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Summer Event

Wifi Network: Events@no6

***Simply log in to the network and it will automatically connect to the server – no password needed.**

11 June 2024

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Introduction

Vanessa Jones
ESO
Power Responsive Officer

Power Responsive Team

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Callum Wright
Power Responsive Manager

Calum McCarroll
Power Responsive Technical Delivery Lead

Boluwatife Adeyemo
Power Responsive Officer

Vanessa Jones
Power Responsive Officer

James Kerr
Power Responsive Engagement Lead

James Hill
Power Responsive Officer

Agenda

13:15	*5 mins*	**Welcome and introductions –** Vanessa Jones
13:20	*10 mins*	**Flexibility Overview –** Sarah Honan
13:30	*30 mins*	**Power Responsive Updates –** SAA Trial, Operational Metering and Internal Review, Flex Assure Roadshow - James Kerr and Will Gratton
14:00	*5 mins*	**DFS 2024/25 Update** – Rich Hanson
14:05	*10 mins*	**Constraints Collaboration Project** – Alifa Starlika
14:15	*10 mins*	**Short Break** Refreshments served in the lobby outside The Elizabeth Room

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Agenda

14:25	*10 mins*	**ESO Distributed Flexibility Strategy – Dave Phillips ESO**
14:35	*10 mins*	**Speaker from ENA – Helen Jarva**
14:45	*45 mins*	**Panel Session - Chaired by Sarah Honan with DSO's and ESO panel members** **"What do DSOs and NESO need to do to achieve NetZero?"** Lois Clark – ESO, Deirdre Macduff – SSEN, Gerry Boyd – SPEN, Matt Watson – NGED, Carol Choi – UKPN, Maurice Lynch – NpG
15:30	*25 mins*	**Q & A on the day's presentations** All speakers and ESO Staff
15:55	*5 mins*	**Reflections and Summary** Jon Wisdom - ESO
16:00- 18:00	*120 mins*	**Drinks, Canapes and Networking** Please join us….

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Flexibility Overview by Sarah Honan

Head of Policy, ADE

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Power Responsive Overview and Updates

