Delivery Method	Strategic Priority Alignment
Agile	Decarbonised Energy

Investment Overview

The Local Constraints Market (LCM) is an interim market aimed at reducing constraint costs by increasing demand or reducing embedded generation within constrained network areas, specifically boundaries from Scotland to England and from northern to southern Scotland. LCM seeks to provide benefits in learning and development for NESO as this is a new and high growth potential area. As agreed with Ofgem, LCM is an interim investment aimed at managing high and

rising transmission constraint costs ahead of the delivery of a strategic solution through the Regional Development Programme (RDP) implementation beyond 2025. LCM uses an existing 3rd Party market platform to simplify design scope and minimise integration with existing systems to accelerate delivery of an end-to-end solution encompassing contracting, onboarding, availability submissions, price submissions, requirement setting, order stack creation, dispatch, settlements, and reporting.

Current State

Post the BP2 submission, it became evident that there was a need to manage increasing transmission constraint costs. After completing a discovery phase to understand the best approach, trials with market participants spanning 3 months ensued, to ensure market participants were able to engage in the end-to-end process for LCM. Post the successful trials, where we determined we were able to complete auctions, LCM went live in Q3 FY 2024.

By introducing LCM, which enables us to manage constraint costs, we have taken a key step to increasing market competition for actions needed in constrained areas at the boundary of England and Scotland and between northern and southern Scotland. We are also building fundamental learning about Demand Turn Up with both Domestic and Industrial assets. In addition LCM delivers qualitative benefits including nurturing new sources of flexibility, developing new and fairer compensation and understanding interoperations with DNOs.

Future State

No further investment is planned for LCM during BP3, however the market will continue to operate until the end of Q3 FY 2025 as to provide RDP with qualitative strategic learnings and understandings of this newly opened market.

Roadmap

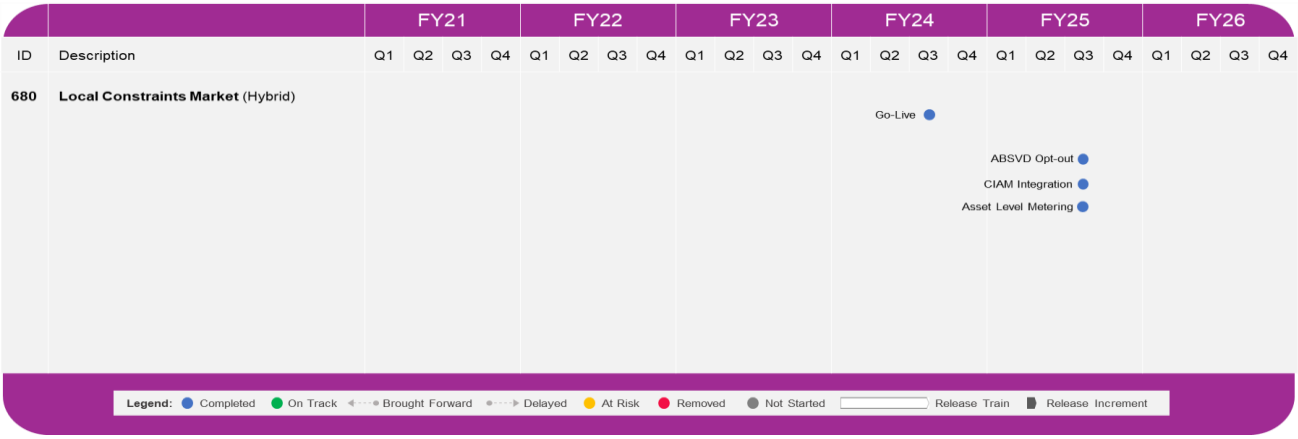


Figure 34 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	ABSVD Opt-out	Allow LCM participants to opt in / out of the ABSVD report	Q3 FY25
Milestone	CIAM Integration	Provide participants with single sign-on functionality to the LCM portal via the CIAM platform	Q3 FY25
Milestone	Asset Level Metering	Allow aggregators to provide asset level metering rather than boundary point metering	Q3 FY25

Table 106 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	- 0.0	-	- 0.0	-	- 0.0
OpEx	0.3	-	0.3	-	0.3
TotEx	0.3	-	0.3	-	0.3

Table 107 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Evolving or redefined scope since BP2	Scope	TotEx	The delivery of a new LCM as an interim investment to increase market competition and reduce transmission constraint costs was agreed post-BP2 submission. The cost is therefore reported as a variance to the BP2 submission.	0.3m
Cost Changes Since BP2				0.3m

Table 108 - Investment cost change summary

3.33 Primacy (Formerly AWEF 650) (710)

Delivery Method	Strategic Priority Alignment
Agile	Customer Centricity

Overview, Purpose & Strategic Fit

As we transition to Net Zero, we are seeing a proliferation in the volume of flexibility assets (wind, solar, Electric Vehicles (EV), batteries, etc.) connecting to distribution networks, changing how they behave and unlocking additional flexibility for NESO and DSOs. FES 2023 analysis identified 34GW of Distributed Energy Resource (DER) and Consumer Energy Resource (CER) connected to the GB distribution networks in 2022, representing c30% of total capacity. By 2030, this capacity could increase to as much as 62 GW (Leading the Way Scenario).

In BP2, AWEF (650) comprised of two separate workstreams, DER/CER Visibility & Access and Primacy. Having completed the discovery phase for DER it became evident there was a need to split the two investments. This is due to DER/CER Visibility & Access aligning more closely with the Strategic Energy Planning (SEP) in BP3, whilst Primacy aligns with the Markets delivery portfolio. The Primacy investment aims to implement rules into commercial and operational systems and platforms, focusing specifically on the conflicts that arise from utilising more distribution connected assets, which may receive competing or conflicting signals for operation by Distribution Network Operators (DNOs). Enabling this investment would ensure there is improved service co-ordination between NESO and DNOs on the use of distribution connected assets.

Current State

NESO continues to participate in the Electricity Network Association (ENA) Primacy Technical Working Group defining the internal and external business impacts of increased coordination between NESO and DNOs. The aim of the Working Group is to agree rules to manage the conflicts that may arise when distribution connected assets receive competing or conflicting signals for operation by DNOs. These rules will inform the scope of the Primacy investment.

Future State

Once there is more certainty on scope of the Primacy investment, taking account of the approach being taken by the Electricity Network Association (ENA) Primacy Technical Working Group, we will mobilise a Digital, Data & Technology (DD&T) discovery phase. The discovery phase is aimed at assessing the impact of the primacy rules on NESO systems and processes, including refinement of cost and time to implement. The implementation of primacy rules aims to mitigate any conflict that may arise should NESO and DNOs issue competing instructions to assets connected to the distribution network. Adherence to agreed primacy rules will provide better operational understanding and predictability to both NESO and DNOs.

Public

Roadmap

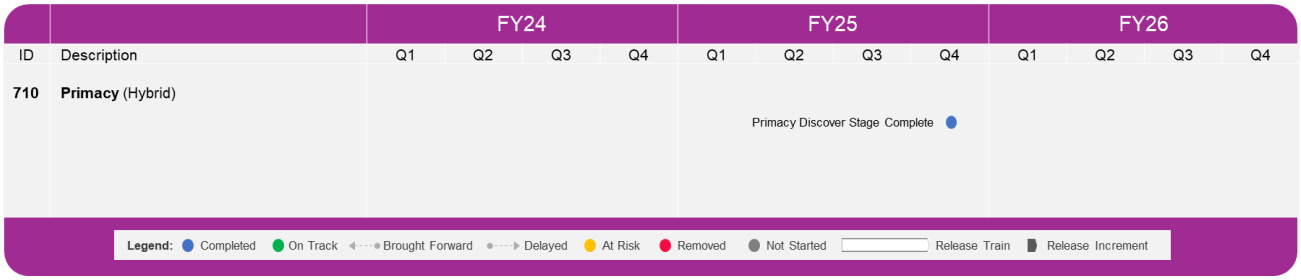


Figure 35 - Outcome roadmap

Milestone	Outcome recipient	Outcome description	Date
Milestone	Primacy: Discover stage complete	Definition of business needs, impacts to platforms, change strategy with estimates of effort and costs for further work	Q4 FY25

Table 109 - Outcome summary descriptions

Approach

The Primacy project approach will be defined after completion of the DD&T discovery phase.

Solution Options

The solution options for the Primacy project will be considered after completion of the DD&T discovery phase and will follow the principles adopted in other investments to maximise platform reuse and make informed decisions whether to build or buy COTS or SaaS solutions. The forecast covers the discovery and initial scope delivery during the BP3 period. We have calculated these costs using our experience from previous discovery projects. There are 2 resources performing the initial discovery, the output of discovery will be a clearly defined scope and roadmap which we anticipate will continue beyond BP3 and require further investment.

Costs

Total View	FY '26
CapEx	-
OpEx	-
TotEx	0.5

Table 110 - Investment cost summary

Assumptions

Category	Assumption	Investment Impact Areas	Review Frequency
Cost & Timeline	It is assumed scope will be defined in Q4 FY25 followed by the completion of a DD&T discovery phase and project initiation during the BP3 period	DD&T	Quarterly

Table 111 - Investment assumption summary

Risks/ Issues

Risk	Mitigation	Likelihood	Impact
There is a risk that the above Assumption proves to be invalid	Review and refine cost and timeline after Q4 FY25 once scope is better understood	2	3

Table 112 – Investment risks/issues summary

3.34 Network Services Procurement (Formerly Emergent Technology & System Management) (NSP) (720)

Delivery Method	Strategic Priority Alignment
Waterfall	Consumer Value

Investment Overview

This investment covers the Voltage & Stability Pathfinder programme. The aim of the Pathfinder programme is to identify the most economical way to operate a low-carbon system while preserving system security, reduce consumer bills and reduce the environmental impact of the electricity industry.

Current State

During BP2 this investment has focused on completing the development and testing of some of the key elements, such as the NED (Uniform Pricing) Report, the delivery of Balancing Mechanism (BM) Revision and the Separation of Short Circuit Level (SCL) from Inertia. Grid Forming Batteries

onboarding to the NESO systems provide Stability services for the Grid, allowing response to Inertia deficits in real time.

Future State

Although NESO's solutions are well understood and are in the process of being implemented, ongoing interactions with partners led to additional deliverables. This investment will refine the delivery scope and support these distributed partner components, with the aim to operate a low carbon systems security. Pathfinders provides key insights and leadership on long term pathways for the energy sector, managing connections to the energy transmission system and delivering solutions to long-term operability needs through the innovative Pathfinder programme.

Roadmap

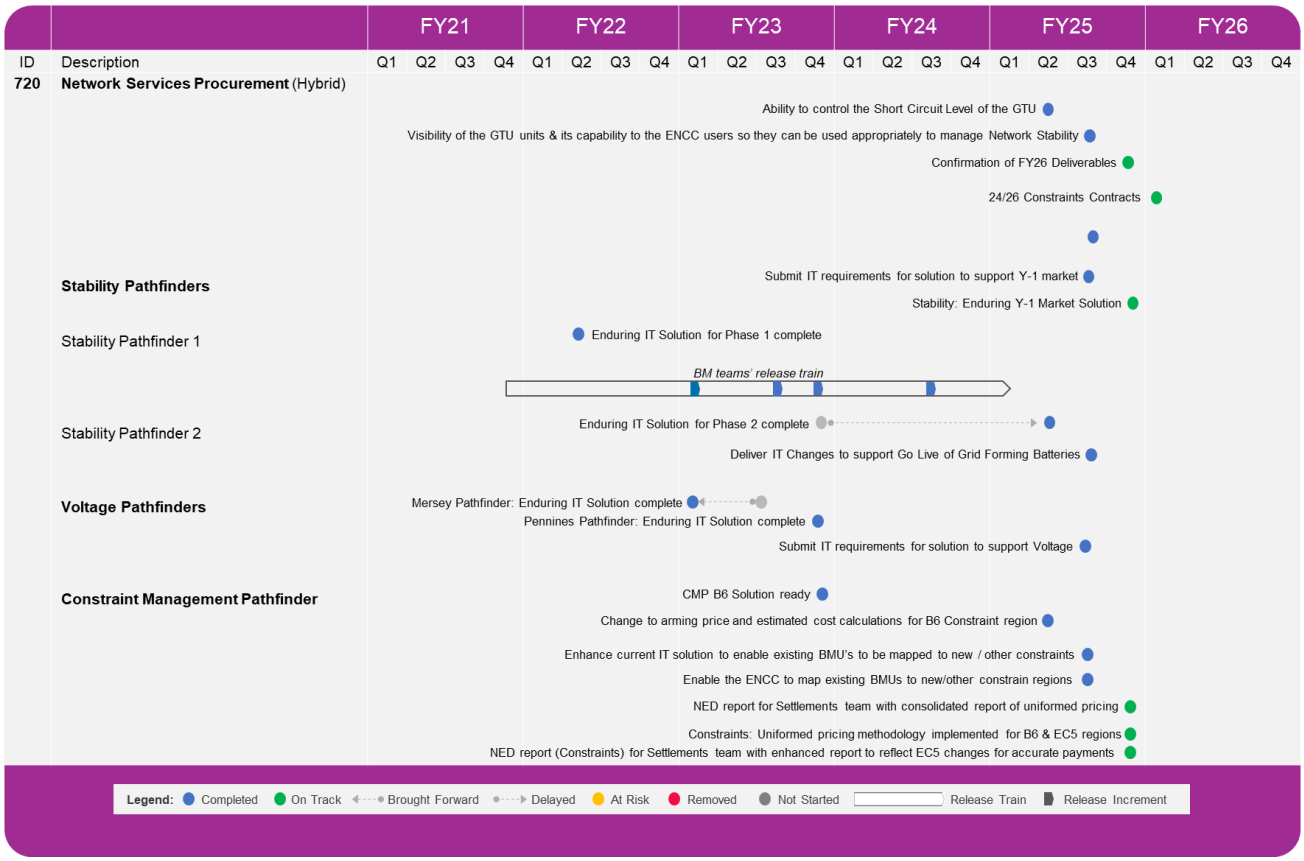


Figure 36 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Visibility of the GFU units and its capabilities to the ENCC users so they can	System changes delivered to support visibility of GFU units	Q3 FY25

	used to appropriately manage network stability		
Milestone	Stability: Deliver IT changes to support the go live of Grid Forming Batteries (Stability Phase 2)	System changes delivered to support the Go Live of Grid Forming Batteries.	Q3 FY25
Milestone	Constraints: Enhance current IT solution to enable existing BMUs to be mapped to new / other constrain regions	IT System enhancements to provide ENCC users with the capability to map existing BMUs to other constraint regions	Q3 FY25
Milestone	Enable the ENCC to map existing BMUs to new/other constrain regions	IT System enhancements to provide ENCC users with the capability to map existing BMUs to other constraint regions	Q3 FY25
Milestone	NED report (Constraints) for Settlements team with consolidated report of uniformed pricing	Delivery of revised NED Report to support Settlements team in providing consolidated uniform pricing	Q3 FY25
Milestone	Stability: Submit IT requirements for solution to support Y-1 market	Submission of IT requirements to support future development activities.	Q3 FY25
Milestone	Voltage: Submit IT requirements for solution to support Voltage 2026	Submission of IT requirements to support future development activities.	Q3 FY25
Milestone	NED report (Constraints) for Settlements team with enhanced report to reflect EC5 changes for accurate payments	Delivery of revised NED Report & associated system enhancements to support Settlements team in providing EC5 billing	Q4 FY25
Milestone	Constraints: Uniformed pricing methodology implemented for B6 & EC5 regions	Delivery of associated system enhancements to support uniform pricing within the B6 & EC5 regions.	Q4 FY25

Milestone	Confirmation of FY26 Deliverables	Breakdown of FY26 Deliverables - milestones & features	Q4 FY25
Milestone	Stability: Enduring Y-1 Market Solution	Enduring solution to Control Room by (a) allowing the stacking of contracts and (b) provision of greater visibility for contracted Stability Market units	Q4 FY25
Milestone	24/26 Constraints Contracts	Constraints Management Program (CMP) Contract data uploading into SPICE will support new contracts & to enhance Control Room visibility. Addition of new units/generators to Scottish Operational Tripping Scheme / Contracts Management Intertrip Service (OTS/CMIS) & to enhance Control Room visibility	Q1 FY26
Milestone	Constraints: EC5 Enduring IT Solution implemented	Breakdown of FY26 Deliverables - milestones & features	Q2 FY27
Milestone	New Constraints Contract Go Live	In EC5 region and ability of ENCC to choose various services from these units based on network constraint needs	Q2 FY27

Table 113 - Outcome summary descriptions

Costs

Total View	FY '22-25' (Actuals & Forecasts)	FY '26' Forecasts	BP3 Submission Total	BP2 Submission Total	Variance
CapEx	2.8	0.9	3.7	5.7	- 2.0
OpEx	0.4	0.2	0.6	1.0	- 0.4
TotEx	3.2	1.1	4.3	6.6	- 2.3

Table 114 - Investment cost summary

Cost Driver Theme	Cost Driver	Cost Type	Description	Cost change variance (£)
Efficiencies	Supplier and development costs	Capex	Multiple efficiencies have been achieved for this investment: • Re-working of the contractual basis by which 3rd Parties provide reactive power to NESO • Reduced levels of resourcing required to deliver vs BP2 estimates • Reprofiling the overhead cost of the investment All of these efficiencies have contributed to an overall reduction in the actual cost compared to the BP2 forecast.	-2.0m
Efficiencies	Supplier and development costs	Opex	Deployment of enhancements to support the operation of the PeakGen were not charged back to NESO. This led to reduced supplier costs compared to the BP2 forecast, resulting in lower than expected Opex spend.	-0.4m
Cost Changes Since BP2				-2.2m

Public

Part 4 - New Investments

4.1 GeoSpatial & Location Intelligence (690)

Delivery Method	Strategic Priority Alignment
Agile	Digital Mindset

Overview, Purpose & Strategic Fit

In the BP3 period, we will launch a new investment delivering centralised geospatial technologies and data across the NESO. The enterprise-wide Location Intelligence (geospatial) platform will enable insight driven decision making, through the use of managed, accessible and accurate location data. The solution will deliver benefits to multiple NESO directorates, NESO users, and external parties, delivering greater insights and providing quality trusted geospatial data.

