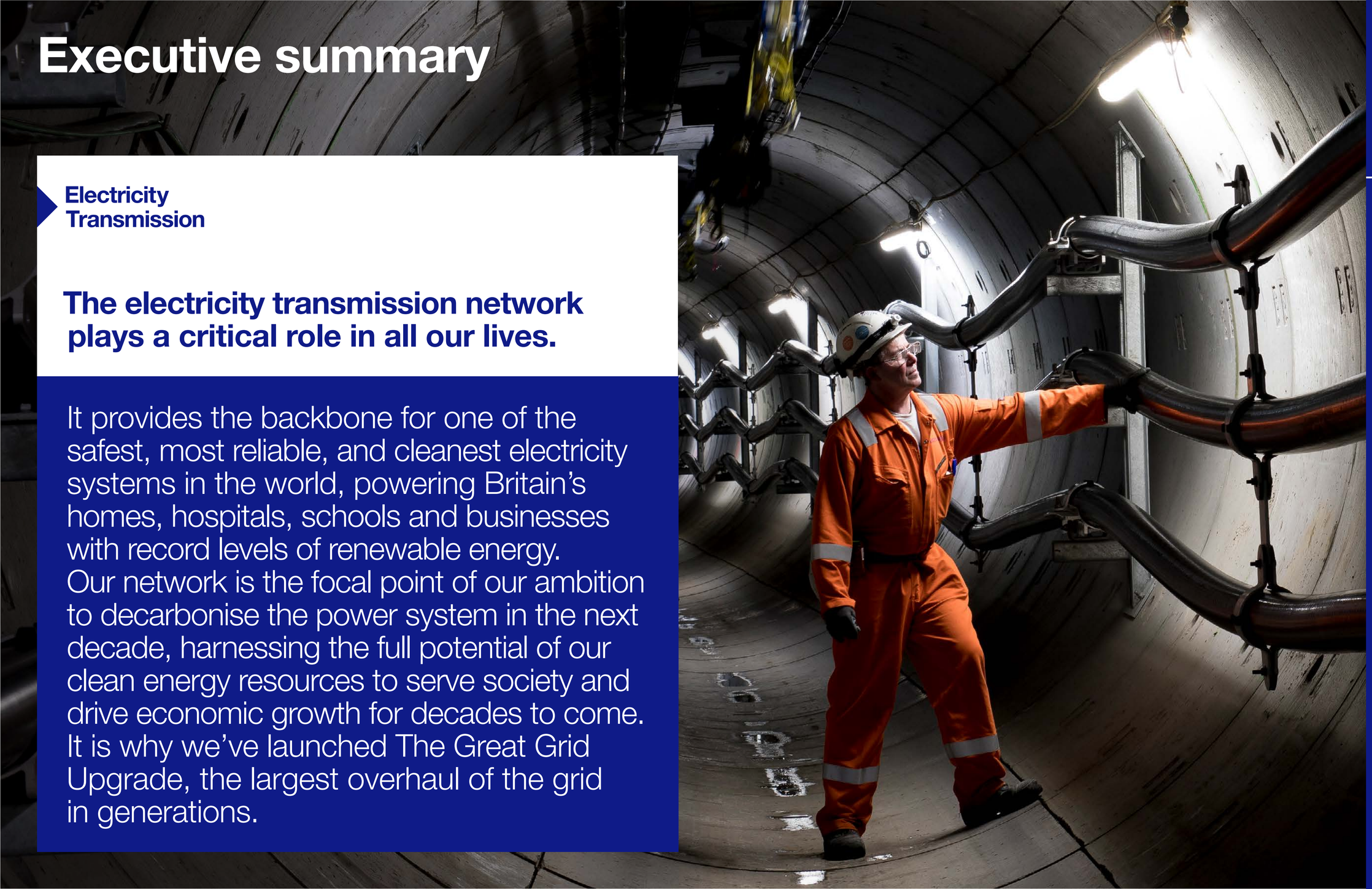
Electricity Transmission

nationalgrid

March 2024

Digitalisation Strategy

Executive summary



Electricity Transmission

The electricity transmission network plays a critical role in all our lives.

It provides the backbone for one of the safest, most reliable, and cleanest electricity systems in the world, powering Britain's homes, hospitals, schools and businesses with record levels of renewable energy. Our network is the focal point of our ambition to decarbonise the power system in the next decade, harnessing the full potential of our clean energy resources to serve society and drive economic growth for decades to come. It is why we've launched The Great Grid Upgrade, the largest overhaul of the grid in generations.

Executive summary

But delivering the network we need is not limited to physical infrastructure, it is also about how we leverage our digital and data to transform how we maintain and operate our assets, accelerate the connection of clean energy, and improve the experience of our customers, partners, and the communities we serve. Our updated digitalisation strategy builds on our previous submission in 2022. It outlines what we have achieved so far, and how we will deliver our remaining RIIO-T2 commitments to ensure we lay the digital foundations to further build on in RIIO-T3.

We were pleased to see Ofgem's statement in their framework decision for RIIO-T3 that "developing digital capabilities across network companies and Ofgem will underpin the future regulatory framework", as it aligns with our own vision for digital. An updated version of our Digital Strategy and Action Plan (DSAP) will be included alongside our RIIO-T3 business plan submission later this year. Enabling transformation is at the heart of our digital strategy, which includes:

1

The Great Grid Upgrade:

Developing and building new infrastructure across England and Wales to help the UK meet its net zero goal, strengthen security of supply, and contribute to lower energy bills for consumers in the long term.

2

Delivering for our Customers:

Reducing the time and cost for customers to connect to our network through an improved end-to-end connection process, ensuring that connections are completed within the required timeframes.

3

Intelligent Asset and Network Management:

Maximising the value of our network whilst maintaining reliability, we will enable access to deep insights by transforming how we operate, monitor, and control the network backbone of UK's energy system.

As part of our transformation, we have adopted a digital operating model and continue to mature the digital culture across our business, underpinned by a shared digital mindset. We continue to refine and develop our Digitalisation Roadmap with engagement and feedback from our stakeholders. This provides clarity over what we need to do whilst retaining flexibility to adapt to changing stakeholder needs, an evolving industry context and technology advancements. We have made good progress over the last two years and know what we need to do to close out RIIO-T2 and create strong foundations for RIIO-T3.

For example, we have significantly enhanced how we service our connections customers across the channels through which they choose to interact with us. We have also defined an intelligent substation blueprint to prepare for the Great Grid upgrade, which will help us build the assets we will need tomorrow with the best technology available today.

Harnessing the power of data is equally central to our journey. To deliver with pace, confidence, and agility, we need high quality and trusted data that drives robust and timely decisions across National Grid Electricity Transmission and industry. Our Data Strategy reflects the importance of data to fuel new ways of working and will enable us to realise the potential of Artificial Intelligence (AI). We will approach data as a product, carefully managing it as a valuable and reusable asset. This marks a significant evolution of our approach to data and supports the delivery of data best practice and data sharing across the industry.

We hope the strategy that we have laid out helps you to learn more about our Digital and Data Products and services, the progress we have made to date, and the roadmap we have put in place to help deliver the network we need to ensure a clean, fair, and affordable energy future for all.

Alice Delahunty
President of Electricity Transmission, National Grid

Sarah Milton-Hunt
Chief Information & Digital Officer, National Grid Electricity Transmission

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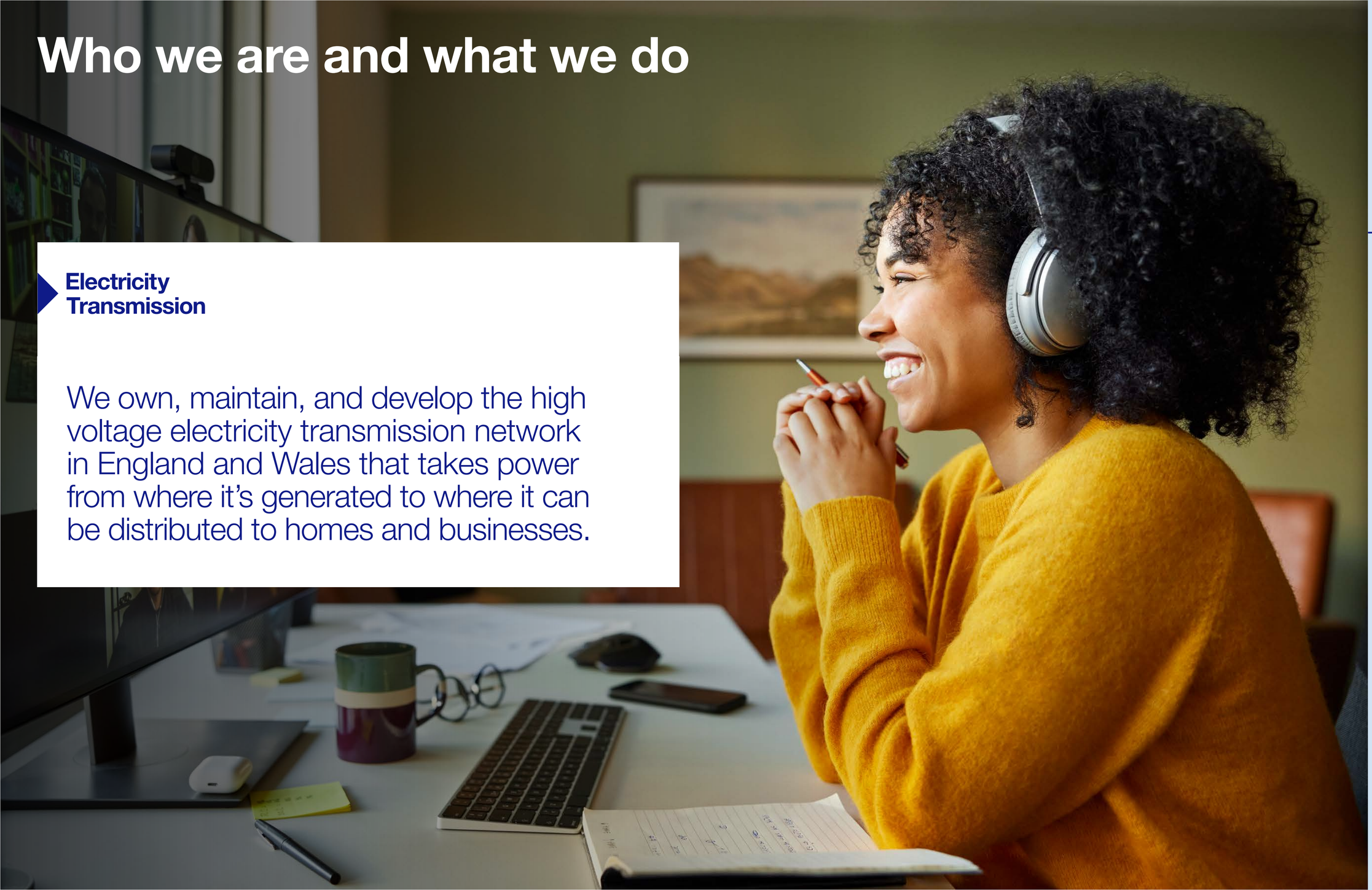
- **Looking towards RIIO-T3**
  Overview

Hover over each symbol to reveal more information.

Who we are and what we do



Electricity Transmission

We own, maintain, and develop the high voltage electricity transmission network in England and Wales that takes power from where it's generated to where it can be distributed to homes and businesses.

Who we are and what we do

Every time a phone is plugged in, or a switch is turned on, we've played a part connecting you safely, reliably, and efficiently to the electricity you need – and it all happens via our network of overhead lines, pylons, cables, and substations.

National Grid Electricity Transmission (NGET) staff monitor and maintain this network all year around. Our engineers keep an eye on its health from our control rooms, and our operations teams look after the infrastructure in the field. We invest a lot annually on the maintenance and development of our network, making it one of the most reliable in the world.

Each year we connect gigawatts of new renewable generation and sources of demand across England and Wales. That means plugging in clean energy projects like batteries, solar arrays, and wind farms, as well as connecting heavy industry like rail, steelworks and giga factories – all of which are helping to both power and decarbonise Great Britain.

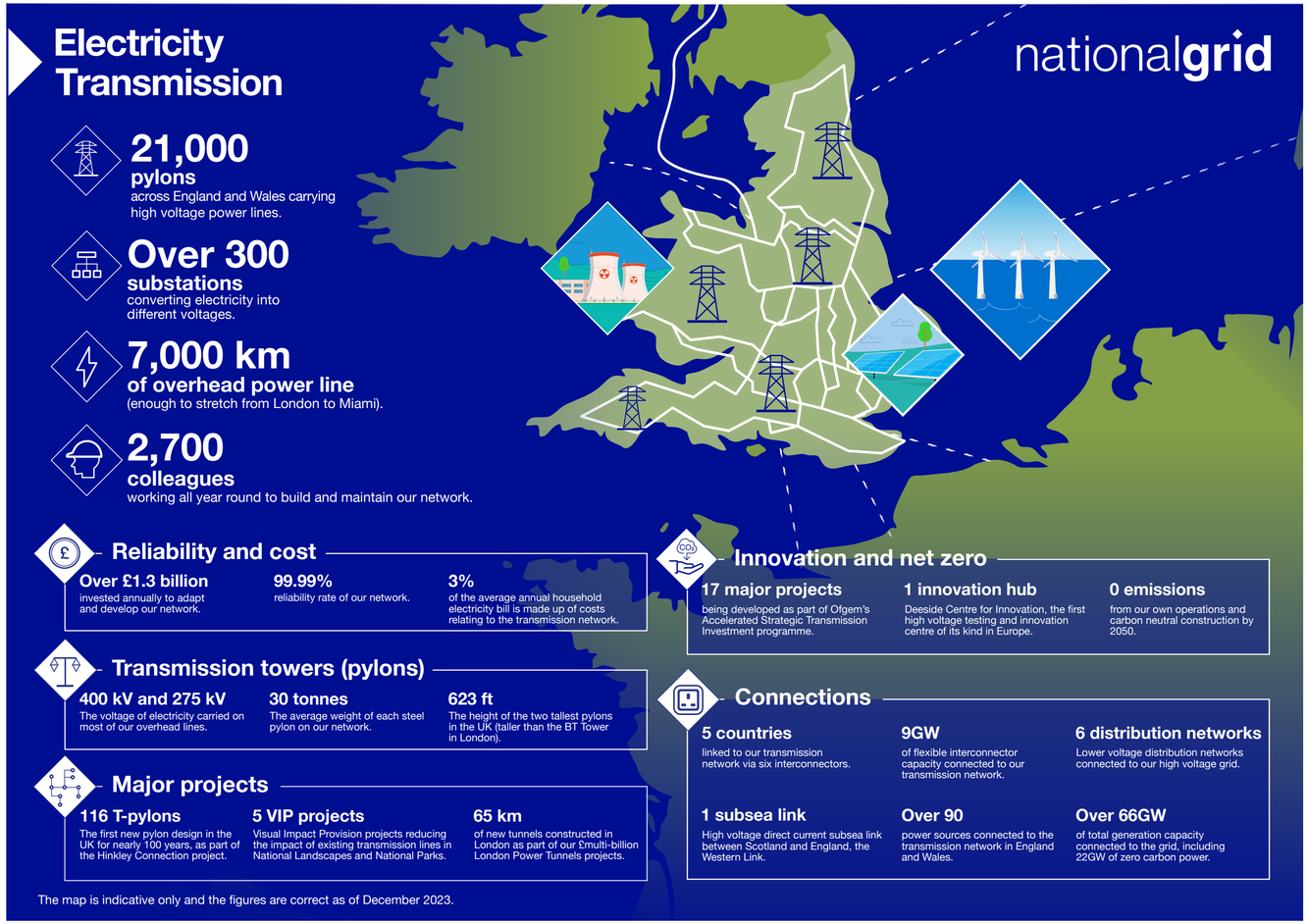
As a Transmission Owner (TO) we also have a central role in future network planning alongside the Electricity System Operator (ESO) and other TOs. Our next price control – the mechanism by which our transmission business will be regulated from 2026 to 2031 – will shape how we plan and invest in tomorrow's network, so will be pivotal in making the ambitious thinking you'll discover throughout this document a reality.

