

Open Networks Project

17th May 2021
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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

Distributed Energy Resources (DER)

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

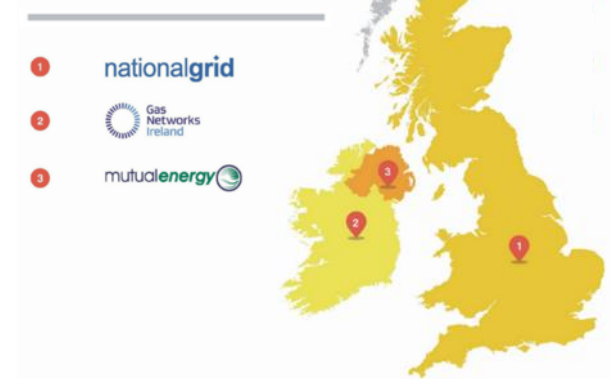
nationalgridESO



Gas Distribution

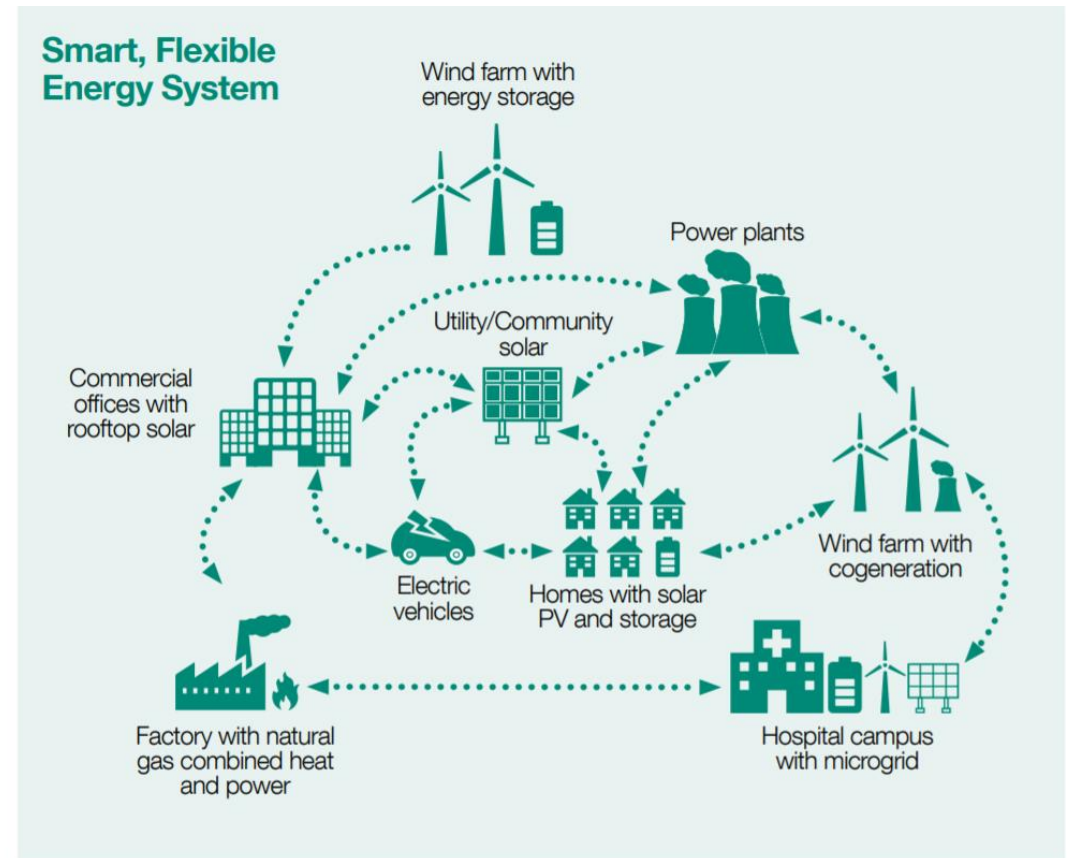
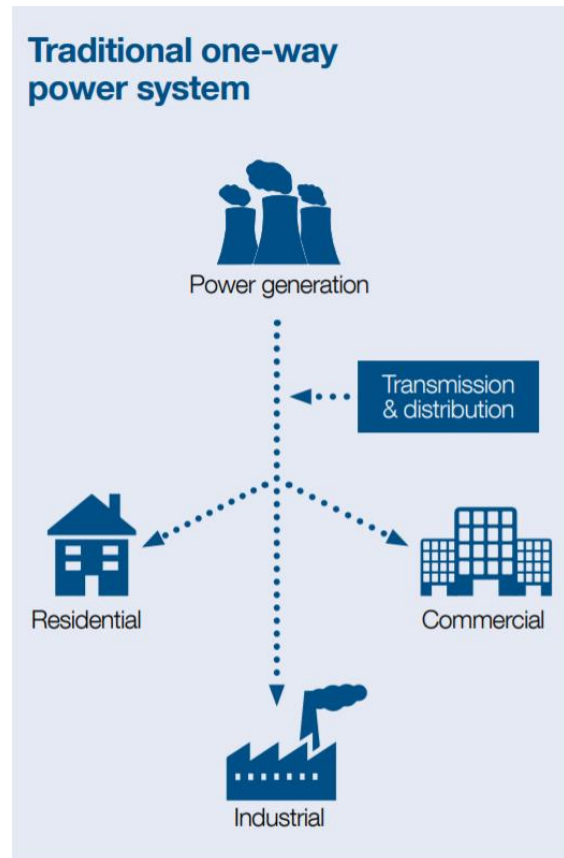


