



electricity
north west

Bringing energy to your door



Digitalisation strategy 2023

**Supporting our plans for improving customer service,
business resilience and business efficiency**

1 April 2023

Stay connected...



www.enwl.co.uk

Contents

- 1 Welcome 3
- 2 Document purpose 4
- 3 Summary 4
- 4 Digitalisation strategy contribution to the business plan vision 7
 - 4.1 Our stakeholders’ priorities 8
- 5 Digitalisation vision 8
- 6 Main data and digitalisation outputs and deliverables 9
- 7 Our change journey so far 11
- 8 Customer and stakeholder engagement 11
- 9 Our sourcing approach 12
- 10 Our delivery approach 13
 - 10.1 Risk management 13
- 11 Guardrails 13
 - 11.1 Strategic principles 13
 - 11.2 Metrics 14
- 12 Strategic risks 14
- 13 Our target architecture 15
 - 13.1 Target digital architecture 16
- 14 Our data strategy overview 17
 - 14.1 Our data journey so far 18
 - 14.2 How our data strategy aligns to data best practice and EDTF recommendation 19
 - 14.3 Data and our digitalisation strategy 21
 - 14.4 Improving the quality of our data 22
 - 14.5 Data governance across the organisation 22
 - 14.6 Making our data open to share 23
 - 14.7 Maximising the value we get from our data 23
 - 14.8 Talking a common language 24
 - 14.9 Modernising the data architecture 25
 - 14.10 Benefits of our data strategy 25

1 Welcome

Technology, information and data are becoming increasingly important at Electricity North West as we strive to improve efficiency, drive innovation, increase transparency and support the transition to net zero.

We need to bolster the resilience of our network as our customers become more dependent on a reliable supply of electricity and we face the growing threat of 'cyber-crime'.

Together with our people, information technology (IT) is one of the key assets that will help us achieve our goals. Our digitalisation strategy is a key component of our [RIIO-ED2 business plan](#) for 2023 – 2028 and will help us create a more sustainable, fair and connected future for our region.

It also supports our efforts to implement the recommendations of the energy data taskforce (EDTF) and Ofgem's data best practice, which include openly sharing our data for the benefit of our stakeholders. A great example of this is our new [open data sharing portal](#) and our first public application programming interface (API) at the end of 2022 which is big step forward in this area.

We are investing in new systems and processes, such as CLASS (Customer Load Active System Services), to operate our energy networks in a more sustainable and customer centric way. CLASS uses innovative voltage control to reduce demand for electricity, without customers noticing a difference to their service. This proven technology is already helping the National Grid reduce spikes in demand and balance the national electricity network on a daily basis. If rolled out nationally CLASS could save GB customers around £1 billion over the next 30 years. Benefits include lower bills for customers, reduced emissions and the development of the low carbon energy sector.

By investing in digitalisation in this way, we aim to become a leader among our peers. Our strategy will ensure we meet the needs of our customers and stakeholders, further enhance cyber protection, grow business resilience and increase transparency.

I hope you find this document useful. If you have any feedback or have any questions, please contact us.

Steve Cox
Asset and Technology Director

2 Document purpose

The purpose of our digitalisation strategy is to share our understanding of our stakeholders' needs and the digital products and services required to meet those needs, with the ultimate goal of creating benefits for consumers.

The publication of this document fulfils our licence obligation to do so under RIIO-ED2 price control.

3 Summary

Using information and technology to support customers is a critical enabler for our future aspirations and our business plan. We will provide efficient and customer centric IT services that directly contribute to our business plan vision of leading the North West to net zero across all three of our business plan themes:

- **Net zero** – We will drive the transition towards local net zero targets, following a path to make our own operations net zero by 2038.
- **Network** – We will remain one of the world's most reliable networks, reducing the number of power cuts and the time people are without power by 20%.
- **Customer** – We will deliver at least a 9/10 level of customer service and provide additional support to electricity users in vulnerable circumstances and fuel poverty.

Our focus is to improve our systems to support customers and to help support a more sustainable future. Our customers will become increasingly reliant on electricity as they move away from fossil fuels and adopt low carbon technologies. With this increased dependence on the electricity network, and the digital systems which support it, cyber security has become even more important to the resilience of our business and the essential services we provide to our customers.

We also need to develop new systems and processes as part of the transition to 'distribution system operation' (DSO) – systems which will need to be available around the clock.

We have built foundations for the future in RIIO-ED1 and will build on these in RIIO-ED2 and beyond. We will reduce cost and increase customer satisfaction, improving the service we offer in terms of resilience and reliability as well as value for money.

We are the only distribution network operator (DNO) with a single licence which allows us to be more flexible and innovative. For example, we are the only DNO to implement an innovative and modern network management system that allows us to control our low voltage (LV) network, which we believe is essential for net zero and DSO transition.

While our size allows us to be more innovative and responsive, we do not want our customers to pay more, simply because our fixed costs can only be shared across one licence area.

Technology has a major part to play in helping to reduce our fixed costs. Our cloud-first strategy will move us to volume-based charging and leverage the economies of scale of global service providers as well as improving reliability, resilience and time-to-market. These changes are in line with our long-term strategy, although transitioning to a cloud-based environment leads to some increased costs in the short term.

It is important that we look at customer value both in the long and short term. We will look beyond pure up-front costs, while recognising and meeting the requirement to change and improve our digital systems, driven by the needs of our customers and the environment, and to mitigate risk.

In response to the challenges facing our sector, during RIIO-ED2 we will invest in 14 key areas, aligned to our business plan and stakeholder priorities, to deliver our digitalisation strategy as efficiently as possible

The 14 areas of investment are summarised below and are covered in more detail in separate specific proposals.

Our digitalisation strategy areas of investment

Corporate IT		Real-time systems	
Work and asset management	Customer and market operation	Operational IT and telecoms	Smart meters
Enterprise resource planning, Geographical information systems, Work and asset management, Complementary and specialised	Customer Market operations	Operational telecommunications Smart grid systems Substation monitoring and control	Smart meters
Digital workplace (field and office)			
Data analytics and integration platform			
Cloud and infrastructure (including corporate network and telephony)			
Cyber			

Our digitalisation strategy includes:

- **Digitalisation strategy on a page** – a one page summary of our strategy
- **Digitalisation strategy contribution to the business plan vision** – how our strategy contributes to our RIIO-ED2 business plan
- **Digitalisation vision** – our three digitalisation capability themes – enablement, innovation and insight – which have shaped our plans across our 14 investment areas
- **Main data and digitalisation outputs and deliverables** – a high-level overview of the scope of our proposed RIIO-ED2 digital portfolio and the required changes, outputs and deliverables
- **Our change journey so far** – the foundations we have put in place during RIIO-ED1 in preparation for RIIO-ED2
- **Customer and stakeholder engagement** – how we have ensured we are customer and stakeholder-led in the development of our digitalisation strategy
- **Our sourcing approach** – the sourcing approach that we are adopting to deliver our RIIO-ED2 portfolio
- **Our delivery approach** – the approach we are taking to deliver our change portfolio in RIIO-ED2 and manage delivery risk
- **Guardrails** – the strategic principles and metrics used to guide behaviour and decision-making to deliver this strategy
- **Strategic risks and issues** – the risks to this strategy and how we will manage them
- **Our target architecture** – our future state architecture for RIIO-ED2
- **Our data strategy** – more details on how we are adopting Ofgem’s data best practice guidelines.

