

# Open Networks programme Dissemination Forum

24<sup>th</sup> March 2022



## Inaugural Dissemination Forum

Welcome to the first Open Networks Dissemination Forum session.

This initial session will focus on setting the scene, providing an overview of the 2022 work programme, and having a more detailed update on a few key products.

As we kick off this forum, we are keen to understand your priorities and preferences to help shape future sessions. We have included Sli.do questions throughout the session today to gather your feedback.

We encourage you to engage with us throughout the session using the chat function.

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# Agenda

Item	Start	End	Time	Item	Lead
1	10:00	10:10	10	<b>Welcome</b> Welcome from the Chair	Farina Farrier (Head of ON, ENA)
2	10:10	10:25	15	<b>Introduction</b> Overview of programme and Dissemination Forum	Farina Farrier (Head of ON, ENA)
<b>Flexibility Services (WS1A)</b>					
3	10:25	10:45	20	<b>Overview of 2022 workstream scope</b>	Ben Godfrey (Chair of Flexibility Workstream, WPD)
4	10:45	10:55	10	<b>ANM curtailment information (WS1A P8)</b> Developments to date and an overview of data to be shared with timescales	Jialiang Yi (Product team lead, UKPN)
5	10:55	11:00	5	<b>Break</b>	
<b>Whole Electricity System Planning &amp; T-D Data Exchange (WS1B)</b>					
6	11:00	11:20	20	<b>Overview of 2022 workstream scope</b>	Ian Povey (Chair of Whole Electricity System Workstream, ENWL)
7	11:20	11:35	15	<b>Network Development Plans (WS1B P5)</b> High level overview and signposting key dates	Rita Shaw (Product team lead, UKPN)
<b>Customer Information Provision &amp; Connections (WS2)</b>					
8	11:35	11:50	15	<b>Overview of 2022 workstream scope</b>	Jim Cardwell (Chair of Connections Workstream, NPg)
9	11:50	12:10	20	<b>Embedded Capacity Register (WS2 P1)</b> Digitalisation of the ECR, design options and recommendations	Steve Halsey (Product team co-lead, UKPN) Bahij Youssef (Product team co-lead, WPD)
10	12:10	12:15	5	<b>Break</b>	
11	12:15	12:30	15	<b>DSO Transition (WS3)</b>	Steve Atkins (DSO Transition Workstream, SSEN-D)
12	12:30	12:45	15	<b>Whole Energy Systems (WS4)</b>	Andy Wainwright (Chair of Whole Energy Systems, NG ESO)
13	12:45	12:55	10	<b>Upcoming communications activity</b>	Emily Jones (ON Communications Lead, ENA)
14	12:55	13:00	5	<b>AOB</b>	Farina Farrier (Head of ON, ENA)

## Slido

How familiar are you with the Open Networks programme?  
(1 low - 5 high)

*Please submit your answer at Slido.com*

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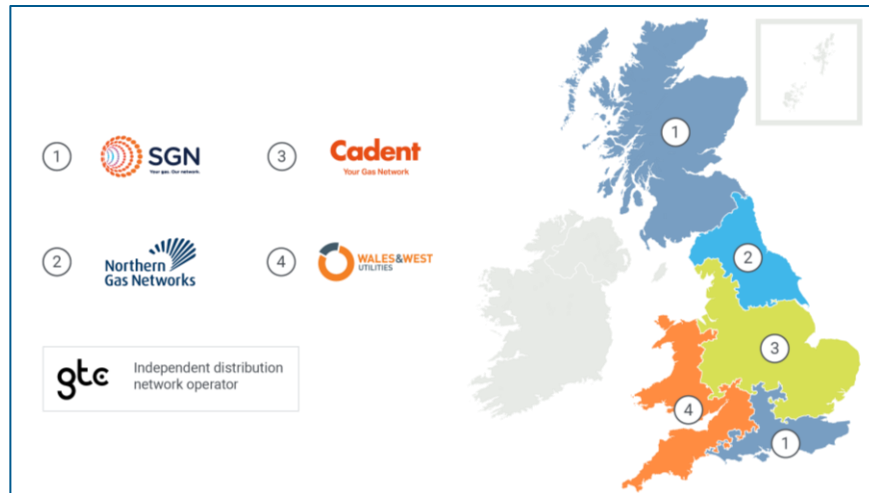
# Introduction

Overview of programme and Dissemination Forum

# Introduction to ENA

## The voice of the networks

- 29 million electricity customers
- 21.5 million gas customers
- 180,000 miles of gas network
- 519,304 miles of electricity network
- £60bn invested 2015-23



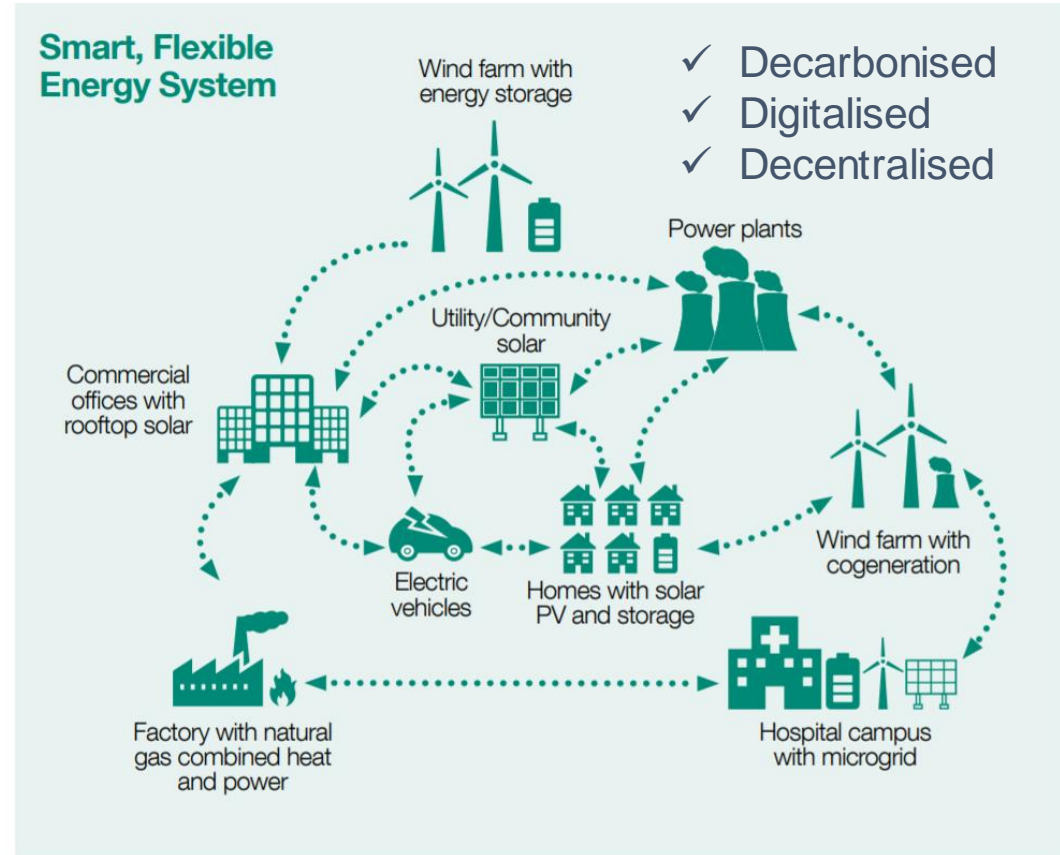
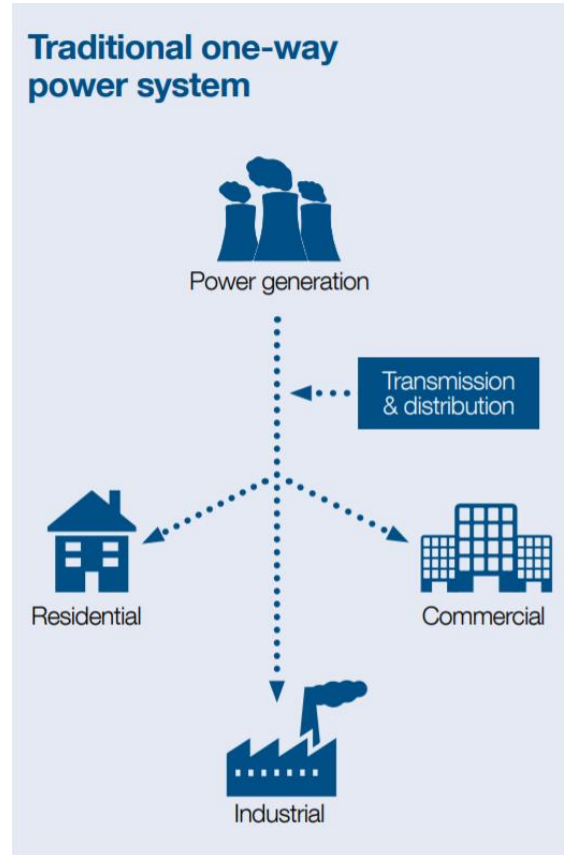
# The Challenge

The UK has world-leading climate change targets that require a fundamental change across the energy system.



## Net Zero

Decarbonised power system by 2035

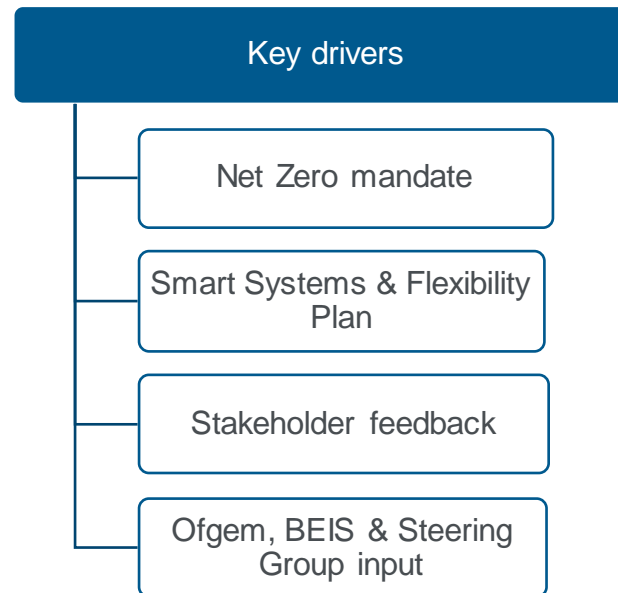
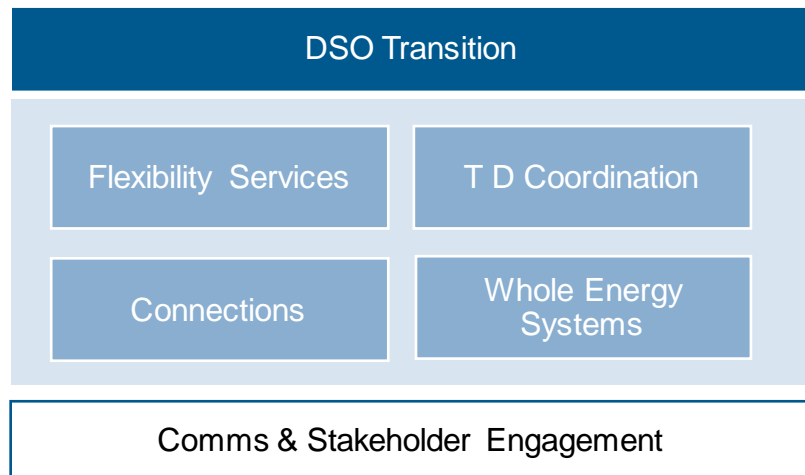




## Open Networks – Delivering a Smart Grid

Started in 2017, the Open Networks programme is working with the networks and industry to lead the transition to a smart and flexible energy system that will enable net zero.

