Digitalisation Strategy & Action Plan

December 2024
Submission

NESO
National Energy System Operator

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NESO's Corporate Strategy

Our purpose, vision and values underpin everything we do, defining why we exist and how we deliver as NESO.

We will demonstrate that through embracing our core values and strategic priorities, we are redefining our role in the energy system, fostering collaboration and delivering tangible benefits across the entire energy landscape.

Foreword

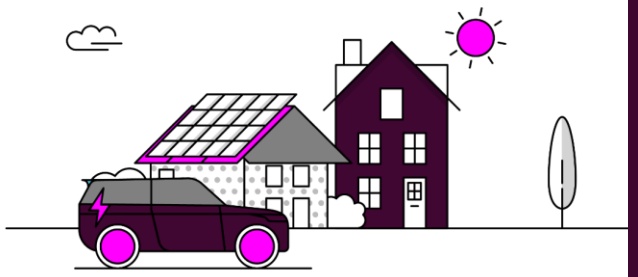
Submission Overview

The energy landscape is undergoing a rapid transformation, with decarbonisation, affordability, and security of supply at the forefront of our priorities. As the organisation responsible for planning and operating Great Britain's electricity and gas systems, NESO is at the heart of this evolution, guiding the nation towards a sustainable energy future.

To navigate this complex landscape, NESO is adopting a whole system approach, integrating natural gas, electricity, and other energy forms as outlined in the Energy Act. Our robust Digitalisation Strategy and Action Plan (DSAP) harnesses the power of data, artificial intelligence, and innovation to establish a clear, digital-first vision for 2025 and beyond.

This DSAP not only marks our first submission as NESO but also coincides with the consultation of our Business Plan 3 (BP3) and Clean Power 2030 submissions. This sets forth our strategic ambitions and action plans, demonstrating our expanded role in the energy sector.

By leveraging emerging technologies, harmonising data standards, and maximising the value of data, we aim to foster innovation and collaboration, creating a more interconnected and efficient energy network that is both customer centric and moves us towards our 2030 targets.



Welcome to NESO

"Welcome to our 2025 Digitalisation Strategy and Action Plan. As CIO, I'm thrilled to share this with you. The energy sector is evolving rapidly, and we find ourselves at a crucial juncture where decarbonisation, affordability, and security of supply are more important than ever.

At NESO, we're not just managing the electricity system; we're leading a digital revolution that empowers a sustainable future. Our commitment to embracing digital technology and innovation is stronger than ever.

This DSAP reflects our determination to present a clear and concise overview of our strategic ambitions and the action plans that will help us achieve them.

I believe that collaboration is key to our success. We recognise that achieving our decarbonisation goals requires a collective effort, and we are eager to work closely with our customers and partners. Together, we can build a resilient energy system that meets the needs of today and tomorrow.

I invite you to join us on this exciting journey. Your insights and collaboration are invaluable as we strive to unlock the full potential of digitalisation in the energy sector. Thank you for being part of this transformative process as we work towards a cleaner, more secure energy future for all."

Shubhi Rajnish
NESO Chief Information Officer

Our Purpose, Vision & Mission

Our mission is to drive the transformation to a fully decarbonised electricity system by 2035, one that is reliable, affordable, and fair for all.

We will achieve this by planning and optimising Great Britain's electricity and gas networks, operating the electricity system, and providing insightful recommendations for the future of a unified energy system. Our role is to unify and optimise our approach to energy to meet the challenges of climate change, ensure secure energy supply, and make energy costs manageable for consumers.

We are committed to being an expert, impartial body responsible for shaping the future of energy in Great Britain. We are working closely with the government, Ofgem, and customers to develop and implement solutions that will enable a zero-carbon electricity system. This includes embracing a whole-system approach, fostering innovation, and with partners across the energy sector.

We aim to operate one of the fastest electricity systems in the world for decarbonisation, with an ambition to have periods of zero carbon operation by the end of 2025. Our independence allows us to consider all perspectives without favouring any specific technology or stakeholder.

Delivering value for consumers will be at the forefront of our efforts as we strive to create an integrated, future-proof energy system that benefits all Great Britain — people, communities, businesses, and industry.

Our vision is a future where everyone has access to reliable, clean and affordable energy; our work will be a catalyst for change across the global community.

Our purpose is to forge the path to a sustainable future for everyone.

About NESO

NESO's Strategic Priorities

As NESO, we have identified six Strategic Priorities that will guide our efforts through to 2026, ensuring we fulfil our duties and achieve our purpose and vision.

Our 'Clean Power', 'Decarbonised Energy' and 'Consumer Value' priorities describe **what** we will deliver and our commitments under these priorities.

Our 'Customer Centricity', 'Digital Mindset' and 'People Value' priorities describe **how** we will deliver our commitments.

Clean Power

We will enable a zero-carbon electricity system by adopting a whole system approach, encouraging innovation and collaboration.

Decarbonised Energy

We will develop integrated plans for a decarbonised, efficient and flexible energy system fit for the future.

Consumer Value

We will have unlocked around £3 billion of consumer benefits by 2026 through delivery of our commitments.

Customer Centricity

We will understand and balance the different needs of our customers to form meaningful partnerships.

Digital Mindset

We will unlock the potential of technology and teamwork through a digital-first approach, enabling a future of seamless connectivity and innovation at pace.

People Value

We will invest in our people, to ensure we are prepared and empowered to embrace the opportunities of the future.

NESO Strategic Priorities

Our Customers

As a publicly owned organisation, we have a unique role in prioritising the needs of our customers and the communities we serve.

We recognise that our customers rely on us 24/7, every day of the year. Their lives are intertwined with the flow of energy, and it is our responsibility to ensure that this flow is secure, affordable, and sustainable.

Transparency and accountability are paramount, and we strive to ensure our customers understand our decisions and how they impact their lives.

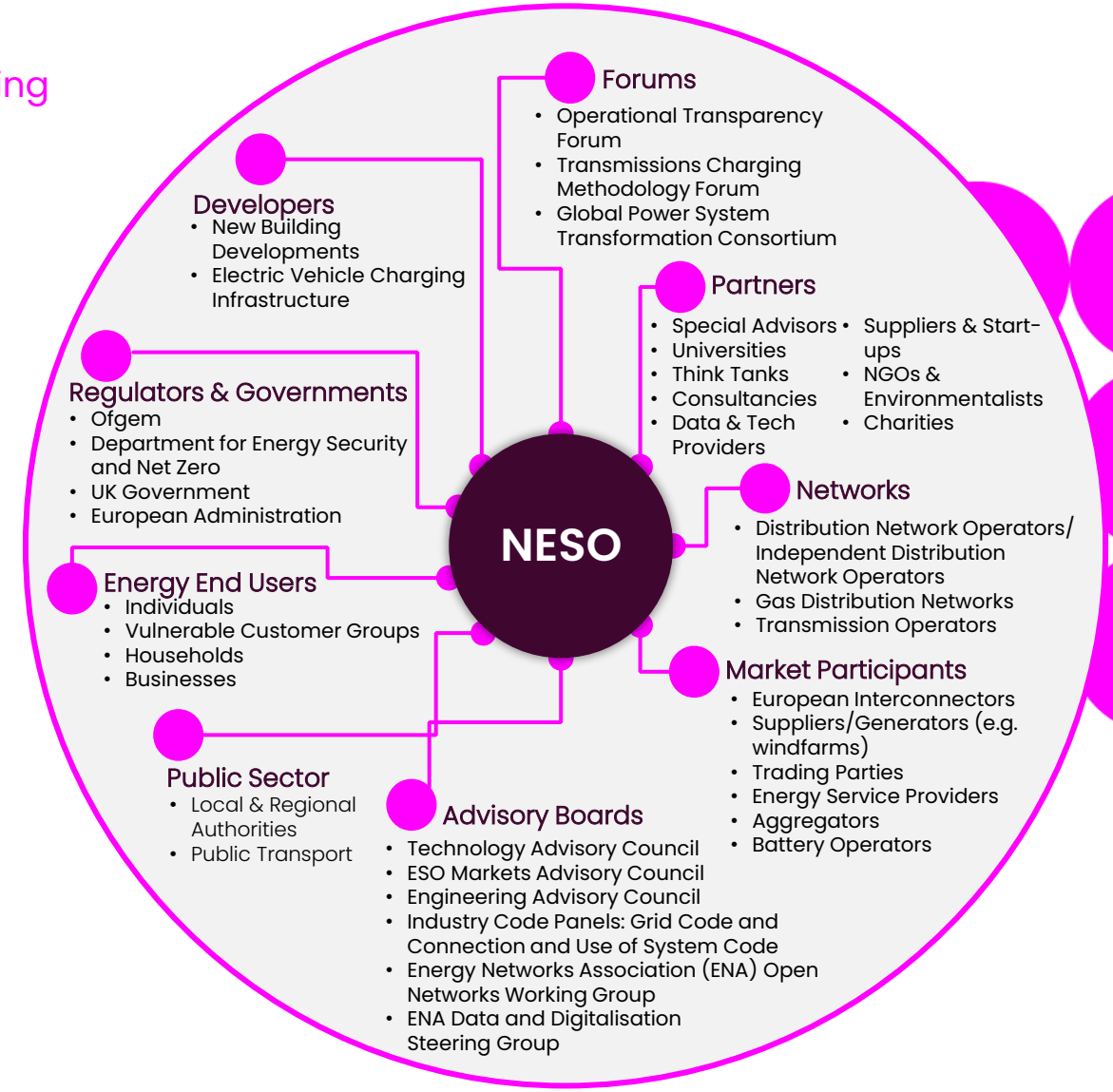
We are dedicated to fostering a customer-centric culture, actively engaging with our customers, listening to their feedback, and collaborating to build a better energy future together.

To become Digital Leaders, we must engage regularly with all our customers to understand their digital needs. This includes long-standing partners like Distribution Network Operators (DNOs) and newer industry players, such as battery storage providers and demand aggregators.

Our definition of customers encompasses a wide range of stakeholders, including:

- Entities and individuals who purchase our products and services
- Entities and individuals from whom we procure products and services
- Consumers who utilise our energy
- Stakeholders with a vested interest in our activities and decisions
- Individuals and entities who work with us, including employees, contractors, and innovation partners

By prioritising these relationships, we aim to build a resilient and responsive energy system that meets the needs of today and tomorrow.



How our customers shaped our strategy

We engaged in several customer engagement activities to help build and inform our Digitalisation Strategy

BP3 Consultation

The BP3 consultation is crucial in shaping our strategy. By gathering feedback on performance incentives and business plan requirements, we have ensured that our digital initiatives align with customer expectations. This input helps us prioritise the right investments.

Innovation and Customer Engagement

Innovation is driven by customer engagement. Our 2024-25 innovation strategy was developed with feedback from industry customers and subject matter experts. Events and publications fostered idea creation and project development, directly influencing our Digitalisation Strategy. The Demand Flexibility Service (DFS) utilised customer data to inform digital efforts, demonstrating our commitment to continuous improvement through digital innovation.

We also encouraged stakeholders to engage with our digital initiatives through our "Get Involved with NESO Innovation" initiative. This open invitation ensured that our digital strategy benefits from diverse perspectives and innovative ideas from those impacted by our services.

Performance Reporting

Our monthly performance reports and weekly Operational Transparency Forums provide platforms for direct engagement with market participants. These interactions allowed us to incorporate real-time feedback into our digital strategy, ensuring our systems and processes are clear and accessible to all customers.

Collaborative Network Access Planning

Our Network Access Planning team worked with Transmission Owners (TOs) and Distribution Network Operators (DNOs) to enhance value for end consumers. This collaboration informed our Digitalisation Strategy and Action Plans by identifying key areas where digital tools can improve network access and operational efficiency.

Continuous Engagement

Looking ahead, we will continue engagement through Ofgem's consultations on BP3 and review our approach to customer events to maximise input. This dialogue is essential for further refining our Digitalisation Strategy, ensuring it remains relevant to the needs of our customers and the energy market.

2.

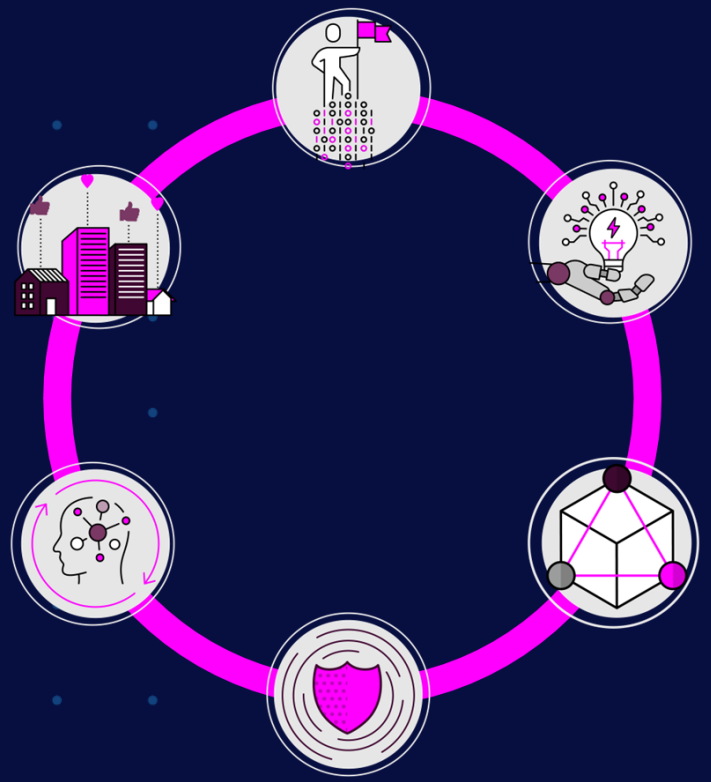
Digitalisation Strategy

Our Digitalisation Strategy reflects a flexible, principle-led approach that aligns with NESO's strategic priorities.

We will demonstrate that by harnessing data and innovation, we will become a digital leader and drive collaborative digitalisation across the whole energy system.

Our Digitalisation Vision

Utilising the power of data and innovation, we will become a digital leader and drive collaborative digitalisation of the whole energy system.



Our role in the industry has changed, and we have developed a flexible digital strategy that can respond appropriately.

We have evolved into the next phase of our digitalisation journey, transforming our people, processes, data, and technology. We call this phase "Digital First". The steps to achieve Digital First have begun, and consistency, applied through our Guiding Principles, will be essential to integrate digital into every aspect of our organisation, to ultimately become a "Digital Leader". The timeline below provides a view of how we see our own transformation taking shape.

Our digitalisation journey

Modernise Tech

A focus on technology enabled enhancements to drive efficiency gains and support solution evolution.

Digital First

A fundamental change in business culture & business operations, embracing reinvention rather than simply enhancing the legacy process or technology.

Digital Leader

A digital leader across the whole energy system, looking to expand the bounds of what is possible for the industry and readily exploring technological advances.

