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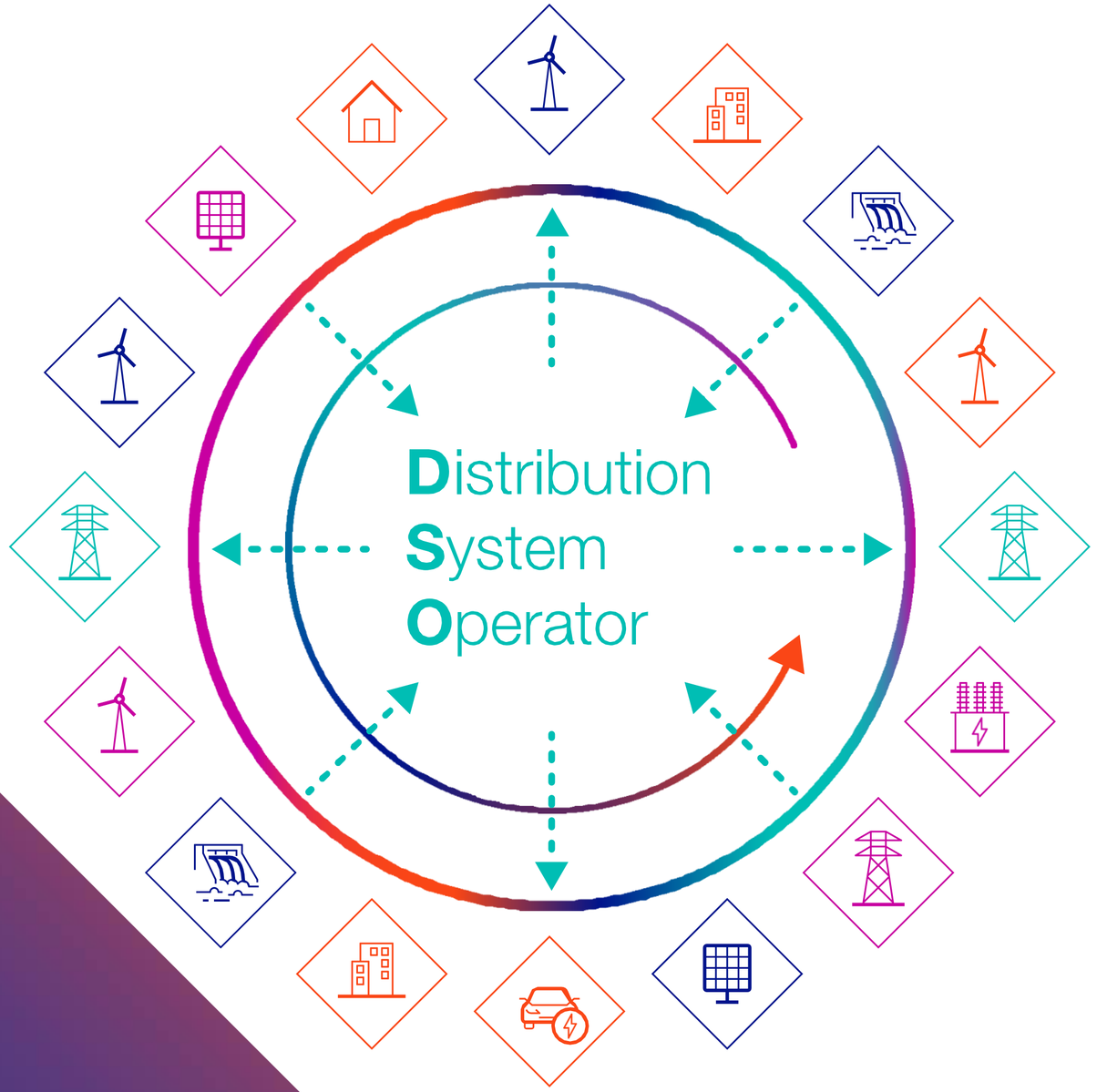
Switched-On!

Local Authority Stakeholder Workshop

02 October 2024



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Welcome and housekeeping

National Grid Electricity Distribution

Welcome and housekeeping

There will be a number of presentations throughout the morning followed by discussions in breakout rooms and some electronic voting

- Please mute yourselves during the presentations
- Please turn on your cameras during the discussions – if your internet allows

We will be recording the main presentations but not the discussions. Independent note-takers will be noting your feedback during the discussions. Comments will be attributed to your local authority but not to you personally

We will be taking some photos and screenshots. If you are not comfortable being in a photo, please send a message in the chat to Vincent Luxmoore (EQ)

If you have any questions during the presentations, please post these in the Q&A box. Alternatively, there will be plenty of opportunity to ask questions in the Q&A session at the end of the workshop

Agenda

10:00	**Welcome and introduction:** Cathy McClay, DSO Managing Director
10:15	**Presentation:** Progress to date and service improvements - Ben Godfrey, DSO Director
10:25	**Presentation:** How to use our data - Emily Taylor
10:40	**Breakout session 1:** What types of data are most useful to you?
11:00	**Coffee break**
11:15	**Presentation:** Network Development Plan (NDP) update - Kathryn Thomas & Peter Gaskin
11:25	**Case Study:** Progress on Welsh LAEPs - Huw Lewis, Welsh Government
11:35	**Presentation:** RESPs – our response and industry next steps - Cathy McClay
11:45	**Breakout session 2:** How can NGED DSO best support local authorities now?
12:05	**Panel Q&A session**
12:30	**Workshop closing remarks:** Cathy McClay

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Electronic voting

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Introduction

Cathy McClay

Managing Director, National Grid DSO

Welcome and purpose of today

1	Show Action	Demonstrating how we've acted on your feedback over the past year
2	Share Information	Bringing Local Authorities together to share progress
3	Listen	Understanding what more we can do to support you with your decarbonisation plans

Engaging with Local Authorities is essential to help us to deliver a decarbonised power system

Planning and Network Development

- Maximise ‘hidden’ capacity
- Ensure network investment is delivered when it’s needed at the lowest cost to consumers
- Collaborate and coordinate across the whole system to help stakeholders achieve their decarbonisation plans.

Flexibility Market Development

- Collaborate with industry stakeholders to simplify and standardise how we procure our flexibility services
- Coordinate across the whole system to deliver new market opportunities and reduce barriers to entry for all customers.

Network Operation

- Facilitate whole system coordination that improves efficiency and transparency of decision-making
- Continuously improve our data, technology, and processes to operate a responsive and dynamic network.

- 120 Local Authorities across our licence areas
- We engage to support you to deliver your decarbonisation plans through our Net Zero surgeries
- By sharing information and data with us, we can make the network future ready

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Our DSO Team here with you today

Cathy McClay
Managing Director,
National Grid DSO

Ben Godfrey
Director of Distribution
System Operator

Emily Taylor
Strategic Engagement Officer

Peter Gaskin
DSO Engineer

Kathryn Thomas
Strategic Engagement Officer

Our Q&A Panel

Ben Godfrey
Director of Distribution
System Operator

Huw Lewis
Energy Delivery Manager
Welsh Government

Kieran Highman
RESP Manager, NESO

Ray Arrell
Associate Director, Regen

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Our progress to date

Ben Godfrey

Director of DSO

In our first year as a functionally separate DSO we focused on engaging our stakeholders to build our vision and commitments

Vision

To enable and coordinate a smart, flexible energy system that facilitates local decarbonisation for all customers and communities, at the right time and lowest cost.

Governance

We will continue to prioritise effective governance measures to ensure independent, transparent and efficient DSO decision-making.

Planning and Network Development

1.1 We will maximise the use of 'hidden' capacity on the network, whilst ensuring network investment is delivered when it's needed, at the lowest cost to the consumer

1.2 We will collaborate and coordinate across the whole-system, to help stakeholders achieve their decarbonisation plans.

Network Operation

2.1 We will facilitate whole-system coordination that improves efficiency and transparency of decision-making

2.2 We will continuously improve our data, technology and processes to operate a responsive and dynamic network.

Flexibility Market Development

3.1 We will collaborate with industry stakeholders to simplify and standardise how we produce our flexibility services

3.2 We will coordinate across whole-system to deliver new market opportunities and reduce barriers to entry to all customers.

We are acting on feedback from our first annual DSO survey to improve our service further

- Overall score **7.77 / 10**
- **24** known LAs completed the survey

- We received a total of **213** pieces of feedback which we've reviewed and put into an action plan

- Highest scoring question was **'Our approach to network planning' at 8.14**

- There are three themes that came through as important for LAs
  1. **Data and access to information**
  2. **Support for LAs**
  3. **Network capacity**

Feedback: Accessing data and getting help to understand it

We have over **86 data sets** on our **Connected Data Portal** and we are continually making changes so this data is easier to navigate and understand.

We are actioning your feedback by:

- Presenting today on navigating data and how we are making data more visual
- Refreshing the DSO website to make information easier to find
- Secured funding for the second stage of our **Planning Regional Infrastructure in a Digital Environment (PRIDE)** innovation project
  - £3.7 million pound grant from the Ofgem Strategic Innovation Fund
  - It supports Local Area Energy Planning by giving Local Authorities greater insight, streamlining processes and ultimately reducing cost
  - We will work collaboratively with our project partners to further develop this tool.

