

Open Networks Project Introduction for ESIG

March 30th 2021



Introduction to ENA

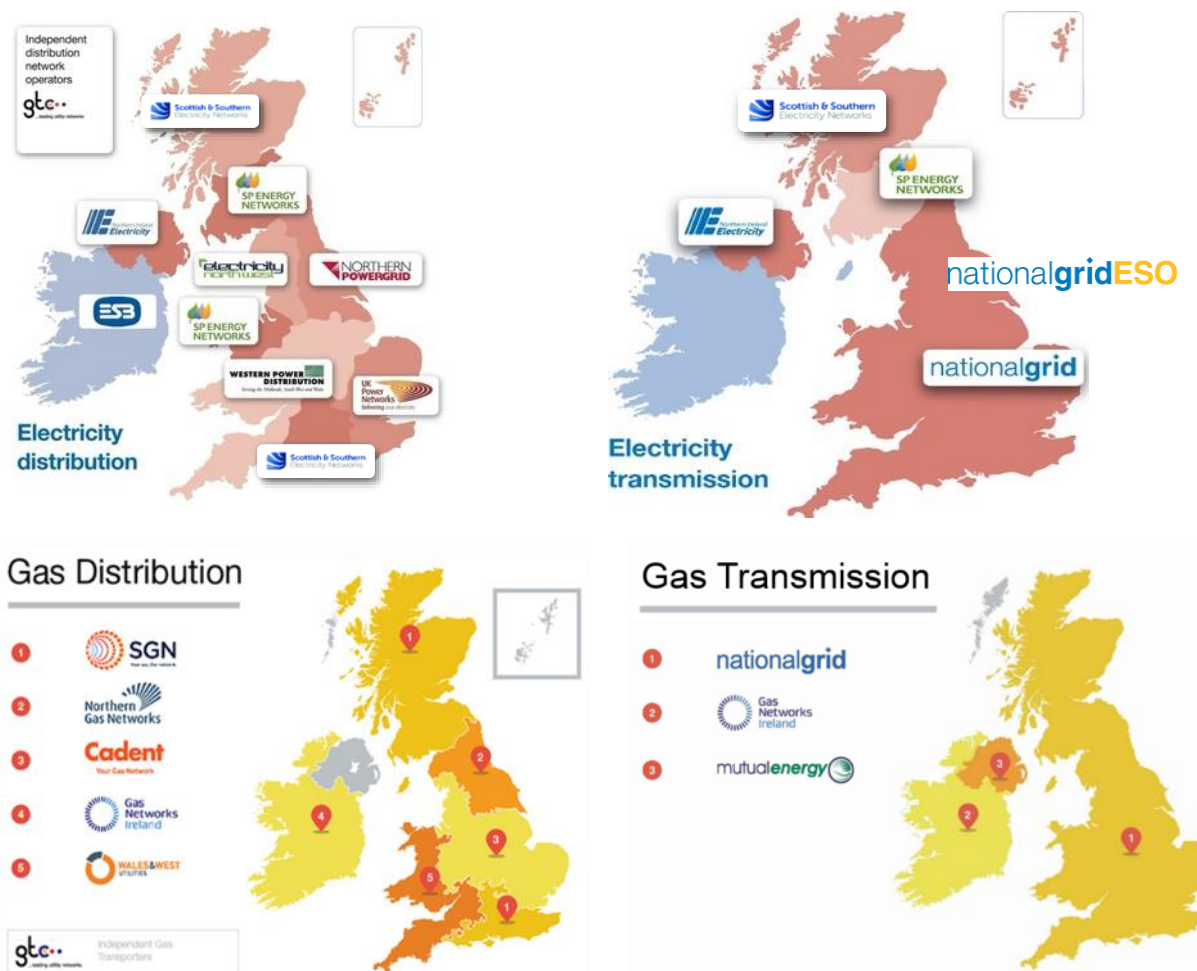
The voice of the networks

- 29 million electricity customers
- 21.5 million gas customers
- 180,000 miles of gas network
- 519,304 miles of electricity network

Collaborative ENA development has been key to Open Networks

Distributed Energy Resources (DER)

- Over 30GW of distributed generation is currently connected
- DER uptake (especially EVs!) is increasing rapidly