NESO

2024 FSO transition

2025 Interoperability & resilience across the energy system is possible through greater digitalisation

2030 System balancing and stability actions are automatically deployed

2035 Digitalisation is a fundamental part of energy system, enabling market facilitation of flexibility actions

RIIO-2 BP2

RIIO-2 BP3

2022

2023

2026

UK Energy Industry

RIIO-2 Period Commences **2021**

Operate a zero-carbon system **2025**

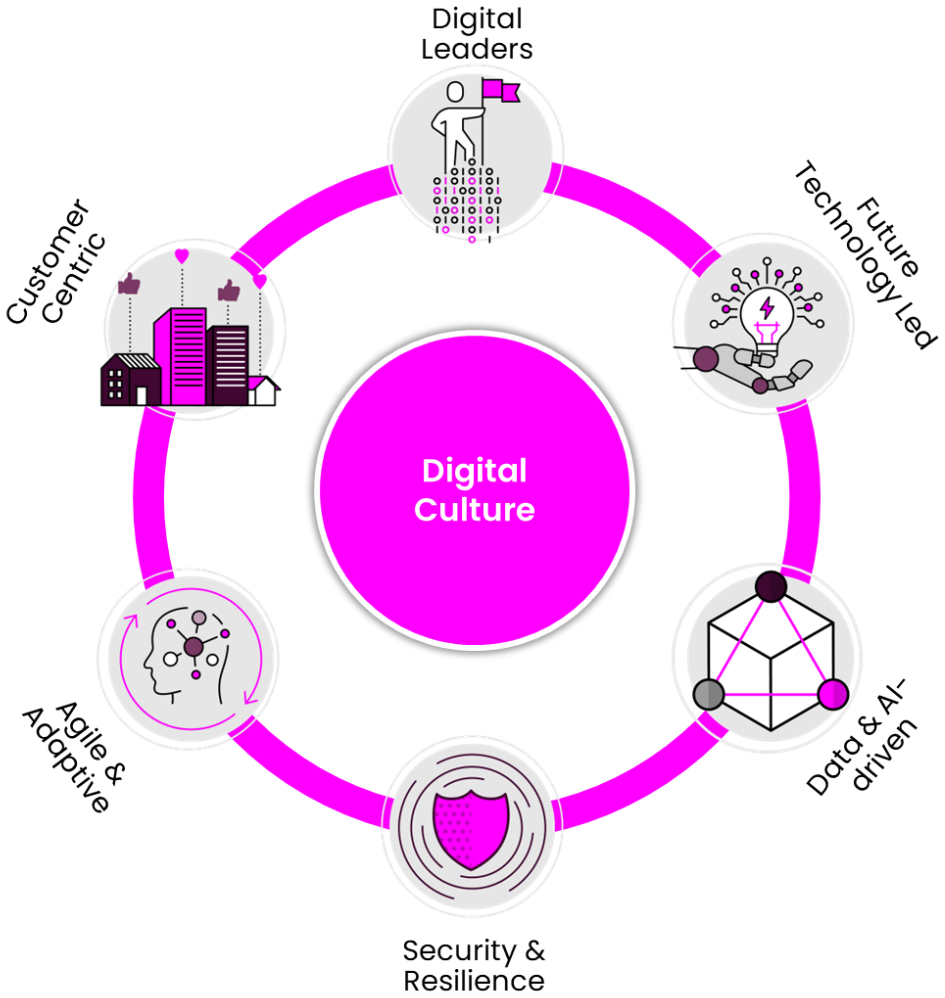
Petrol phase out, fully decarbonised electricity system, & 50% electricity from renewable sources **2035**

GhG Net Zero UK **2050**

Our Guiding Principles

We will achieve our digital vision by adhering to our Digitalisation Guiding Principles.

Our Guiding Principles guide technology and data decisions, and ultimately support our Digital Culture, which is at the heart of our ambition.



Digitalisation Guiding Principles

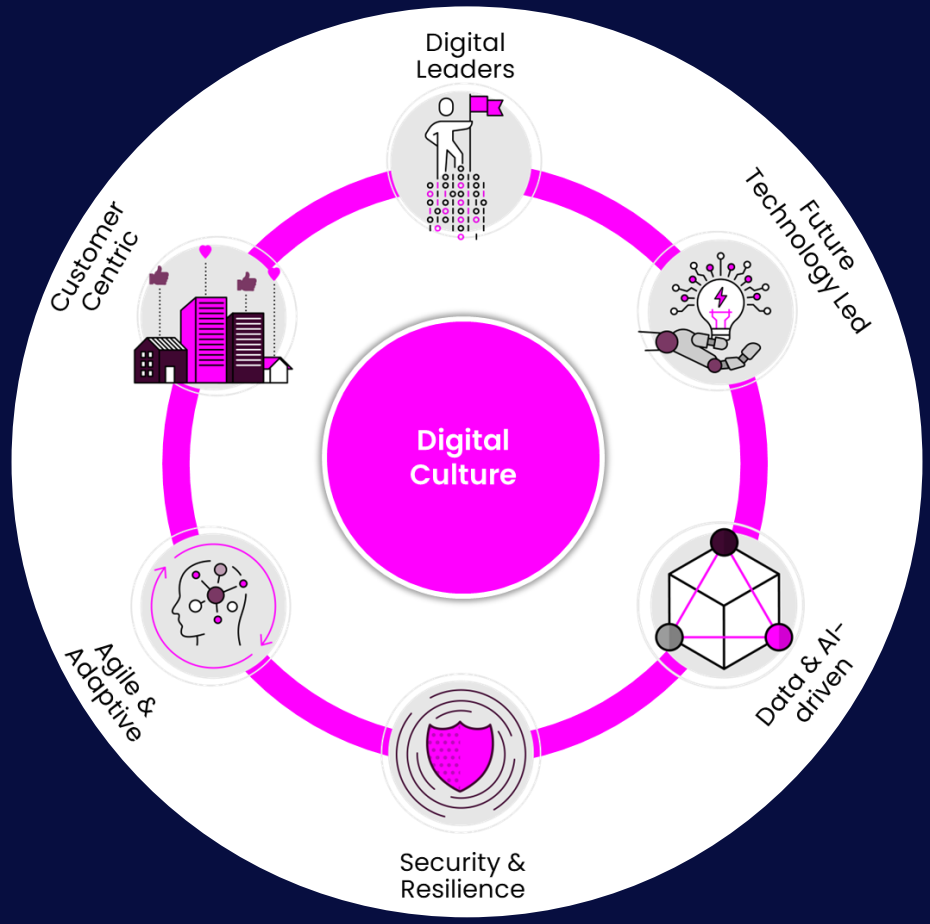
Digital Leaders	Setting the standard for digital excellence across the energy sector.
Future Technology Led	Embracing and harnessing emerging technologies to shape the energy future.
Data & AI-driven	Leveraging the power of data and artificial intelligence (AI) to make informed decisions and enhance operational efficiency.
Security & Resilience	Building and maintaining robust and secure digital infrastructure to support a reliable and sustainable energy system.
Agile & Adaptive	Responding to changing demands and evolving landscapes with flexibility and speed.
Customer Centric	Placing the customer at the heart of our digital transformation journey to deliver exceptional experience.

At our heart is Digital Culture

We are aligning our culture on reinvention through digitalisation & innovation. We achieve this through living our Guiding Principles.

We are Digital Leaders

We set the standard for digital excellence across the energy sector, facilitating collaboration, and drive digital adoption. We aim to lead by example, fostering a unified digital ecosystem.



We are Future Technology Led

We constantly scan for emerging technologies, evaluating their impact and adopting those with significant benefits. This proactive approach keeps us at the forefront of technological advancement, enabling us to address future challenges.

We are Customer Centric

We prioritise customer needs, working collaboratively to deliver value across the energy system. This ensures we provide a reliable, affordable, and sustainable energy system.

We are Data & AI-driven

We embed data analysis and AI into our core processes to inform decisions and enhance efficiency. This ensures we leverage data to optimise operations, manage risks, and identify opportunities.

We are Agile & Adaptive

We embrace flexible methodologies, working iteratively and adjusting to new information. This growth mindset values continuous learning and improvement. Agile practices like DevSecOps enable faster, more responsive delivery.

We prioritise Security & Resilience

We embed security & resilience, with good architectural designs in our digital transformation, safeguarding infrastructure and ensuring system reliability.

Our Guiding Principles contribute towards NESO's priorities

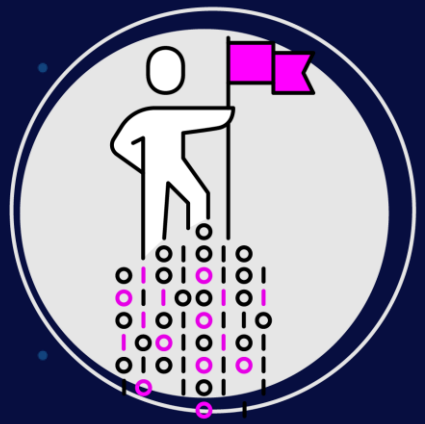
Below are representative examples of how principles support our strategic priorities.

		Secure & Resilient	Future Tech Led	Data & AI-driven	Digital Leaders	Customer Centric	Agile & Adaptive
Clean Power	'We are Secure and Resilient' and 'We are Future Technology Led' support the transition to a zero-carbon electricity system by ensuring robust and innovative infrastructure.	✓	✓				
Decarbonised Energy	'We are Future Technology Led' and 'We are Data & AI Driven' enable the development of integrated plans for decarbonisation by leveraging data and emerging technology.		✓	✓			
Consumer Value	"We are Customer Centric" demonstrates transformation efforts are focussed on consumer priorities. This is supported by digital roadmaps which deliver clear value to consumers.					✓	
Customer Centricity	"We are Customer Centric" is directly aligned with this strategic priority, reinforcing the commitment to understanding and meeting customer needs					✓	
Digital Mindset	"We are Digital Leaders" cultivate a digital mindset within NESO by promoting digital excellence and empowering a digitally skilled workforce.				✓		
People Value	"We are Digital Leaders" and "We are Agile and Adaptive" demonstrates commitment to learning, and growth mindsets required to adapt to future requirements.				✓		✓

We are Digital Leaders

We will set the benchmark for digital excellence in the energy sector by nurturing digital skills & capabilities within NESO and across the industry.

Our approach is not just about keeping pace with change; it's about setting the pace. We are excited to explore new technological frontiers and expand the possibilities for our industry.



Our strategic objectives are anchored in a digital mindset that unlocks the full potential of modern technology. We achieve this by becoming Digital Leaders, not just within NESO but for the entire industry. By harnessing the power of digitalisation, we maximise value, foster innovation and collaboration throughout the energy ecosystem.

Key Areas of Focus for Digital Skills and Learning:

- Unlocking Digital Opportunities for all: We believe in creating pathways for everyone to engage with digital technologies.
- Digital Fluency: Enhancing digital fluency across our teams is vital for driving progress.
- Continuous Learning: We are committed to a culture of continuous improvement, embracing new knowledge and skills.
- Partnerships: Collaborating with industry partners to nurture the next generation of digital leaders.

Measuring Our Digital Quotient (DQ)

The DQ survey is a robust, independent tool that assesses our digital maturity based on our practices and technologies. It evaluates our capacity to adopt digital strategies, modernise technology, and enhance digital capabilities, ultimately creating value for our customers and employees. The insights gained will illuminate our strengths and highlight areas for growth.

Developing Digital Charters

To guide our digital transformation, NESO will create bespoke Digital Charters for each key business area. These charters will articulate a clear vision and roadmap for achieving a Digital First approach.

Launching the Digital & Data Academy

We are thrilled to introduce the Digital & Data Academy, a platform offering courses and quizzes designed for Digital & Data training. This initiative is a useful resource for enhancing digital skills, with new content released regularly.

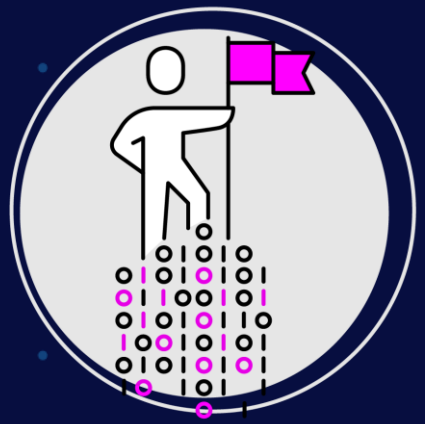
Our Academy will cover four proficiency levels, starting with Foundation proficiency, ensuring that everyone can find their place in this learning journey.

We are proud to measure our progress with the DQ, currently at 61%, with an ambitious target of 65% for FY25. This commitment reflects our confidence in our ability to lead the digital transformation journey.

We are Digital Leaders

Find out more

Go to our Action Plans



Engaging with customers on their digital journeys

We recognise that achieving our decarbonisation goals requires a collective effort. Each customer is at a different stage of their digital maturity journey, and to be a true Digital Leader, we must engage with all customers—long-time partners and new entrants alike—on their unique digital needs. Our approach is inclusive, welcoming participation from all customers.

Partnerships and Collaboration

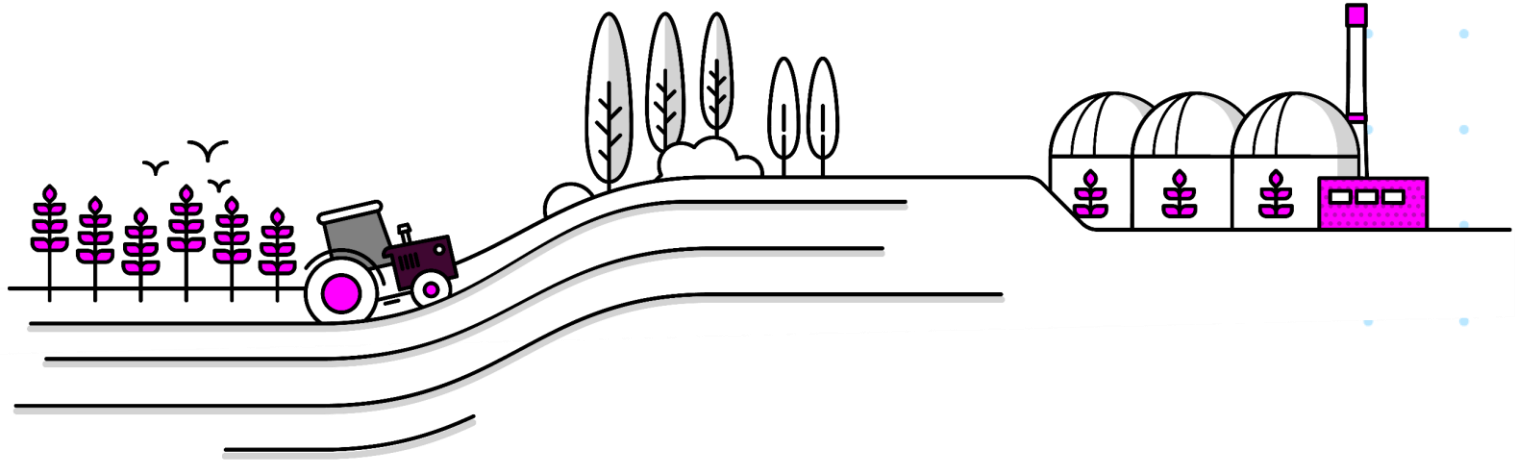
NESO is dedicated to facilitating partnerships and collaboration that will deliver innovative solutions to digitally advance and decarbonise Great Britain's energy system. As a Digital Leader, we will operate an energy system where participants can make informed choices through access to data and transformational technologies, ensuring greater efficiency and security. We will drive collaborative digitalisation by improving data standards and access for all participants.

Embracing Emerging Technologies

We will continue to enable the digital transformation of our operations by leveraging the power of AI, ML, and other emerging technologies. This commitment not only enhances our operational capabilities but also positions us as leaders in the digital energy landscape.

Harnessing Data & AI

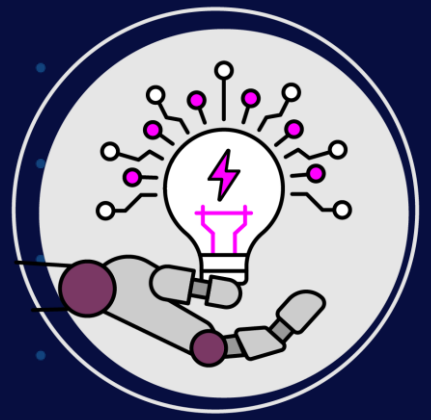
We are accelerating the use of AI and data sharing to enhance operational efficiency and resilience, ensuring a sustainable energy future.



We are Future Technology Led

Innovation is critical to helping us meet the challenges of transitioning to a zero-carbon future.

To meet the challenges of decarbonising our energy system, we are focusing on cutting-edge technologies and collaborative solutions that pave the way to a net-zero future.



We are committed to being the energy industry's innovation champion, leading by example as we address the challenges ahead. By enhancing internal awareness of emerging technologies, we are engaging our workforce in the innovation process, ensuring that insights are integrated into our daily ways of working. Our Future Technology Led approach is reflected in our Innovation Strategy, which focuses on six key areas.

Driving the Zero-Carbon Transition

By exploring better forecasting of supply and demand through transformational technologies, we enhance the integration of renewables and reduce balancing costs.

Collaboration is essential for accurately monitoring carbon across the energy system, informing decisions on optimal pathways to net zero.

Initiatives include:

- Enhancing supply and demand forecasting to better integrate renewable energy sources.
- Reducing balancing costs as we decarbonise the electricity system.
- Improving carbon monitoring across the energy landscape.
- Exploring microgrid management and decentralised dispatch.
- Supporting the pathway to 2030 and beyond for network requirements and Clean Power initiatives.

