



Digitalisation Action Plan

Delivering our Digitalisation Strategy and
Roadmap to create the network of the future

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Introduction

Digitalisation of the energy system is at the heart of our transition to build a smart and efficient energy system supporting the UK's clear commitment to net zero carbon emissions by 2050.

This is leading to unprecedented changes in the way customers use and generate energy. We operate the network for our customers, so it is essential we respond to their changing use of the network and adapt our operations to continue to deliver excellent customer service, reliability, and value for money.

We have set out our roadmap as part of our digitalisation strategy; describing how we plan to continue our digitalisation journey and deliver new and improved solutions and data access internally and externally for our customers and stakeholders.

This document focusses on our current and planned activity to deliver our digitalisation strategy and measuring progress against our long-term roadmap.

Project governance is key to a successful delivery programme to enable the outputs and outcomes to facilitate our digitalisation transformation. An overview of our project governance is shared to ensure transparency and openness to support benchmarking and tracking our success.

How we approach digitalisation delivery, ensuring it meets ours and our stakeholders needs, how we will regularly communicate our activity and ensure we continue regular and relevant engagement is core to our strategy and is demonstrated throughout this action plan.

We will provide an update of this document at least every six months. We know that many people will want more frequent updates as to the progress against our delivery plan and specific projects, therefore, we're making this available and interactive online.

You can view our **delivery plan online**, see the progress against key milestones, get updates from the team through blogs and videos, feedback on progress and input through formal consultations but more frequently through quick and engaging surveys as well as links to direct output from each and all activity.

Our action plan right now focusses on some fundamental developments, implementing data governance and cataloguing to enable asset data improvement; setting the foundation for our continuing journey to digitalisation.

We are looking forward to continuing to share our developments, progress and delivering benefits.

Jonathan Berry
DSO Digitalisation & Data Manager

Our Approach

We're committed to delivering tangible and impactful change and improvements through our digitalisation programme. We have implemented a **Digitalisation & Data Governance Group**, chaired by our Operations Director, to ensure the programme is appropriately integrated and supported across our complete business.

Our roadmap sets out our long-term vision and the approach of our action plan is to ensure that significant steps are delivered to support the wider roadmap vision.

Our projects within the action plan are assessed against their drivers and benefits, which is discussed more in the **Project Setup section**, to ensure that needs and the output meet or exceed our internal and external requirements and expectations.

We use a number of metrics and measures to make sure that our programme remains balanced, from internal and external user types, which of our digitalisation strategy underpinning themes are being targeted and which of the five key recommendations from the Energy Data Taskforce report are supported for each project. This is further introduced in the **Action Plan section**.



Engagement



Ensuring our Action Plan remains focussed on the right areas requires significant and on-going engagement both internally and externally to ensure the focus and priority areas meet current and future challenges as effectively and efficiently as possible.

We use informal and formal engagement and feedback internally and externally. Where appropriate we will have external stakeholders as part of a project's steering group activity, where the focus is largely on providing external data access, visibility and solutions; this will ensure that we meet their requirements and expectations.

Updates and Visualisation



We will provide updates of this Action Plan at least every six months but know that an interactive approach to understanding our progress, developments and learning will drive better outcomes.

To support this our action plan is available in an **interactive format online**, showing the timeline of current activity, progress against key milestones and regular updates from the team delivering the projects in blogs and videos to ensure we maintain an open approach to our developments.

Regular webinars will also be used to give more detailed updates and provide an opportunity for direct feedback and questions; these will all be made available on our **YouTube channel**.



Project Delivery



Methodology

Digitalisation is and will continue to involve and impact our complete business, our interactions with customers and stakeholders and the services we offer them and them us.