West Midlands Combined Authority

nationalgridESO

regen transforming energy

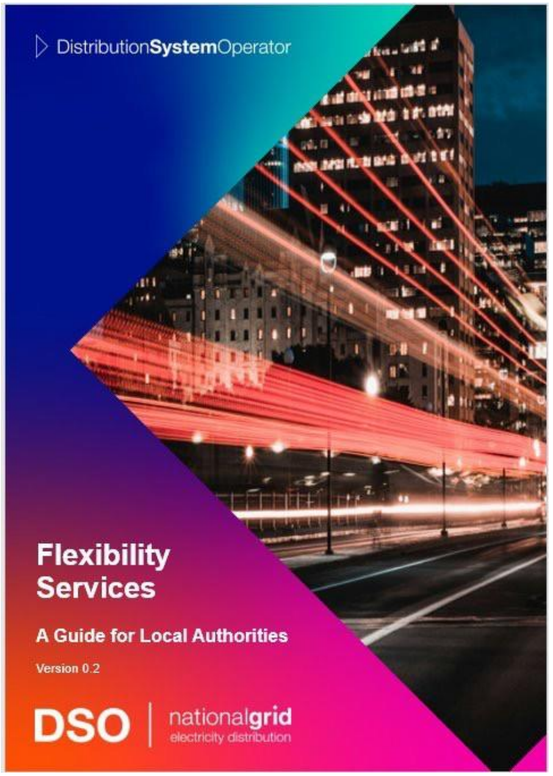
ai advanced infrastructure

Feedback: Local Authorities want to know how to access flexibility services

We are actioning your feedback by:

- Launching our new Local Authority flexibility guide – TODAY!

- **The guide aims to:**
  - Explain what flexibility is
  - Describe how Local Authorities can participate in flexibility markets
  - Describe our processes for how we buy flexibility.



For more information please contact the Flexible Power Commercial team at **nged.flexiblepower@nationalgrid.co.uk**

Feedback: Frustration at the time it takes to connect projects

We are actioning your feedback by...

- Proactively implementing the Energy Networks Association (3-point plan), as well as leading in wider industry connections reform.

Reforming the distribution connection queue	• Removed 3.6 GW (157 projects from the queue so far) • All projects (incl. pre-2017) now on milestones • Accelerated our first project to connection under first-ready-first-connected.
Changing how we coordinate connections between transmission and distribution	• Released 10 GW through technical limits: >200 customers discussing accelerated connections • 50 contracts signed - average improvement in connection date of 6.7 years.
Greater flexibility for storage customers	• Drawn up contract terms for 3GW-worth of storage customers • Assessing the process to deliver these offers.

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Understanding our data

Emily Taylor

Strategic Engagement Officer

Contents

What we have been told about our data

- Generally, positive feedback about the amount of data available and how useful it is
- Some stakeholders are not aware of all the data we have available and how to find it
- Some stakeholders would like us to publicise our data more
- Some stakeholders have asked if we can offer support to help them access/use the data

"It would be helpful for the DSO to provide some training sessions on how to navigate the data sources, and explain what the data is showing and potential uses of it."

"I think it could be clearer where this information is and that it is publicised more. I think there also needs to be a better easily accessible overview how all the data relates for the layperson."

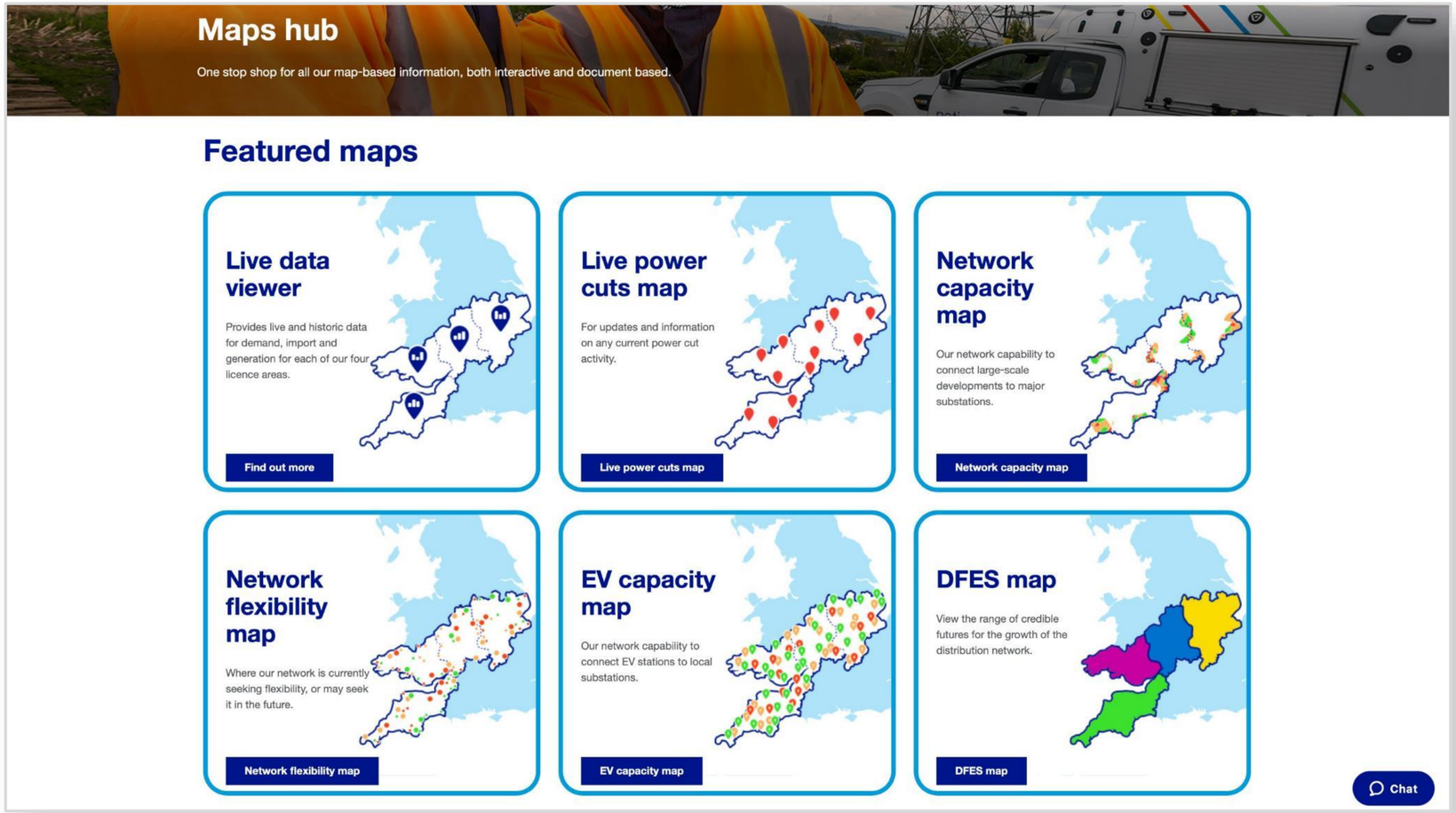
"The improvements that we would like to see are the closing of data gaps which are still prevalent at both primary and secondary substation level on capacity."

Maps hub

Available to access on our website

Going to look at:

- Network capacity map
- EV capacity map
- DFES map



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Network capacity map

Overview

- High voltage
- This shows our network capability to connect large-scale developments to major substations
- You can explore network capacity for both demand and generation. Demand is a connection that will receive electricity from our network, generation is anyone who is passing electricity back into our network
- Caution - this is a snapshot in time, current demand and whole pipeline that we have committed to

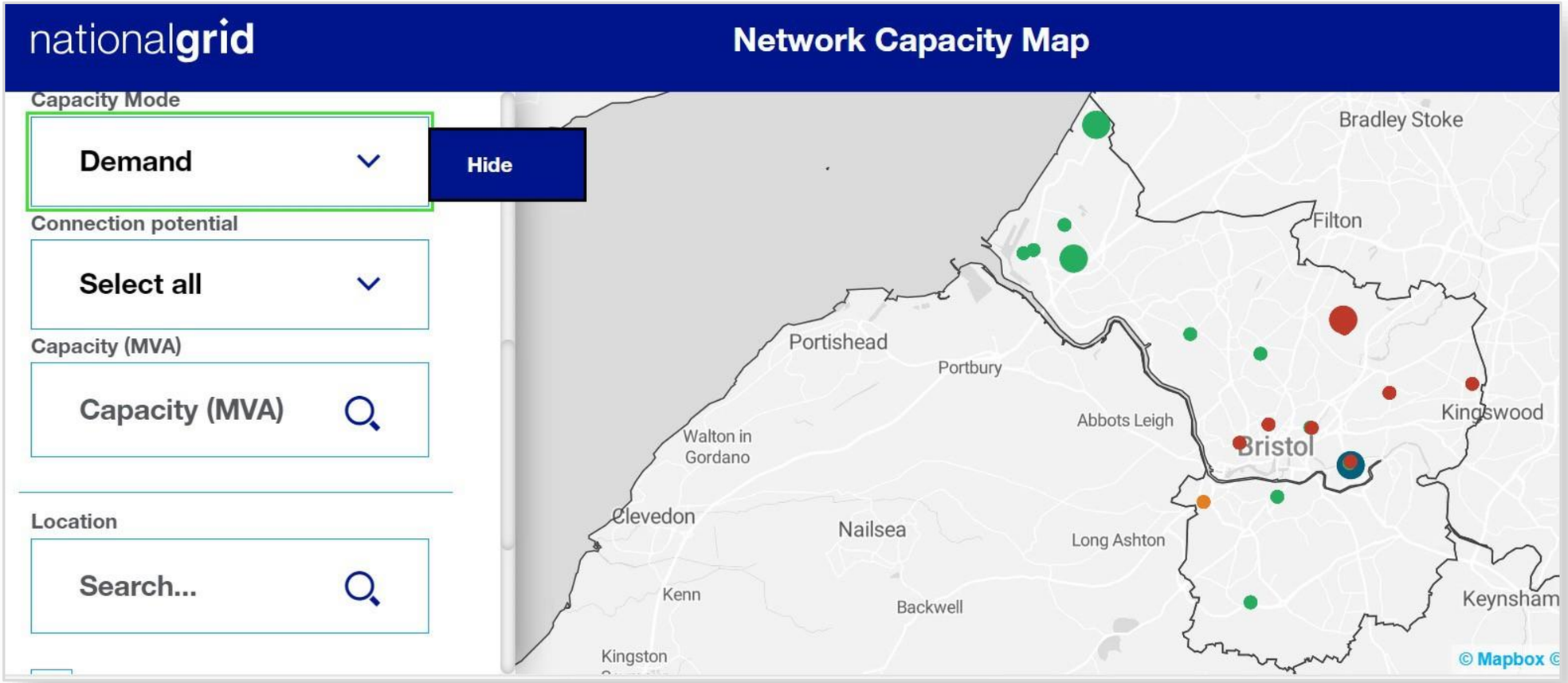
How might you use it?