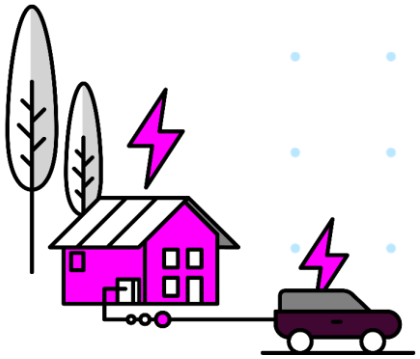
Whole Energy System

We adopt a holistic view, integrating electricity, gas, and hydrogen systems to support decarbonisation across sectors.

Understanding how multiple energy vectors can be co-optimised is key to enabling the decarbonisation of heat, power, transport, and industry while maintaining a secure and resilient energy system.

Initiatives include:

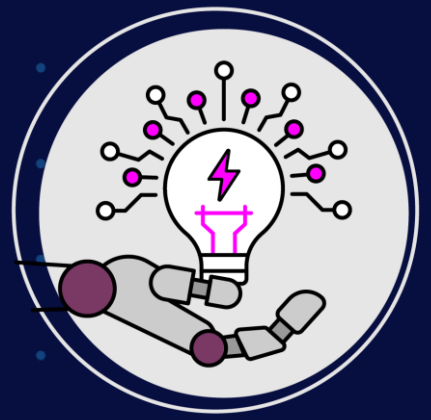
- Promoting collaboration and knowledge sharing throughout the energy system.
- Facilitating the integration of Distributed Energy Resources (DERs).
- Developing a strategic transport and energy demand model to assess Vehicle-to-Grid (V2G) impacts.
- Enhancing our network planning methodologies for long-term investment evaluation.



We are Future Technology Led

Find out more

- Innovation Strategy
- Operability Strategy Report
- Future Energy Scenarios
- ENA Innovation Portal
- Balancing Costs Strategy
- Go to our Action Plans



Digital, AI & Data

To become a Digital Leader, we are implementing AI to enable faster, more informed decision-making, automate processes, and enhance user experiences. These serve as enablers across our innovation priorities, exemplified by tools like the Dynamic Reserve Setting (DRS) model and the Advanced Dispatch Optimiser (ADO) project, which empower our control room with unprecedented insights.

Initiatives include:

- Improving data interoperability and automation.
- Utilising AI to enhance data quality and standards.
- Establishing a secure data-sharing infrastructure.
- Innovating the Control Room of the future through technology.
- Exploring Generative AI use cases for operational efficiency.
- Investigating Quantum Computing applications for energy simulation.

Constraint Management

We are implementing innovative solutions to effectively manage system constraints and minimise impact on consumers. By testing a variety of market-led solutions and technologies, we aim to identify the most economic methods to mitigate constraints and reduce costs..

Initiatives include:

- Developing methods for early oscillation detection and mitigation.
- Creating tools to enhance operational awareness of inertia.
- Optimising metrics for system strength and stability.
- Testing various approaches to economically mitigate power transmission limits.

Future Markets

We are designing and testing market reforms aimed at facilitating the net-zero transition at the lowest cost. Our approach focuses on the removal of barriers to enable a diverse range of contributors to the market.

Initiatives include:

- Exploring long-term market design options for whole-system solutions.
- Developing mechanisms that incentivise flexibility from diverse resources.
- Investigating peer-to-peer energy trading in local markets.

System Stability and Resilience

Our focus is on ensuring the stability and resilience of the system as we integrate more renewable energy sources. We aim to improve our understanding of how various factors impact the system and how to mitigate these effects while operating with increasing non-synchronous generation.

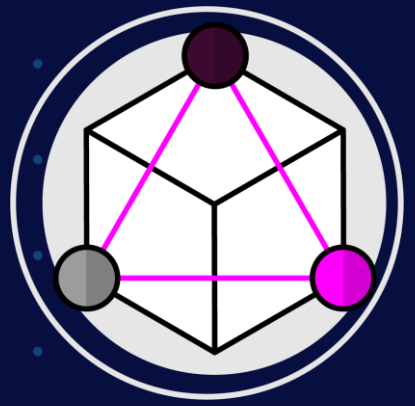
Initiatives include:

- Developing tools for real-time monitoring and management of inertia.
- Enhancing cybersecurity and grid monitoring capabilities.
- Improving our capacity for Electro-Magnetic Transient (EMT) studies.
- Innovating outage planning and system restoration strategies.
- Managing frequency and stability in asynchronous systems.

We are Data & AI-driven

We recognise that a robust data and information ecosystem is foundational to our vision for a modern energy landscape.

We aim to enhance decision-making, improve operational efficiency, and foster collaboration both within our organisation, and across the industry.



Data is the cornerstone of our Digitalisation Strategy. As we shift towards a digital-first approach, we are dedicated to developing a comprehensive Data Quality Programme to enhance the accuracy and reliability of our data.

Data Quality Programme

We are dedicated to developing a comprehensive Data Quality Programme to enhance the accuracy and reliability of our data. This initiative includes refining our data policies and procedures to ensure consistently high-quality information.

Data and Analytics Platform (DAP)

We are building a Data Platform, which will be a central repository for all energy system data relevant to the wider industry and stakeholders. This platform will facilitate discoverability, access, and advanced analytics, ultimately improving data insights and supporting the development of data products, including Open Data. NESO is committed to making energy system data as open and accessible as possible, treating it as "Presumed Open" to encourage innovation and collaboration.

Data as the foundation for AI

High-quality, standardised, and interoperable data is essential for training, validating, and deploying effective AI models. The success of our AI-driven operations relies on a robust and accessible data ecosystem. The DAP will serve as the unifying platform for both data management and AI development, housing the Advanced Analytics Environment (AAE) and facilitating seamless integration of AI models into NESO's operational workflows.

Our data governance initiatives, including the Data Quality Programme and the adoption of industry common frameworks, will directly support AI development by ensuring data consistency, accuracy, and reliability. Additionally, AI-driven insights will enhance our data management processes, creating a continuous feedback loop that improves both data and AI capabilities.

Data Sharing Infrastructure (DSI)

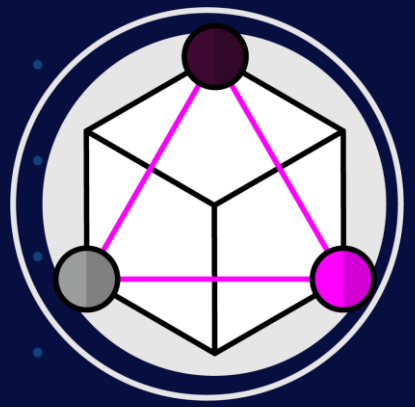
As part of the National Digital Twin Program, we are collaborating with industry customers to develop a DSI that will revolutionise data exchange within the energy sector. This innovative initiative aims at creating a secure, trusted, and efficient system for seamless data sharing between organisations and systems.

The decentralised architecture of the DSI will promote collaboration, enhance decision-making, improve operational efficiency, and accelerate innovation across the energy sector. By enabling seamless data sharing, we aim to create a more connected and resilient energy ecosystem.

We are Data & AI-driven

Find out more

Go to our Action Plans



AI and Machine Learning (ML) are transforming how we manage and operate energy systems. We're taking a phased approach to becoming AI-driven, initially focusing on foundational AI capabilities before expanding innovations to the wider market. Our AI ambition is structured around three key workstreams: Technology & Data, Talent & Culture, and Policy & Governance.

Technology & Data

- Delivering AI-based use cases built on robust data and cutting-edge technology platforms.
- Introducing enterprise-wide AI capabilities, such as an OpenAI service for generative AI solutions and a demand forecasting tool using time-series AI capabilities.
- Advanced Dispatch Optimiser (ADO) integrating AI into the Control Room to aid real-time decision-making, with a Minimum Viable Product (MVP) expected by October 2025. This will enhance scheduling strategies and introduce an AI-based decision awareness tool.

Talent & Culture

- Ensuring a long-term talent pipeline to support our AI ambitions by upskilling internal resources and collaborating with top universities to influence curriculum.
- Establishing a core AI hub to address internal AI ideas, launching initiatives like NESO.GPT, demand forecasting, and the Grid Code GenAI tool.
- Conducting workshops and webinars to raise awareness of AI opportunities across the organisation, with plans to identify skill gaps and create a long-term resource plan.

Policy & Governance:

- Influencing AI policy and identifying barriers to the safe and ethical use of AI.
- Launching an internal AI policy to guide employees on safe practices and enable self-service AI.
- Engaging closely with Ofgem on AI initiatives, including building an AI cost-benefit analysis for the industry, and collaborating with the Royal Academy of Engineering and Department for Science, Innovation & Technology (DSIT) on the opportunities and threats of AI.

By introducing AI internally first, we will refine our applications and processes before extending innovations to the wider market. This approach ensures that we build a solid foundation and demonstrate the value of AI within our operations, paving the way for broader adoption across the energy sector.

We prioritise Security & Resilience

Resilient operations are vital for safeguarding information and ensuring our customers can trust our markets and platforms.

By enhancing our security posture and resilience, we are well-equipped to adapt to the evolving needs of our customers and the energy sector.

In today's digital landscape, our investments in security, and resilient architectural approaches will align with our enhanced security objectives and obligations, reinforcing our role as a leader in the energy sector. We will achieve this through several areas.

Strengthening Cybersecurity

We are continuously improving our cybersecurity capabilities. By implementing robust security controls and enhancing threat detection, we aim to protect our systems and sensitive data from evolving threats.

Our security principles include:

- Building NESO's secure future
- Enhancing NESO's cyber resilience
- Developing & attracting security talent
- Assisting the government to enable the UK energy industry
- Protecting data & innovation

We are continuing to establish NESO's own cyber and physical security capability. Key services are to include:

- Designing and implementing both a Cyber and Physical Security Operations Centre (SOC) and a Security Information and Event Management (SIEM) solution to detect and respond to suspicious or actual cyber events.
- Designing and enhancing physical security controls, such as CCTV.

Resilient Architectural Designs

Enterprise architecture serves as the foundation for our operations as a digital and data-centric business, enabling us to focus on customer needs through iterative, agile development cycles.

Our commitment to a secure and resilient architecture involves adopting a defence-in-depth strategy and leveraging cloud technologies for scalability and redundancy. We are taking a cloud-native approach to simplify our build, deployment, and monitoring processes, utilising containerised services and infrastructure as code to enhance efficiency. This architecture will include robust data backup and recovery mechanisms, essential for maintaining operational continuity in the face of disruptions

Regulatory requirements

Transitioning services from the National Grid Shared Service Model to our ownership will help us meet regulatory requirements and maintain high service standards. Establishing our Vendor Management Office will ensure effective third-party service delivery and value for money through strategic vendor selection and performance management. This transition will also avoid unnecessary costs from parallel systems, generating long-term operational benefits.

As an Operator of Essential Service (OES), we work closely with Ofgem to enhance our maturity in line with their expectations.

We prioritise Security & Resilience

Find out more

Go to our Action Plans

RIIO-2 Business Plan 3

Proactive Threat Mitigation

By implementing Site Reliability Engineering (SRE) principles, we enhance our ability to monitor and respond to disruptions. This shift from monitoring to observability allows us to understand the root causes of failures, enabling quicker and more effective responses.

Platforms and Ecosystems

We are embracing Software as a Service (SaaS) and standard design patterns, prioritising features, business value, and user experience over traditional infrastructure. This includes the use of reusable patterns and published design models to foster innovation.

Application Programme Interface (API) and Integration

We are building new capabilities using microservices and event-driven designs. Our platform will feature self-service APIs that can be extended to external customers and partners, incorporating event-driven patterns and both public and private gateways.

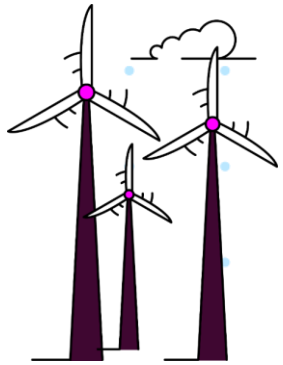
Telemetry and Networks

Our focus is on removing barriers to connectivity, enabling seamless integration with energy grids and control systems at an accelerated pace.

Collaborative Architectural Approaches

Our approaches will foster collaboration across the energy sector. Our initiatives include:

- Industry Engagement: We will maintain continuous dialogue with customers to cultivate a culture of shared responsibility and collaboration.
- Common Frameworks: By contributing to the development of common data-sharing frameworks, we will ensure interoperability and unified approach to security.
- Data Sharing Infrastructure: Leading the development, in collaboration with the National Digital Twin Programme, will enhance security and resilience across the sector.
- Digital Skills Development: Recognising the importance of skilled personnel, we are investing in digital skills development programmes for our workforce and external partners.

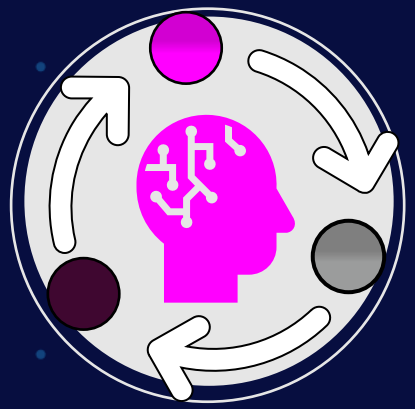


As we implement our strategy and transition our services, we anticipate that these efforts will yield significant benefits during the BP3 period, enhancing our overall security posture and operational efficiency.

We are Agile & Adaptive

NESO will embrace agility in response to evolving industry demands and rapid technological advancements

An agile and adaptive approach allows us to stay ahead of industry changes, ensuring we can integrate solutions seamlessly and respond to emerging trends effectively.



By embracing agile and adaptive practices, we will create an energy system capable of meeting future challenges, benefiting both NESO and the wider energy industry.

Digital Strategy & Mindset

We are prioritising modern architectures and agile delivery methods, such as DevSecOps, to ensure our systems are robust and adaptable. By fostering a digital-first mindset, we are empowering our employees to embrace change and drive innovation.

Agile Resource Deployment

We are forming flexible teams capable of adapting to new challenges. Our "Growth Mindset" culture encourages continuous learning and experimentation, preparing our workforce for the future.

Software-as-a-Service (SaaS) Platforms

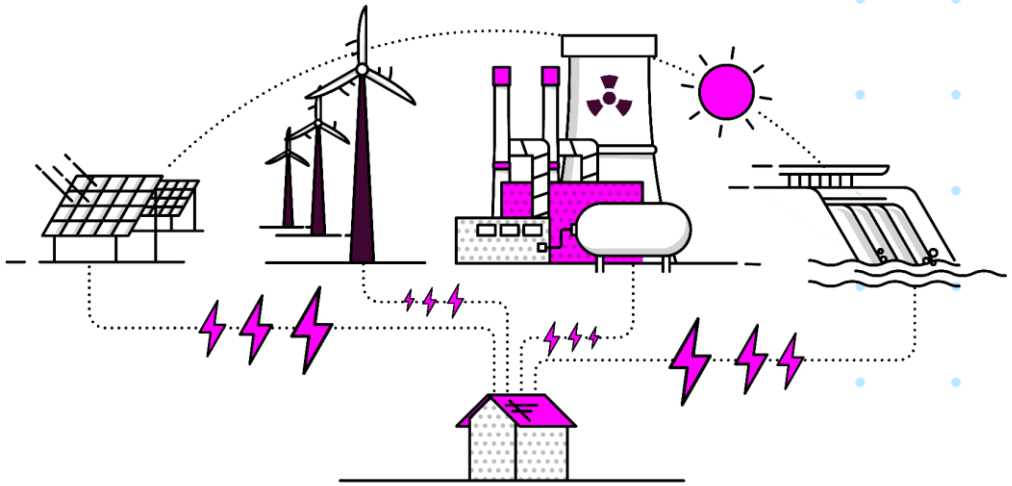
We are adopting modern, scalable platforms that enable rapid feature development and deployment. The Open Balancing Platform (OBP) demonstrates this by enhancing transparency, operational flexibility, and security.

Iterative Development

Continuous improvement is at the core of our working. We are regularly updating our DSAP and roadmaps based on stakeholder feedback and evolving needs, ensuring our initiatives remain relevant and effective.

Cross-Functional Collaboration:

We are promoting collaboration across teams and with customers to identify needs and develop tailored solutions. We are leveraging technology to facilitate data exchange and consistency, supported by initiatives like the Data and Information Ecosystem accelerator and the Technology Advisory Council (TAC).



