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Welcome to the Power Responsive Autumn Event 2025

NESO
National Energy System Operator

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Welcome & introduction

Vanessa Jones

Power Responsive Officer

NESO

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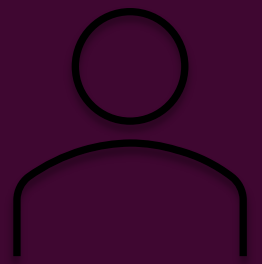
NESO staff

Vanessa Jones
Power Responsive Officer



Calum McCarroll
Technical Lead

Kayte O'Neill
Chief Operating Officer

Rebecca Beresford
Director of Markets

Jon Wisdom
Head of Market Change Delivery

Liz Hamer
Balancing Services Market Development Officer

James Kerr
Engagement Lead

Callum Wright
Power Responsive Manager

Becky Hart
Head of Flexibility & Electricity Market Development

Damien Kelly
Distributed Flexibility Strategy Lead

Edwin Tammas-Williams
Ancillary Service Development Manager

Nigel Talboys
Balancing Services Market Development Officer

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Agenda

Keynote Kayte O'Neill, COO – NESO

DESNZ update Yusuf Yeniturkogullari, Head of Non-Domestic Consumer-Led Flexibility, DESNZ

Ofgem update Dr Nina Klein, Flexibility Policy Expert, Ofgem

Market Facilitator Steven Gough

Demand Side Flexibility Routes to Market Review Damien Kelly, NESO

Demand for Constraints Becky Hart, NESO

- BREAK -

Power Responsive round up, including operational metering James Kerr & Calum McCarroll, NESO

Local Constraints Market update Adam Roston, Piclo

Demand Flexibility Service Liz Hamer, NESO

Q&A Panel

- Networking drinks until 6pm-

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Keynote

Kayte O’Neill

Chief Operating Officer

NESO

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Department for Energy Security and Net Zero

Yusuf Yeniturkogullari

Head of Non-Domestic Consumer-Led Flexibility

DESNZ

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Ofgem udpate

Dr Nina Klein

Flexibility Policy Expert

Ofgem

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Agenda

1. Clean Flexibility Roadmap

2. Market Facilitator
3. Flexibility Digital Infrastructure (FDI) & Flexibility Market Asset Registration (FMAR)
4. Smart, Secure Electricity Systems (SSES)

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Clean Flexibility Roadmap

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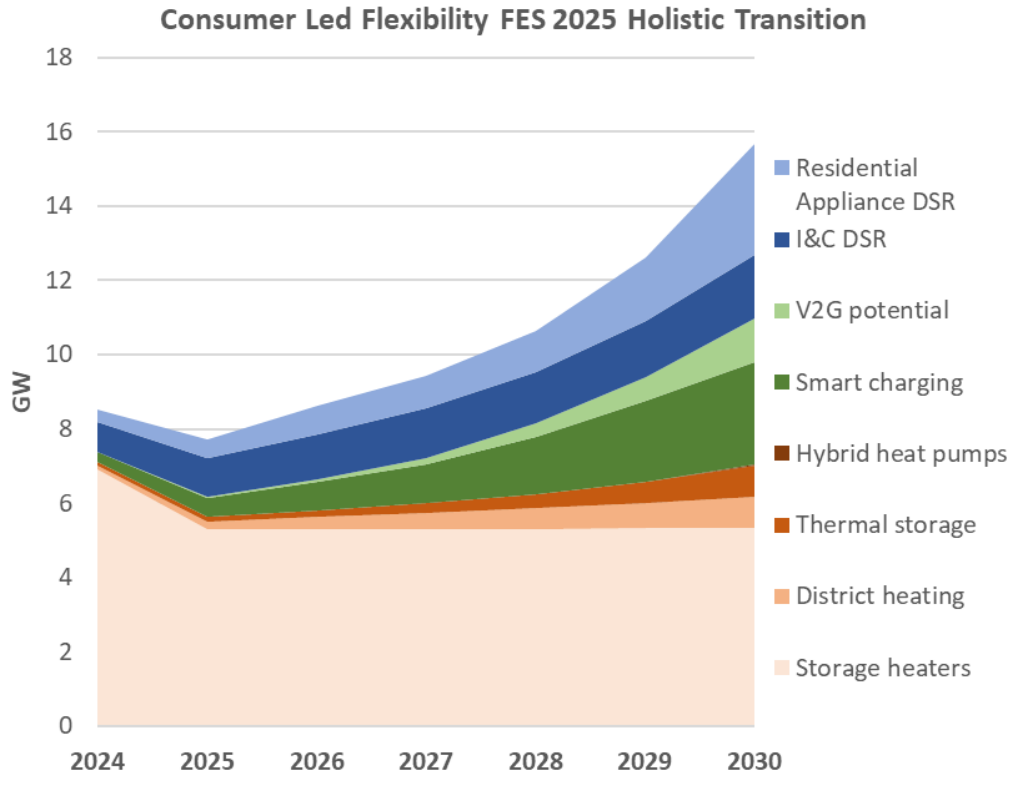
Consumer Led Flexibility – CP2030 & Roadmap