This digitalisation strategy is complemented by a six-monthly digitalisation action plan (DAP) that will describe our progress and set out how we intend to transform and automate business processes creating additional value for customers and stakeholders.

Leading the North West to net zero					
Drivers	Cost efficiency	Priority customers	Cyber threats	Smart grid	Modernising energy data recommendations
	Heat pumps and electric vehicles	Open data	Data best practice	Ecosystems	Environmental sustainability
	Cost of living	Global warming	Distribution system operation	Innovation	Ofgem digitalisation principles
Business plan themes	Net zero We will drive the transition towards local net zero targets, following a path to making our own operations net zero by 2038.		Network We will remain one of the world's most reliable networks, reducing the number of power cuts and the average time people are without power by 20%.		Customer We will deliver at least a 9/10 level of customer service and provide additional support to electricity users in vulnerable circumstances and fuel poverty.
	Our digitalisation themes	Enablement		Innovation	Insight
<ul style="list-style-type: none"> Business resilience Prioritise field force Cyber protection 		<ul style="list-style-type: none"> Open data Modular architecture Cloud first 	<ul style="list-style-type: none"> Integration platform Data platform Analytics 		

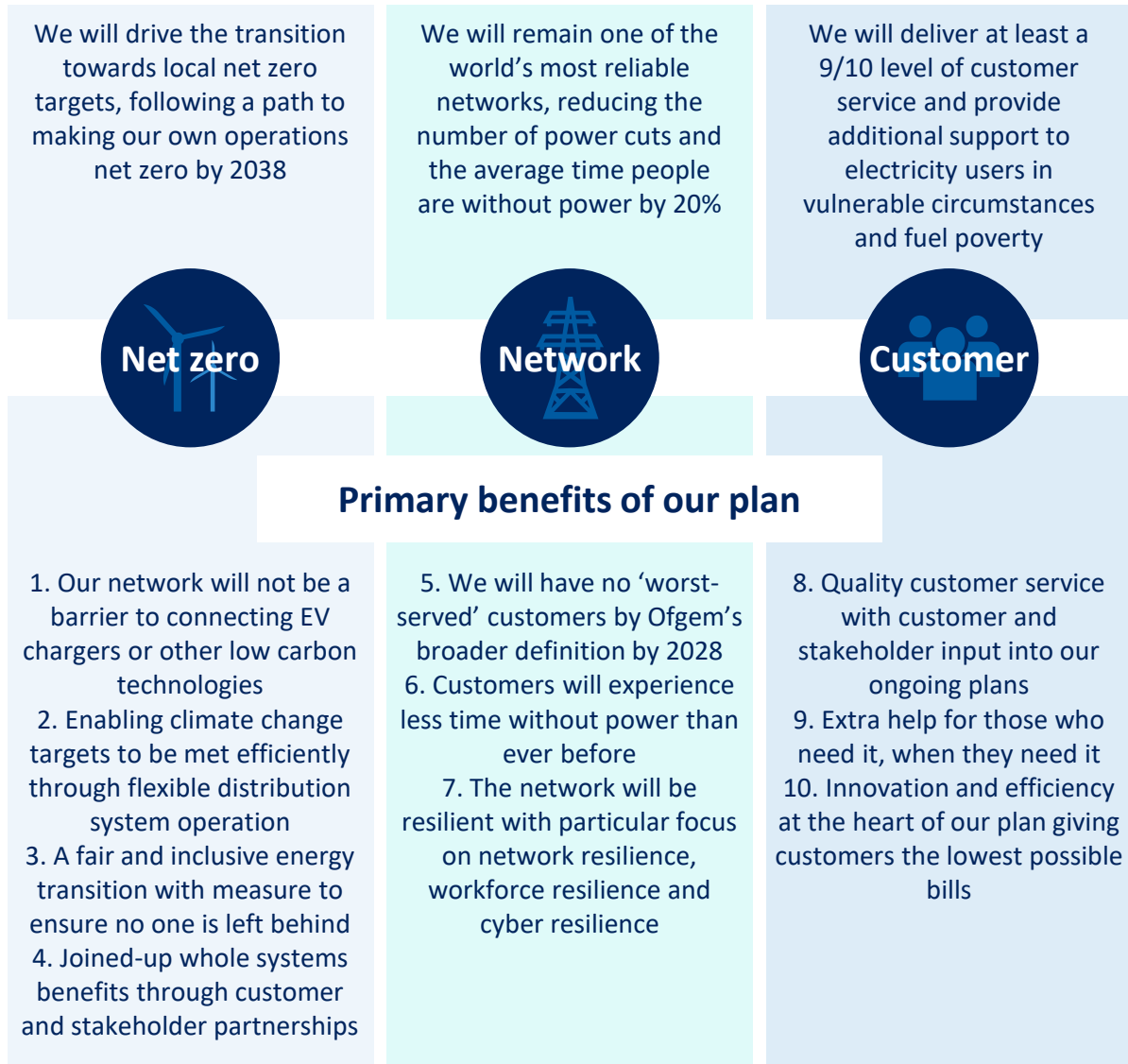
RIIO-ED2 roadmap 2023 - 2028	
Investment proposals	Primary outputs and deliverables
Corporate IT <ul style="list-style-type: none"> Work and asset management Geographical information systems Connections Customer Market operations Market operations Complementary and specialised systems 	<ul style="list-style-type: none"> Work and asset management – field-friendly solutions Data capture – accuracy improvement New GIS system and open GIS data Improved connections - customer journey New priority services for vulnerable customers Enhanced digital channels Reduced manual processes
Real time systems <ul style="list-style-type: none"> Smart grid system Substation monitoring & control Operational telecommunications Smart meter 	<ul style="list-style-type: none"> Full visibility of network data Enhanced LV and HV control New smart meter gateway Refreshed active network system for DSO New DSO services
Enabling <ul style="list-style-type: none"> Data, analytics and integration platform Digital workplace Cloud and infrastructure Cyber 	<ul style="list-style-type: none"> Modern data architecture Data sharing portal and enhanced analytics Refreshed digital device platform Cloud platform Improved and enhanced cyber protection

Metrics	<ul style="list-style-type: none"> Number of cloud services Cyber security compliance 	<ul style="list-style-type: none"> Number of 'open data' sets Number of external APIs Data best practice progress 	
Key risks	Business impact Overburden the company, or parts of the company, with IT-driven change.	Deliverability Capacity to deliver our plans	Resourcing Resourcing and workforce resilience for key skills
Benefits	<ul style="list-style-type: none"> Our network will not be a barrier to connecting EV chargers or other low carbon technologies Enabling climate change targets to be met efficiently through flexible distribution system operation A fair and inclusive energy transition with measures to ensure no one is left behind Joined-up whole systems benefits through customer and stakeholder partnerships We will have no 'worst-served' customers by Ofgem's broader definition, by 2028 	<ul style="list-style-type: none"> Customers will experience less time without power than ever before The network will be resilient with particular focus on network resilience, workforce resilience and cyber resilience Quality customer service with customer and stakeholder input into our ongoing plans Extra help for those who need it, when they need it Innovation and efficiency at the heart of our plan giving customers the lowest possible bills 	

4 Digitalisation strategy contribution to the business plan vision

This section summarises our RIIO-ED2 business plan and how our digitalisation strategy contributes to the business plan vision.