James Kerr

ESO Power Responsive Engagement Lead

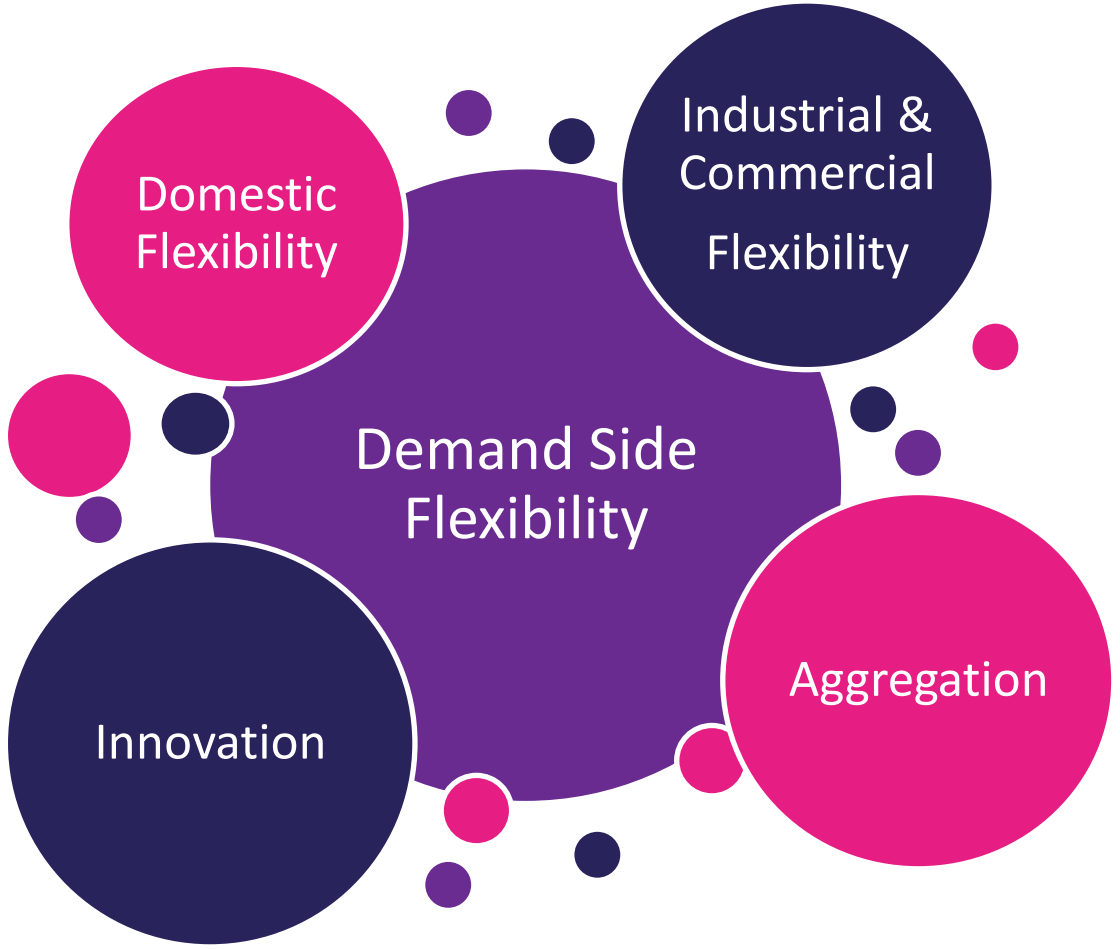
What is Power Responsive

Power Responsive has three visions for 2024 and beyond:

1. Remove barriers to entry for Demand Side Flexibility (DSF) in ESO Markets
2. Raise awareness of Demand Side Flexibility opportunities
3. Act as a voice for Demand Side Flexibility within the ESO and wider industry

Our work aims to:

- Positively impact Demand Side Flexibility
- Increases system stability and security
- Increase competition/create a level playing field
- Incentivise investment



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Engaging with our Stakeholders

EMEX - *November 2023*
Distributed Energy Show – *March 2024*
Steering Groups
Working Groups
Mailing List – *over 2000 subscribers*

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Building confidence

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Power Responsive - Operational Metering Standards Review

Will Gratton

ESO Senior Strategy Analyst

Roadmap

Operational Metering identified as a blocker for small-scale assets accessing the BM

Industry working group set up to assess more proportional operational metering standards

Case Studies – assessing impacts of measurement frequency and accuracy on metering feeds*

Independent Review – Instructing a 3rd party to recommend optimised operational metering standards

Time-limited trial established to understand how small-scale assets will behave in BM

300MW Enduring Derogation – Opening up the BM to small-scale aggregated assets

Case study results can be viewed in the ev.energy "Metering Matters" Report

300MW Enduring Derogation

A reminder

- Operational Metering derogation for units up to 1MW
- Open to 300MW, 50MW cap per provider & ringfenced volumes for both domestic and I&C
- Guidance note published online

We are live!

- 3 BMU's active - 1,000's of small-scale assets already operating in the BM
- Different consumer propositions and approaches to flexibility
- Conversations ongoing with many other providers

Challenges

- Registration processes
- Updating ownership and unit information
- Identifying best practises for operational processes e.g. data parameters, data accuracy

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DNV – Independent Review

Project Goals

1. Assess the feasibility of the current metering standard using a clear and transparent methodology
2. Recommend optimised operational metering standards for the Balancing Mechanism which:
   - allow NG ESO to continue meeting the SQSS with the current and forecasted energy mix
   - consider how providers with a diverse range of assets could meet the standards
   - consider learnings from regulations and processes used in Europe
3. Assess the practicalities of adopting the newly proposed standards
4. Engage with ESO and external stakeholders to support the findings

Key Contacts

DNV

- Principal Consultant Project Manager — Marellie Akoury-Shima
- Senior Consultant, Project Coordinator — Joseph Weston
- Subject Matter Expert in DER, Market Design, Electricity Markets — Hans de Heer
- Senior Consultant Subject Matter Expert in balancing services — Angeliki Gkogka