We are Customer Centric

We will work closely with customers, to ensure they have the tools to succeed in the digital age.

Our principle-led approach ensures that our digital initiatives are designed to meet the evolving needs of our customers, delivering exceptional digital experience and seamless engagement.

Go to our Action Plans

Our digitalisation efforts are aligned with the broader goals of Clean Power 2030, ensuring customer-centric design principles are integrated across our transformation.

Data Transparency and Access

We are committed to data transparency and accessibility, emphasising a comprehensive data catalogue within our data portal. Providing customers with easy access to real-time insights and historical trends empowers them to make informed decisions about their energy consumption and participation in flexibility markets. Expanding open data initiatives and promoting data literacy among consumers fosters greater trust and engagement in the energy transition.

Understanding Evolving Customer Needs

The establishment of Regional Energy Strategic Planning (RESP) roles highlights our commitment to understanding and responding to regional differences in customer needs and priorities. Proactive engagement through industry forums and workshops, ensures our strategy remains aligned with evolving needs. Developing consumer archetypes in the Future Energy Scenarios demonstrates our dedication to understanding the diversity of customer perspectives.

Facilitating Customer Participation

Investments in digital platforms, such as the Open Balancing Platform (OBP), create more accessible and user-friendly markets for flexibility services. This allows a wider range of customers, including households and businesses, to participate and benefit. Providing clear information about participation, benefits, and risks encourages greater uptake.

Enhancing Communication

Improving communication channels and providing timely updates on system status, market developments, and planned outages enhances customer trust and satisfaction. Collaborating with industry partners also ensures our strategic goals align with broader industry needs and priorities.

Improvement & Feedback

Establishing robust feedback mechanisms, such as customer satisfaction surveys (CSAT) and online forums, provide valuable insights for ongoing improvement. Emphasising agile delivery and iterative development enables us to adapt our strategy based on customer feedback and changing market dynamics.

Action Plan

Our Action Plan sets the stage for NESO's digital transformation, driven by a principle-led approach to enhance collaboration and sustainability across the energy system.

We have structured the Actions Plan into two sections: Cross-cutting Efforts and Business Plan 3 Investments.

Cross-cutting Efforts aim to amplify the impact of our Business Plan investments, delivering swift value to NESO.

Business Plan 3 investments focus on long-term projects that will address the evolving needs of our stakeholders.

Cross-cutting Efforts

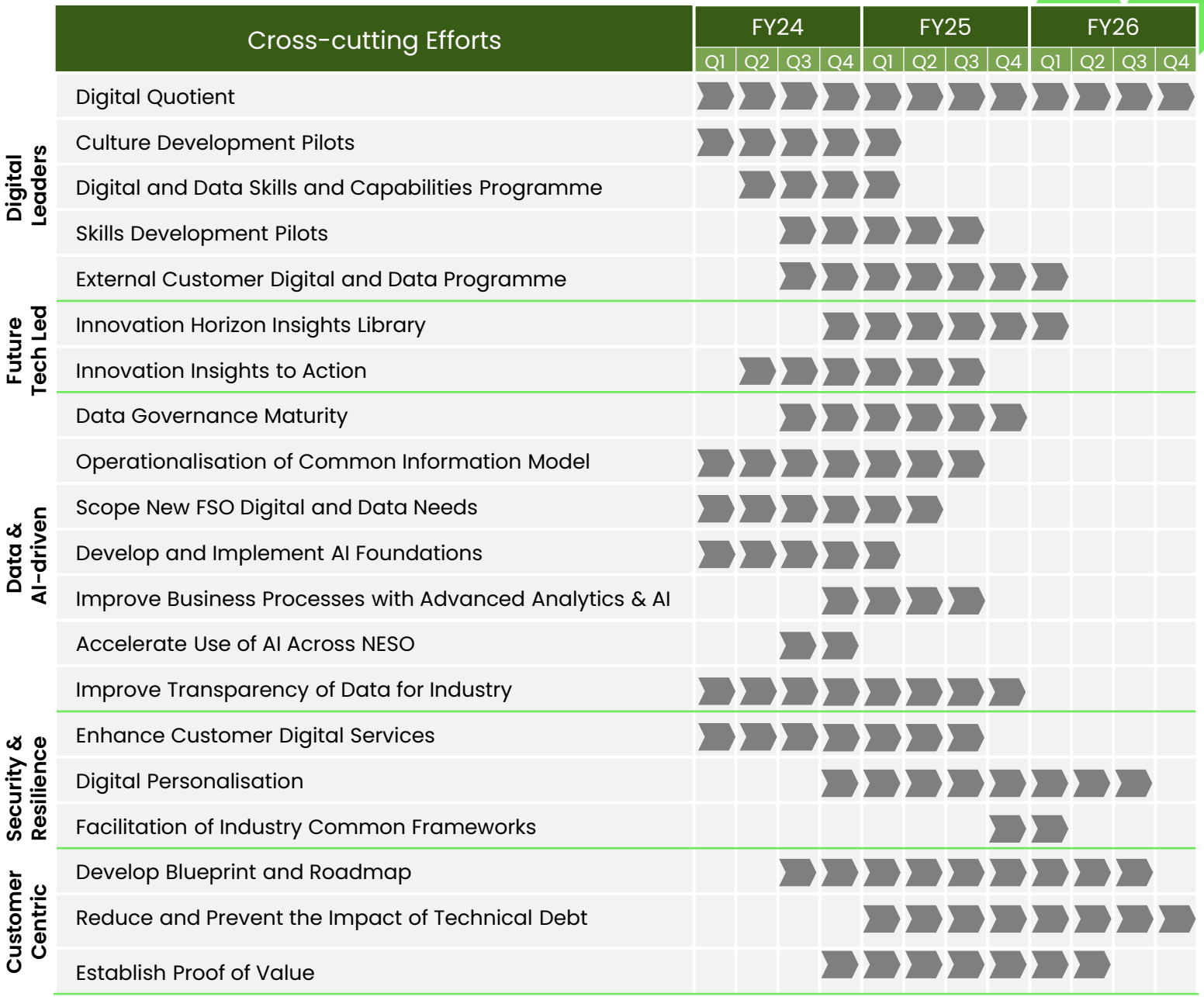
Business Plan 3 Investments

Cross-cutting Efforts

Cross-cutting Efforts aim to amplify the impact of our Business Plan investments, delivering swift value to NESO.

Previously known as New Cross-cutting Efforts, these actions complement Business Plan 2 and Business Plan 3, enhancing the impact of these investments. These efforts are aligned with our Digitalisation Principles.

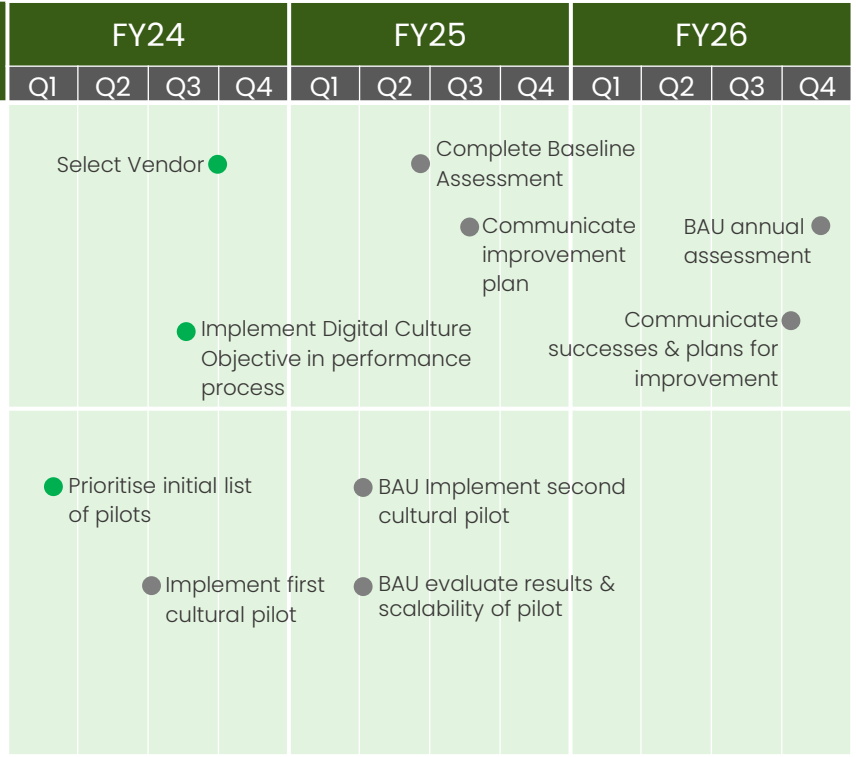
Note: Due to the sensitive nature of our operations, additional cyber security activities have been excluded from this DSAP.



Cross-cutting Efforts: Digital Leaders

How these support our strategy

Title & Description	Update
Digital Quotient **Deliverable Description**: Implementing a measurement and assessment tool that quantifies the ESO's digital readiness and capabilities. **Deliverable Value Add**: Provide clarity on action areas in organisational digital capabilities and inform strategic decisions on digital transformation.	The Digital Quotient baseline survey was conducted in May 2024. The results provided a score, indicating the level of a "Digital Practitioner." As Digital Practitioners, employees demonstrate a solid foundation in most digital practices and technologies, and they can apply this knowledge in their work. Another survey is planned for February 2025. In 2024, the primary focus has been on capability development. In 2025, the focus will shift to culture. To support this, expert panels and regular "connect-calls" have been introduced, along with DD&T-wide off-sites to share DevSecOps demos. Milestones will be reviewed again once the capability uplift is concluded in March 2025.
Culture Development Pilots **Deliverable Description:** Exploring and testing new practices that foster innovation, improve adaptability to digital and data, and mature the Digital Culture within the organisation. **Deliverable Value Add:** Enable digital innovation ideation and increase the pace of adoption of new digital and data tools to realise value quicker.	



Cross-cutting Efforts: Digital Leaders

How these support our strategy

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

Title & Description	Update	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4	FY25 Q1	FY25 Q2	FY25 Q3	FY25 Q4	FY26 Q1	FY26 Q2	FY26 Q3	FY26 Q4
Digital and Data Skills and Capabilities Programme **Deliverable Description**: Establishing basic capability personas and implementing learning initiatives to develop the skills to navigate digital and data. **Deliverable Value Add**: Structure and align organisational efforts on digital and data development to ensure the correct skills and capabilities.	Publishing of Programme Comms has been completed with targets set for training role out and individual participation at a persona level.			Complete skills assessments & gap identification									
				Publish programme comms internally									
						Implement learning & career pathways for prioritised personas							
Skills Development Pilots **Deliverable Description:** Exploring and testing new practices that reinforce the development of new skills. **Deliverable Value Add:** Further digital capabilities and adaptability through a variety of approaches that cater to all internal customer personas.	A dedicated Data & Digital "Power Skills" series of pilots has been developed, deployed and completed, demonstrating a "proof of concept". Broad participation in wider skills development is now underway, with dedicated curriculums being established for each area of the business. This is still in development and subsequent roll-out timing may be impacted			Prioritise initial list of pilots			BAU Implement second skills pilot						
					Implement first skills pilot			BAU evaluate results & scalability of pilot					
External Customer Digital and Data Programme **Deliverable Description**: Developing materials that enable greater public usage of open data and our services and keep them informed on developments. **Deliverable Value Add:** Enable innovation and collaboration by distributing access to data.	The Data Sharing Initiative (DSI), is now the main focus of providing external access to data across the industry. External skills pilots and training has been de-prioritised at this time until DSI impact has been fully understood and assessed.						Finalise comms strategy for external Digital & Data Market Proposition						
								Determine which skills pilots can extend externally				Release first public digital trainings	

Cross-cutting Efforts: Future Technology Led

How these support our strategy

Title & Description	Update	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4	FY25 Q1	FY25 Q2	FY25 Q3	FY25 Q4	FY26 Q1	FY26 Q2	FY26 Q3	FY26 Q4
Innovation Horizon Insights Library **Deliverable Description**: Developing an internal platform that enhances the way the ESO ideates and collaborates on horizon scanning insights and ideas. **Deliverable Value Add:** Provide open access to historical ideas and insights to stimulate new ideas and expand the understanding of what is possible.	Leveraging Microsoft systems to deliver our platform enables rapid development and iterative enhancement of concepts, incorporating feedback from internal stakeholders. Selected customers have access to an initial version of the library and we are expanding access to gather comprehensive feedback and conduct further testing as the platform and features evolve.			Platform/system selection and process design			Early version of library available to selected customers			Library available to all internal customers			
Innovation Insights to Action **Deliverable Description:** Creating avenues to explore and pilot digital innovation ideas with rapid prototyping and innovation challenges throughout the business. **Deliverable Value Add:** Proactively adapt to emerging technology and trends to seize new opportunities in the industry and mitigate risks	The first prioritisation exercise was successfully completed in Q4 of FY23, setting the Technological Insights priorities for research in FY24. We are currently engaged in the next (BAU) prioritisation exercise. We have conducted one Digital, Data & Technology (DD&T) horizon scanning forum and are developing further initiatives in this domain.			First prioritisation exercise Internal review process implemented, including DD&T horizon scan forum			BAU prioritisation exercise						

Cross-cutting Efforts: Data & AI-driven

How these support our strategy

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

Title & Description	Update	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4	FY25 Q1	FY25 Q2	FY25 Q3	FY25 Q4	FY26 Q1	FY26 Q2	FY26 Q3	FY26 Q4
Data Governance Maturity **Deliverable Description:** Maturing data management and governance processes, refining internal data policies and procedures, integrating these with DAP, and establishing a Data Council for ESO and key open data participants and recipients. **Deliverable Value Add:** Drive quality and trust in our data assets internally and externally	Data maturity was completed. An Executive summary was written to describe which gaps were identified and which steps must be taken next. The biggest highlight from the assessment was a lack of Data governance framework and Data governance processes in place for NESO. The Data Policy was written and published was NESO Day 1 along with a set of procedures which are in the process of being implemented. The Data Council was established to provide a central governance mechanism.			Finalise revised data policies, procedures & controls		Launch data quality programme with governing Data Council			Data quality and governance programme is BAU			
Operationalisation of Common Information Model **Deliverable Description:** Operationalising a standardised and comprehensive Common Information Model (CIM) to improve information management and exchange within the ESO organisation. **Deliverable Value Add:** Provides regulatory certainty. Drives commonality, standardisation, and interoperability across network planning data. Further applications of the CIM beyond the standard will become easier, (based on known CIM), profiles for different instances of data exchange can be built upon the core model.	The CIM council is being run regularly. So far there were 4 meetings held. Based on the latest update, we have identified various existing CIM use cases across NESO, and defining strategy for implementing the CIM across them.	Enact CIM council		Complete analysis on existing CIM implementations and challenges				Begin implementation of new CIM approach			

Cross-cutting Efforts: Data & AI-driven

How these support our strategy

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

Title & Description	Update	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4	FY25 Q1	FY25 Q2	FY25 Q3	FY25 Q4	FY26 Q1	FY26 Q2	FY26 Q3	FY26 Q4
Scope New FSO Digital and Data Needs **Deliverable Description:** Work with newly identified FSO business leads to identify upcoming digital and data tools, capabilities, and needs to deliver new obligations. **Deliverable Value Add:** Ensure the ability to deliver on new FSO roles	AAE is in place and it works. Traditional AI models (i.e. Machine learning) use data ingested via DAP. There is a lack of data governance and data management happening to the data which poses a reputational and financial risk for NESO. All models must pass AI checks before they are productionised. Operational decisions cannot be made at the back of AI that did not pass production checks. This also applies to any AI projects done either via delivery teams or via innovation. They can do any MVP outside of AAE, but if they want to productionise it - it must go via DAP.					Complete analysis of new system and data needs for FSO scope							
Develop and Implement AI Foundations **Deliverable Description:** Migrating existing AI and analytics to an Advanced Analytics Environment (AAE) and creating policies to drive AI capabilities, streamline operationalisation, and create productivity dividends through automation and best practice. **Deliverable Value Add:** Allow the organisation to efficiently harness AI to improve automation and data insights and ensure models conform to a minimum standard that confirms consistency, quality, and reliability for data-driven decision making.	We are in the process of establishing an AI Governance and Risk management framework to ensure the implementation. of Responsible AI across NESO. The procedures have not been written due to low level of AI risk in NESO at the time. Since, AI team are getting more requests for AI projects, the risk is starting to go up. We are now rewriting all the AI risks to plan the scope of AI procedures that needs to be written and implemented. The controls must be written by the end of March 2025.			Launch AAE in DAP			Publish internal policies and measurement requirements on AI						