Gas Transmission



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.



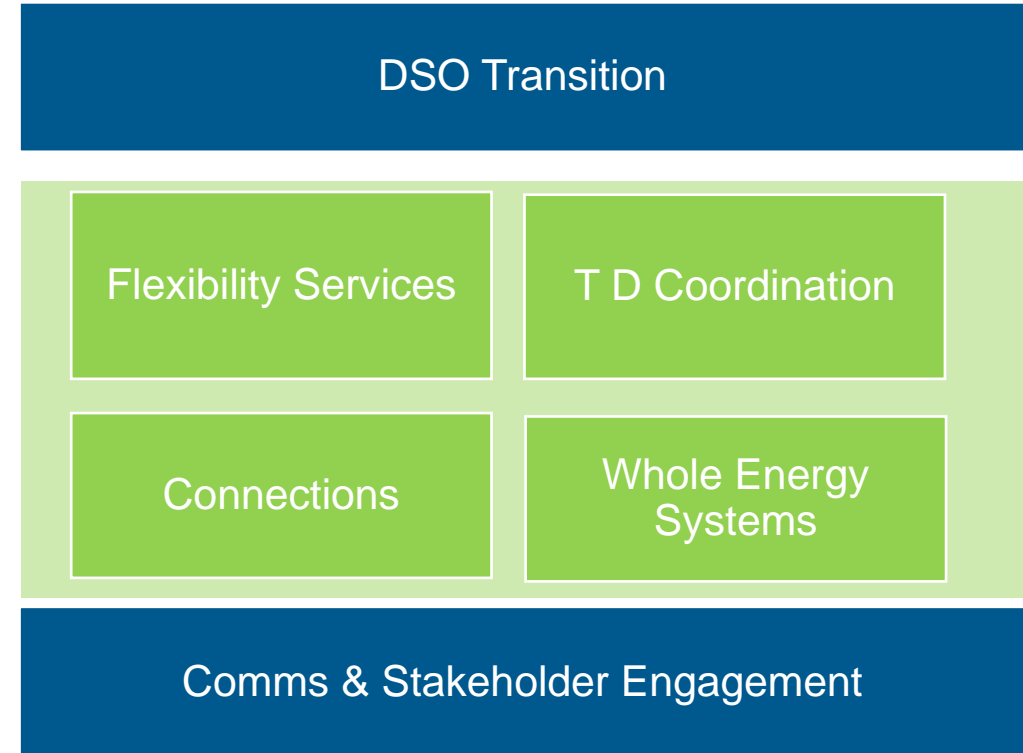
We are taking a 'learn-by-doing' approach; we are using innovation funding to trial and test aspects of the various future electricity system options to drive the key changes needed to transition to a Net Zero emissions smart grid.

A short animation on the Project can be found at: https://youtu.be/te_d34zldJ8

Areas of focus

Open Networks is delivering a smart Grid by:

- ✓ 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



Open Networks Approach



Flexibility Services

- ✓ Developing **transparency** and **standardised** approaches across DNOs flexibility procurement, delivering consistency with the ESO.
- ✓ Enabling **new markets and platforms** for flexibility (e.g. peer-to-peer trading).
- ✓ Reducing reliance on Flexible Connections and **Active Network Management** contracts.

