SP Energy Networks
Preparing for Net Zero Conference
Wednesday 8th September 2021

Preparing for Whole System Approach: Flexibility, DSO and Innovation Projects

Thank you for your time today

SPEN Preparing for Net Zero Conference
Wednesday 8th September 2021

Agenda

Flexibility, DSO and SPEN Innovation Projects

Thank you for taking the time to attend today.

We value your opinions, and we are keen to generate an open session with opportunities to hear your feedback.

09:30 – Welcome, Housekeeping & Safety Contact

09:40 – Fault Level Management Strategy for RIIO-ED2

10:15 – DSO Plans for RIIO- ED2

10:45 – Whole System Approach - Preparing for RIIO-ED2

11:00 - Flexible Tenders

11:10 – The Strategic Role of a DNO

11:30 – Overview of ICE Progress

12:00 – Close

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Housekeeping

Flexibility, DSO and SPEN Innovation Projects

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We value your opinions, and we are keen to generate an open session with opportunities to hear your feedback.

- *This session is being recorded*
  - *please let Louise know if you are not comfortable with this and we will take your comments in the Chat section*
- *Please try and keep background noise to a minimum by using the mute button when you are not speaking*
- *We are keen for this to be an interactive session as your feedback is important*
  - *please raise your hand electronically or use the chat function if you would like to ask questions to the speakers*

Conference Logistics

Video conferencing

If you experience any problem, please unmute and tell us, or type it into the chat function

You can call or text us on 07753 62442 if you have a problem joining

Data protection

We will be capturing your feedback anonymised, if we would like to attribute your views to your organisation we will seek your approval first

Join the discussion

'Raise hand' to ask a question at any point or please message in the chat

To make it easier for you to provide detailed feedback we are using Mentimeter. Please scan the QR code on the side or click on the following link
https://www.menti.com/acaoqbr1ao
When we reach a question, a prompt will appear on the screen for you to provide your feedback

Mentimeter QR code

Safety / Environmental Contact

E-highway study given £2m funding to draw up plans for overhead electric cables on M180 motorway near Scunthorpe, in Lincolnshire.

▲ Siemens and Scania have already tested their e-highway systems in Germany, Sweden and the US. Photograph: Siemens

- Study will draw up plans to install overhead cables on a 20km (12.4 miles) stretch of the M180.
- If the designs are accepted and building work is funded the trucks could be on the road by 2024.
- On the e-highway, lorries fitted with rigs called pantographs – similar to those used by trains and trams – would be able to tap into the electricity supply to power electric motors.
- Lorries would also have a smaller battery to power them over the first and last legs of the journey off the motorway.

The project is led by Costain, an infrastructure construction company that also operates some UK motorways, using trucks built by Sweden's Scania and electric technology from Germany's Siemens that is already in use in smaller-scale trials there, Sweden and the US.

Fault Level Management Strategy and Innovation for RIIO-ED2

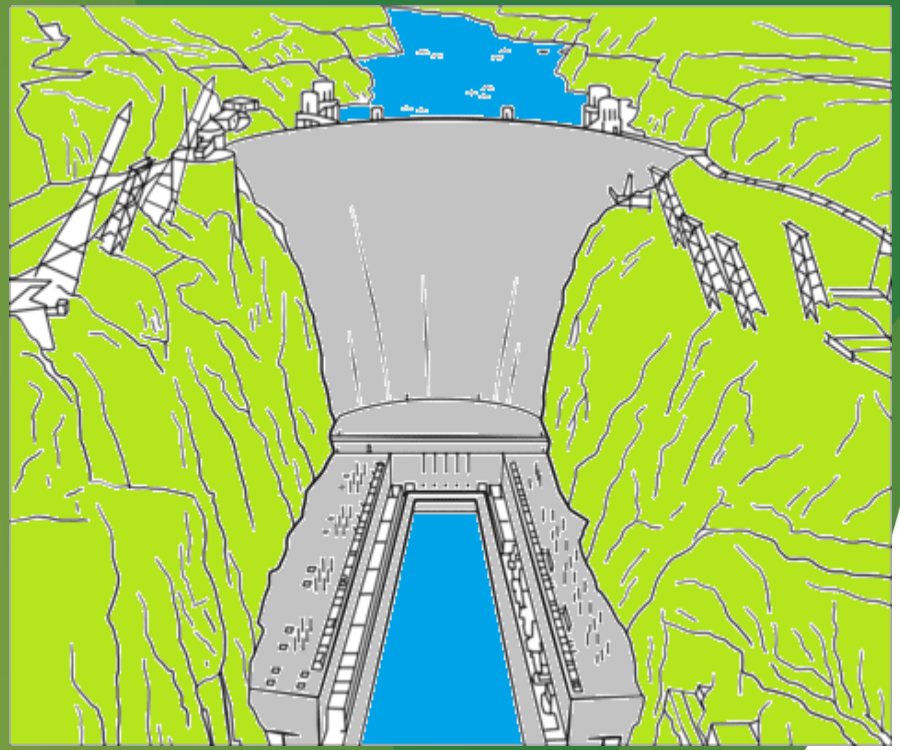
- Ralph Eyre- Walker
- Environmental & Innovation Manager

Content

Examples of:

- How we are innovating to enable the Net Zero transition
- How we are delivering new solutions from concept to business as usual
- How we are leading the industry in solving the technical challenges that we face

What is Fault Level? An analogy….



The Dam Analogy:

- Our network is the “river side of the dam”
- The “river” is normal operating current on the network
- A fault on the network results in the “dam bursting” – flooding the river!

Good news…

- Our network protection can switch the water off and “fix the dam”

Bad news…

- We can’t “see” how much water is in the reservoir – but this water level is the “Fault Level”
- Our network needs to “cope with the flood”

The Fault Level Challenge

Network **Fault Level (FL)** is the expected **short circuit current** that will flow through the network in the event of a fault

- Switchgear and other plant is **rated** to a particular FL.
- Increased levels of connected **Distributed Generation (DG)** cause **increased FL**.
- Fault Level is already one of the **greatest network challenges**.
- **DG** could almost **triple in SPD** and **double in SPM** by end of RIIO-ED2.
- DNOs target to be **Net Zero** accelerators!

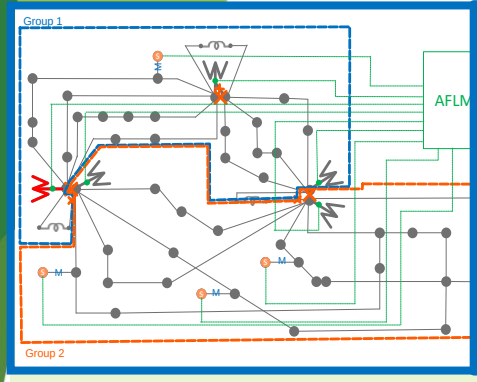
Existing approaches to managing Fault Level:

- Offline network models calculate likely fault level across the network
- Accuracy dependant on a range of inputs, and value is worst case at any single point in time
- **Innovation is key to avoid Fault Level becoming a barrier to the low carbon transition**

Fault Level Management - Innovation

Real Time Measurement and Monitoring

- Measured fault levels to inform investment decisions
- Understand fault level variability
- Inform control actions in real-time



Active Management

- Network configuration during normal operation to reduce fault level
- During outage conditions ANM will reconfigure network and constrain generation to maintain fault level limits

Innovation: Measurement and Monitoring

SP Energy Networks has been **leading ground-breaking innovation** since 2011, partnered with **Outram Research Ltd.**

Starting in 2013, an IFI funded innovation project developed the **world's first commercially available portable Fault Level Monitor.**

- Now deploying as **Business As Usual** with 20 devices installed on the network in SPM this year.
- Observes naturally occurring network behaviour to external stimuli – generally **requires a few days/weeks to obtain a result.**

Starting in 2017, a new innovation project set out to develop a prototype **real time** version.