Locational Intelligence (LI) is a set of spatial technologies (Including GIS) and processes for gaining insight from geospatial data. LI provides different end users with the ability to create, view, share, analyse, edit, interact, and understand the complexity of Geo-spatial data. GIS or Geographical Information Systems is a key part of the wider Geo-spatial ecosystem. GIS enables end users to visualise (as a map) the insights, data, etc in a geographical application (Desktop GIS, Web Mapping Application, Dashboard, etc).

The investment will procure and deploy a centralised geospatial technology platform for NESO. Ensuring we have the technology to address the following key points that have been identified with our customers and stakeholders;

- data governance and management (spatial data integrity)
- data sharing and transparency (centralised managed repository for referential geography and business geography) including the use of APIs (spatial data and technology services)
- web mapping and engagement services (spatial data visualisation and consultation)

Current State

In early 2024, NESO established a Geospatial tactical solution to support an ever-growing need from within the business. Like many organisations, NESO has multiple Geospatial & Location Intelligence (LI) solutions, which had been procured to meet a specific use case or resource skill set. The distributed nature of our current GIS solutions means NESO is unable to effectively use and manage its spatial data, resulting in inefficient siloed working and with significant data quality issues. This was identified by DD&T as work commenced on the Strategic Energy Planning (SEP) capability, where spatial data management, sharing and consultation is a key deliverable to a successful outcome. Following the successful implementation of the tactical solution, other

departments are now using the tactical solution for external data and service delivery. The continued increasing demand for this capability cannot be met by the tactical solution. To address this, DD&T will invest in a tool that meets the current and future needs of NESO business objectives and its customers.

We initiated discovery and procurement activities in BP2, which is expected to conclude in Q1 FY26 to facilitate the strategic objectives to be delivered by the BP3 investment.

Future State

Over the BP3 period, we will deliver the strategic, centralised LI capability enabling NESO to harness Location intelligence data and analysis driving operational efficiencies and improved decision-making.

Capability	Target Platform
Geospatial & Locational Intelligence	Azure

Roadmap

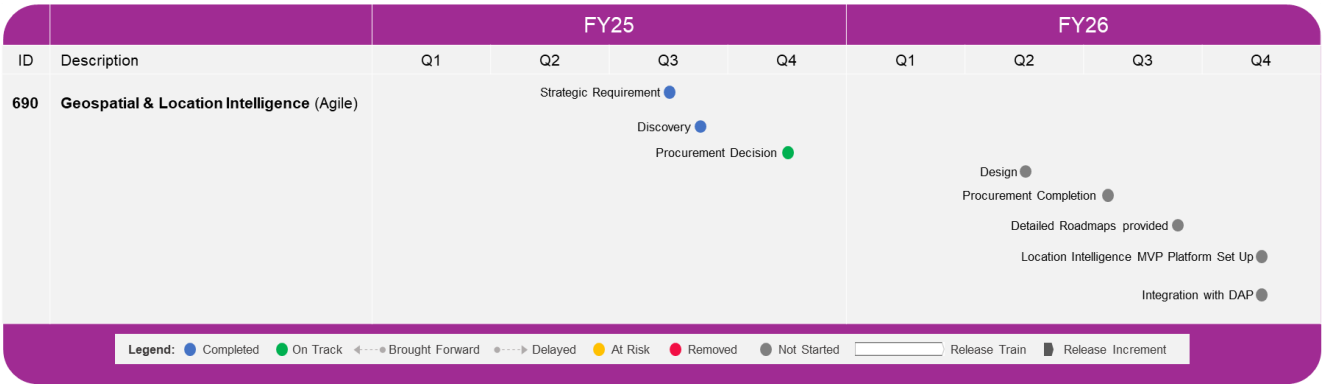


Figure 37 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Strategic Requirement	Gather Functional and Nonfunctional requirement	Q3 FY25
Milestone	Discovery	Complete the discovery	Q3 FY25
Milestone	Procurement Decision	Start the procurement event	Q4 FY25

Milestone	Design	Design the data model, focusing on categorisation, Data Storage Design, GIS Software and Tool Options exploration	Q2 FY26
Milestone	Procurement Completion	Procure the specialised software that will meet NESO requirements in alignment with our architectural design.	Q3 FY26
Milestone	Detailed Roadmaps provided		Q3 FY26
Milestone	Location Intelligence MVP Platform Set Up	Deploy and configure the Locational Intelligence technology solution platform	Q4 FY26
Milestone	Integration with DAP	GIS Integration with Data and Analytics Platform	Q4 FY26

Table 115 - Outcome summary descriptions

Approach

We will use a phased approach delivering a centralised LI solution, and migrating the distributed legacy solutions to the strategic platform, while enabling future solutions to be built on the strategic platform. This delivery, specifically beyond the procurement stage will follow an industry standard agile methodology. This approach will ensure that the most critical requirements are delivered against in an effective prioritised manner meeting customer expectations. This will be aligned with the use of modern user experience tools such as wireframes and prototypes enabling the delivery of effective tooling that is adopted at pace with minimal rework.

In terms of the procurement, the expectation is to procure software that will meet the functional requirements of NESO now and in the future. The software and its deployment approach will also be delivered in a way that ensures our non-functional requirements can be met. These include but are not limited to scalability, security and availability.

Solution Options

Initial activities, assessing the strategic requirements of the enduring Locational Intelligence platform in line with our architectural and broader principles, have enabled the decision to select

an appropriate commercial offering and not to build our own tooling. This approach will enable us to select the most appropriate tools for our requirements and deliver them in a timely manner that aligns with our security, architecture and cost requirements.

The following section provides more insight into key factors that supported the decision:

- Timeline: A custom build solution would require significant build time (9-12 months). Given the pressing need to deliver enterprise location intelligence for critical programmes (SSEP, Energy Insights) by Q4 FY26, and provide strategic management of the Location Intelligence (LI) data (data integrity), a buy option would enable the organisation to use recognised LI vendors to deploy appropriate infrastructure and deliver value to the business quicker (<3 months).
- Cost: Additional investment would be needed to implement a build solution, with additional developers needed with appropriate LI skills. While this would be a temporary solution, ongoing support costs would be significantly higher, due to the need to retain some of the skilled resources for support and development. A buy solution enables us to utilise the suppliers' resources to provide support and development. Leveraging existing supplier relationships enables NESO to deliver faster at a reduced startup cost.
- Security and data privacy: Open-source solutions are often used to provide build solutions. Lack of clear support and security validation opens NESO to significant risk and cost. LI vendors provide services to all market types, including SaaS services to organisations such as Government, Public Sector, Military, Banking, and have undertaken multiple security and data privacy assessments to ensure alignment to recognised standards. We will follow our standard policies and guidelines to facilitate inter-operability and ensure best practices are followed, ensuring that we can meet the business outcomes in a repeatable, modular and adaptable manner to maximise opportunities for future demand and enhancement.

The discovery phase may identify additional capabilities, and these will be reviewed in line with our Architectural Principles. This will ensure the responsible re-use of existing capabilities as is appropriate before considering buying or building a new capability. In line with principles, SaaS and COTS solutions will be considered where buy vs build is preferable/more efficient, to avoid customisation and minimise configuration.

Costs

Total View	FY '26
CapEx	4.67
OpEx	-
TotEx	4.67

Table 116 - Investment cost summary

The above cost of £4.67m was based on high level estimation from our technology architecture analysis and also included a bottom up analysis from requirements gathering, working with teams and users across the relevant NESO departments.

Risks/Issues

Risk	Mitigation	Likelihood	Impact
Appropriate Tools Procurement may be delayed due to changes in Procurement Policies	Procurement request to be raised once requirements are confirmed	High	Medium
Customers, and stakeholders may not use tools in the most effective ways and will require the appropriate skills and training	An effective and clear user manual will be provided and Self-Serve training material will be provided. The user community will also be supported by the central data function.	Medium	Medium
Multiple stakeholders are required for prioritisation and decision making which causes delays	Effective and targeted frequent communications for stakeholders and being clear on approvers will reduce this risk .	High	Medium

Table 117 – Investment risks/issues summary

4.2 Strategic Energy Planning (700)

Delivery Method	Strategic Priority Alignment
Scaled Agile	Decarbonised Future

Overview & Purpose

As the National Energy System Operator (NESO), this new role will bring together the strategic energy planning of the gas and electricity networks for the first time and recommend a plan for energy and network solutions to meet decarbonisation targets across gas, electricity and hydrogen.

As the Strategic Energy Planner, NESO will act across the following three overarching roles:

- **Strategic Spatial Energy Planning (SSEP)**

Working closely with the UK, Scottish and Welsh governments we will develop and deliver the first GB Strategic Spatial Energy Plan. The overall goal of the SSEP is to help accelerate and optimise the transition to clean, affordable and secure energy across GB by providing greater clarity to industry, investors, consumers and the public on the shape of our future energy system.

- **Centralised Strategic Network Planning (CSNP)**

Our Centralised Strategic Network Plan which will take a broad, whole energy system view to transform the pace and scale of our planning. CSNP will consider the networks needed to deliver the SSEP and include recommendations on gas, electricity and in the future potentially hydrogen and CCUS network. For electricity it will consider onshore and offshore electricity transmission networks in Great Britain (GB) along with cross-border electricity interconnectors and offshore hybrid assets. For Gas, it will build on the NESO's new role in gas strategic network planning.

- **Regional Energy Strategic Plan (RESP)**

Currently, local energy network planning is conducted by local government, Gas Distribution Networks (GDNs) and electricity Distribution Networks (DNOs). When local and national energy networks are planned well, they can unlock local economies by creating new jobs and sectors; however, they can often be developed in silos or without a true understanding of local needs. In NESO's new role as RESP we will ensure energy networks are regionally coordinated across fuel vectors and between geographies, with the right level of local input into the process as well as regional democratic oversight.

Figure 38 - The objectives of the Regional Energy Strategic Plan (RESP)

Strategic energy planning Aims:

To achieve all the above in coordination, at pace, and up to industry scrutiny, we need to set up a range of technological capabilities. In line with our *Digitalisation Strategy and Action Plan*, the processes that will underpin our new planning roles are being designed to be 'Digital First' and will be aligned to our digital priorities and principles. Although each role has discreet deliverables, there will be considerable overlap that can be enabled by digital, and the ability for frictionless data exchange between the roles will be critical. NESO will need to stand up new teams and a new structure with the capabilities to drive value across Strategic energy planning. Our business and Digital capabilities will be aligned behind this digital vision, with the appropriate subject matter expertise applied to drive the digital vision against the business and industry challenge.

In order to deliver the digital vision, we are adopting a delivery operating model to cater for all of the outcomes for the Strategic Energy Planning (SEP) directorate under one investment. This is due to the overlapping nature of processes, data and technology requirements across the directorate. Creating discrete investments for each of the planning roles may lead to more complex dependency management, cost and resource inefficiencies and a disjointed customer experience. Where SEP capabilities can be delivered through existing or planned initiatives these will be utilised as appropriate. Several NESO-wide capabilities have already been identified which will support the delivery of SEP outcomes and are outlined further in the Solution Options section.

This investment will deliver capabilities to be utilised by internal users across the SEP directorate, along with external customers interacting with each of the plans including Ofgem, DESNZ, local governments, GDN's, DNO's, local authorities, investors and consumers.

Current State

Given the fact most methodologies are still under consultation, the detailed scope for this investment is still unknown. We are currently in a discovery and strategy definition phase with extensive user engagement. As part of this phase, we have identified the digital mission for SEP. Our Digital Mission for Strategic energy planning is focused on not only how we can address the

industry challenges of today, but how we can adopt a digital approach to anticipate and adapt to future challenges.

We have also identified the digital outcomes and the high-level capabilities that are required from data and digital to enable these outcomes, detailed in the Future State section. We are currently working with all SSEP, RESP and CSNP areas to define an indicative operating model, vision, high-level process and the roadmap for the design and implementation of SEP capabilities.

To support priority SSEP timescales, an interim location intelligence solution has been delivered to enable modelling and geospatial visualisation. This interim solution will allow us to learn and understand the business and stakeholder requirements and enable us to design and build an enduring solution that can be used across the organisation by the many teams and stakeholders that require a Location Intelligence solution. This work is further outlined in investment 690 Geospatial and Location Intelligence.

Future State

We expect the following outcomes to be achieved through the implementation of technology in Strategic Energy Planning:

1. **Whole energy system plans**

   There will be digitally enabled models for the strategic energy planning of the gas, electricity and hydrogen networks recommending whole energy solutions considering network constraints, economic, environmental and societal impacts. This will deliver the ability to flex inputs and relationships to determine trade-offs, enabling optimised decision making to drive decarbonisation and security of supply.

2. **Interoperable plans between SSEP, CSNP, RESP**

   We will have a shared data repository capable of managing multiple data sources which will provide standardised and consistent data for use across planning tools. Commonality between data and models for societal, economic, technical, and environmental impacts will enable interoperability and compatibility between plans.

3. **Publish clear and visual outcomes of strategic energy planning information at a national and regional level**

   Customers will have access to interactive maps to support investment decisions and for awareness of planning information. The maps will contain information specific to the differing needs between SSEP, CSNP and RESP which may include geospatial data, energy

consumption patterns, grid performance data and renewable resource potential accurate to their location.

4. **Customers self-serve access to the information that they need**

   We will apply presumed open data principles and other Energy Data Taskforce recommendations to enable self-service modelling and scenario analysis, enabling customers to do a 'soft check' on their investment plans, community, or environmental impacts at any point in time. Assumptions and inputs into the methodologies will be made available to support open communication and collaboration.

