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SP ENERGY NETWORKS

Digitalisation Strategy and Action Plan update

31 December 2021

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Foreword

Digitalisation and unlocking the value of our data present a significant opportunity to drive modernisation and decarbonisation of our energy system. The electricity networks are at the heart of this transition.

We believe that digitalisation and data can improve the services we provide to our customers and stakeholders, whilst enabling a just transition to Net Zero so no one is left behind, ensuring the benefits are shared fairly by all.

This document provides an update on our data and digitalisation activities as of December 2021.

Putting our customers and stakeholders at the heart of our plans

We provide services in Scotland, England and Wales and therefore have a set of customers and stakeholders with diverse and changing needs. Since our previous DSAP publication we have continued to invest significant time engaging with our stakeholders and customers through focussed sessions on digitalisation both with our RIIO-ED2 Customer Engagement Group (CEG) and with other internal and external stakeholders. This feedback has informed our DSAP and has also been used to guide our digitalisation approach for RIIO ED2 as presented in our RIIO-ED2 business plan which you can find on our **website here.** In particular, our RIIO-ED2 Business Plan Annexes **4C.1 IT and Digitalisation Strategy** and **4C.2 Data Strategy** have been heavily influenced by engagement with our customers and stakeholders.

Digitalisation will allow us to significantly improve our existing services whilst offering additional, new services for our customers and stakeholders, including our vulnerable customers. For example, we are expecting a significant increase in connections to our network between now and 2030 and will be offering new digital connections journeys with self-service options that our customers have requested. Furthermore, new digital technology and data will help us to make our own operations more efficient, which in turn will save our customers money on their bills. For example, we believe that applying the latest data analytics and visualisation techniques will help our staff deliver the complex projects required to upgrade our network more efficiently.

Progress since our previous DSAP publication

We have continued to expand our dedicated Digital team and recruited new talent with our priority being digital skills including agile, analytics, data, and mobile apps. We have also developed partnerships with specialist external suppliers who bring us innovative thinking on digitalisation, best practice and lessons learnt from across industry sectors and geographies, ensuring that our RIIO-ED2 business plan sets out an ambitious vision for the future which balances investment, benefits, and risk.

Our new Process and Technology Director (Graham Campbell) has taken up his post and passed on the mantle of chairing the ENA's Data and Digitalisation Steering Group (DDSG). Graham certainly understands the need for a modern digitalised energy system from his role as DDSG chair and will be driving the delivery of our data and digitalisation strategies across our operation.

We have also appointed Lynda Ward as our Business Transformation Director, a newly created role this year. This is in recognition that our organisation needs to implement seismic change to deliver the energy transition and that this will require significant changes to our business structures, our processes, our culture, and our skillsets. Lynda and Graham will lead our organisation's transformation to one that will deliver a just transition for our customers and play a significant role in achieving the UK's Net Zero ambitions. We see our Data and Digitalisation Strategies at the heart of this transformation, not only underpinning much of our wider RIIO-2 programme but also presenting opportunities to delivery Whole System solutions and drive efficiency. We believe that now is the time to invest in the technology solutions, skills and processes that will be key enablers for the future energy system.

Our RIIO-T2 plan has begun to deliver. In particular:

- we are continuing our investment in the implementation of the BIM (Building Information Modelling) methodology for our large transmission projects with a longer-term view to creating an integrated digital design platform that can be used for our capital investment projects and ultimately the optimisation and management of our wider asset intervention initiatives.
- we have begun the process of developing our Network Asset Risk Metric (NARM) solution to build on our previous investment in our Condition Based Risk Modelling (CBRM) platform. CBRM is largely focused on the needs of our distribution businesses. Our NARM solution will initially be focused on the needs of our transmission business but with a medium-term vision of creating a single SPEN asset management system allowing the management of comparable assets to be optimised and aligned.

Our RIIO-ED1 programme will continue to deliver to the start of RIIO-ED2. Our programme includes initiatives to:

- upgrade solutions that are reaching end-of-life,
- respond to regulatory and external requirements,
- deliver enhancements to existing solutions to improve efficiency, and
- undertake exploratory activities to determine the viability of approaches prior to full scale implementation.

Our RIIO-ED1 programme will prepare the ground for our transformational activities that have been detailed in our RIIO-ED2 business plan.

Whilst RIIO-ED2 doesn't start until April 2023, we recognise that there are activities that we can do now to prepare us for a smooth transition into the new price control period. We have identified a number of "enablers" which we believe will help prepare us for the challenges we are anticipating during the delivery of our RIIO-ED2 plan. See below for details of our RIIO-ED2 Enablement activities.

Our major focus since our June 2021 update has been on our data and digitalisation plans for RIIO-ED2. This presents an ambitious vision for a digital transformation of our business with a set of innovative initiatives and projects that underpins much of our wider RIIO-ED2 business plan. We will update our DSAP with further details from this once the funding determination from Ofgem becomes clear.

We have continued to play an active role in the development of the ENA's UK National Energy Systems Map project, one of the key recommendations following the Energy Data Taskforce Report in 2019. The NESM proof of concept is now live (at **https://nesm.os.uk**) and generating feedback which will inform future plans in this area.

We have engaged with the Energy Digitalisation Taskforce (EDiT) and support the interim recommendations which are aligned with our own plans. We look forward to receiving the EDiT report in 2022.

In Summary

We are excited about the role that digitalisation and data is already playing in transforming our business, ready to meet our Net Zero ambition. We have mobilised an ambitious programme of work, but we recognise that we do not have all the answers and that the nature of technology, the energy transition and the COVID-19 recovery means that we need to be flexible in our approach to respond to changes as they happen.

Stakeholders and Engagement

We know that we cannot do this on our own and will need to build an ecosystem and industry partnerships to be successful. We also recognise the importance of putting our customers and stakeholders at the centre of everything we do, and as such we would welcome feedback on our DSAP and on our approach to engaging with stakeholders. We have provided a feedback form and contact form and encourage stakeholders to register to receive updates or provide feedback as appropriate. Details are on our website: **https://www.spenergynetworks.co.uk/digitalisation**

The focus for our stakeholder engagement over the past 6 months has been on our RIIO-ED2 plans.