- **Real Time Fault Level Monitor** (RTFLM) developed.
- Stage 1 completed successfully in 2019, with the first two prototypes installed on our network in SPM.
- Measured a change in network Fault Level in real time (within 20 seconds) – **this was a World First.**

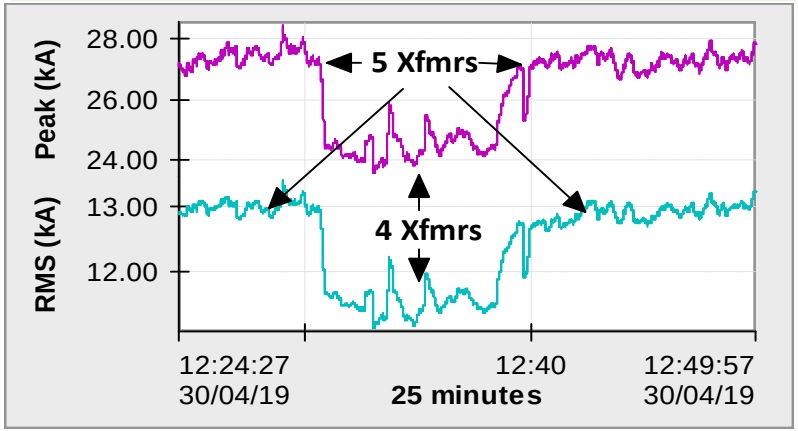
RTFLM Stage 1 – Prototype Trials 1

The Real Time Fault Level Monitor:

- Creates its own, synthetic network disturbance at LV
- Detects this disturbance at the target voltage, to **calculate Fault Level within seconds.**

First prototype was in **Station View Primary, Chester.**

- Measured change in Fault Level with change in network running arrangement.
- Modelled and measured **results found within 1%**



RTFLM Stage 2 – Extended Trials

Stage 2 commenced Summer 2020. UK Power Networks joined as a project partner.

First Milestone: Algorithm fidelity tests at the **Power Networks Demonstration Centre.**

Key Findings**:**

- Advanced **Real Time Digital Simulator** used as a controlled substitute for network.
- Allows assessment of **multiple network topologies.**
- 59 measurements undertaken over seven days.
- Inherent algorithm accuracy **verified as <~1% error.**

- Confirming algorithm fidelity gives us confidence in **measured vs modelled results.**
- Use of multiple network topologies improves knowledge for deployment.

RTFLM Stage 2 – Extended Trials

To replicate **algorithm fidelity tests on a live test network**, requirements are:

- fault level representative of a distribution network
- capability to execute a solid earth fault without a collapse in voltage

Two potential test laboratories identified - located in Hungary and Australia.

Hungary selected for both technical and logistical reasons - completed July 2021

Ground breaking: this was the first time that a measurement of fault level could be directly compared to a fault current measurement from a real fault.

Still analysing the results, however early indications have confirmed:

- Results have further supported the inherent algorithm fidelity of <1%
- Greatly improving understanding of how fault current behaves on the network – including impact of faults not being “perfect” in the real world
- How the results will influence our future plans

Active Fault Level Management (AFLM) Project

Project Objective: Specify and demonstrate an operational approach for managing increasing fault levels and improving network hosting capacity for DG/DER.

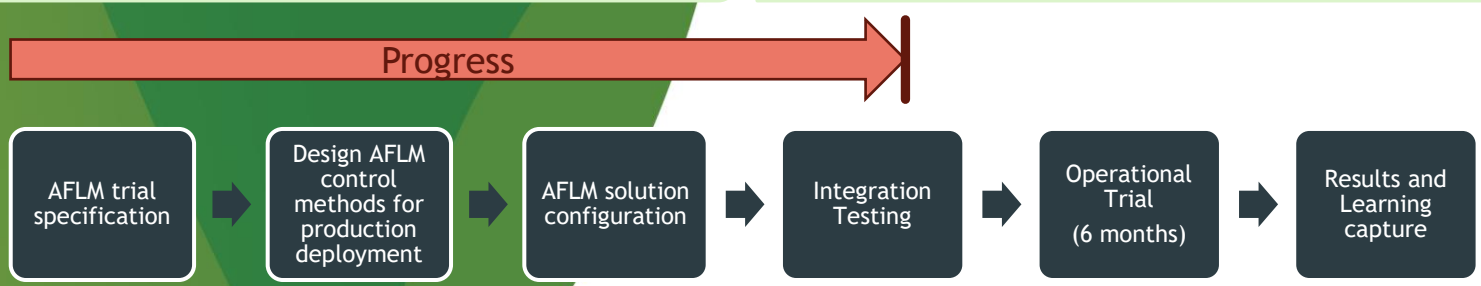
Phase 1 and 2 complete:

- FLM toolbox defined
- Network headroom modelling and CBA
- Defined solution
- Prototype development and lab testing

Proposed solution: ANM real-time fault level management enables DER operation only when fault level and/or network topology permits.

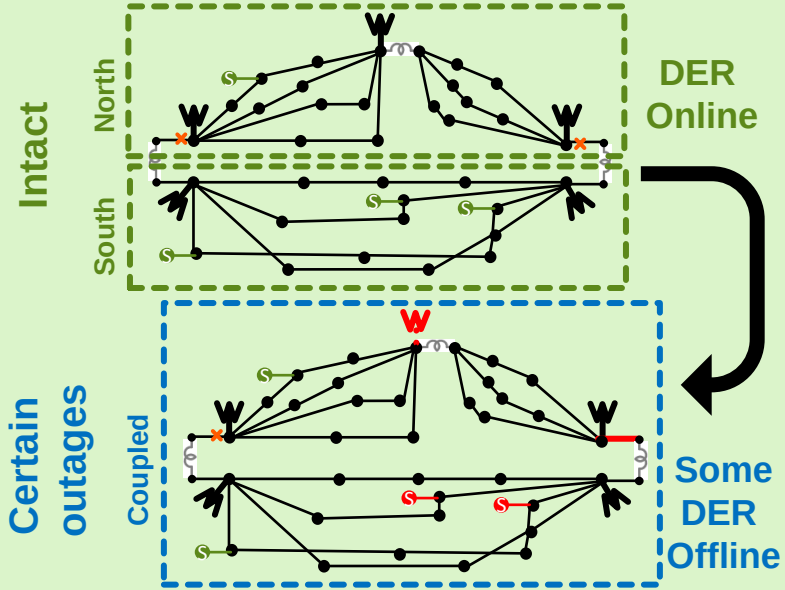
Phase 3 in progress: Network Trial, Learning Capture and BaU Strategy.

- AFLM Solution based on established principles and existing ANM platform
- Testing of AFLM Lab Prototype
- Scoped Network Trial



AFLM – Warrington Trial

Warrington selected: FL causing barrier to DG connections. Normal solution is reinforcement.



Live trial:

- Two existing DER in Warrington south with non-firm connection agreements.
- FL headroom permits DER online during intact conditions – DER disconnected when network is coupled during certain outages.

Trial objectives:

- Automate the disconnection of DER when FL headroom exceeded.
- Explore feasibility of utilising realistic restorative actions to permit partial DER curtailment in certain situations.
- Integrate with RTFLM measurements.

Strategy: Enabling Net Zero

Distribution Future Energy Scenarios (DFES) developed to establish future direction:

- Our DFES are forecasts of our customer's future electricity requirements on their journey to Net Zero
- Our DFES includes a range of four scenarios with differing levels of Net Zero ambition, they are granular forecasts at a community level to 2050
- Our DFES underpin our network assessments and inform investment decisions, and incorporate Net-Zero and regional decarbonisation ambitions

Key findings: by 2030, network load could increase by up to 27% and Distributed Generation could triple

Our customers will have between **215k and 1.4m Electric Vehicles** by 2030

Our customers will have between **26k and 590k Heat Pumps** by 2030

Levels of Distributed Generation could increase by **200% by 2030**

Fault Level Management in RIIO-ED2

The Electricity Distribution Network Is Critical To Facilitating Net Zero.

Our Business Plan for the next price control period, **RIIO-ED2** which runs from 2023 to 2028, sets out the allowances we require to efficiently:

- Facilitate Net Zero
- Enable a Safe, Secure & Flexible Grid
- Improve Network Performance & Reliability for our customers
- Optimise Network and Asset Risk

To meet the requirements of the forecast increase in Distributed Generation, our RIIO-ED2 Load Investment Plan includes deployment of:

- 41 fault level monitoring and management solutions

Estimated savings to our customers are **over £35m within RIIO-ED2 alone.**

Innovation will help us facilitate the Net Zero transition, as society becomes increasingly reliant on electricity

Feedback and Q&A

Please tell us:

- Do you believe that this proposal will facilitate a cost-effective transition to Net Zero and ultimately benefit customers and stakeholders?