Cross-cutting Efforts: Data & AI-driven

How these support our strategy

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

Title & Description	Update	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4	FY25 Q1	FY25 Q2	FY25 Q3	FY25 Q4	FY26 Q1	FY26 Q2	FY26 Q3	FY26 Q4
Improve Business Processes with Advanced Analytics and AI **Deliverable Description:** Utilising productivity dividends to create and address a prioritised list of advanced analytics and AI use cases, incorporating cutting-edge analytical technologies. **Deliverable Value Add:** Drive business value from prioritised delivery and operationalisation of advanced analytics and AI into business processes.	The migration of Analytics & AI, as well as the baseline of critical datasets identified for governance and for access via DAP are in progress.				Complete migration of existing AI & Analytics into AAE			Complete productionisation of existing AI & Analytics	BAU prioritisation activity for backlog enhancements & new solution requests				
Accelerate Use of AI Across NESO **Deliverable Description:** Actively reviewing areas of the business (e.g., the control room) as a whole to establish where processes can be reinvented with AI. **Deliverable Value Add:** Enhance efficiency, enable streamlined operations, and realise cost saving opportunities.	The DAP UI enhancements to support the searching and viewing of the Enterprise data inventory - aligned to the Data Policy are in progress. Transformative uses cases have been identified and scoping is underway.			Evaluate accelerated use of AI in the control room									
Improve Transparency of Data for Industry **Deliverable Description:** Provide a comprehensive data catalogue embedded within the data portal **Deliverable Value Add:** Increase the availability and ease of access to sharable critical energy data.	Data Governance metadata has been set up in data catalogue. The migration of exiting metadata to the new tool is underway.				Scope of critical energy datasets defined		Latest version of data catalogue tooling available	Make open data available through the data portal with relevant metadata					

Cross-cutting Efforts: Security & Resilience

How these support our strategy

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

Title & Description	Update	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4	FY25 Q1	FY25 Q2	FY25 Q3	FY25 Q4	FY26 Q1	FY26 Q2	FY26 Q3	FY26 Q4
Develop Blueprint and Roadmap **Deliverable Description:** Completing a maturity assessment to track and measure the transformation of the legacy system to the Modern Architecture Blueprint. **Deliverable Value Add:** Provide a clear picture of remaining work to be done and a path for prioritisation to a flexible loosely coupled architecture.	Gartner Maturity Assessment completed, indicating relatively low maturity on their benchmarking scale. Twin track approach being adopted, looking at both team dynamics/culture and procuring a dedicated Enterprise Architecture Tool, to store the necessary documentation and details			Determine Maturity Assessment Framework				Update Maturity Assessment Based on Progress			Revise prioritisation for improvement areas			Complete prioritisation for improvement areas	
Reduce and Prevent the Impact of Technical Debt **Deliverable Description:** Developing a technical debt burn-down analysis and plan, implementing technical reference models. **Deliverable Value Add:** Provide a clear picture of remaining work to be done and a path for prioritisation, removing redundancy, risk and cost.	Technical Debt initial aggregation process completed. Scale of challenge understood and Architecture Governance Working Group (AGWG) is to be formed early 2025 to define the remediation path & roadmap as part of a wider review of Architecture Governance.					Finalise initial aggregation of debt & future logging process							
Establish Proof of Value **Deliverable Description:** Creating a value case to show the benefits that will be achieved from modernising architecture and Agile DevSecOps. **Deliverable Value Add**: Prove the value of efficiencies, scalability, and innovation enablement.	Introduction of Cloud Platform(s), alongside automated Developer tooling for Agile DevSecOps is providing both time and cost saving benefits, these are still being explored and benchmarked following the review of OBP and NCMS. Final recommendations still under development.							Review debt reduction process and prioritisation					
								Finalise strategy for debt reduction					
										Complete benchmarking of modernisations & best practice			
													Communicate plan and begin roll out

Cross-cutting Efforts: Customer Centric

How these support our strategy

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

Title & Description	Update	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4	FY25 Q1	FY25 Q2	FY25 Q3	FY25 Q4	FY26 Q1	FY26 Q2	FY26 Q3	FY26 Q4
Enhance Customer Digital Services **Deliverable Description:** Implementing advanced support tools and services to offer a better user experience for customers. **Deliverable Value Add:** Automation and self-service options designed based on customer needs reduces time to value and increases customer satisfaction.	Deployment of enhanced security capability including PingIdentity/PingPremium for defacement/threat monitoring and alerting to prevent malicious attacks on NESO.energy e.g. unsolicited images being presented on homepage.			Finalise prioritisation of digital support initiatives				Pilot new digital support initiatives					
		Incorporate first Horizon Scanning insights into digital customer projects											
					Release open data triage process & request functionality externally								
					Release self-help content knowledge library for external usage								
Digital Personalisation **Deliverable Description:** Refining our capabilities and processes for understanding our growing list of internal and external customers and tailoring the user experiences for all ESO digital experiences. **Deliverable Value Add**: Consistently refreshing our understanding of customer needs and reducing the time to value for customers.	Improving searchability options through AI use cases, to create user focused responses, enhancing customer navigation and interaction with NESO data.	Implement new web analytics tools					Analyse results from new web analytics tools						
							Implement personalisation pilot with A/B testing						
						Develop digital personalisation strategy							
											Host first forum on industry customer trends & set cadence		
Facilitation of Industry Common Frameworks **Deliverable Description:** Facilitating industry agreement on a common socio-technical framework. **Deliverable Value Add:** Drive commonality, standardisation, and interoperability across industry data, enabling a faster pace for innovation.	Improving interaction with open-source data through our mapping and locational intelligence capabilities that will support CP30.												Common frameworks in place across industry

BP3 investments

Our BP3 investments are focussed on delivering key objectives and priorities for the energy system and consumers through to March 2026.

These represent a continuation of, and enhancement to commitments made under the RIIO-2 BP2 period.

These do not cover all that we will deliver as NESO, and we want to assure our customers that we will continue to deliver on all our commitments, including any continuous and ongoing deliverables from BP2.

The mapping here demonstrates how we have remapped commitments in BP2 to BP3.

RIIO-2 Business Plan 3

BP2 Role	BP2 Activity	BP3 Performance Objective
1 – Control Centre Operations	A1 Control Centre architecture and systems	Operating the system
	A2 Control Centre training and simulation	
	A3 Restoration	Secure and resilient systems
	A17 Transparency and open data	Digitalisation & data sharing
	A18 Market monitoring	Operating the system
	A19 Data and analytics operating model	Digitalisation & data sharing
2 – Market development and transactions	A4 Building the future balancing service markets	Fit for purpose markets
	A5 Transform access to the Capacity Market and Contracts for Difference	
	A6 Develop code and charging arrangements that are fit for the future	
	A20 Net Zero Market Reform	
	A21 Role in Europe	
3- System insight, planning and network development	A7 Network Development	Strategic whole energy plans
	A8 Enable all solution types to compete to meet transmission needs	
	A11 Enhance analytical capabilities	
	A12 SQSS Review	
	A13 Leading the Debate	
	A14 Take a whole electricity system approach to connections	Connections reform
	A15 Taking a whole energy system approach to promote zero carbon operability	Operating the system
	A16 Delivering consumer benefits from improved network access planning	Strategic whole energy plans
	A22 Network Planning Review / Offshore Coordination	

BP3 Performance Objectives for 2025/2026

Eight Performance Objectives support the delivery Strategic Priorities between April 2025 and March 2026. These objectives recognise the transformational changes currently taking place within the energy system, sharpening our focus on advancing clean power, decarbonising energy & maximising consumer value:

Strategic Whole Energy Plans

Work towards national and regional strategic whole energy plans that align to deliver a clean, secure and affordable energy system for the benefit of communities, consumers and society.

Operating the electricity system

Continue maintaining the safe, reliable and efficient operation of the electricity system, ensuring our electricity systems remain secure and stable today and in a future zero-carbon network.

Fit-for-Purpose Markets

Advance policy reform and the design of wholesale and balancing markets to unlock the potential of all market participants through 2030 and beyond, supporting investment and economic growth across Great Britain while reducing consumer costs.

Separated NESO systems, processes and service

Enabling pace in NESO's business operations and delivery through successful exit from transitional arrangements with National Grid and by implementing NESO specific digital infrastructure, systems and services

Enhanced sector digitalisation and data sharing

Work across the sector to build a unified digital ecosystem with transparent data access and stakeholder-focused solutions.

Connections Reform

In collaboration with Ofgem, the Department for Energy Security and Net Zero (DESNZ), network owners and stakeholders, implement a reformed connections framework that enables projects for 2030 and beyond to connect in a timely and coordinated manner.

Secure and resilient energy systems

Adopt a whole energy system approach to understand and mitigate risks, ensuring energy resilience and security for Great Britain.

Clean Power 2030 Implementation

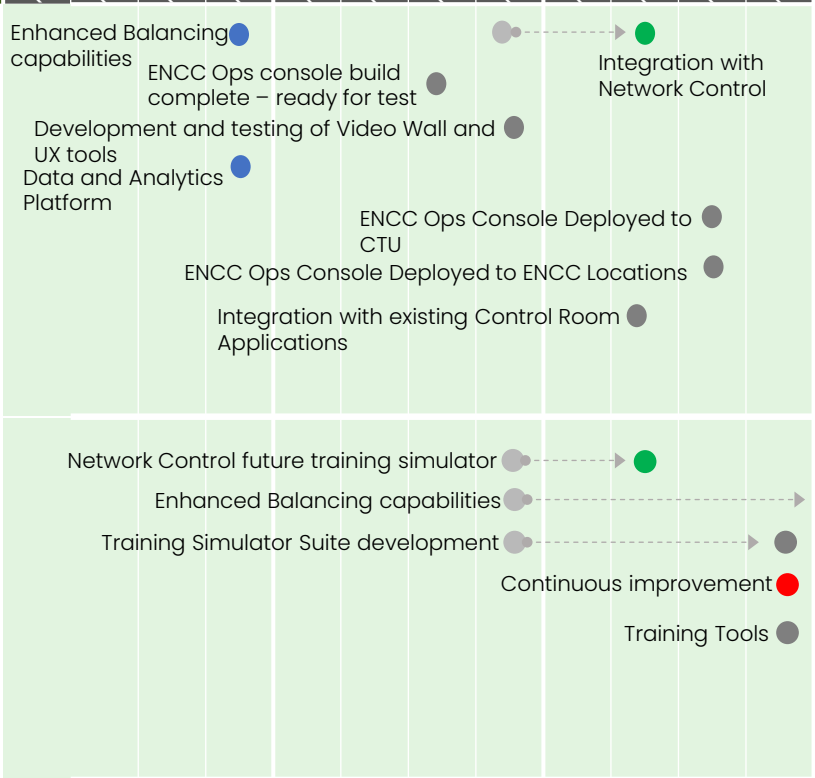
Play a pivotal role in securing clean power for Great Britain by 2030. Building on our 2024 advice to government on the pathways to a clean, secure, operable, and deliverable electricity system, we will move into action and implementation in line with the government's CP2030 action plan.

Action Plans | Digital Leaders

Our strategic objectives are anchored in a digital mindset that unlocks the potential of modern technology. We achieve this by becoming Digital Leaders, not just within NESO but for the entire industry. By harnessing the power of digitalisation, we maximise value, foster innovation & collaboration throughout the ecosystem.

How these support our strategy

ID	Title & Description	Update
140	**ENCC Operator Console** Delivery method: Waterfall We are enhancing the user interface for our control room systems with the Operator Console. This initiative aims to improve the desktop experience for operators at the Electricity National Control Centre (ENCC) and training facilities, ensuring a seamless user experience that accounts for human factors, future growth, and organizational changes.	The ENCC Operator Console delivery team has conducted design thinking workshops with key stakeholders to gather user requirements, define the delivery scope, and establish the technical approach. These discussions considered the capabilities and user experiences from the 110 Network Control, 180 Enhanced Balancing Capability, and 220 Data and Analytics Platform to clearly delineate the ENCC Operator Console solution.
200	**Future training simulator and tools** Delivery method: Waterfall 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	During BP2, we engaged extensively with training delivery and ENCC stakeholders to assess current training capabilities and future needs. The core scope of this investment remains focused on simulating and emulating our core control room applications and environment. Additionally, we identified the need to enhance our operational environment with improved capabilities for managing training, specifically in logging, recording, and monitoring training delivery.

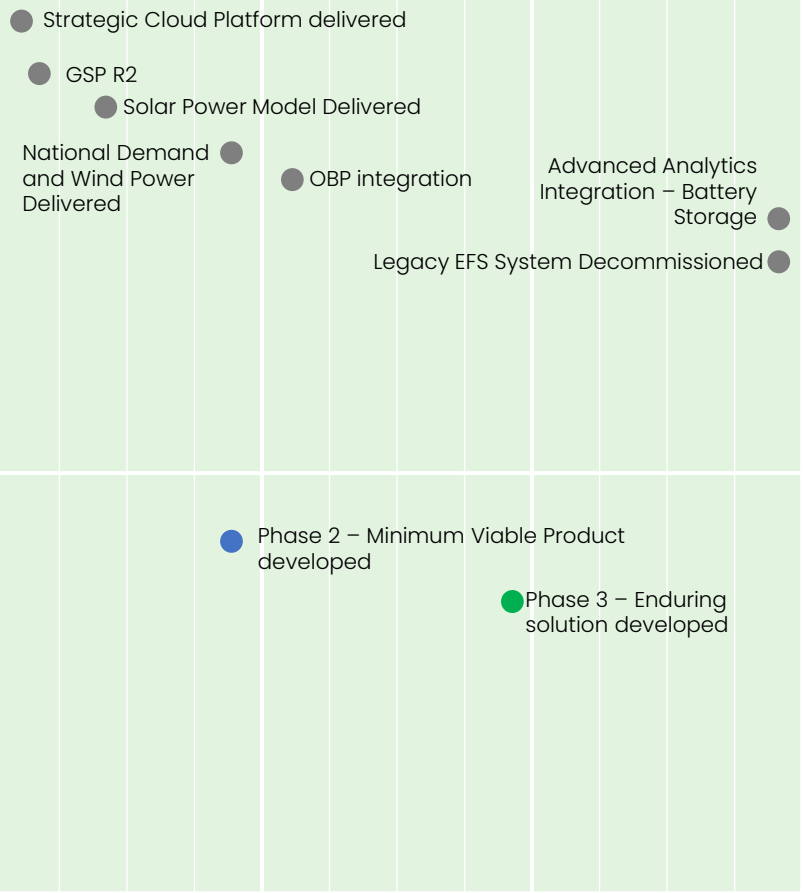


How these support our strategy

Action Plans | Digital Leaders

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

ID	Title & Description	Update
260	**Forecasting Enhancements** Delivery method: Agile 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 focusses 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.	Since the BP2 submission, the Forecasting Enhancements investment has reviewed our forecasting estate and implemented new Platform for Energy Forecasting (PEF) design principles. This aims to reduce technical debt by decoupling from legacy systems. Incremental improvements and new features have enhanced forecasting products. The Azure platform has been established, and model migration has begun, offering benefits like improved performance, scalability, and integration. This investment will enhance forecasting capabilities and drive customer value.
330	**Digitalised Code Management** Delivery method: Agile DevSecOps DCM enhances technology to make industry codes more accessible and user-friendly. By digitalising codes, we will move away from PDF versions and manual workflows, offering improved navigation and document management. This transformation will streamline the GridCode, providing seamless experience for customers, especially when integrated with the Digital Engagement Platform (DEP).	In April 2024, The Grid Code was converted from a 1000-page PDF to a digital version with navigation and a glossary, integrated into the NESO Website. End user panels and working groups provided positive feedback. The digital version was rebranded and relaunched with GenAI capability in October 2024. Workflow management capability is set for completion by March/April 2025, aiming to accelerate governance processes, improve resource efficiency, reduce costs, and enhance customer experience.