We have facilitated a number of stakeholder consultation events to inform the development of our RIIO-ED2 Data and Digitalisation Strategies.

Details can be found in our **RIIO-ED2 Business Plan Annex 3.1 Co-creating our RIIO-ED2 Business Plan with our Stakeholders** and in the associated **Digitalisation Triangulation Record**.

Our Evolving Digitalisation and Data Strategy

Our Digitalisation Strategy provides the solutions that will deliver our Data Strategy. Our Data Strategy establishes the framework to ensure that we carefully collect, manage, share and extract maximum value from data.

Together, these two strategies underpin the breadth of our RIIO-ED2 programme, providing the mechanisms to deliver our ambitions in alignment with the recommendations from the Energy Data Task Force's report on 'A Strategy for a Modern Digitalised Energy System'.

We have now published our RIIO-ED2 business plan including our data and digitalisation annexes:

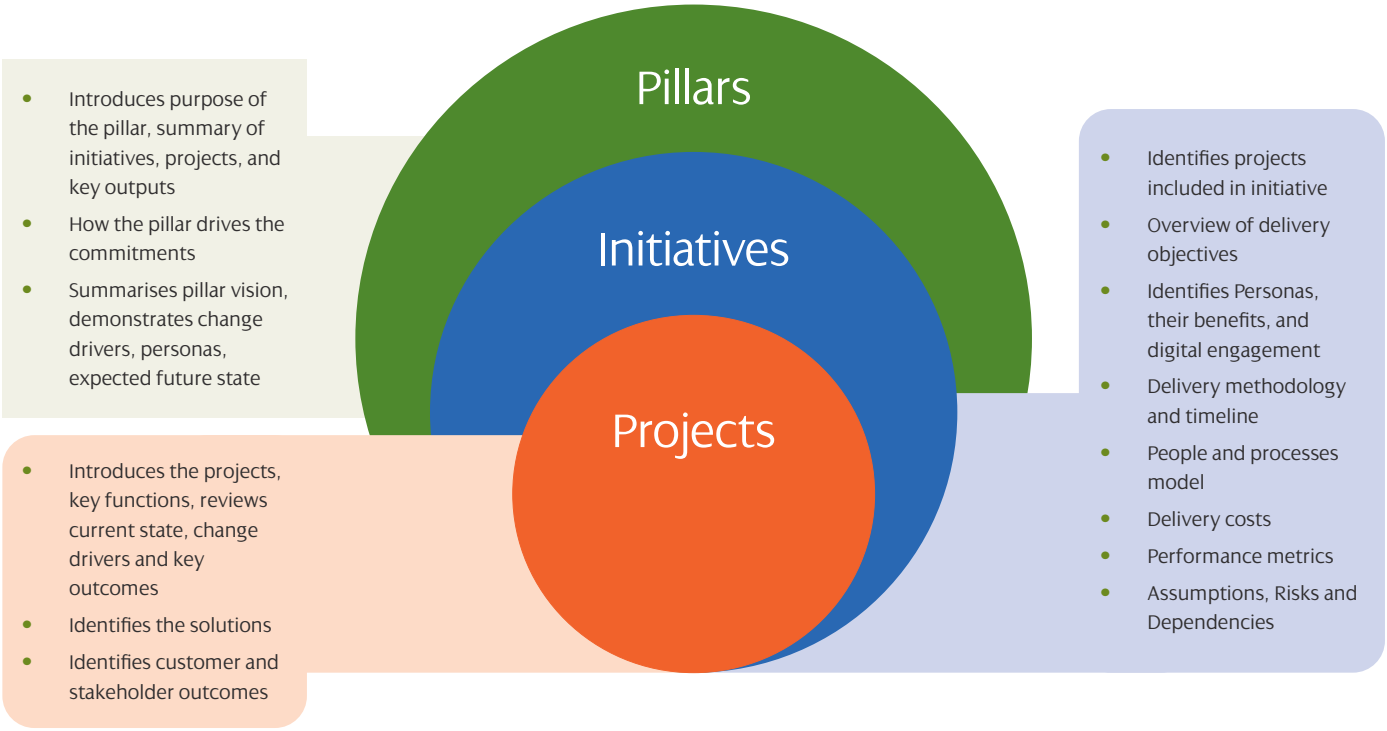
- **RIIO-ED2 Business Plan Annex 4C.1 IT and Digitalisation Strategy**
- **RIIO-ED2 Business Plan Annex 4C.2 Data Strategy**

These present our vision of the role that data and digitalisation have as part of a transformation of our organisation: one that is required to deliver the commitments across our RIIO-ED2 business plan.

At this stage in the regulatory cycle, we have not transferred the full vision from our RIIO-ED2 business plan into our DSAP. We will do this as the funding determination becomes clear. This section presents a summary of our RIIO-ED2 business plan vision for data and digitalisation. For further details of our RIIO-ED2 business plan, please **visit Our RIIO-ED2 Business Plan**.

RIIO-ED2 Digitalisation Strategy

Our RIIO-ED2 digitalisation strategy builds on the work we've done to date and presented in our Digitalisation Strategy. It presents detailed initiatives and projects underneath each of the 6 pillars of our Digitalisation Strategy.



We will reflect the appropriate updates into our Digitalisation Strategy as the funding determination for RIIO-ED2 becomes clear.

RIIO-ED2 Data Strategy

Our RIIO-ED2 Data Strategy presents our vision for how we will maximise the value of data in our organisation and support the principles of the **Data Best Practice Guidance** to open up access to the data we hold. Funding for our RIIO-ED2 Data Strategy is encapsulated in the "Improving Mastery of our Data" pillar in our RIIO-ED2 IT and Digitalisation Strategy where we lay out the technology solutions required to support the delivery of our RIIO-ED2 Data Strategy.