2021 Products



T D Coordination

- ✓ Optimising existing processes and **data exchange** across T & D boundary.
- ✓ Improving **visibility of DER** for operational planning.
- ✓ Improved **data provision** for non-network stakeholders.

2021 Products

Future Energy
Scenarios (P2)

Network
Development
Process (P5)

Operational
DER visibility
and monitoring
(P6)

Operational
Data Sharing
(P7)

Customer Connections

- ✓ Delivering **improvements to customer connections process** and identifying further opportunities for consistency.
- ✓ **Improving information** available for customers to identify most suitable locations to connect

2021 Products

Embedded
Capacity
Register (P1)

Queue
Management
(P2)

Interactivity
(P3)

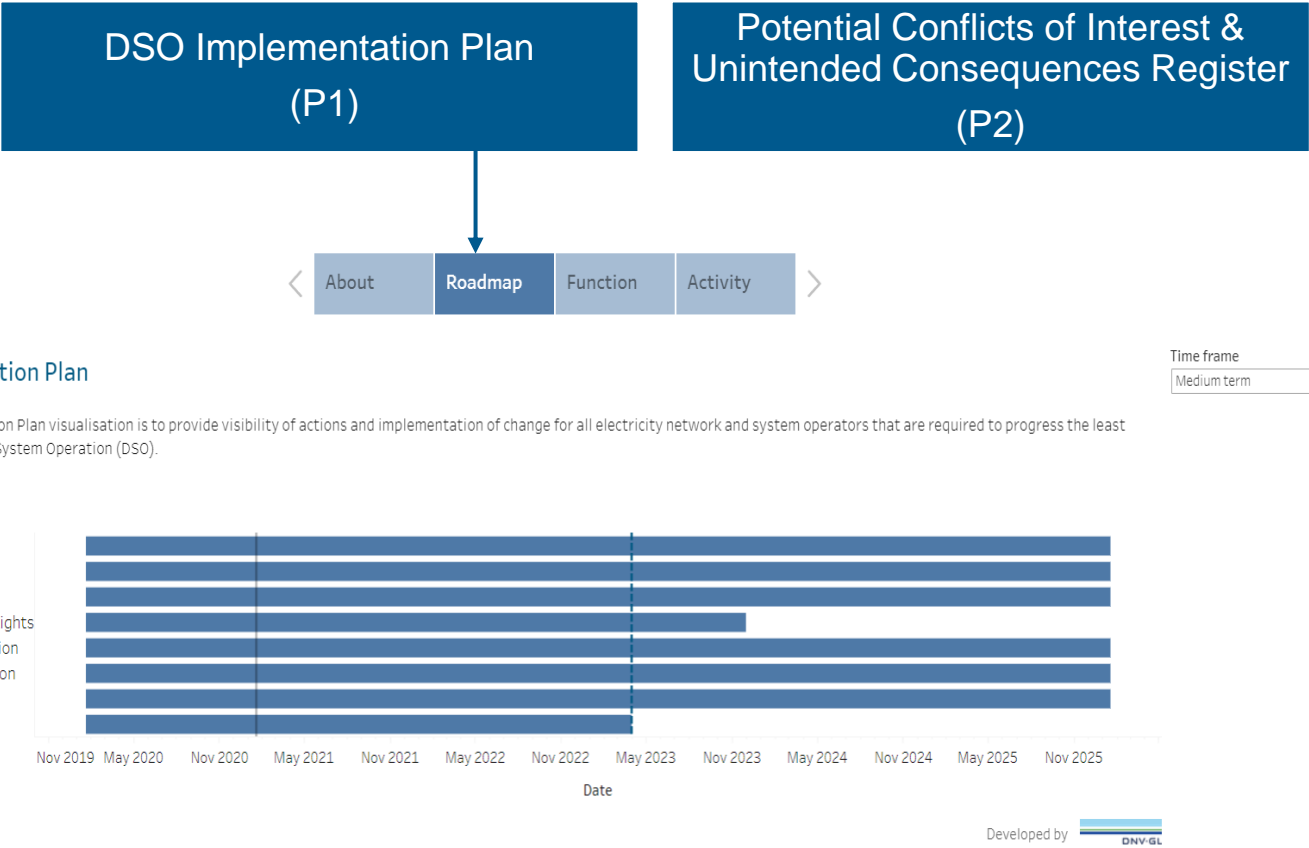
Connection
agreement
review (P4)

User
Commitment
Improvements
(P5)

See [Project Scope Document](#) for further details.