- Do you consider this proposal to be innovative and beyond current practices in monitoring and managing fault level?

DSO Plans for RIIO-ED2

- Mark Goudie
- Distribution System Operation (DSO) Manager

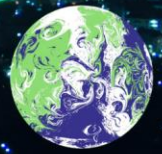
Enabling the path to Net Zero

Delivering a better future, quicker through our RIIO-ED2 Business Plan

SP ENERGY NETWORKS

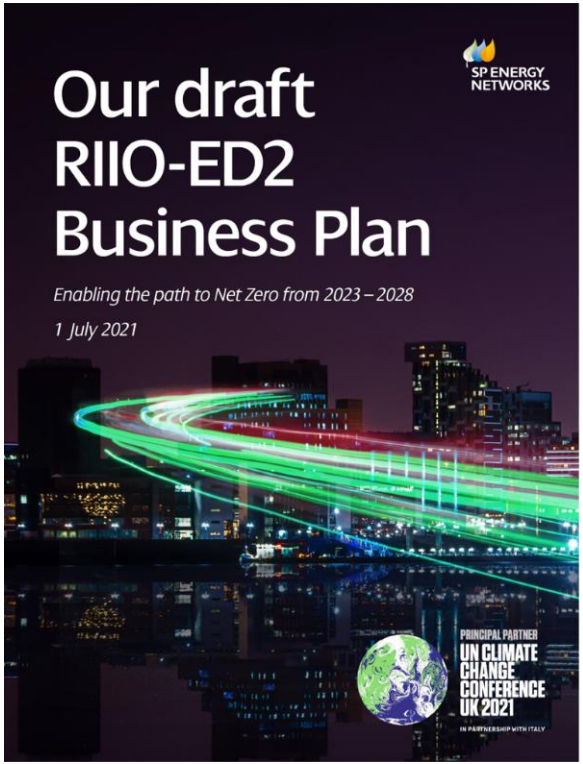
Preparing for Net Zero Conference
RIIO-ED2 - DSO

08 September 2021



PRINCIPAL PARTNER
UN CLIMATE CHANGE CONFERENCE UK 2021
IN PARTNERSHIP WITH ITALY

Our draft plan submission



We submitted our draft business plan to Ofgem and the RIIO-2 Challenge Group on 1 July 2021 – along with publishing this externally for all of our customers and stakeholders.

200 page business plan document

83 Supporting Annexes

>120 Engineering Justification Papers and >100 CBAs

348 Business Plan Data Tables and commentary pack

Input from stakeholder engagement, CEG meetings, RIIO-2 challenge group

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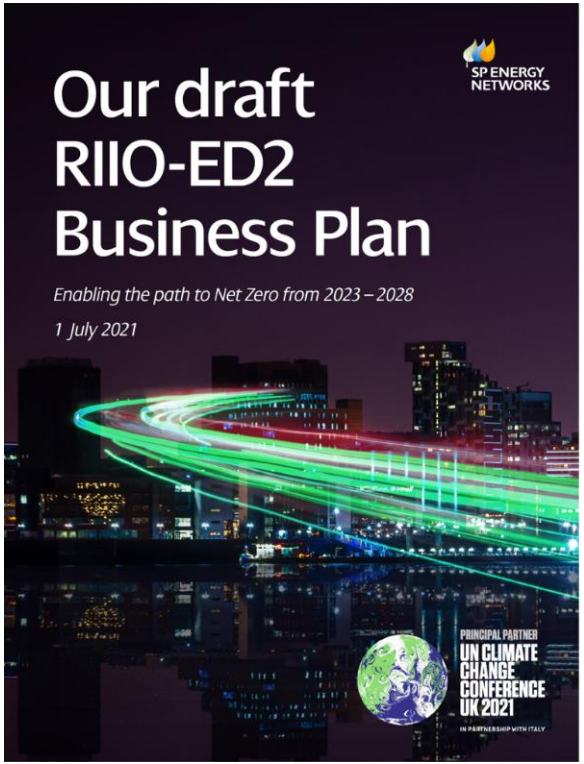

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Forecasts

Our **Distribution Future Energy Scenarios** show the scale of activity is greater than ever before

Electrification of transport

1.0m - 1.5m new **EVs** by 2030

Electrification of heating

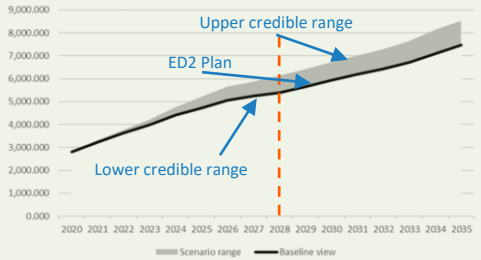
0.6m - 0.9m new **heat pumps** by 2030.

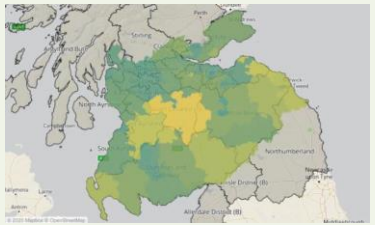
Distributed generation

+**5.6GW** to **+7.0GW** of additional **generation** by 2030. *(2.5 x current levels)*

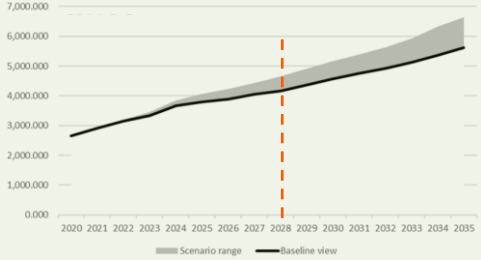
Developed our **Baseline scenario** using DFES, ESO, and Climate Change Committee projections

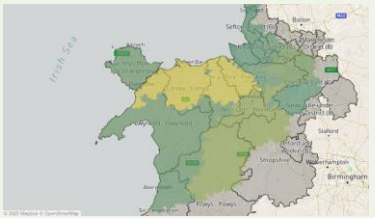
Distributed Generation in SP Distribution





Distributed Generation in SP Manweb





Our plan will facilitate all credible Net Zero pathways with our delivery strategy flexing accordingly

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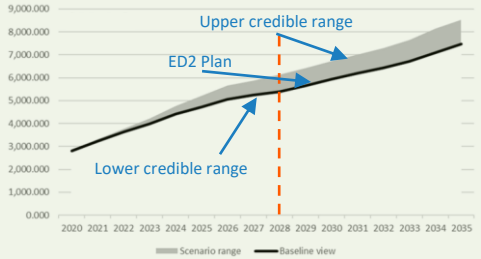

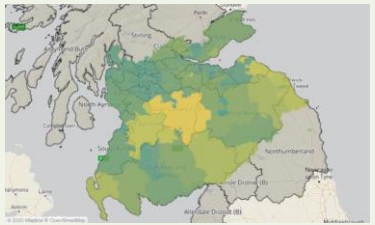

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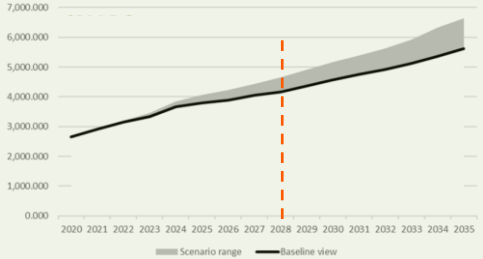