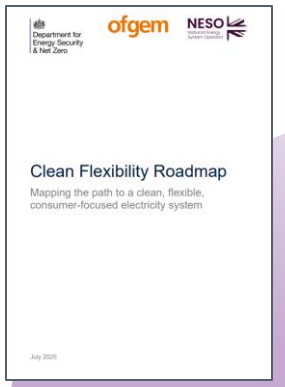
Clean Power 2030 targets a **step change in consumer flexibility** to provide a substantial **14-16 GW** contribution, a **x4-5 increase**.

- Large contribution from **EV smart charging**, and Industrial & Commercial loads, also **residential appliances** driven by MHHS
- Retain ~5 GW of **storage heaters**
- Emerging **V2G** but limited **heat pump** deployment by 2030



The **DESNZ, Ofgem and NESO** Clean Flexibiltiy Roadmap provides **50 key actions to deliver flexibility** for 2030 and beyond

- An ongoing governance mechanism will track progress and develop new actions, closely engaging industry leaders and government ministers



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Roadmap – Ofgem CLF actions

By 2027/28 we will have achieved good alignment and access in NESO and DSO markets for consumer flex, and also Wholesale market improvements.

Market Facilitator (MF)

- standardising and aligning NESO and DSO markets, appointed to Elexon
- target to align NESO/DSO by early 2028, and consider Wholesale in 2028/29

Flex Market Asset Registration (FMAR/FDI)

- common IT systems across NESO and DSO markets to improve access
- ESO/DSO FMAR to be deployed by mid-2027, and explore Wholesale/CM opportunities in future

SSES Aggregators

- licencing aggregators so consumers and the grid are protected when flexing
- licence applications open September 2026 and in effect from September 2027

Wholesale Market

- **MHHS/SMIP** crucial enablers, and CC/SSES support participation
- Now open to **Independent Aggregators** (P415) and code mod (**P483** HHS) **will expand access** by 2025/26
- Market Facilitator to consider alignment in 2028/29

Other Market reforms

- Review **Demand Turn Up**, considering its whole system value, barriers, and possible solutions
- Review how **suppliers, aggregators** and other third parties **interact**

Consumer Consent & Data Best Practices

- **one-stop-shop for consumers** to grant access to data and smart appliances; initially covering consumption data by 2026/27, but can expand in future
- **Data is presumed open** unless otherwise specified. This is to address the increasing complexity of decentralization.

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Market Facilitator

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Market facilitator

Background

- A new single, expert, **independent entity** responsible for and aligning **DSO and NESO markets**
- Governed by Ofgem and **delivered by Elexon**, with NESO and DSOs required to implement outputs

Recent progress

- BSC modifications to give role to Elexon, Ofgem decisions on policy frameworks, ENA Open Networks transition
- **Ofgem "blueprint" consultation** on draft governance framework document, impact assessment and NESO/DSO licence conditions (closed)
- **Elexon consultation** on governance documents, day 1 Flexibility Market Rules, and **1st Delivery Plan (31st October)**

Forward Plan

- **Ofgem "blueprint"** response analysis and **decision publication in December**
- **Market Facilitator "go live" by end of 2025** and 1st Delivery Plan Jan 2026 – March 2028 with objective to align market arrangements where there is system benefit, subject to scope/remit