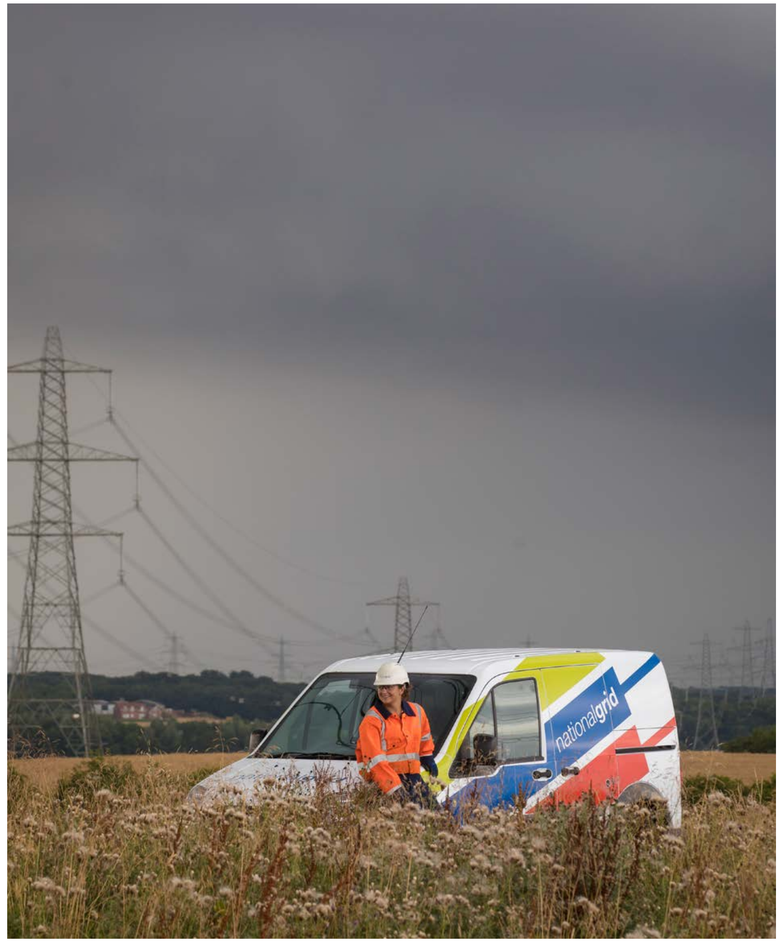
Today we continue to invest in and innovate on our existing network, growing its capacity and connecting more clean electricity to keep Britain on track for net zero.

[1] ESO is a legally separate part of National Grid, soon to become an independent public body called the National Energy System Operator (NESO).

Who we are and what we do

Figure 1 Overview of National Grid Electricity Transmission plc (NGET)





Who we are and what we do
Our operating context

Since our last DSAP publication in 2022, the transformation of the energy sector has accelerated. We have completed a comprehensive assessment of the factors behind this change.

With these insights, we have revised our strategy to ensure it best fulfils our net zero commitments and enables a clean, fair and affordable energy future for all.

Hover over each diamond below to reveal more information:

The energy transition and net zero

Stakeholder expectations

Whole system

Sustainability

Global energy markets and geopolitical uncertainty

Digital transformation

* Responsible Business Charter

Who we are and what we do
Our vision, strategic priorities, and values

Our vision remains aligned with our net zero ambition, and aims to provide a clean, fair, and affordable energy future. We will deliver our vision through a series of strategic priorities, anchored on our values.

Figure 2 Our vision, strategic priorities, and value

Purpose	**Our Purpose** We Bring Energy to Life				
Vision	**Our Vision** To be at the heart of a clean, fair and affordable energy future				
Strategic Priorities	**Enable the energy transition for all** • Be a leading voice for the energy sector • Shape the policies and regulation for net zero	**Build the networks of the future now** • Create the electric network of the future • Make our gas assets clean and sustainable* *Refers to National Grid's US gas assets	**Delivering for our Customers** • Give consistently great customer service • Respond quickly and make it easy	**Operate Safely and efficiently** • Do the basics well and focus on results • Make the energy transition affordable	**Build tomorrow's workforce today** • Create the leadership, capability and diversity we need for the energy future • Develop our people to seize the opportunities ahead and perform at their best
Value	**Every day we do the right thing, find a better way and make it happen**				

Progress on our Digitalisation Strategy

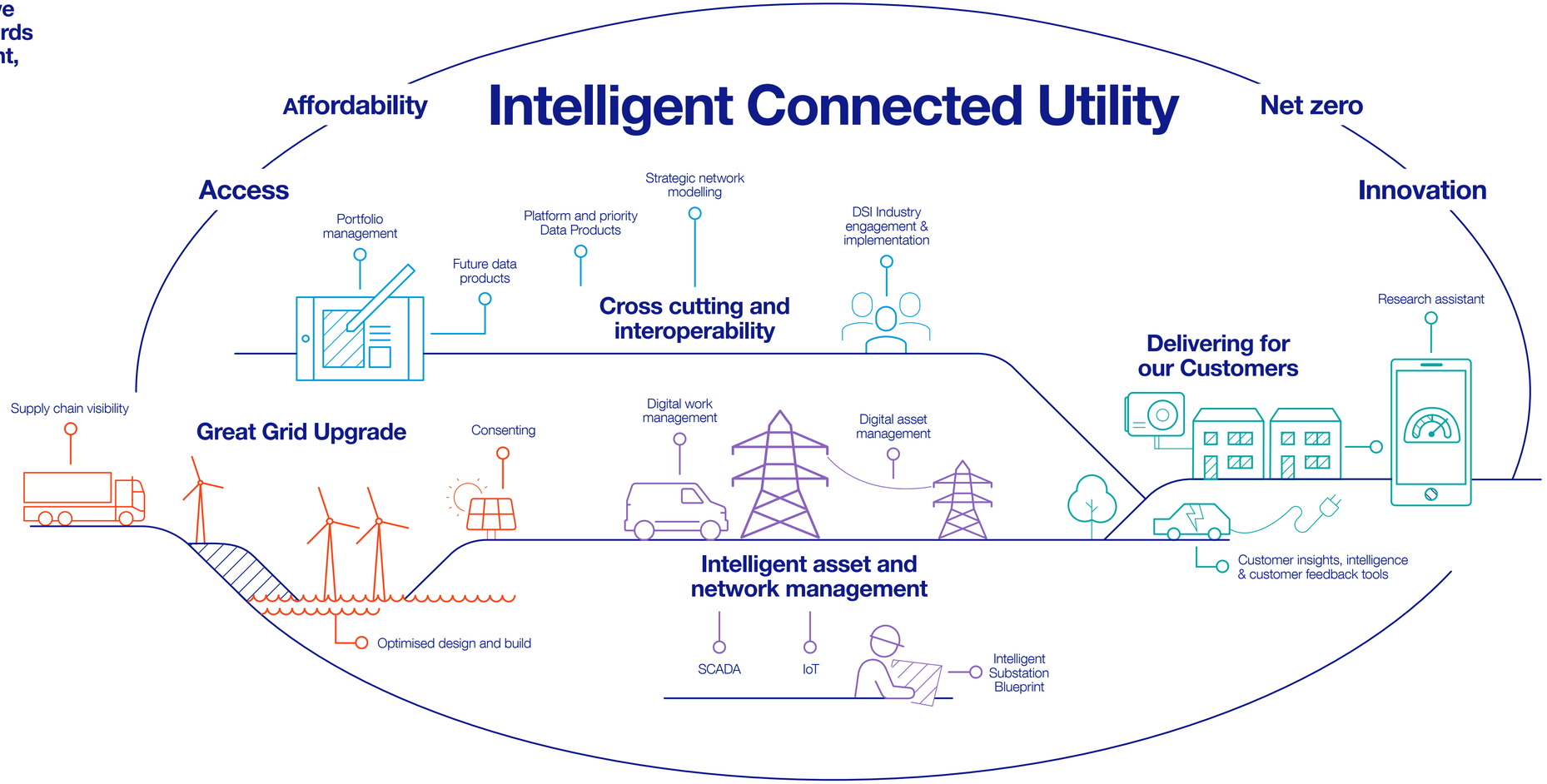
Electricity Transmission

Our updated Digitalisation Strategy builds on our previous submission in 2022. It outlines what we have achieved so far, and how we will deliver our remaining RIIO-T2 commitments to ensure we lay the digital foundations to further build on in RIIO-T3.

Progress on our Digitalisation Strategy
Our ambition

To enable net zero, and a clean, fair and affordable energy future for all, we are transforming towards becoming an Intelligent, Connected Utility.

Figure 3 Becoming an Intelligent, Connected Utility



Progress on our Digitalisation Strategy
Our digitalisation objectives and enablers

Our digitalisation ambition, objectives, and enablers are aligned against our stakeholders' priorities, the Energy Data Taskforce recommendations and the Digitalisation Strategy and Action Plan (DSAP) guidance from Ofgem.

Figure 4 Our digitalisation ambition, objectives and enablers

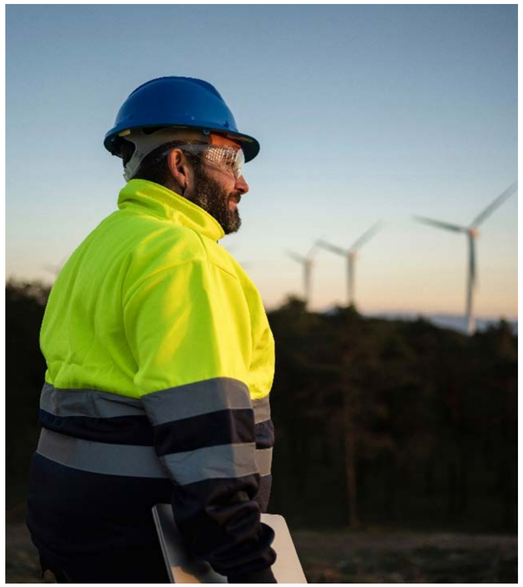
Ambition:

An intelligent, connected utility that enables net zero and clean, fair, affordable energy future for all through…

Objectives:

Hover over each diamond below to reveal more information:

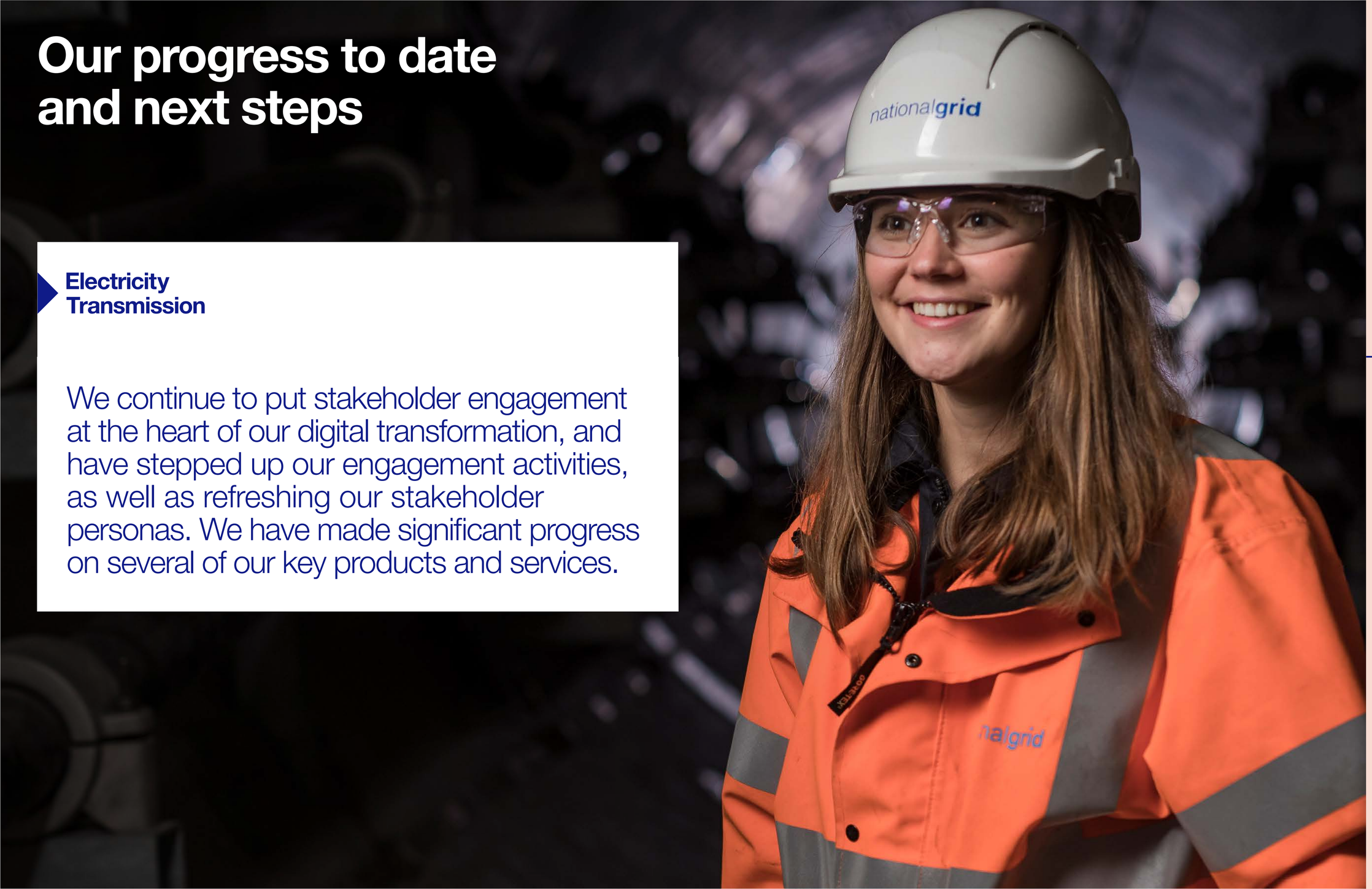
1. **The Great Grid Upgrade**
2. **Delivering for our Customers**
3. **Intelligent Asset and Network Management**



Enablers:

- **Whole system stakeholder engagement**
- **Digital culture and ways of working embedded in everything we do**
- **Trusted, available and secure data.**

Our progress to date and next steps



Electricity Transmission

We continue to put stakeholder engagement at the heart of our digital transformation, and have stepped up our engagement activities, as well as refreshing our stakeholder personas. We have made significant progress on several of our key products and services.

Our progress to date and next steps
Our enablers

Whole system stakeholder engagement

We recognise that we have a leading role to play in the UK's energy system and continue to collaborate closely across the whole stakeholder landscape to enable net zero, and a clean, fair and affordable energy future.

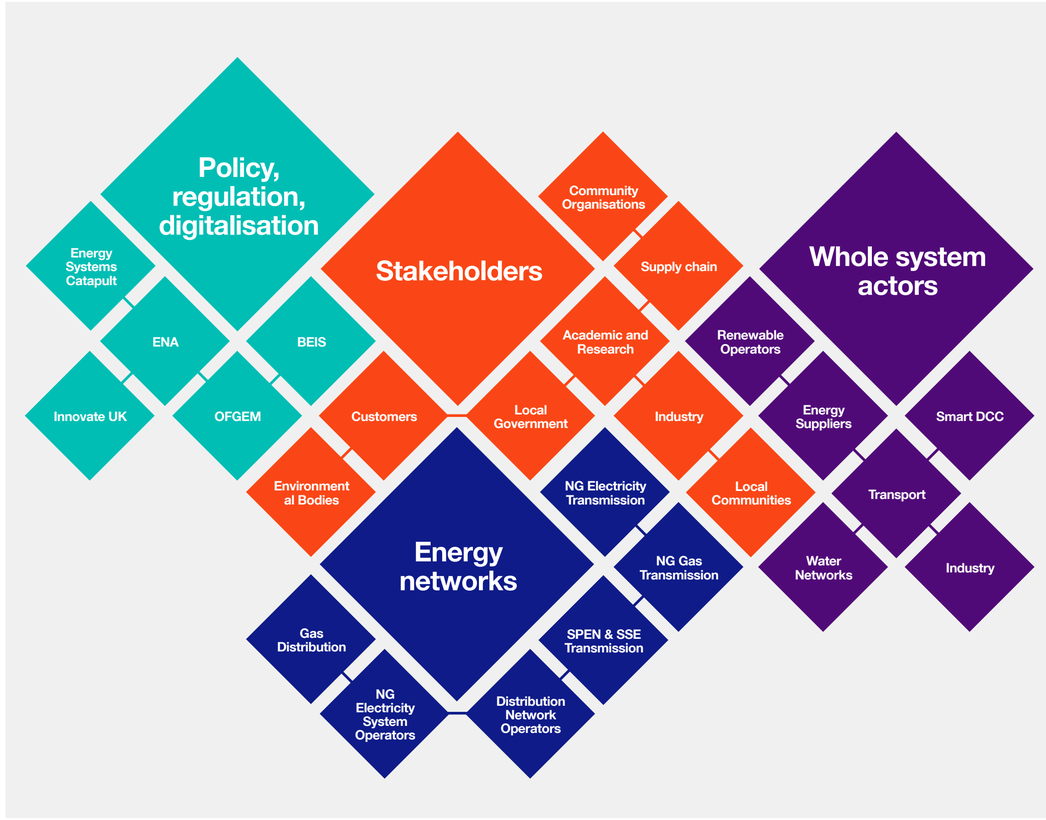
In line with Energy Digitalisation Taskforce report, Delivering a Digitalised Energy System, we recognise our role as part of a whole system of data and digitalisation initiatives that demands greater integration, openness, and accessibility.