ED2 Enablement

In recognition of the works required in advance of RIIO-ED2, we have recently assembled two agile squads working under the Scrum framework, focusing on the following key areas of improvement:

- Connections
- Customer Relationship Management (CRM)

These squads are in the final stages of the discovery phase and are key enablers for RIIO-ED2.

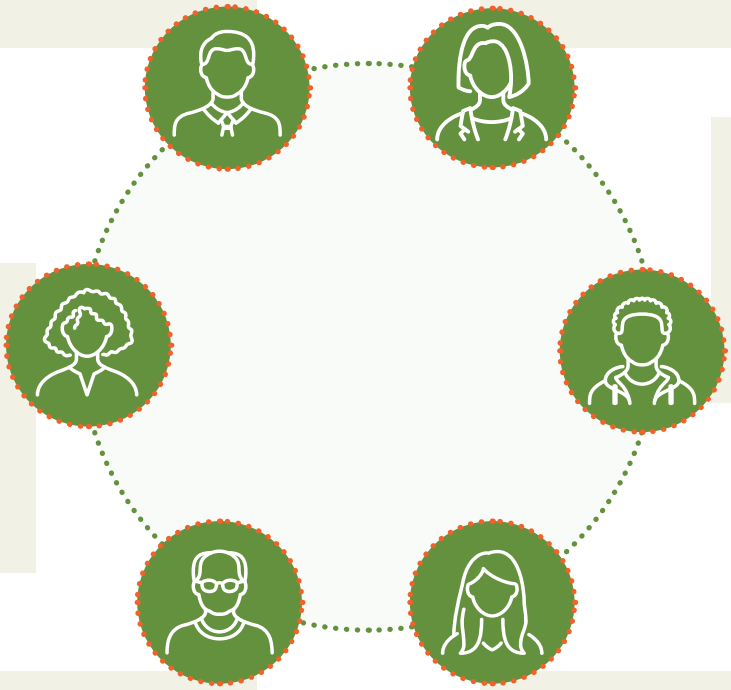
Each agile squad consists of a Product Owner, Scrum Master, Subject Matter Experts, Change Leads, Design Leads and supported by several expert roles from across the relevant business areas. Overseeing each squad is a Product Owner, from directorate level within the organisation.

The figure on the next page demonstrates how our squads are assembled.

Agile Squads

Squad Lead (i.e Product Owner)
Empowered business owner who is an expert in the squad's functional area. Responsible for setting a vision, acting as an interlock with business stakeholders and making decisions on functionality.

Scrum master
Responsible for facilitating the sprint cycle, including planning, delivery and retrospectively ensures that tooling and status is updated. Supports the scrum team by removing blockers.



Design Lead
Responsible for the overall journey design, optimising customer, user and employee experience and for bringing 'voice of the customer' and 'voice of the agent' to the journey.

Business analyst
Expert in the squad's functional area, responsible for defining user stories and bringing a detailed knowledge of the business process. Supports the squad lead with decision making on functionality.

Data and analytics analyst
Responsible for providing data extracts and reporting on existing process performance, and designing KPIs, reporting and analytics for the 'to be' journey.

Technical Lead
Expert in the existing solution architecture, application landscape, data integration and process steps. Provides guidance for integration with and enhancements to existing systems.

Roles added during delivery sprints

Business Change
Responsible for preparing business users for new functionality, including comms, training, business readiness.

Developers
Responsible for development and configuration of software, apps. integration, data.

Testers
Responsible for test planning, execution, defect management and test closure.

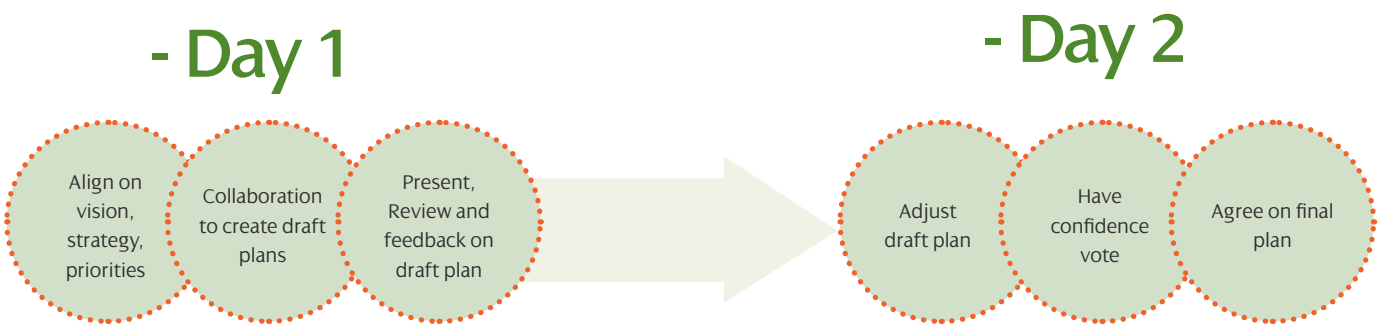
DevOps
Responsible for code management, configuration, deployment, release management and environment management.

This is a critical step in ensuring the business is ready to deliver on our commitments to our customers and stakeholders according to their needs. The squads will be used as training and upskilling of our own staff around the agile methodology and lessons-learned sessions will be used to improve the next scrums and squads as they are assembled.

Our intention is to increase the use of squads as we approach RIIO-ED2 and continue this methodology throughout the price control. This is a new way of working for SPEN and has been chosen as it is cross-functional and intended to break down any departmental siloes, which in turn will help to deliver value to customers quicker.

Planning

In order to prepare ourselves for 2022 we have adopted an approach, new to SPEN called Big Room Planning. This began with the creation of a masterplan containing a list of pipeline projects with associated outcomes and business value. This plan was reviewed during a 2-day session attended by key stakeholders, business sponsors and the delivery teams.