5. **Frictionless user experience across all our Strategic energy planning services**

   In line with our Digital First approach, we will consolidate multiple customer engagement points, differing visual representation tools and models to simplify and improve engagement with NESO as a service provider. We will also remove any manual processes, building automation in to reduce wasted time and manual effort.

6. **Internal users, customers and stakeholders will be equipped with the digital skills and tools needed to participate in strategic energy planning processes**

   We will have the training environments and digital tools required to upskill internal users on the new capabilities required to fulfil RESP, SSEP and CSNP obligations. There will be training and sandbox environments to enable customers to participate fully and inclusively in the strategic energy planning process.

7. **Output data will be assured, transparent and auditable**

   We will have appropriate people, process and technology enablers to ensure that output data is trusted, based on industry standards, categorised, transparent and auditable so customers are assured as to the source and quality of data underpinning recommendations.

To achieve the required digital outcomes for Strategic Energy Planning, we have identified a set of technology solution areas to pursue, with several existing capabilities which can enable parts of these areas. In line with our Architectural Principles, we will ensure responsible reuse of existing capabilities before considering buying or building new capabilities. We will drive standardisation with policies and guidelines to facilitate inter-operability and best practices ensuring that we look to meet the SEP outcomes in a repeatable, modular and future proof way.

The below table provides a high-level view of the capabilities identified for Strategic Energy Planning to date. This will be validated and refined further throughout the discovery phase:

Core Capability Domain	Target platform (existing/new)
Analysis and Modelling	We currently have a few analysis and modelling tools across our technology estate. As part of this initiative, we'll evaluate the current applications, rationalise and consolidate where appropriate, ensuring that we integrate specialist functionality from 3rd party applications, aligned to our domain level architecture strategies. This includes integration with our enterprise-wide Data and Analytics Platform (DAP) alongside standard integration patterns. For example, Energy Exemplar's Plexos application started being used by several teams across the NESO organisation for Economic Assessment activities. As part of the initiative, we intend to leverage the strengths and specialist capabilities of Plexos, complemented by capabilities available within the DAP platform, to address business requirements. This approach can then be extended to incorporate other tools and applications as necessary. The discovery phase will identify more details relating to new capabilities we will need within our estate, complementing existing applications and platforms to take into account environmental and societal assessments. As an example, the interim Locational Intelligence/GIS application will provide early mobilisation of capabilities, which will support both the Analysis and Modelling, and Data capability domains. These will evolve as requirements are further identified and refined.
Data	Data is a core capability domain that underpins all of the requirements within the initiative. Leveraging a combination of our DAP platform and our new Locational Intelligence platform, we will ensure the capabilities identified are robustly supported for the SEP initiative. We will work with colleagues across our Data, Data Architecture and DAP teams to ensure re-use and standardisation which can be utilised for the needs of the NESO organisation, and our wider stakeholder communities, be that industry or consumer related. We will follow an approach that enforces accurate and quality data to be exchanged across a wide range of parties in a secure yet accessible manner.
Stakeholder Engagement	We will look to embrace common capabilities, rather than introduce solutions which can only be used within the SEP initiative. Our existing CRM platform is anticipated to provide several of the Stakeholder Engagement capabilities, complemented by other application platforms, embracing effective re-use and enhancement to be efficient in our implementation activities and operational processes. We will also work with our Digital Engagement Platform (DEP) team

	to surface and expose all the data and outcomes from our analysis and provide another vehicle for stakeholders to interact with our tools and send their feedback.

Access to simple, clear and visual geospatial information across the whole energy system will be a first for the industry, enabled by advanced digital technology. The visual tooling will be supported by enhanced data management and platforms, scenario modelling and proactive knowledge management and training. Access to the data required when it is required can increase confidence in investments.

Roadmap

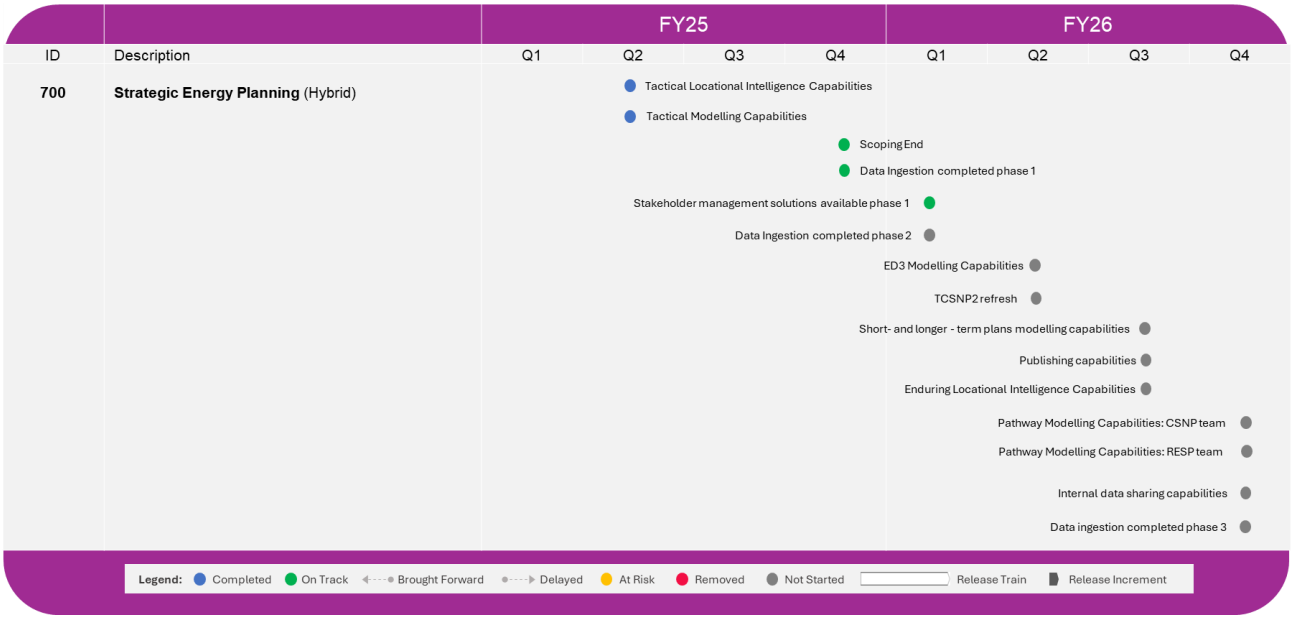


Figure 39 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Tactical Locational Intelligence capabilities	SSEP team able to perform Locational Intelligence analysis for methodology publication	Q2 FY25
Milestone	Tactical modelling capabilities	SSEP team able to perform modelling for methodology publication	Q2 FY25

Milestone	Scoping end	An indicative operating model, high-level processes and the roadmap for the design and implementation of SEP capabilities.	Q4 FY25
Milestone	Data ingestion completed phase 1	SSEP team able to access all information required to Habitats Regulations Appraisal (HRA) and Strategic Environmental Assessment (SEA)	Q4 FY25
Milestone	Stakeholder management solutions available phase 1	SSEP and RESP teams able to use standard stakeholder management solutions for their needs	Q1 FY26
Milestone	Data ingestion completed phase 2	RESP team able to access all information required for RIIO-ED3	Q1 FY26
Milestone	ED3 modelling capabilities	RESP team able to model pathway for ED3	Q2 FY26
Milestone	TCSNP2 refresh	Changes to enable TCSNP2 refresh implemented	Q2 FY26
Milestone	Short- and longer-term plans modelling capabilities	CSNP team able to model short- and longer-term plans	Q3 FY26
Milestone	Publishing capabilities	RESP team able to publish externally their outcomes	Q3 FY26
Milestone	Enduring Locational Intelligence capabilities	All SEP teams able to use enduring Locational Intelligence capabilities	Q3 FY26
Milestone	Internal data sharing capabilities	All SEP teams able to share and reuse their data	Q4 FY26

Milestone	Data ingestion completed phase 3	CSNP team able to access all information required to coordinate options across networks	Q4 FY26

Table 118 - Outcome summary descriptions

Approach

Our approach will be confirmed during the discovery phase, although the expectation is that we will re-use or extend existing capabilities wherever possible. This will require many SEP requirements to be delivered through other products / programmes and will need prioritisation and backlog management to ensure SEP requirements are met and outcomes are delivered as expected to the timescales required. Agile DevSecOps is the preferred delivery approach across NESO and will be used as the delivery approach where relevant.

A design thinking mindset will ensure that customer and stakeholder expectations are met through the development of user and customer personas and journeys. This will be done through extensive engagement with customers. We may also use trials and Proof of Concepts to refine solutions, although this will be confirmed during the discovery phase. Cognisant that these are evolving roles subject to industry consultation, our approach will be flexible to accommodate new or emerging requirements. In parallel we will progress no regrets capability build at pace to meet key milestones. The discovery phase will outline key milestones, priorities and any tactical capability build as we develop strategic solutions.

For delivery, we will shape the delivery teams by technology capabilities, this will support everyone to work collaboratively across all SEP areas. As such, we will have technology capabilities workstreams instead of SSEP, RESP and CSNP specific delivery teams. We will work closely and be part of scope definition for various innovation projects to ensure we create a combined roadmap, allowing innovation to progress with a relevant use case whilst not becoming the critical path to deliver on major and nearest milestones.

Solution Options

At this stage, we are not able to describe Solution Options but, as has been described in previous sections, we have identified a number of candidate solution components to enable the core capabilities. Our belief is that many capabilities that are required are not unique to SEP and can benefit other areas of the NESO organisation, the wider energy ecosystem players and consumer communities alike. We will drive standardisation with policies and guidelines to facilitate inter-operability and best practices, ensuring that we look to meet the SEP outcomes in a repeatable, modular and adaptable manner to maximise opportunities for future demand and enhancement. Several NESO-wide capabilities have already been identified which will help in the

delivery of SEP outcomes. These capabilities have been introduced through initiatives such as 690 Geospatial and Location Intelligence, 220 Data and Analytics Platform, 250 Digital Engagement Platform, 380 Connections and 390 Electricity Network Development Tools. The discovery phase may identify additional capabilities, and these will be reviewed in line with our Architectural Principles. This will ensure the responsible re-use of existing capabilities as is appropriate before considering buying or building a new capability. Also SaaS and COTS solutions will be considered where buy vs build is preferable/more efficient, with the intention of avoiding customisation and minimising configuration.

Costs

Scope will be finalised in this quarter however we have already identified a number of capabilities that will be required to meet SEP outcomes. The costs are in line with the assumptions outlined below where we are using existing or planned capabilities. The costs are also based on high level estimates of cloud computing and storage, licence costs, team sizes (core team estimated at 12 FTE) and work required by other enterprise delivery capabilities mentioned in Future State section. The costs have been developed in collaboration with the impacted initiatives to ensure consistency in costing assumptions.

Total View	FY '26
CapEx	3.89
OpEx	0.39
TotEx	4.28

Table 119 - Investment cost summary

Assumptions

Category	Assumption	Investment Impact Areas	Review Frequency
Deliver	Any external reporting will be delivered via Digital Engagement Platform (NESO.com)	SEP, DEP	Quarterly
Deliver	Any stakeholder management will be delivered via our	SEP, CRM	Quarterly

	Customer Relationship Management solution		
Costs	Clean Power 2030 costs will be funded via a separate mechanism	SEP	Quarterly
Deliver	Tactical Locational Intelligence solution will not be enhanced as it will be replaced by the enduring solution	SEP, Locational Intelligence	Monthly

Table 120 - Investment assumption summary

Risks/ Issues

Risk	Mitigation	Likelihood	Impact
Multiple internal and external stakeholders are required for any prioritisation and decision making	Clear stakeholder map empowered with decision making	3	5
We build short-lived solutions as the ambition to create a whole energy system plan is a new requirement for NESO, which hasn't been tried in any other country in the world	Create Proof of Concept solutions where possible and relevant to validate direction of travel	4	3
Whole energy problem is too complex to solve in acceptable timeframes to allow an efficient process	Explore Artificial Intelligence options Apply micro-services architecture	3	3
Customers, and stakeholders may not use tools correctly as will require the appropriate skills and training to make the process of performing planning activities accessible.	Users and customers must be empowered to self-serve to optimise their data. Train each regional representative to be able to train stakeholders	5	3

Decisions or changes on roles, methodologies and publication dates are outside of NESO's full control	Apply Agile mentality to how we work Establish robust reprioritisation methods Engage early with all stakeholders	4	4
Scope between this investment and innovation projects overlaps and creates confusion	Engage early on with innovation project to help shape their scope Ensure innovation projects don't end up in critical path of major and nearest milestones	3	3

Table 121 – Investment risks/issues summary

Dependencies

Downstream:

Offline Network Modelling (**360**) has a dependency on SEP (**700**) to confirm future modelling changes required for design and modelling on OLTA and EMT applications.

Electricity Network Development Tools (**390**) dependency for licensing, usage levels and potential enhancements to tools.

4.3 Digital Change for Enabling Functions (800)

Investment Overview

NESO is committed to driving digital improvements, both internally and for its customer facing services, to deliver against the Digital Mindset and Customer Centricity strategic objectives. To this end, NESO are proposing to make a number of digital investments and enhancements to the following enabling functions:

- Strategy & Policy,
- Customer,
- Finance,
- HR
- Legal & Regulation

These investments will be delivered to drive digital enhancements to technology systems, platforms, processes and tooling across NESO's Customer and Enabling Functions. They are currently in their early stages and an initial funding envelope has been provided for them as a whole. Over the coming months, exploratory work will be conducted and further detail on the investments and the breakdown of the costs between them will be provided. It is important to note that this investment is separate from and supplementary to the necessary technology activities being undertaken to separate NESO from National Grid under the Cost to Achieve funding mechanism.

Current state

Our Enabling Functions are at a formative stage as we separate from National Grid, the investments to support digital change across these areas are in their earliest exploratory stages as we undergo transformation to align with and enable our digital strategy and ambition.

The customer proposal, however, is more mature. During RIIO-2 and specifically in BP2, there has not yet been any direct investment in customer-facing applications and their platforms. This was due to the development of platforms and applications under other investment lines (such as EMR, SMP, and CPP), and due to the inheritance of infrastructure and applications such as Salesforce Customer Relationship Management (CRM) from the National Grid prior to the separation to NESO.

The delivery and continuous improvement of customer experience was, however, supported through the BP2 investment Digital Experience Platform (250-DEP). In BP3, we are seeking to develop and enhance our customer engagement, servicing and relationship management capabilities by taking AI powered Digital First approach through unlocking the power of Customer data and insights. The scope of the investment has not yet been fully determined, but it is likely to include Customer Data model, architecture improvement, enhancing Salesforce capabilities, automating core processes such as Queries and complaints and leveraging AI.

Future State

Our ambition is to drive digital transformation in each of the areas as outlined below.

Digital Change for Strategy & Policy

Ambition

The Strategy and Policy (S&P) directorate develops comprehensive and independent insights across the entire energy system, providing clear recommendations to both internal and external stakeholders on how to accelerate progress towards net zero.

Current Investment Scope & Proposed Key Initiatives

To deliver on our objectives, we have identified a need for new technical capabilities that can better enable us to leverage the power of our data across the business. The three key areas of focus are:

- Analysis & modelling
- Data
- Stakeholder engagement

Investment in these areas will be focused on rationalising our technology estate to enable more advanced modelling, integration with our enterprise-wide Data and Analytics Platform (DAP), data sharing and customer engagement. We are aware that there are a number of technical solutions we could employ, but we will ensure the responsible reuse of existing capabilities where possible. We will explore and identify the business requirements further in the discovery stage.

Digital Change for Customer

Ambition

To achieve our strategic priorities for Customer centricity, we will take an AI powered Digital first approach to develop and enhance capabilities for Customer Operation (Servicing), Customer Engagement (incl. Communication) and Customer Management (inc Relationship). We will harness the power of high quality, well governed customer data to deliver insights which will enable customer centricity in our engagement and interactions. We will take an AI first, Automate first and mobile first approach to Customer operation and Customer engagement activities and solutions to drive efficiency (speed to response), effectiveness (first time right) and future readiness (bot to bot interaction).