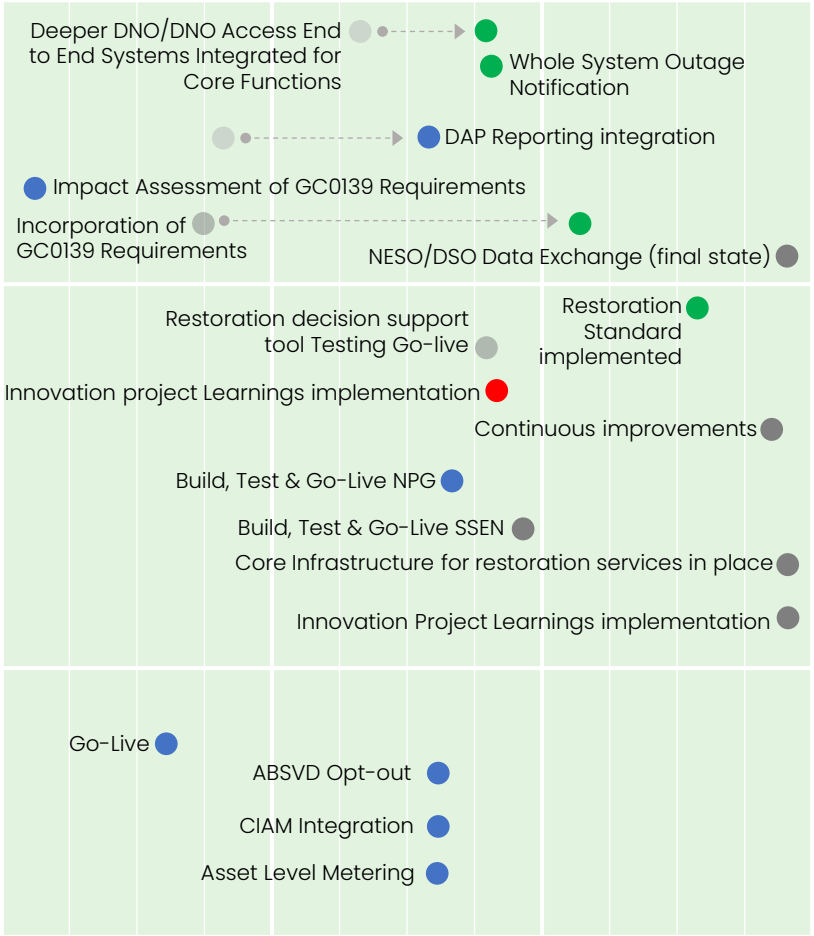


How these support our strategy

Action Plans | Digital Leaders

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

ID	Title & Description	Update
350	**Planning and Outage Data Exchange** Delivery method: Agile This investment will deliver and enhance the electricity network outage planning and data exchange capability across transmission and distribution networks.	We have enhanced the outage management tool (eNAMS) to improve user experience and support Deeper Access Planning. Enhancements include single-sign on and multi-factor authentication for around 1,500 users, new interfaces for sharing outage data, access to KPI reports, and enabling the retrieval of outage details.
510	**Restoration & Restoration Decision Support** Delivery method: Waterfall Delivers 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 and deliver a decision support tool based on real-time data to deliver a restoration plan to govt standard.	Procurement underway for Restoration Decision Support Tool (RDST). The Pre-Qualification Questionnaire (PQQ) responses highlighted a mix of vendor capabilities, categorised as 'product' or 'build', with product vendors needing feature development. NESO advanced its Digital First agenda, clarifying Digital Products and strategic Technical Platforms. Platform strategy matured with key investments in Enhanced Balancing Capability and Network Control.
680	**Local Constraints Market** Delivery method: Agile Interim market aimed at reducing constraint costs before future RCM solution. LCM continues to help manage constraint costs and boosts market competition between England and Scotland.	We conducted three-month trials with market participants to engage them in the LCM process. These successful trials led to LCM going live in Q3 FY2024. Additionally, we are exploring Demand Turn Up with domestic and industrial assets.

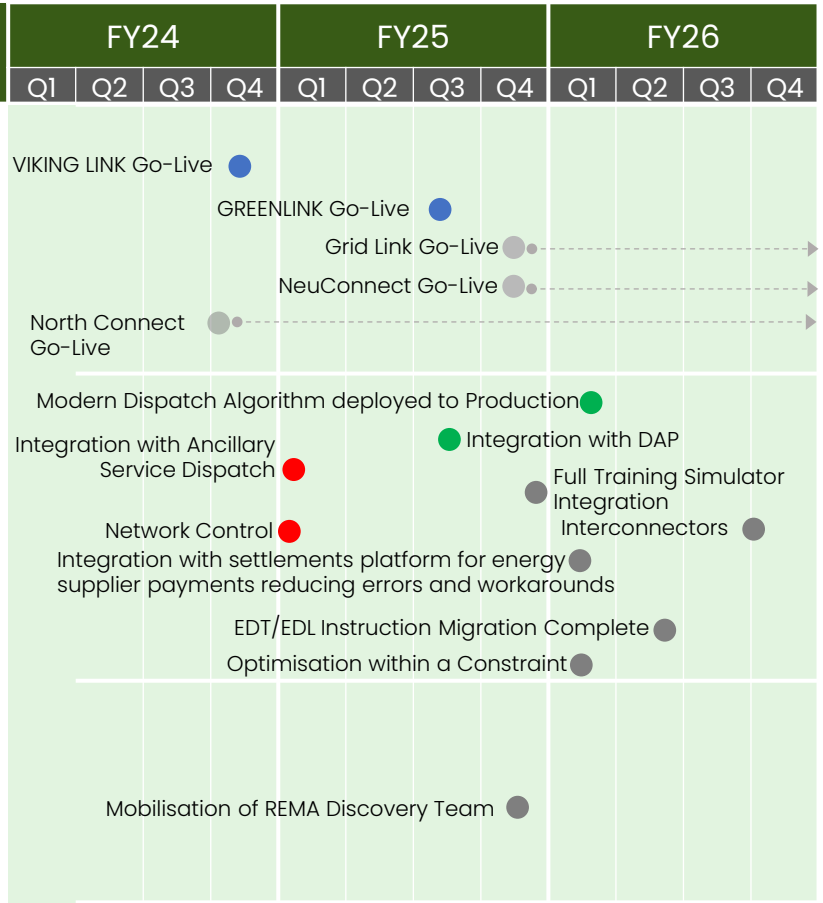


Action Plans | Future Technology Led

How these support our strategy

We are committed to being the energy industry's innovation champion, leading by example as we address the challenges ahead. By enhancing internal awareness of emerging technologies, we are engaging our workforce in the innovation process, ensuring that insights are integrated into our daily ways of working.

ID	Title & Description	Update
120	**Interconnectors** Delivery method: Agile Interconnectors are high-voltage cables that connect the electricity systems of neighbouring countries, enabling trading and sharing of excess power, maximising renewable energy and reducing waste.	We've standardised our interconnector deployment to minimise future changes. Most legacy functions have moved from the Balancing Mechanism (to be replaced by the Open Balancing Platform, OBP) to the Interconnector Flow Manager (IFLO). Current systems include IFLO, EDL/EDT, and BM.
180	**Enhanced Balancing Capability** Delivery method: Scaled Agile The OBP is a new real-time balancing system to replace legacy systems. The new system is flexible, allowing access for smaller generation units and enabling new energy services more quickly and with lower risk, to support zero-carbon grid operations	In December 2023, we launched the OBP, enhancing dispatch for Batteries and Small BMUs. The modular, highly available architecture simplifies operations, enables faster changes, and reduces deployment risk. It operates on a hybrid cloud platform, replacing legacy hardware for versatile, cost-effective development and testing.
810	**Review of Electricity Market Arrangements (REMA)** The government's programme to reform GB electricity markets for Net Zero. Launched in 2022, REMA is now in its third phase as a Major Government Project.	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.

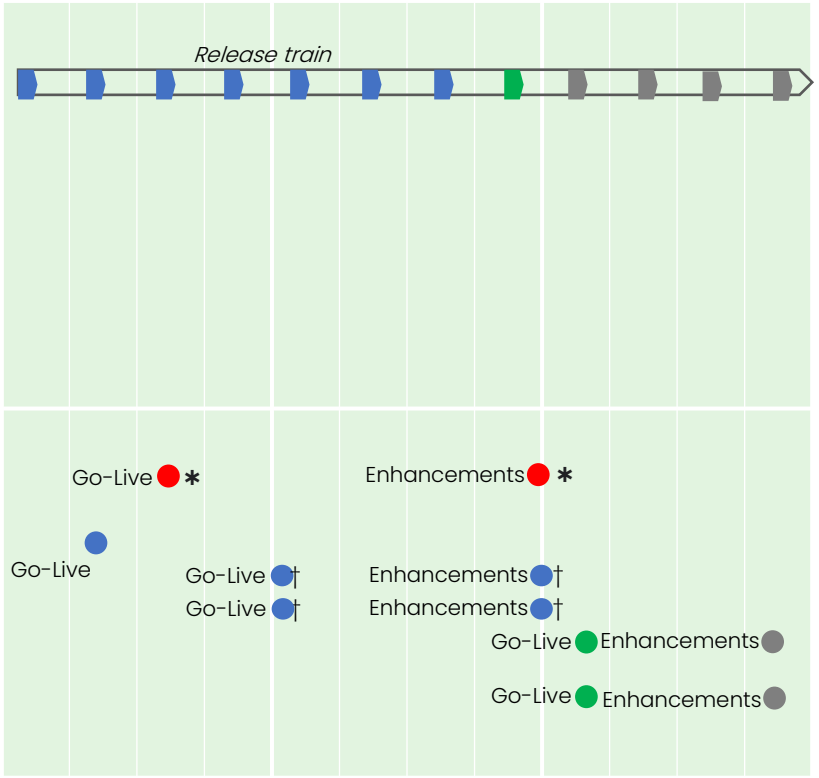


How these support our strategy

Action Plans | Future Technology Led

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

ID	Title & Description	Update
280	**GB Regulation** Delivery method: Agile This investment supports regulatory changes from our GB obligations. We expect an increase in regulatory-driven changes during BP3, driven by NESO and the Energy Industry's market reforms and the UK's commitment to a fully decarbonised power system. Ofgem is likely to request system changes for the GB Grid Code, Balancing and Settlement Code, and Connection and Use of Systems Code.	During BP2, we managed the regulatory change backlog to keep NESO compliant, avoid fines and reputational damage. Early high-level analysis during consultations helps refine delivery timescales, understand IT implications, and assist discussions with working groups and regulators.
340	**RDP Implementation and Extension** Delivery method: Agile This investment aims to enhance NESO technology for Net Zero operations in electricity transmission and distribution. We plan to implement integrated data exchange and situational awareness with DNOs and DSOs, enabling coordinated access to Distributed Energy Resources (DER) and manage service conflicts through regional development programmes (RDPs).	During BP2, we delivered initiatives to connect DER and manage network constraints, increasing zero carbon generation and reducing costs. We implemented N-3 intertripping for UKPN, NGED, and SSEN to ensure transmission network operability during N-3 events. Through MegaWatt Dispatch, the ENCC can manually instruct DERs to manage thermal boundary constraints via NESO's ASDP and the DNO's DERMS.



* These milestones have been removed from Investment 340's scope and added into Investment 180

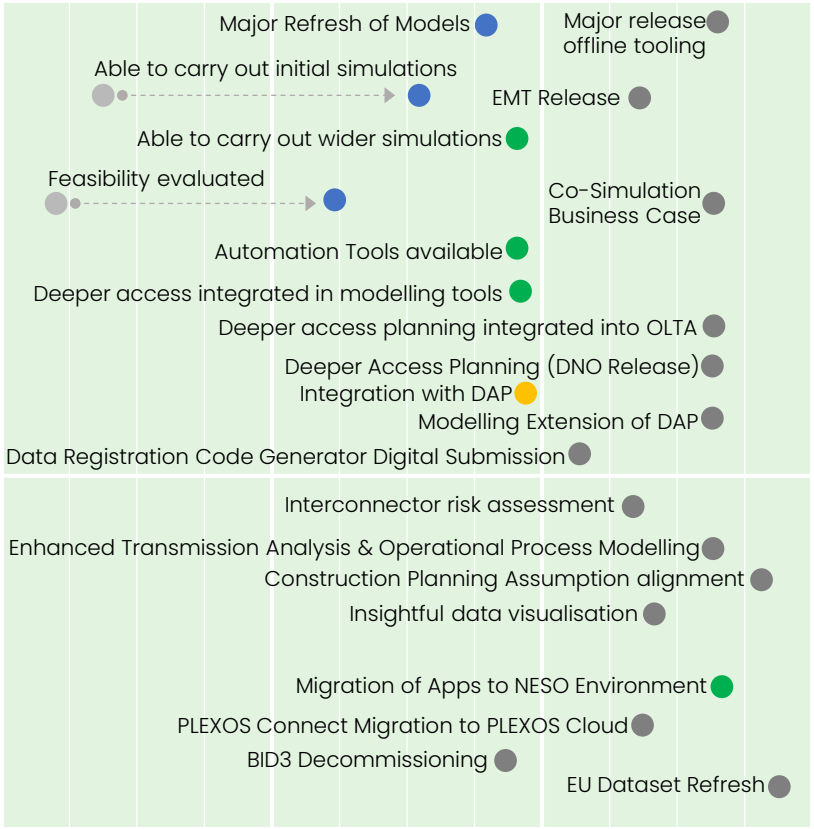
† These milestones have been removed from the scope of RDP3 & RDP4. They have been rescoped and completed through RDP1 & RDP2

How these support our strategy

Action Plans | Future Technology Led

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

ID	Title & Description	Update
360	**Offline Network Modelling** Delivery method: Scaled Agile This investment supports a comprehensive energy system approach for zero carbon operability, enhancing NESO's network capabilities and addressing complex decarbonisation modelling challenges. Our Offline Network Modelling tools provide essential day-to-day analysis for safe transmission system operation and are crucial for the Electricity Ten Year Statement and regulatory reporting.	To date on the Offline Transmission Analysis (OLTA), we've upgraded to support complex RMS models of the GB Network, including new HVDC connections, and upgraded to PowerFactory 2023 for model submissions with TOs. We've introduced Electromagnetic Transient (EMT) Modelling for faster system transient simulations and confirmed RMS and EMT co-simulation feasibility, though validation complexities remain. The new Data Registration Code (DRC) Portal for generator submissions received positive feedback and will be delivered in Q1 FY26 as planned.
390	**Electricity Network Development Tools (Formerly NOA enhancements)** Delivery method: Agile Enhancement to plan and optimise assets of both the transmission and distribution electricity networks, to expand and enhance modelling tools, allowing comprehensive analysis of scenarios to ensure efficient investment decisions.	In 2024-25, we made significant progress on our FY25 plans. We enhanced the Economic Assessment tool (Plexos) for Ancillary Services and implemented BID3 historical data storage to eliminate BID3 RTB costs (completion in Q4 FY25). We also addressed demand discrepancy, visualising differences between actual demand and forecasts at GSP level, and automated a NAP grey IT solution on the Rapid Development Team (RDT) platform.