ESO

- Senior Strategy Analyst — Will Gratton
- Power Responsive Manager — Callum Wright
- Demand Side Flexibility Specialist — Calum McCarroll

How we will do it

WP1	WP2	WP3	WP4	WP5
Assess current metering requirements, asset capabilities, barriers	European TSO benchmarking, metering future requirements and capabilities	Change and Impact Assessment (IA)	Monitoring & Implementation	Recommendations and final reporting
Stakeholder Engagement: BM Asset Mapping and Grouping; Assess OM impact on SQSS; OM requirements feasibility	**Stakeholder Engagement:** Asset and Meter manufacturer interviews for roadmap understanding	**Stakeholder Engagement:** In depth impact assessment on the SQSS compromising 4 different assessments	**Stakeholder Engagement:** Assess practicalities of adopting recommendations across different asset types and providers e.g. processes, data requirements, communication systems.	**Stakeholder Engagement:** Present findings, lessons learned, and next steps
May - July	June - July	July - September	October - November	November - December

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Next Steps

Relaxed Metering Capacity for up to 300 MW of Small-scale aggregated asset (SAA) BMUs

Overseeing new units joining the BM under the Relaxed Metering Capacity (300MW) initiative.

Identifying and addressing challenges and risks

+

External Independent Review of operational metering standards

Commissioning and overseeing an external provider to review current metering standards and capabilities, recommending optimal operational metering standards and understanding how these could be implemented

Preparing the Balancing Mechanism for SAA BMUs

Evaluating and updating systems and processes across the BM/ESO to maximise the benefits of small-scale aggregated asset BMUs operating in the market.

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Demand Flexibility Service Update

Rich Hanson
ESO Flexibility Services Development Manager

Demand Flexibility Service (DFS)

Existing derogation for DFS expired on Tuesday 30 April 2024

Feedback questionnaire - 38 responses received to the DFS questionnaire – feedback calls took place

DNO meetings – views and ideas on future design of DFS

Review of the overall revenue proposal was the highest priority on average

Allow stacking with other services another key priority

Evolved DFS product to provide a route to market

Demand Flexibility Service (DFS)

- Today, we have published an End of Year report which contains a number of headline stats from Winter 23/24. It also covers topics including and overview of the service design, learnings, test analysis and industry feedback
- ESO have also launched an Initial Evolution Design Proposal – this can be found on the DFS website.
- Key Highlights:
  - Change from an enhanced action service to an in-merit margin service for peak demand
  - Unlock ability to stack with Capacity Market and DNO Flexibility Services.
  - Remove day-ahead dispatch option. Keep within-day only.
  - Remove requirement for asset meters to be associated to HHS boundary meters

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Constraints Collaboration Project

Alifa Starlika

ESO Senior Market Development Lead

Constraints Collaboration Project (CCP)

Power Responsive Summer Event 2024

June 2024

ESO

In January, we kicked off the Constraints Collaboration Project (CCP), looking for solutions for thermal constraints, which can be implemented and deliver results in the short term

Objectives

- Provide a platform where the ESO and industry can co-create new ways of addressing the costs of thermal constraints, focusing initially on the network boundaries with the highest volumes of thermal constraints as highlighted by the Electricity Ten Year Statement
- Assess a shortlist of market-based solutions using our market design framework
- Progress ideas that deliver significant consumer benefits to detailed scoping and delivery phase, with the intention to be introduced in the short term

For the ESO to progress any new market services, the solution needs to:

Reduce volume of constraints
- Increase effective network capacity: enable more green electricity to flow through the wires
- Reduce overall volume of ESO actions: send signals to lower constrained flows to reduce volume of constrained renewable generation

Reduce the cost of managing constraints
- Reduce overall costs to consumers: pay less for balancing actions to reduce £/MWh end-consumer pays

Feasible – within the ESO's scope

Quick – can be introduced < 5 years

Effective – reduces constraints costs

Overview of market-based solutions received from the industry

30 **Solutions Received**

50% Constraints Management Markets

27% Increasing how much can flow over boundaries

23% Other non market-based solutions

13 **Organisations submitted their solutions**

6 **Industry webinars held**

1

Constraints Management Markets

Instead of curtailing demand through the BM, non-BM generators can provide offers to turn down and demand can provide offers to turn up, thereby reducing the volume of constrained generation. These offers are made through a CMM and the markets can be run either in the short-term (D-1 or W-1) or long-term (Season ahead, Y-1, X).