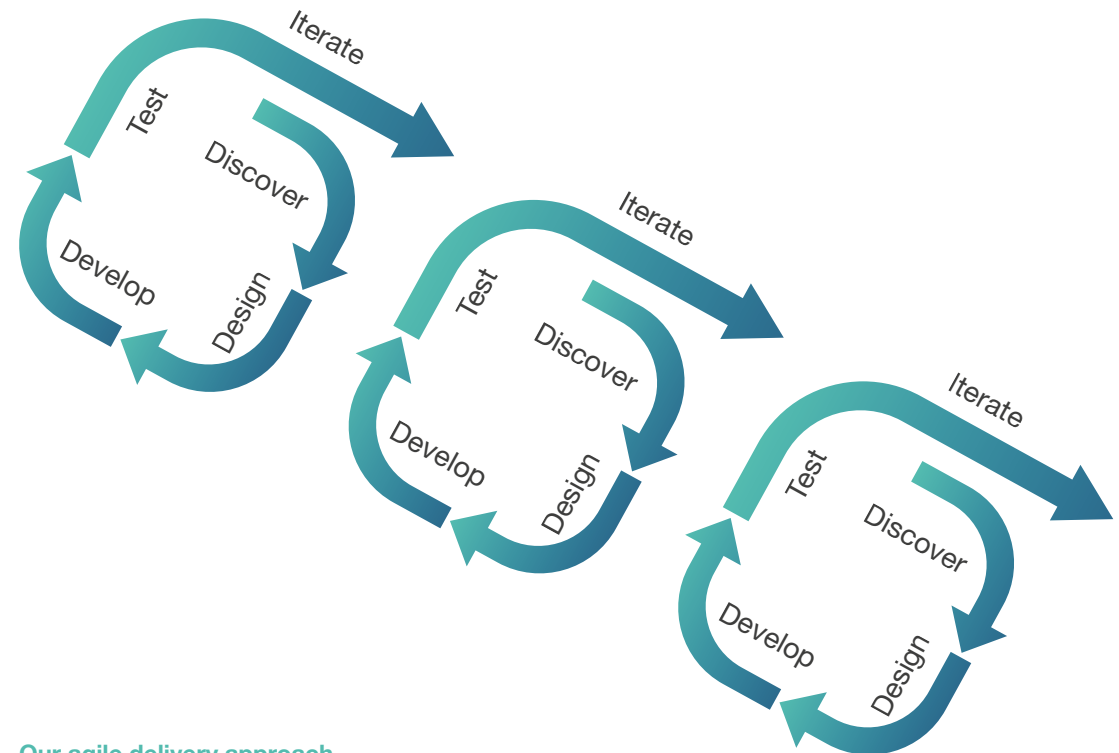
The developments we're employing are revolutionary and wide ranging and we need to continually drive value and improvements. It's critical that we take an active and agile approach to delivery, development and improvement.

We want to deliver value as quickly and effectively as possible, providing output and benefit as soon as it's available, take feedback from the users' experience, iterate, develop and improve. Adopting an agile delivery model will make this possible.

We have aligned and integrated our digitalisation delivery approach to that used within our Information Technology (IT) function, taking advantage of their existing systems, tool and processes. We have implemented a web-based development management tool.

This has enabled us to adopt a Kanban approach to project development, allowing everyone to visualise work activity, giving a view of the progress and process from start to finish.

This also means that we have a central and open repository for issue-tracking and pipelines for continuous integration and deployment (CI/CD).



Our agile delivery approach

Governance

Effective project governance is critical to all projects, ensuring that the accountabilities and responsibilities are understood, providing a decision making framework that is clear, appropriate and repeatable to enable a well-structured and delivered digitalisation programme.

We have a well-established business change governance process, developed as part of our long running innovation programme and we are utilising this to support our digitalisation project governance.

Structure



Our governance structure is driven by our Digitalisation and Data Governance Group approving the Digitalisation Strategy and Roadmap.