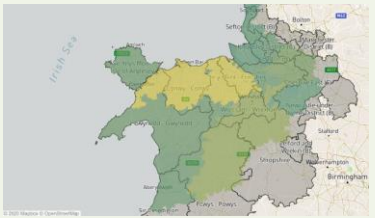

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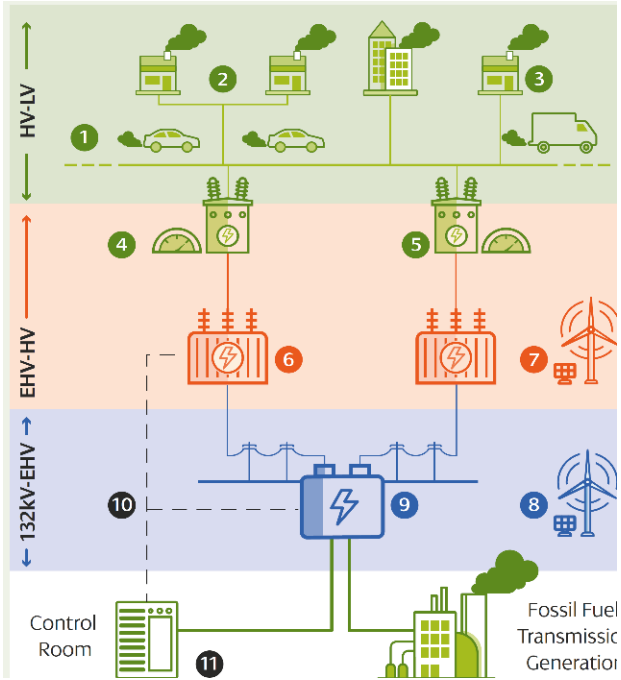
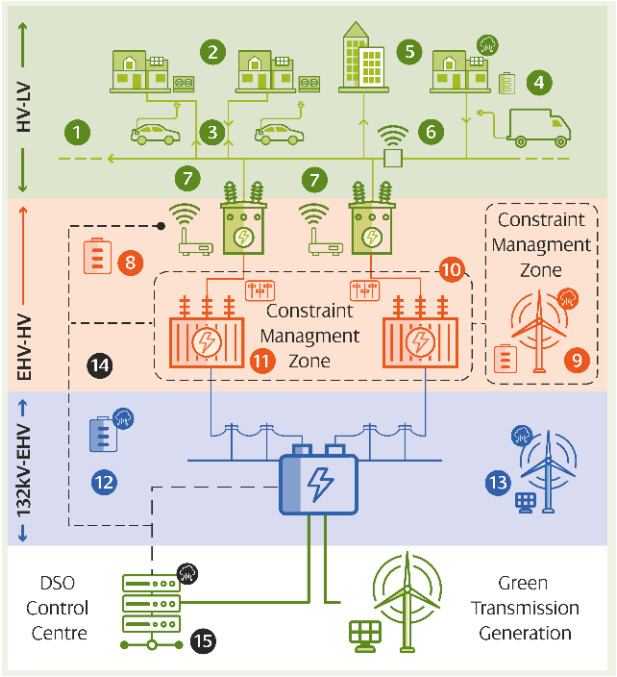
The network of tomorrow

The challenge for us in RIIO-ED2 is to evolve our network and deliver our customer priorities against a radically changing energy landscape for Distribution

Network of today



Network of tomorrow



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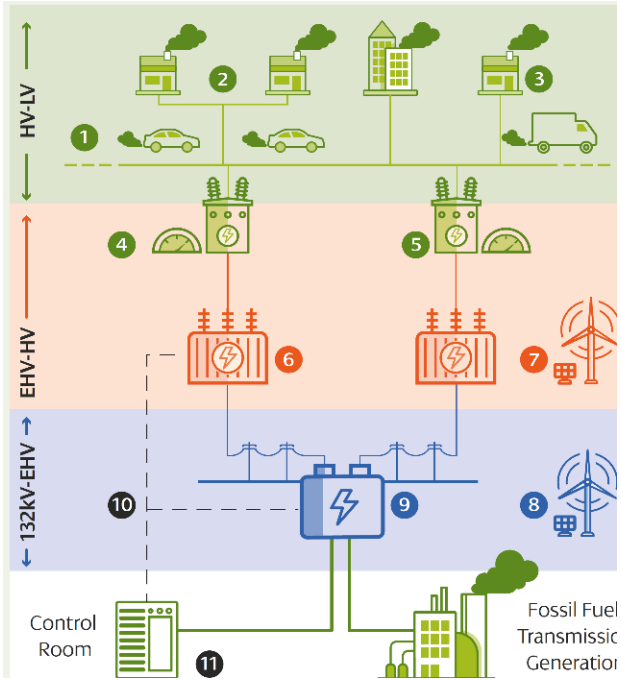

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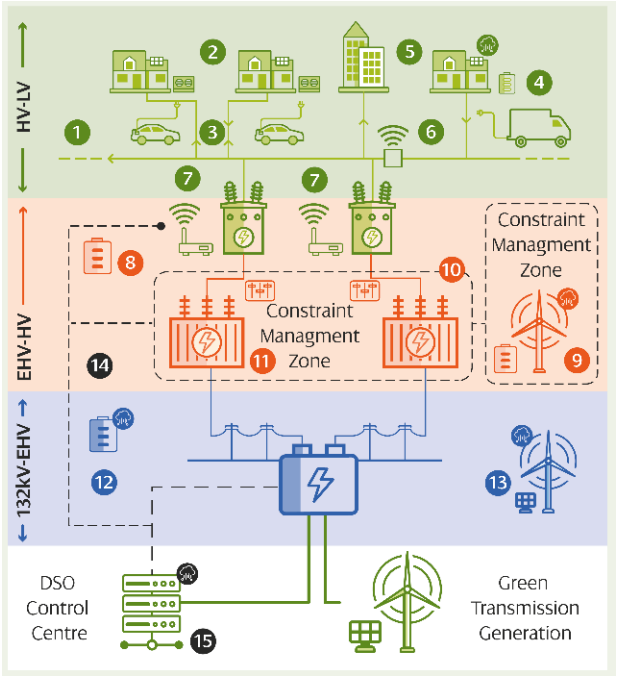

Our Role as the Distribution System Operator

Roles, Activities, & Infrastructure to serve our customers & communities

Planning & Network Development

1. Plan efficiently in the context of uncertainty, taking account of whole system outcomes, and promote planning data availability

Network Operation

1. Promote operational network visibility and data availability
2. Facilitate efficient dispatch of distribution flexibility services

Market Development

1. Provide comprehensive, user-friendly, and accurate market information
2. Embed simple, fair, and transparent rules and processes for procuring distribution flexibility services

Our DSO Strategy

Developed with input from our customers & stakeholders

Accommodating **Customer Decarbonisation** & delivering **Net Zero.**

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Meeting and Exceeding Ofgem's Baseline Expectations

Ofgem Requirements	SPEN DSO Strategy
Planning and Network Development • Plan efficiently in the context of uncertainty • Take a Whole Systems approach to network planning • Promote planning data availability	**Planning and Network Development** • Enhanced modelling and forecasting tools • 14,102 LV network monitors; ENZ platform • Regularly report and share data and forecasts
Network Operations • Promote operational network visibility • Facilitate efficient dispatch of DER	**Network Operations** • LV monitoring at 14,102 secondary substations • Use near-time forecasting platform and ENZ platform • Increases in operational IT and telecoms • 22 CMZs, Decision Making Framework for DER use
Market Development . Provide accurate, user friendly and comprehensive market information . Embed simple, fair and transparent rules for procuring distribution flexibility services	**Market Development** . Data exchange and multiple routes to facilitate markets . Conflict of Interest management and transparency embedded within approach

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Voltage Specific Architecture (1)

Voltage-specific deployment of **DSO Infrastructure** in areas forecast to become **constrained** based on **DFES** and **Engineering Net Zero Model**

LV & HV Network

- 14,102 LV substations are forecast to become constrained.
- Linked to **Engineering Net Zero Platform** providing increased visibility, network management and automated connections.
- Deploying 4,500 **Network Controllable Points**, 31 **On-Load Tap Changers**, 22 **LV Engine** and over 150 locations with **RTTR** and **LV automation**.

Maximise utilisation & increase reliability

EHV & 132kV Network

- Deployment of **22 Constraint Management Zones** (10 SPD, 12 SPM) covering ~**40%** of the network**.**
- **Triggered** where **capacity limits** are constrained**.**
- Providing functionality for **Flexibility**, **Active Network Management, Active Fault level Management**, **Service Co-ordination** and **voltage management**.