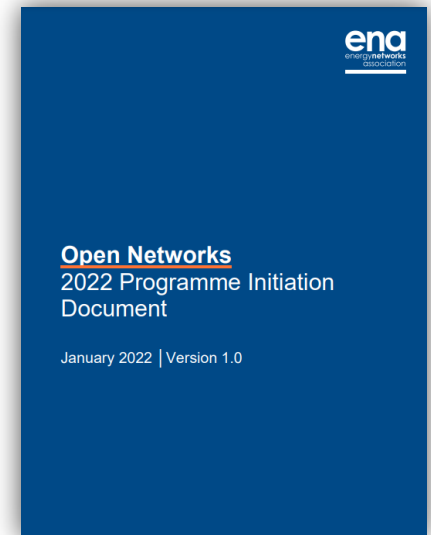
- ✓ Opening local flexibility markets to demand response and renewable energy
- ✓ Helping customers connect faster
- ✓ Opening data to enable customers identify best locations to invest
- ✓ Delivering efficiencies between network companies to operate secure and efficient networks





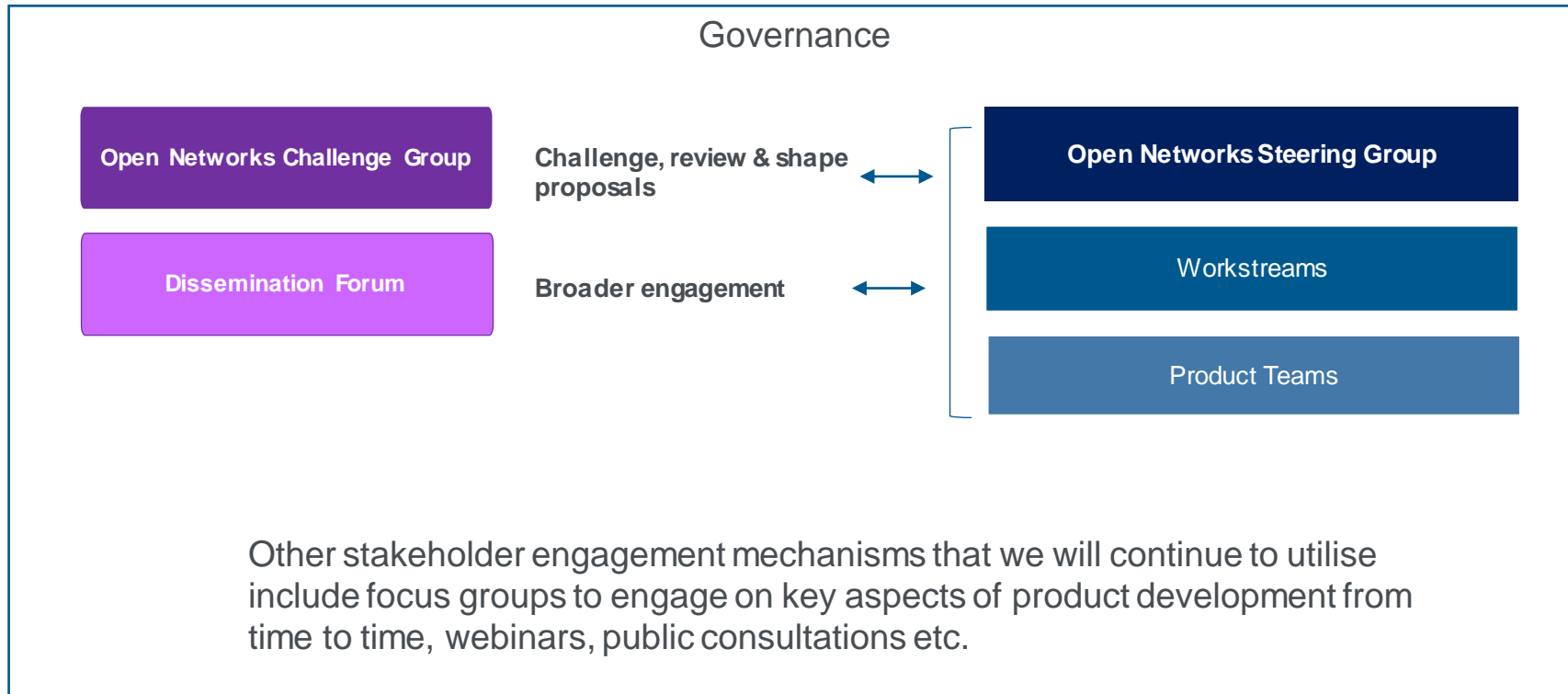
## 2022 work plan

- Launched 2022 work plan following public consultation and input from Challenge Group representatives.
- Delivering 24 products across six workstreams.
- Delivery against the Smart Systems Plan and doing this in collaboration with the wider industry are priorities for the programme.
- Programme Objectives
  - Enable networks to deliver open, transparent, accessible, and efficient markets for local flexibility, in coordination with the ESO and accounting for impacts across transmission and distribution systems (as per the Ofgem and BEIS Smart Systems and Flexibility Plan).
  - Improve and optimise existing network functions to achieve efficient coordination across T-D boundaries, including through coordination in planning, forecasting, network and flexibility operations, and data sharing.
  - Apply a whole system approach to work across gas and electricity networks to deliver greater coordination across existing functions and to work with the industry, Government, and Ofgem to address key strategic industry challenges in the move to Net Zero.



# Open Networks Dissemination Forum

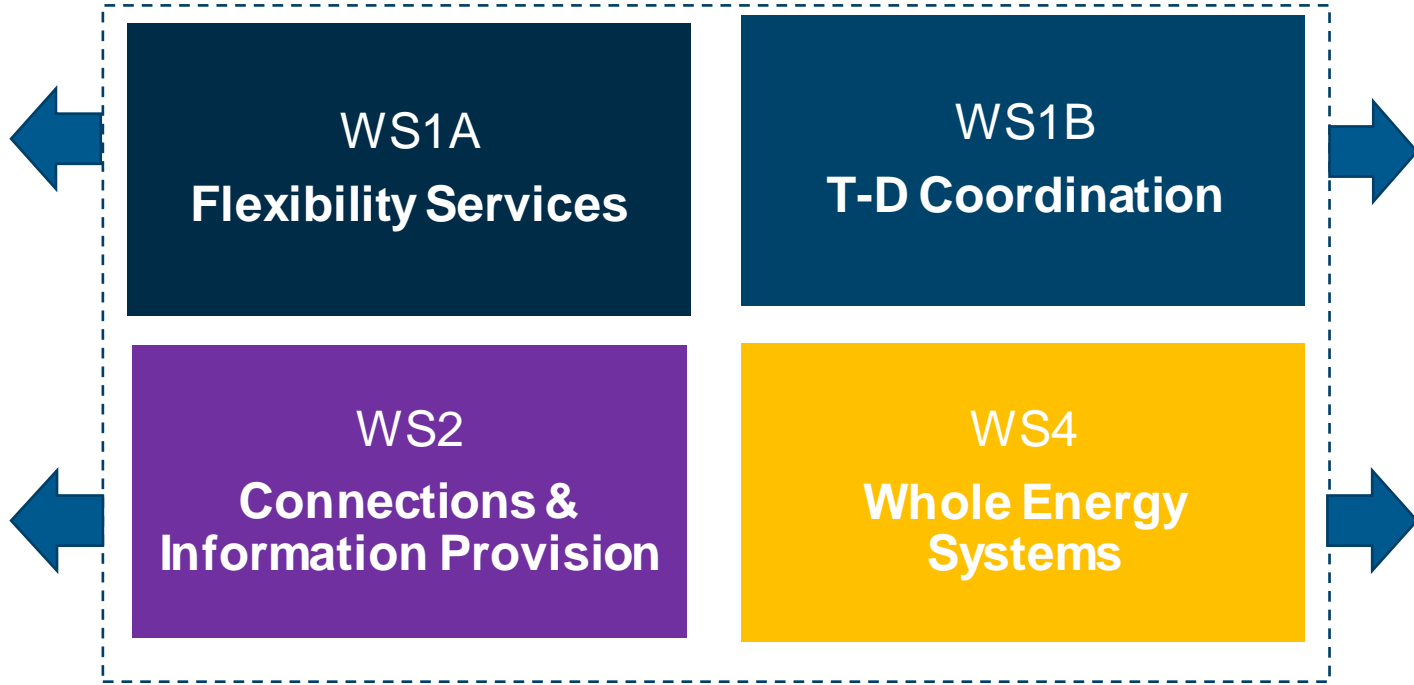
The Open Networks Dissemination Forum is a key forum that we have introduced in 2022 that will enable us to further open up the programme to the industry and offer the opportunity for broader engagement.



# 2022 Areas of Work

*Taking ownership of the overarching DSO Implementation Plan.*

## WS3 DSO Transition



- T-D processes
- Future Network Requirements
- Data visibility and sharing

- Gas & Electricity Network co-ordination

- Standardising flexibility products, contracts and processes
- Embedded Capacity Register
- Queue Management Improvements to free capacity in the queue
- Interactivity Process Improvements for connections with cross-network implications

## WS5 Comms & Stakeholder Engagement

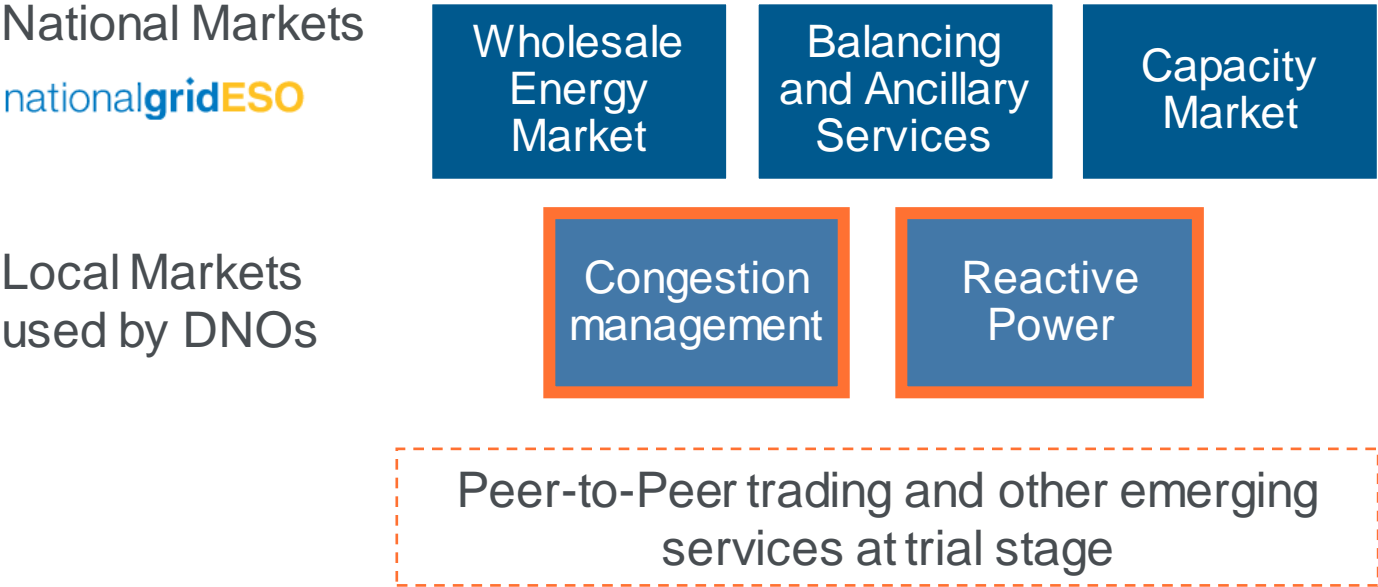
*Overseeing stakeholder engagement and comms across the programme*

# 2022 Overview - WS1A Flexibility Services

Ben Godfrey (Chair of Flexibility Workstream, WPD)

# Flexibility Markets in Great Britain

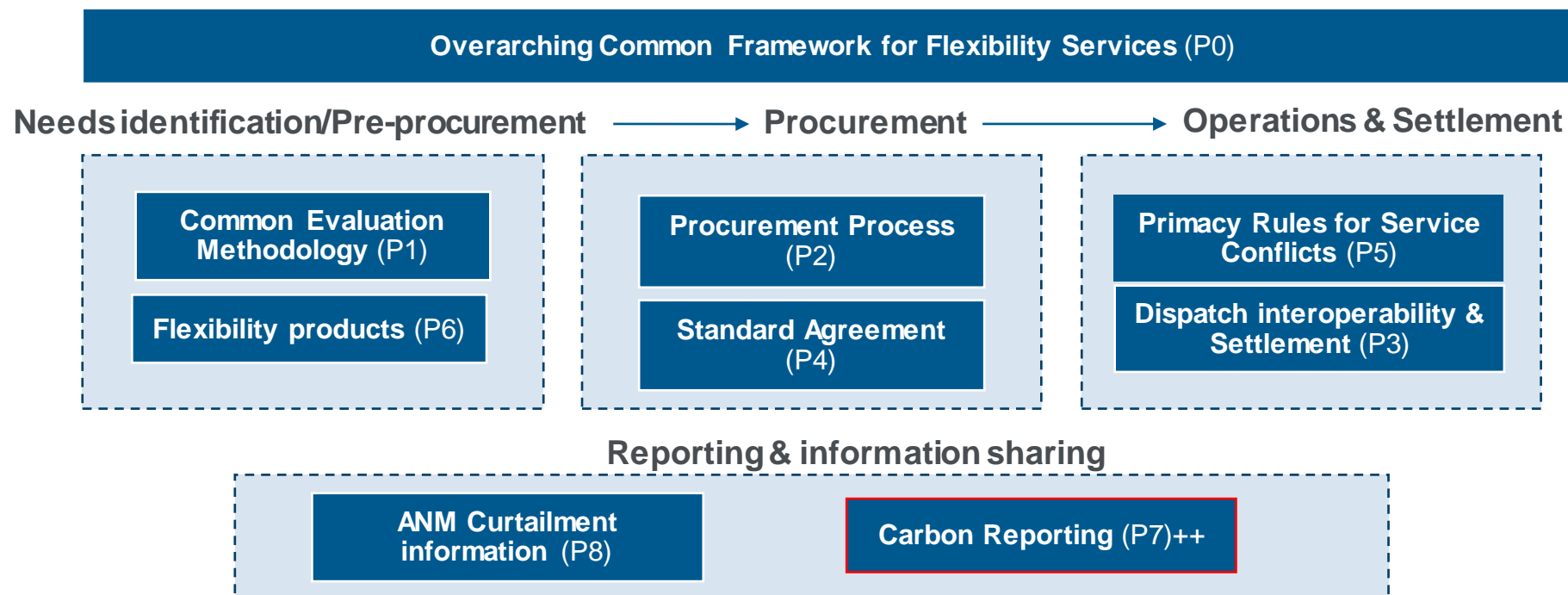
A recent report commissioned by pan-European trade association GEODE has shown that UK's electricity networks are leading in Europe for supporting and delivering local flexibility services.