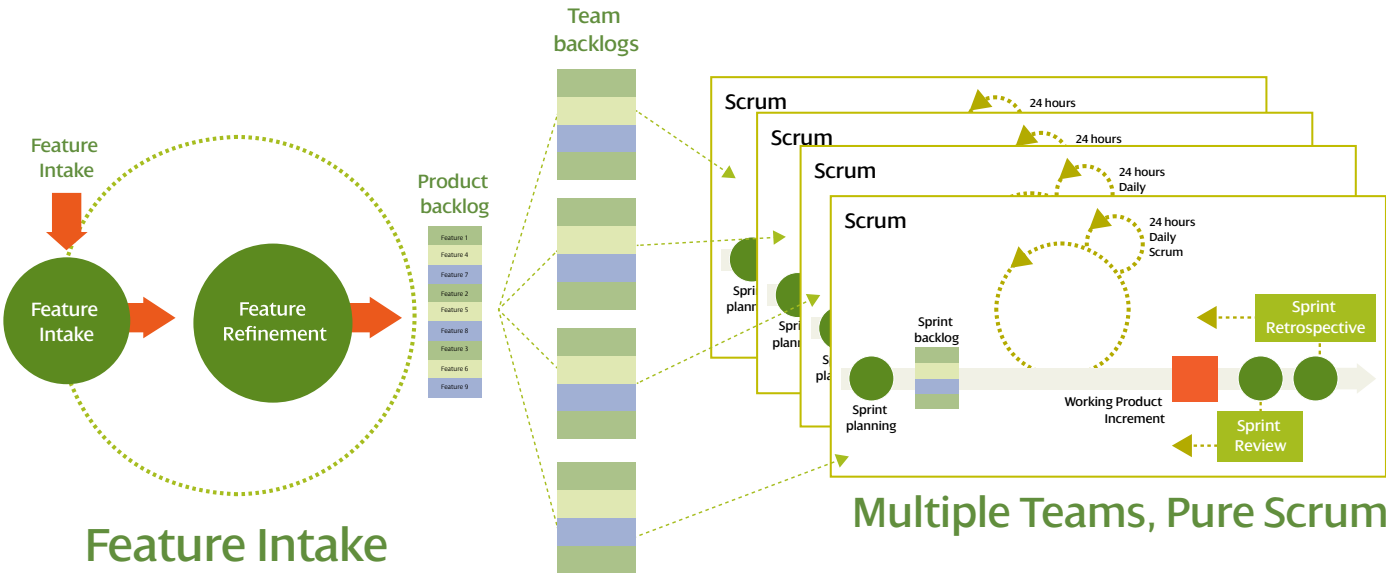
The key considerations covered were as follows:

- achievement of business goals and how these align to our overall strategy
- resourcing: skills required, capacity and current capabilities
- dependencies on achieving a successful outcome, who is dependent on us, and the management of those dependencies
- what are our risks and how do manage them
- deliverability of plan

We have held these sessions, with the key output being the construction of our project masterplan for the next quarter, and how this will be delivered.

The diagram below illustrates the process to be followed for the next stage of delivery.

We will adopt the agile methodology as this will give us flexibility in our plan to ensure we meet the needs of the business and continue to add value at the right time.



Our Digitalisation Action Plan

Pillar Name	Initiatives	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2022 Q2	2022 Q3	2022 Q4	2023 on
Optimised Asset and Network Management	Accelerated Loss of Mains Exchange									
Optimised Asset and Network Management	Application Product Upgrades									
Improving Mastery of our Data	Big Data & Analytics									
Optimised Asset and Network Management	Building Information Modelling (BIM)									
Using Digital Technologies to Deliver Enhanced CS	Charge/Connect More									
Using Digital Technologies to Deliver Enhanced CS	Consolidated CRM									
Using Digital Technologies to Deliver Enhanced CS	Customer Connections									
Using Digital Technologies to Deliver Enhanced CS	Customer Services Enhancements Phase 2									
Optimised Asset and Network Management	Digital Substations									
Optimised Asset and Network Management	EN –Twin-e (Strategic Innovation Fund)									
Supporting the Development of New Business Models and Markets	Environmental & Sustainability									
Using Digital Technologies to Deliver Enhanced CS	ESCOMMS Replacement									
Using Digital Technologies to Deliver Enhanced CS	Faster Switching									
Optimised Asset and Network Management	GIS Upgrade									
Optimised Asset and Network Management	Infrastructure Upgrades									
Improving Mastery of our Data	Integrated Network Model (INM)									
Optimised Asset and Network Management	IoT Platform & Configuration Management DB									

Pillar Name	Initiatives	2021 Q1	2021 Q2	2021 Q3	2021 Q4	2022 Q1	2022 Q2	2022 Q3	2022 Q4	2023 on
Optimised Asset and Network Management	Logistics Enhancements									
Optimised asset and network management	Barcoding ph2									
Using Digital Technologies to Deliver Enhanced CS	LV Engine									
Optimised asset and network management	LV Model Readiness									
Optimised Asset and Network Management	Mobile Device and Field Strategy									
Improving Mastery of our Data	New VoWD and Forecasting System									
Improving Mastery of our Data	Open Data									
Supporting the Development of New Business Models and Markets	Open Data Sharing Platform									
Optimised Asset and Network Management	Phoenix									
Investing in the Skills of our People	Sharepoint Replacement									
Using Digital Technologies to Deliver Enhanced CS	SPEN Website Refresh									
Optimised Asset and Network Management	SPT NARMS Tool									
Optimised Asset and Network Management	System Monitoring & Dynamic Rating									
Using Digital Technologies to Deliver Enhanced CS	ED2 Online Representation (PH2)									
Optimised asset and network management	SAP Enhancements (ongoing)									
Improving Mastery of our Data	Process Mining									
Optimised Asset and Network Management	Faults E2E Process Review									
Optimised Asset and Network Management	IT Communication Network Upgrades									