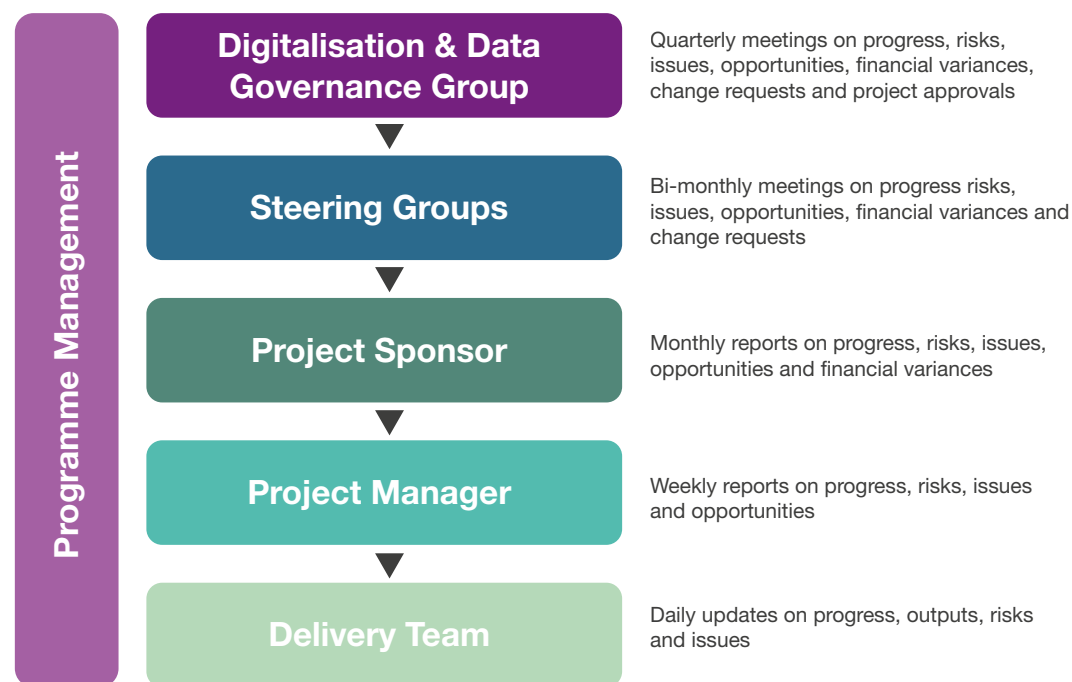
For each of our projects there will be a Steering Group, made up of relevant people from within the business, where their current processes will be changed as part of implementing the project's solution, or are key to enabling the development and implementation.

Where a project is driving direct external value and benefit the Steering Group will also have appropriate representation from a user representative; this could be a community energy group, another utility provider or an energy aggregator as examples.

A Steering Group will be typically made up of the Project Sponsor, the likely owner of solution on implementation, Senior Users, to inform the approach and output and Suppliers, providing key inputs to support the development.

The Project Sponsor, although part of the Steering Group will also have their own explicit role to ensure that the vision and the benefits of the project are delivered. Importantly each development will have a specific Project Manager to ensure that the planning, design and delivery of each project is provided to time, cost and quality.

Overarching is the programme management, governing the projects as part of the action plan and the wider roadmap activity, ensuring decisions at each level can be appropriately made through agreed tolerances and exception reporting.



Digitalisation Delivery Governance Hierarchy



Project Setup



Each new digitalisation project has to follow a defined registration process in order to get approval to proceed to the delivery stage of the project.

The project approval focusses on producing a Project Initiation Document (PID), outlining the project scope, the business case, aims and benefits and the key outputs and milestones. It also includes a high level project delivery outline, a list of project resource requirements, finance detail, key risks, assumptions and dependencies.

The PID is developed by the Project or Programme Manager, reviewed and supported by the Project Sponsor and approved by the Steering Group or Governance Group dependant on project value.

This provides a clear capture to measure delivery performance and success at the end of the project effectively.

Project Delivery



The Project Manager takes responsibility for the day to day delivery of the project using a standard set of tools to manage deliverables, risks, issues, assumptions and dependencies.

Reporting is described in the Digitalisation Delivery Governance Hierarchy, ensuring that the right level of oversight and visibility of the project and its progress against the PID deliverables.

Appropriate tolerances for time, cost and quality are set for each reporting level, enabling effective delivery to be achieved whilst ensuring appropriate bounds are set to ensure the original aims of the project are delivered.

Measuring Success



Delivering the projects against their original aims and objectives is critical to facilitating a successful digitalisation programme.

To ensure that success is continually measured a RAG status is used against each aim and objective identified in the PID. This ensures that at the earliest point any anticipated issues can be identified and rectified.

Once the solution is delivered it is important to review the complete product or solutions against the original aims and objectives. Three to six months after the project is implemented a full 'success review' takes place at Steering Group and Governance Group level.

This enables a complete retrospective review of a project's outcomes and understand if any further iterative developments are required.

Action Plan



Our Action Plan contains the current projects being delivered as part of our digitalisation programme.

It provides an overview for customers and stakeholders to understand the developments in progress and the outputs that they can expect and when. The longer-term view can be seen in the Roadmap as part of the Digitalisation Strategy.

For each project a description of the activity is given, providing an overview of what the project will do. The drivers behind the project will be summarised, detailing the rationale and reason for the project and the benefits will also be described.

We are committed to delivering a balanced digitalisation programme and are using a number of key metrics to support and measure this.

Using the three underpinning themes of our digitalisation strategy, each activity within the Action Plan is characterised against one of these:



Improved data management



Increased network insight and operation



Presumed open data

To further ensure we have a balanced programme we also capture which of the five key recommendations from the Energy Data Taskforce report a project aligns and supports our progress in delivering against.