1A

Demand for Constraints

Demand for Constraints incentivises new sources of demand, in the right locations, to use the excess electricity and reduce the volume of curtailment by reducing the cost of electricity in those locations.

1B

Constraints Management Markets – Long Term

Long-term Constraint Management Markets secure long-term flexibility through markets months or years ahead. This flexibility can be secured through firm contracts, options or availability. Each of these allow ESO to balance forecast confidence with the upfront commitment.

1C

Constraints Management Markets – Short Term

Short-term Constraint Management Markets could be used in to procure flexibility when there is some certainty over constraint forecasts. This is typically between week-ahead and real-time. This would probably be procuring firm response but could alternatively use availability or utilisation.

2

Increasing how much can flow over boundaries

The expansion of the intertrip scheme to reduce the volume of curtailment actions performed by ESO, as well as increasing the effective network capacity. Proposed solutions range from greater utilisation of flexible assets for import in ANM/GEMS zones and gradually increasing the Largest Infeed Limit to around 2 GW.

Ideas have been consolidated to determine five options for assessment

1. Constraints Management Markets (CMM)

1A. Demand for Constraints

- amp CLEAN ENERGY: Increasing demand for power in constrained areas for electrification of heat
- eneus energy: Flex PtX to produce green H_2 and related derivatives
- Statkraft: Demand signal product
- ScottishPower: Incentivising new discretionary demand (H_2 production and electricity storage)
- Flexitricity: 'COOLER HEATING' – commercial heat loads as responsive assets
- sse Business Energy: Long-term constraint management contracts (incentivising new demand)

1B. CMM – Long Term

- TEL the energy landscape: Constraints management markets (CMMs)
- SCOTTISH FUTURES TRUST: Long term contract to manage a portion of the forecast constraint volumes
- sse Business Energy: Competitively allocated season ahead constraint management availability contracts
- EDF: Long-term auction of excess wind

1C. CMM – Short Term

- ZENOBĒ: Pre gate closure constraint management product using scheme 7 trade
- sse Business Energy: Competitively allocated short-term constraint management contracts (D-7)
- EDF: Discounted demand turn up
- EDF: Weekly generation turn down market
- Flexitricity: The 'Big Friendly Battery' for long duration

2. Increasing how much can flow over boundaries

2A. Extended intertrip scheme

- FIELD: Extended intertrip scheme
- ZENOBĒ: Intertrip scheme utilisation
- sse Business Energy: Enhance utilisation of the transmission network
- Eku: Battery for constraints: Reducing the line rating from 10 to 3 mins

2B. Flexible assets to support capacity increase

- FIELD: Grid booster
- ZENOBĒ: Transfer booster
- Kona Energy: Paired storage systems across key boundaries
- ZENOBĒ: Flexibility for Active Network Management (ANM) zones and Generation Export Management (GEMS)

Key: Demand for Constraints | CMM – Long term | CMM – Short term | Increasing how much can flow over boundaries

ESO will undertake an Market Design Framework (MDF) assessment, which aims to assess the trade-offs between efficient dispatch, efficient investment and value for money

	Efficient Dispatch	Efficient Investment	Value for Money
Market Design Objectives	*Meets balancing service needs in real time using the optimal combination of supply and/or demand side resources*	*Gives investors sufficient certainty over revenues to obtain financing, ensuring future system requirements are met by the right technology mix in the right location*	*Selects outcome that are in the best interest of current and future customers*
Market Design Principles	Competition (Short Run)	Competition (Long Run)	Net Consumer Benefits / Least Cost*
	Locational Signals in Dispatch	Locational Signals in Investment	Practicality / Deliverability
	Coherency		Adaptability
	Transparency		
	Whole Energy System Flexibility		
		Investability	
Constraints	***We are looking for market-based solutions that can be implemented and deliver results in the short term (<5 years)***		