Direct cost savings of up to £334m

Managing Constraints with **Flexibility** to defer reinforcement, tendering at over **2,000 locations** for ED2

DSO Strategy to minimise additional costs as the UK transitions to Net Zero

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Voltage Specific Architecture (2)

Built on successful innovation

DPCR5

Accelerating Renewable Connections (**ARC**) project, enabled additional **160MW** of generation to connect in constrained parts of the network.

RIIO-ED1

Extensive deployment of **ANM** in Dumfries & Galloway and North Wales, **enabling 500MW of generation** to connect to the network.

RIIO-ED2

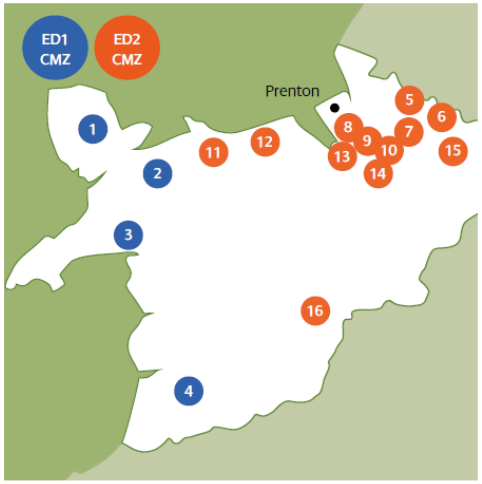
The **DSO platform** will **manage demand**, **generation** and **fault-level** in real-time and develop **new markets** (e.g. secondary trading).

Facilitating an additional **1.5GW** of Distributed Generation and **0.5GW** of customer demand.

Kirkintilloch DSO Control Centre

SP Distribution Network Consraints Managment Zones

1. Dunbar
2. Dumfies & Galloway
3. Berwick
4. Coylton
5. Bonnybridge
6 Saultcoats B
7. Redhouse
8. Earlstoun Hydro
9. Livingston East
10. Galasheilds
11. Dunfermline
12. Dalmarnock
13. Linnmill
14. Kaimes



Prenton DSO Control Centre

SP Manweb Network Consraints Managment Zones

1. Amlwch
2. Bangor
3. Four Crosses
4.Aberystwyth
5. Bold
6. Warrington
7. Percival Lane
8. Rock Ferry
9. Capenhurst
10. Ince
11. Colwyn Bay
12. St. Asaph
13. Deeside
14. Chester
15. Lostock
16. Legacy

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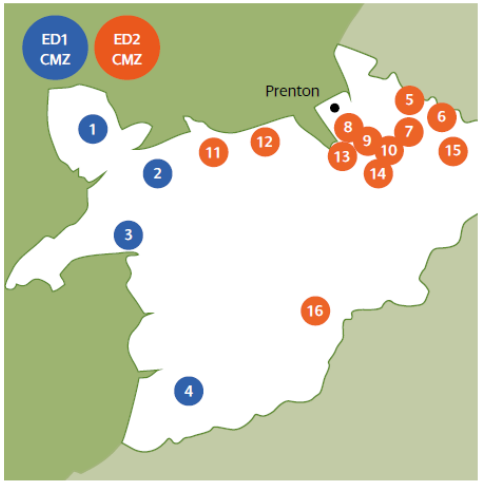
Kirkintilloch DSO Control Centre

SP Distribution Network Consraints Managment Zones

1. Dunbar
2. Dumfies & Galloway
3. Berwick
4. Coylton
5. Bonnybridge
6 Saultcoats B
7. Redhouse
8. Earlstoun Hydro
9. Livingston East
10. Galasheilds
11. Dunfermline
12. Dalmarnock
13. Linnmill
14. Kaimes



Prenton DSO Control Centre

SP Manweb Network Consraints Managment Zones

1. Amlwch
2. Bangor
3. Four Crosses
4.Aberystwyth
5. Bold
6. Warrington
7. Percival Lane
8. Rock Ferry
9. Capenhurst
10. Ince
11. Colwyn Bay
12. St. Asaph
13. Deeside
14. Chester
15. Lostock
16. Legacy

Feedback and Q&A

Please tell us:

- Do you believe our plans will deliver Ofgem's DSO Roles and Activities?
- Are there other areas you would like to consider ahead of our ED2 plan submission?

Enabling the path to Net Zero

Delivering a better future, quicker through our RIIO-ED2 Business Plan

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Thank you

Whole System Approach - preparing for RIIO - ED2

- Laura Dunn
- Senior Innovation Engineer

Whole System Mission Statement

Our mission is to unlock the full value of Whole System thinking, by collaborating not only with other electricity companies, but also key stakeholders including gas and water networks, innovators, non-regulated companies and local communities to ensure efficient investment in the electricity network and to achieve optimal outcomes for customers in the transition to net zero.

Which provides SPEN with opportunities to:

- Effectively coordinate network investments and operations to optimise the electricity grid and meet the challenge of enabling a net zero energy system at lowest cost to consumers.
- Ensure we do not leave any communities behind in the energy transition.
- Work together with companies across multiple energy vectors to identify Whole System solutions.
- Plan with knowledge of the full range of solutions and their impacts.
- Discover, innovate and implement solutions by harnessing the benefits of sharing data

Guided by our six-pillar strategy:

1. Establish strategic partnerships to achieve common Whole System goals
2. Improve our mastery of data, sharing data easily to unlock Whole System and consumer benefits.
3. Supporting communities and vulnerable customers to ensure no one is left behind in the transition to Net Zero.
4. Using innovation, markets and flexibility to push the boundaries of Whole System thinking.
5. Thinking beyond the electricity sector to support other energy vectors including heat, transport and hydrogen.
6. Embedding whole systems thinking in our culture and ways of working

Approach

Why we are doing it

- Increasing interdependence across the electricity system and growing interactions with gas, heat, transport and beyond necessitates thinking that exceeds traditional boundaries.

How we will do it

- A planning process that considers flexibility solutions from the outset.
- Implement a decision-making framework that prioritises Whole System outcomes and considers options beyond the electricity sector.
- Consideration within our assessments of carbon emissions.
- Targeted and regular stakeholder engagement.
- Senior leadership oversight of progress and risks.
- Alignment of strategies* to integrate how we design and operate a rapidly evolving network.
- Sharing our data for use by others.
- Adding functionality to our Energy Data Hub to communicate system and network needs as well as receive external data and suggestions.
- A focus on ensuring customers and communities in vulnerable circumstances are not left behind.

* DSO, Digitalisation & Data, Whole Systems, Innovation, Stakeholder Engagement, Connections and Environmental Action Plan