- Open Networks is looking at the interface between these markets.
- GB Energy Regulator leading reforms to improve price driven flexibility.

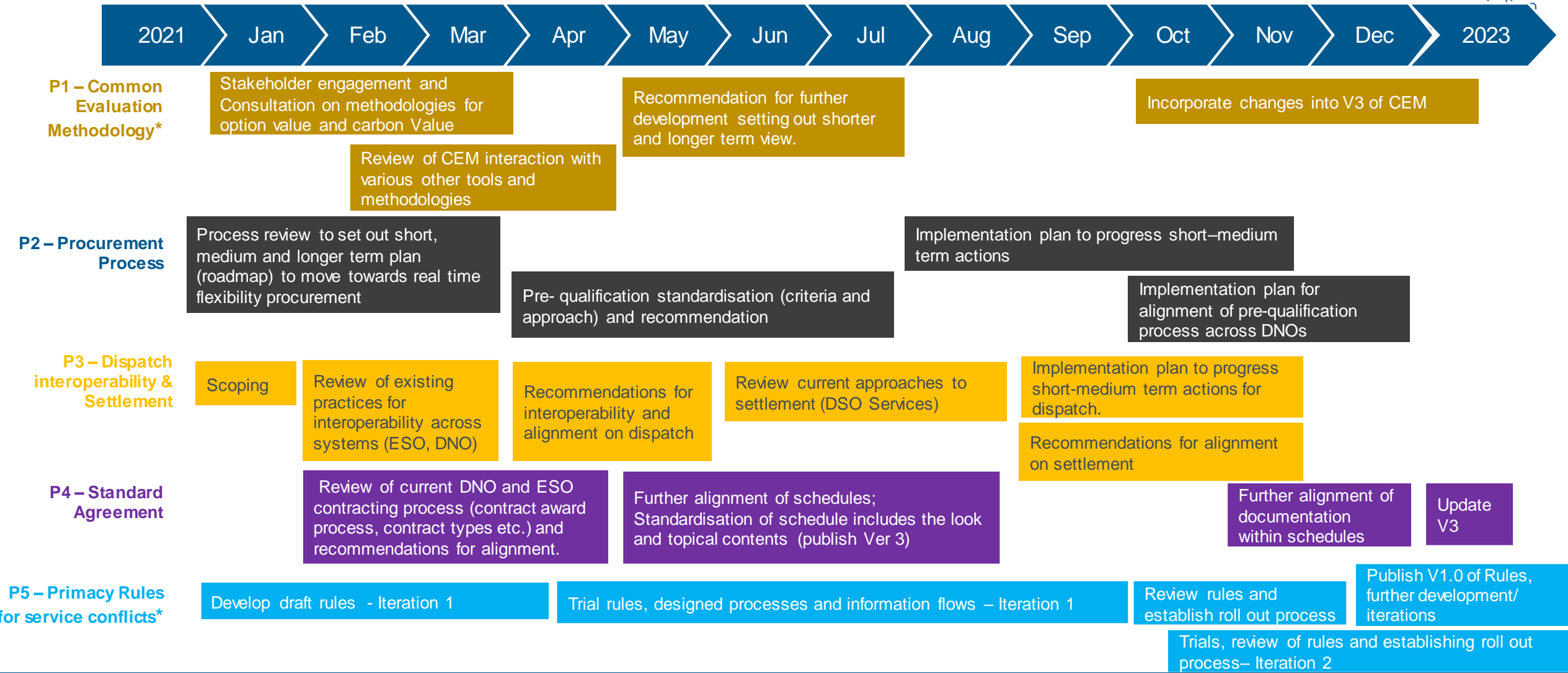
# Flexibility Services (WS1A) planned areas of work for 2022

- Supporting delivery of actions from Smart Systems & Flexibility Plan,
- Facilitating the development of local flexibility markets through more standardisation (across DNOs and with the ESO), simplification, and transparency in decision-making.



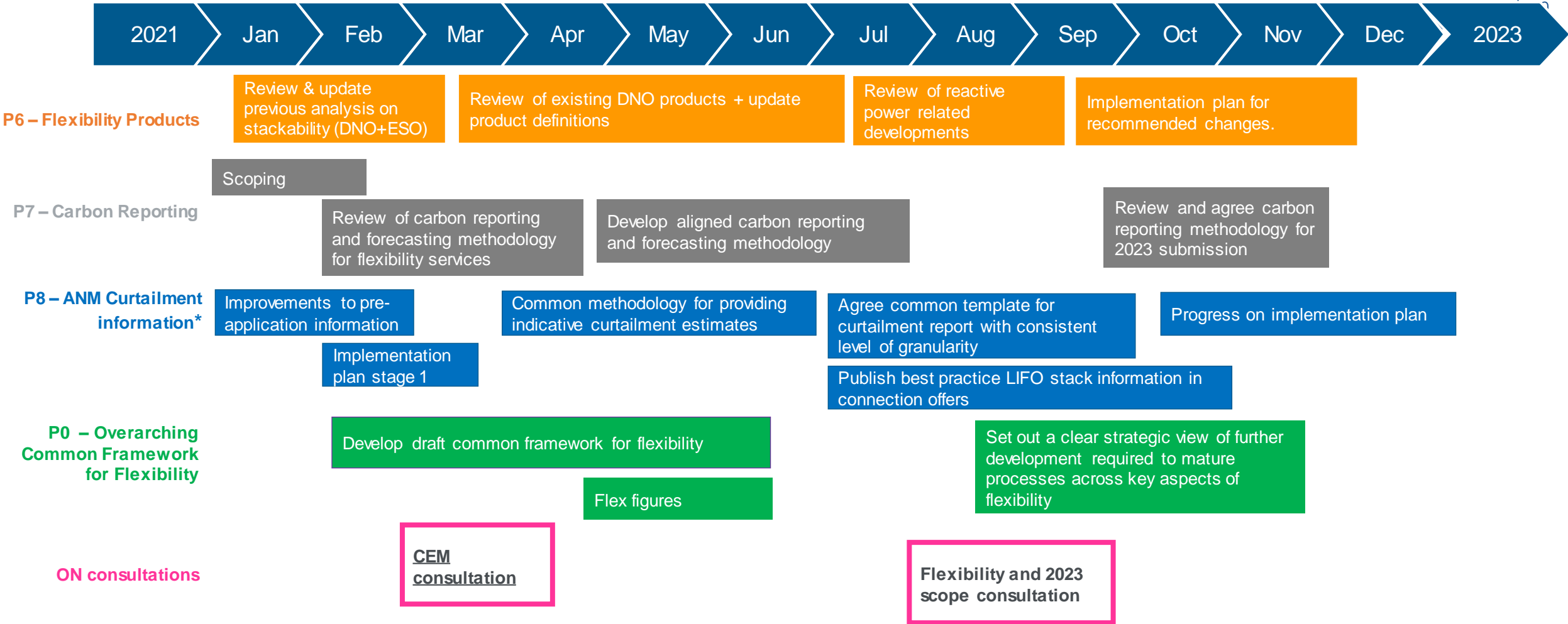
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# Flexibility Services (WS1A) Timeline for 2022





# Flexibility Services (WS1A) Timeline for 2022 (Cont.)



# Open Q&A

## Slido – WS1A

### WS1A - Which areas of work are of greatest interest to you? (Max 3)

- P1 Common Evaluation Methodology
- P2 Procurement Processes
- P3 Dispatch Interoperability and Settlement
- P4 Standard Agreement for flexibility procurement
- P5 Primacy Rules
- P6 Flexibility Products
- P7 Carbon Reporting
- P8 ANM curtailment information
- P0 Overarching Common Framework for Flexibility

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# WS1A P8 ANM curtailment information

Jialiang Yi (Product team lead, UKPN)

## WS1A P8 Overview

- WS1A 2022 Product 8 (previously P9 in 2021) – Curtailment Information
- Working with stakeholders to develop a strategy for improving the availability of curtailment information with a phased delivery of improved curtailment information throughout the remainder of ED1

## 2021 progress

- Reviewed information already made available
- A two-staged approach was taken to capture stakeholder feedback on improving curtailment information
  - Stakeholder Curtailment Information Questionnaire
  - Flexible Connection (ANM) Focus Group Workshop Apr-21
  - [Gap analysis report](#) Jun-21
  - Targeted workshop Sep-21



# Implementation plan

- [Implementation plan](#) published Dec-21
- Improve provision of curtailment information during the remainder of the ED1 price control period

Stage	Stakeholder Requirement	Indicative time scale
Pre-Application Information	Information on active constraints (distribution and transmission) on heat maps	Q2 2022
	Access to generation and battery storage profiles	Q2 2022 - ED2
	Indicative curtailment estimates based on technology and location	Q1 2023 – ED2
Flexible Connection & Offer Information	Access to LIFO stack characteristics (MW, Type, etc.)	Q3 2022
	Curtailment reports to provide consistent level of granularity across DNO's	Q4 2022 - ED2
	More transparency on the DNO assumptions used in curtailment assessments and how ANM systems work	Q3 2022
Operational Information	Access to data which shows historical ANM actions / curtailment	Q4 2022 – ED2
	Access to historical half-hourly (HH) power flow data at constraint locations	Q1 2023 – ED2



# 2022 workplan

## Plans for 2022 and progress

Deliverable and scope	Expected completion and progress
Recommendations on consistent timeframe for updating constraint information on heat maps	March – <i>Approved for publication</i>
DNO's to publish generation and battery storage standard profiles – stage 1 (Q2 2022 - ED2 completion)	March – <i>Approved for publication</i>
Common methodology for providing curtailment estimates	July – <i>on track</i>
Common approach to sharing information - Agreed common template for curtailment report with consistent level of granularity - A set of aggregated ANM actions/curtailment and publish in consistent format	Oct
Best practice for providing connection offer information – LIFO stack information	Nov
Prepare and publish guidance document on standard assumptions used in curtailment assessments	Nov
DNOs to publish agreed flexible connection curtailment report in line with agreed template	Dec

# Open Q&A

# Break

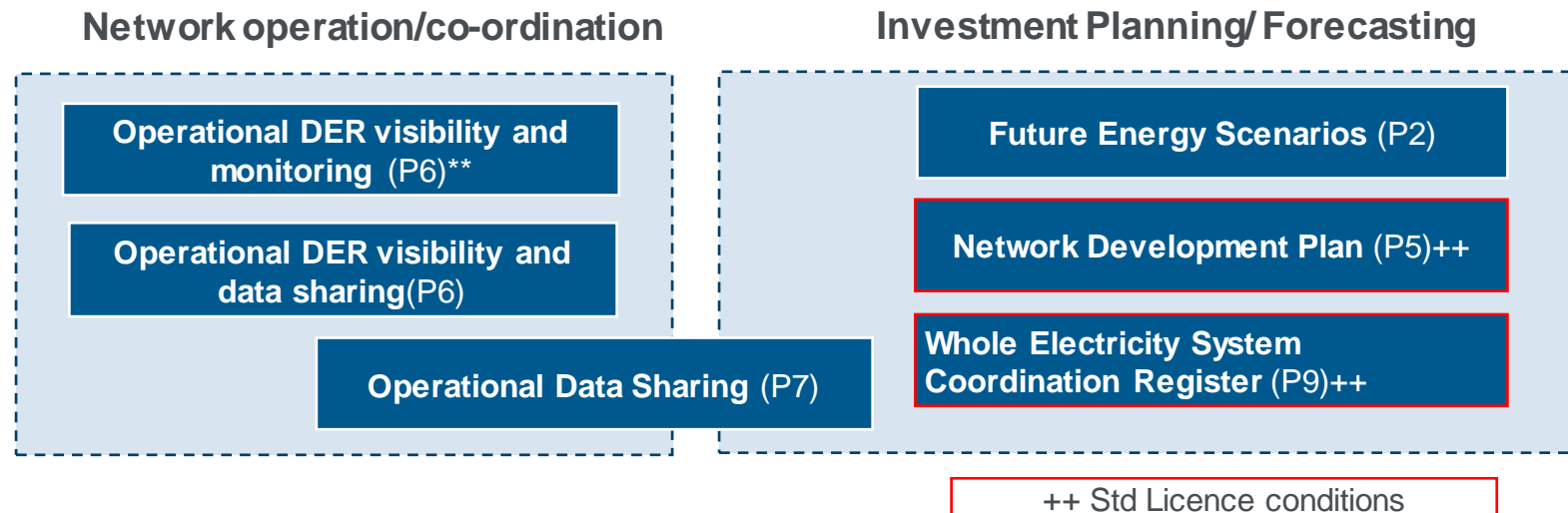


# 2022 Overview - WS1B Whole Electricity System Planning & T-D Data Exchange

Ian Povey (Chair of Whole Electricity System Workstream, ENWL)