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Flexibility Digital Infrastructure (FDI) & Flexibility Market Asset Registration (FMAR)

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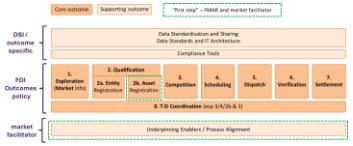
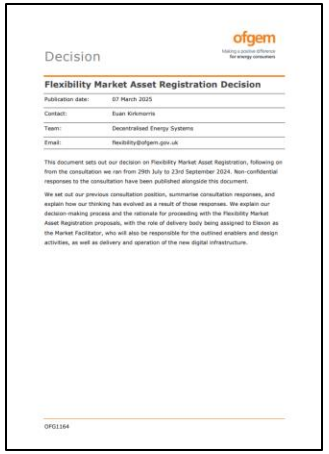
Flexibility Digital Infrastructure (FDI) & FMAR

Background

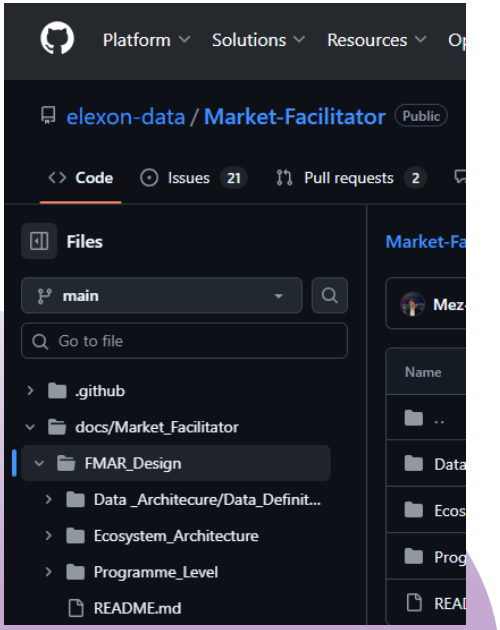
- Maximise CER/DER participation in **NESO/DSO markets** though **common digital infrastructure**, to avoid FSPs entering the same data multiple times across different platforms and support NESO/DSO coordination
- **Flexibility Market Asset Registration (FMAR)** was the first policy intervention, with the **market facilitator** appointed to deliver a **"single source of truth" for asset data**
- **Flexibility Digital Infrastructure (FDI)** policy covers the **overall topic area**





Recent progress

- DESNZ NZIP innovation projects, Automatic Asset Registration (AAR) and Flex Markets Unlocked (FMU), completed in March 2025
- **Ofgem** "Blueprint" consultation on **FMAR performance assessment framework**
- **Elexon FMAR technical design** stakeholder workshops Jul – Dec 2025 and public GitHub
- **Ofgem FDI policy workshop** considering common IT for other flexibility market steps



Forward Plan

- Ofgem **decision** on **FMAR performance framework** in **December**
- Elexon consultation on **FMAR detailed design in early 2026** and expected **go-live in mid 2027**
- Ofgem **FDI open letter** on policy position for other common IT (or not!) in **November**

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Flexibility Digital Infrastructure (FDI) & FMAR

Core outcome

Supporting outcome

"first step" – FMAR and market facilitator

DSI / outcome specific

Data Standardisation and Sharing
Data Standards and IT Architecture

Compliance Tools

FDI Outcomes policy

1. Exploration (**Market** Info)

2. Qualification

2a. Entity Registration

2b. Asset Registration

3. Competition

4. Scheduling

5. Dispatch

6. Verification

7. Settlement

0. T-D Coordination (esp 3/4/2b & 1)

market facilitator

Underpinning Enablers / Process Alignment

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Smart, Secure Electricity Systems (SSES)

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Smart, Secure Electricity Systems (SSES)

Background

- SSES regime supports **consumers with energy smart appliances (ESAs)**, increasing consumer **confidence** and supporting **innovation**
- The DESNZ led, Ofgem supported programme covers:
  1. **Load Control Licence –** developing the implementation approach for a regime to licence load controllers
  2. Regulation of ESAs
  3. Tariff Data Interoperability

Recent progress

- Analysis of June 2024 consultation responses with DESNZ, and held a series of **licencing working groups** over summer 2025
- Currently finalising policy intent and **drafting licence conditions**

