

SP Energy Networks RIIO-T2 Digitalisation Strategy

March 2024



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01 Introduction

Scottish Power Transmission (SPT) is a wholly owned subsidiary of SP Energy Networks, responsible for the transmission of electricity in central and southern Scotland. We take electricity generated from power stations, wind farms, and various other utilities and transport it through our vast transmission network, consisting of over 3700 kilometres of overhead lines and over 600 kilometres of underground cables. We have over 150 substations and in excess of 100 grid supply points in our network where we take the high voltage supply and reduce it to the low voltage needed for use in the home.

This is our first SPT specific Digitalisation Strategy, previous documents covered both our transmission and distribution licences, recognising the increasing significance and unique aspects of Digitalisation for SPT. This document builds on our RIIO-T2 Non-Operational IT and Telecoms Business Plan, reflecting changes since its publication in 2020. It also reflects the updates since our previous SPEN Digitalisation Strategy documents which can be found on our website* and provides an update on our plans to develop our use of digital tools to support our transmission business.

Our SPT Digitalisation Strategy focuses on enabling efficient management and operation of the transmission network to deliver value and benefit for our customers and stakeholders. The drive to Net Zero has led to increasing demand for connections and load on our network and we are developing our digital platforms to support this in alignment with our strategic goals, which are:

Our RIIO-T2 Strategic Goals



A sustainable **Net Zero future**

We will take the lead to build a healthier, more accessible energy model - one which leaves the carbon economy behind. We will meet carbon targets, consumers and network users' lowcarbon ambitions, and make a large, proactive contribution towards Net Zero.

Adapt our world-class, resilient network

This is a critical time for networks. Demand is changing, generation is evolving, and new threats are emerging. We will adapt our world-class network to meet these challenges, including extreme weather, cyber security, and black start events – delivering ever higher performance for consumers, network users and wider stakeholders.

Increase efficiency through constant innovation

We will continue to improve our performance through a continual cycle of innovation. With smarter solutions, we can do more with less deploying new technology, processes, and ways to share data. Innovation will help us deliver uninterrupted supply, faster connections, and meet the ambitions of consumers, network users and wider stakeholders.

Keeping network users & consumers at the heart of our decisions



We will listen and learn even more from our stakeholders. This will allow us to continue to raise our efforts as we work to improve lives, create jobs, and protect vulnerable customers. In everything we do, we aim to do more.

Our Digitalisation Strategy is aligned with our RIIO-T2 strategic goals and provides a number of key capabilities that underpin their delivery. We have summarised our strategy against 4 pillars:



Further detail of the alignment between our digital initiatives and our strategic goals is described under each initiative later in this report. Each initiative we undertake is developed with the 'secure by design' development approach, eliminating the requirement for one single cyber initiative.

Our investment in digital solutions creates a foundation upon which we will build as we transform our organisation to deliver the strategic investments in the transmission network required to deliver Net Zero. The Digitalisation Strategy represented here is an evolutionary one scaled to meet the needs of the transmission business as envisaged in our RIIO-T2 business plan. Subsequent developments including the significant increase in connection requests, Accelerated Strategic Transmission Investment, and Holistic Network Design will be fully incorporated into our Digitalisation Strategy. However, it is clear that we need to continue to invest in digital solutions in order to prepare for the future of our transmission business.

Further detail on our future plans for Digitalisation are described in our section 'Looking Forward'.



02 Stakeholder Engagement

In SPEN we engage with a range of customers and stakeholders to understand what they require both now and in the future. Their feedback and priorities are used to build our strategic goals that sit across SPEN and provide a consistent focus for our business, enabling us to deliver our agenda. We have tested our Digitalisation Strategy approach and shaped it through engagement with our customers and stakeholders.

Within each business initiative we have identified performance metrics to track the success of our deliveries. As each project progresses, we engage further with our customers and stakeholders, to build on and maintain alignment with the metrics, adding the actual values to assess the realised benefits. This is a dynamic process as business and customer priorities change during the RIIO-2 period and is revised and published here in our Digitalisation Strategy every two years.

Stakeholder Engagement in Action

SPT Connections Summit

The SPT Connections Summit is a bi-annual event, most recently held in December 2023, to address customer challenges within our licence area. Over 150 customers attended, including those who are looking to connect or have connected to our Transmission network.

During the event, we were able to provide updates on the network and reinforcement works, as well as encourage customer feedback on the day and in the future. The event informs customers about our internal processes and is a great opportunity for direct interaction with a range of our teams across the business.