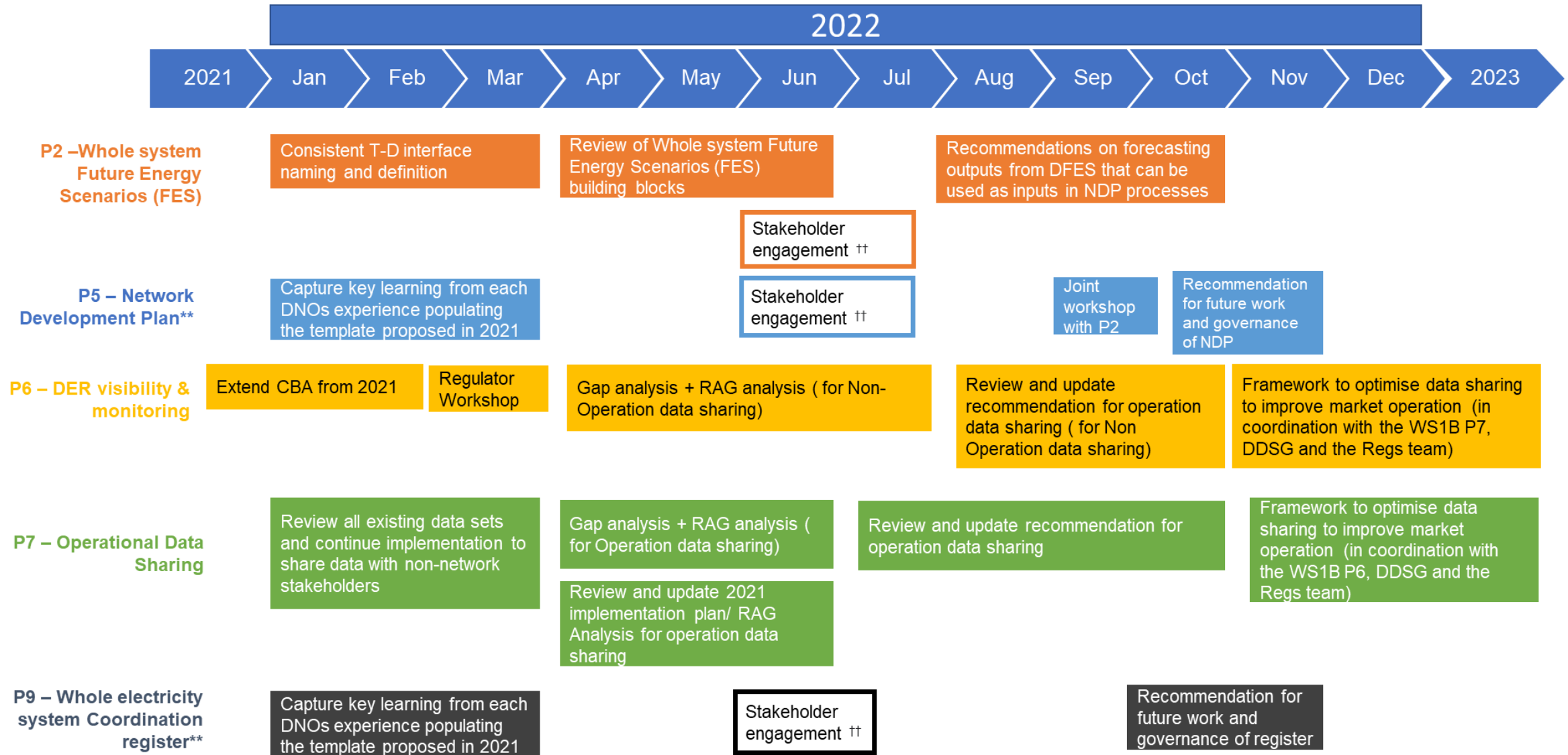
# T-D Co-ordination (WS1B) planned areas of work for 2022

- Optimise existing planning and forecasting processes across the Transmission-Distribution boundary, through streamlining of Future Energy Scenarios (FES) and Distribution Future Energy Scenarios (DFES) by identifying synergies and reviewing key assumptions in their building blocks.
- Develop and implement approaches to improve the quality and the consistency of data sharing in operational and planning timescales between DNOs, TOs, ESO, and non-network market participants.



\*\* Carry forward from 2021

# T-D Co-ordination (WS1B) Timeline for 2022



†† Joint session together with P2, P5 and P9

\*\* Light touch Product- Not resource intensive

# Open Q&A



## Slido – WS1B

**WS1B - Please rank the WS1B products in order of interest to you (high to low)**

- P2 Future Energy Scenarios
- P5 Network Development Plans
- P6 Operational DER Visibility & Monitoring
- P7 Operational Data Sharing
- P9 Whole electricity system co-ordination register

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# WS1B P5 Network Development Plans

Dr Rita Shaw CEng MEI (Product team lead, UKPN)

## Network Development Plans

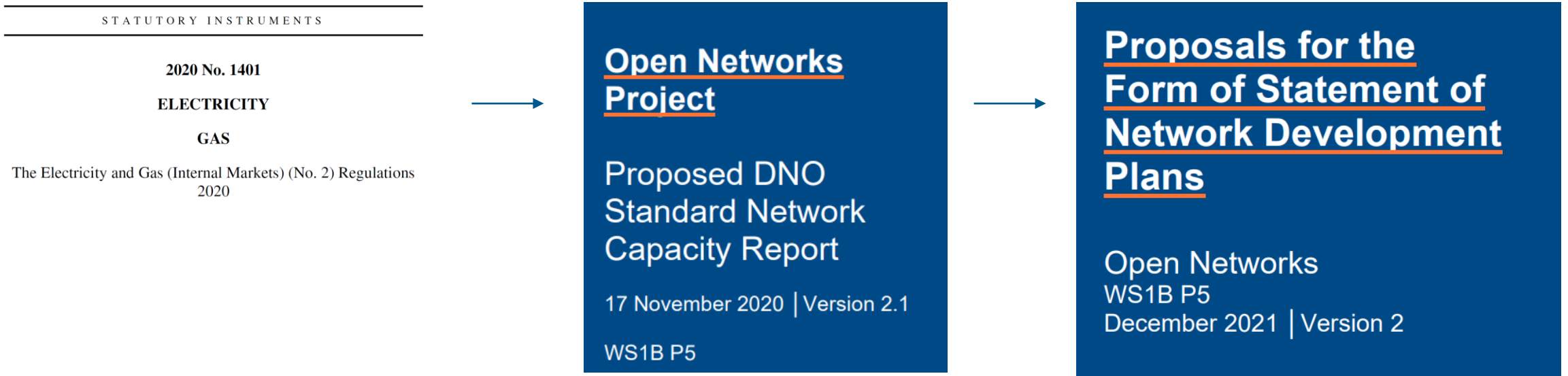
### New regulatory requirement for DNOs from 1<sup>st</sup> May 2022

- **A medium-term view of their ‘best view’ plan for network development**
  - 2021 base, for the network in November 2021 Long Term Development Statement
  
- **Proposed infrastructure and flexibility services for next ten years**
  - Shares what, where and why with stakeholders
  - What development occurring in my area?
  - What flex services will be procured?
  
- **Set in context of physically unused substation capacity over time in the Distribution Future Energy Scenarios.**

# What will be produced?

The ENA Open Networks project engaged and developed a ‘form of statement’ with the detail of how to deliver on the licence requirement.

This delivers a common approach for all DNOs’ NDPs.



# Contents of the NDP

The “NDP” comprises three standalone reports – all to be published for the first time 1<sup>st</sup> May 2022

## 1) Network Development Report (NDR) – update every 2 years

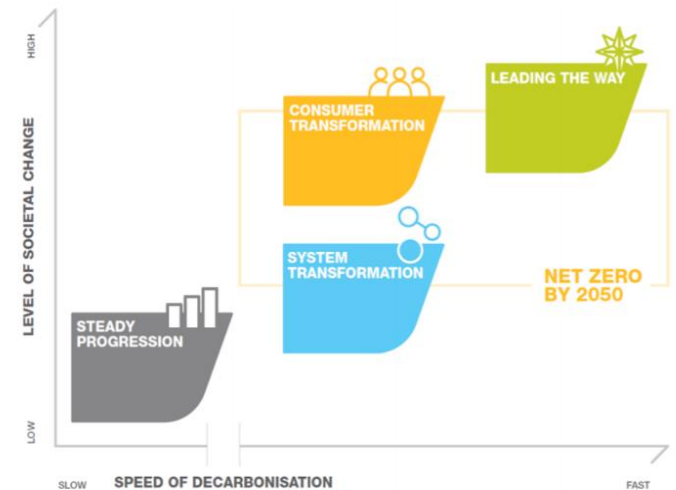
- Introduction to the purpose of the NDP
- High level plans 0-10yrs from highest distribution voltage (eg 132kV) to the lower voltage of primary substation
  - For network infrastructure & flexible service requirements, plus justification

## 2) Network Headroom Report (NHR) – update annually – consultation version produced August 2021

- For all Grid and Primary substations (those in LTDS)
- Demand headroom and Generation headroom over time to 2050 in all DFES

## 3) NDP Methodology – update as required

- Explain calculation of the network headrooms
- Explain end-end process and assumptions to justify network developments



## Excerpts from the ‘Form of Statement’

[ON21-WS1B-P5 NDP Form of Statement Template and Process \(22 Dec 2021\) Published.pdf](#)  
[\(energynetworks.org\)](#)

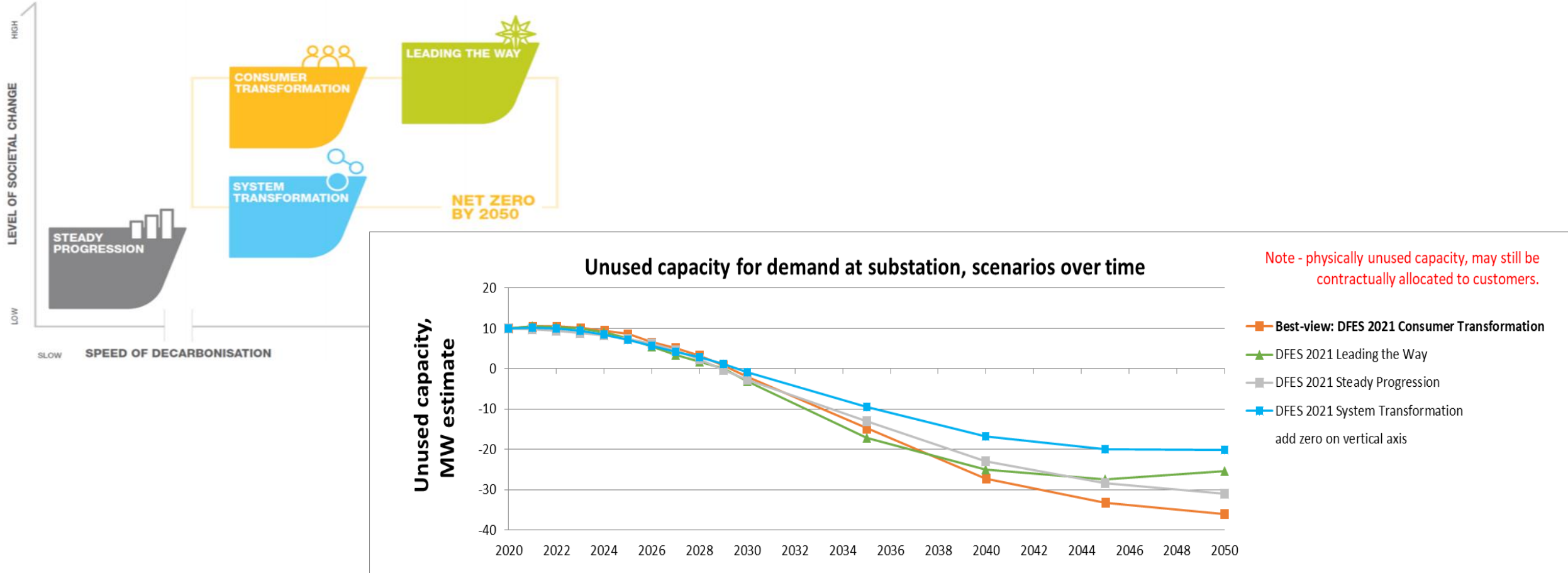
### Network Headroom Report (per scenario and year)