We will leverage and build upon the current customer initiatives such as Self-serve capability (help centre), Automated query management etc. delivered in BP2. Our aim is to enable an aligned end-to-end omnichannel customer journey that is consistent across all customer engagement channels and systems providing our customers with the right information through guided insights.

Current Investment Scope & Proposed Key Initiatives

We are exploring different options for delivering and achieving an improved customer experience through enhancements to the current solution. The key enhancements that we are seeking to deliver with the investment include:

- Automation of Customer Operation processes such as Self-serve knowledge management, Customer Queries and Complaint management, Feedback Management etc.
- Achieve consistent, authoritative, high quality Customer Data through the implementation of Customer Data Governance and protection to enable automated Customer insights and analytics.
- AI implementation to enable cognitive automation, Omnichannel communication, proactive identification and resolution of issues and personalised service.

Digital Change for Finance

Ambition

The Finance directorate manages a portfolio of projects and programmes, supported by reporting tools and platforms, to enable close management of the Portfolio and responsible use of public money. The directorate are seeking to identify whether there is a platform better able to provide a clearer single view, to reduce the manual effort and improve efficiency.

Current Investment Scope & Proposed Key Initiatives

NESO have identified an opportunity to rationalise their approach and transition all programmes onto one management software, providing a centralised view across the portfolio, reducing duplication of effort and enabling more strategic portfolio management. During the discovery phase, we will explore the different tooling options and provide details on the delivery approach.

Digital Change for HR

Ambition

The People directorate enables NESO to meet it strategic and people objectives, committed to attracting and retaining the best talent to balance electricity supply and demand without interruption. To achieve this in the BP3 period, we require investments to deliver improved digitalisation and workforce insights.

Current Investment Scope & Proposed Key Initiatives

We are exploring a portfolio of functional and non-functional People investments to achieve more efficient workforce management and improve skills and training across the organisation. The scope is in development but may include investment in:

- Strategic Workforce management
- Talent and learning platforms
- Centralised workforce data management
- Updated career pathways
- Performance Management

We will continue to develop and refine the business requirements and provide further details in the coming months.

Digital Change for Legal & Regulation

Ambition

The team of legal, assurance, governance, information rights, market monitoring, regulation and network competition experts provide proactive and reactive regulatory and legal expertise to NESO and industry. We drive industry performance to the benefit of the GB consumer and work with the business to ensure we meet stakeholder expectations. To enable us to continue to achieve this effectively, we have identified a requirement for improved technical capabilities.

Current Investment Scope & Proposed Key Initiatives

We are seeking to explore whether AI and new platforms above those currently utilised can deliver improved efficiency and reduce case times. In the discovery phase, we will explore whether we can minimise time-heavy manual tasks and improve our case management approach and practice. This will focus around:

- New case management platforms
- Legal specific generative AI tools

In the future we would like to automate many of the manual administrative tasks that are carried out and seek a greater understanding of the benefits AI could deliver in our respective area with a view to incorporating AI into our processes.

We will continue to develop and refine the business requirements and provide further details in the coming months.

Public

Roadmap

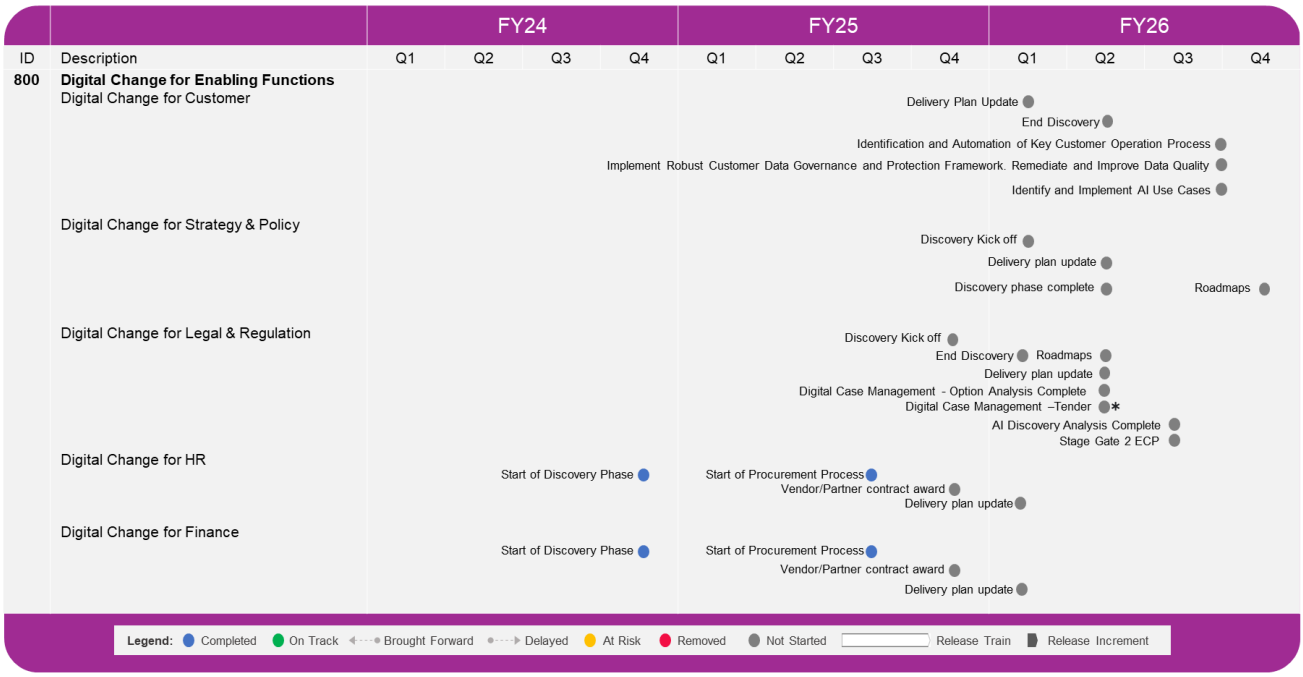


Figure 40 - Outcome roadmap

Digital Change for Customer

Event Type	Event Name	Outcome Description	Date
Milestone	Digital Change for Customer- Delivery Plan Update	Provision of a developed roadmap and further detail on our delivery plans	Q1 FY26
Milestone	End Discovery	Identification and prioritisation of key customer areas which deliver the most value for the organisation and customers	Q2 FY26
Milestone	Identification and Automation of Key Customer Operation Process	Increase efficiency and effectiveness of Customer Operation. Capture Customer data through the authoritative data sources to drive analytics and insights. Improve Customer Satisfaction	Q3/Q4 FY26
Milestone	Implement Robust Customer Data	Develop automated Customer insights and analytics based on good quality	Q3/Q4 FY26

	Governance and Protection Framework. Remediate and Improve Data Quality	and authoritative data sources to drive meaningful customer relationship and management	
Milestone	Identify and Implement AI Use Cases e.g. Chatbot	Become future ready and leapfrog to deliver enhanced customer experience	Q3/Q4 FY26

Table 122 - Outcome summary descriptions

Using the underspend from other investments, we have started some of the activities to lay the foundation for BP3, accelerate progress and achieve our vision for Customer as an independent organisation. These activities include Platform Capability enhancement, identification and implementation of quick wins to improve Customer operation and Customer Data quality remediation. Milestone information will be provided in upcoming CMF reports once they are added in Project online.

Digital Change for Strategy & Policy

Event Type	Event Name	Outcome Description	Date
Milestone	Discovery Kick off		Q1 FY26
Milestone	Digital Change for Strategy & Policy - Delivery Plan Update	Provision of detailed scope, roadmaps, milestones and costs on the basis of discovery findings	Q2 FY '26
Milestone	Discovery Phase Complete	Prioritised roadmap with key milestones. Business capabilities and EPICS identified. High level solution architecture Refined cost estimates.	Q2 FY26
Milestone	Roadmaps	Provision of updated roadmaps	Q4 FY26

Table 123 - Outcome summary descriptions

Digital Change for Legal & Regulation

Event Type	Event Name	Outcome Description	Date
Milestone	Discovery Kick off	The scope for the discovery is defined and a Business Analyst commences a defined discovery period with a set output c	Q4 FY25
Milestone	End Discovery	The discovery period ends and the outputs can be used to inform investment decisions	Q1 FY26
Milestone	Roadmaps	Roadmaps documented that indicate and explain key milestones populated based on the discovery output	Q2 FY26
Milestone	Digital Change for Legal & Regulation – Delivery Update	Provision of detailed scope, roadmaps, milestones and costs on the basis of discovery findings.	Q2 FY26
Milestone	Digital Case Management – Option Analysis Complete	Option analysis complete	Q2 FY26
Milestone	Digital Case Management - Tender	Commercial tender for solution (*should enterprise system not be available)	Q2 FY26
Milestone	AI Discovery Analysis Complete	AI discovery analysis complete Discovery period to include analysis where applicable, show and tell/ industry case studies.	Q3 FY26
Milestone	Stage Gate 2 ECP	Stage Gate 2 ECP complete	Q3 FY26

Table 124 - Outcome summary descriptions

Digital Change for HR

Event Type	Event Name	Outcome Description	Date
Milestone	Start of Discovery Phase	Initiation of initial phase to define of case for change, scope, requirements and key milestone plan.	Q4 FY24
Milestone	Start of Procurement process	Initiation of Technology vendor and partner selection and procurement process.	Q3 FY25
Milestone	Vendor/Partner contract award	Selection and onboarding of Vendors and delivery Partners. Provision of Milestone roadmap/ High-Level plans.	Q4 FY25
Milestone	Delivery plan update	Provision of detailed scope, plans and costs based on agreed solution designs.	Q1 FY26
Milestone	Estimated Go-Live	Estimated Go-Live for HR and Payroll system.	Q1 FY27
Milestone	End of TSAs with NG	Complete separation from National Grid. End of Transition Service Agreements	Q2 FY27

Table 125 - Outcome summary descriptions

Digital Change for Finance

Event Type	Event Name	Outcome Description	Date
Milestone	Start of Discovery Phase	Initiation of initial phase to define of case for change, scope, requirements.	Q4 FY24
Milestone	Start of Procurement process	Initiation of Technology vendor and partner selection and procurement process	Q3 FY25
Milestone	Vendor/Partner contract award	Selection and onboarding of Vendors	Q4 FY25

Milestone	Delivery plan update	Provision of detailed scope, plans and costs based on agreed solution designs.	Q1 FY26
Milestone	Estimated Go-Live	Estimated Go-Live for Finance system, including ELS.	Q1 FY27
Milestone	End of TSAs with NG	Complete separation from National Grid. End of Transition Service Agreements	Q2 FY27

Table 126 - Outcome summary descriptions

Approach

We are currently in the discovery phase for these investments, and in some cases, this work has only just begun. As such, detailed delivery approaches are still to be determined, but we will endeavour to conduct these investigations as efficiently as possible and provide updated information early in the BP3 period. However, where discovery work is more mature, we are able to provide some detail on the areas below.

Digital Change for Finance and HR

During the discovery phase, we identified two options to deliver HR and Finance capabilities for NESO and ensure a smooth separation from National Grid. One option was to mirror the National Grid estate with a 'Lift and Shift' approach. The preferred option was to create NESO's own systems early, selectively transform Enabling Services, and tender for a new HR/Finance/Procurement capability. This approach requires embedding a fit-for-purpose operating model through RTB transformational business change.

This strategy brings costs forward, avoids a 'double hop,' reduces running costs, improves long-term efficiency, and enhances customer experience. We are now conducting a procurement event to select the vendors and SI partners who will provide and implement the best technical solution to support our business both now and into the future. We will be able to refine our delivery plans and delivery assumptions once the vendor and SI partners are onboarded early 2025.

Digital Change for Legal & Regulations

Our approach for a new case management system centres around seeking a best in class (likely off the shelf or vanilla) product that will meet our capability requirements which will be defined during discovery.

During our AI discovery, we will seek to educate and inspire internal stakeholders into "the art of the possible" by utilising partners experience and industry use case examples to refine our ambition in this area.

Solution Options

At this stage, we are not in a position to provide detailed solution options for all these investments, although we have some information on the areas below.

Digital Change for Finance and HR

The procurement process we have undertaken is seeking technology options and partners to establish NESO's own technology infrastructure. This is essential for providing data-driven capabilities, automated processes, and systems that offer valuable insights for enhanced efficiency, improved data management, control, planning, and decision making, ultimately enabling more efficient service delivery to both the business and customers. We have decided to explore Software-as-a-service (SaaS) platforms due to their ability to offer a stable and secure set of applications with the latest available capabilities and functionalities, which will help reduce technical debt and support the business.

During the discovery phase, a core team has delivered the articulated business case, scope and key requirements for the programme. We have developed a high-level working delivery plan with input from expert sources in the organisation. Upon awarding the contract in early 2025, we will be able to provide more information on our solution, and refine costs and delivery plans.

Costs

Whilst some of these investment areas are more developed than others, we are currently in the discovery phase and building out a view on what form these investments will take. As such, we have grouped them under one investment line, to enable flexible cost allocation in response to requirements across our Enabling Functions.

	FY' 25	FY' 26
Capex	3.76	3.08
Opex	0.94	0.77
Totex	4.7*	3.84

Table 127 - Investment cost summary

**Underspend re-allocated to Customer from other DD&T investments that has been used, as outlined in the introduction section to this document. The FY26 Totex value is not reallocated underspend.*

Assumptions

Some of these investments are at a more developed stage than others, which is reflected in the detail of the assumptions. We will update these following the outcomes of the discovery activity.

Strategy & Policy

Category	Assumption	Investment Impact Areas	Review Frequency
Deliver	Any external reporting will be delivered via Digital Engagement Platform (NESO.com)	S&P, DEP	Quarterly
Deliver	Any stakeholder management will be delivered via our Customer Relationship Management solution and this can support strictly confidential and legal privilege information	S&P, CRM	Quarterly
Support	Support levels for any solutions will be weekdays from 9am to 5pm	S&P, DEP, CRM, DAP, Locational Intelligence	Quarterly
Costs	Clean Power 2030 costs will be funded via a separate mechanism	S&P	Quarterly

Table 128 - Investment assumption summary

Digital Change for Customer

Category	Assumption	Investment Impact Areas	Review Frequency
Deliver	Inflight and new investments that require customer supported applications, will be funded through their own investment cost mechanism		Quarterly
Deliver	Impact assessments will take place prior to implementing any data changes in the Salesforce Platform	Salesforce Applications	Quarterly
Support	Customer and External Affairs directorate will align on strategy and areas of delivery		Quarterly

Support	Current platforms, applications and technologies will be reviewed and re-used unless it is not fit for purpose as deemed by architecture	Salesforce, MuleSoft	Quarterly

Table 129 - Investment assumption summary

Digital Change for Finance and HR

Category	Assumption	Investment Impact Areas	Review Frequency
Deliver	HR (inc. Payroll) and Finance (inc. Procurement) will be managed under one programme	All	Quarterly
Deliver	Deliver NESO 'off the shelf' Finance and HR technology capabilities, leveraging cost optimisation from SaaS option.	All	Quarterly
Deliver	Delivery supported by Vendor and SI partner	All	Quarterly
Deliver	Timelines currently aligned to end of TSA agreements		
Support	A separate procurement event will be run to choose support partners once the capabilities are implemented	All	Quarterly
User	Business Change will be managed by Strategic Business change partner to ensure users are operating in alignment with new operating model and are confident with working with new capabilities in place	All	Quarterly
Architecture	Capabilities will leverage SAAS/Cloud solution, and the use of data and technology advances (AI)	All	Quarterly

Table 130 - Investment assumption summary

Digital Change for Legal & Regulation

Category	Assumption	Investment Impact Areas	Review Frequency
Deliver	Discovery for AI adoption will deliver the requisite intelligence required to further this investment and make appropriate decisions	All	Monthly
Deliver	Access is available to Business Analysts, Architects and Partners with AI experience as required who can showcase case studies and help build out the ambition with the business	All	Quarterly
Deliver	If a tender is required for a Case Management system, the small number of licenses required will keep the costs low enough to achieve single sourcing and thus avoid a lengthy tender	All	Quarterly
Architecture	Capabilities will leverage SaaS/Cloud solution where possible	All	Quarterly