Regulation in GB

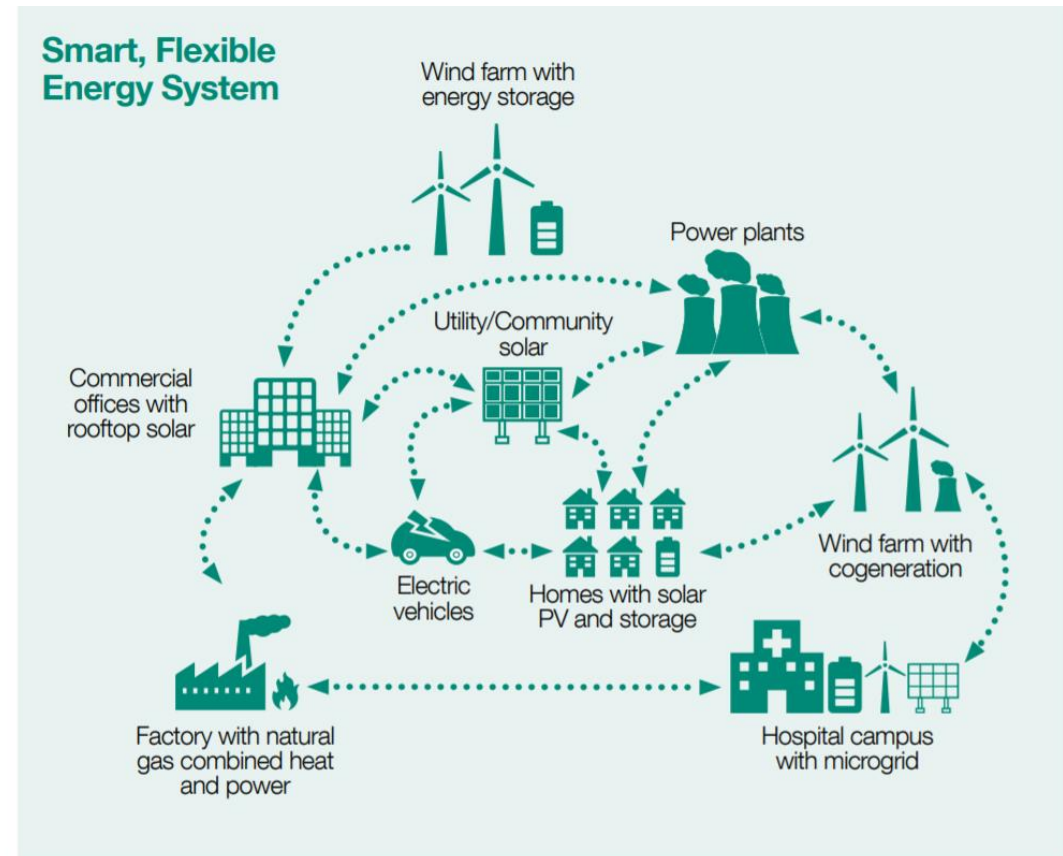
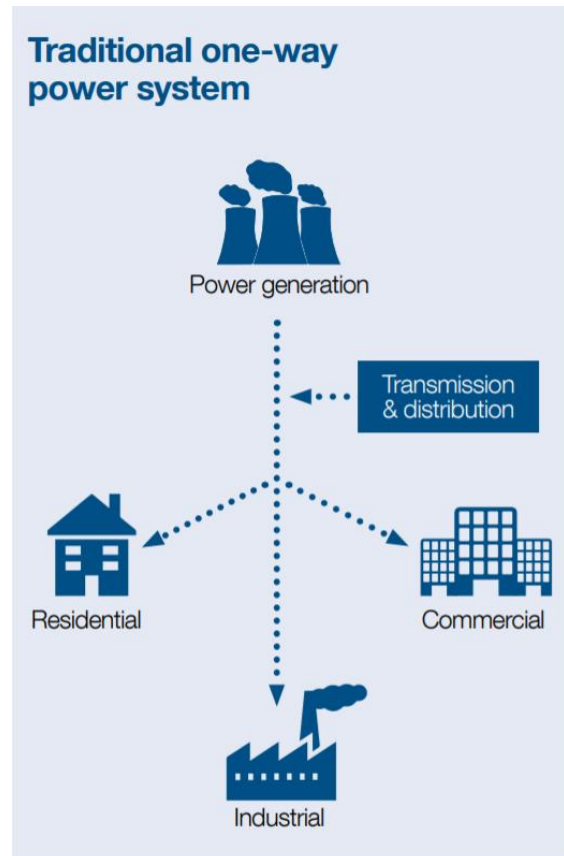
- Ofgem is the Regulator for Gas & Electricity Markets in Great Britain
- Networks are unbundled in the UK
- We are heading towards our next regulatory period (RIIO2) starting in 2023 for Distribution (will include stronger T-D focus)
- Gas and Electricity Networks are governed by the 'RIIO' model: Revenue = Incentives + Innovation + Outputs
- Performance-based framework that includes a 'TOTEX' model
- RIIO has been successful; driving down costs for customers while incentivising innovation and non-build solutions where feasible
- Establishing an agile regulatory framework that encourages smart grid development and flexibility markets is essential