Substation Name	Voltage kV	BSP Group	GSP	Substation location	Demand Headroom MW	Generation Headroom MW
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### Network Development Report

Flexibility services	New infrastructure
<ul style="list-style-type: none"> <li>• Magnitude</li> <li>• Expected timescale</li> <li>• Voltage</li> <li>• Location of the requirement</li> <li>• Nature of requirement / flexibility product type, for example post or pre-fault</li> <li>• Nature of the service, for example demand-side response, energy efficiency, or other alternative to asset-based reinforcement</li> </ul>	<ul style="list-style-type: none"> <li>• Expected timescale</li> <li>• Details of connectivity including voltage</li> <li>• Asset quantities approx. circuit lengths, number of transformers etc</li> <li>• Equipment ratings</li> <li>• Approximate geographical locations and options for possible circuit routes</li> </ul>

# Example output from Network Headroom Report





## 28-day consultation period on each NDP – then publish by 1<sup>st</sup> May

Distribution Network	Link
1. Scottish and Southern	<a href="http://ssen.co.uk">Network Capacity Information - SSEN [ssen.co.uk]</a>
2. SP Energy Networks	<a href="http://spenergynetworks.co.uk">Network Development Plan - SP Energy Networks [spenergynetworks.co.uk]</a>
3. Northern Powergrid	<a href="https://www.northernpowergrid.com/network-data">https://www.northernpowergrid.com/network-data [northernpowergrid.com]</a>
4. Electricity North West	<a href="https://www.enwl.co.uk/get-connected/network-information/network-development-plan/">https://www.enwl.co.uk/get-connected/network-information/network-development-plan/</a>
5. Western Power Distribution	<a href="http://westernpower.co.uk">Western Power Distribution - Network Development Plan [westernpower.co.uk]</a>
6. UK Power Networks	<a href="#">Long Term Development Statement and Network Development Plan Landing Page — UK Power Networks</a>



# Open Q&A

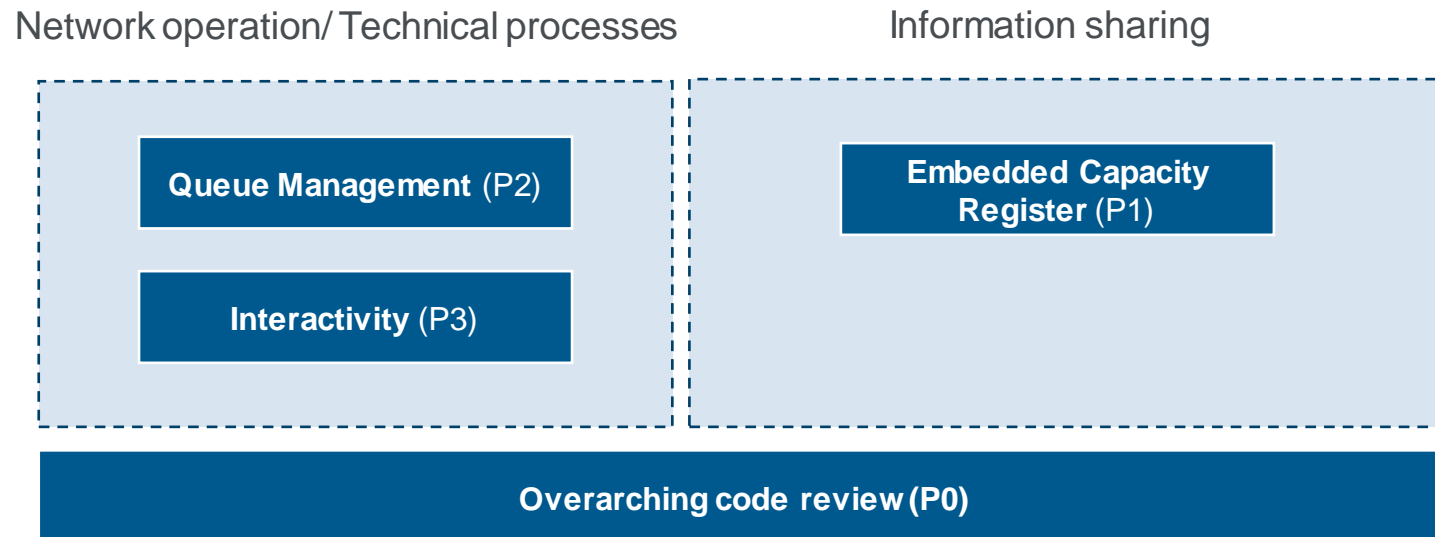
## 2022 Overview - WS2

# Customer Information Provision & Connections

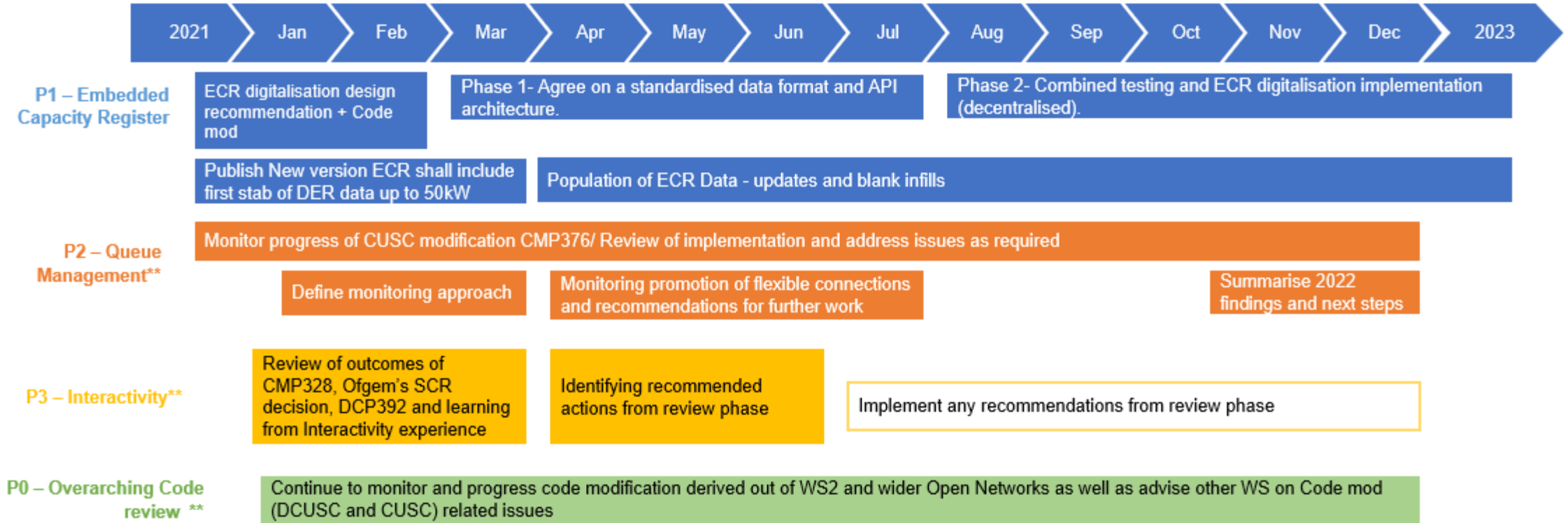
Jim Cardwell (Chair of Connections Workstream, NPg)

## Connections (WS2) planned areas of work for 2022

- Enhance information provision to customers to aid them through the connections and contracting processes and facilitate the realisation of value for their connected technology.
- Communicate whole electricity system needs and facilitate the translation of this into value for asset developers and owners as well as 3rd parties outside direct DSO contracted services (as highlighted in the Flexibility Workstream).



# Connections (WS2) Timeline for 2022



\*\* Light touch Product - Not resource intensive

# Open Q&A

## Slido – WS2

**WS2 - Please rank the WS2 products in order of interest to you (high to low)**

- P0 Overarching code review
- P1 Embedded Capacity Register
- P2 Queue Management
- P3 Interactivity

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# WS2 P1 Embedded Capacity Register (ECR): Digitalisation

Steve Halsey (Product team co-lead, UKPN)

Bahij Youssef (Product team co-lead, WPD)



## What is the ECR

- The ECR is published by all DNOs/IDNOs and comprises details of all connected and accepted to connect generation projects >1MW (was previously the System–Wide Resource Register)
- Common spreadsheet-based format

### **Contains details such as,**

- MPAN, customer name, address, location, connectivity, energy source and rating etc.
- Where applicable also details DSR/flexibility and reinforcement