Table 131 - Investment assumption summary

Risks/ Issues

Strategy & Policy

Risk	Mitigation	Likelihood	Impact
Multiple internal and external stakeholders are required for any prioritisation and decision making	Clear stakeholder map empowered with decision making	3	5
The advisory role is new and requests are outside of NESOs full control. The requests may necessitate capabilities which are currently unknown.	Apply Agile mentality to how we work Establish robust reprioritisation methods Engage early with all stakeholders	4	4

Public

Digital Change for Customer

Risk	Mitigation	Likelihood	Impact
Customer Strategy not fully defined.	Conduct detailed exploratory assessments to understand customer pain points to minimise technical debt and realise business benefits	2	3
Data Quality	Conduct detailed data reviews and determine ability to share objects across applications	3	3
Impact of changing data Objects on applications	Conduct a thorough Impact assessment against all data fields and how they are used across all applications before implementation	3	2
Automation of boxes into QM management affects business processes.	Ensure business processes are mapped and impacted areas are fully informed on how it will impact their interactions with customers	3	3

Digital Change for HR and Finance

Risk	Mitigation	Likelihood	Impact
Delivery plans defined before procurement events can't be achieved by selected partners, leading to the need to extend TSA exit plans, at a cost.	- Conduct early refinement of requirements, impact assessment and planning activities with selected partners, from contract award and mobilisation onwards to reflect achievable timelines. - Consider incremental approach to delivery and prioritise milestones to meet timelines and minimise impact on Transition Service Agreements (TSA) exit plans.	3	3

Delivery costs confirmed by selected partners come at higher costs than estimated prior to procurement event	- Negotiate costs down as part of procurement process. - Review deliverables towards streamlined MVP.	3	3
Business processes cannot be reflected in the standard solution offered and customisation is required, leading to further costs	- Business agreed for 'Adopt not adapt' and 'configuration over customisation' as a key delivery principle - Work with the business to design TOM and business processes in alignment with selected solution. - Provide extensive training on solution adoption and new processes	2	3

Digital Change for Legal & Regulation

Risk	Mitigation	Likelihood	Impact
Delivery plans defined before procurement events can't be achieved by selected partners, leading to the need to extend TSA exit plans, at a cost.	- Conduct early refinement of requirements, impact assessment and planning activities with selected partners, from contract award and mobilisation onwards to reflect achievable timelines. - Consider incremental approach to delivery and prioritise milestones to meet timelines and minimise impact on Transition Service Agreements (TSA) exit plans.	4	3
Delivery costs confirmed by selected partners come at higher costs than estimated prior to procurement event	- Negotiate costs down as part of procurement process. - Review deliverables towards streamlined MVP.	3	3

Business processes cannot be reflected in the standard solution offered and customisation is required, leading to further costs	- Business agreed for 'Adopt not adapt' and 'configuration over customisation' as a key delivery principle - Work with the business to design TOM and business processes in alignment with selected solution. - Provide extensive training on solution adoption and new processes	2	3
If an enterprise solution does not provide the required capability's a tender process could extend the estimated milestone durations	Establish expected costs early during associated discovery phase Keep users to the required minimum Update expectations via the CMF	1	3

4.4 Review of Electricity Market Arrangements (REMA) (810)

Delivery Method	Strategic Priority Alignment
	Decarbonised Energy

Investment Overview

The Review of Electricity Market Arrangements (REMA) is the government's programme to reform GB electricity markets to support delivery of net zero and decarbonisation of the power sector.

REMA, launched officially in 2022, is now within its third phase and has been stood up as a Major Government Project. NESO is an official Delivery Partner to DESNZ on the REMA programme, alongside Ofgem. Several policy options are still under consideration and at the end of this phase the government will publish a White Paper, where they will set out their intentions for reform alongside an implementation plan.

Decisions under REMA have the potential to drive far reaching changes to electricity markets (for example, if zonal pricing is selected) and hence the processes carried out within NESO. The investment will focus on all impacts from REMA, with major areas expected to be potential changes to wholesale pricing, scheduling & dispatch arrangements, Capacity Market and Contracts for Difference schemes. The degree of focus required in each area is dependent on government policy decisions.

This new investment is a discovery activity to develop understanding of the potential impacts on our systems, it will not deliver new technology capability but will be an enabler to future delivery programmes. Given the range of potential policy decisions by government the scale of change required within NESO remains highly uncertain. Hence as policy decisions are taken, the scale and pace of investment required in this discovery activity has the potential to change significantly.

Current State

During BP2 the policy options being considered under REMA has narrowed and the policy detail of the remaining options has become clearer as part of the government's second REMA consultation in March 2024. However, the range of potential policy decisions remains significant.

The NESO REMA team have been working alongside DESNZ and Ofgem to refine these options and understand the implications for NESO. Identifying the areas with potential significant impacts and the key process changes that could be required. As part of this work, during BP2 we have undertaken IT discovery and impact assessment activities through the 280 GB Regulations investment (referenced as Net Zero Market reform in the BP2 submission) to support NESO, industry and government as the market design options evolved. This includes an earlier impact assessment completed on market design options to inform our modelling of the options, and an ongoing impact assessment on Zonal Pricing – Capacity Calculation and Allocation.

Public

Future State

The ongoing impact assessment work on Zonal Pricing – Capacity Calculation and Allocation has highlighted likely impacts to our Balancing, Network Modelling and Market Facilitation capabilities. A government decision on the market design is anticipated at the end of this phase of the DESNZ REMA programme, and the subsequent discovery work proposed within this investment will define the future state capabilities needed and target platforms.

Roadmap

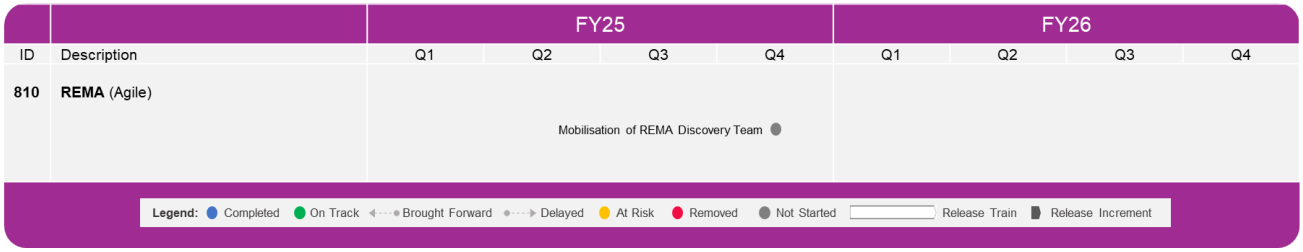


Figure 41 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Mobilisation of REMA Discovery team	Initiated REMA Discovery work supporting NESO, industry and government with definition of business needs, impacts to platforms, change strategy with estimates of effort and costs for further work	Q4 FY25
Milestone	Further Milestones to be defined	Further milestones will be defined after the government makes policy decisions on the REMA implementation plan at the end of this phase of the DESNZ REMA programme	TBD pending Government decision

Table 132 - Outcome summary descriptions

Approach

The approach during the BP3 period is for discovery activities, as the REMA context is uncertain pending high-level market design decisions. As and when decisions become known on the direction for REMA we will work to assess the impact of the policy decisions on our activities. We expect information to come in a phased manner but are as yet uncertain on the time scale and phasing. We will identify how the proposed market arrangements will impact current processes and systems and work with our architecture teams to identify options on how to deliver required changes. The delivery approach after BP3 period is to be defined by the outcomes of this discovery work.

Solution Options

The discovery activity in BP3 will define the solution options, subject to government decision timescales. Solution options will be considered in line with our Architectural Principles. This will ensure the responsible re-use of existing capabilities as is appropriate before considering buying or building a new capability.

Costs

Total View	FY '26
CapEx	-
OpEx	0.39
TotEx	0.39

Table 133 - Investment cost summary

Using experience from conducting discovery on other large complex programmes (e.g. Balancing Transformation) and impact assessment on potential REMA outcomes, we have provisioned for a multi-disciplinary team comprising a total of circa 3.8 FTE for a period of 10 months. This includes business analysis, solution architecture, and delivery manager capability. Given the uncertainties surrounding the REMA outcomes, we will be continually reviewing costs throughout discovery and will track this through the quarterly Cost Monitoring Framework (CMF) reports shared with Ofgem.

Assumptions

Category	Assumption	Investment Impact Areas	Review Frequency
Deliver	We will need to revisit this investment once decisions are made which lead to more certainty over the scale and timeframes of change	All aspects of this investment are impacted given the scale of potential change and pending high level decisions	Monthly

Table 134 - Investment assumption summary

Risks/ Issues

Risk	Mitigation	Likelihood	Impact
Decisions within the DESNZ REMA programme affect the scope of change within this investment within the BP3 period and drive a far larger	Support the DESNZ REMA team with 4 impact assessments of future state options for this workstream	4	2

scope of work within REMA implementation	when these options are defined		
The timing of government decisions affects the volume of work which could be covered under this investment within the BP3 period	Monitor and provide support to the government decision making process	3	1

Table 135 – Investment risks/issues summary

4.5 Contracts for Difference (CfD) (820)

Delivery Method	Strategic Priority Alignment
Agile	Customer Centricity

Investment Overview

The Contracts for Difference (CfD) scheme is the government's main mechanism for supporting the deployment of low-carbon electricity generation. Decarbonising the power sector is a vital part of the UK's efforts to meet its world-leading net zero target. Appointed by the government, NESO is responsible for the CfD prequalification, disputes and allocation processes which run once a year with timelines defined by DESNZ. The Legacy EMR Portal has been used by the Delivery Body to fulfil its obligations for the CfD scheme, for the previous 6 CfD Allocation Rounds.

The increasing application submission trend for each allocation round and recent customer feedback has highlighted performance concerns, impacting the delivery of the CfD scheme. Technology used in the current platform is becoming aged and will be end-of-life in the coming years, affecting supportability, introducing security risks, requiring significant investment.

The original plan was to replace the Legacy EMR Portal, for both CfD and CM schemes by BP2. However, due to the impact on the CfD scheme of the high level of uncertainty driven by the DESNZ-led Review of Electricity Market Arrangements (REMA), replacement work for CfD scheme was paused. Having consulted with DESNZ, Ofgem and the industry, it was agreed to undertake a feasibility study to replace CfD scheme first during BP2 until the future CfD scheme is better understood.

Since REMA work has completed and no significant change has been identified for CfD; this investment aims to improves the legacy CfD solution, commencing from FY26 to enable increased market participation through an improved user experience.

Current State

During the BP1 and BP2 periods, all CfD regulatory changes have been delivered in the legacy EMR Portal which enabled delivery of the allocation rounds up to round 6. With a better understanding of the CfD reform under REMA, NESO has carried out an initial feasibility assessment and defined the replacement strategy.

Customers have provided positive feedback on the recently delivered New EMR Portal customer experience, for the CM scheme, in comparison to the customer experience on the Legacy EMR portal for the CfD scheme. This has further emphasised the need to improve the current CfD solution, to continue to meet customer expectations. This will also help achieve the objective of reducing the spend on maintaining aged technology and infrastructure.

Future State

To improve customer experience, cope with increased future demand and address legacy technology limitations, the delivery of the CfD solution improvements will commence during BP3. However, further detailed analysis, design work and challenge review will be carried out to ensure the solution is fit for purpose as well as value for money.

Roadmap

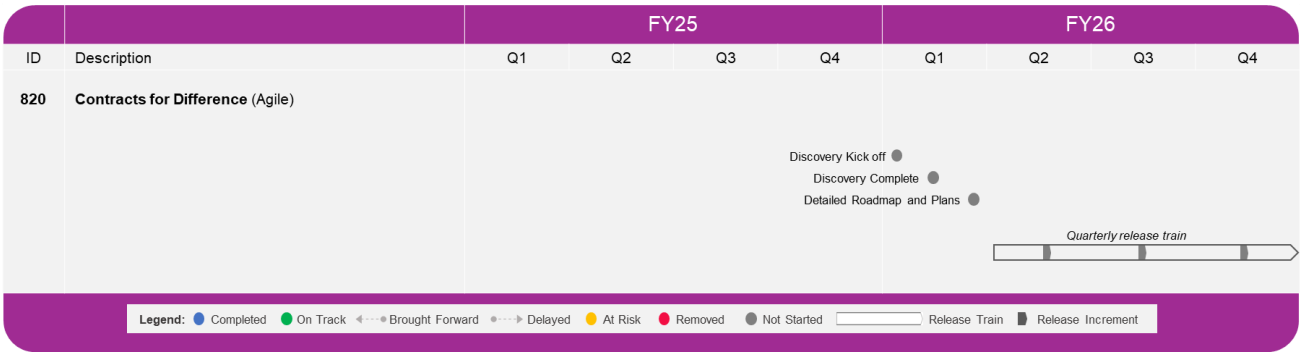


Figure 42 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Discovery Kick off	Initiate Discovery and Requirements work with supporting definition of business needs, impacts to platforms, change strategy with estimates of effort and costs for further work	Q1 FY 26
Milestone	Discovery Complete	Conclude CfD solution improvements discovery with High Level Requirements and	Q1 FY26

		architectural recommendations with costs	
Milestone	Detailed Roadmap and Plans	Detailed CfD solution improvements delivery roadmap and plan	Q1 FY26
Milestone	Quarterly Release Train	Quarterly release based on roadmap / priorities planned after agreement of the solution.	Q2 FY26 Q3 FY26 Q4 FY26

Table 136 - Outcome summary descriptions

Approach

The Contracts for Difference (CfD) solution improvements will be built and delivered through an incremental product development approach. This approach has been used in recent EMR new portal CM scheme delivery and received positive feedback from stakeholders.

Solution Options

Applying a customer centric approach and a digital first mindset, we are currently undertaking the solution optioneering exercise with a range of potential platforms being considered. The current high-level costs and roadmap are based on improving the CfD solution but keeping costs to a minimum. The detailed analysis and discovery activity will be completed by Q1 FY26 and the solution will be confirmed.

Costs

Our cost estimates are based on performing an initial discovery phase to identify costed options to improve the existing CfD solution. Resources to deliver this work are already onboarded and exist within the CfD delivery team.

Total View	FY '26
CapEx	1.56
OpEx	-
TotEx	1.56

Table 137 - Investment cost summary

Assumptions

Category	Assumption	Investment Impact Areas	Review Frequency
Deliver	CfD solution improvements delivery should commence beginning of FY26 so that improvements go live throughout the year.	N/A	Monthly
Cost & Timeline	Cost and timeline are based on building on the existing CfD solution, re-platforming and solution improvements.	NA	Monthly

Risks/ Issues

Risk	Mitigation	Likelihood	Impact
There is a risk that CfD delivery scope may increase because of future regulatory changes such as Ofgem, DESNZ, REMA changes etc. that are unknown at this stage leading to overall cost and timeline impact	Periodically review the changes if any, for any material impact to cost and timeline then change request process will be followed	3	4

Table 138 – Investment risks/issues summary

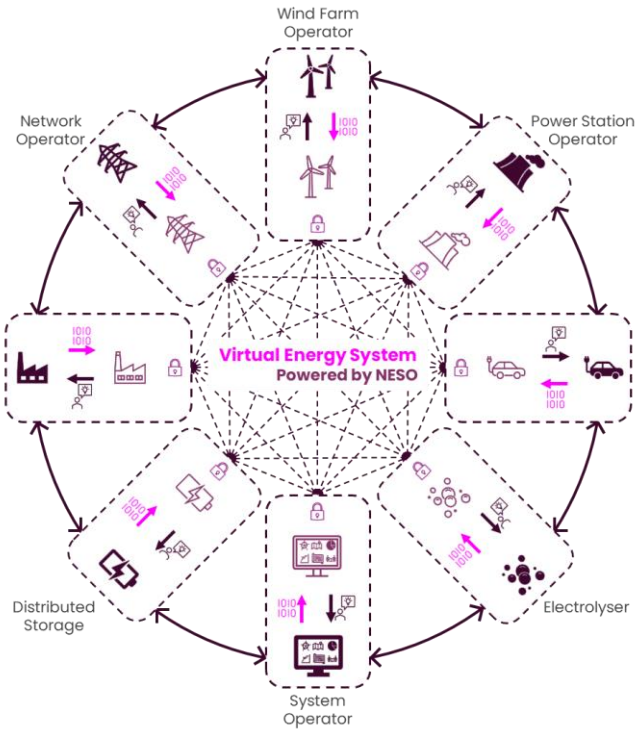
4.6 Data Sharing Infrastructure (830)

Delivery Method	Strategic Priority Alignment
Agile	Decarbonised Energy

Investment Overview

This investment is for progressing the development of a Minimum Viable Product (MVP) of the energy sector wide Data Sharing Infrastructure (DSI). The DSI is designed to provide the digital services, standards and tools that deliver trusted, secure, resilient, scalable sharing of data across organisational boundaries of energy sector participants.