We presented the learnings from our Quality of Connections customer survey undertaken by our new Customer Liaison team- the themes highlighted in this will be our focus for the future, including:





😇 SPT Heatmaps

In 2023 we recognised following stakeholder feedback that we need to make our data more available and accessible through system visualisations. To do this we launched an initiative to create our SPT Generation Heatmap which is a valuable resource for visualising our transmission assets using data from the National Energy System Operator (NESO) Transmission Entry Capacity (TEC) register.

The aim was to contextualise the volumes of generation capacity and their associated project status status in the same view as the SPT network:

This was launched in December 2023 and demonstrated at our SPT Connections Summit. Feedback was positive, and we are now in our second development phase where additional functionality will be added, including:

- · Improving the data and information displayed to show the connection between projects and the respective point of connection.
- · Incorporating information on the distribution embedded capacity export.
- Improving clarity on line voltage colour coding.
- Displaying the thermal rating of substations and their respective available capacity.
- Providing regional information to improve understanding of saturation on parts of our network.





External Accreditation

To support our programme of continuous improvement and the development of high-quality stakeholder engagement practices, we enlist AccountAbility, an independent company who own the global standard for stakeholder engagement, to conduct an audit of our engagement strategy and processes.

This robust and comprehensive assurance and accreditation programme is aligned to the principles of inclusivity, materiality, responsiveness, and impact against the AA1000SES global standard for stakeholder engagement.

We have once again improved our AccountAbility Health check score in 2023, achieving an 89% rating, one of the highest scores ever achieved globally.

Looking ahead, we remain fully committed to our work with AccountAbility, and have embedded this commitment within our future business plans to ensure we continue to learn from best practice and develop industry-leading engagement with our customers and stakeholders.

89% Health check rating achieved in 2023

AccountAbility Health Check Progress





03 Our Digital Initiatives & Roadmap

The diagram below provides an overview of our digital solutions that are part of our RIIO-T2 Digitalisation Strategy. A number of these have been fully delivered and the remainder are on track for delivery as per our roadmap. These are shown against 4 pillars.



Stakeholder Solutions:

Implementing and upgrading our existing customer service applications, including the Customer Relationship Management (CRM) platform, and our Open Data Portal where we publish data for consumption by external stakeholders.

Works and Asset Management:

Our business manages and maintains a large and complex set of assets. Our Building Information Model (BIM), mobile field workforce solution, and environmental systems are designed to support the management of these assets.

Technology Enablers:

We continue to invest in our platforms to support the operation of the business and the initiatives shown here bring new technical capabilities which will enable future development of solutions.

Data and Analytics:

Data is at the heart of our digitalisation programme. Without well governed data, our technology solutions will fail. We have a suite of initiatives that enable us to manage and extract the maximum value from data.

Our Digital Initiatives & Roadmap

Our Digital Strategy encapsulated in this document is aligned with these strategic goals and considers the various factors outlined below.

Our RIIO-T2 Strategic Goals



A sustainable **Net Zero future**



Increase efficiency through constant innovation



Adapt our world-class, resilient network



Keeping network users & consumers at the heart of our decisions



Digital Strategy

Development of digital platforms to facilitate improved intera external), enabling improved capture, recording, analysis, and

Consolidation of IT solutions around key asset management and enhanced data capture across a wider base of business information to be used in business decisions.

Extension of IT platforms to capture more data (geospatial, t measurement points, video, etc..) on SPT assets (using things edge computing, social media, etc..) enabling better informe

Introduction of robotic process automation to facilitate the ra data volumes.

Exposing more information closer to the point of consumption adoption of mobile platforms, the development of focused a edge computing solutions and technologies such as virtual

Adoption of cloud-based solutions where these provide the and technology effectiveness and efficiency.

Implementation of BIM Level 2 compliant solutions including assets and the establishment of the Common Data Environn

Development of analytical solutions to enable automated pr to provide insights into SPT's operation at a level currently no

The implementation of a data exchange layer using enterprise will facilitate the further adoption of process automation thro SPT's operation.

Improved condition assessment of assets based on broader better decisions on the operation, maintenance and replace

The integration with additional monitoring points on the netw monitoring and dynamic rating calculations to be performed that will facilitate the capture of the real-time information for network operation.

Consideration of the impact of the transition to Net Zero on t operation of management data.

Introduction of machine learning and artificial intelligence so and decision making.

being undertaken to realise these goals.