We also identify, where applicable what internal and external user types the activity is most likely to benefit. These user types are:

User Types

External User Type



**Academic
& Innovators**



**Local Authorities
& Regulators**



Commercial



Energy Sector



Consumer



Third Sector

Internal User Type



Design & Planning



Operation



Finance



Regulatory



IT / OT

Action Plan



The definitions of the external user types are:

Energy Sector

aggregators, energy providers, flexibility platforms, network operators, electricity generators and renewable generators

Academic & Innovators

academic researchers, entrepreneurs and innovators

Third Sector

charitable sector, campaign groups and community energy organisations

Local Authority & Regulatory Bodies

local authorities, policy makers, regulators, social work and care systems

Commercial

commercial energy market, low carbon technology provider, consultants, developers and EV fleet operators

Consumer

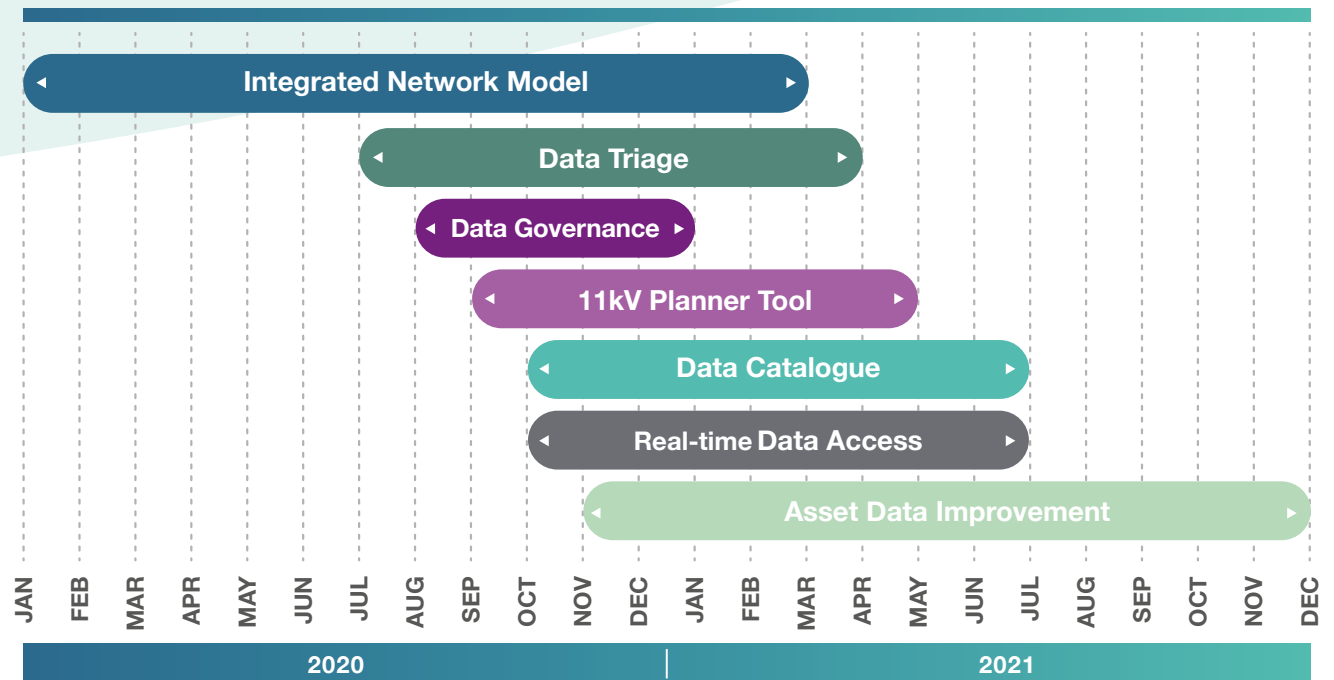
consumers, investors and intensive consumer

Critical to understanding the value and benefit of an activity within the Action Plan is being able to measure success. Therefore, for each activity a number of clear success criteria are captured that will be used to evidence their effectiveness.

These metrics will provide useful insight to inform our digitalisation programme and ensure it remains balanced and delivering value, however, we understand that a greater focus in some areas will be required throughout the delivery of our digitalisation roadmap.

Our current action plan describes six key projects that will deliver significant benefit and act as enablers for future activities and deliverables.