The development of the DSI is central to the realisation of the strategic roadmap of the Virtual Energy System (VirtualES) programme. The VirtualES programme is an ambitious industry-wide mission to digitalise our energy system in an architecturally coherent way to provide the enabling services for the transition to net zero. The objective is to establish the foundation of interoperable data sharing and build on it to facilitate the creation of an ecosystem of connected digital twins which over time will include representations of electricity and gas assets and link up to other sectors. This network of connected digital twins will provide the basis for more complex multi-party scenario modelling for optimal whole-system decision making. These whole-system decisions will result in better outcomes for society, the economy, and environment by balancing the needs of users, electricity and gas systems, and other sectors.



Owing to extensive stakeholder engagement alongside systematic research and design activity, the VirtualES programme has generated industry-wide support around its proposals. The DSI is a strategically significant digital initiative for the sector building on the recommendations of the Energy Digitalisation Task Force (2022). Two recent publications by DESNZ and Ofgem - the government's response to the digital spine feasibility study and the consultation for the governance of the Data Sharing Infrastructure respectively, set out commitments and aspirations leading to requirements and expectations for NESO to progress the DSI development. Specifically, the delivery of a pilot of the DSI during FY 2024, and the development of a DSI MVP during FY 2025.

NESO are committed to deliver on those expectations, which aligns with our objective to be a 'Digital leader' as set out in our Digitalisation Strategy and Action Plan. Having adopted a business use-case driven approach to develop the DSI, our aim is to shape its delivery with reference to industry goals, and therefore create opportunity for enhanced impact for the industry in NESO's new roles.

Current State

Having concluded extensive research activity and a first round of strategic design, delivered through Network Innovation Allowance (NIA) projects NIA2_NGESO0014, NIA2_NGESO028, and NIA2_NGESO065 and Strategic Innovation Fund Discovery project 10026595, the Virtual Energy System programme is currently implementing a pilot of the DSI. The pilot will demonstrate how it can enable the trusted, secure, resilient, scalable sharing of data between a select group of electricity networks who have committed to partake in a series of pilot trials.

Planned to conclude around April '25, the Pilot will help validate the specification and the method of developing the DSI. The delivery of the pilot is led by NESO, in collaboration with the National Digital Twin Programme led from the Department of Business and Trade, and is supported by Ofgem and DESNZ.

The pilot use case (outage planning) is in support of enabling wider business and industry needs in the future.

Future State

1. The investment will deliver a Minimum Viable Product (MVP) of the DSI. The MVP will expand the technical capability developed during the pilot and will be launched in test mode (private beta release) for trials by network partners. This early use in test mode will provide feedback and insight to refine the DSI, and the basis for the industry to spearhead use cases of the DSI.
2. The estimated start date of MVP delivery is July 2025, with readiness for launch projected within approximately 12 months. This will cover initial deployment of MVP 'Data Preparation Nodes' into the network partners' ecosystems, development of initial capabilities required to operate the DSI as a service, implementation of a trust framework and a catalogue service to onboard organisations and support the discovery of available data.

Considering the overarching VirtualES ambition, the development of the DSI will enable the energy industry to standardise the way it shares data. This standard approach to sharing data will reduce time and effort in managing data sharing agreements and will drive data standardisation across energy vectors. Over time, following the implementation of the MVP, adoption of the DSI will expand out to all regulated networks, then to other energy market and non-market participants.

The development of the DSI targets the following three logical components of “prepare”, “trust”, and “share” outlined in the government’s response to the digital spine feasibility study:

Capability	Target Platform
Prepare (Drive and improve data standardisation)	The DSI will support improving data standards across NESO and the sector through relevant standards aligned with sector prioritised use cases, and enforcing their use through the technology deployed across the DSI. This will drive standardisation, improve data quality as well as compliance with Data Best Practice guidance. This capability will be developed through the Data Preparation Node (DPN) which will provide tools and capabilities to support the standardisation of data, metadata and security labels.
Trust (Establish and operate a trust framework)	As the number of organisations requiring energy vector data increases (*as well as energy organisations requiring non-energy data*) the need for a scalable, secure and assured approach to sharing data is required. The ‘trust framework’ element of the DSI development offers a scalable methodology for agreeing to the legal terms and conditions as well as their implementation. The use of the DSI should, in theory, reduce the requirement for bespoke data sharing agreements through time, and enable rapid sharing of **shared*** data between organisations. This capability will be delivered both through the DSI technology (specifically, the ruleset is managed by the ‘Data Sharing Mechanism’ (DSM) element of the DSI. The ruleset itself will be developed in collaboration with stakeholders and industry experts, with the DSM implementing that ruleset. The catalogue of the DSM will provide a method of data discovery and access for organisations participating in the Trust Framework. **Shared data, as outlined by the* ODI’s Data Spectrum*, being data which cannot be made openly available, but can be shared for commercial, legal or other reasons to enable a business need, with restrictions on access and use.*
Share (Provide an interoperable technology service)	Consistency of shared digital infrastructure is a growing challenge as the sector becomes more technologically complex and interdependent. The DPN element of the DSI is designed to be deployed by organisations within their environments and standardises the interactions that happen at the boundary of organisations. This enables a consistent way to exchange data between organisations, reducing overhead and increasing interoperability between varying technologies and digital systems.

	The development of the DSI is technology agnostic, therefore allowing organisations who use different digital services and products to more easily deploy and exchange information between each other without creating vendor lock in.

Roadmap

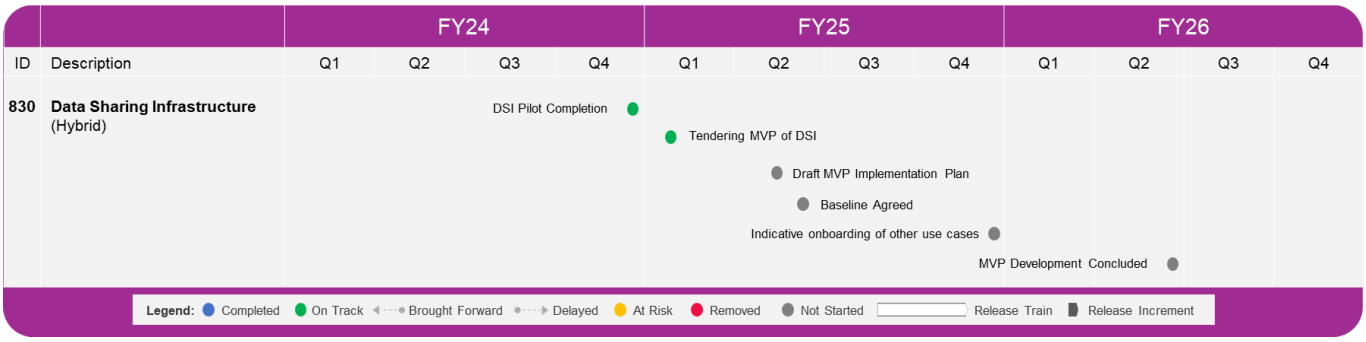


Figure 43 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	DSI Pilot Completion	It is essential to validate design and planning information based on pilot outcomes and learning.	Q4 FY24
Milestone	Tendering MVP of DSI	Supplier to develop DSI MVP is procured from market	Q1 FY25
Milestone	Draft MVP Implementation Plan	A detailed MVP implementation plan draft expected around July 2025, when MVP tender responses have come in.	Q2 FY25
Milestone	Baseline Agreed	A baseline agreed around September-October 2025 when the selected supplier should have kicked-off delivery.	Q2 FY25
Milestone	Indicative onboarding of other use cases	Target date for when sufficient capability exists in the DSI to onboard additional use cases	Q4 FY25
Milestone	MVP development concluded	Initial release of DSI components (Data Preparation Node, DPN and Data Sharing Mechanism, DSM) available for trial use by select network partners in Private Beta mode. Target for DPN element is to release as 'open source' codebase.	Q2 FY26

Table 139 - Outcome summary descriptions

Approach

Overall, the VirtualES programme follows a lifecycle approach broadly aligned to the Government Digital Service (GDS) Manual for the delivery of the DSI, going through the Discovery > Alpha > Beta (Private, Public) > Live series of phases. Underneath these high-level programme phases, the DSI will be implemented in tranches with each tranche mapped to a use case of the VirtualES. This is so that the delivery of the DSI and overarching service is organised in a manner that responds to real-world needs, with its scale and complexity growing in accordance with the requirements of the use cases it serves.

We have just entered the Private Beta phase of the DSI which is expected to extend through the whole of BP3. It will be delivered in two parts: the first part is the implementation of the DSI pilot based on an operational planning use case, which will be followed by the implementation of the MVP based on a strategic planning use case. The learnings from the Pilot will provide significant input, including customer input, which will be gathered and incorporated into the design and approach taken to MVP development. The MVP will expand the technical capability developed during the Pilot and will be launched for early use in test mode by Network Partners. This early use in test mode will provide feedback and insight to refine the DSI ahead of deploying for use by regulated networks as a Public Beta release.

Given the strategic importance, a team has been assembled comprising of those within the VirtualES programme as well as digital teams to ensure NESO can leverage its digital expertise and enable strategic alignment to the sector's enterprise architecture and digital capabilities. To ensure impartiality and trust in the decision making process for the technical development of the DSI, we are planning a public tender process to procure a supplier to support development of the MVP. We expect significant stakeholder engagement to occur during the development of the MVP, as has been the case in the VirtualES programme activity to date, in line with our strategic priority of customer centricity and transparency. The MVP will be developed with industry participation throughout, and supplier(s) will be expected to support and contribute to dissemination, engagement, demonstration and trial events.

Solution Options

The solution being developed has had significant expert thought and industry input towards its architecture. The DSI MVP is a direct response from the digital spine feasibility study, which in turn was in response from the energy digitalisation taskforce. The latter scoped the high-level concept, with the former going into deeper detail on the needs and benefits cases, along with a high-level design of the proposed solution.

In the discovery and alpha phases of the VirtualES programme, solution options were explored which considered a range of data sharing architectures. The conclusions of these options were published in the Technical Factors report. The recommended design for decentralised data sharing infrastructure was developed as the requirements were explored further.

Subsequently, NESO established collaboration with the National Digital Twin Programme, to explore elements of their solution, the Integration Architecture (IA) and how that matches up with the DSI high level design. Through this effort, the logical architecture of the DSI was developed and its specification was documented with reference to a data sharing user journey and an initial backlog of user needs for data sharing. The overall GDS approach allows for iteration and development as more is learned about the capabilities and their requirements, with the pilot and MVP scoped to provide assurance that the solution fulfils the needs of the market.

Costs

Based on current data points from the pilot, the outline projection for MVP delivery supplier costs is in the region of £6m (£4.67 in 18/19 prices). This is in addition to continuing costs for the existing Virtual Energy System programme team, and its expansion to increase its headcount with around 8 new roles.

Both timescales and projected costs for the MVP are subject to confirmation based on insight from the pilot and market testing through the competitive tender process. The opex costs fund a core programme team for this investment, with the cost for in-depth impact assessment activities by impacted platforms.

Total View	FY '26
CapEx	4.67
OpEx	-
TotEx	4.67

Table 140 - Investment cost summary (costs in 18/19 prices)

Assumptions

Category	Assumption	Investment Impact Areas	Review Frequency
Cost	Competitive bids will be made by the market to support development of the MVP	DD&T, VirtualES	Regular checkpoints ahead of MVP procurement
Cost	Government agencies, regulator or other stakeholders do not request significant new requirements	DD&T, VirtualES	Monthly

Support	Access to relevant subject matter expertise, both internal and external capabilities	DD&T, VirtualES	Quarterly (as required)
Delivery	Pilot phase is successful and agreed to be progressed to MVP	DD&T, VirtualES	End of pilot phase

Table 141 - Investment assumption summary

Risks/ Issues

Risk	Mitigation	Likelihood	Impact
Upcoming change in procurement regulations may impact timescales for engaging an MVP supplier and delay the start of MVP delivery.	Work closely with procurement team to ensure relevant processes are done in a timely manner before the planned date of new regulations coming into effect.	3	4
Selected MVP use case leads to higher security criticality of the DSI earlier than expected, extending timelines to deliver MVP.	Choosing use cases that avoid national security concern.	2	3
Dependency on completion of pilot and requisite learning to finalise the scope and specification of the MVP, therefore risk that delay in pilot completion could delay the start of MVP.	Maximise parallel activity and interaction between teams working on pilot delivery and MVP planning so that learning to inform the MVP specification is fed through in 'real time'.	3	3
Delay to signing contracts to engage network partners to support the delivery of the MVP.	Learn lessons from Pilot challenges and engage with partners earlier in process. Be proactive by working with the legal team early.	3	5
Lack of alignment of DSI implementation with existing regulations and available standards, leading to increased complexity of implementation and impeding readiness for DSI transition into use.	Good communications and close working with DESNZ, Ofgem and network partners on implementation of the MVP. Plan to conduct an industry codes review to gain knowledge of opportunities and constraints against which DSI design proposals need to be assessed to assure their viability from a regulatory perspective.	3	4

Table 142 – Investment risks/issues summary

4.7 Resilience & Emergency Management Whole Energy Modelling Capability (840)

Delivery Method	Strategic Priority Alignment
Discovery	Digital Mindset

Investment Overview

NESO has an objective to ensure security of supply of the electricity system when carrying out its functions. In electricity this includes continuing our roles in maintaining real-time secure operation and balancing of the electricity system; delivery of security of supply through the Capacity Market; as well as providing advice and recommendations on policy development. We will also adopt a whole energy system coordination role for improving the security and resilience of gas and electricity systems.

The Resilience & Emergency Management (R&EM) Directorate will be a core element of NESO with the potential to perform resilience assessments across energy networks, identifying resilience interactions and opportunities across industry, and assess gas security of supply considering the availability, reliability and deliverability of 'molecules' as set out in the Energy Security Plan (2023).

We must therefore develop new capabilities and, aligned with our digital strategy, 'take a digital first mindset to achieving outcomes'. Whole Energy Modelling is a key area where we intend to begin developing capability to support the following NESO licence conditions:

- C7 Part A Dynamic Risk reporting (ad hoc risk reporting) which will be completed all year round
- C7 Part C Resilience Risk Assessments (annual). Year-round process to assess culminating in an annual report
- C7 Part D Emergency Processes Assessment (NGSE as required)

The purpose of this investment will be to continue the original innovation project Scenarios For Extreme Events. An Alpha phase was concluded but with this investment we need to review if the original innovation scope is still applicable or if we need to add to the scope to allow for our whole energy remit and licence conditions to be fulfilled. Furthermore, under the conditions of the innovation project we had to use several partners but now we will explore the ability to deliver in house vs requirements now needed from 3rd party suppliers.

Current State Existing resilience approaches focus on localised asset management without considering wider infrastructure or the impact to different types of consumers.