Vision: Leading the North West to net zero



We will continue to deliver network reliability and security, excellent service and efficient operations by building on our core services and exploiting new and maturing digital technologies. These are changing the way companies interact and work with their customers and stakeholders while recognising that some customer segments have difficulty accessing some technologies.

For our customers and stakeholders, this will mean increased availability of data and transparency through improved digital services which in turn will support market innovation, energy supply chain efficiency and economic growth.

Our customers have a large part to play in shaping and delivering our digitalisation strategy. We will work together to provide improved digital services and open access to network and market information, taking care to avoid excluding hard-to-reach groups.

We have developed a continuous improvement process that will refine and confirm our digitalisation journey. While engaging with customers and stakeholders for our RIIO-ED2 submission we focused

on the opportunities and projects that provide the best stakeholder outcomes. We are in a process of exploration and consideration, not least as the technology evolves.

We are asking ourselves how best to address the challenges we face. We will be open and transparent in this process and we want and need our stakeholders to help us decide what we do, recognising that we need to remain agile in this fast-changing dynamic digital world.

The 14 initiatives outlined in this strategy are what we plan to deliver in RIIO-ED2. We are continuing to refine this as we undertake more detailed planning based on the final determination outcome, cost benefit analysis and consultation. This will ensure that our investment plan for RIIO-ED2 is affordable, deliverable and optimally aligned to the ten business plan benefits (detailed above) and our stakeholders' priorities below.

4.1 Our stakeholders' priorities

Our engagement approach for this strategy has been thorough, high quality, robust and transparent using complementary quantitative and qualitative research methods. We have worked hard to give participants a genuine opportunity to build, inform and influence our proposals from the ground up, by allowing them to set the agenda and delve into the issues that really matter to them. In our research we asked consumers which priority areas we should focus on in RIIO-ED2. These were:

- Supporting electricity users in vulnerable circumstances
- Delivering a reliable network
- Building a resilient network
- Keeping our communities safe
- Leading the North West to net zero
- Our direct environmental impact.

5 Digitalisation vision

This section details the three digitalisation capability themes which have shaped our investment plans for RIIO-ED2 across the 14 investment areas and underpin our digitalisation vision.

- **Enablement** – we will provide cyber protection and business resilience around access to data and appropriate technology. This will enable our people to work more safely and efficiently, to improve public safety and better serve our customers and stakeholders. Our initial focus in RIIO-ED2 will be to improve systems for our field teams, replace inefficient devices and enhance our work and asset management systems.
- **Innovation** – we will ensure the company and our supply chain can adapt quickly to changes in the operating environment and can innovate by continuing to invest in flexible technology platforms, data quality and data sharing.
- **Insight** – we will make information and analytics accessible in an affordable, secure and reliable manner, to enable us, as well as third parties, to identify opportunities to innovate and continually improve the whole energy system.

6 Main data and digitalisation outputs and deliverables

This section provides a high-level overview of the scope of our proposed RIIO-ED2 digital portfolio over the next five years, outlines the changes required and aligns them to the business plan themes.

Main outputs and deliverables

Area	Main outputs and deliverables	Theme support
Customer	<ul style="list-style-type: none"> Enhanced digital channels A single view of customer data Improved customer data quality, including PSR data Open customer data when appropriate 	<ul style="list-style-type: none"> Customer
Connections (ERP)	<ul style="list-style-type: none"> New cloud-hosted fully integrated connections system Improved customer journey Removal of offline process steps and data repositories Open connections data when appropriate 	<ul style="list-style-type: none"> Net zero Customer
GIS	<ul style="list-style-type: none"> New GIS system Expanded scope of GIS dataset which will include advanced telecommunications data and additional LV datasets Improved GIS data quality Open GIS data when appropriate 	<ul style="list-style-type: none"> Net zero
Market operations	<ul style="list-style-type: none"> Maintenance and ongoing continuous development of key information systems Maintaining quality of data in areas such as address data relating to supply points of our network, unmetered supply inventories and supply point data Ensuring accurate billing of electricity suppliers (DUoS) charges for the distribution of electricity across our network 	<ul style="list-style-type: none"> Customer
Work and asset management	<ul style="list-style-type: none"> A new solution to collect and utilise new data about our vehicles and their movements 'Friendly for the Field' solutions that facilitate better data quality from the outset whenever data is captured Improve visibility of employee location and expected workload Addition of telecommunications data to the platform A single-view of work and asset management data with increased scope 	<ul style="list-style-type: none"> Net zero Network
Complementary and specialised systems	<ul style="list-style-type: none"> Maintenance and continuous development of complementary and specialised systems ranging from treasury systems to risk management Migration to the cloud when appropriate 	<ul style="list-style-type: none"> Customer
Data, analytics and integration	<ul style="list-style-type: none"> Modern cloud-based data, visualisation and analytics platform, providing a 'single source of the truth' through cleansed and catalogued data Improved business capability in data and analytics by providing appropriate toolsets and user enablement 	<ul style="list-style-type: none"> Net zero

Area	Main outputs and deliverables	Theme support
	<ul style="list-style-type: none"> • Cloud-based integration hub, enabling secure, cost-effective systems integration and external data sharing 	
Digital workplace	<ul style="list-style-type: none"> • A refreshed digital device platform, replacing inefficient field devices first in financial year 2024 • A low-code platform and business capability to digitalise manual processes on a common cloud platform • Improved data quality through improved digital communication channels and collaboration tooling for field-based and hybrid office workers 	<ul style="list-style-type: none"> • Customer
Cloud and infrastructure	<ul style="list-style-type: none"> • A highly-elastic platform ideally suited to securely hosting dynamic volumes of data and burst levels of computing • Refreshed onsite data centre – including data centre, servers and corporate networking equipment 	<ul style="list-style-type: none"> • Customer
Smart grid systems	<ul style="list-style-type: none"> • Refreshed and enhanced network management system to support DSO • New and enhanced capabilities as described in our DSO strategy • Full visibility of our network data, internally and externally 	<ul style="list-style-type: none"> • Net zero • Network
Substation control and monitoring	<ul style="list-style-type: none"> • Refresh of the existing measurement and control hardware • Additional measurement and control capability will be deployed on an additional 2000 HV and LV circuits to support ‘connect and manage’ 	<ul style="list-style-type: none"> • Net zero • Network
Operational telecommunications	<ul style="list-style-type: none"> • Refreshed operational telecommunications network technology • Visibility of the telecommunications network to internal and external stakeholders, if required 	<ul style="list-style-type: none"> • Net zero • Network
Smart meters	<ul style="list-style-type: none"> • Refreshed smart meter gateway • Use of smart meter data to locate faults quickly and accurately • Customer smart meter ‘ping’ services for customers to check supply while away from home 	<ul style="list-style-type: none"> • Net zero • Network
Cyber	<ul style="list-style-type: none"> • Refreshed and enhanced cyber services • Enhanced cyber compliance • Improved cyber protection 	<ul style="list-style-type: none"> • Net zero • Network • Customer

7 Our change journey so far

This section describes the foundations we put in place during RIIO-ED1 in preparation for RIIO-ED2.