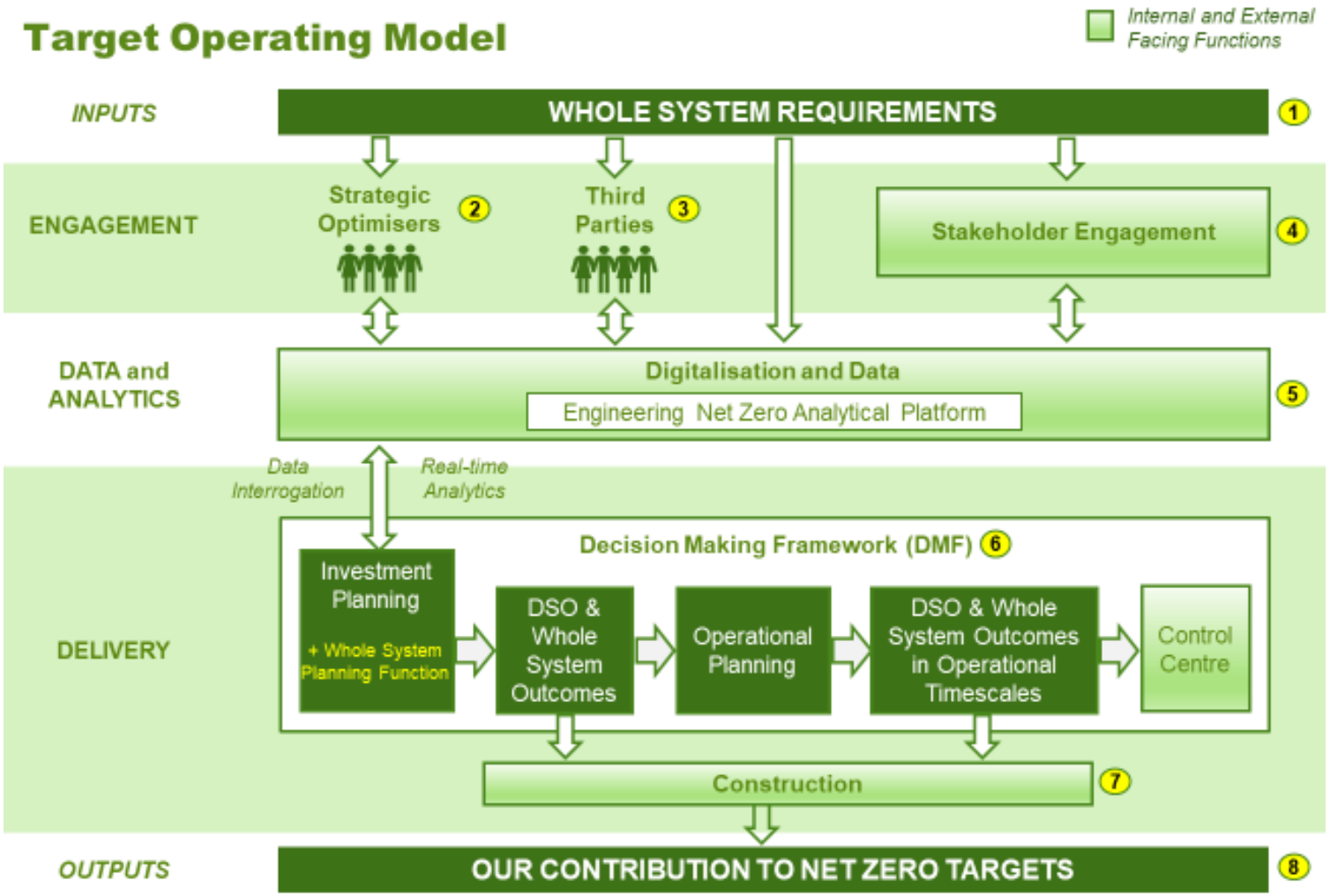
Key areas of focus

- Transforming investment processes
- Frameworks for cooperation and collaboration
- Mechanisms for identifying Whole System solutions
- Whole System licence compliance
- Data sharing

Impacted Stakeholders

- Service providers – aggregators, storage, generation.
- Other electricity, gas, water, telecoms companies.
- Devolved governments and local authorities
- System operators.
- Local communities.
- Consumer bodies.
- Our customers.
- Current and future consumers.

Target Operating Model



Examples of initiatives mapped to pillars (1 of 2)

The cornerstone of our RIIO-ED2 Whole System plan is the introduction of a Whole System Planning function to coordinate between licences and engage with other electricity network operators and wider stakeholders such as gas and water companies. We have other Whole System initiatives (some already underway) that are mapped against our pillars in the table below.

Strategic Pillar	Initiative
Establish strategic partnerships	- Scottish Government strategic partnerships for decarbonisation of heat and transport - Bus decarbonisation task force - Energy Networks in Wales - Energy Networks Charter - Structured whole systems engagement with neighbouring DNOs - Partnerships with house builders & homes for Scotland - Strategic optimisers, Local Heat and Energy Efficiency Strategies (LHEES), Local Area Energy Plans (LAEPs)
Improving mastery and sharing of data	- Leading ENA data & digitalisation steering group, contributing to national energy system map & publishing catalogue of available data - Share useful information with stakeholders including local authorities & fire service - Signpost areas of the network where storage providers are looking to connect – join up with generation customer to create flexibility

Examples of initiatives mapped to pillars (2 of 2)

Strategic Pillar	Initiative
Customers and communities in vulnerable circumstances	- Implement a Whole System planning function to engage with community energy key account managers to ensure a Whole System approach is taken to community energy projects - Share learnings from community energy projects with other DNOs - Community energy – Net Zero Fund, Bethesda - EV charger provider of last resort - Work with WPD to develop a long term solution for Mid-Wales
Using innovation	- Flexible Power - Project FUSION - Project CHARGE - ANM - Whole systems thinking is embedded within our innovation strategy
Thinking beyond the electricity sector	- Share guidance for house builders and ICPs on future requirements and e.g. heat networks vs individual heat pumps, managed EV charging (also ADMD calculator) - Supporting the development of other energy vectors e.g. Hydrogen – Net Zero North West
Embedding Whole System thinking	- Whole System Planning Function - Implement business change project to train teams in whole system thinking and how it affects them - Update to investment process to include whole systems considerations - SPT & SPD coordinated approach

Feedback and Q&A

Please tell us:

- Do you agree with our strategic pillars?
- Do you agree with our Whole System Strategy?
- We believe our target operating model (TOM) will enable us to deliver our Whole System Strategy. Do you agree?

Flexible Tenders

- Guy Shapland
- Flexibility Services Lead

Flexible Power

Flexibility Services

flexiblepower.co.uk

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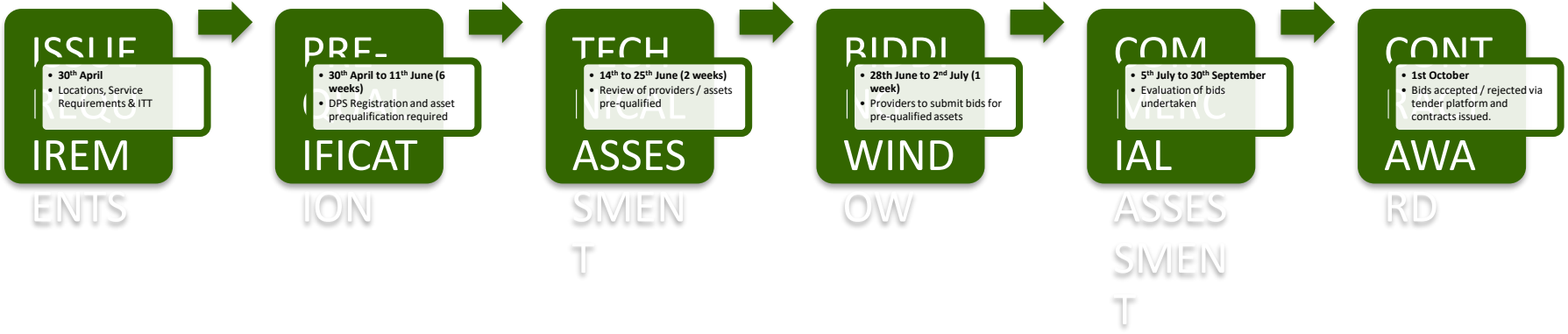
Flexibility Services – Spring 2021 Timetable

Flexible Power

The timetable for our Spring 2021 Tender is:

Assessments in final review



Results for the Spring 2021 tender will be published by the end of September

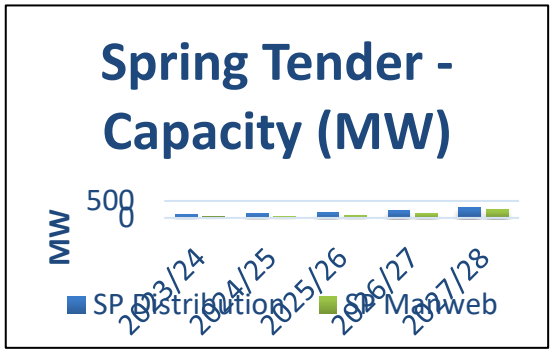
Flexibility Services – Tenders to Date

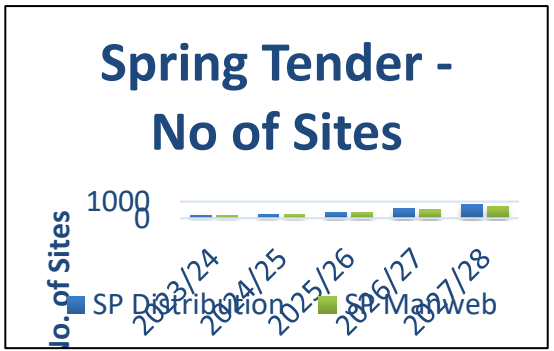
Flexible Power

There has been a significant increase in the volume of locations and capacity tendered for:

Tenders	Mar 2019	Oct 2019	Oct 2020	Spring 2021
No. of Sites	3	10	1138	1554
MWs tendered	116	250	960	1420
MWs awarded	0	53.3	139.6	TBC

The Spring tender illustrates the substantial year on year growth in Flexibility Services requirements by licence area:





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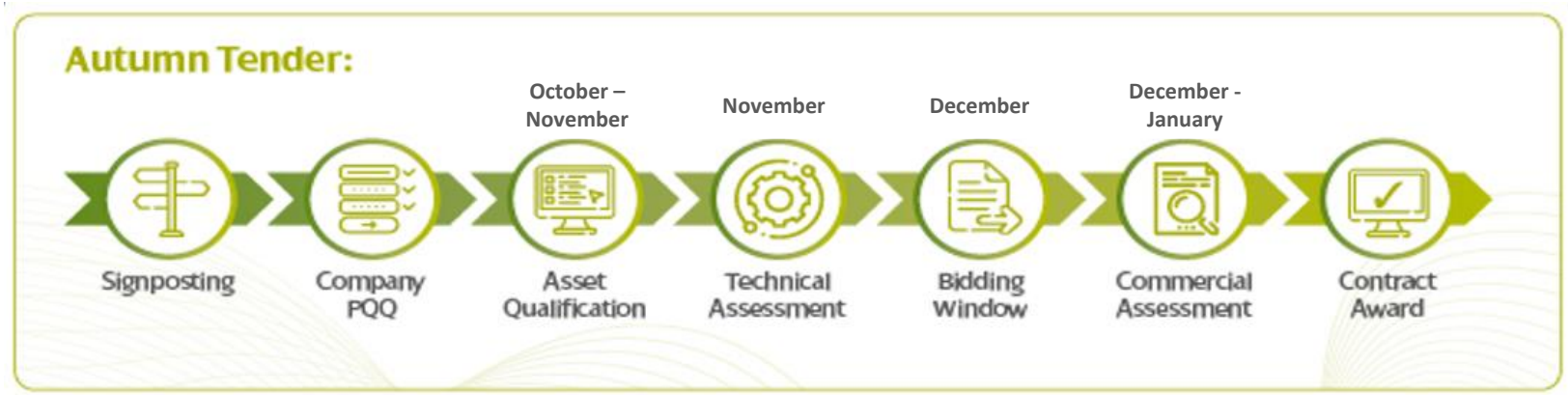
Flexibility Services – Tender Timeline



- Autumn tender will launch October 31st
- Smaller targeted tender

Flexible Power

Contact Us:

Flexibility@spenergynetworks.co.uk

www.spenergynetworks.co.uk/flexibility

www. flexiblepower.co.uk

www.picloflex.com

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The Strategic Role of a DNO

- Lynne Bryceland
- Policy and Licence Manager

Enabling the path to Net Zero

Delivering a better future, quicker through our RIIO-ED2 Business Plan

2021 DFES Stakeholder Engagement Local Authority Workshop

August 2021

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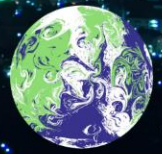


PRINCIPAL PARTNER
UN CLIMATE CHANGE CONFERENCE UK 2021
IN PARTNERSHIP WITH ITALY

Session:
The strategic role of the DNO

Introducing a Strategic Role for DNOs in ED2

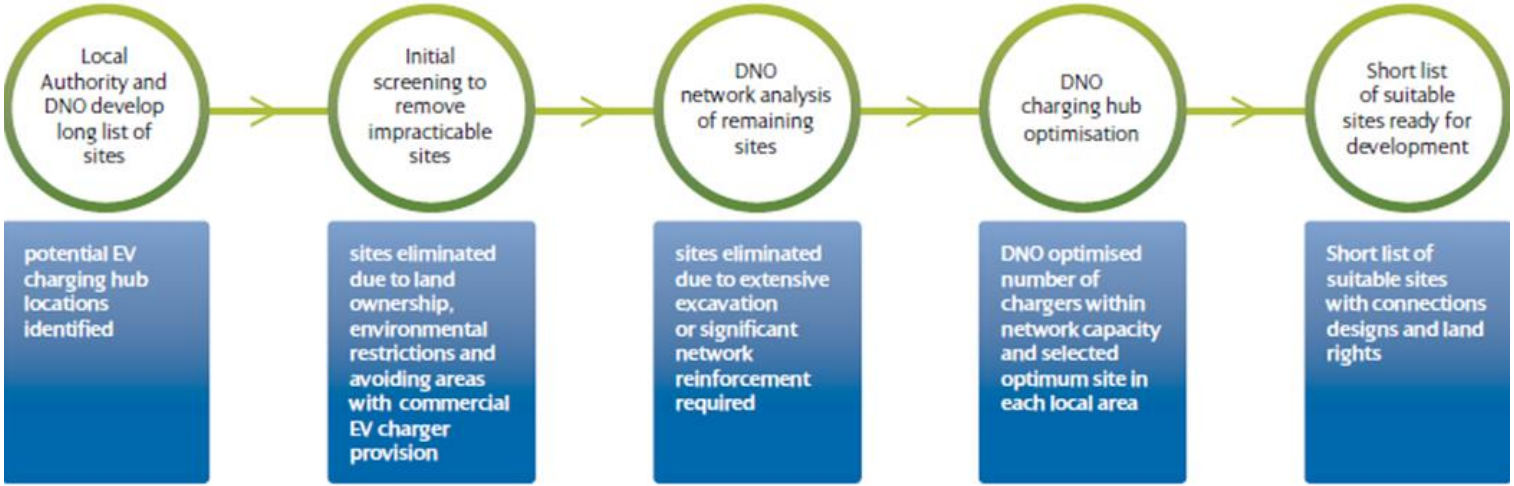
Building on the success of Project PACE we are proposing a strategic role for DNOs in Transport and Heat (*e.g. supporting the roll-out of EV chargepoints, decarbonisation of other modes of transport, energy efficiency, domestic heat pumps and heat networks*) in our ED2 Business Plan.

Our proposal will deliver significant wider **Whole System benefits** for all customers in the form of optimised costs and accelerated connection times. **It will also ensure a 'Just Transition',** as we will support communities which would otherwise be left behind by a market led model.

There are **3 strands** to our Strategic Initiative:

1. Work with Local Authorities (and Transport Bodies) **to undertake detailed DNO-led Optioneering works**, to ensure the **optimal and cost effective siting of public EV Chargepoints**.
2. Acting as a **'Provider of Last Resort'** for public EV ChargePoints where the market fails to deliver (i.e. in areas which aren't currently commercially attractive to market providers). We stand ready to work with Ofgem as they develop policy in this area to support new DNO licence requirements.
3. Set up a team of **'Strategic Optimisers' to act as contacts for Local Authorities** to ensure alignment of Network and Local Area Energy Plans (LAEPs)/Local Heat and Energy Efficiency Strategies (LHEEs).

RIIO-ED1 Project PACE – Learnings and Benefits



Scaling up this activity across SPM would cost ca. £4m and **save up to £16m in connections costs.**

Benefits delivered through completion of detailed feasibility studies and through working collaboratively with Local Authorities in the planning stage.

- Expected connections savings of £1.3m-£2.6m*.
- Time savings in delivery phase.
- Increased the number of chargers in the two LAs by 200%.
- Increased installed capacity (expected to be 10MW).

*When comparing 44 progressed hubs vs 44 average and 44 most expensive sites

Strategic Transport Role – ED2 EV ChargePoint Optioneering proposals

1 EV-Up Project

- Previous innovation project that created data to improve understanding of customers' ability to adopt EVs based on off-street parking & customer demographics.
- Use data to prioritise EV works in areas which have low average household income and low levels of off-street parking, and subsequently, where the market is not expected to deliver.

Local Authority EV

- Work with LAs to decide on areas where detailed EV optioneering would be most beneficial, e.g. where regeneration is being planned.
- Focus on areas where there is a need for public sector intervention in the delivery of public EV charging infrastructure, whilst avoiding areas where the market is expected to deliver.

3 Optioneering

- We will apply the optioneering methodology used as part of the ED1 Project PACE to carry out detailed optioneering in the specially selected areas, informed by the EV-Up data and LA community development priorities.