As such, we are strongly supportive of the work led by the Energy Systems Catapult energy data taskforce report in 2019, and the most recent energy digitalisation taskforce report published in January 2022.

We continue to be an active voice in discussions and are committed to delivering the recommendations, exemplified by our collaboration with the Energy Networks Association on the National Energy Systems Map.

Our business priorities are informed by our whole system stakeholders and shaped by our focus on delivering outcomes that matter to all. We continually enhance our ability to anticipate future stakeholder needs by tailoring our data, products and services accordingly.

Figure 5 Whole System digitalisation landscape



Our progress to date and next steps
Our enablers

With that in mind, we have worked with our stakeholders to develop personas to help us better understand the needs of different user groups, and where digitalisation can play a part in servicing those needs.

We continue to review and update the persona groups regularly, based on internal and external feedback.

Table 3 Overview of stakeholder personas used to inform our digitalisation strategy and products

Personas	Persona Description	Primary needs	Challenges
Consumers	Residential and businesses customers who consume electricity and pay for our transmission network	Expect energy providers to deliver an affordable and resilient network whilst simultaneously decarbonising the energy system	As electrification and digitalisation become more prevalent in our lives, the uninterrupted supply of electricity becomes even more crucial
Connecting Customers and Energy Insiders	Stakeholders that work in, or closely with the energy industry, such as network companies, system operators, and connecting customers	Require data to inform their day-to-day operations, long-term investments and decision-making. Require access to many different datasets to support their activities, such as details on assets and their condition, operational data, and performance.	Information-sharing agreements are often nonexistent and lengthy to put in place. Limited view of connection application status and want to connect cheaply and quickly.
Innovative Thinkers	Stakeholders who are interested in our assets and network and may have unique or wide interests for accessing our data, such as members of the public, communities, academia, technology companies, and wider energy innovators	They will develop new uses cases. Require our data (often combined with other data sources), including the accuracy and granularity to answer wider questions they are interested in. May not know what data they need and rely on us to share and collaborate to meet their outcomes.	Available datasets are poorly signposted and difficult to find. Data is often not provided in accessible, non-technical terms, making it difficult to understand where they come from and any potential limitations.
Policy Influencers and Decision-makers	Stakeholders such as consumer groups, regulators and other government departments who oversee the energy sector, the public interest, and consumer protection	Require access to longer-term data that supports them in their strategic oversight, long-term policy-making and decision-making. Require our data in their service to the public.	They expect complete, high-quality, and consistent datasets to inform their thinking, which is often not available or is a work in progress
Digitally Excluded	Stakeholders who do not have the ability to interact with the online world due to a lack of access to devices, data packages or are missing the skills to accomplish this	Require updates on outages and local projects through traditional channels such as telephone, mail, and face-to-face interactions. Require user-friendly website with voice command integration, and multilingual content to facilitate simple navigation.	This group faces four main challenges : 1) **Access:** The ability to actually go online and connect to the internet 2) **Skills:** The ability to be able to use the internet 3) **Motivation:** Do not understand how the internet can be a source of good 4) **Trust:** Concerns around online crime etc.

Our progress to date and next steps
Our enablers

We carried out our largest ever stakeholder engagement exercise to develop our 2021–2026 business plan, engaging with over 1,000 individuals covering all our main stakeholder groups.

We also listened to over 11,000 households and over 750 business consumers through meetings, focus groups and surveys. We have engaged across our stakeholder groups to develop this strategy and aligned our digitalisation strategy objectives to our RIIO-T2 stakeholder priorities.

1,000
Number of individuals engaged

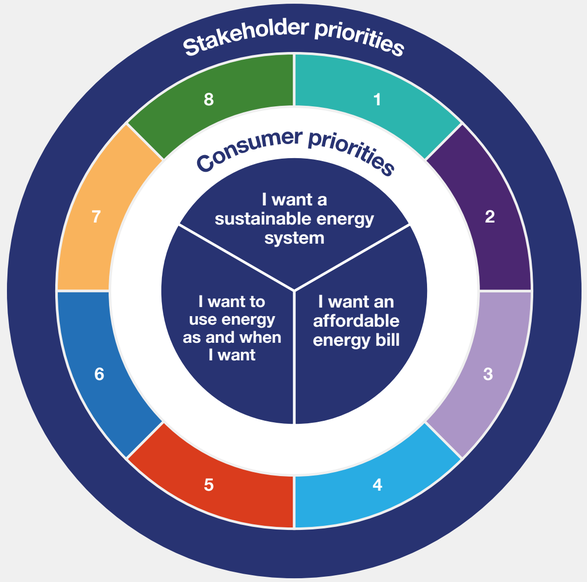
11,000
Number of households listened to

In 2023, we hosted several listening events with regional stakeholders including existing and future customers, Distribution Network Operators (DNOs), and other key stakeholders with 600 attendees representing 383 organisations. We engaged with these stakeholders to understand their priorities, their needs to support their net zero ambitions, the information they need to inform their plans and what we can do to make the process of electricity network planning clearer and more transparent.

92% of those engaged felt they could input and ask questions and 81% felt we covered the right topics. Stakeholders voiced their need to have more transparent communication on data and digitalisation to accelerate net zero goals. The stakeholder feedback summaries (see Appendix E: What our Stakeholders have told us) have been shared with our digital teams.

As part of our Accelerated Strategic Transmission Investment (ASTI) framework, where we are leading on major capital projects, our priority is to ensure robust stakeholder engagement and communication. For each project, we have been carrying out several stages of public consultation, involving face-to-face meetings, events and webinars. Our outreach efforts target local authorities, Members of Parliament, parish councils, community groups and local businesses.

Figure 6 Our Stakeholder Priorities for RIIO-T2



1. I want you to enable the ongoing transition to the energy system of the future.
2. I want you to be innovative.
3. I want you to provide value for money.
4. I want you to be transparent.
5. I want the network to be protected from external threats.
6. I want you to provide a safe and reliable network.
7. I want you to make it easy for me to connect to and use the electricity network.
8. I want you to care for the environment and communities.

[2] Government Digital Inclusion Strategy, 2014

Our progress to date and next steps
Our enablers

Further to this, we operate a dedicated community helpline where customers and other interested parties can make inquiries. Additionally, we organise 8-12 public exhibitions per project at strategic locations where attendees can ask questions, explore interactive maps, and provide feedback either in person or online. To keep stakeholders informed and remain transparent, we regularly distribute newsletters detailing our plans and progress. All these efforts ensure that our stakeholders remain engaged and informed throughout the project lifecycle.

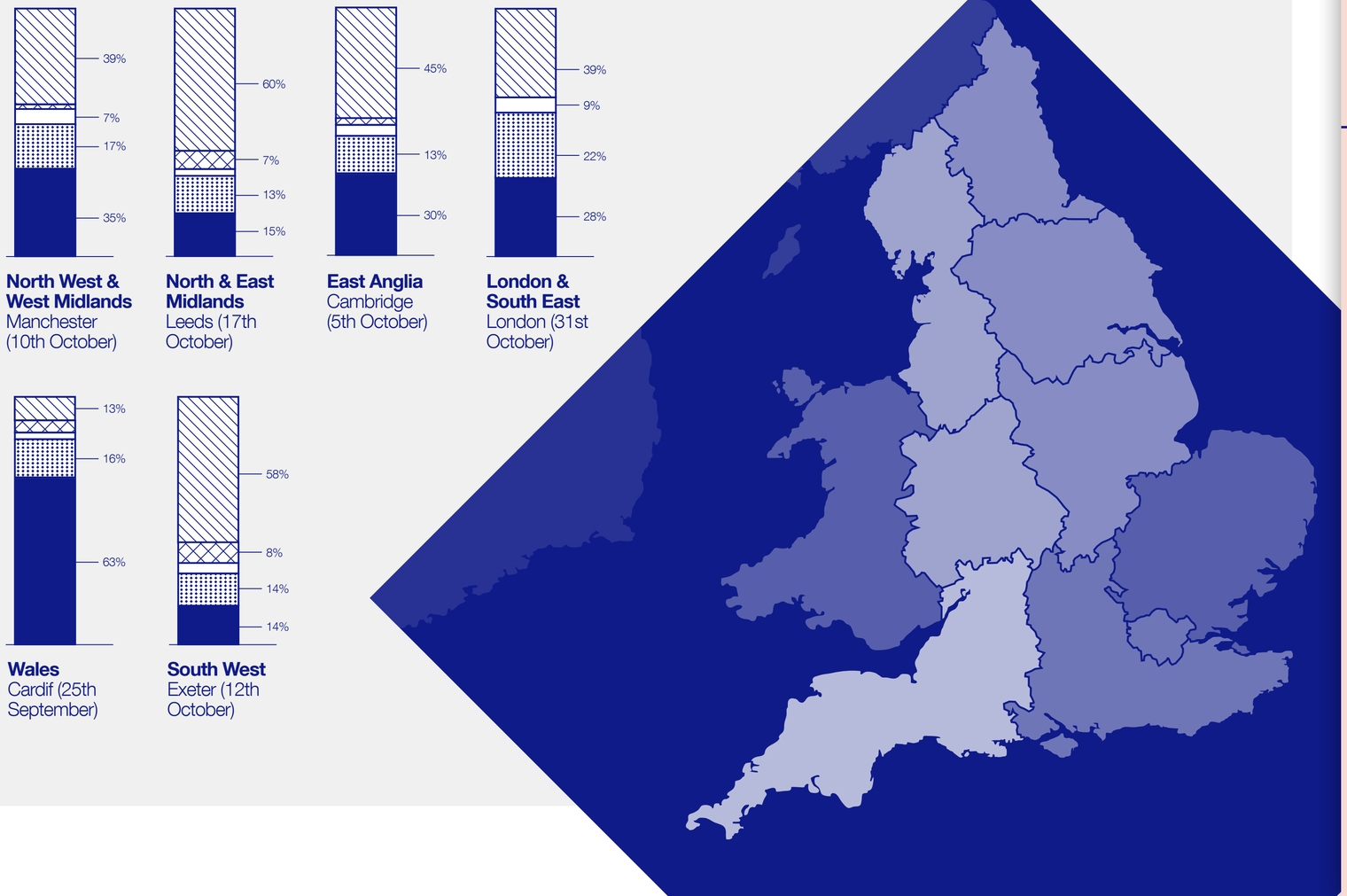
In July 2023, we adopted a single Stakeholder Relationship Management (SRM) system to improve our interactions with stakeholders. This system provides up-to-date information of stakeholder needs and requests, cross-business visibility of interactions, coordination of engagement overlaps between teams, and the provision of a single, traceable information source.

Hover over each graph to reveal more infomation on the map.

Attendees

- Local Government
- Major Energy User
- Other
- Infrastructure
- Energy Industry

Figure 7 Breakdown of participants that attended the regional listening events



Our progress to date and next steps
Our enablers

Considering the digitally excluded in our stakeholder engagements

Efforts to incorporate the digitally excluded stakeholders in the way we work is crucial to ensure inclusivity and equal access. Presently, we engage with our stakeholders directly to enable those who may lack digital skills and access, allowing them to provide input on their needs, objectives and feedback on our products and services, as appropriate.

Additionally, we have a good relationship with our Distribution Network Operators (DNOs), local government institutions who represent local communities, which enables us to receive relevant comments on our digital strategy.

In 2023, we collaborated within a consortium of three energy networks: Northern Gas Networks, Cadent, and National Grid Electricity Transmission, coordinated by the Energy Innovation Centre to produce the research report titled "Digital exclusion: The challenge of communicating with all energy consumers". This report summarises insights from other leaders and highlights best practice in engaging with digitally excluded consumers to improve engagement and communication strategies, and deployment of local initiatives to benefit our communities.

To further address the needs of digitally excluded stakeholders and enhancing their involvement:

- We will conduct internal sessions within the organisation to disseminate insights gained from our engagements and relevant findings such as the outputs of the 2023 digital exclusion research report, to ensure all employees understand the implications of digital exclusion in building digital products and services.
- When developing consultation strategies on projects, we work with community leaders to identify hard to reach groups and employ a mix of communication channels to make certain materials accessible for all.
- When a specific need is identified, we adapt our material and approach accordingly for example, provide translations, and visual aids. I exclusion and are equipped with the effective engagement strategies.

Digital culture and ways of working embedded in everything we do

Continuing our journey towards becoming intelligent, connected utility we have embraced Agile working to enable faster delivery of value for our customers and stakeholders.

We are actively making a cultural shift towards evolving into a 'Digital Business' within NGET, through campaigns, digital coaches, and training. Our goal is to enhance holistic digital literacy, empowering our people to make informed decisions with a digital mindset to meet our objectives. This aligns with our overarching goal of developing products and services that align with the needs of our stakeholders and help us achieve net zero.

Being a Digital Business means digital is a key consideration in all aspects of the business, from marketing to product design to supply chain management. It is a philosophy that drives innovation and agility.

What is a digital mindset?
According to Harvard Business Review, A digital mindset is a set of attitudes and behaviours that enable people and organisations to see how data, algorithms, and AI open new possibilities and to chart a path for success in a business landscape increasingly dominated by data-intensive and intelligent technologies.[2]

[2] Developing a Digital Mindset (hbr.org)

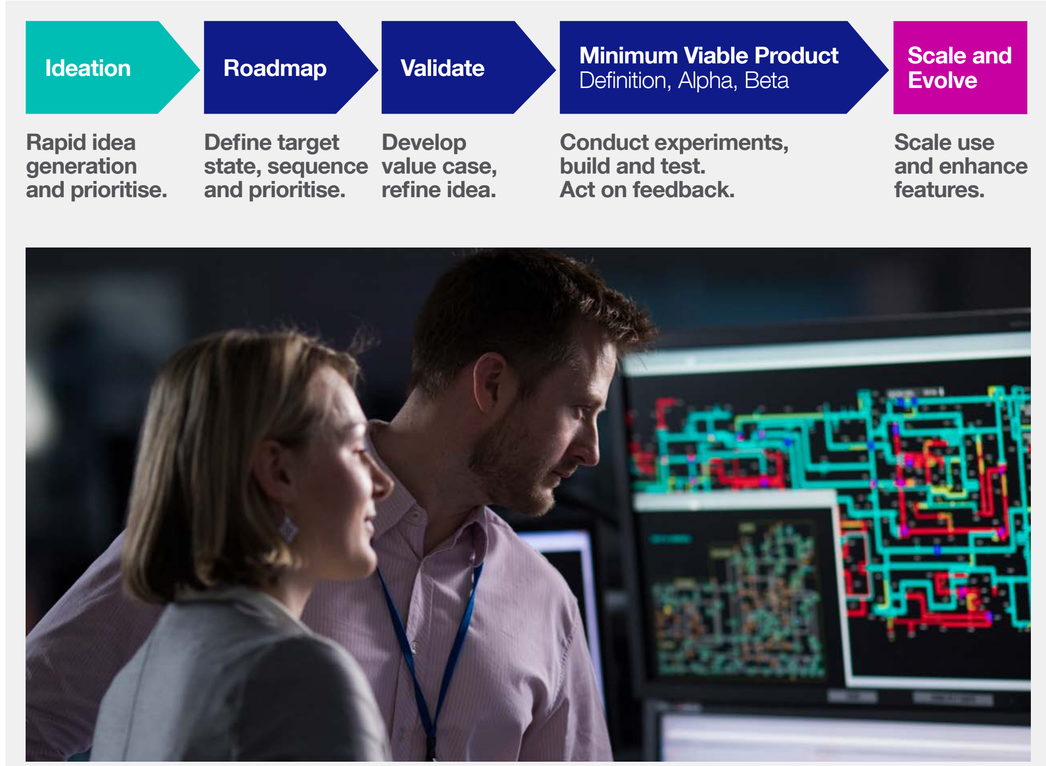
Our progress to date and next steps
Our enablers

We have adopted a digital operating model which reorients digital solutions closer to the problem we are trying to solve such as and deliver faster, iterative capability releases to all our products. This starts with embedding multi-disciplinary teams in each of our lines of business, focused on addressing a specific customer, stakeholder, or business need, and upskilling those teams across all phases of the product development life cycle illustrated below.