Throughout RIIO-ED1 we continued to refresh and update our current systems. We also completed two major transformational change programmes – work and asset management and our network management system (NMS). Both will provide springboards for further transformation in RIIO-ED2.

- **NMS** – The implementation of this enhanced system for network management and control will be central to our smart grid platform throughout RIIO-ED2. The culmination of five years of product selection, planning, development and testing, NMS was successfully implemented in September 2021 and acts as the platform for building our transformational DSO capability. We will shortly add active network management to this foundational platform, along with functionality to support our innovative Smart Street rollout. This complements the existing CLASS functionality which is already live on NMS.
- **Work and asset management** – During RIIO-ED1, we supported our field teams with the development of digital timesheets and work scheduling tools. We rolled out Clear Horizon's 'Chime', a third-party work and asset management product designed specifically for distribution networks. We are currently working with the supplier to extend the functionality of the system to replace our existing asset management functionality. We will then update our capital planning and delivery processes to prepare for the net zero investments we expect to see over the next decade. As part of this development work, the products will be commercialised and made available to all networks. Chime will continue to enable new ways of working and provide a simple but comprehensive experience for our field teams. During RIIO-ED1, it has changed the way we work, internally and with our partners. It has improved the way we allocate work, and has enabled us to more accurately predict costs and deliver capital work. These improvements in efficiencies have been built into our plan and will crucially drive our ability to deliver the increased capital investment required in RIIO-ED2 and beyond.

Across the eight years of RIIO-ED1, much of our work has been about preparing for the future. We have made major improvements in all areas from our control centre and smart meters, to digital workplace, cloud and infrastructure. We have also established a data and integration platform team, developed our data strategy and have started to put in place new processes to support delivery.

By improving all aspects of our data, we will be able to support future innovation, make better decisions, implement the recommendations of the EDTF and make our data available for our customers and stakeholders.

8 Customer and stakeholder engagement

This section outlines how we are customer and stakeholder-led in everything we do, including the development of the digitalisation strategy.

We published our Digitalisation Strategy 2021 and Digitalisation Action Plan as part of our RIIO-ED2 submission in July 2021. This is a refreshed version of that strategy which has been revised following Ofgem's final determination. Both documents were published on our website and social media and signposted in our regular stakeholder forums.

As part of the development of these documents, we surveyed our 'Voice of the Customer' panel to feed into the current strategy and received feedback from 76 stakeholders, ranging from large corporate stakeholders to individual customers. These stakeholders include hard-to-reach groups and those who operate in markets outside of the energy sector.

We will continue to engage with our customers and stakeholders during RIIO-ED2, as set out in our Digitalisation Action Plan. This includes our annual stakeholder satisfaction survey which covers questions on awareness, usage and satisfaction with our digital services. In RIIO-ED2 we will explore the possibility of putting in place a digitalisation expert panel aligned to our vulnerability and sustainability panels to further improve stakeholder engagement.

9 Our sourcing approach

This section outlines the sourcing approach that we are adopting to deliver our RIIO-ED2 portfolio.

We have reviewed our investment proposals and categorised our requirements into the following sourcing approaches:

- **Cloud support services** – Requirements such as computer processing needs and storage expansion.
- **Value added reseller services framework** – Requirements such as software as a service (SaaS), commercial off-the-shelf software or hardware, technology requirements and associated services.
- **Professional services and software development framework** – Technology support, development and integration needs, data science roles and specialised cyber support roles.
- **Tenders** – For imminent projects that cannot be serviced by one of the above approaches, including tenders for sourcing towers, a strategic data platform and cyber.
- **Direct award or an incumbent contract** – Where permitted under utilities regulations e.g. below threshold requirements or where requirements are covered by an existing contract.
- **Future awards** – Requirements which are a significant period away which will be reviewed closer to the time.

It was clear that some services need to be bundled together with existing contracts to ensure that the propositions are attractive to the market and to ensure that we can take a holistic view of our upcoming business as usual (BAU) requirements as well as for RIIO-ED2.

Subject to internal approvals, we expect the structure of the overall sourcing programme to cover a variety of options for RIIO-ED2 spend and BAU support services:

Part A: Sourcing towers

- Lot 1: Infrastructure services contract
 - Public cloud support and migration services
 - Data centre support services
 - Rate card (to support services such as application modernisation)
- Lot 2: Service desk
- Lot 3: End-user computing
- Lot 4: Applications

We will evaluate market options against insourcing options when we complete our evaluations.

Part B: Frameworks (which are now in place)

Framework 1: Value added reseller (to support procurement of on-premises hardware, software (SaaS, COTS) and associated services)

Framework 2: Professional services (Project planning and operations support, development and integration, data and analytics, cyber, cloud, information technology and operational technology consultancy)

Part C: RIIO-ED2 tenders

Relating to specialist areas such as advanced modelling tool.

10 Our delivery approach

This section outlines the approach we are taking to deliver our change portfolio and manage delivery risk in RIIO-ED2.

- The project delivery lifecycle provides project managers with structure and guidance for a four-phase, four-gate lifecycle covering governance and assurance processes and a variety of documentation templates.
- Each project has a project steering group (PSG) which meets monthly as a minimum. A PSG is responsible for overseeing day-to-day management, control and delivery of the project to time, cost, scope and quality. The PSGs have standard terms of reference and authority delegated from the senior governance forum. The project sponsor, as chair of the PSG, is responsible for the overall governance, delivery and benefits realisation of the project.
- Deliveries from this process are subject to a standard cost benefit analysis (CBA) process.
- Project financing is managed through a two-step business case process (initial and full business case), agreed by the PSG and ratified by the portfolio governance board. Once ratified, the business case is submitted for sanction approval from our capital business plan.
- People resources are scheduled and charged to a project according to the cost of their time.
- The cost of supporting the output of projects in production is funded separately, via an opex model. As projects are increasingly focused on a SaaS or infrastructure as a service (IaaS) basis, we are seeing a shift from capital-based expenditure (one-off licence fees) to operating cost-based expenditure (annual SaaS fees).

10.1 Risk management

Effective risk management is fundamental to achieving our corporate goals. Our approach is overseen by our board who discuss key risks regularly, carry out an annual risk review and approve our 'risk appetite'. In November 2021 in recognition of the importance of our data and systems, we added a new category to our risk appetite to provide increased visibility of how these map to the strategic direction of our business.

As part of our approach to risk management approach we consider new and evolving risks in a timely manner. This is underpinned by a network of risk coordinators and champions who promote our approach across the organisation. For technology-focused risks, day-to-day oversight and support is provided by a dedicated IT risk manager who works in conjunction with our head of risk, control and assurance to ensure that the risks are owned, understood and managed in accordance with our overall approach.

11 Guardrails

This section describes the strategic principles and metrics that we have put in place to guide behaviour and decision-making to deliver this strategy, as well as the metrics we will use to track progress.