- The map will be particularly useful when considering short term projects as our strategic investment process will already be considering the additional capacity required in 5 years and beyond, looking at where and when reinforcement will be needed
- Can be used if you want to know if you want to high level of capacity ahead of a connection surgery for a large project that requires a grid connection

Where the data comes from:

- Spatial data sets
- Network capacity
- We have started work to update this data and are looking for Local Authorities who would be keen to work with us to develop the information further. If you are, please email **NGED.DSO@nationalgrid.com**

Network capacity map Example - Bristol City Council



Headroom available

Limited headroom available

Very limited headroom available

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EV capacity map

Overview

- Shows capacity available on our network to support the connection of Low Carbon Technologies such as electric vehicles and heat pumps
- It shows our low voltage network down to local substation (street level)
- Using this map, you can view where in your community there is capacity to promote low carbon technologies
- However, capacity can be reserved at anytime so the data on the map will always be changing

How might you use it?

- To understand the capacity at a local level
- This would help when identifying areas for EV charging or streets that you may want to explore low carbon technology projects on

Where the data comes from:

- Spatial data sets
- EV capacity

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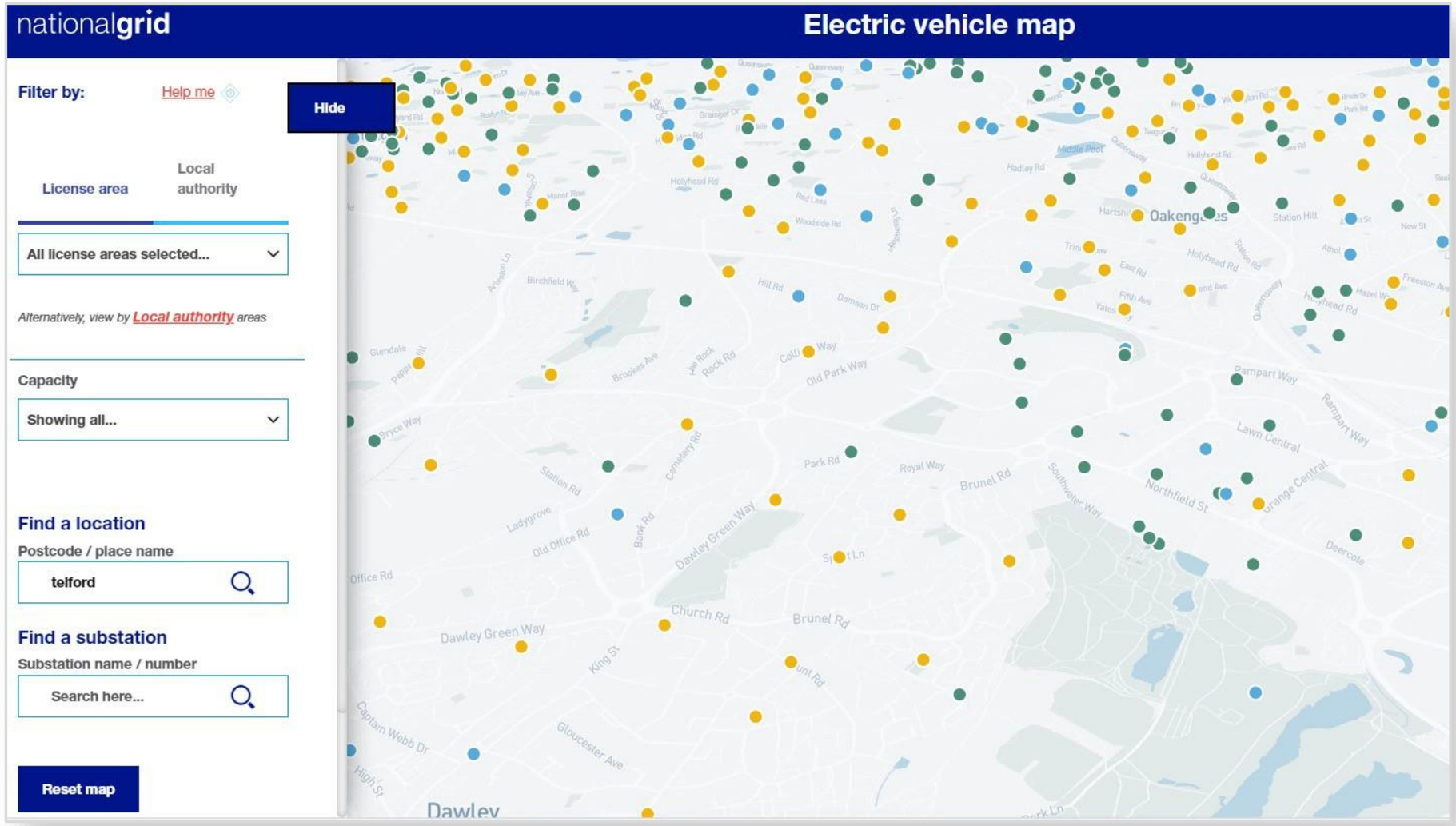
EV map

Extensive capacity available

Capacity available

Some capacity available



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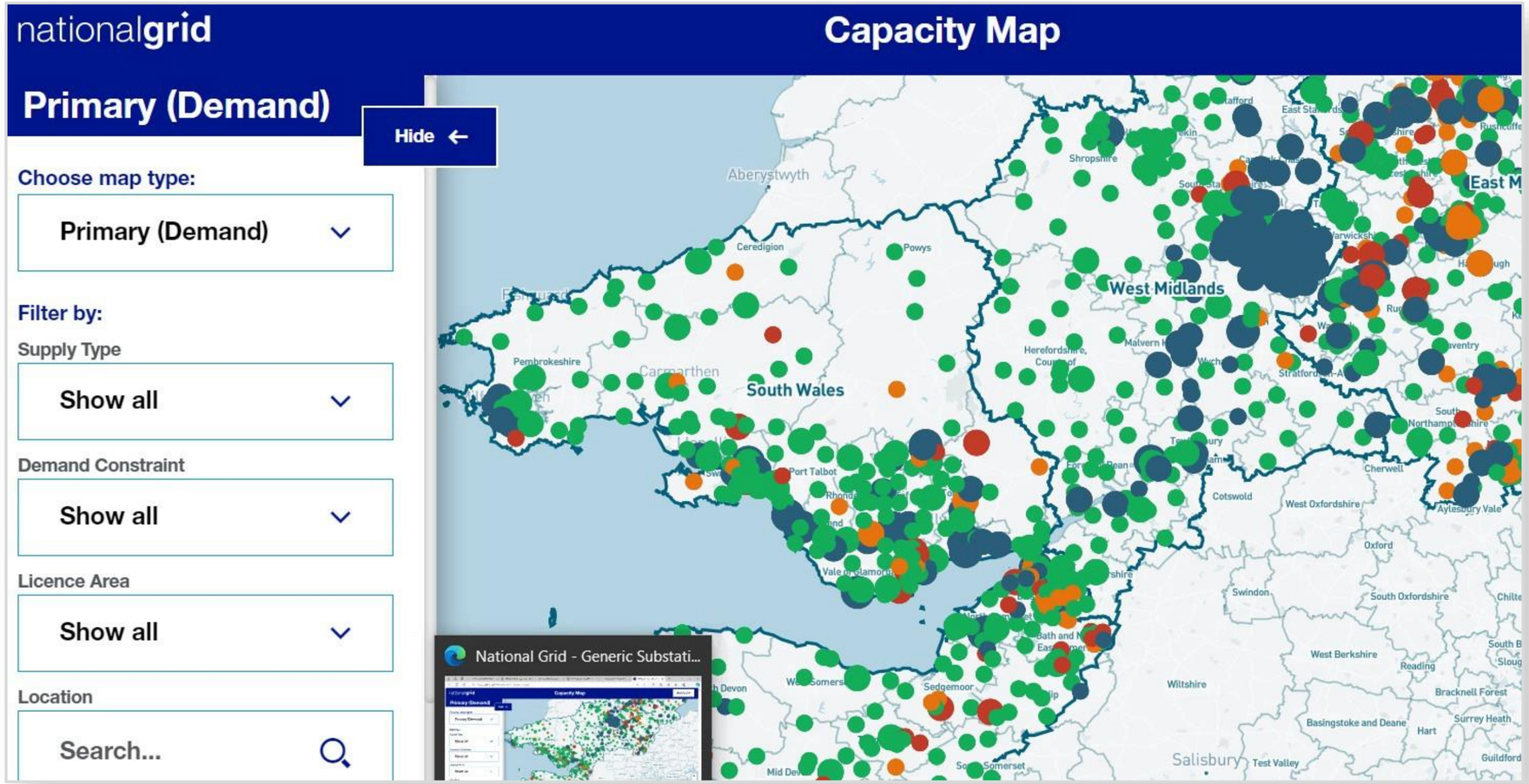
Coming soon - Capacity map

- This will launch early November
- Will cover both the primary and secondary networks
- Will combine both of the existing capacity maps
- We are looking for people to test the map and data
- Please email NGED.DSO@nationalgrid.com to get involved



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DFES map

Overview

- Our Distribution Future Energy Scenarios outline the range of credible futures for the growth of the distribution network
- This map displays the scenario projection at a Local Authority level and Electricity Supply Area (ESA)
- Bespoke reports for each Local Authority are available to view on the DFES map
- We have created a short video that is available on our website explaining how to use the map

How might you use it?