Through this, we deliver in smaller increments using wireframes, prototypes, and Minimum Viable Products (MVPs) to test assumptions and if necessary, pivot the delivery to ensure the right outcome is achieved. As a result, we maximise quality of work by prioritising end-user value and gathering feedback during development, ensuring alignment with user expectations. It also improves risk management by offering enhanced visibility to spot bottlenecks early and prevent delays. We have also aligned with the Scaled Agile Framework (SAFe) to direct our delivery approach and set portfolio and change management standards.

Rapid development of digital products in response to existing and emerging needs helps increase our teams' confidence in the ability of digitalisation to deliver for customers and stakeholders. We are continuing to enhance our digital, data and technology recruitment by strategically partnering with organisations such as Code First Girls to expand access to a diverse and highly skilled talent pool. We are also committed to investing in the professional development of our employees by providing specific learning pathways and training focused on Agile methods, product development, data management and exploitation.

Figure 8 Our approach to product development



Our progress to date and next steps
Our enablers

Trusted, available and secure data

Our ability to contribute meaningfully to the government's net zero targets and ambitions relies on us having good quality, trusted data for informed decision-making. Through our Data Mesh Strategy, we are putting the power of data into the hands of everyone in the organisation. It marks a significant shift towards approaching data as a product, aimed at fostering greater data connectivity and eliminating silos of data. This means:

- Putting the quality and management of data with those who own and can impact it.
- Driving value for those who know the data best.
- Giving everyone in the organisation the tools to use data the way they want and when they want to.

By adopting this approach, we are not only fostering a more digital culture but driving value creation and innovation across the organisation.

Decentralising Data Ownership

Decentralising data ownership to domain-specific teams that manage, own, and serve the data as a product empowers the organisation holistically. It also encourages otherwise traditionally non-digital teams to think about data as a powerful asset within their scope of work. This approach is rooted in the principle that these domain-specific teams possess the deepest understanding of both the data and the information it holds, thereby positioning them to add the most value.

Ensuring Quality

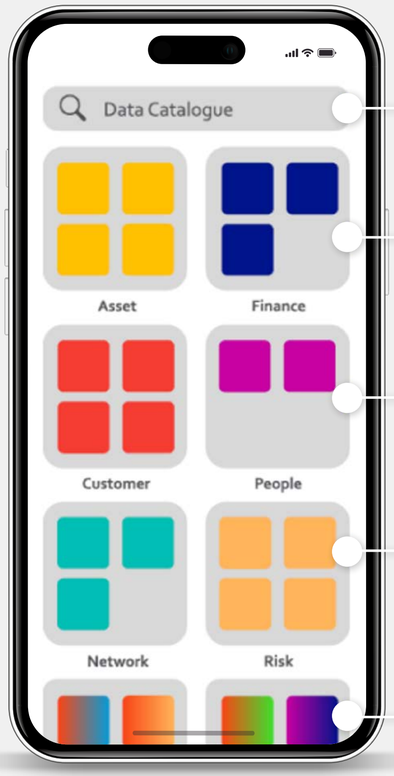
By making each domain-specific team accountable for the quality and accuracy of the data they own, we see strong evidence of enhanced data product quality. Each data product will have a data contract, which ensures that every data product is built to the required standards and against prescribed governance and data practices. These data contracts will contain information on the data description, data lineage details, quality assessment criteria, subject matters and more. For those using the data, this translates into the ability to easily access, review, and obtain insights without having to execute complex procedures in between.

Building Data Products

To achieve this level of data interoperability, we have been reviewing and refining our information model throughout the organisation, assessing products individually to gain a holistic view of our landscape. We will prioritise building data products with the highest value. By adopting this focused strategy, we will enable value creation by continuously improving quality, refining processes, and optimising our data utilisation practices. Our strategy is centred on creating reusable data products that can be seamlessly integrated and/or consumed across various digital tools, enabling the provision of key insights to aid decision-making.

Figure 9 Future of Data at NGET

Utilising our data mesh approach will enable greater collaboration with partners and industry with open and easily accessible data.



The Search Bar: This will be how we make it easy for people to find and use NGET data (We call this data catalogue).

The OS: This is the technology (we call this platforms and services that enables the NGET business to get the most out of our data.

The Folders: These will be the collections of data of a similar type (we call these domains) that help us ensure we have the right owners to improve the quality.

The Built-in Apps: These will be the sets of data (we call these foundational products) which give us the foundations for making the most of our data in analytics.

The Specialist Apps: These will be the combination of data (we call these analytical products) which have been enriched to provide insights and add value.

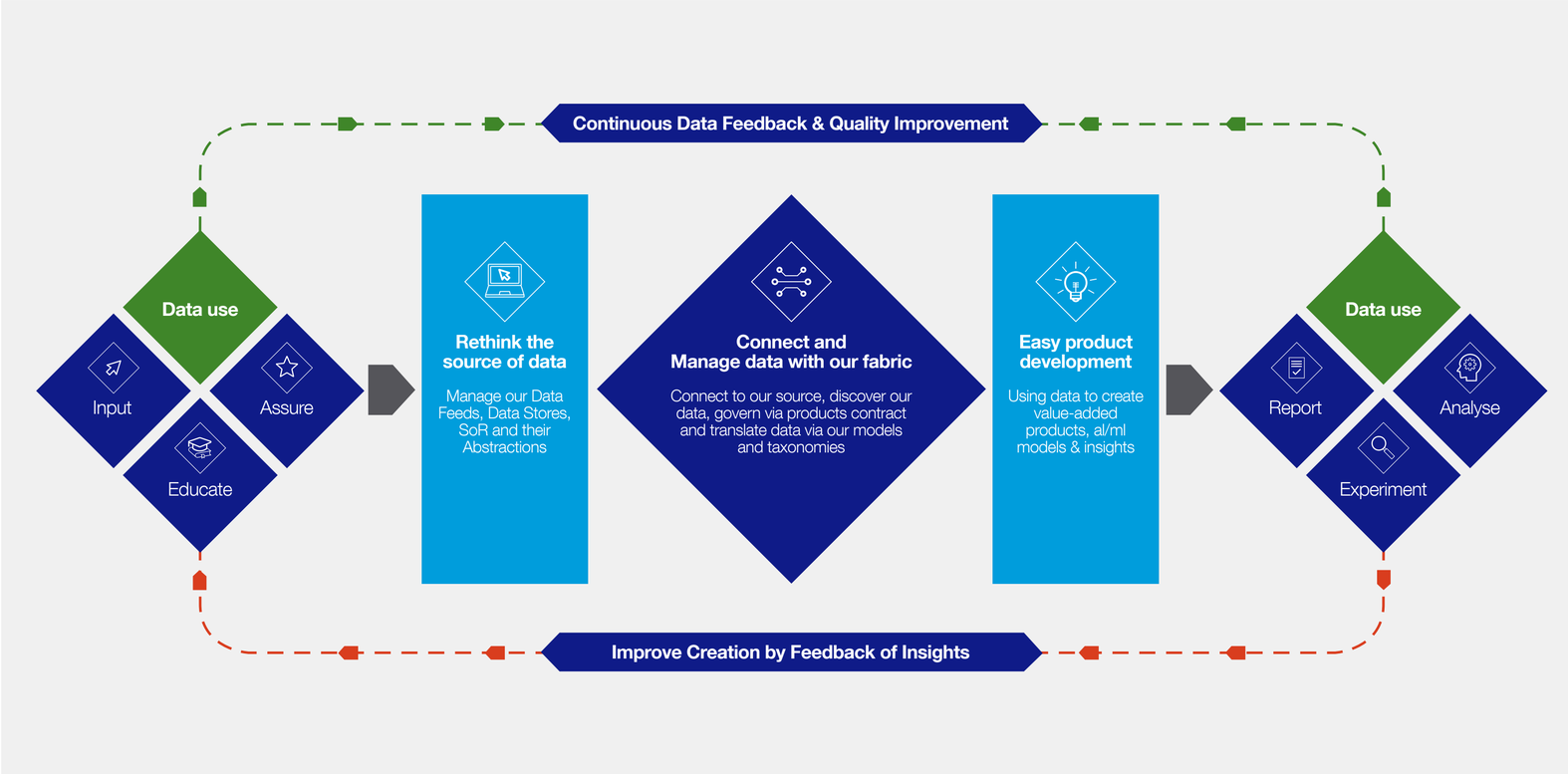
Our progress to date and next steps
Our enablers

Data Fabric

The Data Fabric is the technical platform which will connect, catalogue and provide access to data for data product teams to work and develop upon. The platform will provide full data observability by enabling users to see the entire lifecycle of data from its creation to its consumption.

Further to this, we are engaged with the Energy Networks Association (ENA) to review and align our position to new expectations on data best practices, focusing on sharing and transparency. We have also taken a lead role in the stakeholder subgroup, focusing on interoperability and standardisation to ensure rounded discussion and feedback capture.

Figure 10 Illustration of our how the Data Fabric would work



Our progress to date and next steps
Our enablers

Cyber Resilience

As a responsible business, and as more of our operation and critical national infrastructure is digitalised, we will remain vigilant with cyber protection and adapt to stay ahead of fast-evolving threats. The future of cyber is also about being part of the right communities where analytics can be shared to spot threats before they materialise.

To enhance our cyber protection measures, we continue to adopt innovations such as the use of digital protection and control in substations with the application of digital protocol IEC61850 unlocking a seamless flow of valuable information in a secure manner.

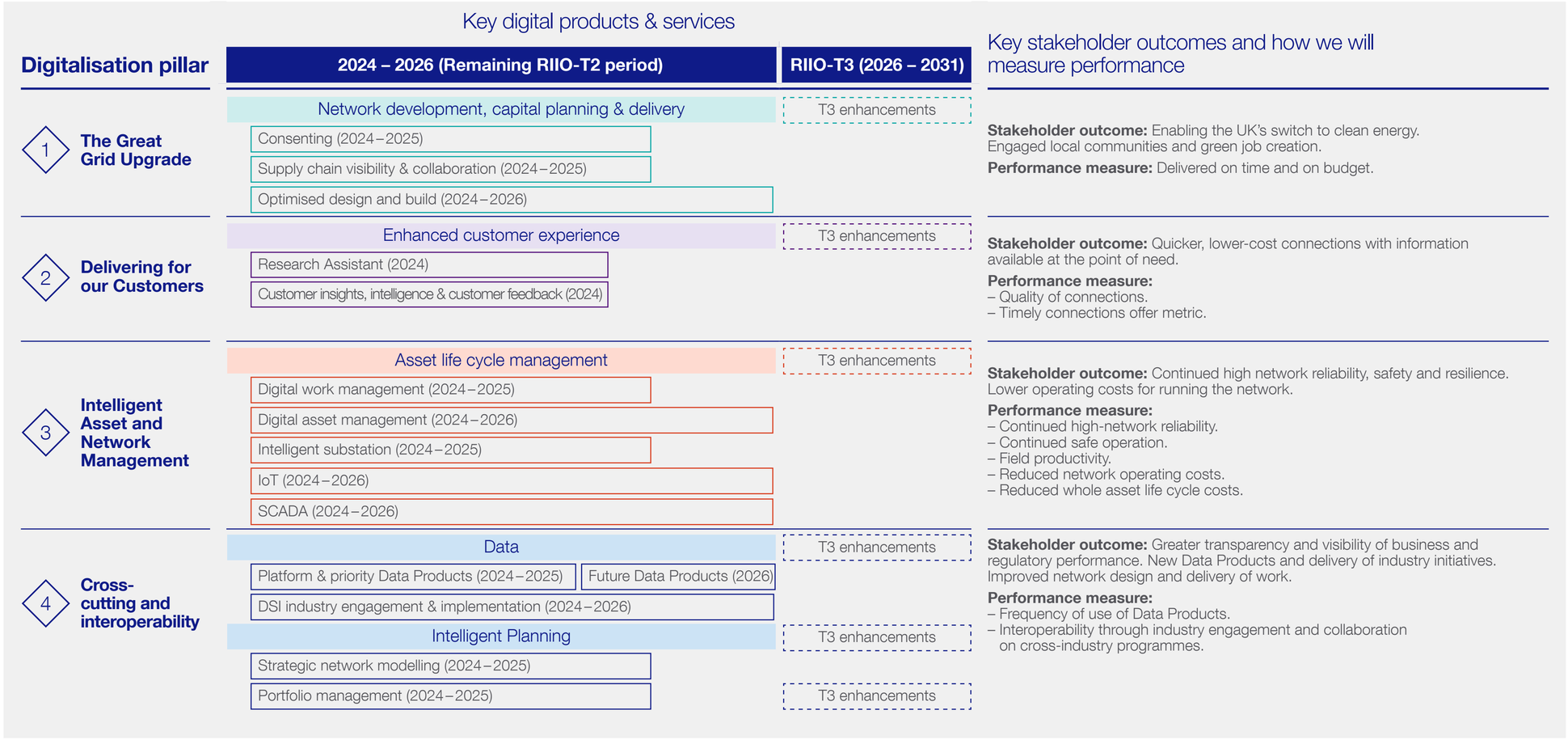
Additionally, we are working on achieving enhanced Cyber Assessment Framework (CAF) profile for critical Network and Information Systems (NIS).

Our progress to date and next steps

Our digitalisation roadmap

Our digitalisation roadmap summarises our key digital products and services that meet our business objectives. We are continuously developing our roadmap in line with stakeholder feedback. The roadmap provides clarity on what we need to do over the rest of RIIO-T2 and how this will create the foundations for further development and evolution in RIIO-T3.

Figure 11 Our Digitalisation Roadmap



Our progress to date and next steps
Our digital products and services

We have included updates on our key digital products and services, outlining progress and next steps since the publication of our previous Digitalisation strategy.

Our progress to date and next steps
Our digital products and services

1 The Great Grid Upgrade

The Great Grid Upgrade is the largest overhaul of the electricity grid in generations. We are building new infrastructure and modernising our existing infrastructure to accommodate the integration of renewable energy sources into the grid.

These projects are crucial to achieving the government's ambition of connecting 50GW of offshore wind by 2030 and achieving net zero greenhouse gas emissions by 2050.

To achieve this, digital will play a fundamental role in ensuring that stakeholders have timely access to crucial information, empowering them to make informed decisions which will accelerate project delivery.

50GW

Amount of offshore wind we will connect to the grid by 2030

The integration of digital products will enhance communication, empower stakeholders to collaborate more effectively, ultimately resulting in improved coordination. Additionally, it will support sustainable construction by facilitating efficient resource management, ultimately optimising project efficiency. Below we have outlined the products and services we are deploying to achieve **Network Development, Capital Planning and Delivery.**

- **Consenting**
  We have been working on digital products designed to optimise and streamline the consenting process.This has involved engaging in pilot programs (to gather feedback and insights which has enabled us to iterate our visualisation capability to support our consenting processes. This has been focused around providing our internal and external stakeholders with as much transparency as possible around our plans to upgrade the network by creating real-world visualisations.

  Next steps: We intend to roll out the successful pilots we have conducted and continue piloting new products to ensure that we remain at the forefront of digital technology.

- **Supply chain visibility and collaboration**
  We are implementing an enterprise collaboration and communication platform designed to enhance communication among supply chain partners.

  Next steps: We intend to roll out the supply chain visibility and collaboration tool beyond the initial pilot organisation and internal audience. Our goal is to onboard relevant supply chain partners as they are contracted and ensure engagement from all appropriate internal team members.

- **Optimised design and build**
  We have started implementing a Building Information Modelling (BIM) tool on our projects to maintain a comprehensive and continuous understanding of our assets and their characteristics.

  This boosts productivity and minimises rework by enabling us to model infrastructure virtually before construction begins. Additionally, we're delivering a Common Data Environment (CDE) as part of the same solution to support the Project 13 methodology. This will enable us and our delivery partners to seamlessly collaborate and share data across projects.

  Simultaneously, we are developing new risk management and planning tools which will enhance our risk management capabilities and optimise our asset maintenance and capital investment planning.

Building Information Modelling (BIM): BIM is the use of a shared digital representation of a built asset to facilitate design, construction, and operation processes to form reliable data and models for decision-making on interventions and construction.

Common Data Environment (CDE): The common data environment (CDE) is a central repository where construction project information is housed.

Next steps: Moving forward, we will continue to advance the implementation of BIM and the delivery of CDE, while further developing our risk management and planning tools.