A large orange rectangular box is positioned on the right side of the slide. Inside the box, the text 'Network Regulation' is written in a white sans-serif font, with 'Network' on the top line and 'Regulation' on the bottom line. Below this, the text 'The RIIO model' is written in a larger, bold, white sans-serif font.

Network
Regulation
The RIIO model

The Challenge

Electricity Networks are facing unprecedented change as a result of decarbonisation, digitisation and decentralisation



Open Networks – Delivering a Smart Grid



ENA's The Open Networks Project is a major industry initiative that is powering Britain forward to Net Zero by enabling homes, businesses, and communities to provide clean energy back to the networks. Open Networks is delivering a smart grid by opening up new markets, and building an all inclusive energy system



The Open Networks Project will help customers connect and break down barriers, enabling customers to access multiple markets to provide services; all the while reducing cost for consumers through more cost effective planning



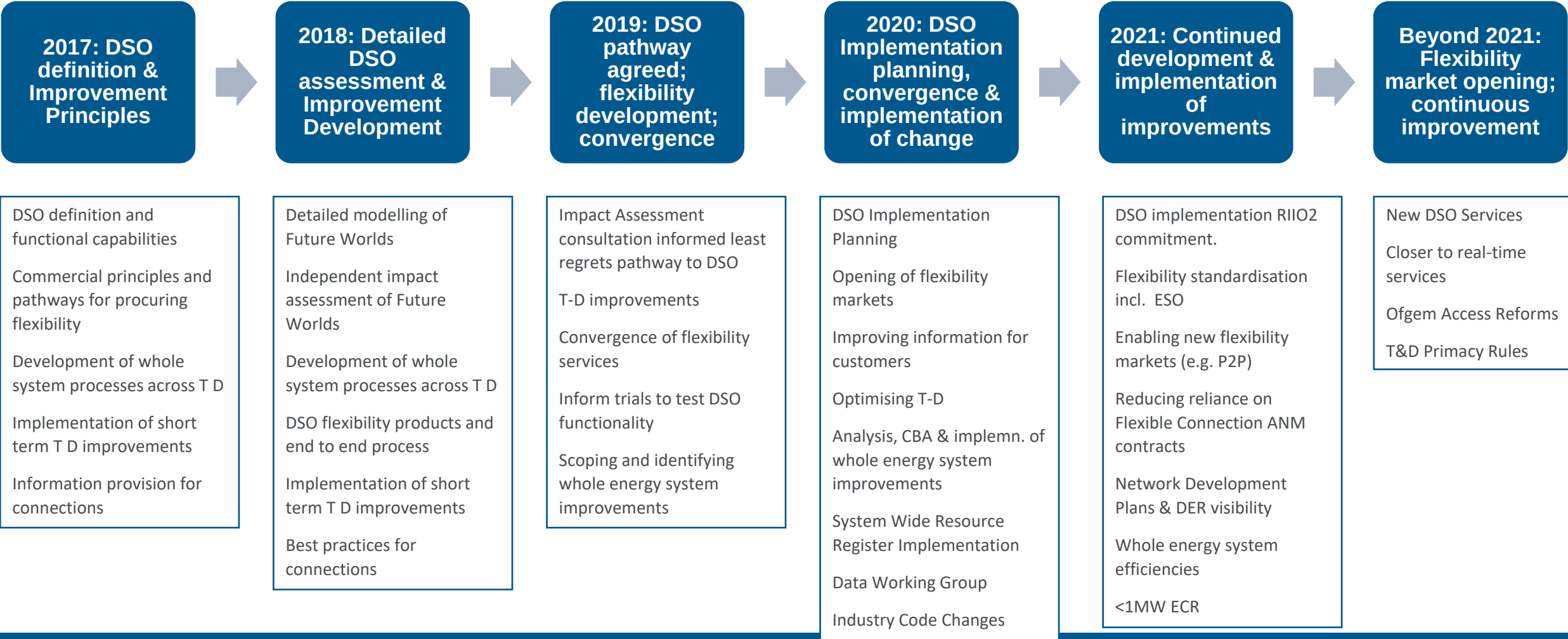
Late last year Government launched the Prime Minister's Ten Point Plan, the Climate Change Committee's Sixth Carbon Budget and the Energy White Paper. The publication of these plans means we now have clear policy pathways for UK decarbonisation, and the Project is now better positioned than ever before to tackle the important and ambitious target of achieving Net Zero by 2050.