- You can use this data to understand how we are expecting the requirements of the network to change as we work towards net zero 2050
- This can be compared to your plans, and we can discuss any variance

Where the data comes from:

- Spatial data sets
- Distribution Future Energy Scenarios (DFES)

Scan to access the webpage

Scan to access the video

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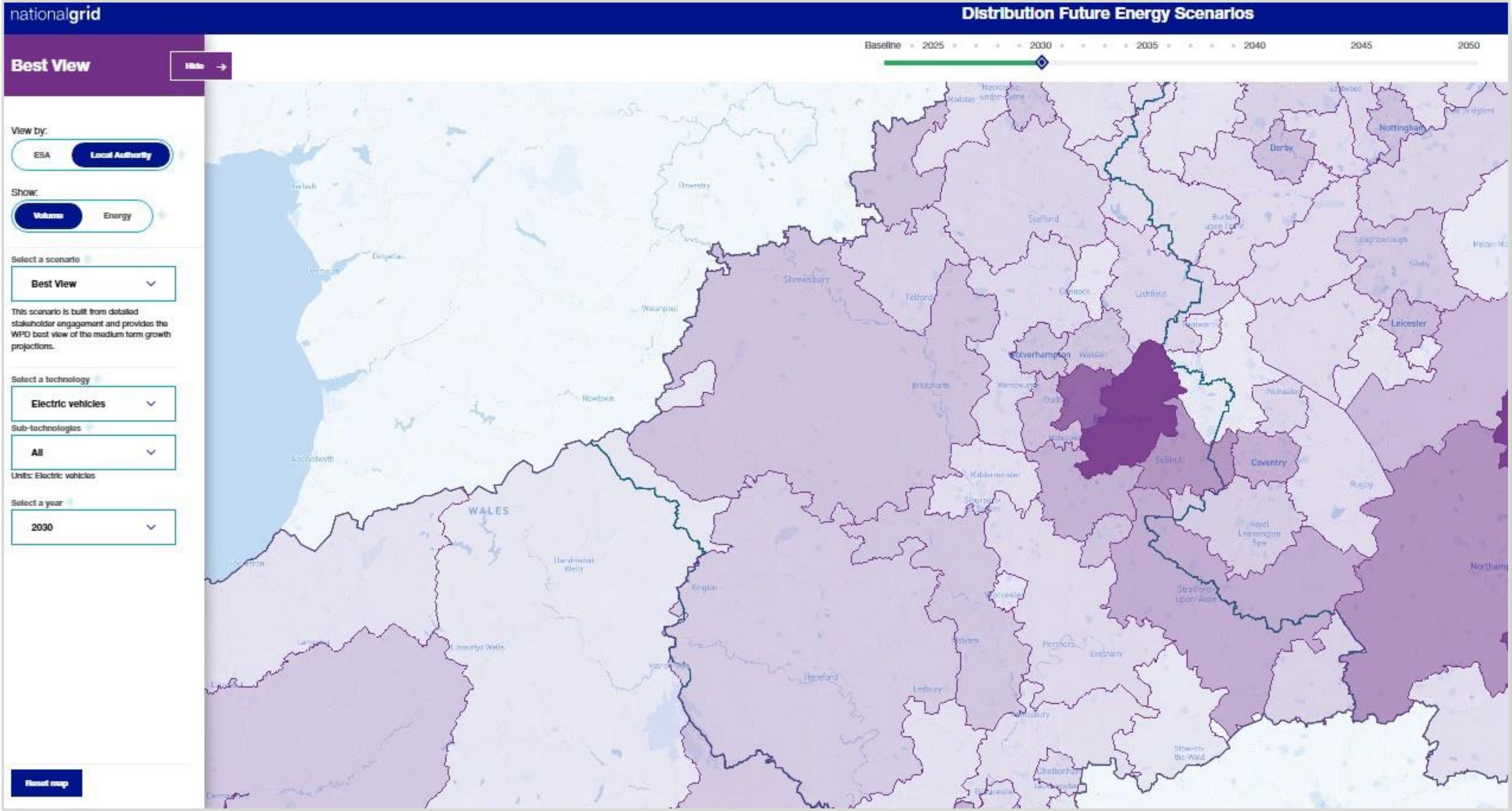
DFES map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Distribution Future Energy Scenarios
Best View
Hide
Baseline
2025
2030
2035
2040
2045
2050
View by:
ESA
Local Authority
Show:
Volume
Energy
Select a scenario
Best View
This scenario is built from detailed stakeholder engagement and provides the WPD best view of the medium term growth projections.
Select a technology
Electric vehicles
Sub-technologies
All
Units: Electric vehicles
Select a year
2030
Reset map
WALES
Shrewsbury
Nottingham
Derby
Leicester
Coventry
Wolverhampton
Lichfield
Telford
Stafford
Hereford
Solihull
Newtown
Rugby

Embedded capacity register

Overview

- Provides information on generation and storage resources (≥50kW) that are connected, or accepted to connect, to our network (distribution)
- It is updated on a monthly basis
- The register also includes information about Flexibility Services that are being provided by connected resources, including flexible demand

How might you use it?

- To understand what generation is already connected in your area
- To understand what generation is in the pipeline to connect in your area

Where the data comes from:

- Embedded capacity register

Scan to access the webpage

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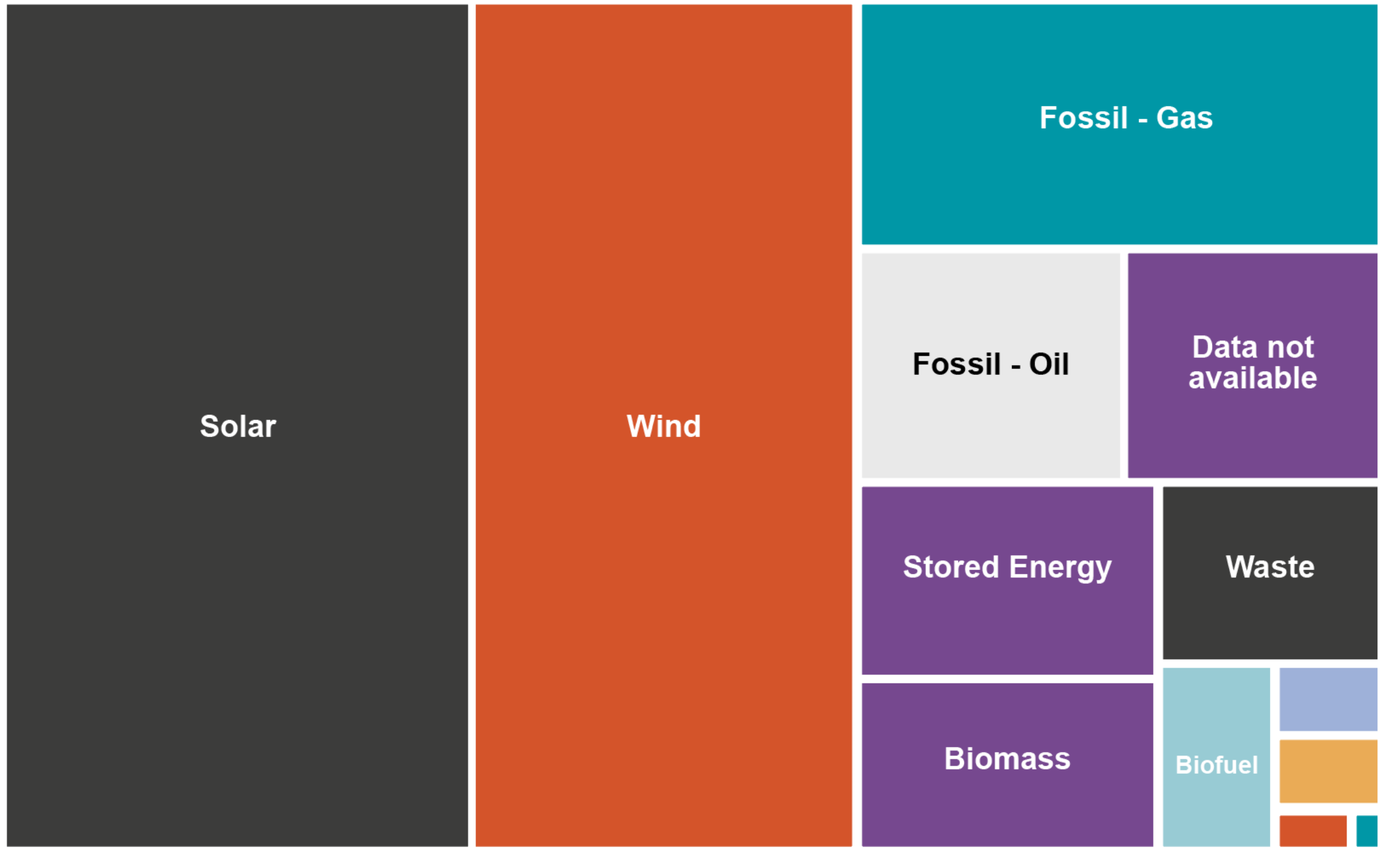
Embedded capacity register