The scale and pace of the transformation needed over the next decade and beyond is a fundamentally different challenge to what has been done. Our suite of products and services will revolutionise how we design and build a resilient and compliant network. This investment will be crucial in fulfilling our mission of delivering clean, reliable, and affordable energy.

Our progress to date and next steps
Our digital products and services

2 Delivering for our Customers

We are leveraging the power of digital to effectively meet the specific needs of our customers.

- **Customer insights, intelligence, and customer feedback tools**

  In 2023, there was an unprecedented increase in connections applications to our electricity transmission network. To effectively manage the influx of customer applications, we launched our **Offer Wizard** digitalising elements of our offer creation process.

  This automation, combined with streamlined processes, has reduced engineering time per offer by approximately 83%, which is significant when scaled against the increasing numbers of offers.

  Since 2022, the need for improved Customer Experience (CX) has led us to develop 18 purpose-built Customer Relationship Management (CRM) features between 2022/23, with an additional 24 features developed for 2023/24. These CRM features aim to enhance employee enablement by simplifying and automating processes for our teams engaged in customer connections.

The features also improve employee enablement by automating processes for our customer teams and giving full context on all customer interactions.

Next steps: Aligned to the Connections Reform project, which targets reducing connection timescales and boosting transparency, we plan to enhance CX through new technology-led experiences. This approach will enhance transactions with our customers, elevate customer satisfaction and employee engagement and productivity.

- **ConnectNow**

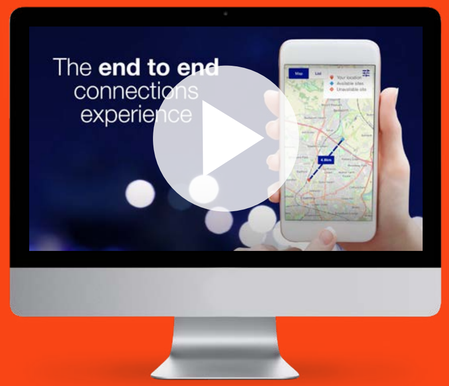
  Our customers have told us that having access to information and managing expectations is important. Through a multi-channel approach, we have provided new digital content and experiences including:

- Updates to the Customer Connection website, adding new content such as news pages, sharing customer connection stories and taking a user-centric approach to navigation redesign.

- Webinars have been introduced to support our customers through the pre-application process. The webinars have been received positively with customer satisfaction scores increasing from 7.35 in FY22 pre-webinars to 7.94 in FY23 for pre-application engagements.

- Since our previous DSAP, we have progressed our work on ConnectNow. Our publicly available ConnectNow **Research Assistant** has made available regional information providing a further channel for our customers to access important content.

- We have introduced analytic functionality on some channels to further understand how our customers and stakeholders interact with our content so we can continuously improve.



Next steps: We will focus on delivering continuous cross-channel experiences by enhancing our channels and content and integrating back-office systems that connect digital customer engagement systems and align with new ways of working.

Our progress to date and next steps
Our digital products and services

2 Delivering for our Customers

- **Solution Lab**

  Since the pilot of our Solution Lab, the digital product which standardises and industrialises the process of developing elements of our customer connections projects, we have developed several applications including:

- Cost and Estimation Tool to increase engineer productivity. This provides standard templates, system integration, improved reporting and editing functionality.

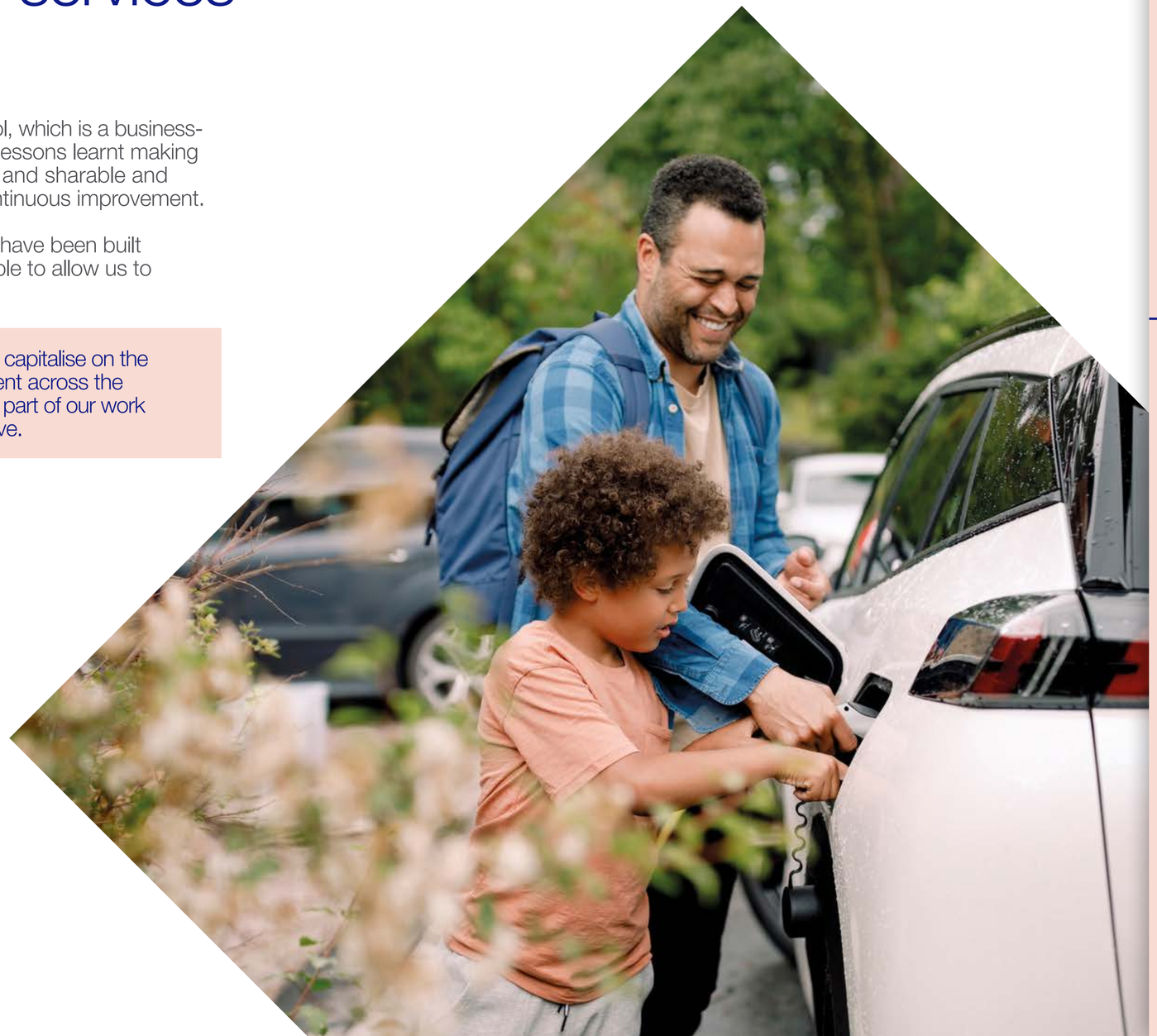
- Integration of the Cost Module, a key component of Offer Wizard, with over 80 standard product templates created. In addition to the time savings in the offer process, the templates drive improved data, consistency, and user experience by automating the back-office administration required for customer offers.

- A Portfolio Management Tool which enables teams to visualise all connection works across sites, aggregating data from multiple systems to a simple user interface with built-in data quality reporting.

- A Lesson Learnt tool, which is a business-wide repository for lessons learnt making lessons accessible and sharable and which supports continuous improvement.

All these applications have been built in a way that is reusable to allow us to efficiently scale.

Next steps: We will capitalise on the capabilities and extent across the organisation to form part of our work management initiative.



Our progress to date and next steps
Our digital products and services

3 Intelligent Asset and Network Management

Further investment is needed to implement Intelligent Asset and Network Management approaches to manage our assets for planning, scheduling, and delivering fieldwork. Instead of reacting to failures after they occur, our focus will shift towards using analytics to anticipate problems, intervening in advance, and developing predictive maintenance programmes that minimise asset downtime. We are developing a range of digital products and services to support our efforts in achieving **intelligent asset and network management.**

- **Digital Work Management (DWM)**
  We have upgraded our Digital Work Management solution to improve productivity for our operational teams. It enables field staff to record in real time work performed, time, and asset data as they progress through tasks. Once a job is done, staff are notified of the next job. DWM eliminates paperwork and travelling time ensuring efficient delivery to support the UK's ambitious net zero targets and guarantees value for money for consumers.

Next steps: We will continue to work with our field teams to streamline the capture of crucial information efficiently while managing the impact of deploying our new enterprise asset management platform and necessary digital work management adjustments.

- **Digital Asset Management**
  Leveraging digital to gain a deeper understanding of our asset performance is vital to making optimal investment decisions. We have created a product which provides decision support for investment/interventions associated with assets that contain sulphur hexafluoride (SF6).

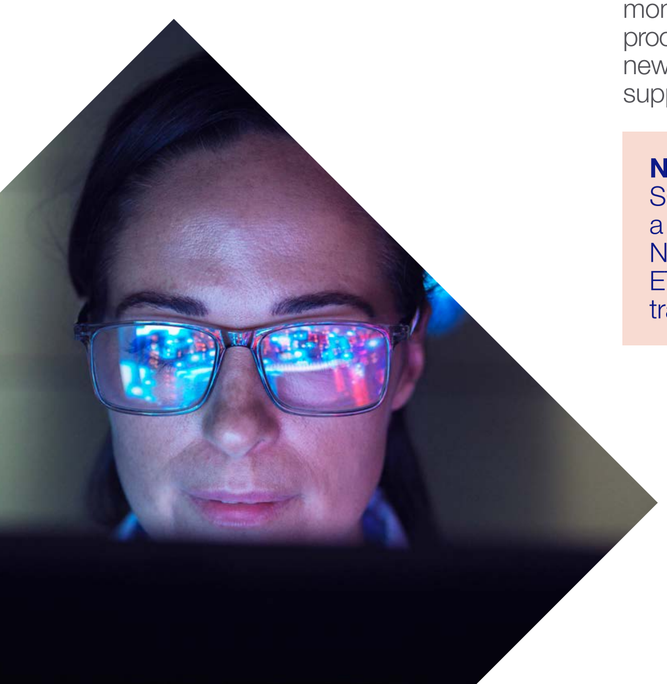
  This product has been used to make decisions around future asset investments, for example replacing the gas-insulated substation (GIS) with an alternative at Sizewell, instead of extending the life of the existing SF6 asset. This product is now an integral part of our asset management strategy, enabling us to access the best information to make the right decisions to minimise our scope one emissions and help us meet our net zero goals.

Next steps: We aim to utilise a digital twin to simulate risks and predict failure modes to improve planned interventions. Digital twin will be developed during the RIIO-T3 period to ensure we make optimised decisions about our network.

Our progress to date and next steps
Our digital products and services

3

Intelligent Asset and Network Management



- **SCADA**
  We are building a new Supervisory Control and Data Acquisition (SCADA) system to support the separation of the NGET and ESO businesses. SCADA provides connectivity between operational sites and control centres to allow the operational management and control of the Electricity Transmission Infrastructure. Our future requirements are for a new SCADA and Safety Management System to replace the current SCADA platform.

  The new platform is a modern modular and flexible platform that offers real-time monitoring and control applications processes. This will allow us to leverage new technologies and integrations to support the future direction of NGET.

  Next steps: We will introduce the SCADA programme which will deliver a control solution independent from NESO, to maintain and further develop ET's capability to control the electricity transmission assets.

- **Intelligent Substation Blueprint**
  We are developing an intelligent substation architecture to transform its operations and meet the needs of a changing market and net zero goal.

  The implementation will focus on digitisation, interoperability, automation, observability, and predictive maintenance. Digitisation will replace analogue measured data with digital data, enabling real-time sharing between devices and substations.

  The intelligent substation architecture demonstrates our commitment to leveraging advanced commodity technologies to optimise operations, improve decision-making, and enhance cybersecurity. The project will improve efficiency, asset utilisation, and overall safety and security, and work with other organisations.

  Next steps: We will be finalising the specifications, building, and the use cases with the business and progressing trials.

- **Internet of Things**
  Our Internet of Things platform will enable the collection of asset performance and condition data.

  Next steps: During RIIO-T2, we will connect sensors to our assets for enabled condition monitoring and interventions, increasing productivity through higher data frequency and easier data collection. This will bolster cyber resilience, automate tasks, mitigate risks, and predict issues more effectively.

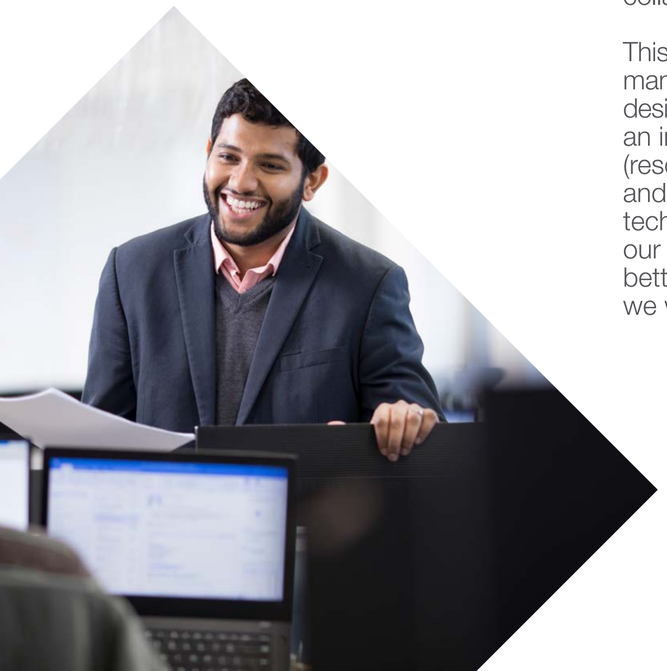
  We will establish a proof-of-concept Internet of Things (IOT) platform with connected assets feeding into a central source to allow data to be received and actions formulated from real-time information.

These solutions will result in reduced maintenance cost and more informed asset management decision-making providing our stakeholders with confidence that the interventions made are cost-efficient and justified.

Our progress to date and next steps
Our digital products and services

4

Cross-cutting and Interoperability



We are also working on numerous digital products and services which span across our objectives, to achieve **Great Grid Upgrade, Delivering for our Customers,** and **Intelligent Asset and Network Management.**

- **Intelligent Planning**
  Delivering work on the Electricity Transmission network is becoming increasingly complex. Balancing asset management, network reinforcement, and customer connectivity, while maintaining reliability, requires a fresh approach for our whole-system collaboration.

  This involves transforming our portfolio management approach to optimise the design of our work on the network amidst an increasing number of constraints (resource, system access, supply chain and many more). By leveraging modern technology, including AI, we can support our teams and the wider industry to make better decisions about where and when we work.

Next steps: We will build out the foundations for these capabilities with plans to use next-generation technology such as AI to drive and optimise our portfolio of work during the next regulatory period.

- **Data**
  The Data Fabric is central to our data strategy. It is the technical platform which will connect, catalogue and provide access to data for product teams to work and develop data and Data Products. The Data Fabric will not only facilitate continued development and value creation of realised Data Best Practices, but also establish a future-proofed, connected platform and data content. This platform will provide continued consumer value by ensuring faster, open, and user-friendly access to all the Data Products.

  As the energy system becomes increasingly decentralised, with more factors and assets than ever before, interoperability becomes crucial.

We are collaborating with the Data Sharing Infrastructure (DSI) team to ensure that the Data Fabric which we are developing seamlessly integrates into their infrastructure.

This will ensure that any Data Products which are requested through the DSI can be created and connected with ease. In addition, through our Data Fabric architecture, we have created patterns that enable connectivity to internal and external data sets.

Next steps: The outcome for internal users, consumers, and the wider industry, will be access to open data licensed products necessary to fulfil our strategy, Ofgem's Enhanced Data Best Practice and Energy Data Taskforce's recommendations.

Our progress to date and next steps
Risks and mitigation actions

Digital transformation represents a fundamental shift; we acknowledge it comes with its share of challenges. However, we recognise we are not alone on this journey. We are actively seeking insights from our ecosystems, drawing on lessons learned to proactively anticipate and mitigate risks and potential impacts.