We are taking a 'learn-by-doing' approach; we are using innovation funding to trial and test aspects of the various future electricity system options to drive the key changes needed to transition to a Net Zero emissions smart grid.

A project intro can be found at: <https://www.youtube.com/watch?v=vqTq-eC4mEQ&t=1s>

ENA Open Networks Project Journey



DSO Transition - The journey so far

2017

Foundations for “Future Worlds”

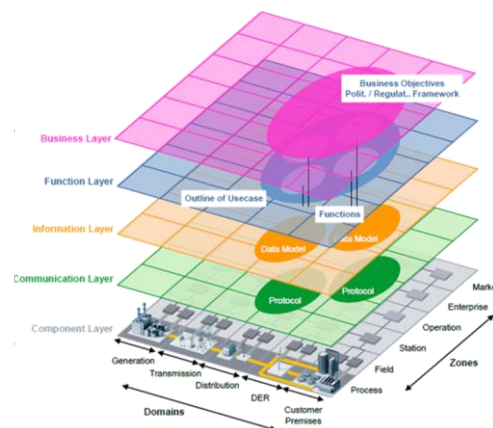
DSO Definition & Functions

Principle of neutral market facilitation

Commercial Principles paper 2017

2018

Detailed SGAM modelling



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

2019

Impact Assessment & Pathways

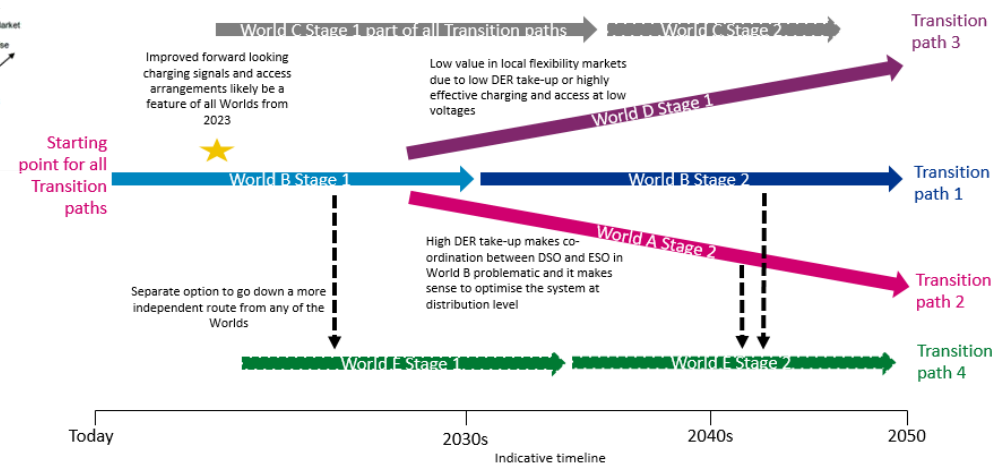
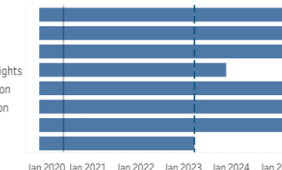
Independent assessment set out a pathway in the short term on a model of stronger coordination between DNOs and ESO and allows for future changes to roles and responsibilities to deliver the most effective mode.