Therefore, a proactive, system-wide approach to risk assessment and resilience planning for the GB energy networks is required: one that emphasises consumer impacts and which captures linkages to other essential services such as water and telecoms. Informed and focused resilience interventions can prevent or mitigate the costliest outages caused by cascading failures, which

often occur in the worst extreme events. We intend to develop capability to model the impact of extreme scenarios on the whole energy system to support resilience assessment.

Within the whole energy modelling space there is no capability to model the impact extreme events would have on the whole energy system.

Currently, the team do not use any models, they are reliant on Industry engaging with our surveys and sharing their knowledge. Our key challenges with this are:

- Subjective survey responses and ensuring people with appropriate knowledge levels are engaging with our surveys
- Understanding whether survey responses are representative of the scenario
- Being able to easily compare geographical areas
- Being able to easily gather a holistic view (difficult getting TX and DX at the same time and hard to get gas and electricity)
- Running workshops with multiple parties can be time consuming and costly
- Difficult to change scenario/add in an adaption to understand how the risk is impacted

As part of our new role as NESO we will be responsible for an analysis of risks/ threats that could disrupt the GB Whole Energy System and provide an annual Energy Resilience Assessment report to government assessing the resilience of our rapidly changing energy system. We currently lack quantitative analysis of the system resilience, relying on expert judgements of extreme event impacts.

The Scenario for Extreme Events (SFEE) innovation project has concluded its innovation Alpha phase, and we will use this investment area to understand if this tool would suitably deliver our requirements and plan implementation.

Future State

Our vision is that we would still survey Industry if/when we have the model but that it would bring greater confidence to the output. The models constancy in how failures are cascaded, and numerical output, will enable a move to more objective decision making on where system vulnerabilities lie and what the appropriate adaptions measures are.

We will develop a whole energy system modelling capability that will enable us to continuously build upon and evolve with the changing nature of the GB energy system. The new capability will provide the ability to apply a whole energy system lens to consider and take input from other sectors and aspects beyond the GB electricity system. This will allow us to provide a holistic view, further providing us with insights and data on which to base future recommendations on planning activity.

The modelling capability will enable us to stress test the GB system against future scenarios and build “what if” cases to reinforce and provide recommendations to industry and government.

Capability	Target Platform
SFEE	Unknown (discovery)

Roadmap

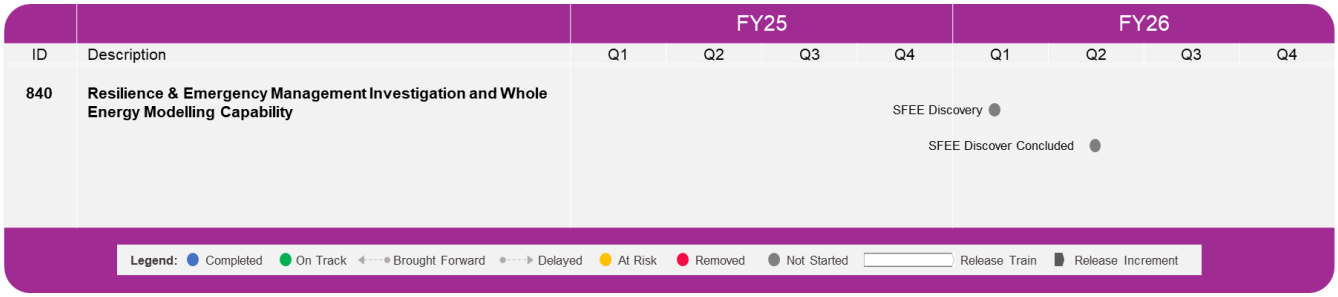


Figure 44 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	SFEE Discovery Concluded	Review of the Alpha phase of the innovation project, understand the current scope vs our requirements and understanding of deliverability in house vs what services we require from the market	Q2 FY26

Table 143 - Outcome summary descriptions

Approach

We will leverage the expertise of the architecture team to create an assessment of in-house capability versus that required to deliver the SFEE modelling capability as part of our discovery work into Whole Energy Modelling. Once the discovery is concluded we will then review our options to understand if this is something that we want to pursue, options for how to take this forward and then we will review funding opportunities for the SFEE project implementation if the discovery is successful.

Solution Options

Future products delivered are expected to be software that is aligned to the strategic vision and can be deployed into the NESO existing estate. We expect SFEE to be the key deliverable following further discovery into Whole Energy Modelling.

Costs

Using experience from conducting discovery on other large complex programmes (e.g. Balancing Transformation), we have provisioned for a multi-disciplinary team comprising Enterprise

Architecture, Solution Architecture, and Business Analysis capability for circa 3 months. As there are uncertainties around any discovery activities, we will be continually reviewing costs and tracking this through the quarterly Cost Monitoring Framework (CMF) reports shared with Ofgem.

Total View	FY '26
CapEx	0.19
OpEx	-
TotEx	0.19

Table 144 - Investment cost summary

Assumptions

Category	Assumption	Investment Impact Areas	Review Frequency
Deliver	SFEE delivers the full capability required to meet DESNZ expectations and delivers the benefits to the R&EM team expected to create comprehensive modelling	REM Investigation & Whole Energy Modelling Capability	

Table 145 - Investment assumption summary

Risks/ Issues

Risk	Mitigation	Likelihood	Impact
There is a risk that following the assessment from our Architecture team there is a requirement to go to market to deliver the modelling capability required	We will run a procurement event to procure a partner with the suitable skills and capability to deliver SFEE	2	2
If wider stakeholders such as TNOs, DNOs and Ofgem do not buy-in to our Whole Energy Modelling approach then beta model outputs may not be accepted or used.	Utilise planned engagement to help stakeholders understand why their input/data is needed and engage with them to understand the benefits of their contribution.	2	3
If terminology is not clearly defined within SFEE and agreed upon then scope may be misunderstood	Build upon key terms agreed in alpha. Reference key terms in scope and architecture definitions.	1	3

	Share terminology widely to support consistency across industry.		
If model Outputs or inputs are sensitive or classified, then information management practices and model storage may need adjustment	Confirm security treatment of model inputs and outputs and their dissemination with government. Detailed security assessment at the project outset to identify appropriate measures across all work packages. This includes anonymising data, using secure systems, and ensuring personnel have security clearance and access to data on a need-to-know basis. The core team is already capable of protecting information up to and above OFFICAL-SENSITVE, which is the expected level of this project due to the sensitivity of energy resilience information. External facing reports will be reviewed to prevent sensitive information reaching the public domain. Communicate strategy for mitigating security risks of handling data from DNOs etc, to partners / UKRI.	2	2
If the model does not appropriately represent the risk of cascading outages then the calculation of the impact of events may not be accurate. Full detailed transient calculations covering the entire UK transmission network are likely to be impractical to implement and/or may inhibit model function due to the speed of calculation.	Further research including a review of relevant literature and engagement with other SIF projects required to understand how best to represent the risk of cascading outages. Research to be captured in additional features sprints and capability expansion plan.	2	3
If the model and its inputs cannot be easily adapted by the end user then it will not be used to simulate events as part of business as usual	Additional features during model development to include a user interface. The training plan and handover activities will ensure that users are capable of interacting with the model and are sufficiently trained to ensure that they	1	3

	can model scenarios of interest through Business-as-usual.		
If there is an extreme event that the model doesn't accurately predict the impact of or help to mitigate against then confidence in the modelling approach and continued investment may be reduced.	Given the nature of high impact lower probability events, it is difficult to predict which event will come next and exactly how it will be manifested. Events may evolve in unexpected ways. The iterative process of development, not only in Beta but through Business-as-usual should increase preparedness to known risks.	2	2

Table 146 – Investment risks/issues summary

4.8 System Operations Technology Enablement (850)

Delivery Method	Strategic Priority Alignment
Discovery	Clean Power.

Investment Overview

Over the last decade the operational management of the transmission system has become increasingly complex, which makes balancing the active power *input* into the system with the active power *output* from the system increasingly challenging. A failure to achieve this balance could lead to the progressive, automatic shutdown of customer demand and ultimately a National Power Outage situation. Traditionally, the active power input to the system was the total of all generation connected to the transmission system and active power output was the total of the demand taken by the DNOs at Grid Supply Points (GSPs). Hence, this was known as the balance of generation with demand.

However, the fundamental principles behind this equation have changed. For example, there are now significant volumes of intermittent generation at both transmission and distribution level, end consumers are actively participating in various markets and there is more interconnection with Europe and interconnector parties are playing a more active role in the energy balance. This is contributing to an increasing level of uncertainty for operational teams, who are trying to manage the energy balance.

This Investment focuses on discovery activities for initiatives aimed at improving operational awareness and operational transparency to allow control room operators to make more informed decisions in operational timeframes. This investment will not directly deliver the capabilities, but ascertain how technology can assist in improving control room operations. During discovery we will work with stakeholders across the organisation to identify and prevent any potential overlap with other ongoing investments.

This investment has 4 strands of discovery activity:

System Modelling Analysis

Operational teams and wider teams from across NESO draw on a range of datasets, models and forecasts to support the energy balance activity. However, these are spread across a number of systems and there is no way to compare and recognise the optimal solutions. If the energy balance is visible and perfectly modelled in future time horizons, then operational teams will need to hold lower levels of reserve and other frequency correction products, driving down balancing costs.

There are significant volumes of data already available and that could be made available, which would allow us to produce a more accurate model of the energy balance, even as the fundamentals behind the equation evolve. This initiative will investigate these data streams to develop an accurate energy balance model and integrate this into existing systems. It will build on data that other investments such as 170 -frequency Visibility and 650 – DER/CER Visibility & Access will make available and complement other initiatives such as 670- Real Time Prediction in forecasting the energy balance.

Transmission Analysis Reform

The increased complexity of generation and demand forecasting means that often assumptions in the planning process are different to outturn in real time. This means that studies need to be redone at various points in time ahead of real time to provide a view of the expected network capability. It also leads to many more credible power system scenarios needing to be understood and mitigated against at every step of the transmission analysis process. The ability to understand a broader operating envelope and potential outturn scenarios will allow us to better manage the operational risk at any given point in time which will result in an ability to make more informed decisions which should result in more economic actions and a reduction in balancing costs.

Discovery activities will focus on defining the capabilities that are needed and whether the current offline modelling tool, with the planned enhancements, meets these or further evolution of power system analysis is needed. As power system analysis spans across the organisation discovery activities will need to include a wide range of stakeholders to ensure a holistic approach.

Network Topology Optimisation

Network topology optimisation is a continuous process to ensure the most efficient running of the transmission system is in place for any given transmission outage pattern and generation schedule. It is an efficient method of reducing balancing costs by using transmission system assets to alter electrical flow from generation to demand. This can reduce the amount of balancing actions required by running the transmission system in its most efficient state. This initiative is to begin discovery on the development of software that can optimise network topology and to integrate this with our real time situational awareness and planning tools. It will

have interactions with the Transmission Analysis Reform with discovery activities conducted in parallel to capture interactions.

Future of the Control Room

As we continue on the journey to a decarbonised power system, how we operate the electricity transmission network will need to evolve. This will result in the need to enhance existing and also bring in new capabilities into the control room to meet the operational challenges a decarbonised power system brings. This initiative is to begin discovery activities on the digital delivery of capabilities needed for safe, efficient operation of a decarbonised power system.

Current State

System Modelling Analysis

There is more active participation in electricity markets, resulting in short notice changes to energy flows into and out of the system. For example, price-driven consumer behaviour and small embedded generation changes producing significant step changes in distribution demand, and interconnector parties driving short notice movements in interconnector flows.

Operational teams and wider teams from across NESO, draw on a range of datasets, models and forecasts to support the energy balance process. However, there is no overall model that accurately describes both sides of the energy balance equation. This uncertainty directly impacts operational risk and balancing costs.

Transmission Analysis Reform

The process from 6-year ahead to real time is based around the use of DigSilent Power Factory, a switch level application that requires a significant amount of manual effort across multiple teams to align substation running arrangements with forecasted system running arrangements to provide appropriate study system conditions for analysis. Moves to automate study set up scenario analysis have proved challenging with only limited success due to issues with equipment models within the application that often have to be switched out to allow the application to converge on a result with reduces the overall accuracy of the study.

Due to the complexities outlined above, the number of scenarios that can be studied and mitigated against within the planning process is limited. This means that analysis is focused around the most operationally critical points and operational actions taken around these. If we are able to increase the scenarios that can be studied, our operational teams will be better informed of optimal operational actions that can be taken.

Network Topology Optimisation

Network topology optimisation is currently done manually and there are human limitations to the number of scenarios that can be assessed for each time period. Scenarios are created for thermal, voltage, stability, fault level and reserve/response transmission system constraints and these are assessed individually. We currently perform these optimisations as part of planning

and real-time processes and there are human limitations to the number of scenarios that can be assessed for each time period.

Innovation projects have been trialled in 2017, 2020 and 2021 that have demonstrated the capability of software to optimise thermal constraints using DC and AC linearisation power flow solver techniques. For products to be operational this would need to expand to full AC power flow solvers and techniques to be researched to cover voltage and stability constraints in particular.

Real-time rules are manually applied to any assessment to ensure that any optimal topology is feasible in a real world environment. Research groups (such as G-PST) have been preparing research in these areas and are keen for partnerships to develop. TSOs from across Europe have been investing in developing products in this space, with 50Hz/Elia/Tennet and Swissgrid confirming that they have achieved similar results to NESO with DC/AC linearisation techniques.

Future of the control room

The Power System engineers in the control room are increasingly required to support new capabilities, outside of their traditional engineering skill set, with more activities to participate in. This limits the time and ability for control room engineers on operational decision making. The set of capabilities needed in the control room is expected to increase as the energy sector continues to decarbonise. We have conducted work to begin to understand the capabilities needed in the control room to operate in a future environment. We want to bring a digital first approach to meeting the future control room capability requirements to ensure we have the right skills, roles and toolsets to operate safely and efficiently.

Future State

This investment will not directly deliver the capabilities outlined below within the BP3 timeframe however will ascertain the role that technology plays in achieving the following outcomes:

1. A better understanding of the real-time operational risk envelope.

We will have a clear understanding of available datasets and use them in digitally enabled models to support operational modelling and control room situational awareness thus providing the opportunity to make better informed decisions to manage and mitigate risk and maintain system security at a lower operational cost than would otherwise be the case.

2. Ability to perform multiple scenario modelling

We will have a modelling capability which allows us to consider multiple scenarios to assess operational conditions at any point across a dynamically changing power system. This will support a better understanding of the real-time operational risk envelope and allow us to make better informed and lower cost operational decisions.

3. Use of optimum network topology

We will have digital tools that can interact with power system models to generate an optimum topology for real time, using rule set for real time operation and providing recommendations for optimisation to engineers in planning and operational timescales. This will provide operational

engineers additional options to mange system conditions delivering benefits in both cot efficiency of actions and in system security.

4. The right capabilities in place for operation of a decarbonised power system

We will bring a digital first approach to enhancing existing and delivering new capabilities, providing digital tools that complement and enhance the operational control room roles. We will have a roadmap of capabilities to be developed and enhanced to aid control room decision making and operational transparency.

Capability	Target Platform
Analysis and Modelling	We currently have a number of analysis and modelling tools across our technology estate. As part of this initiative, we'll evaluate the current applications alongside our processes. The discovery phase will identify more details relating to new capabilities we may need and evaluate options to meet them.
Data	Data is a core capability domain that underpins all of the requirements within the initiative. We will work with colleagues across our Data, Data Architecture and DAP teams to leverage our existing data.