*To be assessed by an external consultant

Key: Efficient Dispatch; Efficient Investment; Value for Money; Potential Prioritised criteria

Next Steps

- Finalise our assessment of each option and recommended actions
- Share with stakeholders via a webinar mid-July
- Kick-off any follow-on actions/projects summer ‘24

For more information, please visit our webpage: https://www.nationalgrideso.com/industry-information/balancing-services/thermal-constraints-collaboration-project

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Break

Return at 14:25

To submit a question, go to *Sli.do* in your browser

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Flexibility Strategy Update

Dave Phillips

ESO Flexibility Strategy Lead

Call for Input on ESOs Flexibility Markets Strategy

Please feed back before 28th June

ESO

Strategy Map

Below is the complete overview - how our strategy fits together to achieve our 2035 Mission, founded on established industry principles

2035 Mission

Transforming to a fully decarbonised electricity system which is reliable, affordable and fair to all

Our vision

Enabling all flexibility resources to move seamlessly between markets, driven by effective market signals, delivering whole electricity system value to consumers

2029 Outcomes

What must we achieve?

- A level playing field and inclusive markets to maximise **competition** between all types of flexible resources
- **Coordinated** flexibility markets across Great Britain
- Fit for the future, **coherent**, market arrangements

Workstreams

Which are the actions that will help us achieve these outcomes?

- 5-Year strategy development
- Barriers & pain points identification & removal
- Standardization across all GB flexibility markets
- Coordination with DSOs
- Paving the way for Future Market Arrangements
- Transform GB flexibility markets digital infrastructure

Principles

Which is our approach while designing the strategy?

- Deliver in partnership
- Consumer value driven
- Digital first mindset
- Transparent at every stage
- Technology inclusive
- Be flexible and adaptable
- Encourage innovation and creativity