DSO Pathway Agreed

2020 & 2021

DSO Implementation Plan

- Function
1. System Coordination
 2. Network Operation
 3. Investment Planning
 4. Connections and Connection Rights
 5. System Defence and Restoration
 6. Services and Market Facilitation
 7. Service Optimisation
 8. Charging



Flexibility Commitments

- More DER is becoming flexible, which is critical to achieving net zero
- Being flexible means the ability to control or schedule demand and/or generation, and this can help address local and national needs
- Britain's Networks have made a "Flexibility Commitment"; using cost-efficient flexibility to relieve network congestion
- 2.9GW of local flexibility services planned for tender in 2021

In Dec 2018, DNOs made the commitment to openly test the market to compare relevant grid reinforcement and market flexibility solutions for all new projects of significant value

- Key in reducing costs of new infrastructure investment and laid the foundations for a new, cleaner, more flexible network
- Offers households, businesses and communities the ability to offer their flexible services to the networks
- Takes a technology agnostic approach

<http://www.energynetworks.org/assets/files/ENA%20Flex%20Committment.pdf>



In Jun 2019, Electricity Networks committed to six steps for making emerging flexibility markets work:

1. Champion a level playing field
2. Visibility and accessibility
3. Conduct procurement in an open and transparent manner
4. Provide clarity on the dispatch of services
5. Provide regular, consistent and transparent reporting
6. Work together towards whole systems outcomes

<http://www.energynetworks.org/assets/files/ENA%20Flexibility%20Commitment%20Our%20Six%20Steps%20for%20Delivering%20Flexibility%20Services.pdf>

Flexibility in Great Britain

✓ 2.9GW of local flexibility services planned for tender this year.

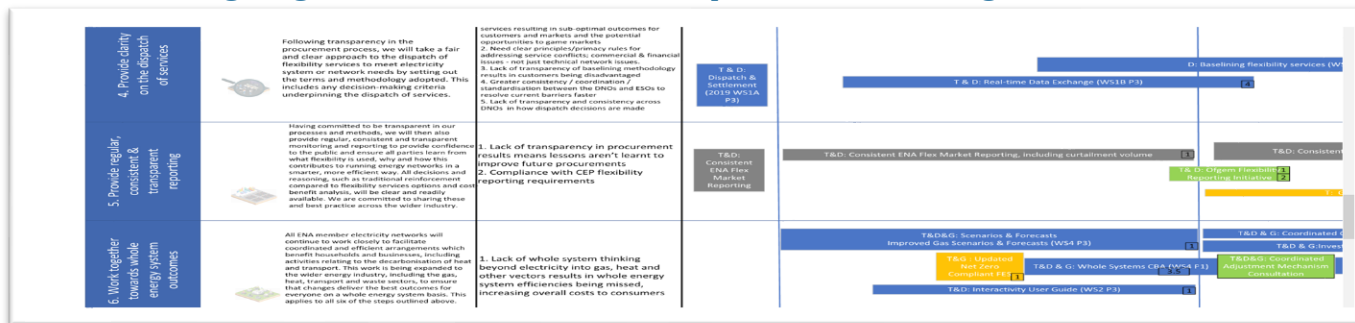
✓ Flexibility Statistics

DSO Flexibility Tenders	Sustain (MW)	Secure (MW)	Dynamic (MW)	Restore (MW)	Reactive Power (MVar) (if applicable)
	Peak Capacity (MW)	Peak Capacity (MW)	Peak Capacity (MW)	Peak Capacity (MW)	Peak Capacity (MVar)
Contracted for 2018	0	24	34	59	0
Contracted for 2019	0	10	121	125	0
Contracted for 2020	2	105	556	503	0
Tendered for 2020	28	481	771	779	7
Contracted for 2021	2	206	599	542	0
Tendered for 2021	41	827	1088	958	9