Action Plan Projects



Projects



Integrated Network Model

Description

The INM creates a complete, single source of the truth, electrical network model through the utilisation of data from our network management system (NMS), geographic information system (GIS) and our enterprise asset management (EAM) solution.

The INM enables this previously disparate data to be connected providing an improved understanding of assets and their connectivity. Key asset and network information is extracted from these three primary data repositories and the INM, through a series of matching rules, identifies both direct and indirect links between assets to provide a single version of the truth. The INM also captures and collates the assets and related information that has not been matched, i.e. where an asset exists in one system but not in another for instance; this enables a foundation for data improvement to take place.

The INM data is stored as a relational database and is managed by a Data Steward and accessed by Data Users. Common Information Model (CIM) format files are also generated, which are to be shared openly providing the asset information and connectivity from the 132kV to the 11kV network inclusive in a standardised and interoperable format.

Drivers

Legacy NMS, GIS and EAM arrangements mean that our data has historically been disparately captured, sometimes needing to be entered separately in to a number of systems.

This has led to a range of data quantity and quality issues and an overarching system is required to robustly and routinely identify these to form the basis for master data improvement and ultimately management processes.

Manually processing and determination of data quality and validation is not possible, due to the volume of data and a centralised system to carry out this activity at regular intervals is required.

Benefits

Data improvement activity is possible, where a single source of data is available to target improvement by priority, specific assets and datasets.

The INM implementation facilitates the introduction of master data management, supporting the implementation of revised data capture processes, exception and improvement reporting.

It provides a single model in CIM format to be used to reduce the engineering effort required to model the current and future network, new connections and long term planning.

This will also ensure that all engineers have the same, increased level of data available to make consistent design decisions. This will speed up the time to quote for customers' new connections and reduce connection costs through increased data availability.

Customers, through CIM, will be able to be provided the same data WPD uses to model and access the network, allowing improved and more informed customer and stakeholder decisions to be made around connections, flexibility, future planning and other functions.



Key information

Start date: January-20

End date: March-21

Strategic Theme:

Increased network insight and operation

EDTF Recommendations support:

Visibility of Infrastructure and Assets & Digitalisation of the Energy System

User Types: All

Success Criteria:

CIM files for our four licences areas open and available; CIM files used internally to inform design and planning activity; tangible asset information data improvement; informed master data management processes

Data Triage Process

Description

We have a significant number of datasets that are public and available through our Energy Data Hub and other.

A number of these datasets have been created through a specific need and request, however a greater number were datasets that existed and have now been made public to support customers and stakeholders meet their needs.

Establishing a consistent data triage process will ensure that we presume all data to be open. This provides a robust process to assess a dataset available internally as to where it can be made public and how that can be managed.

The process will ensure that there is a process and methodology to promote data sharing, how to redact data this is restricting the data being made open whilst preserving its value and benefit.

Importantly we will share which data we have triaged but are unable to share and for what reason.

Drivers

Providing customers and stakeholders access to a wide variety of our current and future data is required to ensure they can meet their ambitions, deliver services effectively to us and others.

We have already seen the benefits of this through our flexible services.

Benefits

Sharing data on our assets, network operation and performance will inform the how customers design and integrate of low carbon technologies and distributed generation.

It will also drive research and innovation on the design, performance and operation of our network to continue to improve and deliver an efficient and effective network.

We have been and are open to sharing data, however, this process will mean that we take a further step in to our proactive approach. Moving from a 'why share' to a 'why not share' approach will provide further confidence in our data approach and support our digitalisation journey.



Key information

Start date: July-20

End date: April-21

Strategic Theme:
Presumed open data

EDTF Recommendations support:
Visibility of Data and Visibility of Infrastructure and Assets

User Types: All

Success Criteria:
All current and future data released will be assessed against the data triage process providing a summary of the process; prioritised data as part of our stakeholder engagement to data assessed against the process; a process established to enable an external request for data to be assessed through the data triage process

Data Governance

Description

Robust Data Governance is required as a foundation for our digitalisation and data activity, ensuring that it is developed and implemented consistently throughout the business.

Our Data Governance is focussed on the development and utilisation of people, process and technology to leverage data as a valuable asset, enabled through appropriate data ownership, accessibility, security, quality and knowledge.