Connected (MW)

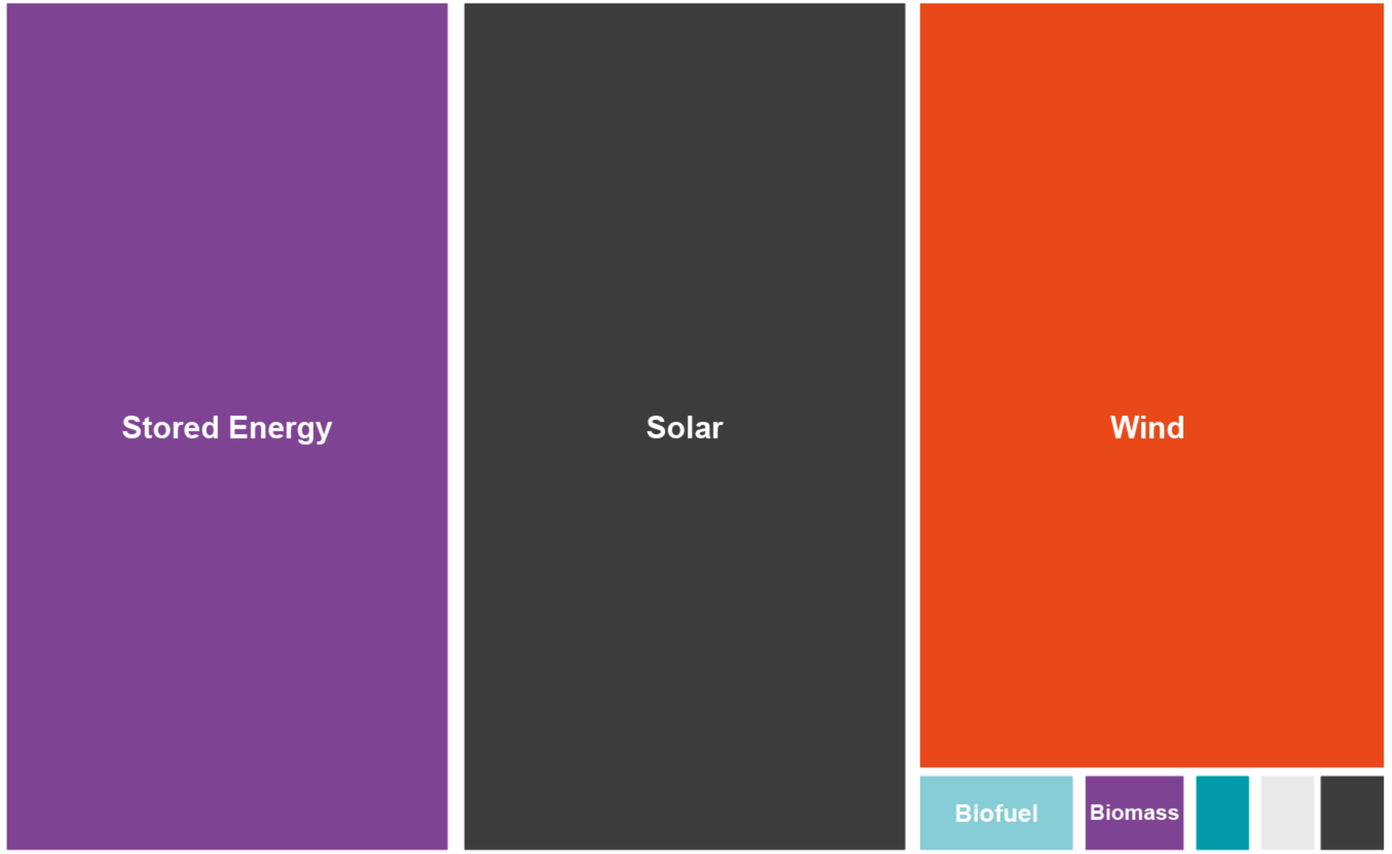
- Solar
- Wind
- Fossil - Gas
- Fossil - oil
- Data not available
- Stored Energy (all stored irrespective of the original energy source)
- Biomass
- Waste
- Biofuel - Landfill gas
- Water (flowing water or head owater)
- Advanced Fuel (produced via gasification or pyrolysis of biofuel or waste
- Fossil - Other
- Biofuel - Biogas from anaerobic digestion (excluding landfill & sewage)
- Geothermal
- Biofuel - Other



Embedded capacity register

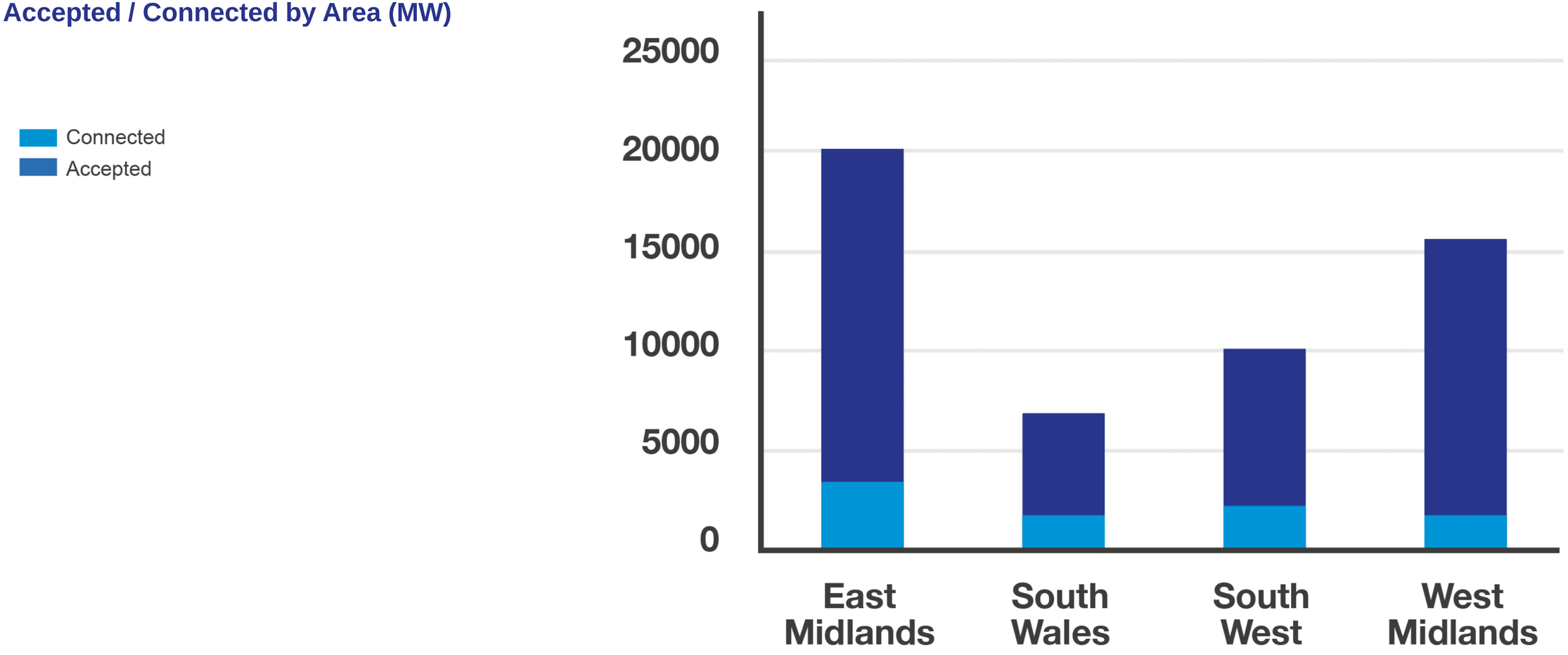
Accepted Not Connected (MW)

- Stored Energy (all stored irrespective of the original energy source)
- Solar
- Wind
- Biofuel - Landfill gas
- Biomass
- Fossil - Gas
- Fossil - Oil
- Waste
- Biofuel - Other
- Biofuel - Biogas from anaerobic digestion (excluding landfill & sewage)



Embedded capacity register

Accepted / Connected by Area (MW)



ClearView Connect

Overview

- Shows the name of projects in the connection queue and those waiting to connect
- Available for each Grid Supply Point

How might you use it?