	Strategic Goal
actions with users (internal and d reporting of data.	鈫
t platforms together with increased s operations enabling more	
ime series, additional s such as IoT devices, ed decision making.	
apid processing of larger	
on through the widespread applications, deployment of and augmented reality	
greatest opportunity for business	P
g full 3D modelling of ment for collaboration.	
rocessing of larger data volumes ot possible.	
se service bus technologies bugh different aspects of	P
r and deeper data sets to enable ment/upgrading of assets.	Image: Control Image: Control Image: Control Image: Control Image: Control Image: Control
work to enable system d. Solutions will be developed use in determining optimal	
the data modelling or asset	會 🖗 參 ☆
plutions to provide new insights	

The following pages detail the project initiatives

Asset Condition Based Decision Support



Overview and Purpose

The deployment of a tool to capture and record asset condition information through sensor technologies to reflect the live SPT asset risk profile and enable improved management decisions throughout the life cycle of the asset. Previously SPT largely followed a reactive approach to the maintenance of its assets with intervention undertaken in response to indications of asset health or performance degradation during regular inspections and condition monitoring activities. We will create a proof of concept to allow us to demonstrate the viability and measure the value gained from a condition-based asset decisioning platform.

Change Drivers

Our current approach to network asset maintenance is based on a regular scheduled cycle of inspection and maintenance activities. We will assess the potential to introduce other approaches such as reliability centred, condition-based and predictive maintenance. The data collected on our transmission assets is predicted to grow exponentially through the adoption of technologies such as drones, IoT, 3D scanners, and other field capture devices, resulting in a modal shift in the monitoring possibilities. This initiative will demonstrate that making use of this data will lead to more efficient asset management strategies with a resultant reduction in costs to customers.

Benefits

- Facilitation of improved data analytics and assessment of datasets across an integrated system.
- Analysis of data trends to allow for asset deterioration rates to be reviewed for asset intervention decision making.
- Improve network resilience resulting in a reduction of customers off supply due to unexpected faults or extreme weather events.

Status Update

This initiative has dependencies on some enabling activities that are required to be completed prior to commencement of the proof of concept. The implementation of the transmission Network Asset Risk Metric (NARM) solution has been completed, providing the platform to perform asset health and criticality calculations. The data transfer mechanism to feed this with asset condition data is currently being upgraded to deploy a flexible solution that will support new data exchanges as required for the proof of concept.

Proof of concept development is due to commence in 2024 and the learnings from this will be incorporated into our RIIO-T3 business plan.

Big Data Platform (Big Data, 3D Modelling, Visualisation & Analytics)

Overview and Purpose

Our Big Data Initiative will see the consolidation of SPT's core asset systems onto a single platform, including the implementation of the Esri ArcGIS Utility Network framework to enable full 3D modelling of the network, and the integration with OSIsoft Pi for key asset information and asset video data capture. SPT has three existing asset and business information systems (GIS, SAP & e-Terra) which are synchronised by nightly batch updates, plus an SAP Business Warehouse reporting universe that is populated nightly. With this initiative we aim to improve the currently limited integration with real-time data.

Change Drivers

The purpose of this initiative is to develop a big data management solution for SPT to support the increased data storage, retrieval and analysis required as a result of the digital transformation. The proposed solution will handle the volume, velocity and variety of the input data and produce a well-structured, veracious output. This is the first stage of the implementation of our Big Data platform, providing the essential storage mechanisms upon which use cases can be developed and deployed.

Status Update

An Azure Synapse data platform has been set up and a suite of data uses cases identified. These use cases have been prioritised, the first set of priority use cases are in development and due for implementation in 2024.

SP Energy Networks RIIO-T2 Digitalisation Strategy



- Development of a data catalogue providing a detailed inventory of all data assets and associated metadata.
- Integration with real-time systems to improve data quality, enabling us to make more informed decisions.



BIM Integrated Solutions



Overview and Purpose

The Building Information Modelling (BIM) initiative business case has been produced alongside the government recommendation to progress to BIM Level 2 compliance. The alignment of whole lifecycle processes for assets within the BIM framework is an enabler for many of the other initiatives in this plan. This will enable the creation of a digital twin of our transmission assets, enabling greater analysis to be undertaken. BIM Level 2 requires 3D modelling of assets and information with data sharing across platforms. In order to deliver on this initiative this requires procurement of platforms to support 3D modelling, development of infrastructure requirements to host the data and provision the solutions to end users, integration with SPT's core asset platforms and finally the development of the Common Data Environment (CDE). At the beginning of the T2 period SPT network was modelled in a mixture of 2D and 3D technologies, and application integration was via point-to-point services. Collaboration between parties will be updated to using one CDE, as currently this is carried out via paper, email, and postal services.