Forward Plan

- **SSES consultation package** covering licence conditions, statutory instrument, and proposed implementation approach by **end of 2025**
- **Licence** application window will **open in Sep 2026**, Licence will be granted and **in effect from Sept 2027**
- **ESA regulations** phased implementation: Phase 1 **mid-2026-27** (minimum requirements) and Phase 2 **late-2028-29** (designated standards)

Traditional Energy Suppliers

New Independent Aggregators

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Smart, Secure Electricity Systems (SSES)

Single SSES Licence

	1) Flexibility Service Provider (FSP)	**2) Load Controller**	
Licensable Activities:	Contracting with **domestic or small non-domestic** consumers for services including **load control** of certain **ESAs**	**Load control** of certain **ESAs** in **domestic or small non-domestic** settings with aggregated maximum potential load of **<300MW**	**Load control** of certain **ESAs** with aggregated maximum potential load of **≥300MW**
Energy Smart Appliances in scope	• EVs • EV charge points in all domestic & non-domestic settings • Heating Technologies under Smart Mandate • Battery Energy Storage Systems (BESS)		
Licence Conditions (phase 1 of licence)	• Management & Financial Controls • General conditions • Enduring Governance (industry code)		
	Consumer Protection • Treating consumers fairly • Recommending suitable services **Consumer Switching** • Exiting an FSP service • Exit fees	Require compliance with • **Cyber Assurance Framework (CAF)** • Grid stability • Industry codes	Require adherence to • CAF and **Network and Information Systems (NIS)** Regulations • Grid stability • Industry codes

Expected licensees : initially around 30 licensees (FSPs and Load Controllers; including suppliers delivering these services).

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Annex

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Clean Power 2030

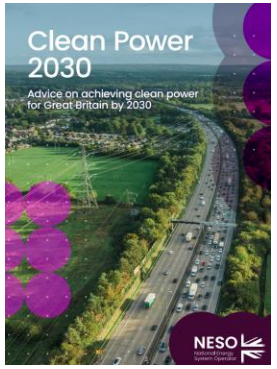
*"We will usher in a new era of clean electricity for our country, with our plan to deliver the **most ambitious reforms to our energy system in generations**." Energy Secretary of State*

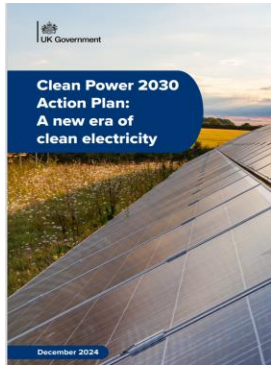
Government target for a **95% clean generation** energy system by 2030

- requires capacity **increases of over 100GW** across renewable generation and flexibility technologies

NESO independent advice and **Government action plan across** multiple areas

- system planning, electricity networks, generation technologies, market reforms, flexibility technologies, supply chains