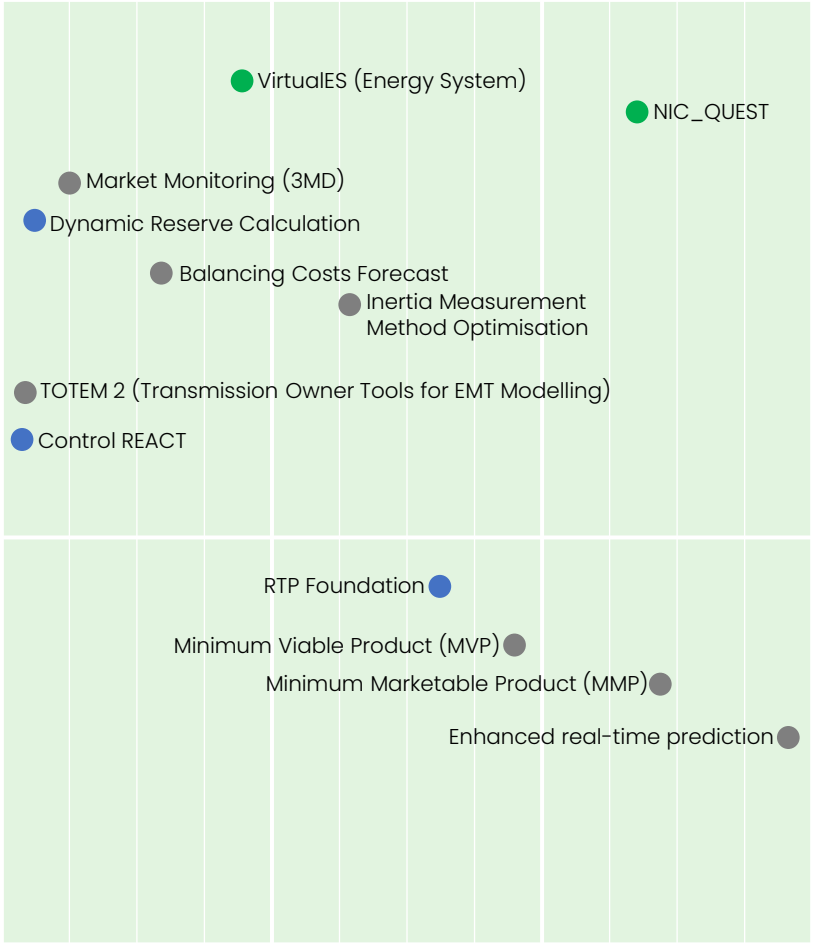


How these support our strategy

Action Plans | Future Technology Led

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

ID	Title & Description	Update
450	**Future Innovation Productionisation** Delivery method: Scaled Agile This investment portfolio aims to further develop innovation projects funded by the Network Innovation Allowance (NIA) or Strategic Innovation Fund (SIF) from Ofgem, now ready for proof of concept (POC) implementation. It enables successful innovation schemes to become operational NESO DD&T services, supporting future digital NESO projects with wider business or industry benefits. Projects requiring formal IT productionisation will align with our technology strategy, commercial terms, support requirements, and security standards.	The current funding rules for the NIA and SIF do not allow innovation projects to transition to full operation upon completion. To realise their value, funding for productionisation is essential for effective incubation and scaling before becoming BAU activities. Seven projects aligned with RIIO-2 investments were identified for productionisation in BP2. For BP3, all productionisation will be centralised under this investment.
670	**Real Time Prediction** Delivery method: Agile Improved real-time demand prediction, allowing better modelling of energy and security requirements of the power system	We have established our core delivery team and initiated long-range planning based on the discovery outcome, which captures current business processes, user journeys, and business logic within legacy systems. To ensure user adoption, we will first build an algorithm that mirrors current system output, then incrementally improve it. Our product strategy includes three milestones: MVP, MMP, and Enhanced Real-time Prediction with improved performance metrics and decision-making capabilities.

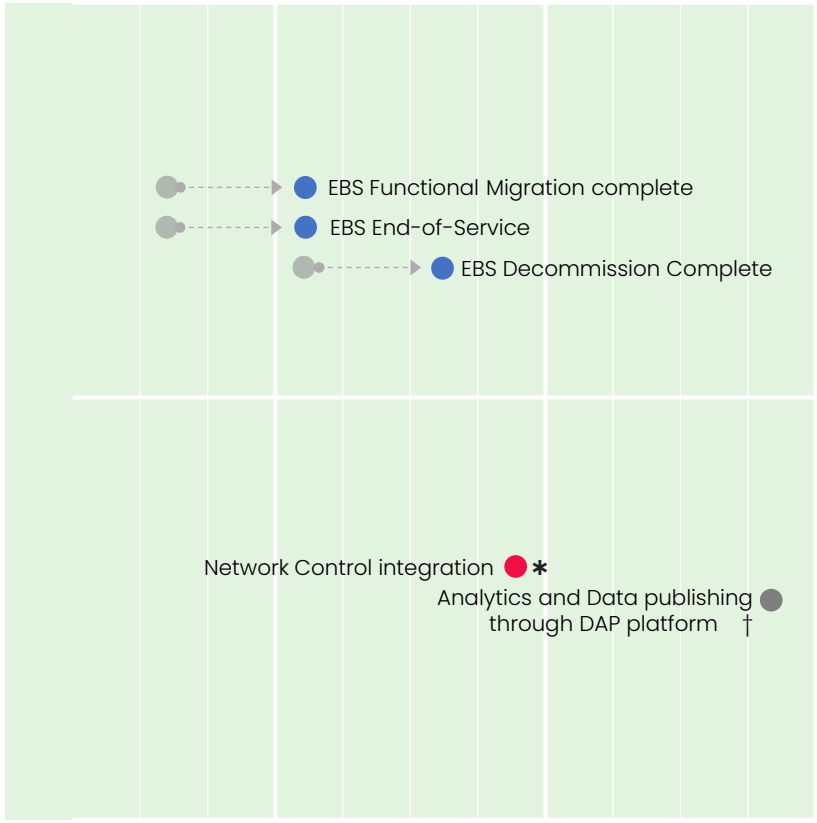


Action Plans | Data & AI-driven

Data is the cornerstone of Our Digitalisation Strategy. As we shift towards a digital-first approach, we are dedicated to developing a comprehensive Data Quality Programme to enhance the accuracy and reliability of our data.

How these support our strategy

ID	Title & Description	Update
210	**Balancing Asset Health** Delivery method: Waterfall 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.	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.
220	**Data And Analytics Platform (DAP)** Delivery method: Scaled Agile The DAP provides the foundational capabilities required to create data products for analytics, whilst making relevant data within DAP discoverable and accessible for stakeholders. DAP enables analytical capabilities that are crucial for data-driven decision making. A goal is to democratise and digitalise insights– ensuring that critical information is available quickly and with greater operational accuracy.	Over 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 NESO with the capability to ingest data at pace and create high-quality reports. DAP has also enabled the development of central capability that provides an advanced analytics environment at pace.

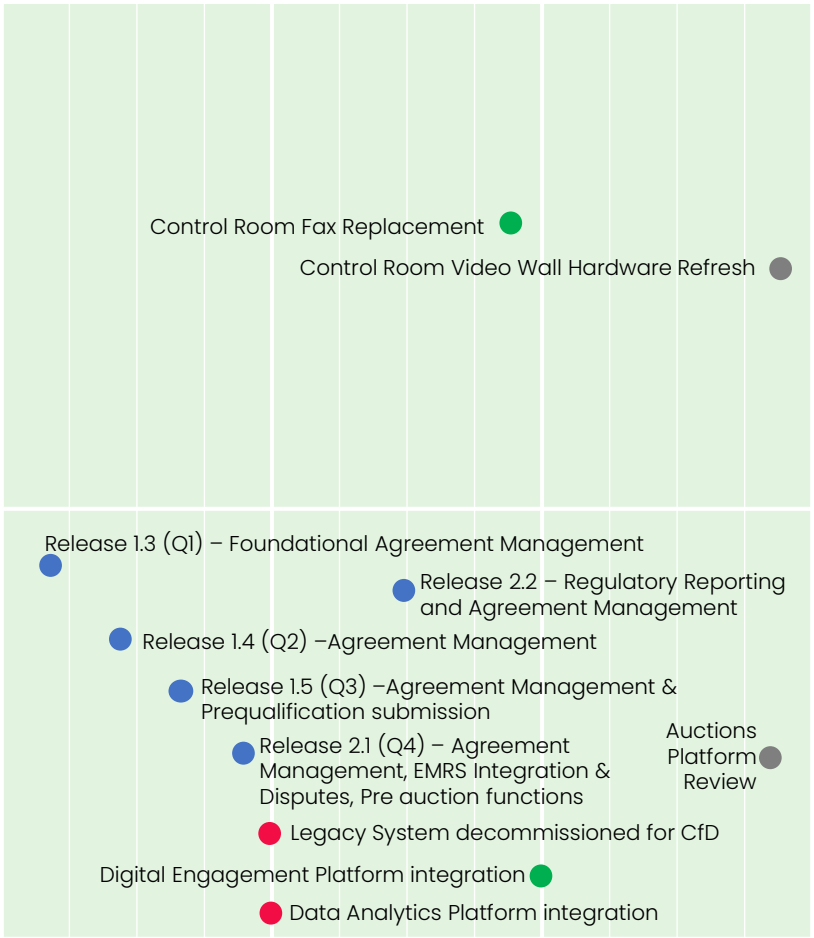


How these support our strategy

Action Plans | Data & AI-driven

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

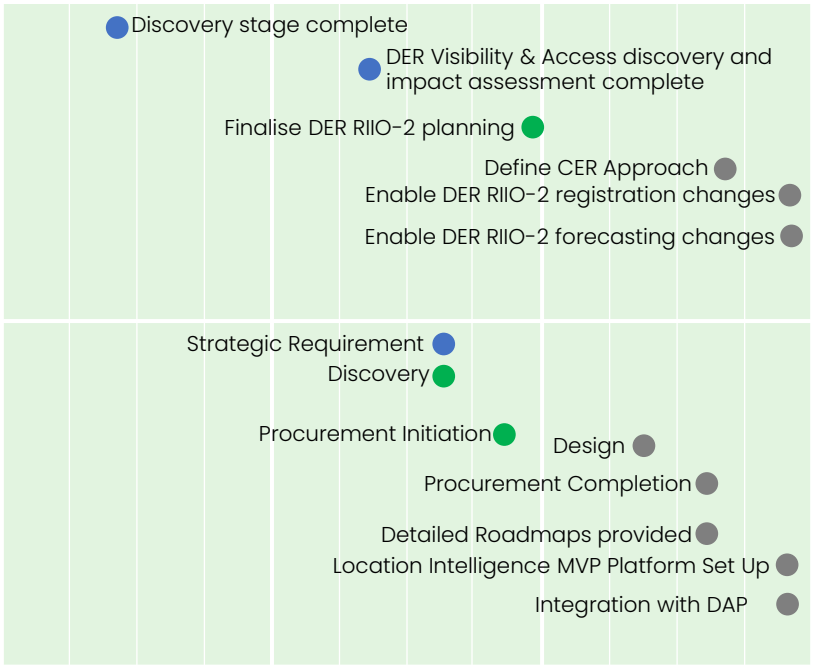
ID	Title & Description	Update
240	**Electricity National Control Room (ENCC) Asset Health** Delivery method: Agile This investment ensures operational stability for the ENCC and maintains the health of our IT systems. We need to invest in system and communication link maintenance to handle unforeseen events and ensure safe, economical, and efficient operations. Maintaining these tools' reliability and usability, and keeping them up to date, is essential to minimise cyber security risks.	By March 2025 we will have completed over 115+ small projects. These projects delivered the following: • 40+ Market participant onboarding activities • 25+ Remedial actions to address issues with business supported and bespoke systems • 25+ Activities 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
320	**Electricity Market Ref (EMR) and Contracts for Difference (CfD) Improvements** Delivery method: Agile This investment aimed to deliver a new platform for EMR to enhance customer experience, increase market participation, and enable cost-effective, rapid regulatory changes. The platform, covering both the Capacity Market (CM) and CfD schemes, was to be completed by the end of BP1.	We are focusing on adopting and stabilising the EMR portal for the Capacity Market scheme. Customer engagement has helped shape and prioritise the backlog, which has grown and shifted timelines. Key improvements include a single user ID for multiple company portfolios, reducing user accounts and manual workarounds. This supports CIAM, allowing access to NESO applications via a single profile. Additionally, CMU and application validations aim to improve submission quality and reduce rejections and disputes during prequalification.



How these support our strategy

Action Plans | Data & AI-driven

ID	Title & Description	Update
650	**DER/CER Visibility and Access (formerly Accelerating Whole Electricity Flexibility (AWEF)** Delivery method: Agile Increasing visibility of flexibility assets through visibility and access to data, and forecasting using future technologies.	The discovery phase for DER Visibility, defined business needs, platform impacts, and change strategy. Assumptions will be validated in the next phase. Planning is ongoing, with team recruitment and shaping as priorities. We will fully understand DER impact before starting a CER discovery stage, as similar constraints are likely to apply.
690	**Geospatial & Location Intelligence** Delivery method: Agile Aimed at centralising and standardising geospatial technologies and relevant data across NESO. An enterprise-wide Location Intelligence (geospatial) platform will support the management and provision of accurate location data to decision makers and consumers to enable insights driven decision making.	NESO introduced a Geospatial tactical solution to address growing business needs. The SEP project highlighted the need for effective spatial data management. The implementation has been adopted by other departments. DD&T recognises the need for further investment to meet future objectives and customer needs.

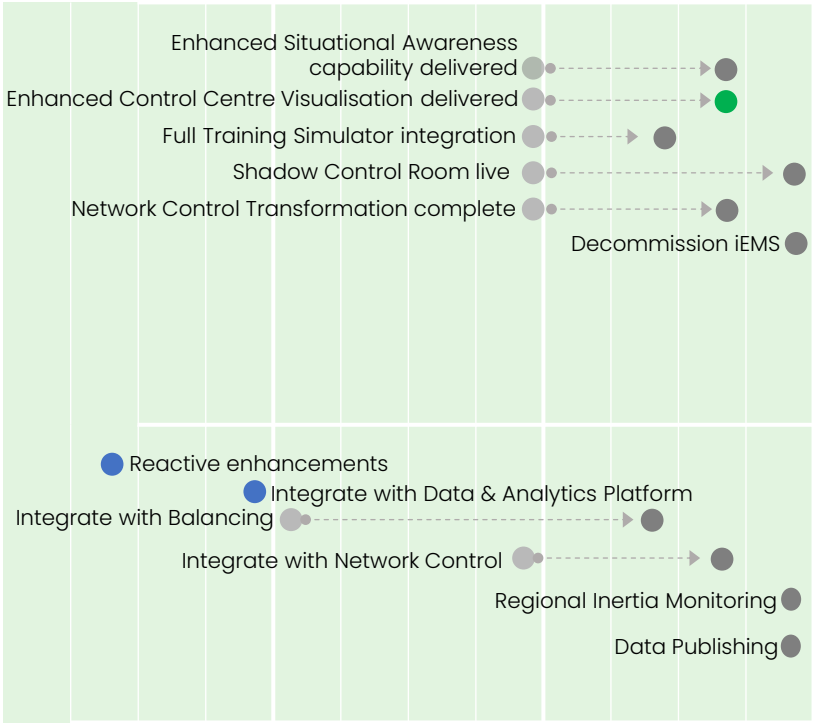


Action Plans | Security & Resilience

How these support our strategy

In today's digital landscape, our investments in cybersecurity capabilities will align with our enhanced security objectives and obligations, reinforcing our role as a leader in the energy sector. We will achieve this through several areas.

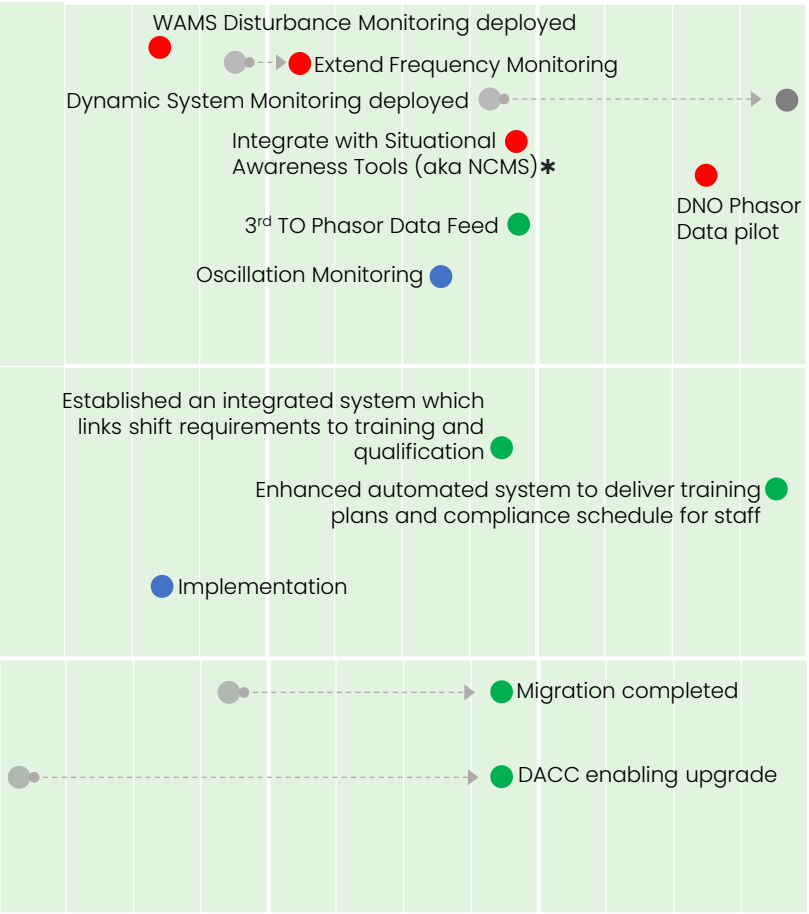
ID	Title & Description	Update
110	**Network Control (NCMS)** Delivery method: Waterfall Our investment enhances real-time situational awareness, enabling Control Centre operators to manage the electricity network as we transition to zero carbon grid operations. This will deliver a NCMS supporting our transformation goals and allowing full separation from National Grid Electricity Transmission (NGET) by replacing the shared Integrated Electricity Management System (iEMS).	We have implemented all tactical asset health and security enhancements to extend the life of the existing Integrated Electricity Management System (IEMS). A new tri-party support contract with NESO, NGET, and GE Vernova will be in place until the replacement systems are operational.
130	**Emergent Technology and System Management** Delivery method: Waterfall We will implement a new Monitoring and Control System (MCS) to enhance Network Control and Situational Awareness. This will improve real-time monitoring and decision-making for control room users during critical grid events.	We have introduced two innovative tools to measure system inertia in real-time, enhancing the accuracy and optimisation of our operations with more embedded generators. These tools monitor transmission and distribution side inertia in real-time and forecast up to 24 hours ahead.