11.1 Strategic principles

A set of high-level principles guide our strategic and day-to-day decision-making and ensure information and technology are aligned with our stakeholder priorities. Our principles are aligned to Ofgem's Digitalisation Strategy Action Plan guidance.

- We will ensure products and services work towards a defined vision.
- We will take full advantage of opportunities to deliver benefits early and to iterate improvements.
- We will make it easy for stakeholders to understand our products and services, the status of their delivery and how to access them.
- We will ensure visibility of our actions in the Digitalisation Action Plan.
- We will ensure there is shared understanding of success and performance is measured.
- We will coordinate with wider products and services.

11.2 Metrics

We will measure the success of our strategy by using the following metrics:

- We will measure the number of 'open data' and external APIs to measure how we are supporting industry innovation.
- We will track the number of cloud services that we have.
- We will measure our cyber security compliance against industry benchmarks.

12 Strategic risks

An outline of the major information and technology risks and issues associated with our strategy is outlined below with approaches for mitigation:

- **Business impact** – there is a risk that we may overburden the company, or parts of the company, with technology-driven change which will impact our performance. We will mitigate this by investing in change management capability, to ensure this is tightly managed, as well as business engagement. Increasingly we expect our ability to implement change to become a major part of the procurement and development process, making systems intuitive and easy to train.
- **Operating model** – modern digital delivery requires cross-functional teams that span traditional organisational silos (business and technology). Without this there is a risk that implementation and delivery will cost more, take longer and may not deliver the promised benefits.
- **Deliverability** – there is a risk that we may not be able to deliver our plans. We have incorporated our delivery experience into our planning to help manage this risk and will further mitigate this by using delivery partners for commodity services (e.g. cloud migrations). We have started the required procurement processes in RIIO-ED1 to ensure we have the right suppliers.
- **Resourcing** – there is a risk that because we are moving into new areas around cloud, cyber and data science, like the rest of the market, we will not be able to recruit and retain colleagues with these skills. We will mitigate this through workforce planning and training, and through using third party suppliers (e.g. architecture as a service).

13 Our target architecture

This section describes the future state architecture that we need to put in place to deliver our strategy.

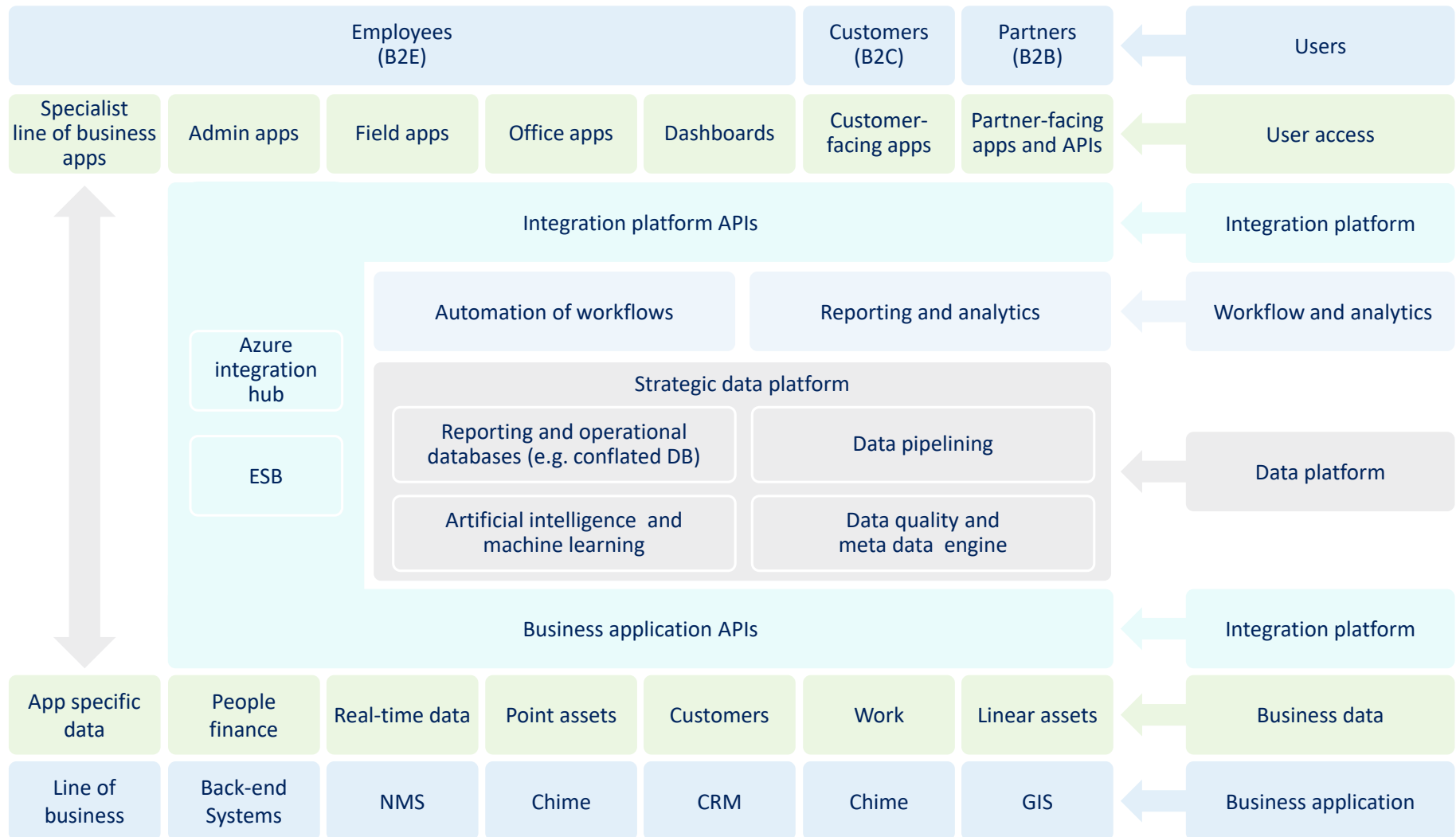
There is significant value in articulating an overall 'direction of travel' and setting out what good looks like. This helps to guide various investments so that the sum of the parts has the greatest value, i.e. investments are complementary in terms of scope and working together ('interoperability').

In summary, we will adopt a 'loosely-coupled' architecture where we can make changes to one aspect without expensive re-engineering of interfaces. There are multiple ways that we can achieve this, including:

- Adopting a common data model for exchanging information
- Simplifying several fundamental data aspects of information that are 'mastered' and then shared with different systems to perform different tasks
- Making more information by modern technical standards that are widely adopted by standard software packages and cloud platforms – namely 'restful APIs'. These are a style of API that simplify how interactions are performed and use long-established secure internet standards
- Declaring certain assets to be 'enterprise-wide', that can be re-used for several purposes not just one application. An example of this is our strategic data platform, where we will gain far more return-on-investment with the ability to combine different data from different systems to deliver analytics that guide decisions, rather than forcing a particular system to understand a wide breadth of data
- By separating how data is managed by systems with how it is consumed by users. This allows us to make newer 'channels' available more easily than if data was 'owned' by the system for just one channel. This will benefit customers, consumers and wider stakeholders and will remove the need for, and reduce the value of, unintegrated 'shadow IT'.