- Understand who is in the connection queue in your area
- If you are already in the queue, you can search to see where you are in the pipeline
- If you have an accepted reference number, you can view where you are in the queue

GSP Overview	
Connected Capacity to date (MW)	319.68
Developer Capacity Available (MW)	0
TD Boundary Capacity Notes	PHASE 1A
Transmission Reinforcement Expected Completion Date	October 2033
Connection Asset Reverse Power Limits (MVA)	240
GSP Technical Export Limit*	263.5
GSP Technical Import Limit Winter*	-160.1
GSP Technical Import Limit Summer*	-110.8
GSP Technical Import Limit Access Period*	-179.1

ClearView Connect

List of schemes and rolling MW export capacity being currently developed in pipeline order
Use your reference number to see where you are currently in the pipeline.

Reference number

Search

Generator Type	Export Capacity (MW)	Position	Cumulative Export Capacity (MW)	Non-Firm Transmission Curtailment (BESS Float) (1%)	Non-Firm Transmission Curtailment (BESS Float) (1%)	Non-Firm Transmission Curtailment (BESS Float) (1%)
Photovoltaic	43.5	1	43.5	Capacity	-	-
Photovoltaic	70	2	113.5	-	-	-
Mixed - Photovoltaic, Storage (Battery)	18.8	3	132.3	-	-	-
Photovoltaic	7.6	4	139.9	-	-	-
Mixed - Photovoltaic, Storage (Battery)	25	5	164.9	-	-	-

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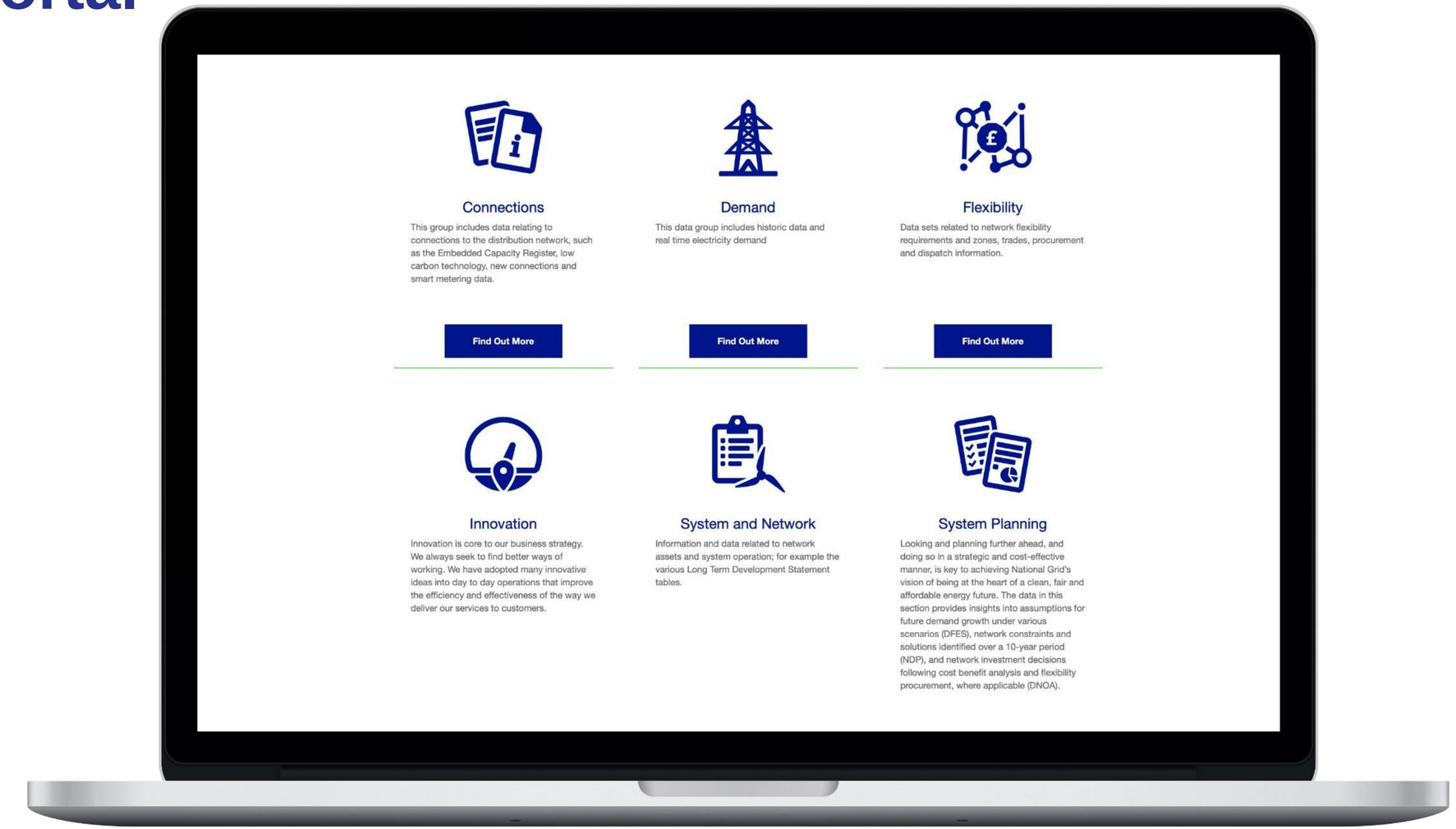
Connected Data Portal

To access some datasets you will need to register and verify your account.



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Breakout discussions

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Electronic voting

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Coffee break

15 Minutes

How can we make our DSO webpages better for you?
Tell us in this short survey

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Network Development Plans (NDPs)

Kathryn Thomas
Strategic Engagement Officer

Peter Gaskin
DSO Engineer

We are using your feedback to help inform our Network Development Plans (NDPs) and future network investment

- Local Authorities have shared their decarbonisation plans and data with us over the past few years to help inform our future generation and demand forecasts used in network planning
- The Network Development Plan outlines how we plan to invest in our network to meet the future needs of our customers
- Local Authorities have also said that they would appreciate an insight into the future build solutions NGED are planning, in preparation for the transition to net zero

Action to date

- This year we are meeting with Local Authorities to present the Network Development Plans for their respective areas. This allows us to show how your data and information is helping to drive investment
- So far, we have shared **20 Local Authority-level NDPs** with many more scheduled. If you would like to have a meeting with us to understand the NDP for your area, please contact your Strategic Engagement Officer

“NGED’s proactive approach has been really helpful. We are particularly focused on exploring how the network development planning process can help us to accelerate the reduction of carbon emissions. Being able to liaise with the DSO team directly is hugely valuable.”

The Importance of Stakeholder Engagement in Creating our Forecasts

- NGED’s load forecasts are created as part of the Distribution Future Energy Scenarios (DFES) process
- Extensive engagement is carried out to capture the ambition of Local Authority plans
- This engagement is used to create projections for demand and generation growth across the network, which then feeds into the rest of our investment process
- Accurate forecasts allow us to strategically invest in the network to unlock capacity and facilitate the net zero transition

Case Study: UK Central Hub

- We worked with Solihull Council, West Midlands Combined Authority and industry partners to understand the future electrical capacity requirements at the UK Central Hub by Birmingham Airport
- We incorporated the data shared into our forecasting, which showed increasing demand we were not previously aware of, e.g. significant growth in industrial and commercial floor space
- Once the new forecasts were mapped to the network, we could identify the capacity constraints
- **Prior to the revised forecasts, Elmdon Substation (nearest to the site) had sufficient capacity until 2050**
- **With the new forecasts built in, the capacity would be exceeded by 2040 without investment**
- We are now revisiting the trigger points for network investment so we can ensure sufficient capacity is made available by 2040.

The engagement we've had with Solihull Council and the other partners on this project has directly impacted the approach we are taking to network investment in this area

Investing in our network

Strategic Investment Process

Forecasting

The **Distribution Future Energy Scenarios (DFES)** identify how customers will use our network in the future

Network Impact Assessment

The **Network Development Plan (NDP)** uses forecasts to analyse and identify future network constraints

Optioneering

The **Distribution Network Options Assessment (DNOA)** outlines how we plan to invest in our network to solve constraints

Network Development Plan (NDP)

The importance of NDPs

- Our strategic plans for developing the network over the next 10 years are published every 2 years
- The latest plans were published on 1st May 2024 and are available on our website
- The Network Development Plan assesses the future suitability of the primary distribution network for continuing to deliver for customers under credible future energy scenarios across the next 10 years

Network Development Plan outputs

- **Introduction & Methodology:** outlines the methodology for preparing the plan and any assumptions made
- **Network Headroom Report:** indicative headroom available for additional demand and generation at each substation across primary distribution networks, across the scenarios and years covered by our forecasting process
- **Network Development Plan Report:** detailed technical reports outlining the parts of the network where constraints are expected in the 0–10-year time horizon. This also covers potential options to solve the identified constraints

Scan the QR code to access our Network Development Plan

Information from the NDPs helps us to publish our updated investment plan (DNOA)

- Published every 6 months since April 2021
- Takes constraints identified as part of the NDP
- Assesses flexibility against conventional reinforcement potential options to solve the identified constraints