# An example

Export MPAN #	Import MPAN #	Customer Name	Customer Sit	Address Line 1	Address Line 2	Town/City	County	Postcode	Country	Location (X-Coordinate Easting, Y-Coordinate Northing)	Location (X-Coordinate Easting, Y-Coordinate Northing)	Grid Supply Point	Ball Supply Point	Primary	Point of Connection II Voltage (kV)
103000230161		SHANKS WASTE MANAGEMENT LIMITED	WESTCOTT VENTURE PARK, PHASE 2A AND	WESTCOTT VENTURE PARK	WESTCOTT	Aylshbury	Bucks	HP18 0NR	England	471900	216700	SUNDON 132kV	AYLESBURY EAST GRID 132/233kV	WADESON PRIMARY 33/11kV	11kV
1050000620109		SITA UK	SUFFOLK FFW	BRAMFORD RD		GTBLAKENHAM	Suffolk	IP40 1LE	England	612250	249700	BRAMFORD GRID 132kV	STONMARKET GRID 132/233kV		33kV
1014564292506		AIA MANAGEMENT LTD	BENTWATERS BUS PK	RENDELSHAM		Wendbridge	Suffolk	IP12 2TW	England	635372	254094	BRAMFORD GRID 132kV	MICKHAM MARKET GRID 132/233kV	BENTWATERS PRIMARY 33/11kV	33kV
1050000624690		Dalkia PLC	LISTER HOSP	COREYS MILL LANE		STEVENAGE	Herts	SG14 4AB	England	552207	227400	WYMONDLEY MAIN 132kV	WYMONDLEY GRID 132/233kV	VERITY WAY PRIMARY 33kV	11kV
103007746333		RENPOWER INVESTMENTS UK LIMITED	PV SOLAR (CARLTON FARM)			Yarmouth Road	Norfolk	NR24 9HA	England	628800	323350	NORWICH MAIN 132kV	THORPE GRID 132/11kV	ORTH WALSHAM PRIMARY 33/11kV	11kV
103000230161		SHANKS WASTE MANAGEMENT LIMITED	WESTCOTT VENTURE PARK			AYLESBURY	Bucks	HP18 0NR	England	471900	216700	SUNDON 132kV	AYLESBURY EAST GRID 132/233kV	WADESON PRIMARY 33/11kV	11kV
1030001216507		AMEVOESPA (EAST) LTD	WASTE SITE DONARBON	ELY RD		WATERBEACH	Cambs	CB25 9FG	England	548920	249096	BURWELL MAIN GRID 132kV	HISTON GRID 132/233kV	LANDBEACH PRIMARY 33/11kV	11kV
1030076424736		RPO GROUP PLC	PROMENS ELLOUGH BECCLES			BECCLES	Suffolk	NR34 7TD	England	644261	210332	BRAMFORD GRID 132kV	ILKESHALL GRID 132kV	HENSTEAD PRIMARY 33/11kV	11kV
1050000612307		AEI Renewable plc	REYDON FARM			Osney Lane	Suffolk	IP18 4SG	England	648735	278037	BRAMFORD GRID 132kV	HALESWORTH GRID 132/233kV		33kV
1050000640655		Freedom Group	PIL MEMBRANES	ESTUARY RD		KINGS LYNN	Norfolk	PE30 2HS	England	561997	321003	WALPOLE GIS 132kV	KINGS LYNN GRID 132/233kV	JUSTIN STREET PRIMARY 33/11kV	11kV
Data not available		MBA Consulting Engineers	OCADO GYPSYMOY HAYE	HATFIELD BUS PARK		Hatfield	Herts	AL10 9BD	England	521295	209461	ELSTREE AIS 132kV	HATFIELD GRID 132kV	TUNNEL PRIMARY 33kV	11kV
1050000644025		GREENVALE MARCH FLOODS		FERRY RD		Wimington	Cambs	PE15 0UW	England	535454	292399	WALPOLE GIS 132kV	MARCH GRID 132/233kV	CHATTERIS PRIMARY 33/11kV	11kV
1030001926420		Horlston Engineering Services Ltd	CANTELUPE FARM			Harlingfield	Cambs	CB23 1LY	England	545323	254033	EATON SOCON GRID 132kV	LITTLE BARFORD GRID 132/233kV		33kV
1050000486725		Matrix Natural Limited	SCOTTOW RD, AD PLANT	AD PLANT		Narwich	Norfolk	NR19 5DP	England	626600	324300	NORWICH MAIN 132kV	THORPE GRID 132/233kV	SCOTTOW PRIMARY 33kV	11kV
1050000349171		Saville	SCOTTOW ESTATE SOLAR FARM			Narwich	Norfolk	NR12 8EP	England	627644	321656	NORWICH MAIN 132kV	THORPE GRID 132/11kV		33kV
1050000698405		HOBACK SOLAR LIMITED	HOBACK FARM			ROYSTON	HERTS	SG9 50B	England	535360	240516	EATON SOCON GRID 132kV	LITTLE BARFORD 132/233kV		33kV
103007612184		AGRI GEN LTD	Building 565	BENTWATERS PARK	Rendlesham	Wendbridge	Suffolk	IP12 2TW	England	634731	252561	BRAMFORD GRID 132kV	MICKHAM MARKET GRID 132/233kV	BENTWATERS PRIMARY 33/11kV	11kV
1030072346525		Biffa Waste Services	(EU0594) Eye Landfill Site	Eyebury Road		Eye	PETERBOROUGH	PEX 7TH	England	523163	301935	WALPOLE GIS 132kV	PETERBOROUGH EAST GRID 132/11kV		11kV
Data not available		Power Central Solutions	OLIVER RD	WEST THURROCK		WEST THURROCK	Essex	RM20 3ED	England	551023	177245	WEST THURROCK GRID	WEST THURROCK GRID	HEDLEY AV HSS	11kV
1050000612354		210 Eca Energy	STOWBRIDGE FARM ST25046			Bursell	Cambs	CB4 3LF	England	556211	273166	BURWELL MAIN GRID 132kV	BURWELL LOCAL GRID 132/233kV		33kV
1050000617492		Solar Power Generation Ltd	EGHERE ARFIELD	BUNKERS HILL		Watkinson	Norfolk	NR22 6AZ	England	596491	331957	WALPOLE GIS 132kV	HEMP TON GRID 132kV	EGHERE AIRFIELD SOLAR FARM 33	33kV
1050000559230		Adgen Energy Ltd	ADVANCED THEMATSEATHMENT	RATTYS LANE		Hadjarlan	Herts	EH11 0RF	England	535390	200390	RYE HOUSE 132kV	RYE HOUSE GRID 33kV	RYE HOUSE LOCAL PRIMARY 22/11kV	11kV
1050000595462		Solar Inc Ltd	HOLMBRINK FM	REACHES DRIVE TRACK		Walpole	Suffolk	IP24 5LR	England	574000	296499	WALPOLE GIS 132kV	MARCH GRID 132/233kV	NORTHWOLD PRIMARY 22kV	11kV
1030000470352		Energy Developments (UK) Ltd	BELLHOUSE LFG			STANWAY PIT	Essex	CO3 5NH	England	594850	222340	RAYLEIGH MAIN 132kV	ABBERTON GRID 132/233kV	SHRUB END PRIMARY 33/11kV	11kV
1050000521735		Solarcentury	HARDINGHAM FARM	HARDINGHAM FARM	HARDINGHAM	Narwich	Norfolk	NR9 4EG	England	605432	304632	NORWICH MAIN 132kV	EARLHAM GRID 132/233kV		33kV
1030002946097		UK Solar Parks Ltd	SKYLARK MEADOW	CAITON RD		BOURN	Cambs	CB23 2SR	England	548596	257501	EATON SOCON GRID 132kV	LITTLE BARFORD 132/233kV	BOURN PRIMARY 23kV	11kV
1050000574221		Eca Energy Ltd Ofa Res Energy Ltd	WESTON LONGVILLE P FM			Wortan Langville	Norfolk	NR9 5LG	England	608740	315910	NORWICH MAIN 132kV	SALL GRID 132kV	WESTON LONGVILLE PRIMARY 33kV	11kV
1030002304870		Countryside Renewable Ltd	SITE OFF FORDHAM ROAD	HENMARKET		Neumark	Suffolk	CB1 7LG	England	543970	247320	BURWELL MAIN GRID 132kV	BURWELL LOCAL GRID 132/233kV	EINING PRIMARY 33/11kV	11kV
10300023085231		Solar Century Holdings Ltd	LEHAM FARM, LEHAM	Litcham		NORFOLK	Norfolk	PE22 2RY	England	597452	319980	WALPOLE GIS 132kV	HEMP TON GRID 132kV		33kV
1050000540028		DNO Consulting Limited	SPRIGGS FARM	LITTLE SAMPFORD		SAFFRON WALDEN	Essex	CB10 2SA	England	562524	232501	PELHAM GRID 132kV	THAXTED GRID 132kV		33kV
1030005020190		The Natural Power Consultants Ltd	TEMPORS WIFE EYE ARFIELD			Eye	Cambs	IP23 0BW	England	612907	278817	BRAMFORD GRID 132kV	DISS GRID 132/233kV		33kV
10300005019734		The Natural Power Consultants Ltd	NORTH FICKERHAM 22 WIND FARM			Walpole	Norfolk	PE27 8JZ	England	585054	306970	WALPOLE GIS 132kV	SWAFFHAM GRID 132/233kV	SWAFFHAM GRID 33/11kV	11kV
1050000521664		The Natural Power Consultants Ltd	WESTON AIRFIELD FARM	HONNINGTON ROAD		NORFOLK	Norfolk	NR9 5JF	England	610626	314905	NORWICH MAIN 132kV	SALL GRID 132kV	WESTON LONGVILLE PRIMARY 33kV	33kV
1050000543169		DNO Consulting Limited	HIGHFIELDS FARM	KELVEDON		Rejalsah	Essex	CO5 9BJ	England	597168	172202	RAYLEIGH MAIN 132kV	ABBERTON GRID 132/233kV	TIP TREE PRIMARY 23kV	23kV
1050000645468		Power systems UK Ltd	BYGRAVE LODGE FM			BALDOCK	HERTS	SG7 60R	England	527511	235543	WYMONDLEY MAIN 132kV	LETCHWORTH GRID 132/233kV	LETCHWORTH FACTORY 33/11kV	11kV
1030002306256		Solar Century Holdings Ltd	CHEDISTON HALL	HALESWORTH		Bramford	Suffolk	IP19 0AD	England	636442	278354	BRAMFORD GRID 132kV	HALESWORTH GRID 132/233kV		33kV
1050000561381		Solar Century	STRATTON HALL	LEWINGTON		Ipswich	Suffolk	IP19 0LL	England	625650	239743	BRAMFORD GRID 132kV	CLIFF DUAY GRID 132kV		33kV
1030002305795		Solarcentury	FOUNTAIN	NARFORD		Walpole	Norfolk	PE22 1JA	England	577210	311570	WALPOLE GIS 132kV	SWAFFHAM GRID 132/233kV		33kV
1050000232467		Redacted	KENNINGHALL FARM	NORTHLOPHAM RD		Narwich	Norfolk	NR18 2DU	England	597890	285370	BRAMFORD GRID 132kV	DISS GRID 132/233kV		33kV

## Next steps

- Lower entry threshold to 50kW
  - Three/Fourfold increase in data
  - Population challenges
  - Revision to DCUSA required
  - Implementation April-July
- Digitalisation
  - Easily accessible to any users with a vested interest in embedded resources.

## Key ambition

To make the data contained in the ECR easily accessible to all users with a vested interest in embedded resources.

The ECR is an information-rich report currently distributed across a number of tables bundled and distributed as an Excel workbook.

The overarching principle of the digitalisation strategy is to ensure ECR data is available for consumption in whichever way best suits the end user. This can be via an API, using geospatial visualisation or in a table.

Multiple digitalisation solutions have been considered since the start of this year. A decentralised approach where each DNO hosts a digitalised version of its own ECR emerged as the best and most sustainable solution.

A recommendation paper setting out decentralised option is available on the [ENA website](#).

## Digitalisation pre-requisites

### Component 1: Application Programming Interface (API)

- This component is vital to the digitalisation of the ECR. As it stands right now ECR data can be either downloaded manually (then ingested) or scraped programmatically from each DNO's website. This approach has a major flaw however, as soon as the location of the ECR changes (URL change) any scraping script will break down.
- Such a challenge can be avoided by utilising API endpoints (URL) dedicated to serving ECR data.
- The data is served in machine readable formats such as JSON or CSV
- Endpoint examples:

*[https://<dno\\_website\\_address>/dataset/embedded-capacity-register/resource/latest.csv](https://<dno_website_address>/dataset/embedded-capacity-register/resource/latest.csv)*

*[https://<dno\\_cloud\\_server>/dataset/ecr/resource/latest.json](https://<dno_cloud_server>/dataset/ecr/resource/latest.json)*

## Digitalisation pre-requisites

### Component 2: Visualising the ECR

- Raw data always has a story to tell as long as it is combined with the correct delivery medium.
- The ECR contains geospatial data in the form of X & Y coordinates that can be superimposed onto a map of the United Kingdom.
- Making this visualisation feature available for users will allow for data ingestion at a quick glance without the need for third party visualisation tools

## Digitalisation pre-requisites

### **Component 3: Downloadable CSV table**

- End users often prefer to download a dataset in order to analyse it in third party packages capable of interpreting CSV files.
- It is vital for this option to be available to ensure the satisfaction of such users.

# Some examples

989 records

No active filters

## Filters

Search records...

### Licence Area

- Eastern Power Networks (EPN) 691
- South Eastern Power Networks (SPN) 204
- London Power Networks (LPN) 94

### Connection Status

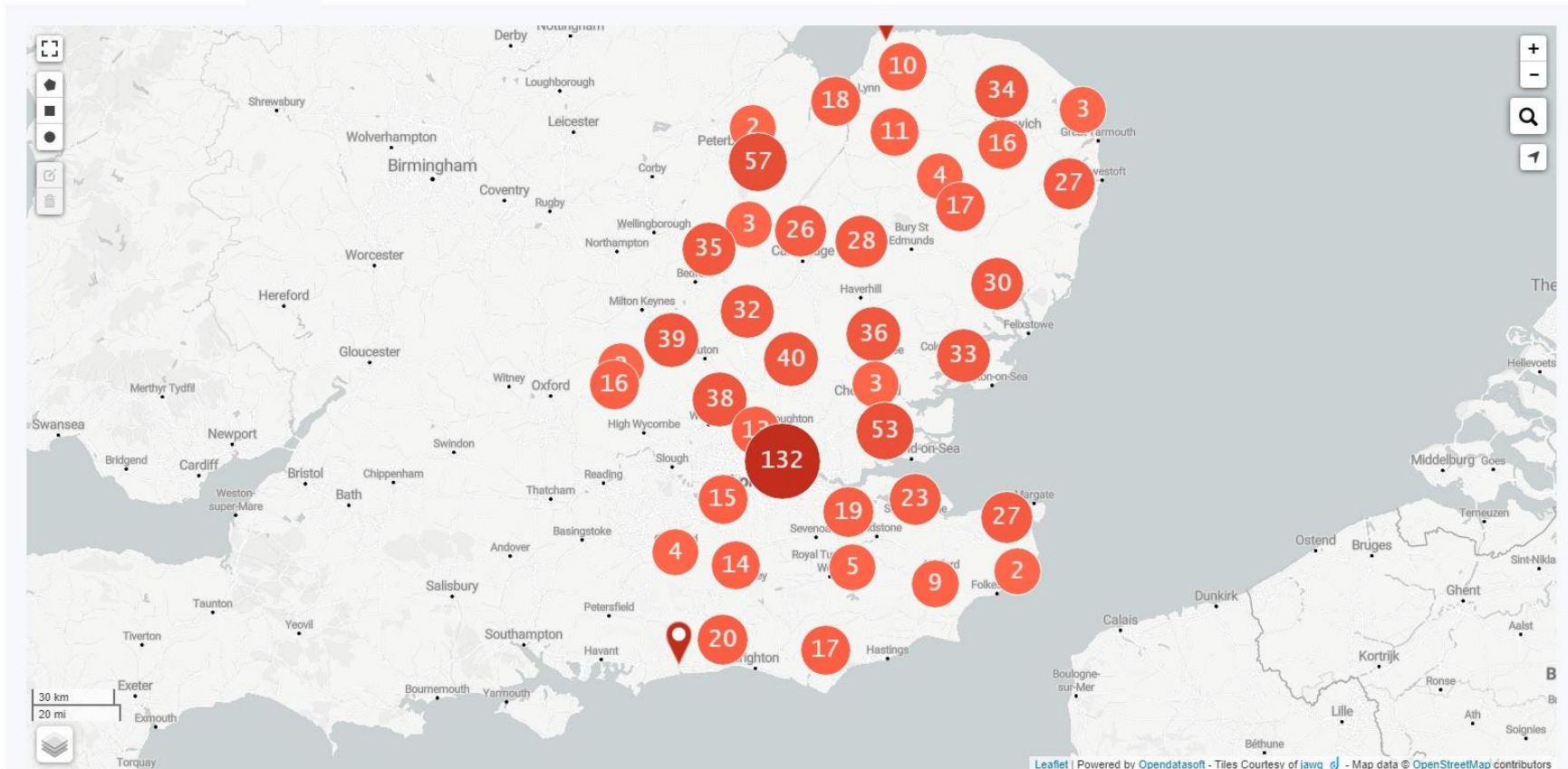
- Connected 622
- Accepted to Connect 367

### Primary Resource Type\_Group

- Solar PV 387
- Fossil fuel 353
- Biogas 92
- Storage 91
- Wind 65

## Embedded Capacity Register

Information Table Map Analyze Export API





# Some examples



989 records

No active filters

## Embedded Capacity Register



Information Table Map Analyze Export API

### Filters

Search records...