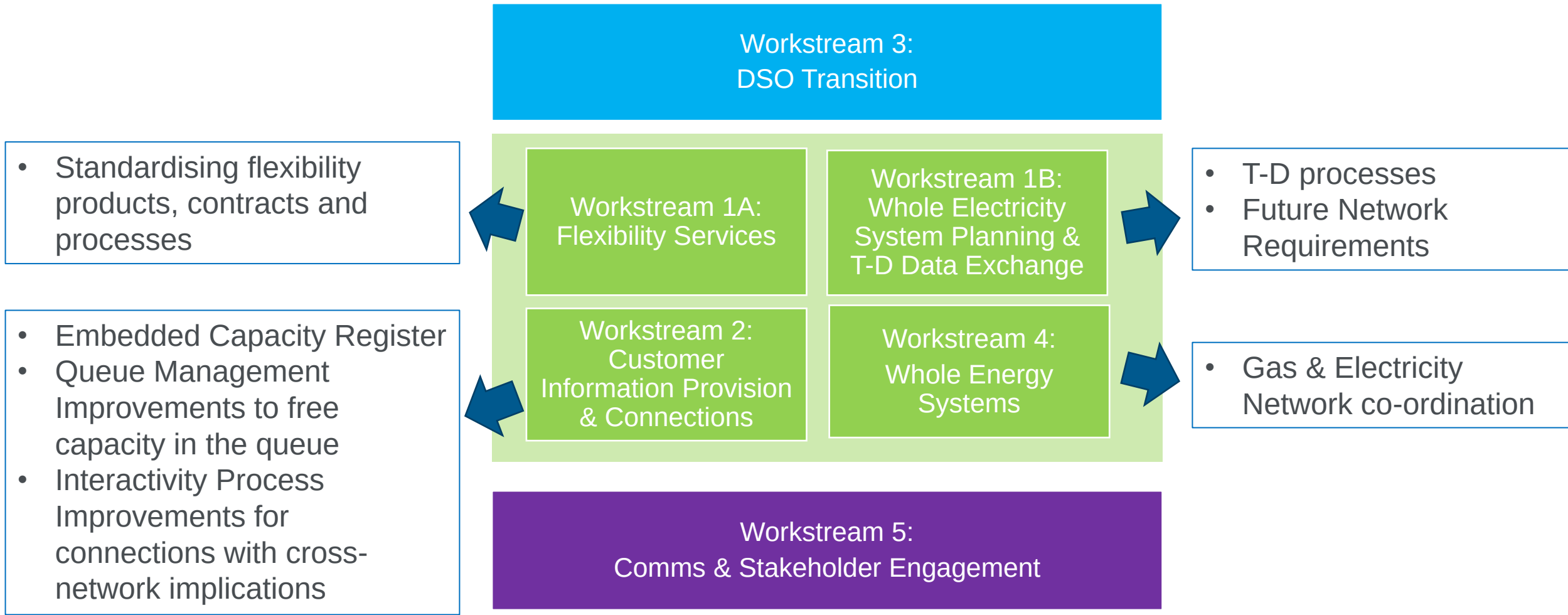
4 Real Power Products:

- Sustain: Scheduled Constraint Management
- Secure: Pre-Fault Constraint Management
- Dynamic: Post-Fault Constraint Management
- Restore: Restoration

✓ Published Flexibility Roadmap which demonstrates how networks are delivering against their six steps to making these markets work in practice.



Open Networks Project Workstreams



Key Priorities

Flexibility remains the largest area of work with highest priority

As well as defining our body of work, we have identified key dependencies, particularly RII02

With more clarity from Government through the 10 point plan and the Energy White Paper, Open Networks will continue to enable delivery of Net Zero by:

- a) opening local flexibility markets to demand response, renewable energy and new low-carbon technology and removing barriers to participation
- b) providing opportunities for these flexible resources to connect to our networks faster
- c) opening data to allow these flexible resources to identify the best locations to invest
- d) delivering efficiencies between the network companies to plan and operate secure efficient networks

Useful Links

Project Scope for 2021

**Work plan
consultation**

Flexibility Roadmap

**DSO Implementation
Plan**

**Stakeholder events &
supporting material**

**2020 End of Year
report**

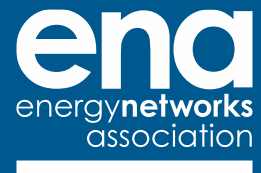
How to get involved

Public
Consultations

Public Events

Mailing List

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



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[energynetworks.org](https://www.energynetworks.org)

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The voice of the networks