Change Drivers

BIM Level 2 is mandated by the UK (April 2016) and Scottish (April 2017) governments for all Government commissioned contracts above £2m. Over the next decade, in combination with data analytics and IoT, SPT will be able to plan new assets more effectively, build at lower cost and operate and maintain assets more efficiently. BIM needs to be fully integrated into SPT's asset information portfolio, complementing the information captured across all asset systems.

Benefits

- Improved quality across all aspects of the project planning lifecycle from design to delivery.
- Reduction in time, effort and cost of changes throughout project life cycle resulting in cost efficiency for customers and reduced variation from original designs.
- Improve project implementation by seamless data sharing with design engineers co-ordinating and making changes within one environment, improving customer satisfaction

Digitisation of Land & Planning Data

Overview and Purpose

Scanning and digitisation of land information within the GIS platform, will enable land rights boundaries to be digitised against the assets and integrated with the grantor payments process in SAP. In the past most of SPT's legacy land records were held in paper form which made rapid search, retrieval and utilisation of information contained in the agreement difficult. Grantor payments were managed and facilitated through SPT's SAP system which previously required manual data entry upon installation and commissioning of the asset.

Change Drivers

With a largely paper-based record system, we often face the inability to retrieve land rights information at the speed grantors and stakeholders expect. The digitisation of land records will make the data more readily searchable and able to be utilised more effectively within the organisation to improve our level of service and enable us to link records directly to the applicable assets.

Status Update

This initiative is currently active, with over 50,000 records scanned in QI 2024. Complete digitisation of all 450,000 Land Right records expected by Q4 2024.

Status Update

The project is currently in its second development phase which is due to complete in QI 2025, delivering the BIM solution across three pilot sites.

SP Energy Networks RIIO-T2 Digitalisation Strategy



- Quicker turnaround for Land Rights information requests.
- Creation of consolidated digital document database.
- Improve and ensure a high level of accuracy within our historical information database.



Environmental & Sustainability



Mobility & Scheduling

Overview and Purpose

This initiative will see the deployment of a solution to capture information about waste generated in the supply chain and its eventual disposal.

This includes the deployment of IT solutions to capture emission information across both our network activities and Scope 3 emissions (those produced indirectly across the wider supply/value chain), e.g., Carbon Emissions.

Historically this information has been captured in a paper-based reporting system, with information consolidated manually and passed on for reporting across the Iberdrola Group.

Change Drivers

This change has been driven through corporate consolidation of reporting onto a global platform as well as regulatory drivers requiring the reporting of additional environmental data.

Moving to a digital solution will improve our reporting time and accuracy.

Benefits

- Understand the fate of waste being produced to inform business decisions to increase reuse and recycling as per our Circular Economy strategy.
- Inform infrastructure design decisions to minimise greenhouse gas emissions during development.

Status Update

Project to implement an improved solution for capturing and tracking waste data has kicked off in QI 2024. Later in 2024 we will deliver enhancements to SAP to capture carbon metrics against projects and associated materials and labour elements, and improvements on capturing environmental data in the field.

Overview and Purpose

Our Mobility and Scheduling initiative addresses the streamlining of processes related to field activities for planned and reactive work to improve Operational Efficiency, Customer Service and, Safety and Environmental Performance. Applications previously sat on multiple isolated mobile solutions, without complete data integration onto core business systems. Currently the scheduling of resources is completed manually using a Visual Planning Board for short term solutions, or outwith our core systems for long term scheduling.

Change Drivers

With the increasing volume of change taking place on the network it is crucial that we invest in efficient approaches to manage scheduling of assets, field work, and supply chain logistics.

This will support better decision making when planning the work, reducing costs for customers, and lowering our carbon footprint.

Status Update

This is a key IT project for us across 2024/25 that will present a significant change for both office and field worker processes and technology usage.

In QI 2024 we completed the blueprint phase, identifying all potential functionality that could be deployed using our chosen field service product and the associated benefits. Procurement of the most appropriate technology platform and licences has also been finalised in QI.

We are now mobilising a team of 35 skilled resources to work on this as we move into the agile delivery phase of replacing our existing field data capture and data management return forms and Substation Inspections, aiming to realise benefits by Q4 2024.