Routes to Market Review for Demand Side Flexibility

Summary

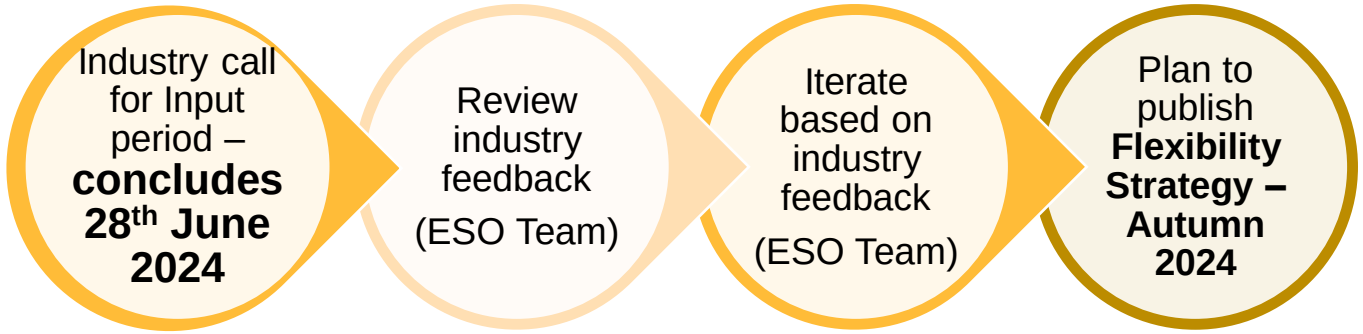
Demand Side Flexibility Archetypes			Static Fast Frequency Response	Dynamic Containment	Dynamic Moderation	Dynamic Regulation	STOR	Fast Reserve	Quick Reserve	Slow Reserve	Balancing Reserve	Local Constraint Market	Demand Flexibility Service	Balancing Mechanism
Consumer	Route to market provider	Flexible asset type												
Domestic	Supplier	Behavioral	●	●	●	●	●	●	●	●	●	●	●	●
		EV	●	●	●	●	●	●	●	●	●	●	●	●
		Battery & Solar	●	●	●	●	●	●	●	●	●	●	●	●
		Heat	●	●	●	●	●	●	●	●	●	●	●	●
	Independent VLP Aggregator	Behavioral	●	●	●	●	●	●	●	●	●	●	●	●
		EV	●	●	●	●	●	●	●	●	●	●	●	●
		Battery & Solar	●	●	●	●	●	●	●	●	●	●	●	●
		Heat	●	●	●	●	●	●	●	●	●	●	●	●
	Non VLP Aggregator	Behavioral	●	●	●	●	●	●	●	●	●	●	●	●
		EV	●	●	●	●	●	●	●	●	●	●	●	●
		Battery & Solar	●	●	●	●	●	●	●	●	●	●	●	●
		Heat	●	●	●	●	●	●	●	●	●	●	●	●
Industrial & commercial	Supplier	Fleet EV	●	●	●	●	●	●	●	●	●	●	●	●
		Large consumer scheduled flex	●	●	●	●	●	●	●	●	●	●	●	●
		Large consumer interruptible flex	●	●	●	●	●	●	●	●	●	●	●	●
		Small & medium enterprise scheduled flex	●	●	●	●	●	●	●	●	●	●	●	●
		Small & medium enterprise interruptible flex	●	●	●	●	●	●	●	●	●	●	●	●
		"Behind the meter" Battery, Solar &/or Wind	●	●	●	●	●	●	●	●	●	●	●	●
		District heating	●	●	●	●	●	●	●	●	●	●	●	●
	Independent VLP Aggregator	Fleet EV	●	●	●	●	●	●	●	●	●	●	●	●
		Large consumer scheduled flex	●	●	●	●	●	●	●	●	●	●	●	●
		Large consumer interruptible flex	●	●	●	●	●	●	●	●	●	●	●	●
		Small & medium enterprise scheduled flex	●	●	●	●	●	●	●	●	●	●	●	●
		Small & medium enterprise interruptible flex	●	●	●	●	●	●	●	●	●	●	●	●
		"Behind the meter" Battery, Solar &/or Wind	●	●	●	●	●	●	●	●	●	●	●	●
		District heating	●	●	●	●	●	●	●	●	●	●	●	●
	Non VLP Aggregator	Fleet FV	●	●	●	●	●	●	●	●	●	●	●	●
		Large consumer scheduled flex	●	●	●	●	●	●	●	●	●	●	●	●
		Large consumer interruptible flex	●	●	●	●	●	●	●	●	●	●	●	●
		Small & medium enterprise scheduled flex	●	●	●	●	●	●	●	●	●	●	●	●
		Small & medium enterprise interruptible flex	●	●	●	●	●	●	●	●	●	●	●	●
		"Behind the meter" Battery, Solar &/or Wind	●	●	●	●	●	●	●	●	●	●	●	●
		District heating	●	●	●	●	●	●	●	●	●	●	●	●

Key:

- ● Not aware of any insurmountable barriers
- ● Barriers are likely blocking some of the market
- ● Barriers are stopping all of the market
- ● Not capable of participating in service

Your involvement

Details of the Flexibility Markets Strategy and our questions to you are contained within the Call for Input pack on our website, alongside a supporting video to help guide you through the document. Following your review, we would appreciate your time in filling in our short questionnaire.



We are open to 1-1 sessions with interested parties, please email us at flexibilitystrategy@nationalgrideso.com with your questions and availability.

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Speaker from Energy Networks Association

Helen Jarva

Programme Manager

ENA's Open Networks programme

DNOs and ESO working together for a flexible energy system fit for a net zero future