Table 2 Key digitalisation risks and mitigations

Key risks	Potential impact	Mitigation
Our cultural change programme is not successful	There are delays to the delivery of our digital products and services, and we don't realise the full value for our stakeholders	Engage early with our people and break the change into small increments. Be willing to listen and adapt to feedback
Governance holds us back and we do not realise the full value of digital investments		Refresh our governance based on lessons learnt from others to enable digitalisation
We do not fully understand the priorities of our stakeholders	We deliver products and services that do not meet our stakeholders' needs. There are some stakeholders without equal access to our services	Continuous stakeholder engagement through a variety of channels. Ensure we reach a diverse range of stakeholders
Lack of industry collaboration	Costs are higher as learnings are not shared, products and services have overlapping functionality, and cannot be used with other products and services	We will take a leading role in bringing different organisations together using digitalisation to break down boundaries and siloes
The level of digital change cannot be absorbed by the business	Higher costs, and lower realisation of benefits. Loss of value for our stakeholders	Engage with stakeholders to prioritise most pressing needs and co-develop solutions
We do not manage our data adequately, missing value		Refresh our data strategy and put strong data governance in place, prior to using data for insight and sharing with our stakeholders
Increased digital footprint places greater focus on the link between technology and resilience	Loss of data or interruptions to business operations, causing impacts to the services we provide to our customers	We continue to invest in our cyber capability. Run simulated attack and response exercises
We are not able to attract the right talent, or develop the right skills	We are left behind and cannot deliver all our digital products and services. Potential impact on existing workforce morale and retention	Use a variety of talent pipelines and invest in allowing our people to develop new skills
The development of generative AI presents security, legal and ethical risks	New AI systems are adopted hastily without full evaluation of the potential risks and unintended consequences	We have introduced a comprehensive Gen AI internal policy, which includes staff training and a detailed due diligence process before new AI systems are adopted

Whole System Collaboration

Electricity Transmission

Learning from others is crucial for our digital transformation. Since our previous DSAP, submitted in 2022, we have spent more time reviewing relevant case studies from other adjacent sectors and organisations of our scale.

Whole System collaboration
Learning from others

Below we have included some of the case studies, delving into the context, scope and lessons learned.

These digital transformation initiatives have provided us with valuable insights to enhance our digital journey. We have also engaged with information technology/technology leaders in this space such as Microsoft, Intel, Iberdrola, and Google to understand how we can improve our digital transformation.

Table 1 Case studies informing our digitalisation strategy

Case Study	**Suedlink** Digital Backbone	**Openreach** Agile Transformation	**BP** Data-Driven Decisions	**Tideway** Digital Collaboration	**Petrofac** AI & Analytics
Context	Suedlink is one of the largest capital projects in Europe. It will deliver 700km of underground transmissions cables to bring renewable energy into Germany, in line with Germany's 80% renewable target by 2050.	Openreach are responsible for rolling out next-generation fibre infrastructure across the UK. They operate in a highly regulated environment.	BP have set an ambition of being a net zero company by 2050. They are undergoing a significant business transformation away from fossil fuels.	Tideway is constructing a new 25km sewer tunnel under the river Thames to prevent millions of tonnes of raw sewage from spilling into the river each year.	Petrofac sought to revolutionise their approach to delivering upstream operations, engineering, and construction services.
What they did	Suedlink invested in a digital backbone built on leading technology platforms and data integration to reduce Grey IT and deliver better data visibility.	Openreach used innovative, agile ways of working to deliver significant efficiencies in their core business to reinvest in the fibre roll-out.	BP are using a data-driven approach to 'reimagine energy'. They have made significant investments in data governance, data science and analytics.	Engineering, Procurement and Construction (EPC) teams seamlessly used 3D models for construction planning, design reviews, and a shared data environment, fostering efficient collaboration.	Petrofac are leveraging AI-powered dashboards, insights, and predictive analytics to improve asset uptime and drive cost reductions in operations.
Relevance to NGET	Taking an end-to-end view across business processes and customer journeys is key. A digital backbone helps integrate things together for better outcomes.	Digitalisation is as much about new ways of working as it is about technology. Digital culture should be at the centre of transformation.	Data is crucial to digital transformation, and it requires time, effort, and patience to unlock value from organisational data.	NGET is rapidly building new infrastructure. Collaborative practices and digital tools are essential for efficient coordination, meeting deadlines, and optimising costs.	Digital technologies can streamline our operations, provide real-time insights, enhance infrastructure reliability, and reduce the need for manual interventions.
How this has informed our strategy	We are investing in digital platforms and taking an end-to-end view. For example, we have transformed our customer journeys. We will integrate better across our organisation.	We have a clear focus on building a digital culture in our strategy. We will equip people with new skills, recruit new talent.	We are making investments in data platforms, such as our cloud data platform and open data portal. We are refreshing our data strategy.	To facilitate coordination across projects, we will embrace agile methodologies and utilise emerging technologies to ensure the implementation of best construction practices.	We are leveraging advanced technologies such as AI to create a more intelligent grid. This will enhance the reliability and resilience of our infrastructure whilst minimising cost for our consumers.

Whole System collaboration
Working with others

We recognise the importance of not only developing digital products and services but collaborating across the industry to realise our shared ambition.

Whole-system solutions across the ecosystem

Energy systems are complex, and one component can trigger significant outcomes throughout.

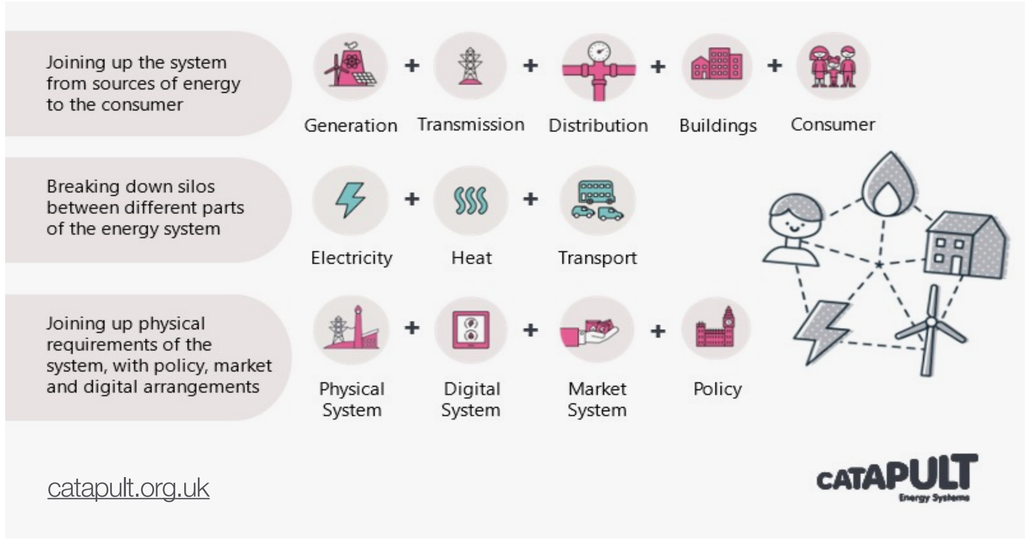
Energy systems are complex, and one component can trigger significant outcomes throughout. Without a whole-system understanding of the interconnected elements, there is a heightened risk of costly disruptions, system unreliability, and dissatisfied consumers.

Prioritising interoperability between the components in the system – electricity, gas, transmission, distribution and between energy networks and other parts of our public infrastructure – will accelerate progress towards net zero.

Our stakeholders have told us they want us to prioritise facilitating the whole energy system of the future and be innovative. With this in mind, we are collaborating with electricity transmission and distribution to tackle the UK's connections queue and fully support the actions set out in both the Government's Connections Action Plan and the ENA's Action plan for electricity distribution.

Digitalisation is a key enabler for whole system solutions. Currently, we are working closely with the Electricity System Operator (ESO) and a range of industry participants on the proposed 'Virtual Energy System' – a full digital replica of Great Britain's energy grid. Our data is a key building block for the solution given that we own and operate the transmission network across England and Wales. We are currently participating in the Data Sharing Infrastructure (DSI) pilot program, focusing on a select few essential products.

Once developed, the Virtual Energy system will empower stakeholders to extract insights that will improve network planning, operations, and drive innovation, ultimately reducing costs for customers. We are already working on our own data platform product (See section, Trusted, available and secure data) which will create the foundation for interoperable industry-wide products.



Whole System collaboration
Working with others

Partnerships to enable net zero delivery

Presently, we are leading numerous major capital projects as part of the Accelerated Strategic Transmission Investment (ASTI) framework, including both onshore and offshore network infrastructure.

For onshore work, we are using the Enterprise Delivery Model (EDM) guided by the UK's Project 13 framework, with the aim to create a collaborative partner ecosystem underpinned by long-term relationships where participating organisations are incentivised to deliver outcomes and leverage their full supply chain capabilities.

Offshore delivery is approached through Joint Venture (JV) arrangements that will have significantly different delivery, regulatory, digital and data requirements through the Scottish Hydro Electric Transmission (SHET) and Scottish Power Transmission (SPT).

Both the EDM and JV constructs will allow us to move at pace, foster innovation, and put value enablement at the core of why and what we deliver. To unlock the required level of collaboration, information-sharing and realise the potential of the EDM and JV, digital is not only an enabler, but a critical factor.

Digitalisation will unlock key benefits such as:

- Transparent, reliable, actionable, and trusted information through the development process.
- Acceleration via improved governance, visibility, and informed decision-making.
- Clarity of impacting assumptions, risks, and issues with allowing for proactive mitigation.

Whole System collaboration
Working with others

Innovation to transform the way we work

Innovation will play a fundamental role in our journey to achieving net zero and collaborating with partners will accelerate our progress to this goal. We have grown our portfolio of innovation projects, expanded our innovation team, and increased engagement with our stakeholders.

We have expanded our innovation team to manage the growing number of live projects we are progressing. Our efforts have been widely recognised, notably earning us the Gold Award for Best Innovation in Net Zero and Sustainability at the annual IET E&T Innovation Awards. Additionally, our joint paper with the University of Manchester was recognised as the best paper in study committee A3 at the 2022 CIGRE Paris Session.

We are working on a range of innovation projects with multiple project partners across the industry. Collaboration and partnerships are a key part of our digital future integrating innovation:

- **Autonomous Aerial, Thermal Inspections of Substations project:** Using drones and Artificial Intelligence to monitor the thermal condition of substations. This will help us improve our understanding of the condition of our assets and failure modes. For this project, we partnered with HEROTech8 and Frazer-Nash Consultancy and worked closely with the Civil Aviation Authority to obtain a BVLOS licence and fulfil other regulatory requirements for drone operation at Deeside Centre for Innovation.

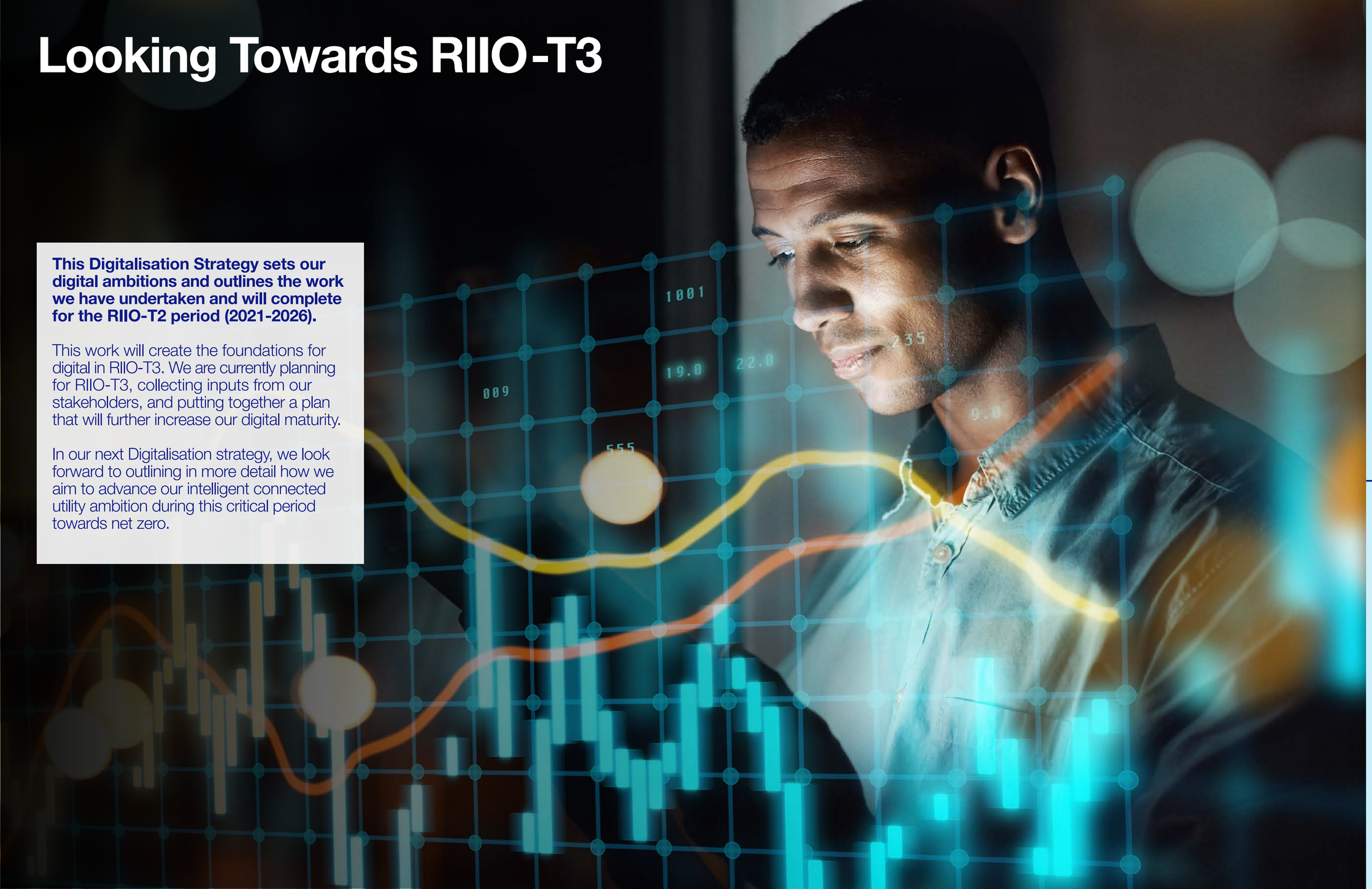
- **Eye in the Sky project:** Using satellite data analytics solution to improve grid resilience. These have the potential to help networks improve the visibility of infrastructure and assets and emergency response, while assessing the effects of climate change effects, such as flooding, strong winds, snowstorms or wildfires. For this project, we have partnered with NGGT, Spottitt, European Space Agency and Cranfield University.

- **Super Conductor Application for Dense Energy Transmission (SCADET) project:** Develop an understanding of the barriers, opportunities, and benefits of replacing conventional cables with the use of high temperature superconductor cable technology to increase network capacity. For this project, we have partnered with Western Power Distribution (WPD), SPT, UK Power Networks (UKPN), Ofsted, Nexans, American Superconductor (ASMC), Frazer-Nash Consultancy, Strathclyde University and University of Manchester.

- **Deeside Centre for Innovation:** We have converted a decommissioned substation into a unique research and innovation facility. This is the first of its kind in Europe, where assets associated with electricity networks can be investigated, tried, and tested, prior to being rolled out on live transmission and distribution system.

Over the past two years, our innovation team has experienced significant growth. Innovation remains key in our mission to decarbonise the energy system whilst in parallel ensuring reliability and affordability. We are enthusiastic about exploring new opportunities and forging strategic partnerships with leading organisations to stay ahead of new developments and digital solutions.

Looking Towards RIIO-T3



This Digitalisation Strategy sets our digital ambitions and outlines the work we have undertaken and will complete for the RIIO-T2 period (2021-2026).

This work will create the foundations for digital in RIIO-T3. We are currently planning for RIIO-T3, collecting inputs from our stakeholders, and putting together a plan that will further increase our digital maturity.

In our next Digitalisation strategy, we look forward to outlining in more detail how we aim to advance our intelligent connected utility ambition during this critical period towards net zero.

Appendices

Appendix A:
Our approach to stakeholder engagement

We are continuing to invest in capturing and analysing data about how stakeholders interact with our data, processes, and systems on a day-to-day basis to better inform how we plan our business and create and deliver tailored services and products.

We continue to use the five principal areas identified from the Independent User Group (IUG) publication throughout RIIO-T2 but we continue to engage to ensure we meet customer needs in the remaining RIIO-T2 period.