SP Energy Networks RIIO-T2 Digitalisation Strategy



- Optimise delivery of work and travel time for our field workers, with optimisation based on resource location and expertise.
- Customers can get better visibility of scheduled work and estimated duration.



Power System Analysis Software



Overview and Purpose

This initiative covers the adoption of new Power Analysis tool licences and modules to enhance functionality to facilitate analysis of new network challenges. At the start of the T2 period DIgSILENT PowerFactory was used to undertake network analysis of the transmission network. Further investment in modelling tools is expected to meet the needs of the changing transmission network.

Change Drivers

With new types of power electronic equipment connecting to the network additional licences and modules are required.

The increasing penetration of renewable technologies and reduction in fossil fuels on the network is leading to challenges such as loss of inertia and system harmonics.

Power Systems analysis tools are required to model the impact on the network of new generation sources with differing characteristics.

Benefits

- Increase understanding of potential impacts on the network due to changes in connected generation and load.
- Upgraded Power System Analysis Software will improve overall Whole System Design.

Status Update

This project has not started yet and has a planned delivery for the period 2025/26.

Stakeholder and Customer Solutions

Overview and Purpose

The development of dedicated data portal platforms to facilitate improved sharing of data will provide a more streamlined solution for stakeholders to interact with us. At present we have a mix of online and off-line customer service interactions as some of our data is available on our website, and we have implemented our dedicated data portal. The development of our Customer Relationship Manager (CRM) tool, Salesforce, will enable us to deliver brilliant service to customers and stakeholders now and into the future.

Change Drivers

Our stakeholders expect us to develop online capabilities, as part of our drive to become a digitalised organisation. This includes the need to share data on the application of appropriate security measures.

Our investment in an open data portal is part of compliance with Ofgem's Data Best Practice guidance.

Status Update

Build and implementation of the CRM tool using a cloud-based Salesforce solution has been delivered in QI 2024. Post-implementation improvements will be made throughout the remainder of 2024. Open data portal is live.

SP Energy Networks RIIO-T2 Digitalisation Strategy



- CRM solution provides a single 360° view of the customer with all details and communication history visible, improving our response times and ability to provide a more tailored customer experience.
- Maintain or improve customer satisfaction, despite the anticipated challenges in RIIO-T2 (uptake of low carbon technology connections, Net Zero)
- Continued and scalable compliance with Data
 Best Practice guidance



System Monitoring & Dynamic Rating



Overview and Purpose

System monitoring and dynamic rating involves the capture and analysis of near real-time operational information on SPT field assets to enable more informed operational decisions about the network.

Additionally, the capability to further analyse our asset and system data will aid design of efficient and strategic risk mitigation. Current system analysis is undertaken retrospectively using fixed data recorders collected for fault investigations and network planning.

Change Drivers

Changes to network operation will result in changes to the operation of transmission assets such that the traditional approaches for system monitoring become sub-optimal. With greater visibility of system performance and operational parameters there is the potential to reduce network reinforcement costs. Additional information from assets through more sensors being fitted and increased volume of data collected and stored, will result in a modal shift in asset monitoring possibilities.

Benefits

- Allows analysis of assets to optimise their usage and to reduce the volume of potential risks.
- Improved network asset lifespan, reducing replacement and repair costs.

Status Update

This project is not started yet and has a planned delivery for the period 2025/26.

Technology Enablers

Overview and Purpose

Technology Enablers represents our investment throughout T2 to facilitate the initiatives driving us towards being a digitally enabled Transmission business. There are four key Technology Enabler areas:

1. The continued investment in cyber security as part of our risk-based approach, underpinning our digital platforms and contributing to the continued operation of a secure and resilient transmission network.

2. Enterprise Service Bus investments to provide mechanisms to move and transform data reliably and securely across our digital platforms to support business operations.

3. Workflow orchestrator integration with our core platforms for the Land and Planning function, to enable the scaling of deliveries to meet the needs of our customers and stakeholders.

4. Upgrade of our Geographical Information Systems (GIS) to ESRI ArcGIS Utility Network, with integration to our BIM platform enabling improved asset management. This provides the capability for 3D modelling (our assets are largely modelled in 2D) and integrates with new datasets, such as those from our aerial LiDAR scans, asset inspection data, and environmental information.

Change Drivers

The technology enablers described here enable the wider delivery of our digital initiatives. They underpin our wider investment in digital solutions and enable us to scale our operation as required as part of our SPT strategic goals.