The development, delivery and implementation of these key aspects will be managed centrally and as such the Data Governance will span our complete business to ensure a uniformed and strategic approach. Key elements within our Data Governance are:

- **Prioritising areas for business improvement;**
- **Maximising availability of information assets;**
- **Creating roles, responsibilities, and rules;**
- **Ensuring and improving information asset integrity;**
- **Establishing and maintaining an accountability infrastructure;**
- **Converting to a master data-based system;**
- **Developing a feedback mechanism for process improvement.**

Our approach to Data Governance will be open and evolutionary, updating and amending as required to be suit the needs of our business, customers and stakeholders.

Drivers

Making change throughout a business requires clear and appropriate governance and this is key to a successful digitalisation programme.

Data and the approach to management is, like most large organisations, handled differently based on department and need.

This approach is no longer suitable to maximise the value of data, our existing systems and new developments. Data Governance will enable a common approach to data and to drive improved value both internally and externally.

Benefits

Implementation of Data Governance will enable clear data ownership, responsibilities rules and processes that are required for our future projects and outputs in this area.

It will also ensure that our data approach is aligned to the 12 data best practice principles.

Data improvement and master data management will be effectively enabled through governance meaning that the quality, value and benefit of data to all will be improved.



Key information

Start date: October-20

End date: January-21

Strategic Theme:
Improved Data Management

EDTF Recommendations support:
Digitalisation of the Energy System
and Maximising the Value of Data

User Types: All

Success Criteria:
Data Governance produced and implemented throughout the business; a public version shared

11kV Planning Tool

Description

A new 11kV Planning Tool will be implemented, supporting the appropriate and effective design of a changing 11kV network.

This new solution will replace a legacy tool, over 10 years old, enabling advanced modelling and design techniques to be employed, such as time series modelling and active network management scheme development.

It will enable new standards of data to be used, such as CIM, rather than bespoke network models creating interoperability between systems.

Drivers

The needs of the 11kV, both in terms of demand and generation, have changed significantly and how that network is designed and operated needs to change.

The implementation of a new tool, with direct data links, the latest LCT and DG models implemented and enabling the design and modelling of new technical and commercial solutions is key to optimising the 11kV network moving forwards.

Developments to date have focussed on our extra high voltage (132-33kV) modelling, which has seen a significant change its use and operation and now that same investment is needed on the 11kV network.

Benefits

The implementation of a state of the art 11kV planning tool will automate several previously manual functions, such as model building, data collation and scenario modelling.

These new features will allow for further optimised network operation to be designed, increasing security and minimising losses and speed up the process to offer new connections to customers.



Key information

Start date: September-20

End date: May-21

Strategic Theme:
Increase Network Insight and Operation

EDTF Recommendations support:
Digitalisation of the Energy System and Maximising the Value of Data

User Types: Internal, Design & Planning and Operation; External, Energy Sector, Consumer and Commercial

Success Criteria:
Implementation of the 11kV Planning Tool; faster time to quote or new connections

Data catalogue

Description

A Data Catalogue provides centralised data access for a wide variety of data, technical, asset focussed, regulatory and other.

It also enables a standardised approach to metadata (the data used to describe the data) and to employ data management.

This will provide greater data visibility and insight without the need for individuals to separately interrogate data to drive useful insight through the identification and use of metadata.

Drivers

Data is currently stored in a variety of locations, some central and some disparate (shadow IT) where access to this data is varied based on user type, role and department, which drives the needs for aspects of duplication of effort in terms of identifying data, gathering and combining separate data sets to provide informed output across the business.

Focussing data access in to a central location, where raw and processed data sets will provide wide areas of the business with direct access to relevant and usable data that has not previously been available.

It is often not understood where the original information used to derive a data set originated. The use of a Data Catalogue will enable the lineage of data (identifying the route to the source of the presented data) to be well understood, ensuring that data is accurate, relevant and up to date. This will mean that the confidence in data is increased.

Once implemented internally the Data Catalogue can also be implemented, in a cloud environment, enabling customer and stakeholder access to this data readily.

Benefits

Greater data visibility to the complete business is possible reducing the time to find data and provide data in a usable format.

Providing insight to the frequency and criticality of data utilisation to focus developments and improvements of these existing and emerging datasets to ensuring data improvement focus and prioritisation is maintained.

Data will now be available to users that was not previously available, or that they were not aware of due to not being central, that will significantly increase the value to the business, customers and stakeholders.