#### Licence Area

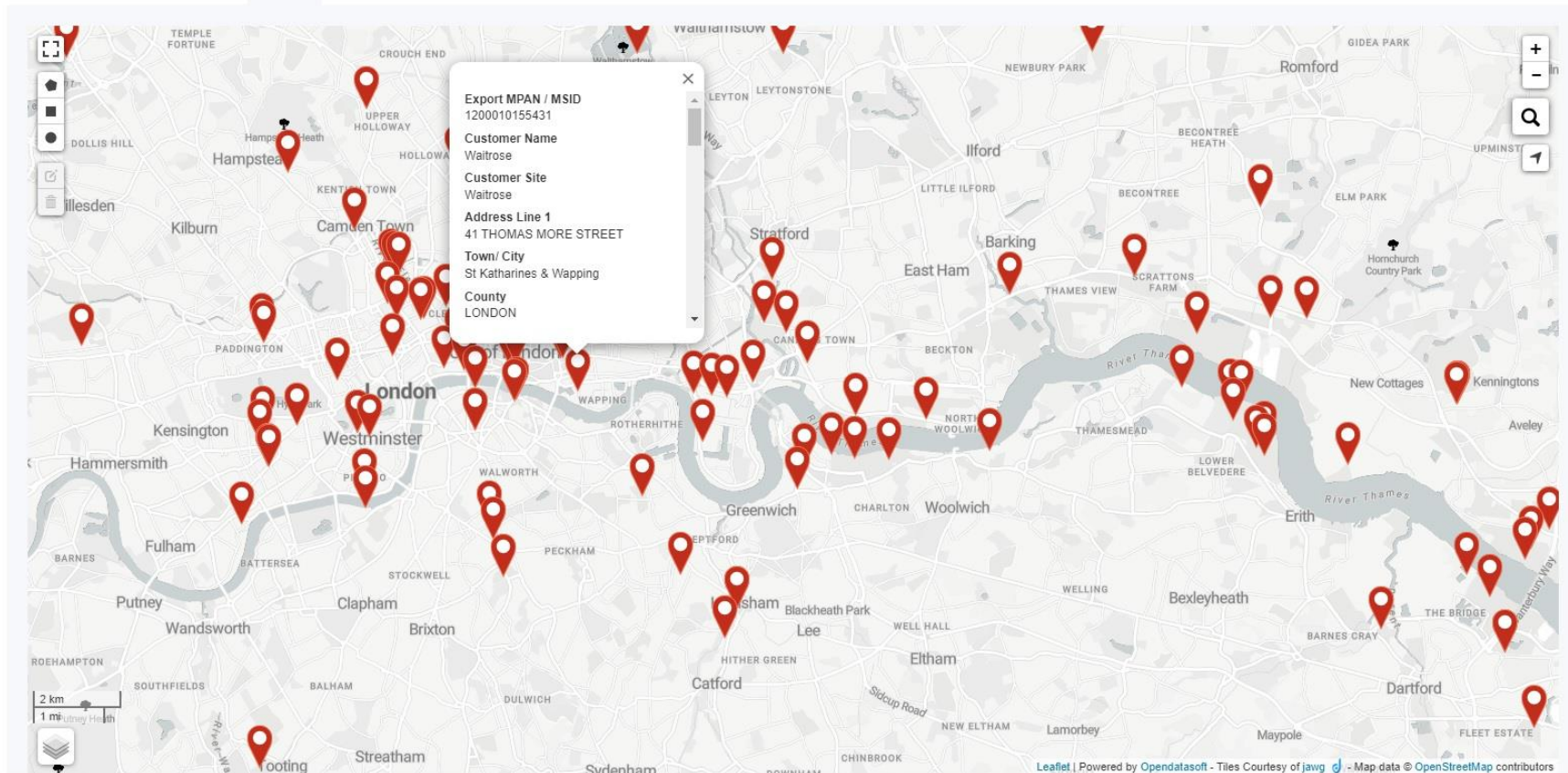
- Eastern Power Networks (EPN) 691
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- London Power Networks (LPN) 94

#### Connection Status

- Connected 622
- Accepted to Connect 367

#### Primary Resource Type\_Group

- Solar PV 387
- Fossil fuel 353
- Biogas 92
- Storage 91
- Wind 65



# Some examples

## Datasets

Home / Dataset / Embedded Capacity Register / Embedded Capacity Register...

### Embedded Capacity Register - March 2022

[Download \(csv\)](#)

[Data API](#)

All distributed generation with a capacity of 1MW or above captured in a consolidated format including generator type, location, capacity and wider key information.

Data Explorer

[Fullscreen](#)

[Embed](#)

[Add Filter](#)

Grid Graph Map

about 2000 records

« 1 - 250 »

Q Search data ...

Go »

Filters

_id	Export ...	Import ...	Custom...	Custom...	Address...	Address...	Town/ City	County	Postcode	Country	Locatio...	Locatio...	Grid Su...	Bulk Su...	Primary	Point of ...	Licence ...	Energy ...	Energy ...	CHP Co...	Stora
1	1100003...		Dudley ...		Village Hall	South M...	Newark	Nottingh...	NG23 6EE	United Ki...	479029	356998	Staythor...	Hawton ...	Carlton ...	11	Western ...	Solar	Photovol...	No	
2	1100040...	1100039...	Severn tr...	Coventry...	Finham ...	St Martin...	Coventry	West Mi...	CV3 6PR	United Ki...	433310	274561	Coventry...	Whitley ...	Dillotford...	11	Western ...	Biofuel - ...	Gas turbi...	No	
3	1100050...	1100050...	Biffa plc	Ufton lan...	Ufton La...	Southam...	Leaming...	Warwick...	CV33 9PP	United Ki...	439014	261405	Berkswel...	Harbury ...	Harbury ...	11	Western ...	Biofuel - ...	Gas turbi...	No	
4	1100050...		Severn tr...	Export si...	Export Si...	St Martin...	Coventry	West Mi...	CV3 6PR	United Ki...	433310	274561	Coventry...	Whitley ...	Dillotford...	11	Western ...	Biofuel - ...	Gas turbi...	No	
5	1100050...	1100039...	White to...	Derby co...	Rolls-Ro...	Gate 5, ...	Derby	Derbyshire	DE24 8BJ	United Ki...	43635	33215	Willingto...	Derby S...		132	Western ...	Waste	Steam tu...	No	
6	1100050...	1100039...	Nottingh...	Queens ...	Queens ...	Derby R...	Nottingh...	Nottingh...	NG7 2UH	United Ki...	454800	338800	Ratcliffe ...	Nottingh...	Lenton 3 ...	11	Western ...	Fossil - ...	Engine (...)	Yes	
7	1100050...		Enviroen...	London r...	London ...	12 Lond...	Nottingh...	Nottingh...	NG2 3AB	United Ki...	457799	339472	Stoke Ba...	Nottingh...	St Anns ...	33	Western ...	Solar	Photovol...	Yes	
8	1100050...	1100039...	Edl (uk) I...	Wellingb...	Edl Uk Li...	Sidegate...	Wellingb...	Northam...	NN8 1RN	United Ki...	49178	26998	Grendon...	Wellingb...	Cannon ...	11	Western ...	Biofuel - ...	Gas turbi...	No	
9	1100050...	1100039...	Cummin...	Cummin...	Cummin...	Royal O...	Daventry	Northam...	NN11 8NU	United Ki...	456246	262963	Coventry...	Daventry...	Braunsto...	11	Western ...	Fossil - ...	Engine (...)	No	
10	1100050...	1100039...	Awg gro...	Milton ke...	Export Si...	Woburn ...	Milton ke...	Bucking...	MK17 8RR	United Ki...	492853	235946	East Cla...	Bletchley...	Victoria ...	11	Western ...	Fossil - Oil	Engine (...)	No	
11	1100050...		Non foss...	Ebet exp...	Ebet Exp...	Burntstu...	Nottingh...	Nottingh...	NG5 8PR	United Ki...	458547	350098	Chesterfi...	Annesle...	Calverto...	11	Western ...	Biofuel - ...	Engine (...)	No	
12	1100050...	1100050...	Alkane e...	Acreage ...	Shirebro...	Acreage ...	Mansfield	Nottingh...	NG20 8RN	United Ki...	452628	366965	Chesterfi...	Mansfiel...	Acreage ...	11	Western ...	Fossil - ...	Engine (...)	No	
13	1100050...	1100050...	Clp envir...	Cotesba...	Export S...	Lutterworth				United Ki...	45371	28082	Coventry...	Rugby 1...	Rugby 1...	11	Western ...	Biofuel - ...	Gas turbi...	No	

## Some examples

Querying »

**Query example (first 5 results)**

```
https://connecteddata.westernpower.co.uk/api/3/action/datastore_search?
resource_id=f8ffe96c-fabf-4a6a-962c-59f193fc2d14&limit=5
```

**Query example (results containing 'jones')**

```
https://connecteddata.westernpower.co.uk/api/3/action/datastore_search?
resource_id=f8ffe96c-fabf-4a6a-962c-59f193fc2d14&q=jones
```

**Query example (via SQL statement)**

```
https://connecteddata.westernpower.co.uk/api/3/action/datastore_search_sql?
sql=SELECT * from "f8ffe96c-fabf-4a6a-962c-59f193fc2d14" WHERE title LIKE
'jones'
```

Example: Javascript »

Example: Python »

## Decentralised approach

### The vision:

This option will ultimately provide ECR data directly from the DNO.

### Technical challenges:

Each DNO to implement the digitalisation pre-requisites mentioned in the slides above.

### Pros/Cons:

Pros	Cons
Will easily cope with increased volume of ECR data	Stakeholders will need to pull data from multiple APIs nation-wide type analysis
Low overhead cost for each DNO	
Low risk of data duplication and/or discrepancy	
DNO remains source of the truth & custodian of the data	
Simple yet powerful solution	

# Open Q&A

# Break



# 2022 Overview - WS3 DSO Transition

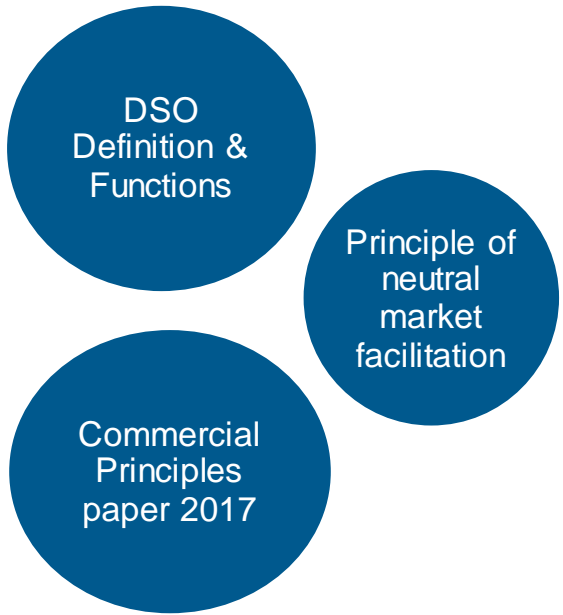
Steve Atkins (DSO Transition Workstream, SSEN-D)



# DSO Transition - The journey so far

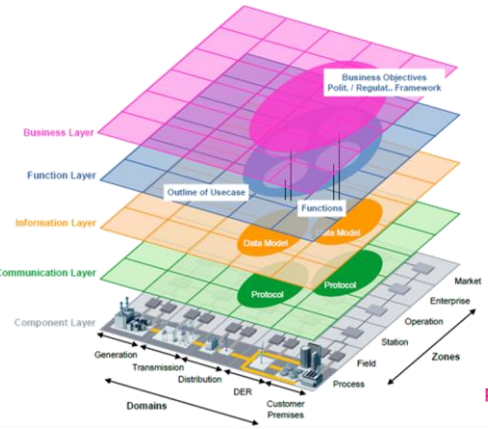
2017

## Foundations for "Future Worlds"



2018

## Detailed SGAM modelling

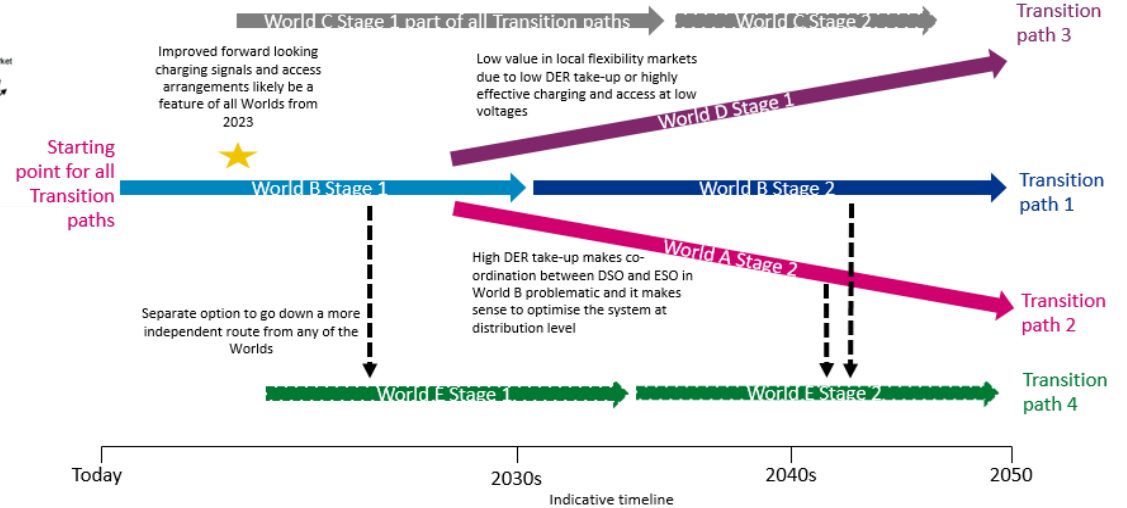


Modelled 5 different Future Worlds with different attribution of roles and responsibilities for DSO Functions.