What we've delivered in the last 6 months

Improving Mastery of our Data	Disruptive Technology Phase 2	Project for an improved, GDPR compliant process using corporate systems to capture and display data on SPEN network for EV chargers, battery storage, solar panels, wind turbines, micro hydro and combined heat and power. Phase 2 delivery has included modernisation of website on-line application forms for customers.
	Active Network Management	This trial project has implemented a revolutionary, wide-scale integrated network management zone across the Dumfries and Galloway area. The project will help manage transmission network constraints by using an active network management (ANM) system to monitor and manage exports from distributed generation on SPEN's network.
Optimised Asset and Network Management	Asset Data Management Return	Implementation of an automated data capture process allowing assets added or removed from the network to pass through a SAP workflow. This allows asset data information to be tracked throughout the project lifecycle from design to implementation and then digitised within SAP and ESRi GIS. This process allows validation that all asset additions and disposals are accurately recorded before projects are completed.
	Barcoding	SPEN Operational Business identified some key changes to the Barcoding UI following its implementation in January 2018 as part of our Network Asset Management System (NAMS) programme of work. The objective of these changes was to make the application more intuitive to the user. This project has delivered functionality allowing an application form to be accessed via the end user's mobile phone or other mobile device
	Fusion	In August '21 Project Fusion successfully implemented the UK's first USEF-compliant flexibility market. It Is now fully live and operational and will run until mid 2023. Data is being collected and analysed on a daily basis from the on-going trial and 6-monthly learning reports will provide updates on our progress with respect to our trial learning objectives.
	SAP Enhancements	Purchasing change requests, improvements in connection processes and variation processes. Targeted benefits are enhanced reporting outputs, process efficiencies, better end user experience and therefore engagement, paving the way for future ED2 initiatives.
Using Digital Technologies to Deliver Enhanced Customer Service	CRM Discovery	The CRM and Customer Enhancement initiative encompasses a range of projects that will enhance the experience of SPEN customers via a range of new channels and services. The discovery phase of this project has formed the basis of our new CRM platform and integrated self-service options by the production of key system specifications and a delivery strategy. Additional analysis to be undertaken in Q1 2022.
	Customer Connections/ E2E Connections Discovery	Decentralisation and electrification of heat and transport will increase the volume of new connections on our network. The discovery phase has undertaken a comprehensive review of the current end-to-end Connections process and developed a strategy to identify opportunities to improve and/or simplify the connections process for customers in order to facilitate this increased demand. Additional analysis to be undertaken in Q1 2022.
	Start Risk Assessment Tool	This project addresses the heavy reliance on paper based START Risk assessment forms, used by field staff before commencing work on site. Easy to use, digital forms have been created, that can be accessed by field staff via a mobile device, meaning that future paper-based assessments should be used by exception only where no digital option is available

Using Digital Technologies to Deliver Enhanced Customer Service	iDentify	SPEN has been working with the ENA to create an application to be used across all DNOs to facilitate the identification of cable head type using a module devices' camera and Artificial Intelligence photographic recognition This technology replaces paper forms used by installers currently downloaded from the ENA website and allows the capability for on-line surveys of cable installations.
	ED2 Online Representation	As part of our RIIO-ED2 submission we have enhanced our current web site to include the publication of our ED2 business plan and supporting annexes with additional narrative. In doing so we hope to maximise transparency, and encourage engagement and feedback from our customers and stakeholders. **https://www.spenergynetworks.co.uk/pages/our_riio_ed2_business_plan.aspx**
	Digital Representation of DSAP	New pages were created in our website to facilitate the digital representation of our Digitalisation Strategy and Action Plan, providing an easy and accessible way for our customers and stakeholders to engage in our DSAP. This site also provides an opportunity to provide feedback to inform our future plans. **https://www.spenergynetworks.co.uk/digitalisation**

To Be Delivered in the Next 6 Months: Jan'22 - Jun'22

	Initiative	Descripton	Status	Measure of Success
Improving Mastery of our Data	New VoWD and Forecasting System	This project will deliver a new Forecast and Value of Work Done (VoWD) system to help SPEN licence areas improve how they manage their Major Network Investment & New Connection projects. This new system will replace the functionality provided by the current technically obsolete solution. It will provide enhanced financial and regulatory reporting	**In Build**	• Provide greater accounting compliance & live information for more accurate VoWD reporting • Full set of governance and internal controls integrated into the solution Ability to forecast directly into SAP PPM from this system
	Open Data Sharing Platform	Creation of a data landing page, the Energy Data Hub, which is now live and was created to house all data that SP Energy Networks currently shares openly in the public domain. The Energy Data Hub is a central point of access for all open data including GIS and heat maps data and will allow users to view, combine, visualise, share and export different datasets. As we progress through 2021-2022, we intend to: • Publish new datasets • Create data catalogue descriptors for published datasets (following Common Information Model (CIM) definitions) • Develop APIs to enable programmatic extraction of data • Develop a further enhanced landing page to bring the datasets together	**Procurement stage**	• Users able to navigate and search datasets easily, and be able to compare like-for-like data from other DNOs utilising the CIM definitions. • Feedback form will allow iterative improvements and act as a request mechanism where required. • The sum of data requests should reduce dramatically due to taking a pre-emptive approach and publishing (and effectively labelling) all datasets that have been triaged as 'open'. • Successfully utilising APIs to automate extraction process and reduce the frequency of manual data refreshes.