Key information

Start date: October-20

End date: July-21

Strategic Theme:
Improved data management

EDTF Recommendations support:
Visibility of Data & Maximising the Value of Data

User Types: All

Success Criteria:
Centralised data access for prioritised datasets; lineage of data included for these datasets; data utilisation tracked to provide future needs insight; cloud-based data catalogue implemented containing all existing datasets available throughout our Energy Data Hub

Real-time power flow data access

Description

Understanding what is happening on our network is key to how we operate our network and we recognise that access to this data is increasingly important to our customers and stakeholders.

Real-time data access will provide, for each of our four licence areas and a total of the demand, generation and import currently on the network.

This data will be provided in our Energy Data Hub with access to historic data for interested users to view and export to inform their activities.

Generation detail will be split by key generation types, such as solar and wind to provide an understanding of the make up on our network in real-time.

Drivers

Customers and stakeholders require real-time information and historic views of this data to inform their decisions for planning and operation.

This data will also support academics and researchers to utilise with additional datasets available, from us and third parties to understand the operation of the electricity network in the UK.

Our stakeholder engagement and feedback has shown that this is a key area of interest and making this initial, high-level, information available will allow us to further engage to understand the need for more granular visibility of power flows on our network.

Benefits

Enabling customers and stakeholders to understand real-time power flow data on our network will enable informed decisions from planning the connection of new load and generation on the network to operational decisions by generators and community energy groups.



Key information

Start date: October-20

End date: June-21

Strategic Theme:
Presumed open data

EDTF Recommendations support:
Visibility of Data and Digitalisation of the Energy System

User Types: All

Success Criteria:
Demand, import and generation available for our four licence areas; historic views of data and extract facility available

Asset Data Quality Improvements

Description

We have a number of legacy systems and applications to store and capture data and this project will centralise and improve the quality of data stored for our assets.

This will involve combining disparate datasets, identify data gaps and employ manual or machine learning approaches to improving the quality of the data.

This work will focus on our network assets initially, switchgear, transformers, cables and conductor and associated ancillary equipment.

Drivers

Ensuring that we understand our asset data is key to operating our network efficiently and we have done this effectively to this point.

The needs of our network are now rapidly changing and data that wasn't previously required by certain areas of the business now is and this means that additional data capture and improvements is required.

Benefits

Improving asset data quality will deliver significant benefits internally, acting as a foundation layer for the implementation of advanced network management operations, operating the network more effectively in real-time, improved maintenance and operational decisions centrally, which have often to this point been made locally.

Having centralised to complete datasets will also improve design and planning activities, reducing the team to compile the information to make the correct, informed decisions.



Key information

Start date: November-20

End date: December-21

Strategic Theme:
Improved Data Management

EDTF Recommendations support:
Visibility of Infrastructure and Assets
and Maximising the Value of Data

User Types: All

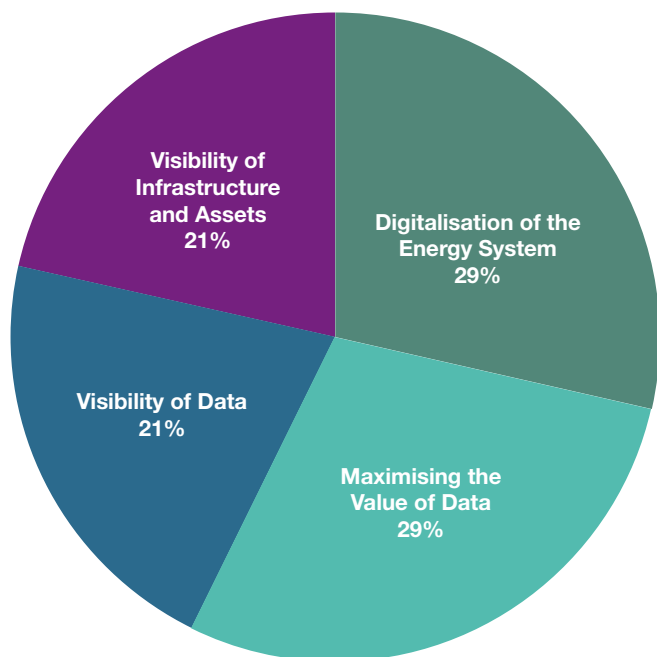
Success Criteria:
Tangible improvements to asset data quality supported through benchmarking; improved CIM files as part of INM; identification of the need for future machine learning and artificial intelligence techniques to further improve data quality across the business

Summary

Our digitalisation aims are ambitious and we have already delivered a number of digitalised and data solutions and our current action plan demonstrates our commitment in continuing this.