We have highlighted Optioneering as a 'Consumer Value Proposition', i.e. an area where we go above baseline requirement to deliver significant benefits to customers. This is assessed as part of Ofgem's business plan incentive.

The output is a short-list of suitable EV charging hub locations with optimal charger configurations through a detailed Optioneering Report to each LA. LAs may choose to use this as the basis for a tender process for the operation of public EV chargers.

Stimulating Future EV Markets – ED2 proposals

To stimulate the development of a competitive market in EV charging infrastructure, we propose to publish publicly available up-to-date information, aimed at facilitating new connections, via an online portal accessible to all parties.

This will allow commercial players to carry out their own Optioneering works and ensure they can plan to install privately owned EV chargers in areas that are best suited to network capacity.

Our online tool will:

1. Show areas of the electricity network with capacity for new connections;
2. Determine the cost of the electricity network connection for new chargepoints;
3. Provide charging solution connections at the lowest costs possible; and
4. Recommend smart charging solutions where reinforcement would normally be required.

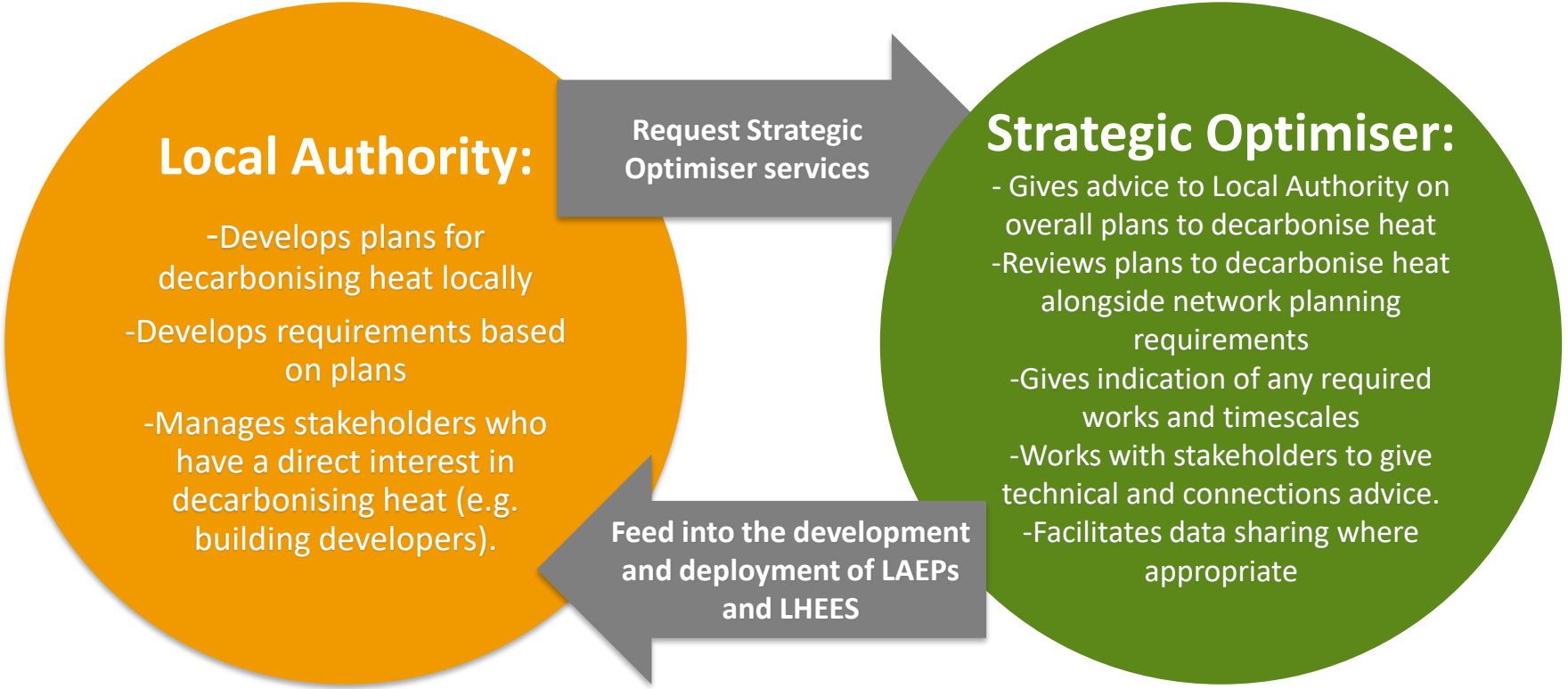
Strategic Heat role – supporting development of LAEPs and LHEEs

- In ED1 **we established a close working partnership with local government**, through the Liverpool City Region Combined Authority.
- The partnership was set up with the aim of helping to develop plans that would deliver Net Zero ambitions, by supporting construction and regeneration.
- Our experienced SPEN staff **provided local, expert engineering advice in areas of our business such as new connections and electricity network reinforcement requirements**, which allowed electricity infrastructure planning to be factored into the development of local investment schemes at the pre-master planning stage.

- **Building on this experience, SPEN intends to create 'Strategic Optimisers' roles, which will act as contacts for each Local Authority in the SPM and SPD areas.**
- The main role of the Strategic Optimisers will be to ensure alignment between network planning and Local Authority plans for the **decarbonisation of heat.**

- This Whole Systems approach will drive connection, reinforcement and time efficiencies, and encourage greater synergies between networks and Local Authority planning.

Strategic Optimisers – supporting development of LAEPs and LHEEs



Feedback and Q&A

Please tell us:

Mentimeter

EV Optioneering

- Are you supportive of SPEN's proposals to carry out EV Chargepoint Optioneering with local authorities in ED2? Yes/No
- Are you supportive of SPEN's proposals to stimulate future EV markets? Yes/No

Feedback and Q&A

Please tell us:

Mentimeter

Strategic Optimisers

- Are you supportive of SPEN making Strategic Optimisers available to local authorities in ED2 to support development of their Local Area Energy Plans or Local Heat and Energy Efficiency Strategies? Yes/No

Overview of ICE Progress

- Rachel Shorney
- SPM Stakeholder Engagement Manager

Policy Updates

Change of location for our SPEN policies - **www.spenergynetworks.co.uk**

They can now be accessed via both areas on the SPEN website:

- Getting Connected
  - Document Library
- About Us
  - Document Library

We are continually updating our Policies and Standard Documents.

Please send any requests or queries to our stakeholder team so that we can incorporate your requirements into our programme of updates.

- gettingconnectedupdates@spenergynetworks.co.uk

Customer Focus Group

Changes to the application webforms - why the need?

LCT equipment size and location information will enable SPEN to make informed decisions on where reinforcement of the network is required. The webforms will be changed to collect this information.

What's changing?

- Modernised look and feel – mobile friendly
- User experience improved with intuitive flow
- Follows common websites structure
- Simple to answer questions – less jargon
- Progress meter
- Add load calculator

Which forms?

- New Supply – information gathered and used on "energisation"
- Alteration to point of supply – information gathered and transferred to system
- Additional Load – information of existing devices gathered and transferred to system

Next Steps

- Go-live by the end of November 2021

RAdAR Working Group

Held 2 RAdAR Working Group meetings to date.

Dates for the next sessions:

- Wednesday 17th November 2021
- Wednesday 9th February 2022

Update on progress:

- Detailed exact customer requirements for the system
- *Reviewing internally with our Business Change team:*
  - *Quick and easy ability to download files – e.g. suggest zip file*
  - *Improve the communication between SPEN Designers and ICP Designers*
- Investigating options for longer term solutions to some of the suggested improvements:
  - Additional functionality to update the user on progress of activity
  - May be part of a wider Connections Transformation in ED2

Feedback and Q&A Session

- Rachel Shorney
- SPM Stakeholder Manager

- Stuart Walker
- SPD Customer Engagement Manager

SPEN Preparing for Net Zero Conference
Wednesday 8th September 2021

Thank you for your time today.

Your feedback has been useful and we will follow up and incorporate your comments when planning our next session.

Upcoming events for the calendar:

Preparing for Net Zero Conference

Wednesday 1st December 2021

- 09:30 to 12:00
  - Preparing for Whole System Approach
- 13:30 to 16:00
  - Preparing for EV and Heat