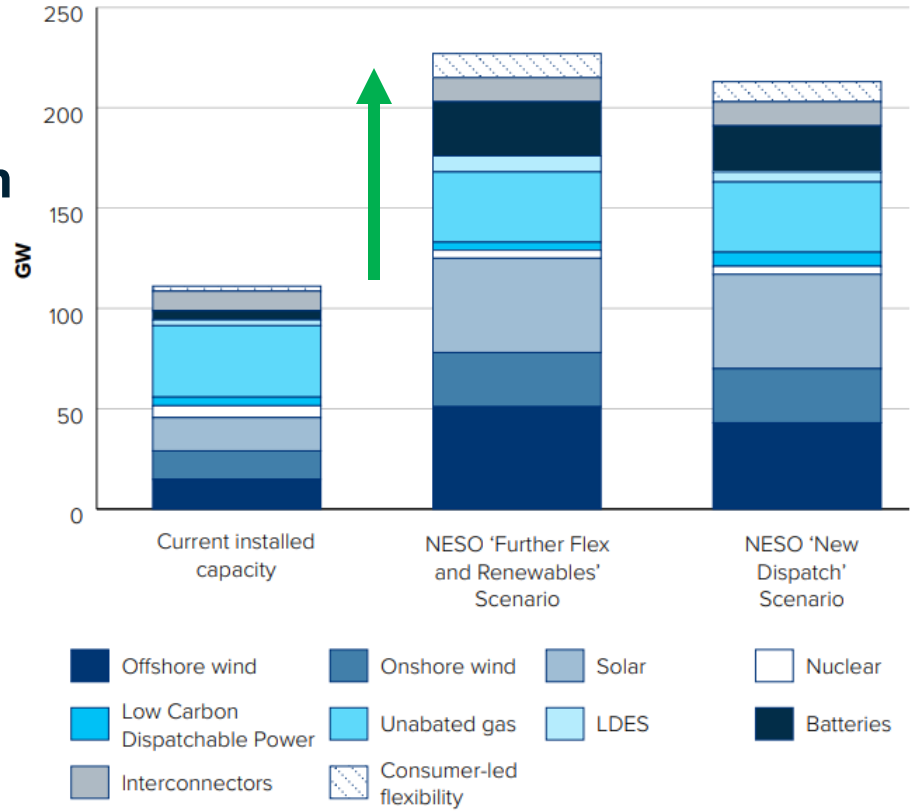




NESO Clean Power 2030 Advice (Nov 24)

DESNZ Clean Power 2030 Action Plan (Dec 24)

Figure 6: Installed capacity in 2030 in the NESO 'Further Flex and Renewables' and 'New Dispatch' scenarios, compared to current installed capacity (GW)



Note: Numbers for this visual can be found in Table 1

Source: Table 1 and NESO (2024), 'Clean Power 2030'

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Market Facilitator

Steven Gough

Head of Flexibility

Elexon

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Delivering Elexon's flexibility vision

Steven Gough
Head of Flexibility, Elexon

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Delivering the Flexibility Vision

Enabler 1:

Market standardisation and coordination

Unified onboarding, aligned baselining, common processes by 2028

Enabler 2:

Flexibility Market Asset Registration (FMAR)

Central register of assets, integrated with smart meter data

Enabler 3:

Empowering consumers

Market-wide Half-Hourly Settlement from Oct 2025

P483 going live in November 2025. Allows 345,000 households to offer flex in advance of being moved to half-hourly settlement

Enabler 4:

Data and digital infrastructure

Smart Data Repository, real-time dispatch, consent-as-a-service

Enabler 5:

Market reform and promotion of flexibility to consumers

Enabler 6:

Agile, consumer-focused governance

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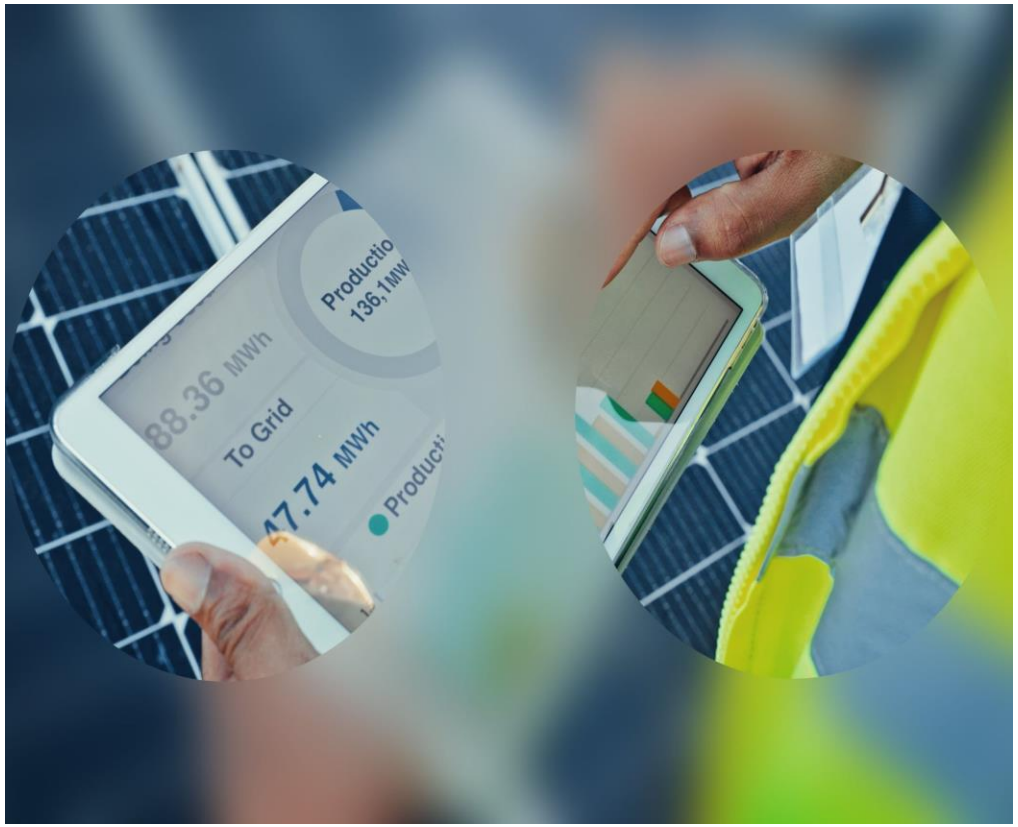
The market facilitator role