Table 4 Digitalisation strategy 'You said – We did'

You said	We did
Clearer purpose and objectives that are externally focused. We recognise the need to map our strategy to the objectives of our stakeholders and clearly articulate our organisation's vision for data and digitalisation, with the benefits it brings our stakeholders.	We have worked closely with our internal teams and external partners in defining our vision of what an 'Intelligent, connected utility' means to us and our stakeholders. We have included three pillars in our updated strategy that are underpinned by continuous stakeholder engagement and strong governance and cybersecurity, to be able to meet our stakeholders' priorities.
Benefits for different stakeholders Our IUG challenged us to set out how our digitalisation strategy will offer wider benefits beyond cost efficiency and consider social value.	The digital products and services, outlined in our digitalisation roadmap, are essential for delivering valuable benefits to our stakeholders. These benefits can be found below: • **'The Great Grid Upgrade'** will enable the UK's switch to clean energy. • **'Delivering for our Customers'** will enable quicker, lower-cost connections with information available, at the point of need • **'Intelligent Asset & Network Management'** will facilitate continued high network reliability, safety, and resilience and lower operating costs for running the network. • **'Cross-cutting & Interoperability'** will provide greater transparency and visibility of business and regulatory performance. Development of new Data Products need and delivery of industry initiatives. Improved network design and delivery of work. We are currently engaged in a variety of innovation projects, aimed at delivering broader benefits beyond cost efficiency. These initiatives include Sulphur Hexafluoride (SF6) Whole Life Strategy project which involves devising a long-term strategy to reduce our dependency on SF6, a potent greenhouse gas that is 23,000 times more harmful than CO_2. Additionally, we have explored the potential of Cemfree, a unique cement-free binder mix with a CO_2 footprint five times lower than conventional concrete (see section Working with others for more information)

Appendix A:
Our approach to stakeholder engagement

We are continuing to invest in capturing and analysing data about how stakeholders interact with our data, processes, and systems on a day-to-day basis to better inform how we plan our business and create and deliver tailored services and products.

We continue to use the five principal areas identified from the Independent User Group (IUG) publication throughout RIIO-T2 but we continue to engage to ensure we meet customer needs in the remaining RIIO-T2 period.

You said	We did
Downstream digital data system Our stakeholders have asked us to outline how we will work with downstream systems (i.e. Distribution System Operators, embedded generation, storage demand [e.g. rapid chargers etc.] connected to the distribution networks) to digitally connect to the wider system, and how we can support them in consuming our data and digitalisation services.	We published our Whole System Strategy in March 2021 and an updated one in June 2022. We have been engaging with our stakeholders, including other networks and local authorities, to undertake pilot projects to establish our whole system working processes and procedures. We are developing data-sharing practices between different entities to jointly evaluate solutions and establishing governance approaches to agree whole system solutions across different businesses. We are also collaborating with other licensees through our innovation projects such as Sustainable Electrical Gas Insulated Lines (SEGIL) and SCADENT which partners with a variety of organisations such as Scottish Power Transmission, General Electric, the ESO, Orsted, University of Manchester, Strathclyde University, UKPN, and others. We have also partnered with Energy Innovation Centre (EIC) where we will work towards a future that provides a decarbonised energy network that is safe, reliable, and resilient, delivering value for customers and society.
Applying best practices The IUG challenged us to benchmark and compare and learn from other organisations.	We recognise the progress other organisations have been making in their digital transformation and are continually learning from them. We have reviewed case studies from other relevant organisations to inform our approach, including in telecommunications, water, and oil and gas. Reviewing the latest best practice and lessons learned from organisations on building out digital foundations, digital culture, importance of data and how digital can enable better collaboration. In addition, collaborating with our peers on our strategic innovation projects and whole system solutions has facilitated extensive knowledge sharing, which has enriched our process of identifying and implementing best practices.
Business Transformation We recognise the need to reshape our business processes and align stakeholder insight with our business decisions.	Internally we have facilitated workshops with each business unit in our entire organisation to understand current business constraints and have worked together with the digital community to identify how these problem areas could be resolved. New products and features have been estimated at a high level, with information on value/business benefits being overlaid.

Appendix B:
Links with our other strategy documents

Delivery of our stakeholders' priorities is supported by a range of supplementary strategies, documents, and reports which form part of our RIIO T-2 business plan (2021–2026).

The table below provides an overview of how our digitalisation strategy complements our other strategies, documents, and reports. It demonstrates how our initiatives come together to enable the delivery of our business plan commitments:

Table 5 Alignment between our RIIO-T2 business plan and digitalisation strategy

Strategic priority	Supporting document	How our digitalisation strategy enables key data and strategic priorities
Enable the energy transition for all	Responsible Business report	• **Climate Change data:** We provide extensive data on our performance through public submissions to Climate Disclosure Project (CDP) and many other ESG disclosures to investors. We will develop our climate change data capability over the 2021–2026 period. • **Circular Economy, Waste Management:** We aim to improve our waste data capture over time.
Enable the energy transition for all	Environmental Action plan	• We have been at the forefront of the global development of low-carbon alternatives to SF6, and we will continue to drive industry by sharing our expertise, data, and tools. • In collaboration with our Commercial and Portfolio, Business Planning and Net Zero Engineering teams, the Asset Operations' Data Product team have been able to successfully develop a SF6 data product to help inform our investment decision-making around managing SF6 containing assets. This has helped to justify future investment in potential assets, for example replacing the gas insulated substation (GIS) with a non SF6 alternative at Sizewell, instead of extending the life of the existing SF6 assets. The SF6 data product has become central to our asset management strategy, enabling us to access the best information to make the right decisions to minimise our scope one emissions and help us meet our net zero goals.
Deliver Efficiently for our customers	Resilient Whole System approach	• We will continue to maximise the capacity and interactions of our energy systems using smart digital technology, enabling supply and demand to interact with the system more flexibly, to enable net zero. • We are developing common approaches, forums, and data sharing to enable the whole system solutions to be delivered at pace. • We will collaborate with local authorities and government to deliver coordinated plans that will help decarbonise GB.

Appendix B:
How our digitalisation strategy, objectives and enablers align with our other strategies

Delivery of our stakeholders' priorities is supported by a range of supplementary strategies, documents, and reports which form part of our RIIO T-2 business plan (2021–2026).

The table below provides an overview of how our digitalisation strategy complements our other strategies, documents, and reports. It demonstrates how our initiatives come together to enable the delivery of our business plan commitments:

Strategic priority	Supporting document	How our digitalisation strategy enables key data and strategic priorities
Deliver Efficiently for our customers	Innovation strategy	• We will continually engage with stakeholders to identify which data and information provides the greatest opportunity and seek to find ways to make this available. • We have been successful in winning funding in the Strategic Innovation Fund for Innovation projects. • We recognise that there is more that we can do when it comes to sharing our data. Open data will drive innovation and unlock additional opportunities for value. • We will develop tools and techniques that allow the digitisation of many of our processes, and overall management of data, as well as exploring the application of artificial intelligence across many of our activities.
Empower our people for great performance	Responsible Business charter	• We anticipate a greater need for people skilled in data analytics and artificial intelligence to manage more complex grid flows, manage customer interactions needed to leverage demand-side management, and support piloting and scaling of new technologies such as hydrogen and heat pumps. This need for new skills will be partly met through our community initiatives such as Grid for Good.

Appendix C:
Data best practice

Our business processes use data sourced from multiple systems. Digitisation of data and provision of open data to our stakeholders requires governance and consistency. Our cloud data platform will integrate our data assets using the techniques defined by the Energy Data Taskforce and our internal business system standards, integrated into our data lifecycle. This includes but not limited to data best practice and data management standard.

We've made progress against our three strategic enablers. For more information on the progress of our initiatives, please refer to our latest action plan. We will continue to engage and collaborate with our stakeholders to understand their data needs, raise the awareness of our publicly available data, and consult on how we can improve and expand both data and provision of it. Below is the progress and plan we have with each of the associated Data Best Practice Principles:

Table 6 Our application of the data best practice principles laid out by Ofgem

Ofgem's Data Best Practice Principles	Progress and planned approach
Identify the roles of stakeholders of data assets	We will capture stakeholder needs and information within our data catalogue and use it to inform our subsequent work and future stakeholder engagement. We are establishing a decentralised data ownership model that is built around relevant and fit-for-purpose roles and responsibilities driven by the Data Best Practice principles and our Data Management Standards. Our participation in the Data Sharing Infrastructure ensures that we adhere to best practices for data governance, in order to facilitate whole system collaboration.
Use common terms within data, metadata and supporting information	To enable our stakeholders to search and utilise the datasets across the organisation, we are implementing a data fabric that further develops the data catalogue where they can search the data they need, understand how to access it, and how to use it. By combining a persona-aware data portal with dynamic security access, we can create a customised attribute-based access to the same Data Product, internally and externally with different views depending on what, where, and who is accessing the data.
Describe data accurately using industry standard metadata	We are adopting multiple models where the primary model we are using is Dublin Core 'Core Elements' metadata standard (Dublin Core) ISO 15836-1:2017 which we have adopted for metadata.
Enable potential data users to understand the data assets by providing supporting information	As we are moving towards a Data Product-centric organisation, we will engage with our stakeholders on the Data Products which they are interested in and consult on the supporting information they would require alongside them. We will provide access to the data to enable self-service, so the products can be used as needed. Each Data Product has a data contract which will contain important details such as a description of the Data Product to ensure that our users can understand the data provided to them. On the Data Portal, users will have the option of contacting the data owner and if necessary, make requests for additional information or data.

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Ofgem's Data Best Practice Principles	Progress and planned approach
Make products discoverable to potential users	We are already engaged as part of the ENA's Energy Data Request Tool, with a data triage process in place to ensure we can be as open as possible in response to requests, without introducing unacceptable levels of risk to critical national infrastructure. The Data Fabric will have a Data Portal which refers to the externally facing website which will be developed to provide users with access to NGET's data. This will enhance discoverability and transparency by providing users with access to Data Products which are readily available for consumption.
Learn and understand the needs of their current and prospective data users	We will maintain a log and use this insight to develop our data sharing and digital service offerings.
Ensure data quality maintenance and improvement are prioritised by user needs	The establishment of the data fabric platform will help us improve our data quality metrics as it builds in data quality against products. Each Data Product will have a data contract, which ensures that every product is built to the required standards and against prescribed governance and data practices. These data contracts will contain information on the Quality Assessment criteria. Additionally, our Data Product customers will be able to submit feedback on the Data Portal, enabling us to actively monitor the data quality associated with each Data Product. These efforts will lead to accelerated improved developments of Data Products.
Ensure that data is interoperable with other data and digital services	We work with peers in the energy industry and continue to work to ensure that we all adopt standards which enable this interoperability in our shared data and digital services (See Working with others section for more information).

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Data best practice

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Ofgem's Data Best Practice Principles	Progress and planned approach
Protect data and systems in accordance with Security, Privacy and Resilience best practice	We have robust data compliance policies and guidelines in place to ensure security, privacy, and resilience of our data. For example, we follow compliance with the UK 'General Data Protection Regulation' as well as internally adopted 'Records Management Policy'. In addition, our data management standard ensures that we apply relevant local data protection controls, resilience and disaster recovery techniques, and incident management plans for our business-critical data. In 2023, we actively engaged and responded to Ofgem's enhanced Data Best Practice (DBP) consultation which has informed the development of our data strategy and roadmaps. We updated our data product roadmaps to reflect the guidance given in a revised industry data standards publication. Alignment to these standards means we remain compliant in how we share, integrate, and use data for stakeholder benefit.
Store, archive and provide access to data in ways that maximise sustaining value	Our data management standard provides us with guidelines for how we archive, retrieve, and delete the data at the end of its lifecycle. The key techniques that we use include data criticality categorisations, data security classifications, data consumer details, retention period, and method of disposal and retrieval. In July 2023, we adopted a single Stakeholder Relationship Management (SRM) system to better organise the data we store on our customers and interactions with them.
Ensure that data relating to common assets is Presumed Open	We have been publishing our transmission network data on our website to demonstrate our developing alignment with the 'Presumed Open' principles.
Conduct Open Data Triage for Presumed Open Data	We will complete formal triage assessment for sharing of 'Presumed Open' data, both internally and externally.

Appendix D:
Embedding digitalisation strategy and action plan guidance

Ofgem provided feedback at a group level to all networks involved in the RIIO-2 process and directed feedback to us in December 2023. This feedback has been addressed in this latest iteration of the DSAP.

The table below describes how we addressed Ofgem's feedback and how we intend to embed Ofgem's Digitalisation Strategy and Action Plan Guidance principles into our wider engagement strategy.

Table 7 Our engagement strategy alignment with DSAP guidance

Digitalisation strategy action plan Ofgem guidance principles	Ofgem 2023 Feedback	How we have applied this in our strategy and addressed the feedback
• Prioritise providing benefits to the stakeholders who pay for the products and services as well as benefits that are in the public interest	• Provide examples of feedback from stakeholders to demonstrate validation and assurance of products and services. • We could do more to reflect the needs of digitally excluded stakeholders	Creation of personas to understand strategic priorities, mapping benefits of our products and services to these personas and ensuring wider stakeholder teams are informed (See section titled Our Enablers for further details). We have included a digitally excluded persona to consider when developing our Products and Services and have outlined our approach on how we include the digitally excluded in our product development. Further to this, in Appendix E we have included a summary of comments captured by stakeholders in our latest engagements in 2023 mapped to the personas, demonstrating our commitment to continuous engagement.
• Ensure products and services work towards a defined vision	• Provide links to Products and Services to gather further information.	We have a defined vision of becoming an 'Intelligent, connected utility' (See Our vision, strategic priorities, and values). We have updated our objectives to better align with the work we are doing to 'The Great Grid Upgrade', 'Delivering for our customers' and 'Intelligent asset and network management' and have mapped our digital products and services against these.

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Digitalisation strategy action plan Ofgem guidance principles	Ofgem 2023 Feedback	How we have applied this in our strategy and addressed the feedback
• Take full advantage of opportunities to deliver benefits early and to iterate improvements to products and services	• An effective DSAP should show how benefits can be delivered as early as practical and where benefits can be delivered incrementally throughout the development life cycle of products and services.	We have included details about our digital products and services in the section titled Our Digital Products and Services.
• Enable stakeholders to understand the products and services, the status of their delivery and how to access them	• Use multiple milestones, individually marked with colour codes, to show the progress of the Products and Services.	We undertake regular engagement through various channels to test and educate stakeholders on products and services. In our Digitalisation Roadmap, we have highlighted the milestones across our digital products and services to provide a view of our progress.
• Ensure visibility about the nature and status of actions in the Digitalisation Action Plan	• Outline products and explain how successful delivery of the actions will adapt current Products and Services required to deliver the DSAP vision. • Give access to an archive where more information can be sought for actions completed or no longer planned.	We ensure our Digitalisation Action Plan is kept up to date and there are links to our previous action plan and digitalisation strategy here.

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The table below describes how we addressed Ofgem's feedback and how we intend to embed Ofgem's Digitalisation Strategy and Action Plan Guidance principles into our wider engagement strategy.

Digitalisation strategy action plan Ofgem guidance principles	Ofgem 2023 Feedback	How we have applied this in our strategy and addressed the feedback
• Ensure there is shared understanding of success and performance is measured	• Explain what success looks like and what the performance metrics are across accelerated delivery of new, renewable capacity and faster, cheaper network connections for Products and Services. • Summary of feedback gained from stakeholders on any changes to the success and/or measures in advance of these changes.	We have provided a summary of what success looks like for us and for our stakeholders in Appendix F: What success looks like. Summary of feedback obtained from our stakeholders has been captured in Appendix E: What our stakeholders have told us.
• Coordinate with the wider ecosystem of products and services	• Update on how NGET works with their peers in the energy industry to ensure that they adopt standards which enable interoperability in their shared data and digital.	We are engaging in strategic collaborations with our peers to facilitate extensive knowledge sharing, crucial for the journey towards achieving net zero. (See Working with Others section.)

Appendix E:
What our stakeholders have told us

In 2023, we organised a series of regional listening events across the country to actively engage stakeholders.

These sessions provided a valuable opportunity for us to understand stakeholders' perspectives on key themes, including the scale of the net zero ambition, challenges they are facing, and what they need from energy networks to support their net zero ambition. Below, we have outlined the feedback received from each persona group and our corresponding response.

Table 8 Summary of stakeholder feedback

Stakeholder Persona	Their Comments	Our Response
Consumers	• Having access to information and managing expectations is important.	See Delivering for our Customers section for all the work we have done and are undertaking to enhance customer experience.
Connecting Customers and Energy Insiders	• From a planning perspective, it is crucial to have access to open and accurate data. • Greater transparency around grid queue to ensure access to the necessary information to inform decision making.	We are developing a Data Portal Infrastructure (Data Fabric) which will enable the creation, enrichment and access to data ensuring that consumers have full visibility of available insights. It will provide our stakeholders with simple, direct, and easy to access data and information.
Innovative Thinkers	• Data accessibility must be enhanced, and once published, the datasets must be accurate for practical utilisation. • Holistic approach to data sharing and planning across the ecosystem is needed.	Our pivotal role in developing a Virtual Energy System will grant stakeholders across the ecosystem access to integrated data and modelling capabilities. This will enhance data-driven decision-making for both investments and operations.