Our current projects are focussed on the foundations of digitalisation and this is reflected in the user types that the actions support and deliver benefit for, largely all. As our programme develops this will change and a greater number of our activities will become targeted as we are committed to delivering solutions, benefits and value for all.

The figures below show the split of our current projects against the five key EDTF recommendations and our underpinning strategic elements. These splits reflect our current position and at every update we will share where we were with these splits and where we are with clear explanations and rationale for changes.

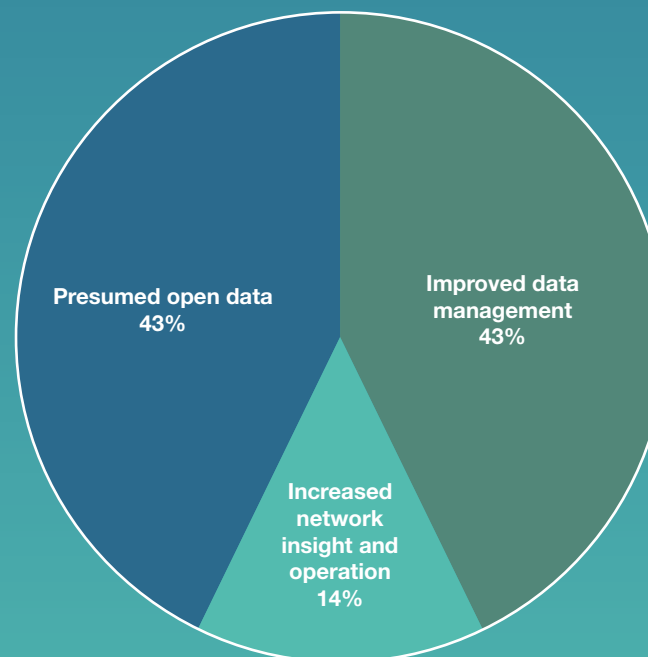


Split of projects against EDTF recommendations

As we develop our programme we will also share the split of activity against user type to ensure that this is appropriate and suitable moving forwards.

We look forward to sharing our next update, capturing where we are with the projects and activities described here and performance against their success criteria and new projects we have developed and started delivering.

You can also get regular updates and provide feedback through our **online action plan**.



Split of Action Plan against WPD Strategic Elements

Have your say

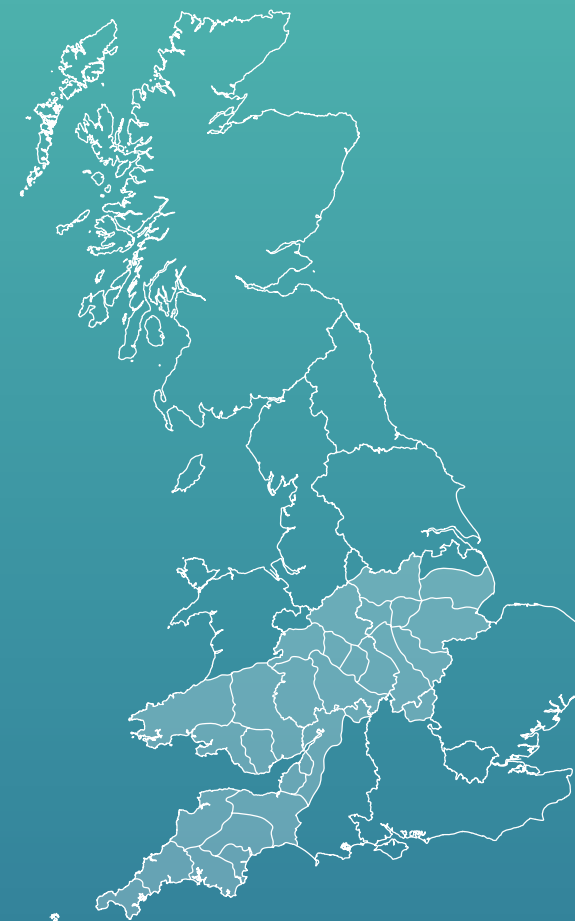
Your voice and opinion matters to us and we'd welcome your feedback on this and our Strategy through our consultation, open until 30th October.



How to get in touch

Find out more about all our digitalisation and data activity, track our action plan progress and more at:
www.westernpower.co.uk/digitalisation

Looking for more information, have an idea or a data need, contact our Digitalisation and Data team:
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