	Initiative	Descripton	Status	Measure of Success
Optimised Asset and Network Management	GIS Upgrade Phase 2	The current business processes and use of systems will not cater for the expected volumes of New Connection requests. This project will create integration layers to our core GIS solution, enabling all geospatial data to be linked. This will allow us to visualise and perform geospatial analyses on all geospatial data. There will also be a key focus on fixed price budget quotes and a new estimation tool.	**In Build**	• Provide a stable platform for increased volume of users • Provide increased functionality to meet with the demand of the new digitalisation processes
	Phoenix	Ofgem Network Innovation Competition funded project collaborating with NG ESO, ABB, Strathclyde University and Denmark Technical University to deliver a hybrid synchronous compensator for fast declining grid services. Phoenix is the world's first H-SC system and will provide essential grid services such as inertia, short circuit level and reactive power largely depleted due to the closure of thermal generation plants on our network. This project technology helps maintain system stability and security with increasing levels of renewable generation connected and will enhance capacity for power flow on our network.	**In Progress** **Trial due to complete Q1 2022**	• Enhance system stability helping to reduce power cuts. • The Phoenix H-SC has potential to increase the B6 boundary transfer in the range of 45 MW to 98 MW • Reduce the electricity network operating costs and effectively financially benefit customers • Minimise carbon footprint and continue creating a sustainable network for our customers. • Aid with the transition to a future GB transmission network that can benefit from clean energy resources without compromising the security and quality of supply to the customers.
	SAP Change Requests (Enhancements)	Enhancements to our core SAP works management system. These will include design deliverability dashboard, purchasing CRs, improvements in connection processes and variation processes.	**In Build**	• Enhanced reporting outputs • Process efficiencies • Improved end user experience

	Initiative	Descripton	Status	Measure of Success
Using Digital Technologies to Deliver Enhanced Customer Service	Customer Services Enhancements – Phase 2	There is an ongoing programme of work to enhance our Self Service Portal. This next phase of work specifically relates to the New Connection process, and facilitates direct online updates of customer information, presentation of outage data, presentation of an interactive map, new online application forms, presentation of additional information relating to applications previously submitted and the introduction of land and planning data.	**In Build**	• % increase in forms received via the web site. • Improved customer golden records resulting from online updates. • Improved Customer Satisfaction by making New Connections data more accessible.
	Charge/Connect More	Charge will merge transport and electricity network planning to create an overarching map of where EV charge points will be required and where they can be best accommodated by the electricity grid. This project will involve the development of ConnectMore online tool to enable users to accelerate their Electric Vehicle (EV) charge point deployment plans by identification of optimum locations for charging infrastructure based on forecasted demand for public charging and available network capacity. As we move forward ConnectMore will enable customers to generate their own EV connection cost estimates. Further details can be found on our website: **https://www.spenergynetworks.co.uk/pages/charge.aspx**	**In Build**	• Acceleration in EV charge point connections • Provide Customers with the ability to identify suitable locations to connect to the grid • Reduction in reinforcement based connections • Provide customers with ability self-serve and receive an estimate of costs for their connections

Starting / In Progress in the Next 6 Months

	Initiative	Descripton	Status	Measure of Success
Improving Mastery of our Data	Integrated Network Model (INM)	Integrated Network Management Zones to be implemented in the East Lothian and South West Scotland areas. These projects follow on from the successful implementation of an wide-scale integrated network management zone across the Dumfries and Galloway area.	**To Start**	• Improve the service we provide to our customers by reducing constraints on connections. • More Renewable Generation will be connected to the Electricity Network, bringing benefits of £40m to customers. • Facilitate the connection of more zero carbon generation. That will contribute to a reduction in CO2 emissions of 522k tonnes by 2031 - the same amount of carbon created by the consumption of 58m gallons of petrol - and advance the transition to a low carbon economy. • Ensure the Electricity Distribution Network is ready to respond with pace to new customer requirements as we move to a low carbon economy. • Utilise our existing network assets more efficiently, reducing costs for customers.
	Process Mining	Project will utilise software tools to analyse , assess and identify areas for improvement in business and operational processes.	**To Start**	• Improvements in business and operational processes
	Big Data and Analytics	Our Data Strategy establishes the framework to ensure that we carefully collect, manage, share and extract maximum value from data. 2022 will see us develop and implement elements of this strategy.	**To Start**	• Build on the Data strategy presented for our ED2 submission
Optimised Asset and Network Management	SPT Networks Asset Risk Matrix (NARM) Tool	To comply with RIIO–T2 requirements to provide a set of Baseline Network Risk Outputs, SPEN have initiated a project to implement a software tool for Network Asset Risk Matrix reporting. Due to the complexity of the measures within the newly developed NARM framework, the current solution utilised was assessed as being unsuitable to provide the degree of SPT reporting therefore NARMS reporting granularity required for SPEN to meets is regulatory obligations.	**Procurement phase**	• Compliance with our T2 Licence Reporting Obligations within required timescales and quality • Improving our current asset management capabilities, enabling continuous improvement in SPT and exceeding regulatory requirements in readiness for T3 • Digitises existing manual processes, outside of core supported systems

	Initiative	Descripton	Status	Measure of Success
Optimised Asset and Network Management	Accelerated Loss of Mains Exchange Programme (ALoMCP)	Alongside other DNOs and IDNOs, we are joining forces with National Grid ESO on their 'Loss of Mains (LoM) Change Programme' - an initiative to help owners of generation assets make the necessary changes to ensure compliance with new settings introduced under the Distribution Code. Further details can be found on our website: **https://www.spenergynetworks.co.uk/pages/loss_of_mains_change_programme.aspx**	**In Progress**	• MW of generation capacity compliant with revised Distribution Code • Number of generation sites compliant with revised Distribution Code • Increase in Customer Protection Systems data known and reportable, e.g. in Wk24 • Roadmap for SPEN & Customer Protection Systems data storage in Corporate Systems
	Barcoding (ph2)	Project will deliver enhancements to the existing mobile logistics barcoding solution.	**In Build**	• Removal of paper based Logistics processes • Automation of processes • Efficient tracking of transportation
	Logistics Enhancements	Discovery phase to create a Logistics roadmap and strategy covering, but not limited to, catalogue app, further digitalisation of warehouse processes including the remaining desktop processes for logistics, and digitalisation of the compliance stores. In addition the creation of a transport tracking application will be under review.	**To Start**	• Creation of a logistics roadmap and delivery strategy
	Mobile Device and Field Strategy	Discovery phase covering but not limited to; • 1) Work scheduling and planning. Need more automation, and planning needs to be more efficient. (e.g. work allocation driven by location, jobs shown visibly on a map so easy to allocate jobs close to each other.) • 2) Intelligent Data capture. Can we automate data capture, how do we make it easier for field staff to enter/capture data, how do we avoid double keying. • 3) Technology roadmap: for device and field strategy • 4) Device strategy - apple to android, tablet to phone, impact of movement on current apps This project is an ED2 enabler.	**To Start**	• Creation of a mobile roadmap and delivery strategy
	GIS Upgrade – Phase 3	The GIS Upgrade Phase 2 project will deliver a stable fully supportable GIS platform . GIS Upgrade Phase 3 is a strategic project that through Discovery, Definition and Migration stages will redefine how SPEN GIS stores and manages asset data within the system.	**To Start**	• Provide a roadmap and implementation route for future GIS development • Creation of strategy for storage and management of SPEN asset data.