DSO Transition

Setting out a clear plan giving visibility of actions as well as key decisions that are required to progress the development and implementation of the least regrets pathway to Distribution System Operation.



The DSO Implementation Plan is an interactive tool that shows all the actions that networks companies are undertaking to progress the transition.

- ✓ Delivering benefits for customers and consumers by realising more cost-effective network investment and operation across the electricity and gas networks.

2021 Products

Whole System
CBA Framework
(P1)

Investment
Planning
(P4)

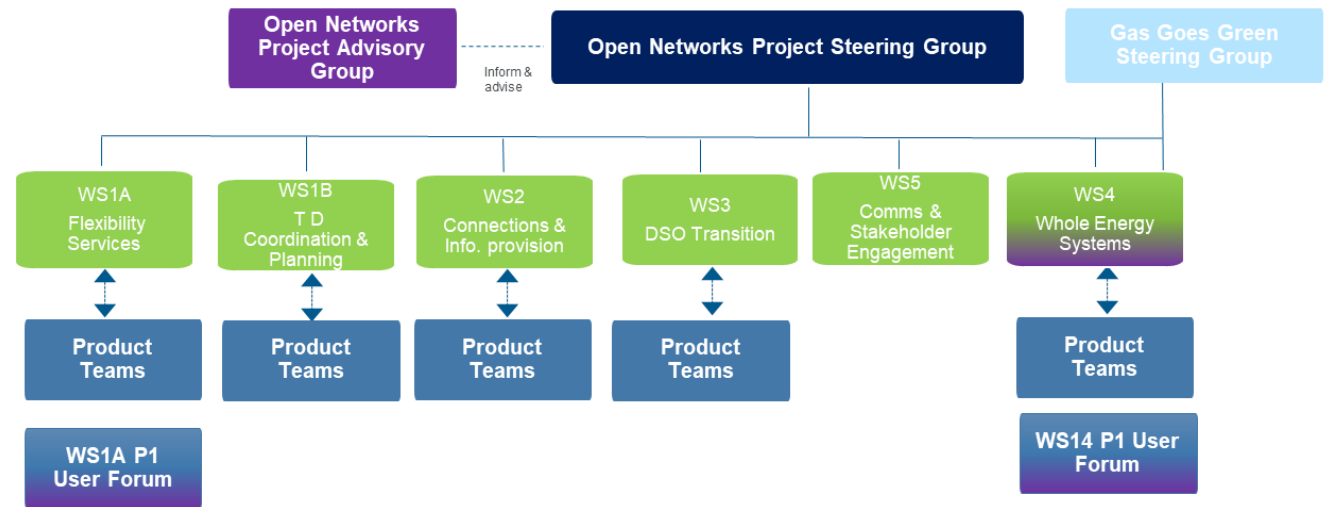
Coordinated
Gathering of
Regional Data
(P3)

Local Area Energy
Planning (P5)

See [Project Scope Document](#) for further details.

Stakeholder Engagement

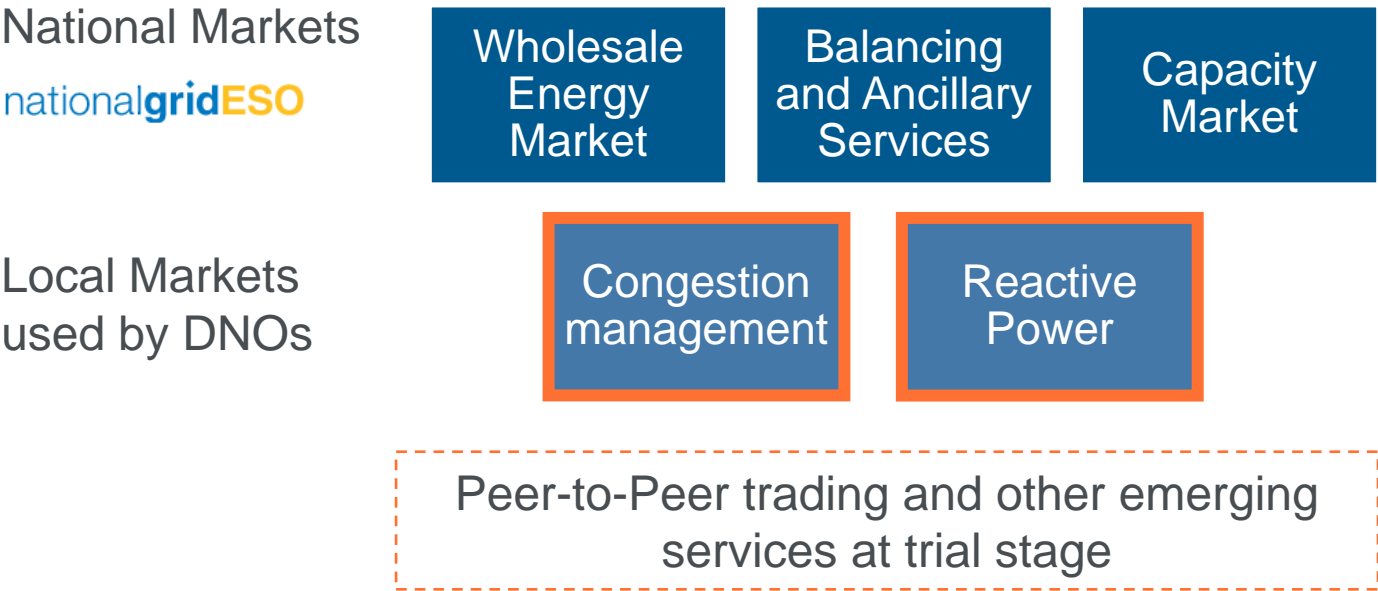
- Advisory Group Sessions
- User Forums
- Public Consultations
- Workshops and events with wider audiences
- Community Energy Forums