Status Update

Our cyber delivery programme is ongoing as part of our risk-based approach to managing cyber security risks. Our enterprise service bus has been implemented and we are now delivering integrations using it. The workflow orchestrator for our land and planning team is under development with a plan to have it live in Q3 2024. Our GIS upgrade is underway with a target to implement in 2025.

SP Energy Networks RIIO-T2 Digitalisation Strategy



Benefits

- Continued management and mitigation of cyber risks.
- Provision of scalable and automated solutions to deliver efficiencies.
- Maintaining technical/software currency of our estate through upgraded products/platforms

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04 IT Team & Enabling Function

The delivery of our digitalisation and data initiatives is the responsibility of the SP Energy Networks Business Transformation team, supported by the wider business subject matter experts. Much of our digitalisation strategy develops new approaches to planning and intervention, to increase the productivity and efficiency of our workforce.

In 2023, our Business Transformation Directorate completed a re-structure that has transformed the team and the way we work. Our headcount increased from 50 to over 90, introducing additional capacity and new roles into the team. This enhances our capabilities to better serve our business and deliver outcomes for our customers and stakeholders.

Functionality and technology change impacts our internal stakeholders, and to enable and manage that change, we use the Prosci ADKAR change management methodology. Operating a 'hub and spoke' model, the transformation team are viewed as experts in change management and provide coaching and upskilling to our network of change practitioners across our organisation. A skilled network of people who understand the importance of managing the people side of change ensures that new technology and digital solutions are fully adopted, and that solutions deliver value for our customers and stakeholders.

Investing in the Digital Skills of Our People

Investing in our people will enable us to accelerate adoption of digital technology and empower our people to identify new and innovative ways of performing their tasks. We will support our people in this transition by equipping them with the right agile and digital skills, creating a team of expertly skilled staff with a more diverse employee skillset.

In order to provide crucial skills to adapt to industry change and embed a culture of continuous learning and development we will:

Implement a cultural change programme so our people recognise the value data and digital skills can unlock for our customers, stakeholders, and our own organisation. Specialist training delivered by external and internal subject matter experts. Expand our graduate programme and recruitment policies to include digital skills. Use gamification of training and knowledge-based AI assistants to enhance our learning and development programmes.

4



Business Transformation Directorate

Architecture and Strategy Team



Our Architecture and Strategy Team own our Digitalisation Strategy and Roadmap and are responsible for developing and driving our digital strategy. They provide architectural oversight and test solutions for compliance with Digital and Data roadmaps. They are responsible for all our Digital submissions and publications which provide updates on our Digital Strategy and delivery progress. The number of systems architects in this team has grown to ensure we have the expertise available across our growing suite of projects, and regularly liaise with our internal Cyber Security team, ensuring that all of our solutions are 'secure by design'.

Centre of Excellence



Our Centre of Excellence is our delivery engine. We have created a delivery model which is efficient and ensures clear accountability for delivering outcomes for our customers and stakeholders. This structure strengthens our delivery capability, capacity, agility and provides us with resilience to grow in the future as and when we need to. We have introduced three new roles, Training Manager, Testing Manager and Contracts Manager, and have recruited experienced professionals to provide their domain expertise and stewardship into all our project delivery teams.

Transformation Team

Our Transformation Team ensure change is managed holistically across our programme, and that changes for people, processes, and systems are fully impact assessed, communicated, and trained. A team of Sigma Black Belts are deployed on key Strategic Transformation projects, using their expertise to enable transformation. Our PMO branch of this team underpin the entire Business Transformation Directorate to make sure the programme is well defined, managed, delivers planned outcomes, and committed value for our Customers and Stakeholders. This team have dedicated Communication experts who support effective communication as solutions and new technology are implemented.

05 Alignment with **Regulatory Obligations**

Following extensive consultation with stakeholders, system users and network operators; our regulator Ofgem has been proactive in raising the importance of data and digitalisation in transforming network operations and stakeholder

interactions with the electricity system. This Digitalisation Strategy meets the principles described in Ofgem's Digitalisation Strategy and Action Plan (DSAP) guidance as follows:

Alignment with DSAP Guidance

Digitalisation Strategy Action Plan OFGEM guidance principles

interest

Prioritise providing benefits to We clearly set out our Products & Services as Initiatives for our the stakeholders who pay for the stakeholders. Within these we assess the need for the change and Products and Services as well define what benefits these will have for end users. as benefits that are in the public