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Case study

Huw Lewis

Energy Delivery Manager,
Welsh Government

Llywodraeth Cymru
Welsh Government

Huw Lewis

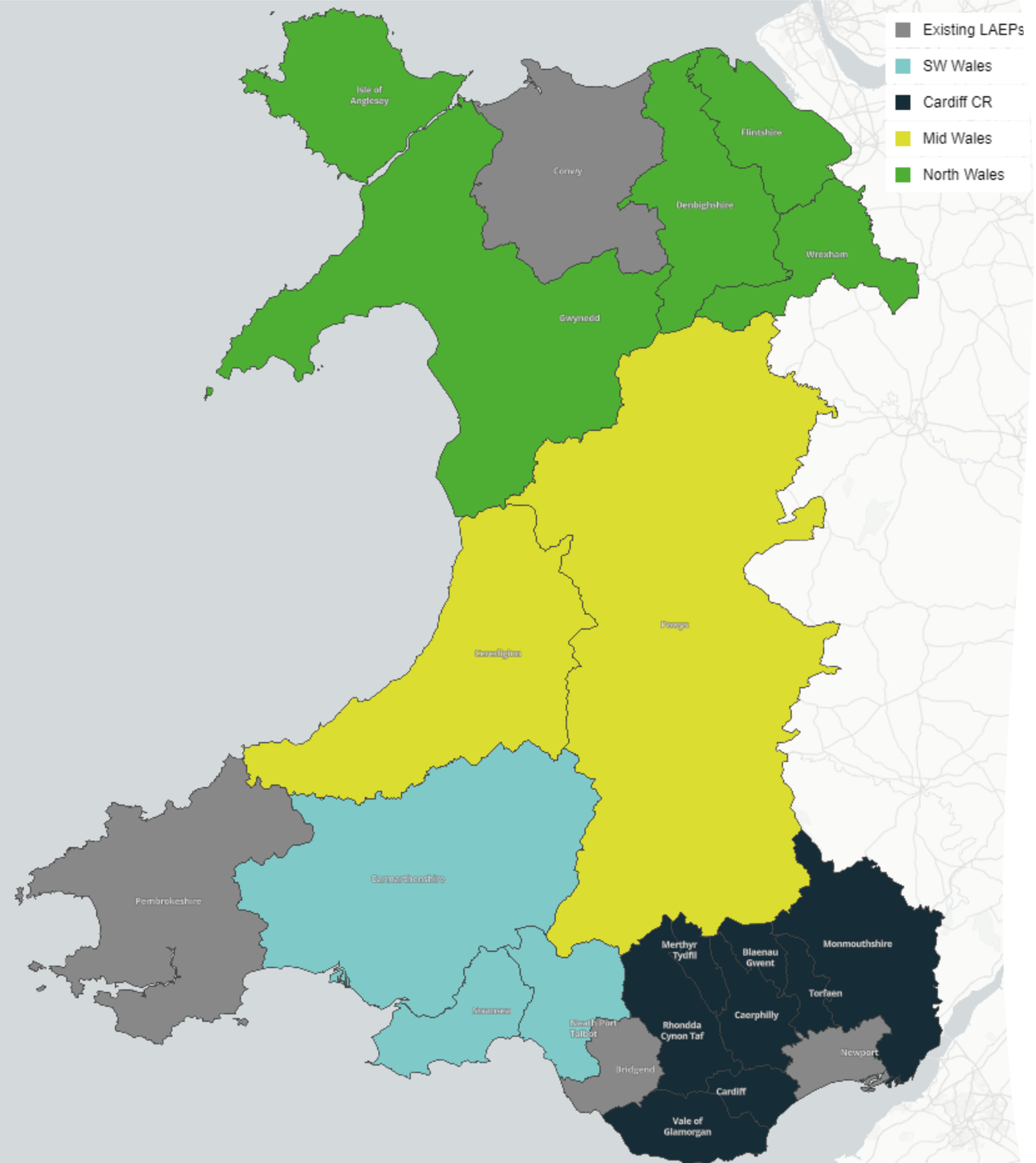
Energy Delivery Manager, Welsh Government
huw.lewis3@gov.wales

Why Local Area Energy Planning?

Part of Wales' planned approach to the energy transition

Assessing the future demands we will need to meet, the renewable resource needed to meet this demand, and then the implications this has for our grid infrastructure.

This is much more likely to lead to a lower cost system where we do not waste resources and retain value and benefit in Wales



22 Local Authorities in Wales divide into 4 Economic Regions

- North Wales
- Mid Wales
- Southwest Wales
- Cardiff Capital Region

Delivery Partners

- Arup-Carbon Trust
- Energy Systems Catapult
- City Science

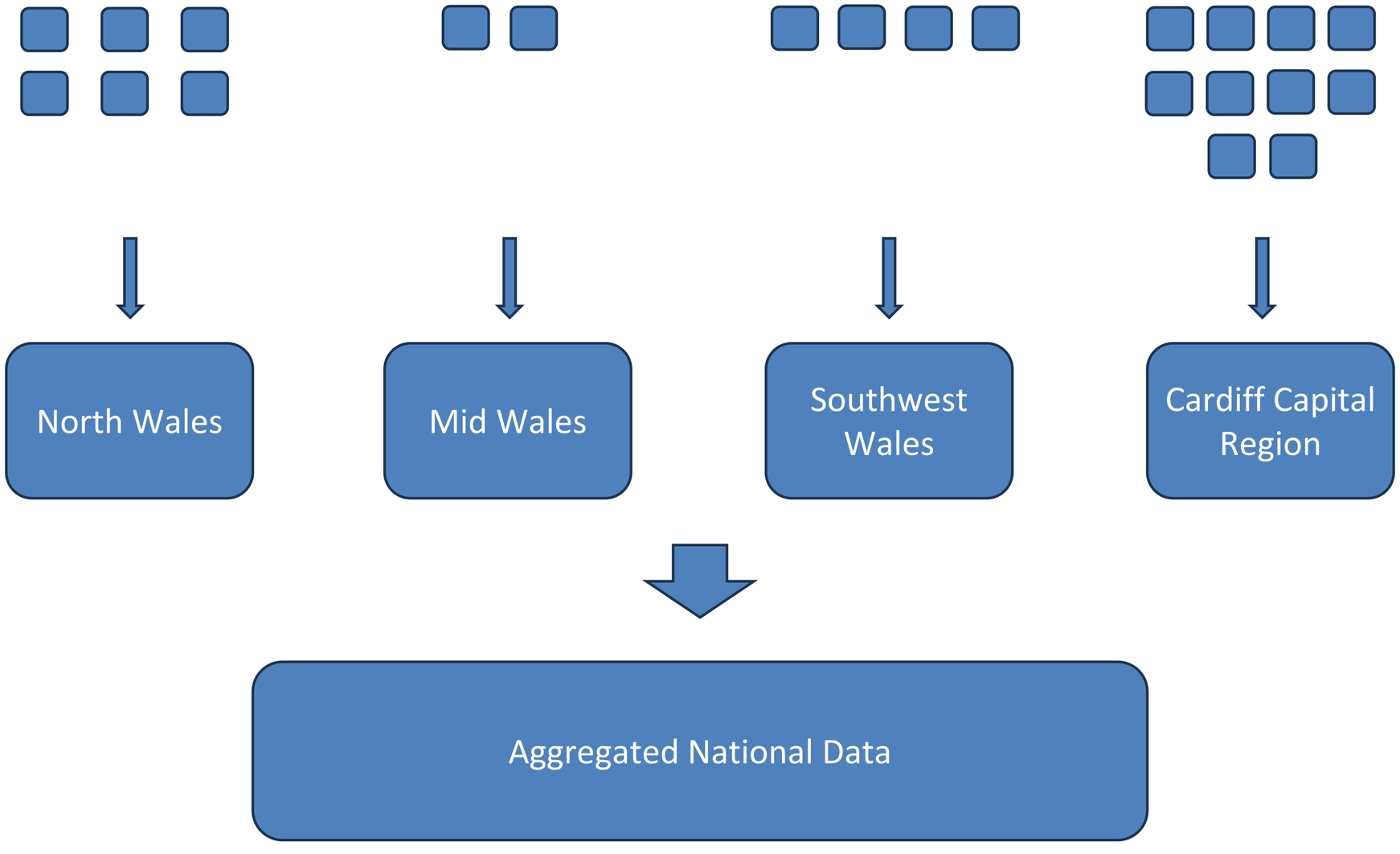
4 Regional Resource Teams

Learnings

Improvements

- Challenging timeframe
- Awareness raising
- Onboarding and briefing
- Targeted stakeholder engagement on specific topics
- Wider input to the procurement process
- Public engagement

22 Local Area Energy Plans



Mid Wales Region data

Item	Ceredigion	Powys	Region Total
Current day context			
Domestic dwellings	36.7k	66.8k	103.5k
% Domestic dwellings EPC A-C	26%	30%	29%
Gas grid % connections	32%	~50%	44%
2050 carbon saved versus current emissions			
CO_2 savings (kt CO_2/year)	180	290	470
Annual energy demands			
2020 electricity demand (GWh)	450	700	1,150
2050 electricity demand (GWh)	820	1,300	2,120

Mid Wales Region data

Item	Ceredigion	Powys	Region Total
2050 buildings – heating systems			
Domestic heat pumps (number of dwellings)	29.5k	56.7k	86.2k (83%)
Domestic district heat (number of dwellings)	1.5k	0	1.5k (1%)
Domestic direct electric (number of dwellings)	6.5k	6.8k	13.3k (13%)
2050 domestic buildings – fabric retrofit			
Cavity wall units	4.3k	7.6k	11.9k (12%)
Loft insulation units	13.1k	27.3k	40.4k (39%)
Solid wall insulation units	11.6k	17k	28.6k (28%)
Window upgrades (double or triple, includes end-of-life replacements)	23k	49.9k	72.9k (70%)

Next steps

- Aggregate LAEP outputs to regional and national level
- Present key data on DataMap Wales
- Raise awareness of outputs
- Develop a delivery framework to support Local Authorities to implement the plans
- Review and refresh the plans

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Regional Energy Strategic Plans

Our response and industry next steps...