Visit our [events page](#).

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 Commitment

Britain's Networks have made a “Flexibility Commitment”; using cost-efficient flexibility to relieve network congestion

- ✓ Champion a level playing field
- ✓ Visibility and accessibility
- ✓ Conduct procurement in an open and transparent manner
- ✓ Provide clarity on the dispatch of services
- ✓ Provide regular, consistent and transparent reporting
- ✓ Work together towards whole systems outcomes



Local flexibility in Great Britain

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

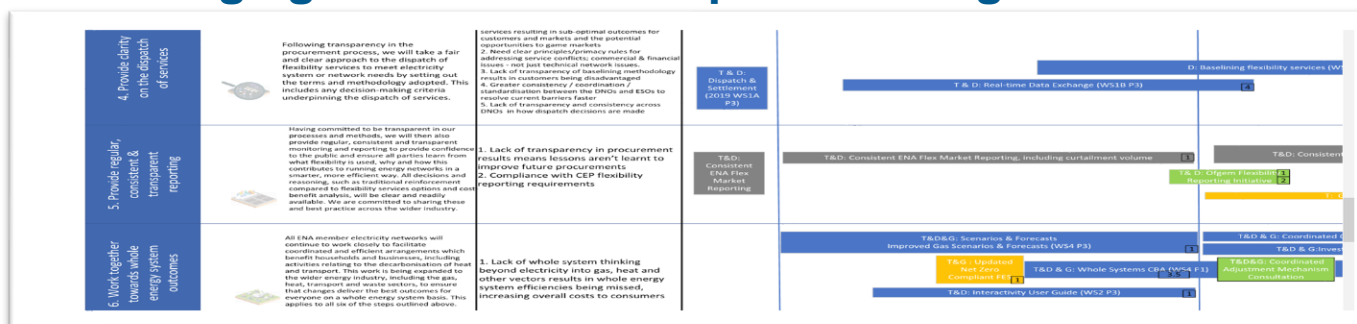
✓ Flexibility Statistics

| 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 |

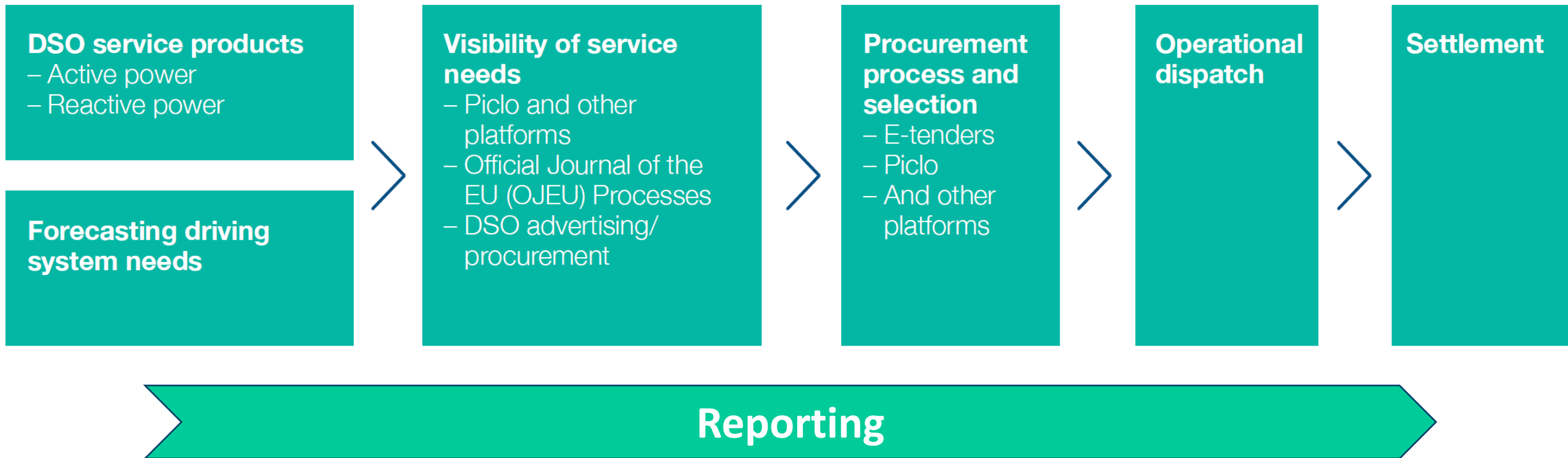
✓ Published Flexibility Roadmap which demonstrates how networks are delivering against their six steps to making these markets work in practice.

4 Real Power Products:

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



DSO Services – Process & Standardisation



Next Steps: Liquidity

- Increasing market size, but DNOs still not procuring all they need