	Initiative	Descripton	Status	Measure of Success
Optimised Asset and Network Management	Building Information Modelling (BIM)	The purpose of the BIM initiative is the implementation of a transformative enabling process for the design and delivery of large projects. This new process will facilitate benefits to the customer through cost and time efficiencies of project delivery with additional benefits in management of health, safety, quality, environment, and sustainability through the project lifecycle. In Q4 2021 the first BIM pilot project , North Kyle windfarm substation commenced. Two further pilot projects are scheduled to commence in 2022.	**In Progress**	• Full BIM level 2 compliance for SPT / SPM large projects.
	Application Product Upgrades	This programme of work incorporates the costs and activities to upgrade to the latest versions of products and applications which underpin the core applications portfolio within Energy Networks (Non-Operational).	**To Start**	• Ensure the applications are following a continuous update programme to ensure the supportability and security of the applications and data they hold.
	Infrastructure Upgrades	This programme of work incorporates the costs and activities to upgrade to the latest versions of Infrastructure products (eg Database and Operating System versions) which underpin the core applications portfolio within SPT (Non-Operational).	**To Start**	• Ensure the infrastructure is following a continuous update programme to ensure supportability and security.
	IT Communications Network Upgrades	Communications network upgrade to cater for step increase in data from digital substations, smart data sensors, virtual/augmented reality and 3D BIM models. The OT network covers the communications to the substations - this is the upgrades to the office sites to accommodate the increased volumes. Also covers the upgrades to RTS firewalls. Consideration will be required to the role of 5G during the RIIO-2 timeframe.	**To Start**	• Facilitate increase in network usage resulting from the Digitalisation transformation programme
Investing in the skills of our people	Sharepoint Replacement – phase 2	Project to migrate SPEN SharePoint 2010 estate onto supportable Document Management System platforms. Current SharePoint version is no longer supported by Microsoft and is classed as technically obsolete. This will be a phased project stretching into ED2. Over the course of this year analysis of the SPEN Sharepoint estate has been undertaken to identify the most suitable migration strategy to a new supported platform . Additionally pilot migrations on selected sites have been successfully undertaken. In 2022 the project will undertake a full migration of Sharepoint.	**Scoping phase**	• Successful migration of data from SharePoint 2010 site to SharePoint Online with end customers enjoying similar functionality on the new platform

	Initiative	Descripton	Status	Measure of Success
Using Digital Technologies to Deliver Enhanced Customer Service	Faster Switching	The programme objective is to improve consumers' experience of changing supplier by implementing a new switching process that is reliable, fast and cost-effective. This will build consumer confidence, lead to greater engagement in the market, facilitate competition and deliver better outcomes for consumers. The programme is a mandatory regulatory change to meet Faster Switching requirements.	**In Build**	• % reduction in duration of switching process
	LV Engine	We are changing the way we generate, distribute and use electricity. SP Energy Networks recognises the need to facilitate the uptake of Low Carbon Technologies (LCTs) such as, electric vehicles, heat pumps and photovoltaics. LV Engine is a flagship innovation project funded via Ofgem's Network Innovation Competition (NIC). The project will carry out a globally innovative network trial of Smart Transformers to facilitate the connection of LCTs whilst representing value for money for our customers. This innovation is in line with the UK Government's CO2 reduction targets which are driving the increase in electrification of both heat and transport. In 2021 the first full smart transformer prototype was built. The unit is currently under various performance tests which are due to be completed in Q1 2022. ahead of a live trial. Further details can be found on our website: **https://www.spenergynetworks.co.uk/pages/lv_engine.aspx**	**In Progress**	• Delivery of the project as per Project Direction approved by Ofgem • Successful demonstration of power electronic devices at secondary substations to improve network operation flexibilities • Preparation for BaU integration of the LV Engine solution following the successful field demonstration
	Consolidated CRM	Using the systems specifications and delivery strategy developed in the CRM Discovery project, this project will identify and implement a CRM in SPEN for use by both Distribution and Transmission businesses.	**To Start**	• Identification and implementation of SPEN consolidated CRM • Fulfiilment of ED2 commitments relating to Customer Service and Engagement

	Initiative	Descripton	Status	Measure of Success
Using Digital Technologies to Deliver Enhanced Customer Service	Customer Connections	The electrification of heat and transport will result in a significant increase in the volume of New Connection requests. Enhancements are required to cater for this increase which includes better design tools, greater self-service options and improvements to our core systemsThis project will deliver the improvements and/or simplifications to the connections process for all customers identified in the Customer Connections/E2E Connections Discovery Project . Included in this will be the analysis if RADAR. This application manages Independent Connection Providers	**To Start**	• Improved and simplified connectionprocess for all SPEN customers
	ESCOMMS Replacement	Project to replace current landownership system with a new fully supportable and integrated platform . This project will be part of a wider initiative in 2022 to review the Land and Planning end –to –end process an d identify areas for change and digitalisation.	**To Start**	• Replacement system for ESCOMMS