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Stakeholder Persona	Their Comments	Our Response
Policy Makers & Decision Influencers	• Need transparency around data, which is accurate, to incorporate it into plans. • Greater engagement from NGET so they can better understand the impact of their proposed plans on communities.	We are developing a Data Fabric which will enable the creation, enrichment and access to data ensuring that Stakeholders have full visibility of available insights. Refer to Data Fabric section for more detail. We continue to evolve and ensure our stakeholder needs are being met and that they are kept informed. In 2023, we have held several listening events with regional stakeholders (existing and future customers), and Distribution Network Operators (DNO).

Appendix F:
How we will measure success

We are accountable to our stakeholders and recognise the importance of tracking and measuring our commitments to ensure we are meeting our business goal and outcomes.

For our key objectives, we will measure ourselves by demonstrating increasing year-on-year maturity in our wider Data and Digital Maturity Assessment and strive towards a 'Leader' status by building user feedback intelligence. We will measure the effectiveness of our stakeholder engagement using an assessment matrix on a six-month basis.

In this section we set out the key success measures which we'll use to hold ourselves to account and provide transparency to our stakeholders:

Table 9 Measuring success of our digitalisation strategy

What success looks like for us	What success looks like for our stakeholders	How we will measure ourselves
1. The Great Grid Upgrade		
• Make optimal decisions to build new infrastructure and modernise existing infrastructure at the pace required to accommodate the integration of significant renewable energy sources into the grid. • Make optimal decisions to reinforce our network at pace, to increase our capability to connect significant renewable generation. • Use data insights to create new products and services to efficiently meet net zero targets.	• We help meet the government's target of 50GW of offshore wind connected by 2030. • We optimise our data and insights to deliver infrastructure projects on time, within our allowed expenditure, with minimum damage to the environment. • We effectively and efficiently design and build a robust and compliant network that has sufficient capacity and that can support NGET's net zero and decarbonisation goals. • Switching UK consumers to clean energy and ensuring their electricity network and supply are secure, sustainable, available, safe, reliable, and affordable.	• We will measure adherence to projected costs and scheduled timelines to ensure effective project management and resource allocation. • We report on infrastructure delivery progress, including any new products and services developed to meet stakeholder objectives. • We continue to engage with stakeholders on projects and what data and services they require to be kept informed of delivery progress.
2. Delivering for our Customers		
• Reduce the time to connect by 50%, and cost for customers by 10% to connect to our network through an improved end-to-end connections process. • Develop internal processes to facilitate external outcomes prioritised by stakeholders.	• We are easier to deal with and customers have better choice about how to interact with us, with digital and non-digital options. • We continue to improve the connections journey for our customers by reducing the time to connect by 50%, and cost by 10%. • We deliver our licence obligations efficiently and provide value for money for stakeholders.	• We meet our ambitious targets to reduce cost and time to connect for our customers. • We continue to meet our licence obligations and incentive targets, such as the Quality of Connections incentive.

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In this section we set out the key success measures which we'll use to hold ourselves to account and provide transparency to our stakeholders:

What success looks like for us	What success looks like for our stakeholders	How we will measure ourselves
3. Intelligent Asset and Network Management		
• Harnessing real-time insights from asset data to unlock greater value within our asset operations and maintain network reliability at an affordable cost for our customers; and a step change in productivity.	• We maintain a world-class level of reliability for consumers. • We ensure affordability and value for money for consumers today and in the future by justifying our network refurbishments and replacements. • We share and make our asset data easily discoverable, so that stakeholders can find the data that they need.	• We continue to meet our licence obligations and incentive targets, for example, our Network Asset Risk Metrics commitments, the Security and Quality of Supply Standard and Energy, and Not Supplied (ENS) incentive. • We will measure ourselves against the data best practice guidelines, ensuring that we exceed each of them by the end of the RIIO T-2 period (2026).
4. Cross-cutting and interoperability		
• Deliver a Data Fabric platform which will connect, catalogue and provide access to data, enabling all users to retrieve information seamlessly and rapidly as needed. • Transform our portfolio management approach, enabling us to make optimal decisions on work locations and timings.	• Increased discoverability by providing users with access to Data Products which are readily available for consumption. • Fast, open, user-friendly access to all Data Products. • We continue to engage our stakeholders on the Data Products they are interested in. Enhanced project outcomes achieved within shorter time frames and lower costs.	• Interoperability through industry engagement and collaboration on cross-industry programmes. • We will monitor how frequently our Data Products our used. • We will actively monitor the feedback submitted by users to better understand the data quality of our Data Products.

Appendix G:
How our products and services meet our stakeholder needs

This table outlines how each of our existing and planned digital products and services for RIIO-T2 (2021-2026) meet the needs of each of our stakeholder persona groups (as outlined in Whole System Stakeholder Engagement section).

Product/Service	Targeted Stakeholder Persona	Needs that will be met
1. The Great Grid Upgrade		
Network development, capital planning and delivery		
Consenting visualisation	Consumers Connecting customers and energy insiders	Improved transparency through network upgrades will help secure consents faster for The Great Grid Upgrade. This will allow us to deliver an affordable and resilient network whilst simultaneously decarbonising the energy system with increased connection of renewables. It will allow our connection customers to access our network quicker than they are able to today.
	Policy influencers and decision-makers	We are testing digital products which provide visualisations of our networks gives real-world visibility that will includes details of our network upgrade plans. It will also provides transparency over our stakeholder engagements enabling faster connections to renewables generation to achieve the UK Government's energy targets.
Supply chain visibility and collaboration	Consumers Connecting customers and energy insiders	Our enterprise collaboration and communication platform once complete will provide better visibility of the supply chain will enable a more efficient and transparent supply chain. This will reduce time to connect and improve collaboration across our partner ecosystem. This will allow us to continue delivering clean and affordable energy to consumers and connection customers.
Optimised design and build	Consumers	Implementation of Building Information Modelling (BIM) and Common Data Environment (CDE) will enable us to maintain a more complete and continuous detailed record of our assets and provide justification for our network development and capital spend. This also will help minimise impact to the environment and improve our efficiency, for example, by optimising asset maintenance.

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Product/Service	Targeted Stakeholder Persona	Needs that will be met
2. Delivering for Our Customers		
Enhance customer experience		
Research Assistant (ConnectNow)	Connecting customers and energy insiders	Our improvements on ConnectNow offer transparency for customers on the processing of connecting to the Electricity Transmission system in England and Wales. Recent developments to ConnectNow are providing more data to customers to guide their day-to-day decisions, for example provision of regional information. We have also piloted Cost and Estimation tools to provide improved visibility of connection costs and status to ensure connecting customers can remain informed throughout the process.
Customer Insights, Intelligence and customer feedback tools	Consumers Connecting customers and energy insiders	Supported by a Tractivity system, we are providing increased transparency and improved access to information, including allowing stakeholders to sign up to regular email updates. Information will be readily accessible to stakeholders and a more seamless connection will be possible through the development of digital products and services in RIIO-T2.
Enhanced channels and content	Connecting customers and energy insiders	We are enhancing transparency and access to information through continuous cross-channel experiences, improving our channel engagements, content enhancements and integrating back-office systems that connect and align digital customer engagement systems and with new ways of working.

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Product/Service	Targeted Stakeholder Persona	Needs that will be met
3. Intelligent Asset and Network Management		
Digital Work Management (DWM)	Consumers	Our Digital Work Management tool helps us resolve issues for customers in a timely fashion to minimise downtime. This responsiveness enhances service satisfaction by maintaining high network reliability and enable faster connections. Additionally, it helps us complete our commissioning activities faster, activating new parts of the network quicker and provides more data transparency.
	Connecting customers and energy insiders	
	Policy influencers and decision-makers	Boosting our productivity and delivering projects in a timely manner, expedites the delivery of our work needed to meet the UK's net zero targets.
Digital Asset Management	Consumers	Leveraging digital to gain a better understanding of our asset performance supports our decision making for better investment and interventions to minimise scope 1 emissions and meet our net zero ambitions. Our plans will allow us to boost our capabilities to reduce outage, improve reliability, and enable faster connection.
	Connecting customers and energy insiders	
	Policy influencers and decision makers	Enhanced insights about assets for policymaking concerning infrastructure and service delivery will better inform decisions to support net zero goals.

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Product/Service	Targeted Stakeholder Persona	Needs that will be met
3. Intelligent Asset and Network Management continued		
SCADA	Connecting customers and energy insiders	Our new SCADA system will allow for operational management and control of the infrastructure offering improved efficiency, safety and reduced time to connect.
Intelligent Substation Blueprint	Consumers	By implementing our Intelligent Substation architecture in the future, we will optimise our operations, enabling us to deliver a more reliable energy supply. Further to this, we will have better data sharing between devices and substations, offering a more comprehensive view of our operations leading to faster connections, less downtime and decreased delays.
	Connecting customers and energy insiders	
Internet of Things (IoT)	Consumers	Enables real-time monitoring of grid assets, supporting NGET to carry out predictive maintenance where needed. This ensures consumers have access to a reliable supply of electricity.
	Innovative Thinkers	The wealth of data collected via IoT can be used to generate valuable foresights. These insights will inform the development of innovative solutions and strategies to address challenges and drive advancements in the energy industry.

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Product/Service	Targeted Stakeholder Persona	Needs that will be met
4. Cross-cutting and interoperability		
Intelligent Planning	Consumers	Improved planning will enable NGET to carry out work optimally, resulting in reduced disruptions for customers. This improvement will enhance customer experience and bolster the reliability of our network.
Data	Connecting customers and energy insiders	The Data Fabric will provide access to data which will inform their day-to-day operations, long term investments and decision making. This presents an opportunity for engagement to enhance the development of future products as well.
	Policy influencers and decision makers	Access to comprehensive and reliable data will support planning and will enable evidence-based decision and policy making that effectively address industry challenges and provide more opportunities for product development.
	Innovative Thinkers	The Data Fabric will offer access to diverse and reliable datasets to support the development of new use cases and innovative solutions for asset management, energy management and sustainability.

Glossary of terms

A

Agile
A way of working or methodology that uses an iterative approach of development and testing, where requirements and solutions evolve through collaboration across teams.

Analytics
The process of analysing data to make conclusions about information, and drive decisions using advanced technologies including Machine Learning and Artificial Intelligence.

Application
In information technology, an application is a programme or software that helps users undertake a specific task.

Artificial Intelligence (AI)
Advanced analysis and logic-based techniques, including machine learning, which can be used to interpret data and support human decision-making or take actions directly.

Accelerated Strategic Transmission Investment (ASTI) programme
The Accelerated Strategic Transmission Investment (ASTI) framework will initially apply to around £20bn of onshore transmission network investment across 26 projects. Asti projects have a streamlined regulatory assessment process in order to accelerate the delivery of strategic onshore projects.

C

Common Data Environment (CDE)
The common data environment is a central repository where construction project information is housed.

Cybersecurity
Reducing the risk of a cyber attack on individuals or organisations by protecting the devices and the services accessed from access, theft or damage and assuring its confidentiality, integrity, and availability by implementing appropriate controls.

D

Data asset
Any entity that is comprised of data. A data asset may be a system or application output file, database, document, or web page. A data asset also includes a service that may be provided to access data from an application. Similarly, a website that returns data in response to specific queries (e.g. www.weather.com) would be a data asset.

Data best practice guidance
A guidance document issued by Ofgem in accordance with Special Condition 9.5 (Digitalisation) of our licence, which also applies to Electricity Transmission and Gas Transmission and Distribution network owners, as well as the Electricity System Operator.

Data catalogue
The store of information about our data which helps us to manage it. It enables us to find out about the data we have, its usage, purpose, ownership, and more.

Data culture
A data culture is an organisation culture of data-driven decision-making.

Data governance
The process of setting, controlling, administering, and monitoring adherence with policy with respect to data and its usage.

Data lifecycle
The stages of managing data through a sequence of steps from its inception to deletion. This includes the following stages: Plan, Specify, Enable, Create and Acquire, Maintain and Use, Archive and Retrieve, Delete.

Data management
A control framework defined by data governance, to provide assurance that the right people have the right access at the right time to quality data to run and grow the business effectively in an environment where data is actively treated as an asset.

Data mesh
A term used to describe our Data Operating Model, the purpose being to push as much as possible of the data interaction and value-added activities towards the business subject matter experts, who understand the data best, and can add the most value. It is a non-technical construct based around value generation, data creation and data ownership.

Data quality
The degree to which data is fit for consumption and meets the needs of data users. Data quality is made up of a few dimensions, including completeness, accuracy, timeliness, validity, consistency, and uniqueness.

Glossary of terms

Data triage
A process to systematically identify issues with a dataset which limit their potential openness and then identify what techniques can be used to mitigate these issues.

Datasets
A collection of related sets of information that is composed of separate elements but can be manipulated as a unit by a computer.

Digital maturity
The degree to which an organisation can employ digital capabilities to generate value.

Digital product
A variety of business applications used with analytics that connect insights to actions that offers utility to users.

Digital Twin
Realistic digital representations of physical assets.

Digitalisation Strategy
The strategic approach taken by an organisation to digitalise its Products and Service in accordance with Special Condition 9.5 (Digitalisation) of our licence, which also applies to Electricity Transmission and Gas Transmission and Distribution network owners, as well as the Electricity System Operator.

Digitalisation
The use of digital technologies to change an organisation's operating model and provide new revenue or equivalent value-creating opportunities; it is the process of moving to a digital business/organisation.

E

ENA
Energy Networks Association is the industry body representing energy network operators in the UK and Ireland.

Energy Data Taskforce
The Energy Data Taskforce (EDTF) was commissioned by the UK Government, Ofgem and Innovate UK to deliver a set of actionable recommendations that challenge the status quo and help deliver the digitalised energy system needed to reach Net zero.

Enterprise Delivery Model
An alternative model in which partners form an enterprise and work collaboratively towards aligned objectives – offers benefits such as better outcomes, greater productivity, more innovation, and a greater predictability of value creation.

ESO
The Electricity System Operator is responsible for operating the transmission network in England, Scotland, and Wales, moving electricity around the country to ensure that the right amount of electricity is where it's needed, when it's needed and keeping supply and demand in perfect balance.

I

Interoperability
The ability of a product or system to operate in conjunction with other products and systems.

Independent user group
A group of experts from across the energy industry and beyond that whose role is to scrutinise our business plans and stakeholder engagement approaches on behalf of the interests of end consumers, the environment, public interest groups and our other customers and stakeholders.

IT
Information Technology: refers to information processing, including software, hardware, communications technologies, and related services.

M

Machine learning
An important branch of artificial intelligence, whereby computer software that can learn from data and improve the way decisions are being made.

Metadata
A set of data that describes and gives information about other data.

Minimum Viable Product (MVP)
A version of a product that has the minimum number of features so that it can be used by customers. The purpose of releasing an MVP is so that customers can provide feedback for future development.

N

Net zero
Net zero refers to the balance between the amount of greenhouse gas produced and the amount removed from the atmosphere. The UK Government amended the Climate Change Act to commit the UK to achieving net zero by 2050.

Glossary of terms

P

Presumed open data
The principle that data should be as open as possible, where anyone is free to use, reuse or redistribute it.

Products and Services
Anything that a party can offer to a market for attention, acquisition, use or consumption that could satisfy a need or want.

R

RIIO-T2
Price control for the high-voltage electricity transmission networks and high-pressure gas transmission networks which transmit energy across Britain from where it is generated. The price control runs for five years from 2021-2026. Also referred to as RIIO-2.

S

Scaled Agile Framework (SAFe)
SAFe is a set of organisational and workflow patterns for implementing agile practices at an enterprise scale. The framework is a body of knowledge that includes definitions on roles and responsibilities, guidance on how to plan and manage the work, and approaches to ensuring that key values are upheld.

W

Wireframes
High-level block diagrams to represent how a digital product or service will look and operate used in Agile development.

Whole system approach
The Energy Whole System comprises the interactions between electricity, gas (methane, hydrogen, bio-gas) and liquid fuels (oil and bio-fuel). Then, how those energy sources best contribute to delivering net zero greenhouse gas emission energy for technology, communications, transport, heat and water. The best mix of energy should provide economic, reliable and resilient green energy for UK society.

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