How we have applied this in our strategy

- 2. Ensure Products and Services We have clear alignment between our Digital Initiatives and overall work towards a defined vision Strategic Goals to ensure their delivery. 3. Take full advantage of Adopting Agile methodologies plays a key role in steering our strategy, opportunities to deliver benefits we have continued to invest in the enhancement of our workforce's early and to iterate improvements proficiency in Agile principles and practices to have the ability to to Products and Services deliver in an agile manner with the minimal viable product developed and released as early as possible followed by continuous, iterative improvements. 4. Enable stakeholders to As described in the Stakeholder Engagement section, we have understand the Products and transmission specific use cases where we educate stakeholders on the delivery of our Products and Services. Services, the status of their delivery and how to access them 5. Ensure visibility about the nature We keep our Digitalisation Action Plan up to date, with all updates to and status of actions in the our documents available to view online in a user friendly, digital format
- Digitalisation Action Plan and we will continue to evolve this website based on stakeholder feedback. 6. Ensure there is shared We have internal tools to ensure there is visibility of projects enabling understanding of success and risks to be managed and a clear view of what success will be from performance is measured project initiation through to delivery.
- 7. Coordinate with the wider Through engaging actively with the wider industry, we are able to ecosystem of Products and deliver priority use cases to enable whole system benefits for end Services. consumers and ensure alignment with the wider ecosystem.

Ofgem in the Data Best Practice (DBP) guidance sets out the aim to:

"ensure data is treated as an asset and used effectively for the benefit of consumers, stakeholders and the Public Interest".

The DBP guidance, revised in August 2023, sets out 11 principles on how to manage data to achieve this aim. In recognition of the transmission licences obligations and our stakeholder needs, SPEN is committed to becoming a more data-centric organisation, harnessing the power of data to drive strategic decision-making, foster innovation, and embrace sustainability. To achieve this vision, we have developed and published our Data Strategy as part of our RIIO-ED2 business plan that outlines the roadmap and initiatives for enhancing our data and analytics capabilities. Our Data Strategy is based on a data framework that spans data operations, data governance, data-driven insights, and people and culture - all of which are critical to achieve our strategic goals through RIIO-T2 and beyond.

Our ambitions go beyond improving internal processes, decision making and insights; and recognise to be successful in RIIO-T2 we must service the data needs of our stakeholders both in terms of meeting regulatory obligations and in listening to stakeholder feedback to help deliver their needs.

The key drivers for our Data Strategy are:

- · Ensuring that we are set up for success to play a key role in enabling Net Zero through effective data flows that support increased electrification, scaling of mechanisms for managing the energy system and risk mitigation to maintain resilience throughout the energy transition.
- Empowering SP Transmission employees and customers through improved accessibility to quality data at the point of need, and enriched insight to help them to make informed decisions.
- Ensuring our regulatory and operational reporting continues to evolve and remains robust throughout the energy transition.
- Improved understanding of the future demands on our transmission network to enable effective planning and investment.
- Identify opportunities for increased efficiency, offering value for money to our customers.
- Compliance with the principles set out in the DBP guidance to ensure that the value of our data, and its use and treatment, is maximised effectively for the benefit of customers and stakeholders.

- Achieving better interoperability so that our organisation can respond to the challenge of enabling the energy transition and support the drive to Net Zero.
- Driving better Whole System outcomes through the sharing of open data.

Our Data Strategy facilitates our licence obligation to comply with DBP guidance. We recognise that Ofgem's DBP guidance provides a strong basis for promoting the changes required by licensees to ensure that data is treated as an asset, and that it is shared in an efficient and effective manner with our customers and our stakeholders. At the time of our RIIO-T2 business plan submission, the industry was in the process of developing its direction with regards to data governance and open data, and there was significant uncertainty with regards to technology, direction, efficiency, and opportunity. Further, at the time of RIIO-T2 submissions, Ofgem's DBP Guidance principles were in the initial stages of development and were not formalised until after business plan submission had been made. As such, our RIIO-T2 business plans could not have fully scoped, or costed, to meet the needs of our customers and stakeholders in this area, or fully encapsulated all necessary requirements to enable SPEN to deliver full compliance with Ofgem's DBP Guidance.