These approaches are very common for creating modern digital systems or modernising existing systems to be 'interoperable'. We are confident this approach will lower risk and up-front costs, while increasing our choice of specific vendors.

13.1 Target digital architecture



14 Our data strategy overview

Using data to support customers is a critical enabler for our future aspirations and business plan. It drives the transition to a more sustainable future by providing more flexible, efficient, responsive and customer centric services that directly support our transition to net zero.

In this data strategy we have identified deliverables to build on our work in RIIO-ED1 to support our customers' expectations and future demands on the electricity network. Our strategy will enable the move to net zero by using data and services to aid decision-making. Supporting the transition to DSO and future markets in a timely manner will be critical in responding to demand.

The strategy has been developed in accordance with the recommendations of our stakeholders and the EDTF which will modernise the UK energy system with an integrated data and digitalisation strategy. We are aligned to Ofgem's data best practice guidelines and committed to delivering an open data approach and improving our own data culture.

A key deliverable of our strategy is to collaborate with other organisations and stakeholders to exchange data sets more openly and provide easier access to our services. Using our data more collaboratively will ensure all our customers benefit and no-one is left behind, including those in vulnerable situations. We have a responsibility to ensure that our data is stored securely and incorporate the latest thinking into our security protocol to provide ongoing assurance to our customers.

Using common language aligned to industry standards will make it easier for organisations to communicate and work together with the same understanding of data. As part of our strategy and in line with our work with the Energy Networks Association, we will establish a data triage system for data requests that balances access and transparency with privacy and security.

To maximise the value of our data and improve our data maturity, we need to enhance the skills and capabilities of our people and our systems. Automating existing manual data processes where we can, will give people more time to understand and use the data to improve services for customers. By having better capabilities and capacity for analysing, storing and sharing our data, we will be able to anticipate future needs and fix current issues quicker and more efficiently for all our customers. With demand for electricity set to double by 2038, starting this transformation now will enable us to realise even greater benefits for our customers and communities and support the future services and markets our stakeholders expect.

The data strategy has been developed in accordance with our stakeholder priorities and is aligned to our ten business plan benefits and Ofgem's data best practice guidance. This will ensure that our approach meets stakeholder and Ofgem expectations and that there is appropriate emphasis on data activities in our RIIO-ED2 initiatives.

This proposal aligns with our journey to deliver digital twin capabilities. We already have the essential foundations for an operational digital twin – providing a current or historic view, but we do not have any significant basis for an analytical digital twin – regarding future scenarios. However, if we mature faster than anticipated and we feel we can deliver value in RIIO-ED2 we will use an uncertainty mechanism, as described in our data, analytics and integration investment proposal (IP).

14.1 Our data journey so far

We have already made significant progress towards improving our data quality in specific areas of the organisation to aid decision-making and to manage impacts on our customers. We continue to be active participants in the industry-wide Energy Network Association data and digitalisation steering group and in the subgroups set up to aid collaboration across the industry and deliver joint projects. We have started to recruit data specialists as part of our focus on meeting future needs. This includes:

- Improving our customer communications when network events impact customers by integration of our control room and customer management systems
- Throughout RIIO-ED1 our customers and stakeholders have had access to our GIS system which shows the location and size of network assets on a map background. Examples of GIS use include:
 - Asset location for safe digging practices by other utilities and public entities
 - Facilitating competition in connections by independent connection providers (ICPs), independent DNOs (iDNOs) and engineering consultancies
 - Research projects managed by consultancies or universities
- Through the Open Networks Project, we have raised and supported modification proposals in the grid code, distribution code and distribution connection and use of system agreement (DCUSA) for data-sharing between multiple licensees or between licensees and stakeholders
- Creation of a data triage process to ensure that customer and industry requests for data are fulfilled in an expedient, secure and accurate way
- Implemented a suite of cloud-based data and analytics tools so we can start to treat our data as an asset
- Building relationships with external stakeholders in the North West and peers in the Energy National Association to understand what data will be required by stakeholders and to collaborate on joint projects such as the national energy system map.
- Starting to recruit new capabilities into our business that are data-specific and aligned to future needs.

We need a much stronger focus on how we collect, store, analyse, share and react to what our data can tell us.

Recent developments			
<p>Improved data quality and network connectivity Cleansing- network connectivity and asset data</p>	<p>Improved customer communication by integrating our control room data with our customer system Ability to manage impact of network events on our customers</p>	<p>Generating work orders to our local team Optimising how allocating colleagues to help resolve faults and improving productivity of fleet</p>	<p>Target operating model Creation of specific data roles, where recruitment will develop in this area</p>
<p>Improved stakeholder access to geographic data A network asset view portal has been developed to provide access to our maps and spatial data</p>	<p>Enabled increase data collection with telemetry asset replacement Replaced any non-smart grid capable telemetry assets with modern digital equivalents</p>	<p>External engagement Reached out to external organisation to establish relationships to discuss what their organisations are doing from a data perspective</p>	<p>Active participation in the Energy Network Association groups Being involved in sub-groups supporting data triage and national energy systems map</p>

This document explains how we worked with our stakeholders to develop our data strategy and how it aligns with EDTF recommendations and Ofgem’s data best practice guidance. It also describes how the themes of our data strategy align to delivery of our digitalisation strategy.

14.2 How our data strategy aligns to data best practice and EDTF recommendation

EDTF recommendations

EDTF recommendation	Data strategy
1. Digitalisation of the energy system	This drives through all the deliverables of the data strategy. This is a key enabler for delivering our digitalisation strategy and for allowing open access to applicable data to support future digital services.
2. Maximising the value of data	This data strategy details how we govern our data processes, making our data open where applicable, maximising the value and talking a common language, all supported by a modern data architecture.
3. Visibility of data	A key deliverable is reflected by the emphasis on how to make our data open where applicable and how we put in the necessary processes to triage data requests and to determine where data can be accessed.
4. Coordination of asset registration	The data strategy is further establishing the components to build on the ongoing national energy system map and the work completed in RIIO-ED1 around management of asset data.
5. Visibility of infrastructure and assets	As with the above recommendation the data strategy establishes the components in a modern data architecture to enable us to increase visibility of assets and support new flexibility markets.

Ofgem’s data best practice guidance

Data best practice	Data strategy
1. Identify the roles of stakeholders of data assets	The re-establishing of our data governance will help identify stakeholders and their roles and responsibilities in our continuous improvement and development in RIIO-ED2.
2. Use common terms within data assets, metadata and supporting information	Establishing a data catalogue as part of ‘Talking a common language’ and collaborative forums will help achieve this objective. .
3. Describe data accurately using industry standard metadata	As above, this requirement will be part of the processes out of creating our data catalogue in line with industry standards e.g. Dublin Core standard.