Cathy McClay

Managing Director, National Grid DSO

Background to Regional Energy Strategic Plans (RESPs)

What is RESP?

- One for each region
- Three building blocks: 1) modelling supply and demand; 2) identifying system need and 3) technical co-ordination
- Whole system-focused and reflecting the regional context whilst also being coherent with national energy planning

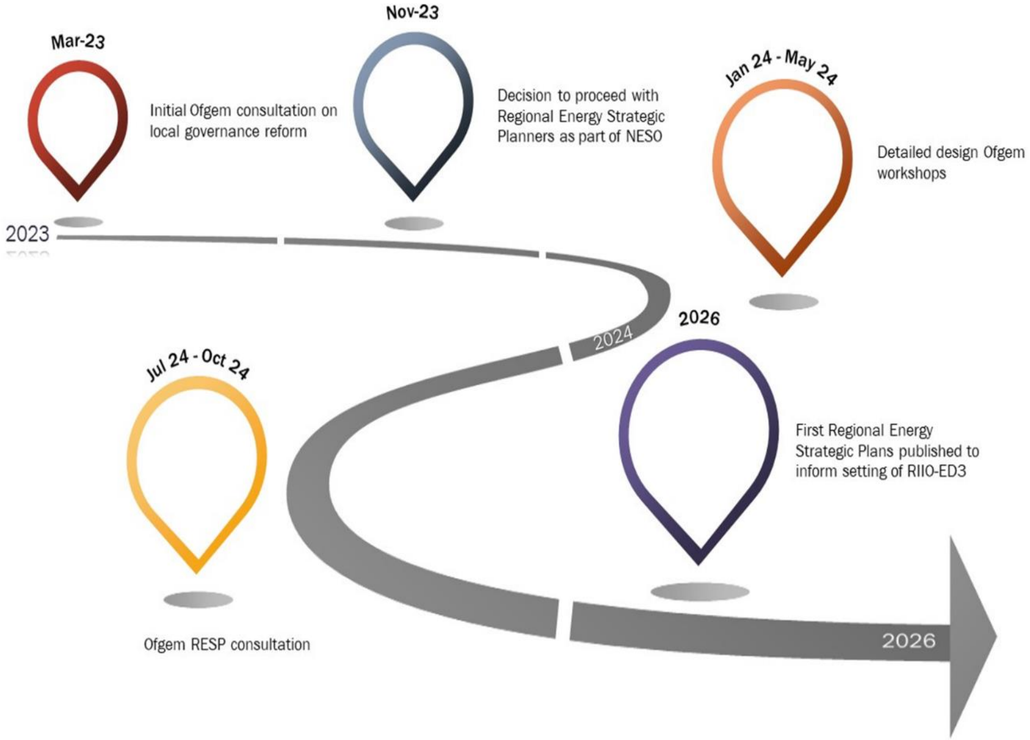
Why is it needed?

- We need to decarbonise at pace in a cost-effective manner
- To achieve this, we need co-ordinated energy system planning which considers electricity, heat and transport at local level
- We currently have multiple parties providing individual plans for a single energy vector. These are not co-ordinated or consistent
- There is currently a gap in accountability

How will it be delivered?

- NESO has been appointed to deliver the RESPs for each region and the proposal is for a hub and spoke model
- Engaging highly at a local level with a large range of actors and being iterative
- Built through combination of top-down and bottom-up
- Each RESP will have a strategic board with supporting workgroups

Timeline



We are supportive of the RESP

We welcome NESO's mission to enhance strategic planning, co-ordination across multiple vectors and in setting the overall regional vision. Within our response to Ofgem, we are also calling for:

Joined-up strategic regional and national plans

- NESO will be responsible for producing new strategic plans and pathways
- RESP and the SSEP need a clear feedback loop to ensure that national and regional plans do not conflict and to ensure that regions are best served and future-proofed

Best practice stakeholder engagement

- We believe that NESO should build on the good work that DNOs already do, and we intend to continue to work collaboratively with NESO and local actors
- A first demonstration of this might be the upcoming RIIO-ED3 cycle where we will engage with stakeholders to develop the DFES and our business plan
- At the same time, RESP will have a transitional role. This is still to be defined, and we encourage NESO to build on the good engagement that exists rather than duplicate effort

Strategic Board escalation procedures

- We agree with the purpose of the Strategic Board and see scope for additional development, particularly around conflict resolution
- Regions should have avenues for escalation, as we expect NESO will need to negotiate decisions from a whole system perspective involving trade-offs between intra- and inter-regional interests
- Further thinking on how working groups feed into the Strategic Board is required; again, building on existing engagement at the local level

Regional boundaries[1]

- We will work with as many regional 'spokes' as required of us and are supportive of what works best for our regional stakeholders
- We welcome hearing your views

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1. We understand the SSEP will also split the country into zones/regions, but this is yet to be confirmed. When this does happen, it may be most logical for the regions/zones in the SSEP to align to the RESP regions.

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Breakout discussions

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Electronic voting

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Further updates

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Panel Q&A

Our Q&A Panel

Ben Godfrey
Director of Distribution
System Operator

Huw Lewis
Energy Delivery Manager
Welsh Government

Kieran Highman
RESP Manager, NESO

Ray Arrell
Associate Director, Regen

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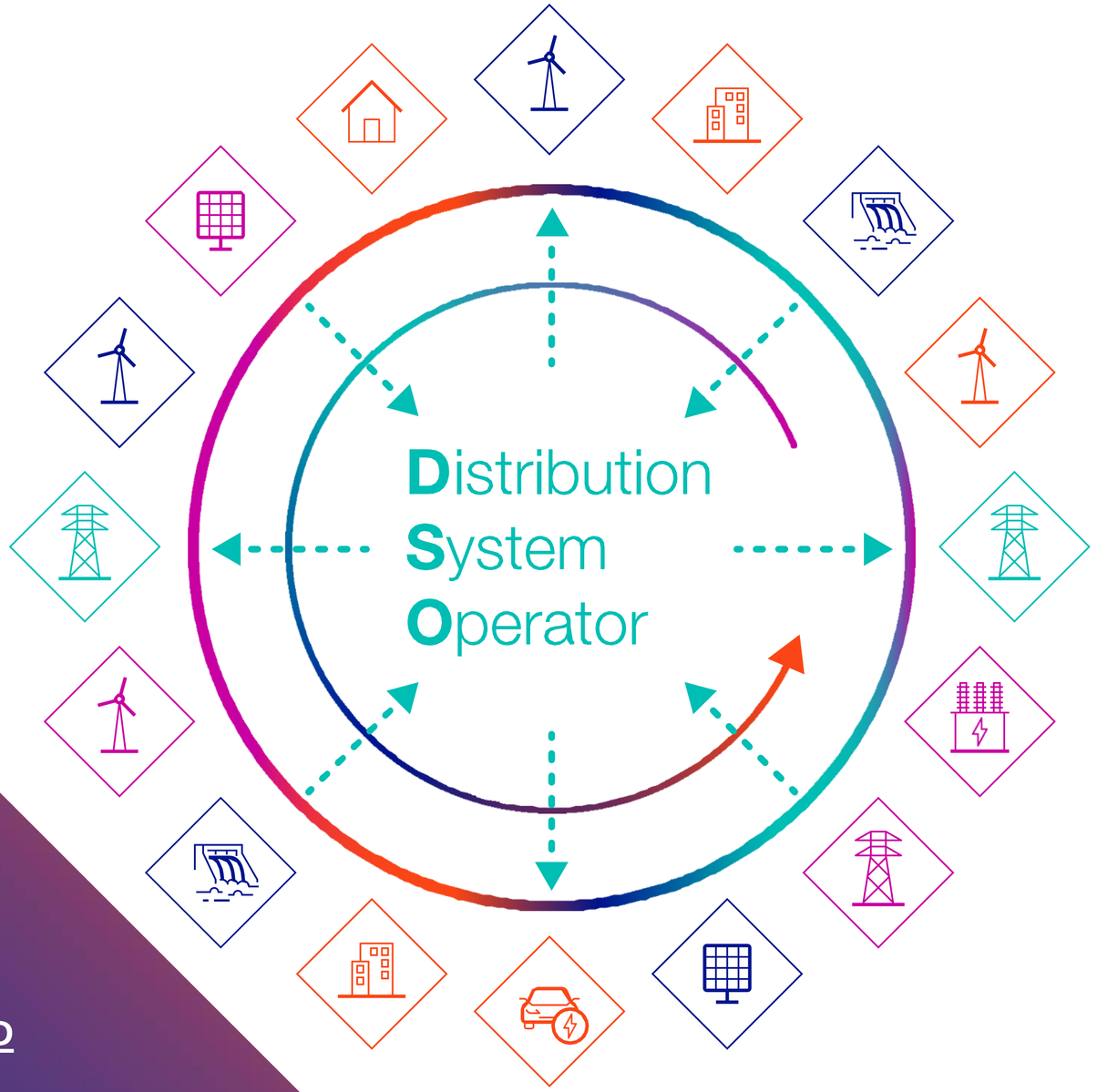
Wrap up and close



Next event:

Delivering the Future of Electricity NOW
(For all NGED DSO Stakeholders)

24 October 2024:
https://createsend.com/t/j-C5C4C5CA2DC5954E2540EF23F30FEDED

Thank you