Potential projects for Q2 2022 Onwards

	Initiative	Descripton
Improving Mastery of our Data	Open Data	Ongoing development and implementation of our open data strategy in response to the needs of our customers and stakeholders.
Optimised Asset and Network Management	Faults E2E Process Review	This project will review the current end - to- end faults process which includes our interactions with our customers and third parties, and the processes and technologies used by our field staff. This is an enabler for ED2 and will result in further projects to implement change.
	IoT Platform & Configuration Management DB	The IoT platform including Configuration Management DB for OT devices needs to be in place before the LV sensors will be deployed. Such a platform will need 'over the air' capabilities.
	LV Model Readiness	We will share operational and market data with customers, stakeholders and market participants through an online data portal. This will include visibility of our short & long-term forecasts via user-friendly digital platforms. Monitors will be applied to the network to facilitate capacity forecasting. Data is to be captured, stored and analysed and then presented.

	Initiative	Descripton
Optimised Asset and Network Management	System Monitoring & Dynamic Rating	This project will enable the capture of additional near real-time operational information on SPENS's transmission assets, enabling the ability to monitor the system operation in near real-time and utilise this information to make operational decisions about the network. It will also enable the use of dynamic ratings to ensure operational and capital investment decisions are optimised and leverage the full flexibility of the network.
	EN –Twin-e (Strategic Innovation Fund)	We believe greater real-time visibility of our transmission and distribution networks creates value for ourselves, NGESO, service providers, and ultimately the energy consumers who pay for the services required to balance the transmission system. During our discovery project, with NGESO, we will determine the transmission and distribution minimum viable product and with our technology and academic partners (SPT, SPD, NGESO, University of Strathclyde, Digital Catapult) we will explore the art of the possible and then set out how we aim to achieve, and validate, our big idea to develop a digital twin that spans transmission and distribution
Supporting the Development of New Business Models and	Environmental & Sustainability	Deployment of a waste solution to capture information about waste generated and its eventual disposal. Additionally a deployment of IT solutions to capture information about emissions (eg. carbon, SCOPE3).
Using Digital Technologies to Deliver Enhanced Customer Service	Digital Representation of ED2 Programme Submission (PH2)	Enhance the online web page to show a digital representation of our the ED2 programme of work.
	Evolve	This project will enable an install monitoring capability in the LV network to meet the following use cases; Faster fault resolution, Fault prediction, Informing investments and supporting DSP activities.
	SPEN Website Refresh	Updates and improvements to the SPEN website that will enhance the experience of SPEN customers and provided them with improved access to SPEN services and information.

Amendments to our June 2021 Plan

Supporting the Development of New Business Models and Markets: Open Data Sharing Platform

In 2021 a basic 'Energy Data Hub' was created on the SPEN Website. Gap analysis has since been undertaken to understand the requirements to transition from our current website to a more advanced future system. Initially, we planned to design a bespoke website for SPEN which would facilitate our stakeholder needs however with the changing landscape of data sharing, and the quality of tried-and-tested products on the market, we have settled on a SAAS solution which has been used by energy companies and government organisations across the world. This will allow us to remain more agile in the market and respond quickly to changes, as well as automating elements that would otherwise have been manual, time-consuming and costly. We hope to confirm our supplier in early 2022, and launch the platform within the first half of the year.

Using Digital Technologies to Deliver Enhanced Customer Service: Work Force Management SaaS

This project has now been amalgamated with the 'Consolidated Customer Relationship Management' project.

Using Digital Technologies to Deliver Enhanced Customer Service: Customer Connections

This project has been brought forward to start Q1 of 2022 to allow us to build/amend systems and processes to facilitate the anticipated significant increase of Low Carbon Technology connection requests.

Using Digital Technologies to Deliver Enhanced Customer Service: ED2 Online Representation

An initial Minimum Value Product was implemented this year to allow us to showcase our ED2 submission. There maybe a further iteration in the second half of 2022 year.

Using Digital Technologies to Deliver Enhanced Customer Service: Robotic Process Automation

In the first half of 2021 we delivered a PoC. We continue to assess this technology and learn from our first implementation. Any further uses of RPA will be incorporated within future projects so we have removed this as a standalone item form our plan.

Using Digital Technologies to Deliver Enhanced Customer Service: Evolve

The pilot continues with no specific changes so we have removed from the plan for now, and added to future 2022 projects.

Using Digital Technologies to Deliver Enhanced Customer Service: ESCOM

New project requested this year due to technology obsolescence. A discovery phase will be completed first to assess the scope and possible solutions.

Optimised Asset and Network Management: Logistics Enhancements

This project has been pulled forward. We are launching an agile discovery phase early Q1 2022 in order to understand where data and digitalisation can be used better to improve our current processes and systems. The output of this will inform future plans and be aligned with our T2 and ED2 strategy.

Optimised Asset and Network Management: Phoenix

Timeline updated, start in 2021.

Optimised Asset and Network Management: SAP Enhancements

This project is now stopping in Q2, and any further SAP enhancements will be incorporated into the specific projects.

Optimised Asset and Network Management: Low code app

This year we have delivered the Start Risk Assessment tool using Power Apps. Any future applications created using this technology will be mentioned in the plan by project name.

Optimised Asset and Network Management: Mobile Device and Field Strategy

We have pulled this forward in our plan and running an agile discovery phase to start in Q1 2022 to create a strategic roadmap for our field staff. The output of this will inform future plans and be aligned with our T2 and ED2 strategy.

Optimised Asset and Network Management: Fusion

In August '21 Project Fusion successfully implemented the UK's first USEF-compliant flexibility market. It Is now fully live and operational with the trial on-going trial. Further phases to be planned based on the output from the pilot.

Optimised Asset and Network Management: Asset Condition Based Decision Support – PoC

This project has been renamed to 'Network Asset Risk Metric (SPT NARM).

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