Data best practice	Data strategy
4. Enable potential data users to understand data assets by providing supporting information	When making our data open, we will follow best practice in explaining our services to ensure users are aware of the data available.
5. Make data assets discoverable for potential data users	Our proposed data catalogue will allow data users to discover what data is stored and the definition of this.
6. Learn and deliver to the needs of current and prospective data users	Data triage processes established as part of our data strategy help to deal with data requests. Collaboration with identified stakeholders is key and this will be supported by the approaches outlined in this data strategy.
7. Ensure data quality maintenance and improvement is prioritised by data user needs	A fundamental theme in our data strategy is around improving data quality and the continual 'remove and enhance' processes.
8. Ensure data assets are interoperable with data assets from other data and digital services	Interoperability is a key principle of the proposed modern data architecture, which will be achieved by application programme interfaces (API) but also take into consideration critical national infrastructure with which our systems communicate.
9. Protect data assets and systems in accordance with security, privacy and resilience best practice	We will only share applicable data to ensure we adhere to General Data Protection Regulations (GDPR) and our security principles. This will be demonstrated in the proposed modern data architecture to secure sensitive and commercial data.
10. Store, archive and provide access to data assets in ways that ensure sustained benefits	Adopting our cloud first principle, with the proposed modern data architecture, will enable us to take advantage of a range of cost effective data storage solutions in line with data retention policies. Accessibility to retrieve the data will be in line with policies and procedures that the data governance group will develop and continually update.
11. Treat all data assets, their associated metadata and software scripts used to process data assets as presumed open	The data strategy will assign appropriate confidentiality settings to all data to ensure that appropriate security is assigned to data that is not open. Our strategy will make applicable data available on a portal that can be easily accessed by our stakeholders.

14.3 Data and our digitalisation strategy

Data is central to our overall digitalisation strategy. It enables us to innovate to achieve our business goals and improve the customer experience. The digital transformation will support the operation of the distribution system, the transition to net zero and help our customers in vulnerable situations to ensure nobody is left behind.

By improving all elements of data in the organisation, we will optimise our processes, enable future innovation and make better decisions based on better quality data.

As this illustration shows, data plays a critical role in supporting the three capability streams of our digitalisation strategy.

Enablement	Innovation	Insight
Establish data governance and data triage processes in incremental deliverables	Published data services that enable innovation to support EV and LCT collaboration	Tools and skills insights
Baseline data maturity established	Support flexible services based on network capacity and usage	Access to consolidated data sets
Creation of a data catalogue	Creation of artificial intelligence (AI) and machine learning (ML) expertise	Improved customer service by using predicative fault analysis and better outage information
Creation of a centralised strategic data and integration platform	Additional value driven from the network	Future capacity planning to determine network reinforcements and commercial alternatives
Data portal established to publish initial data services using application programming interfaces (APIs)	Enabling digital twin to be established	Better analytics using historic data that will drive efficiencies
Services produce to enable customer self-service	Integration of core systems and external data sources	Enable integration with partners with ingesting and sharing data to help identify PSR customers
Best practices established i.e. data quality, data models, data exchange (e.g. common interface model)		
Data culture embedded and collaboratively working across the organisation, industry and external stakeholders		

The next six sections describe the main areas of our data strategy which cover:

- Improving the quality of our data
- Data governance across the organisation
- Making more of our data open to share
- Maximising the value we get from our data
- Talking a common language
- Modernising our data architecture.

The final section describes:

- Benefits of our data strategy

14.4 Improving the quality of our data

The decisions we make based on our data are only as good as the quality of the data. To deliver better services and experiences for our customers, we need to ensure the information we hold, and use, is of the highest quality.

Improving the quality of our data will inspire more trust, from our colleagues to our customers, stakeholders and the external organisations with which we collaborate. We will achieve this by:

- Reviewing and establishing data owners and associated system owners, empowering them with the right tools to collect, manage and analyse data to maximise its value
- Providing easy-to-use tools to build data cleansing rules
- Reducing the duplication of data across the entire organisation
- Making data cleansing a more automated process, reducing the incidence of errors.

How will we measure progress?

We will start to measure data quality as part of our business key performance indicators (KPIs). Improved data quality scores will give people more confidence in our information. We will start by performing a data maturity assessment to benchmark current maturity and set a target to achieve in RIIO-ED2.

When will we deliver this by?

We will develop an initial set of KPIs by December 2023, but with a focus on continuous improvement beyond that. Data needs and processing will continue to evolve, and we want to ensure we are prepared for those developments.

14.5 Data governance across the organisation

To maximise value from our data, we will prioritise the activities that deliver the most benefit to our customers, the network and the environment as part of supporting net zero targets.

To do this we will:

- Create data groups across the organisation to maximise the use of our data to deliver business goals
- Re-establish a steering committee that meets regularly to make decisions on governance and stewardship as new situations arise
- Establish an improved mechanism to respond to data requests from external organisations and develop metrics on handling those requests
- Create a prioritisation process to deliver business outcomes driven by a data-focused culture.

How will we measure progress?

We are building company-wide governance policies and will present these for approval to the data steering committee which will be established with a new remit to oversee them.

When will we deliver this by?

The data steering committee will be in place by December 2023. We will review its structure, remit and frequency depending on how our data structure and demands evolve.

14.6 Making our data open to share

We share data with stakeholders and other organisations to allow us to work together to make and implement better plans and services for the people and communities of the North West. Our customers need data from us to understand everything from their bill, the costs that feed into that bill, to data on our network assets and future electricity demand forecasts.

By building on the quality of our data and having the right governance processes to balance ease of sharing with privacy and security, we will be able to use the data to the benefit of the wider community and participate in national collaborative initiatives.

To do this, we will:

- Provide more open data services internally and externally through our secure data sharing portal and ensure supporting information is clear
- Ensure we continue to improve our data triage processes and that they are in-line with our collaborative work with the Energy Network Association working groups, using the data classifications of 'fully open', 'shared' and 'closed' as determined by our data governance processes
- Establish relationships to share data with local authorities, communities and partners, and work together to understand what data needs to be shared
- Establish service level agreements so partners, communities and local authorities know how quickly they can expect a response
- Ensure privacy and security policies are understood and adhered to throughout the organisation.

How will we measure progress?

We will review performance against the service level agreements put in place for our data triage process. If we fail to meet any part of these, we will take remedial action. The benefits of introducing a robust data triage process will ensure there is consistency in our responses to data requestors and allow us to sign-post data sets that answer similar questions.

When will we deliver this by?

Our data triage process will be fully established by the end of 2023. The data sharing portal will be ready for use by 2024. We will continue to hold conversations with all partners, internal and external, before opening the portal to ensure it meets requirements. The portal will support initiatives for flexible services and the innovation project BiTrader.

14.7 Maximising the value we get from our data

Data per se has no value to us, either as an organisation or to the communities we serve. Only when we understand what the data is telling us, and make appropriate plans based on that understanding, does the data have any value. To maximise that value, we are focused on analysing data from different parts of the organisation, and from our partners, to identify and resolve issues.

With better data, and a better understanding of its meaning, we will be able to build a more resilient network, meet our customers' needs more effectively and support those in vulnerable circumstances. Our decisions will have a bearing on our impact on the environment, and our contribution to helping the North West achieve net zero.

We also need to invest in our people so they have the skills and tools to analyse the data and trust its sources. This is critical to making this ambition a reality and improving our data culture.