After the publication of our Data Strategy, in July 2022, Ofgem issued a formal Request for Information to SPT to investigate the maturity of its' policies, processes, and governance in accordance with the principles of the DBP guidance. Subsequent feedback from Ofgem on our submission identified two principles where SPT should improve its behaviours and processes to adhere to the DBP guidance:

- Principle 3: Describe data accurately using industry standard metadata
- Principle 7: Ensure data quality maintenance and improvement is prioritised by data user needs

An action plan was then submitted to Ofgem in April 2023 setting out SPEN's key deliverables for improving behaviour and processes in relation to the above two principles. These key deliverables focussed on transition of our Open Data Portal to Dublin Core Metadata template, establishment of a Data Catalogue and production of a suite of process documentation. The action plan was endorsed by Ofgem in May 2023. More recently, Ofgem have recently concluded their consultation on proposed changes to the DBP Guidance, providing additional clarification on the intended outcomes of the principles of the Guidance and the introduction of a mandatory requirement to use a Data Catalogue.

06 Looking forward

SPEN's approach to Digitalisation has evolved significantly during RIIO-2 and we will continue to develop it for RIIO-3.

Our RIIO-T2 business plan was created in 2019/20 at the same time as the drafting of Ofgem's Data Best Practice Guidance and the incorporation of the recommendations from the Energy Data Taskforce report into the regulatory frameworks for networks licensees.

Our RIIO-ED2 business plan was created in 2021 and included our first transformational Digitalisation Strategy, where we developed our approach to capture, govern and maximise the value of data, and recognised the significant role that digital tools will play in the future of our operation.

We began our transformation towards this data driven, digitally enabled future as part of delivering our RIIO-ED2 business plan. Up to this point, our approach to Digitalisation largely focused on a SPEN-wide approach, recognising the need for asset, customer, and data management solutions across all our three licence areas.

This SPT Digitalisation Strategy is our first to focus purely on our transmission licence and calls out the specific initiatives that are being delivered as part of our RIIO-T2 plan. In parallel with this, we are creating our RIIO-T3 business plan including the development of a transformational Digitalisation Strategy for SPT.

There are a number of key areas for Digitalisation that we believe will be appropriate for our RIIO-T3 plan. These include:

Customer and Stakeholder solutions



We have already seen a large increase in demand from customers for the connection of more low carbon and renewable technologies. For our distribution licences, this has necessitated the introduction of a new CRM platform to handle the volume of enquiries we receive. The Salesforce CRM solution is now adopted in SPT and we anticipate we that we will further develop, recognising the specific requirements that a transmission connected customer has.

Our network also impacts a wide variety of stakeholders including regulators, governments, local authorities, communities, environmental organisations, contractors, and service providers.

Stakeholder management across the large SPT delivery programme will be key to its success and digital tools will play an important role in facilitating this.

Project design and delivery



Our current digital solutions for managing the portfolio of deliveries are scaled to the volumes in our RIIO-T2 business plan. This includes our investment in BIM and the maintenance of our current works and asset management platforms.

Since the start of RIIO-T2, we have seen a large increase in the volume of work being delivered by SPT through the demand to connect more renewable generation and initiatives such as those arising from the work on the Pathway to 2030 Holistic Network Design. We recently unveiled £5.4bn of contract opportunities associated with investment in the network to connect 80-85GW of clean renewable energy.

A key element of the Digitalisation Strategy for RIIO-T3 will be digital tools that will enable us to scale to deliver this volume of work. This is likely to include further investment in BIM solutions and systems that will enable us to manage a large portfolio of projects, including new platforms scaled for the significant size of a number of these investments.



Optimised asset operation

Improving the visibility of asset operation through increased data collection creates the opportunity for us to maximise efficiency, minimise downtime and reduce costs.

We are undertaking a proof of concept of asset condition-based decision support during RIIO-T2 and anticipate a fully integrated predictive analytics solution to be part of our RIIO-T3 plans, enabling us to implement proactive maintenance strategies.

Additionally, the evolution of the dynamic line and cable rating solutions being developed in RIIO-T2, taking account of improved forecasting and modelling capabilities, will allow us to optimise the operation of transmission assets whilst maintaining reliability.

A continued focus on data

We know that data is the evidence base on which informed decisions can be taken, and which enables us to measure and track the achievement of objectives.

Our RIIO-T2 strategy includes the creation of a big data platform with modelling, reporting and analytical capabilities.

In RIIO-T3 we expect to dramatically increase the volume of data we collect from sources such as IoT devices, field worker solutions, BIM models, drones, stakeholder interactions, etc. With this increase comes the need for scalable and sustainable solutions to govern data over its lifecycle.

We also anticipate the need for increasing data literacy across the organisation together with the tooling to support more advanced analytical capabilities making use of technologies such as machine learning and artificial intelligence.

SP Energy Networks RIIO-T2 Digitalisation Strategy









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