Helen Jarva
Open Networks Programme Manager

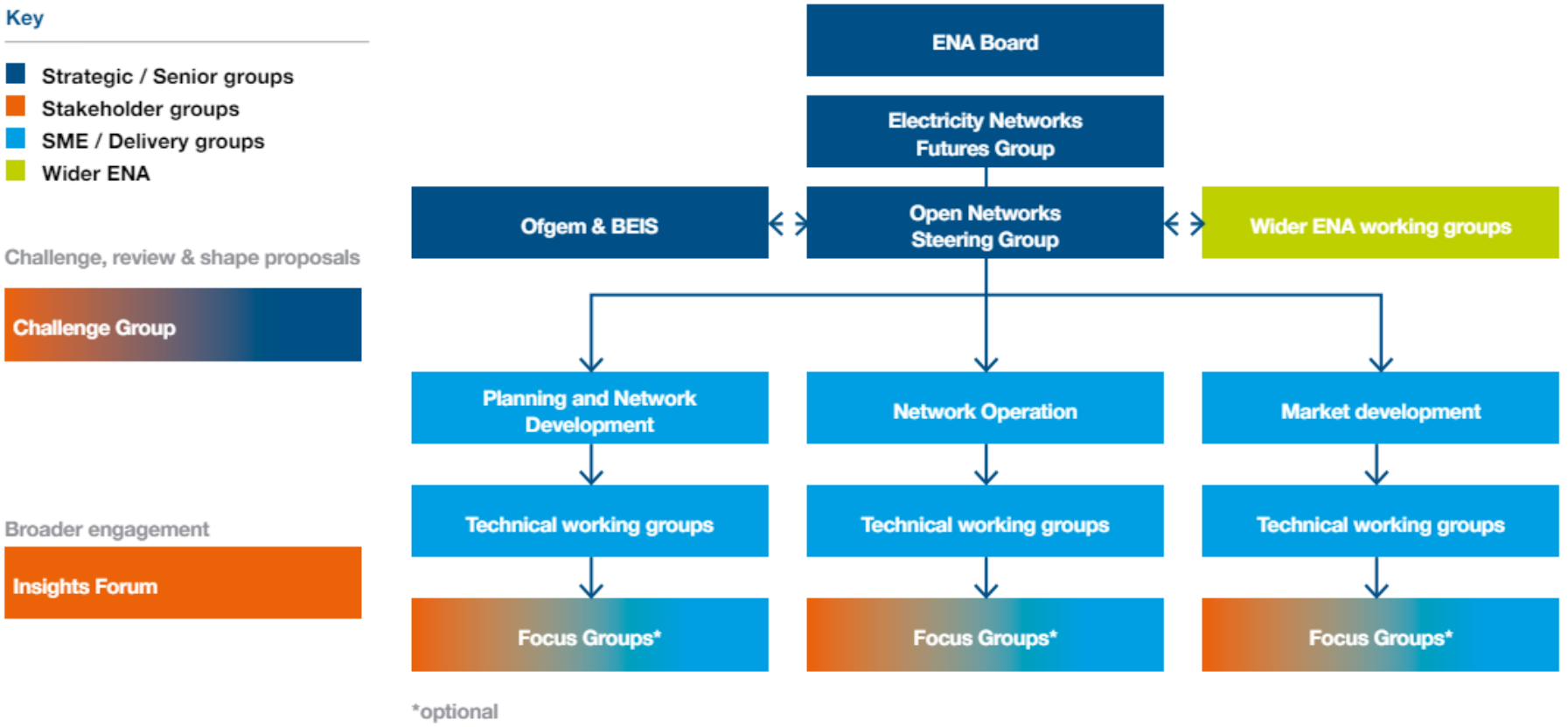
Our mission

In line with actions from the Ofgem and DESNZ Smart Systems and Flexibility Plan (2021), we are focused on:

1. Making it easier for flexibility service providers to participate in the market by standardising products, processes and contracts
2. Improving operational coordination between networks and providers to remove barriers to the delivery of flexibility services
3. Improve the transparency of network processes, reporting and decision-making.

Flexibility could save consumers £10bn per year in energy costs by 2050 and reduce the total cost of the net zero transition by up to £70bn.