- Constraints are geographical but.....
 - Innovation trials
 - Common products
 - Better visibility and ease of access
 - Standardised contractual terms
 - Non exclusivity
 - Consistent reporting and monitoring
 - Lower barriers to entry (eg: size)
 - Co-ordination with TSO and wider energy markets
 - Open Data
 -
 - **More stakeholder engagement & market co-ordination critical!**



Learn-by-doing: Flexibility Projects

- The UK Energy Networks take a learn-by-doing approach
- www.smarternetworks.org

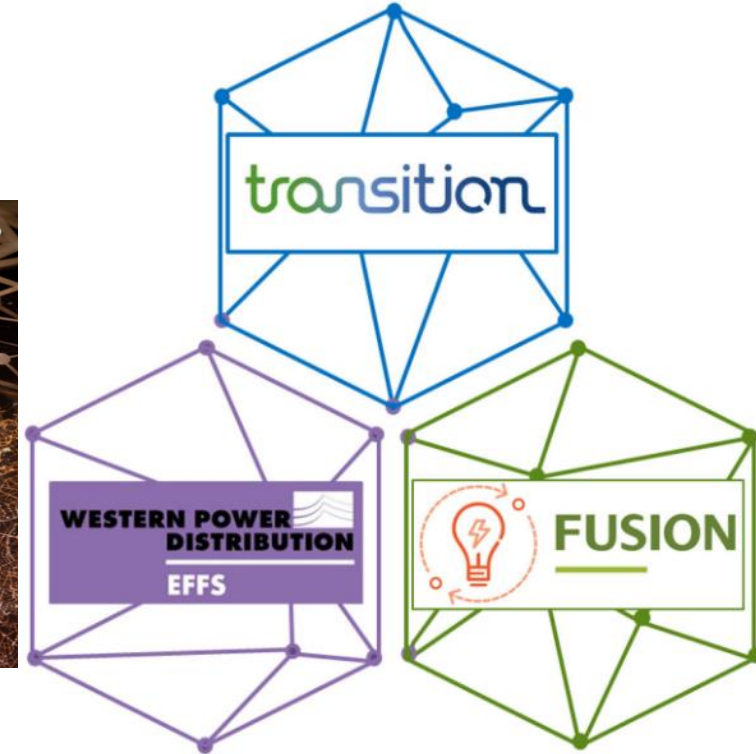


Cornwall Local Energy Market

centrica



piclo®



LE  **Local Energy
Oxfordshire**

Useful Links

**Project Scope
for 2021**

**2020 End of Year
report**

**Stakeholder
events &
supporting
material**

**DSO
Implementation
Plan**

We welcome feedback and your input
Opennetworks@energynetworks.org

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

To find out more, visit our [website](https://www.energynetworks.org) or email us on opennetworks@energynetworks.org.



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