Roadmap

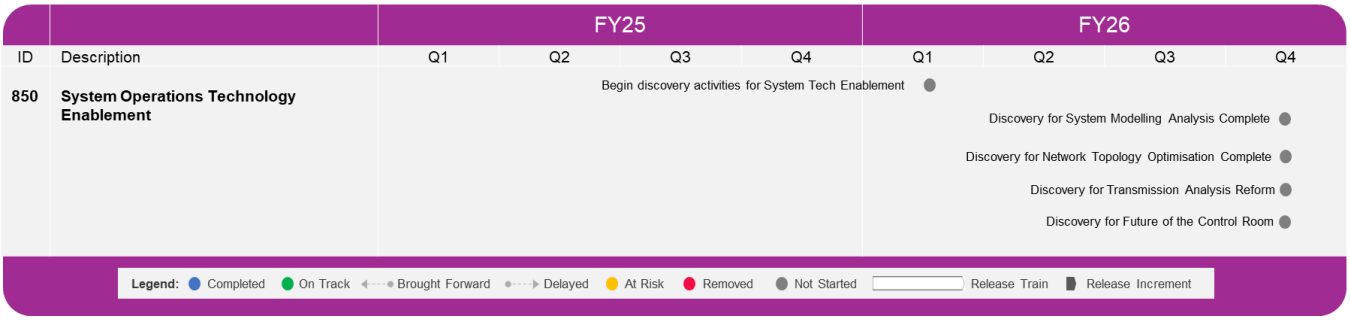


Figure 45 - Outcome roadmap

Event Type	Event Name	Outcome description	Date
Milestone	Begin discovery activities for System Tech Enablement	Team mobilised to begin discovery activities for System Modelling Analysis, Network Topology Optimisation, Transmission Analysis Reform and Future of Control Room	Q1 FY26
Milestone	Discovery for System Modelling Analysis complete	Roadmap for a programme of works to leverage existing data to improve operational risk and situational awareness	Q4 FY26
Milestone	Discovery for Network Topology Optimisation complete	Roadmap for a programme of works to deliver Network Topology Optimisation	Q4 FY26

Milestone	Discovery for Transmission Analysis Reform	Agreed approach to and roadmap for the development of operational scenario modelling capability	Q4 FY26
Milestone	Discovery for Future of the Control Room	Roadmap for a programme of works to deliver digital enablement to the control room.	Q4 FY26

Table 147 - Outcome summary descriptions

Approach

We will leverage the expertise of technical, DD&T and data experts from across the business to map out and assess existing processes, datasets, models and forecasts. This will be augmented with additional research, data and information sources from outside of NESO. Utilising stakeholders, subject matter experts, industry partners and internal end users, we will adopt a design thinking mindset to ensure customer and stakeholder expectations are met by developing user and customer personas and journeys. This will allow us to identify opportunities and develop a roadmap of activities against each of the discovery areas to achieve the desired outcomes. We will also identify and manage interactions and dependencies across these areas and existing programmes of work to develop a pragmatic approach.

Solution Options

At this stage we are not in a position to describe solution options, but during the discovery phase we will review options, including use of open source code in line with our Architectural Principles. This will ensure the responsible re-use of existing capabilities as is appropriate before considering buying or building a new capability. Also SaaS and COTS solutions will be considered where buy vs build is preferable/more efficient, with the intention of avoiding customisation and minimising configuration.

Costs

Total View	FY '26
CapEx	1.25
OpEx	-
TotEx	1.25

Table 148 - Investment cost summary

Cost components of the Investment:

- System Modelling Analysis: Full year discovery scope and leveraging quick wins on the way.
- Transmission Analysis Reform: Full year discovery scope

- Network Topology Optimisation: First view on global position on optimisation of technology driven by System Operations
- Future of the control room – Evaluate opportunity for further digital enablement within the Control Room
- Our cost estimates have been produced using experience from conducting discovery on other complex cross organisational programmes such as our Balancing Transformation programme and Data Analytics Platform. The Transmission Analysis Review discovery will require engagement across many areas of the organisation to ensure a holistic approach. We expect for discovery to run yearlong across all of the areas. In our cost estimate we have provisioned for a multi-disciplinary team comprising a total of circa 11 FTE over a period of 12 months which includes subject matter expert, business analysis, solution architecture, and delivery manager capability. As there are uncertainties around any discovery activities, we will be continually reviewing costs as requirements and engagement with the business evolve. We will continue to track this through the quarterly Cost Monitoring Framework (CMF) reports shared with Ofgem.

Assumptions

Category	Assumption	Investment Impact Areas	Review Frequency
Deliver	Engagement from industry to deliver the right datasets	System Modelling	Monthly
Deliver	Funding is received via an NIA proposal.	Network Topology Optimisation	Quarterly

Table 149 - Investment assumption summary

Risks/ Issues

Risk	Mitigation	Likelihood	Impact
There is a risk that the datasets necessary to deliver the optimal solution are not available or industry partners are unwilling to share datasets that they own.	Engage early with stakeholders	3	2
There is a risk that models cannot be integrated into existing systems and therefore do not deliver the expected benefit to managing operational risk and driving down balancing costs.	Consider tactical and strategic solution options to realise benefits	3	2

There is a risk that the gap analysis will highlight a technology gap that is beyond what is currently commercially available to NESO, and hence the future programme of works may not be achievable in full at this time.	Explore alternative options	2	1
There is a risk that TSOs will not be willing to engage on this topic, through either lack of time/resource or lack of interest in the product development.	Stakeholder engagement plan and approach in place	2	1
There is a risk that relevant research groups do not have adequate funding in place to operate in these areas.	Seek innovation funding to progress work	3	1

Table 150 – Investment risks/issues summary

Public

Part 5 - Technology Enhancements

5.1 Technology Enhancements

As outlined in our BP2 submission, NESO has sought to develop platform-based architecture across its technology estate. The purpose of this strategic decision was to enable the delivery of modular capabilities year-on-year, facilitating ease of change and flexibility so that digital services could be extended and/or superseded as new requirements evolved. For this reason, there will always need to be an 'enhancements' component within the DD&T portfolio to maintain and continually enhance the platform infrastructure that has been stood up since BP2. In effect, this represents the natural transition of these platforms into BAU delivery.

For four investments, we have identified enhancement requirements that will augment the benefits that have already been outlined in their respective investment papers. These requirements go above and beyond the scope that was set out in BP2, and our approach will be to deliver the previously agreed scope set at BP2 first, before embarking on the delivery of any of the enhancements outlined below.

For these enhancements, we have set out a summary overview and description below:

Associated Investment Description	Enhancement Rationale	FY '26 Cost
Digital Engagement Platform - 250	BP3 will cover the implementation of enhancements for the website to improve the end user experience, whilst continuing to support business as usual activities. The enhancement will principally be focused on enhancing and modernising NESO.energy to support customer interaction with our data assets. The enhancements scope includes: • Design and content review and refresh of NESO.energy, • Enhancements to the search capability • Integration with DAP and new GIS capability, • MyNESO account management enhancements to provide a personalised and targeted flow of information to our customers and end users • Interactive content – Balancing the Grid Game development and support to promote customer engagement and understanding of NESO's role • Targeted campaigns through automation, principally newsletter content • Enhancements to the Search Capability, including AI. The above is an initial assessment of the likely scope of work but further detail will emerge as part of the discovery work that will be conducted following the BP3 delivery.	£3.5m

Offline Network Modelling - 360	The enhancement scope will enable us to better analyse the impact of new connections and event scenarios. The work required is primarily in 2 parts: RMS modelling and EMT modelling & support SEP. • For RMS modelling strategies, the product team will model HVDC connectors into the GB network, in accordance with our licence agreement, and model implementation of grid code 139 with our DNOs. • EMT modelling is a new service, which will require the implementation of additional automation for the users to improve the capability for events and new connections scenarios, such as the behaviours of new inverter-based resources. An enhanced EMT analysis capability will speed up the engineering design and event processes and digitisation of Data Registration Codes process will enhance the customer experience for their Grid Code obligations.	£0.8m
Connections Platform- 380	This additional investment will implement the changes agreed as part of the Connections Reform programme transitioning from the current 'first come, first served' approach to a 'first ready, first connected' approach to prioritise projects that meet the Clean Power 30(CP30) plan. Connections Reform is the critical enabler to the CP30. The reformed process will move to a gated annualised process, have additional inputs and checks, and a new queue prioritisation mechanism to ensure viable projects that align to CP30 plan are accelerated through the process as efficiently as possible. This investment also includes the changes needed to facilitate the reassessment of the existing connections queue, as well as the enduring solution for new connections applications. Implementation of the process changes and continual increases in the level of digitisation will provide efficiency savings, improve customer experience and ensure the right connection applications are prioritised to meet UK strategic targets	£4.9m
Settlements, Charging and Billing (STAR) - 610	For BP3 £2 million has been allocated for enhancements to Revenue services. In BP2 the program completed the migration of all revenue streams from the legacy CAB system to STAR; from BP3 a streamlined Product team will prioritise and maintain a high-value backlog of customer enhancements to meet NESO's needs, whilst responding to regulatory changes. The backlog includes improvements to Connections billing for backdated charges and Out-turn charges, enhancements to TNUoS - Generation Ownership change, security calculations and triad calculations, and an update to TNuOS Initial Demand Reconciliation to incorporate CMP425. These enhancements will ensure the revenue services remain compliant with regulatory changes and continue the digitisation of Revenue operations.	£1.6m

Table 151 - Summary of enhancements

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Appendix

Appendix A: DD&T Governance Forums Terms of Reference

Included in this Appendix section are the Terms of Reference for the DD&T specific governance forums, they are Project Checkpoint and Programme Management Board (PMB). The DD&T forums feed into the overall NESO governance at Sanctioning Committee, Portfolio Review Board (PRB), Operations Executive Committee (OpCo) and Executive Committee (ExCo).

Project Checkpoint

The project level governance forum is designed to support the proactive management of key artefacts, ensure risks and issues can be escalated early and to provide a regular health check on project progress (regardless of delivery methodology) against key MI.

Proceeding of Meetings	
Frequency	Weekly / Biweekly
Duration	~ 1 hour
Minimum Quorate	Delivery Manager, Customer and Senior Delivery Managers
Quantity	Current Portfolio – Active Projects 50-100

Purpose and Objectives

- Delivery of project to time, budget and quality standards (and appropriate management of deviation to agreed tolerances)
- Management of project budget against sanctioned funds (and appropriate management of deviation to agreed tolerances)
- Manage resourcing and capacity planning across project
- Management of SDF documentation and Stage Gate process compliance
- Track benefits across project lifecycle
- Track delivery of Ofgem Milestones, Feature & Go Lives
- Proactive management of dependencies across projects
- Proactive management of Risk and Issues

Pre-requisite Information

- Project performance against budget (Accruals/ Forecast/ Actual)
- Project performance against plan (Forecast / Actual)
- Project RAID report and escalations for Programme Level remediation
- Project performance against Ofgem Milestones, Features & Go Lives
- Active Change Requests
- Decisions & Escalations
- Demand pipeline (by exception where it affects the project)
- Ofgem concerns (by exception where it affects the project)
- Updated benefits log
- Updated lessons log

Key Outputs
• RAID resolution management and escalation report defined for PMB review with updates to RAID log as required • Performance report against Stage Gates and plan to mitigate any issues • Lessons learned log updated if required and next steps defined • Benefits log updated if required and next steps defined • Change Requests approved at project level to go to the PMB for programme approval • Resourcing requirements raised at Project Checkpoint. Raised a PMB for information / escalation if required • Decisions & Escalations to PMB • Demand Pipeline (by exception where it affects the project / programme) • Ofgem concerns (by exception where it affects the project / programme) • Progress to plan • Delivery of Ofgem commitments – Milestones, Feature & Go Lives.

Attendees	Decisioning
Chairperson – Forum Decision Maker **Senior Delivery Manager**	• Resolution or mitigation of key RAID items • Decision making on change requests
General membership – IT Forum Contributor • **Delivery Manager/Scrum Master** • **Dev Lead** • **Senior Delivery Manager**	• Provide project level expertise and update on resourcing and pipeline activity
General membership – Bus. Forum Contributor • **Customer** • **Product Owner / Manager**	• Provides customer input to assure quality control • Reviews benefits expected vs delivered
Secretary: PMO	• Consolidate pre-requisite information and address gaps
Additional members by invitation only: • **Project Sponsor** • **Business Analyst** • **Scrum Master** • **Service Transition**	• Provision of expertise depending on stage of project lifecycle

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Programme Management Board (PMB)

The programme governance forum is designed to guide and steer the direction of the programme and the constituent projects. It has the closest level of oversight to delivery performance, providing direction and decisioning.

Proceeding of Meetings	
Frequency	Monthly
Duration	~ 1.5 hours
Minimum Quorate	Business Sponsor, Technology Delivery Head, Senior Delivery Manager, Finance Business Partner
Quantity	Current Portfolio c.15

Purpose and Objectives

- Delivery of programme to time, budget and quality standards (and appropriate management of deviation to agreed tolerances)
- Management of programme budget against sanctioned funds (and appropriate management of deviation to agreed tolerances)
- Management of resourcing and capacity planning
- Approval of change requests or endorsement of changes which need to go to Sanctioning Committee
- Resolution, mitigation or escalation of escalated project level and programme level risks and issues
- Management of benefits across project lifecycle
- Management of change impact and demand requests
- Proactive management of dependencies across projects

Pre-requisite Information

- Programme performance against budget (Forecast/ Actual) with constituent project performance and escalations due to deviation from plan
- Programme performance against Plan (Forecast / Actual) with constituent project performance and any escalations due to deviation from plan
- Escalated project level risk and Programme level risk as per RAID Log
- Programme level demand paper, project level approved change requests or requirements for review and decisioning.
- Programme level dependency map and escalations
- Data entry period is from previous month for all pre-requisites information and a focus on near future impacting escalations

Key Outputs

- Resolution or mitigation of any project level risk escalations and Programme Level risk, and updates to RAID Log agreed

- Mitigation or remediation of deviation to plan or budget and agreed action with implicated stakeholders (Delivery Managers) and updates to RAID log agreed
- Approval of Small Change Requests or decision making on re-sanctioning
- Impact assessment of demand requests (scope, timeline, budget and resourcing) and agreed next steps on communicating with impacted stakeholders
- Mitigation or remediation oged dependencies and definition of plan to course correct
- Escalation of programme risks/ Issues to Portfolio level for Portfolio Review Board visibility and resolution

Attendees	Decisioning
Chairperson – Forum Decision Maker • **Business Sponsor** • **Technology Delivery Head**	• Ensures alignment to business case and expected value to be delivered • Provides decision making function on risk and issue mitigation or escalation and guidance on change approvals
General membership – IT Forum Contributor • **Senior Delivery Manager** • **Business Analyst** • **DD&T Finance Analyst** • **Product Owner/Manager**	• Ensures programme delivery updates • Ensures coherence with pipeline work • Ensures coherence with dependent programmes • Ensures delivery resourcing
General membership – Bus. Forum Contributor • **Finance**	• Provide financial, commercial, and customer insight or representation
Secretary: PMO Analyst (DD&T)	• Consolidate pre-requisite information and address gaps
Additional members by invitation only: DD&T Domain Representation • **Enterprise Architect** • **CNI Service Owner** • **Service Design and Transition** • **Delivery Manager**	• Provision of expertise depending on requirement (Change Request, Dependency Management, RAID escalation etc.).

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Appendix B: Risk Assessment Methodology

Score	Category	Impact of Occurrence	Likelihood of occurrence
1	Remote	• Part of Project affected • Minimal Time & Cost to remedy • Minimal interruption to objectives	Less than 10% (remote)
2	Less likely	• Entire Project affected / Part of Programme affected • Minor amount of Time & Cost to remedy • Minor disruption to objectives	10-30% (less likely to occur)
3	Equally likely as unlikely	• Entire Programme affected • Significant Time & Cost to remedy • Significant disruption to objectives and outputs • Dependency affecting <3 projects*	30-50% (possible it may occur)
4	More likely	• Entire Programme affected • Significant Time & Cost to remedy • Significant disruption to objectives and outputs • Dependency affecting <3 projects*	50-70% (likely to occur)
5	Almost certain	• Entire Portfolio affected • Critical Time & Cost required, reputational damage • Very difficult to recover from disruption • Dependency affecting 7+ projects*	More than 70% (almost certain)

Table 152 - Risk assessment methodology