Collaborative governance



Increasing participation in the market

Focus area	Outcome	Definition of implementation	Impact for stakeholders
Making it easier for flexibility service providers to participate	Standardisation of flexibility products	80% of total volume of flexibility tendered by DNOs will be with common products having common technical specifications, excluding market testing flexibility products that have not been formally standardised under trial/ innovation projects	Flexibility providers are able to identify which services they're best placed to offer, based on a limited number of standardised DSO flexibility products.
	Standardisation of pre-qualification	All DNOs request standard data for technical and commercial pre-qualification for distribution flexibility services	Simplified and standardised pre-qualification process will ensure easy sign-up to DSO flexibility markets and a consistent user experience across the country.
	Standardisation of flexibility contracts	All DNOs use the same version of the standard agreement using common T&Cs and schedule headings for local flexibility tenders and specific ESO services (where applicable) for contracts awarded	Flexibility providers will have minimal legal costs in engaging with the market through standard agreements across all DSO and relevant ESO flexibility services, moving towards a framework arrangement.
	Standardisation of dispatch API	All DNOs adopt common API specification for dispatching flexibility	DSO flexibility market platforms will provide an optimal end-to-end experience, saving flexibility service providers from needing to develop multiple interfaces.
	Standardisation of settlement process	All DNOs use a common settlement approach for delivery of local flexibility services	Flexibility providers will have visibility of a transparent and consistent methodology by which payments are calculated following provision of local flexibility services.

Improving operational coordination

Focus area	Outcome	Definition of implementation	Impact for stakeholders
Improving operational coordination between networks and companies	Implementation of primacy rules	All DNOs and ESO implement processes and information flows for increment 2 rules	Clear and consistent rules to manage conflicts arising within and across flexibility markets will help service providers improve their DSO flexibility offerings, whilst ensuring secure operation of the networks.
	Harmonisation of data shared between DNOs and ESO	Consistent bilateral operational data exchange between DNOs and ESO	Consistency of data sharing between DNOs and ESO ensures more robust forecasts and processes that will directly contribute to improving flexibility market operation.
	Harmonise DER visibility information	All DNOs use consistent Distributed Energy Resources (DER) visibility specifications and/or appropriate code mods are triggered	Requirements for new DER connections will be streamlined and network visibility will be improved through the consistent information flow from DER to DNOs.

Improving transparency of processes and decision making

Focus area	Outcome	Definition of implementation	Impact for stakeholders
Improving the transparency of processes and reporting	Consistent Network Development Plans (NDP)	All DNOs use consistent reporting format for Network Development Plans	Stakeholders are informed of major developments over a one to ten year time-frame with sufficient detail to aid their planning and forecasting activities.
	Consistent carbon reporting	All DNOs use a consistent format to report carbon impacts in the Distribution Flexibility Services Procurement Report, as part of SLC31E (this is a further refinement of the methodology implemented in 2023)	Customers will have visibility of local flexibility market carbon intensity across GB networks, reported through a consistent and transparent methodology.
	Sharing pre-SCR curtailment information	All DNOs provide consistent and accessible curtailment information for ANM-enabled flexible connections pre-SCR (Significant Code Review)	Customers under flexible connections have accurate and consistent curtailment information allowing them to forecast their business plans and improve participation in flexibility markets.

What's next for Open Networks

Publishing an update to the Open Networks website, making the content of our work more accessible and offering transparency of implementation by individual network companies

Launching a new website for flexibility service providers, offering key information about participating in the market and standards developed by Open Networks

Working with Ofgem's appointed flexibility market facilitator for continued market coordination

Publishing the 2024 GB flexibility figures, including a technology break up to show the split of renewables and non-renewables

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Panel Session: Chaired by Sarah Honan

“What do DSOs and NESO need to do to achieve NetZero?”

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Panellists today…..

Carol Choi

Flexibility Markets Developer

UKPN

Deirdre Macduff

Network Access Manager

SSEN

Gerard Boyd

Head of Flexibility

SPEN

Lois Clarke

Flexibility Market Development Manager

ESO

Matt Watson

Head of Commercial and Operability

NGED

Maurice Lynch

Head of System Flexibility

NpG

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Q & A – a chance to follow up on anything you have heard today

To submit a question, go to *Sli.do* in your browser #PowerResponsive

The Q & A will be recorded but not published

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ESO Colleagues supporting today

Louise Trodden
Markets Customer and Stakeholder Strategy Manager

Alistair Fox
Distributed Flexibility Strategy Lead

Anthony Simpson
Policy and Engagement Senior Analyst

Ben Young
Head of Power Systems

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Feedback survey – how did we do?

Power Responsive Summer Event 2024

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Reflections and Close

Jon Wisdom

ESO Head of Market Change Delivery