How these support our strategy

Action Plans | Security & Resilience

ID	Title & Description	Update
170	**Frequency Visibility** Delivery method: Waterfall This investment enhances Frequency Visibility in the control room, improving access to frequency measurements from Transmission Owners (TO), Distribution Network Operators (DNO)/Distribution System Operators (DSO), and smaller embedded generators., enabling the ability to maintain power system control, critical for system restoration.	In May 2024, we launched our new FATE replacement system. We will run it alongside the existing system until we receive PMU data from all TOs, then decommission the legacy system. Our BP2 plan included adding GE Vernova's Wide Area Monitoring System (WAMS) for better regional frequency and stability awareness. Investment 110 Network Strategy will now deliver WAMS, aligning with NCMS objectives.
190	**Workforce and Change Management Tools** Delivery method: Agile This investment improves the publication of operational updates and learning materials, enhancing training and decision-making in the control room. It also supports workforce planning, shift management, changes, and document handling	We have fully implemented our central workforce management system, allowing users to access, review, and request shift changes via web and mobile apps. A single repository with advanced analytics helps develop better strategies based on working time and HR directives. Benefits include reduced time on rotas and improved overtime reporting.
270	**EU Regulation - Role in Europe** Delivery method: Agile This investment allows us to meet regulatory changes from our Trade and Cooperation Agreement (TCA) obligations., following the UK's departure from the EU and ENTSO-E.	During the BP2 period, we managed the regulatory change backlog to keep NESO compliant and avoid fines and reputational damage. Early high-level 'discovery' analysis during consultations helps refine delivery timescales, understand IT implications, and assist discussions with working groups and regulators.



How these support our strategy

Action Plans | Security & Resilience

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

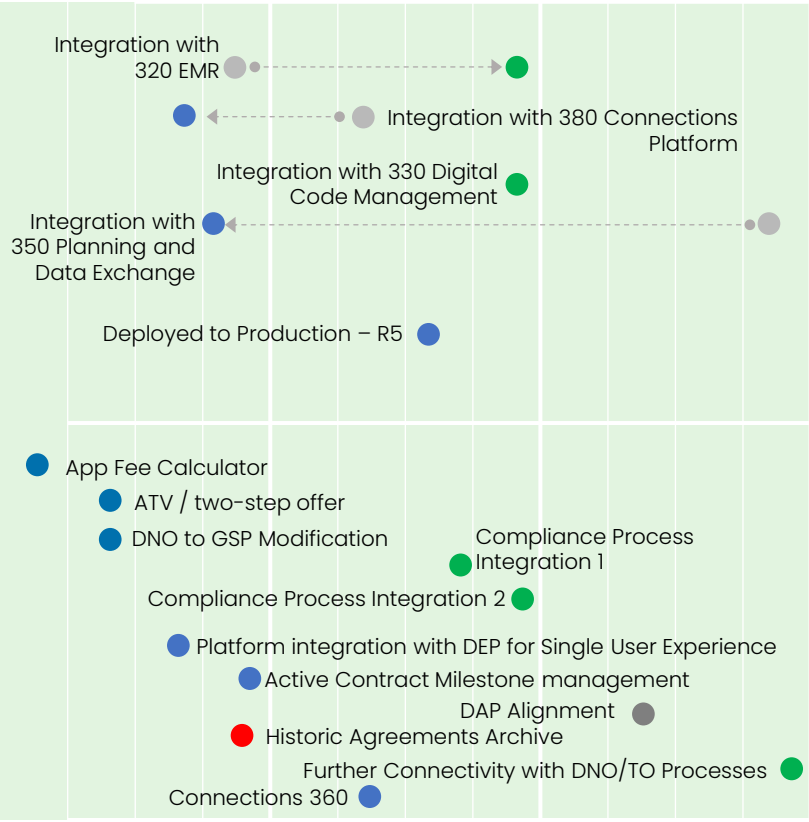
ID	Title & Description	Update	FY24 Q1	FY24 Q2	FY24 Q3	FY24 Q4	FY25 Q1	FY25 Q2	FY25 Q3	FY25 Q4	FY26 Q1	FY26 Q2	FY26 Q3	FY26 Q4
480	**Ancillary Services Dispatch** Delivery method: Agile Delivering safe and secure balancing systems capability until the OBP replaces in 2026	In BP2, the ASDP product team has delivered multiple releases, enhancing ENCC features for dispatching non-BM units and adding new non-BM ancillary services. Our focus is to maintain the ASDP system's quality while it is in use by the ENCC and to support its retirement activities.	R16 – RDP MVP Enhanced R17 – ASDP – Non BM Instruction visualisation R18 – ASR Other Reserve Products R19 – ASDP Technical Improvements OBP migration Complete Initiate ASDP Functional migration to OBP											
500	**Enhanced Frequency Control** Delivery method: Agile Extend rollout out of frequency monitoring from the transmission network into the distribution network.	The proof of concept on the test systems successfully showed that service responses could be triggered within 500 milliseconds, supported by industry resources and end-to-end testing. Findings were published incrementally. Completed as scheduled during BP2, with closure reports on the business case for EFC/MCS services published.	Completion of NIA Demo Commence Non Op Demo Operational Demo Design complete Commence Op Demo Operational Demo complete 1st Stage EFC Service operation Commence 2nd Stage requirements											
830	**Data Sharing Infrastructure** Delivery method: Agile The Virtual Energy System (VirtualES) programme aims to digitalise our energy system coherently to support the transition to net zero. It seeks to create an ecosystem of connected digital twins representing electricity and gas assets, linking to other sectors. This network will enable complex multi-party scenario modelling for optimal whole-system decision-making.	The Virtual Energy System programme is currently implementing a pilot of the DSI that will demonstrate how it can enable the trusted, secure, resilient, scalable exchange 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.	Tendering MVP of DSI Discovery Kick-off DSI Pilot Completion Discovery Complete Draft MVP Implementation Plan Baseline Agreed MVP Development Concluded											

Action Plans | Customer Centric

We are placing our diverse customer base at the centre of our digital transformation efforts, ensuring that customer engagement and digital experiences are at the forefront of our digitisation efforts.

How these support our strategy

ID	Title & Description	Update
250	**Digital Engagement Platform (DEP)** Delivery method: Agile DevSecOps This investment delivers engagement platform technology services to connect NESO with customers. Our DEP supports all roles, providing a unified experience for stakeholders. DEP offers a single access point to NESO systems and processes via NESO.energy, replacing nationalgrideso.com. It also provides secure access and data visualisation, compliant with data policies and standards.	The DEP is on track to meet all BP2 milestones by Q4 FY25. This includes integrating with various applications like SMP, Connections, EAC, PODE, ENAMS, EGAMA, and DCM, and providing authentication services (CIAM). DEP-DCM integration offers enhanced searchability and GenAI navigation for the new digitalised Grid Code. DEP has also deployed advanced security monitoring and has been rebranded to reflect the change to National Energy System Operator (NESO).
380	**Connections Reform Platform** Delivery method: Scaled Agile Implement changes as part of the Connections Reform programme to transform the connections process, handle the volume of applications NESO receives, achieve efficiency savings, improve customer experience, and prioritise applications to meet UK strategic targets.	We launched the Connections 360 Portal Suite, centralising connection management. It supports priority modelling on Future Energy Scenarios, aiding Clean Power decisions and providing insight into the GB connections landscape. We adopted a customer-centric, digital-first approach, enhancing user experience with Single Sign-On (SSO) via the CIAM solution. Customers can now provide live project updates and manage contracts and documents through a centralised storage solution.

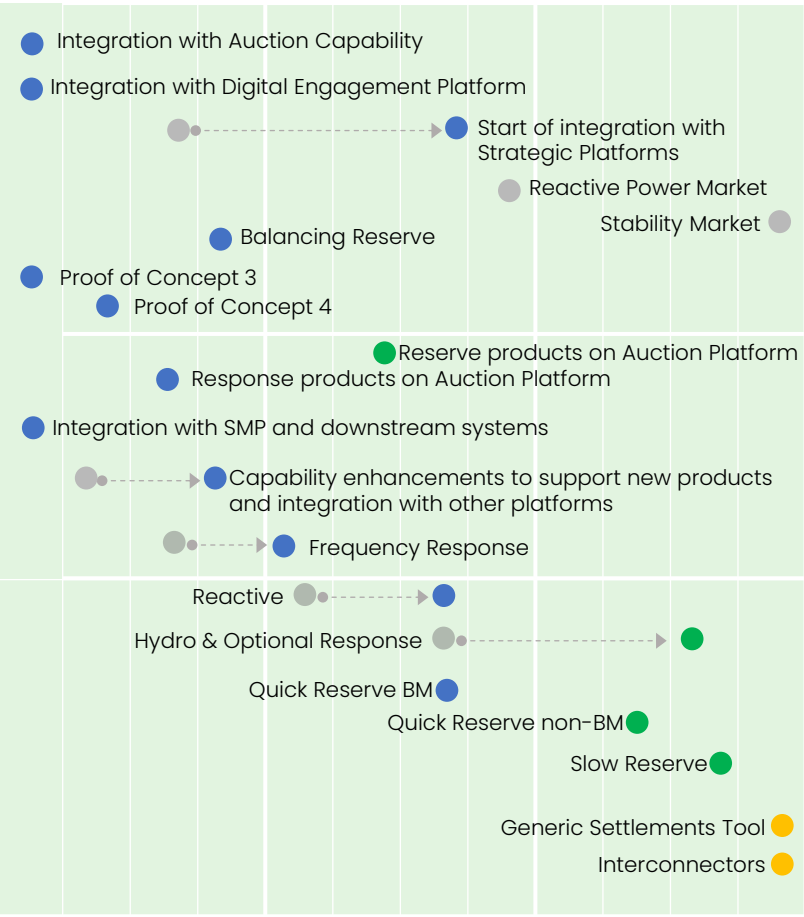


How these support our strategy

Action Plans | Customer Centric

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

ID	Title & Description	Update
400	**Single Markets Platform (SMP)** Delivery method: Scaled Agile Provides access for all balancing services market participants to NESO market and energy services. And enhances customer experience with user onboarding and connection processes. SMP will prioritise functional capabilities, informed by user research, industry consultation, and stakeholder engagement.	The SMP provides a single-entry access point for market participants. It includes onboarding, registration, pre-qualification, and contracting processes. Launched as part of BP2, SMP now delivers enhancement releases, adding new services, features, and integrations. Stable business and technical teams have delivered significant functionality across 17 releases since BP2 began.
420	**Auction Capability** Delivery method: Agile Delivering an Enduring Auction Capability (EAC) market participants to offer energy services.	During the BP2 period, we procured, deployed, and integrated the EAC platform with strategic IT assets. We also migrated frequency response services to the EAC platform, resulting in a more efficient market clearing algorithm and reduced procurement costs.
610	**Settlements, Charging and Billing** Delivery method: Agile Underpins the development of NESO's capability called STAR, which enables the management of industry charging and revenue collection, and the settlement of ancillary services. This capability will replace the Charging and Billing (CAB) and Ancillary Services Business (ASB) systems.	We have migrated Settlement services and Revenue streams to STAR. In Settlements, we migrated Frequency Response services (FFR, Dynamic Services, MFR) to STAR and are working on the remaining services. Market changes and operational challenges required reprioritisation and iterative planning, impacting delivery timescales. To minimise delays, we adopted and matured Agile DevSecOps practices.

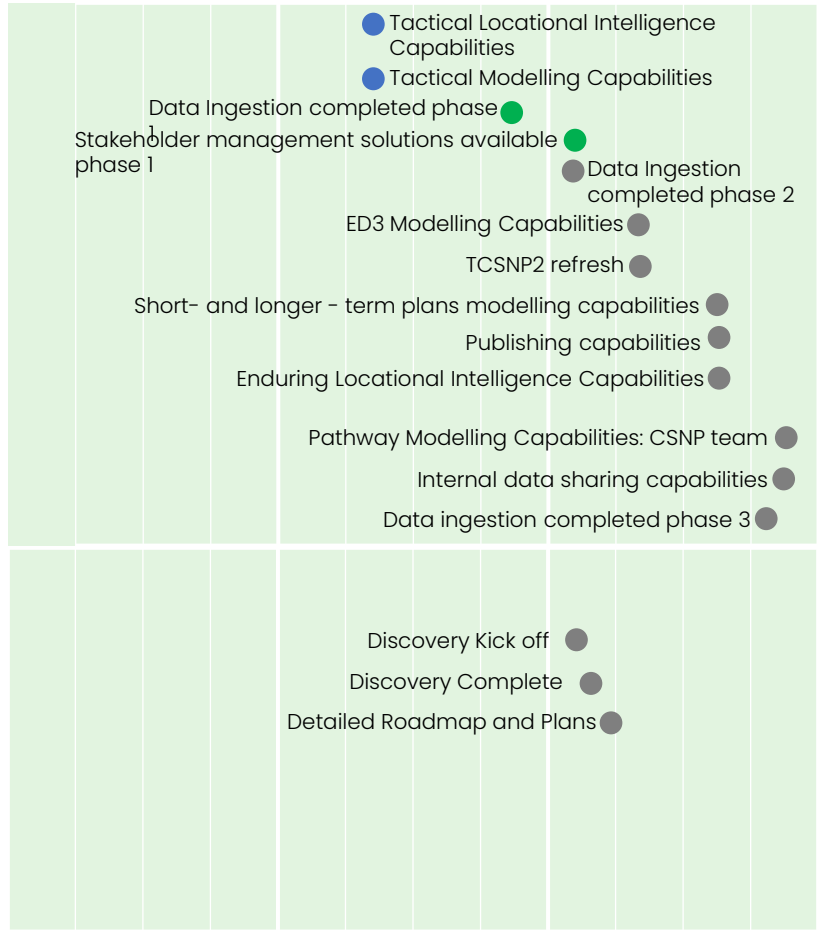


How these support our strategy

Action Plans | Customer Centric

Legend: Completed, On Track, Not Started, At Risk, Removed, Delayed, Brought Forward, Release Increment, Release Train

ID	Title & Description	Update
700	**Strategic Energy Planning** Delivery method: Scaled Agile As 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.	Given that most methodologies are still under consultation, the detailed scope for this investment is currently unknown. We are in a discovery and strategy definition phase with extensive user engagement. During this phase, we have identified the digital mission for SEP. Our digital mission for strategic energy planning focuses not only on addressing the industry's current challenges but also on adopting a digital approach to anticipate and adapt to future challenges.
820	**Contracts for Difference (CfD)** Delivery method: Agile The CfD is the government's main tool for supporting low-carbon electricity generation, crucial for the UK's net zero target. NESO, appointed by the government, handles CfD prequalification, disputes, and allocation processes annually, as defined by DESNZ. The Legacy EMR Portal has been used for the past six CfD Allocation Rounds.	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.



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