2019

## Impact Assessment & Pathways

Independent assessment set out a pathway in the short term on a model of stronger coordination between DNOs and ESO and allows for future changes to roles and responsibilities to deliver the most effective mode.



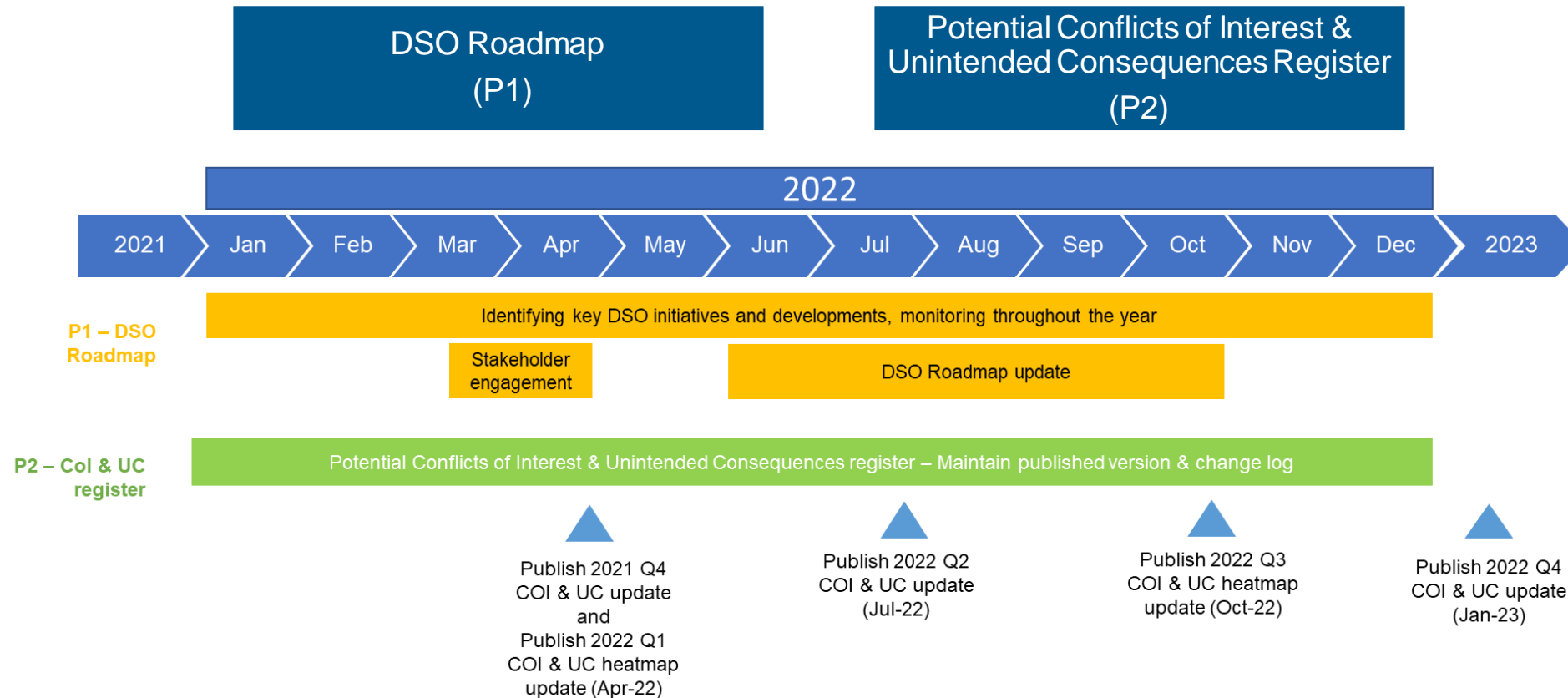
## DSO Implementation Plan





# DSO Transition (WS3) planned areas of work for 2022

- Fulfil an overarching role to progress the development and implementation of the least regrets pathway to Distribution System Operation in line with policy across the programme, including identifying and addressing potential conflicts of interest and unintended consequences.



# Open Q&A

## Slido – WS3

### **WS3 - Are you aware of the DSO Implementation Plan or Conflicts of Interest & Unintended Consequences Register?**

- DSO Implementation plan only
- Conflicts of Interest & Unintended Consequences Register only
- Both
- No, I was not aware of either

Join at  
**Slido.com**

Joining code  
**#945 150**



## Slido – WS3

### WS3 - Have you or do you intend to use the DSO Implementation Plan

- I have used it
- I haven't used it but plan to in the future
- I haven't used it and I don't intend to

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**Slido.com**

Joining code  
**#945 150**

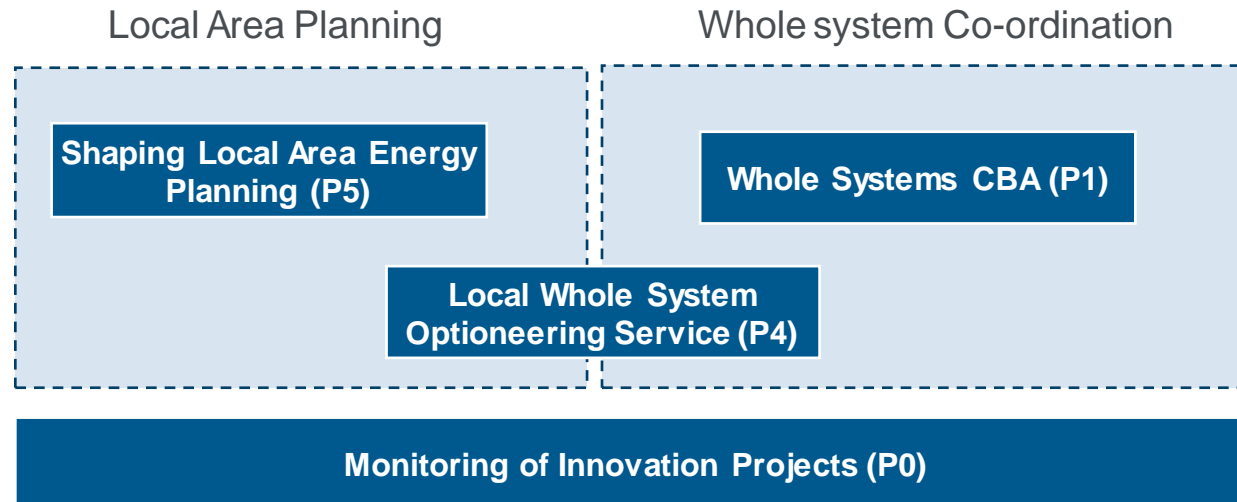


# 2022 Overview - WS4 Whole Energy Systems

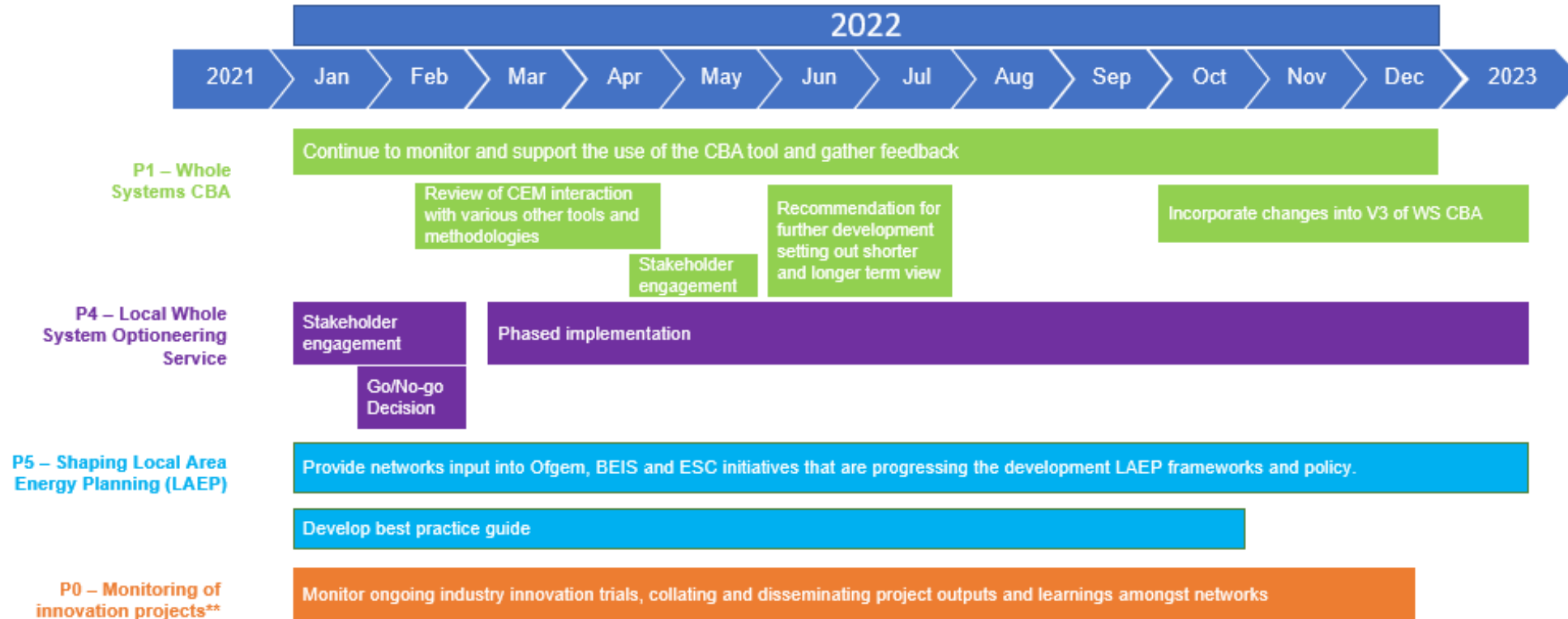
Andy Wainwright (Chair of Whole Energy Systems, NG ESO)

# Whole energy Systems (WS4) planned areas of work for 2022

- Facilitating more cost-effective network investment and operations across the whole energy system (electricity and gas)
- Delivering tangible improvements to existing processes through more coordinated approaches and knowledge sharing.
- Proactively support and inform the development of a national framework and associated policies for local area energy planning from a networks perspective.



# Whole energy Systems (WS4) Timeline for 2022



\*\* Light touch Product- Not resource intensive

# Open Q&A



## Slido – WS4

**WS4 - Please rank the WS4 products in order of interest to you (high to low)**

- P0 Monitoring of innovation projects
- P1 Whole System CBA
- P4 Local whole system optioneering service
- P5 Shaping Local Area Energy Planning (LAEP)

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# Upcoming communications activity

Emily Jones (ON Communications Lead, ENA)

## Slido – Overall

Considering the products presented in today's session, what is your opinion on the level of detail presented?

- I found it useful and shared/received everything I was looking for
- It should have had more technical detail included
- It should have had less technical detail included
- I would have liked more opportunity to share opinions/insights

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## Slido – Overall

**Do you have any additional suggestions for the Dissemination Forum meetings moving forward, or any questions about the Open Networks programme?**

*Free text on Slido*

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# AOB

## Useful Links

Programme  
Scope for 2022

2021 End of Year  
report

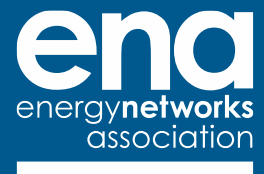
Stakeholder  
events &  
supporting  
material

Open Networks  
homepage

*We welcome feedback and your input*

[Opennetworks@energynetworks.org](mailto:Opennetworks@energynetworks.org)

Click [here](#) to join our mailing list



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