To deliver all of this, we will:

- Provide real-time business performance metrics and data to allow colleagues to use augmented data sets to back up hypotheses
- Enhance our senior management KPI and reporting capability by giving leaders the right information, at the right time, and enabling them to make informed business decisions
- Enable data services to be discovered easily through use of the data catalogue and ensure that data is interoperable across applications e.g. through the creation of an API ecosystem
- Expand our centre of excellence and invest in capabilities across the organisation, including the development of our business analysis and consultancy capabilities
- Establish value outcomes for customers, stakeholders and the environment and deliver against them
- Establish (and manage against) service level agreements so partners, communities and local authorities know how quickly they can expect a response
- Ensure privacy and security policies are understood and adhered to throughout the organisation
- Provide training to colleagues to ensure they have the skills to use the capabilities being delivered and improve data literacy across the organisation, which in turn will improve our data culture and maturity.

14.8 Talking a common language

Every business and industry have its own jargon and language. Sometimes this gets in the way of easily sharing and understanding information, particularly when two organisations use two different terms for the same thing or use the same term for two subtly different data sets.

Establishing a common language and naming convention helps to engage as many people as possible with our data. Making the language surrounding it more accessible and easier to understand means everyone has the same understanding of the information we work with.

Working across the industry, we are creating a common vocabulary. Our data will be easier to interpret, particularly when we work on collaborative projects, and will have a more positive impact on our communities.

To achieve this, we will:

- Collaborate on a common vocabulary across the energy industry, using industry-standard data models where appropriate, building on the work already done in our asset space
- Create and adopt a full data catalogue covering all information in the organisation
- Create common data models and processes that takes into account data protection and GDPR processes – an enabler to the common vocabulary and terminology being adopted
- Ensure that we capture metadata in a recognised format e.g. Dublin Core Metadata.

How will we measure progress?

An established data catalogue will show all the definitions we use, along with the related metadata and the data itself that can also be used for collaborative work on the ENA data catalogue. This will support data best practice on the use of common terms, helping us to discover what data we hold across our business and its lifecycle. The percentage of data assets held in our data catalogue will be used to track progress.

When will we deliver this by?

The data catalogue solution will be implemented in 2023 and will be fully populated by 2024, with regular updates throughout RIIO-ED2 and as part of any future improvements.

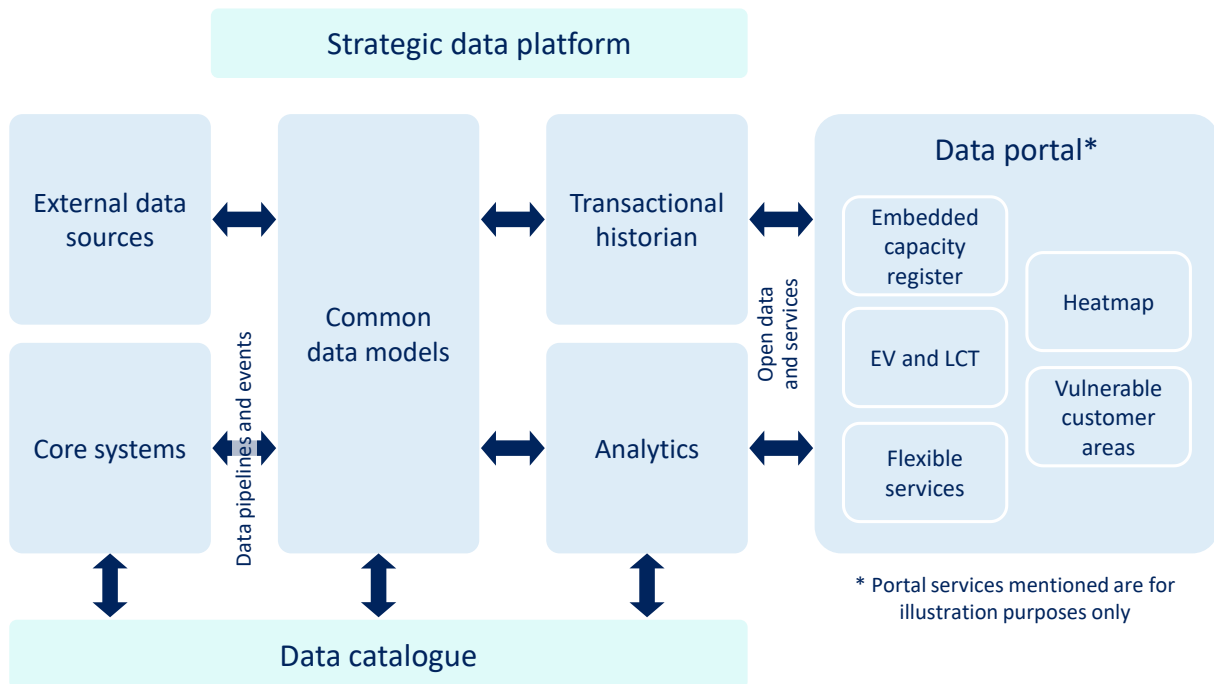
14.9 Modernising the data architecture

The way our data is organised and stored is an enabler for the successful delivery of several initiatives. It will combine data from our core systems as well as identified external sources.

Taking a 'cloud-first' approach will support the need to process large amounts of data. This work links in with the creation of common data models and language development.

The diagram below sets out our proposed approach.

Data architecture



How will we measure progress?

This new architecture will enable us to maximise the value of our data and deliver results without impacting our day-to-day operational activities. Our external partners will have access to the data they need on the data portal.

When will we deliver this by?

Our current architecture will evolve to the new model by 2028. We will achieve this by implementing initial technical components that deliver business outcomes and benefits by the end of 2023. Data will be catalogued to ensure visibility and awareness of what's available. We have implemented strategic analytical reporting solutions during RIIO-ED1 to improve data visibility internally and support decision-making in customer services. Migration of legacy system data will be an ongoing activity until 2028.

14.10 Benefits of our data strategy

These activities will translate into tangible benefits for our customers and stakeholders. Below are some examples:

Our domestic customers

- Having access to data about our customers that has come from collaborative data-sharing initiatives means we can provide better support for our vulnerable customers.

- We will use data to be more proactive in identifying where maintenance is needed on the network which will reduce the number of power outages affecting our customers.

Independent connection providers (ICPs) and business stakeholders

- Requests for data to support ICP initiatives will be handled more efficiently as a result of new governance processes.
- ICPs will be able to get access to the data they need more quickly to support collaboration in the North West.
- Sharing more data will support local authorities to improve local planning, such as for electric vehicle charging infrastructure, and provide more accurate local energy forecasts.
- Collaborating with gas and transmission networks by exchanging data will help solve challenges across the whole energy system.

Electricity North West colleagues

- Our colleagues will know what data we have and where to find it.
- We will all use the same terminology to describe data.
- Our ability to use data in a more efficient, optimised way will provide better support for our colleagues.

Data is worthless if we cannot access it, understand it and share it with others where appropriate. The focus of this strategy is to improve the way we work with data so we can deliver real benefits for people and communities across the North West and the UK.

We will continue to engage with our stakeholders and customers on a regular basis to understand how data services are evolving and to capture their on-going requirements.