As market facilitator Elexon will:

- **Align** more than 20 local and national flexibility markets
- Make the markets more **open, coordinated** and **transparent**
- Make sure that the markets provide an environment for **rapidly scaling** up trading of flexibility
- Deliver the Flexibility Market Asset Registration solution in 2027



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The market facilitator role in practice

Strategic Leadership	Market Coordination	Implementation Monitoring
• Horizon scan for upcoming challenges and opportunities	• Develop Flexibility Market Rules in line with the delivery plan	• Track implementation of Flexibility Market Rules across DNOs and NESO
• Provide strategic and expert advice to Ofgem / DESNZ where a barrier has been identified	• Input into NESO's service design at an early stage	• Escalate implementation issues to Ofgem
• Create a two-year delivery plan and an annual delivery schedule	• Input into NESO's market design framework to support alignment	• Input into the NESO performance assessment process and DNO incentive process
• Proactively identify barriers to flexibility	• Facilitate open and transparent discussions with stakeholders in developing Flexibility Market Rules	• Assess the effectiveness of Flexibility Market Rules, services and processes
• Engage effectively with stakeholders at all levels of flexibility markets	• Maintain an updated Flexibility Market Catalogue in a publicly accessible place	• Identify and feedback improvements

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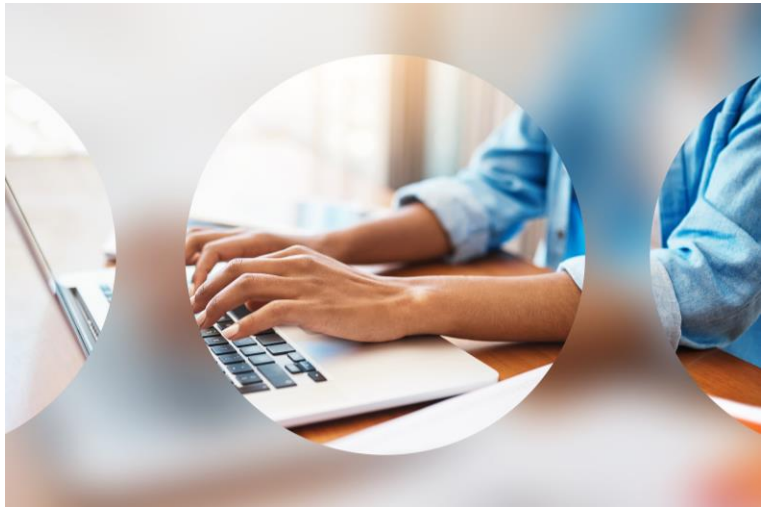
Flexibility Market Asset Registration (FMAR)



Elexon was appointed as the market facilitator in March 2025, part of that role involves delivering FMAR

Critical to couple market rule development with data infrastructure supporting market participation

This vital piece of digital infrastructure will be operational by 1 July 2025

FMAR will be the common digital infrastructure to standardise asset data

Creates a “single source of truth” for flexibility asset registration

Supports Great Britain’s wider digitalisation strategy

Elexon is developing the solution, working with industry stakeholders

Enables a ‘Register Once’ principle, substantially reducing administrative burden

Unlocks asset visibility, laying the strategic foundation required to drive market liquidity and competition

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Market Facilitator Draft Delivery Plan

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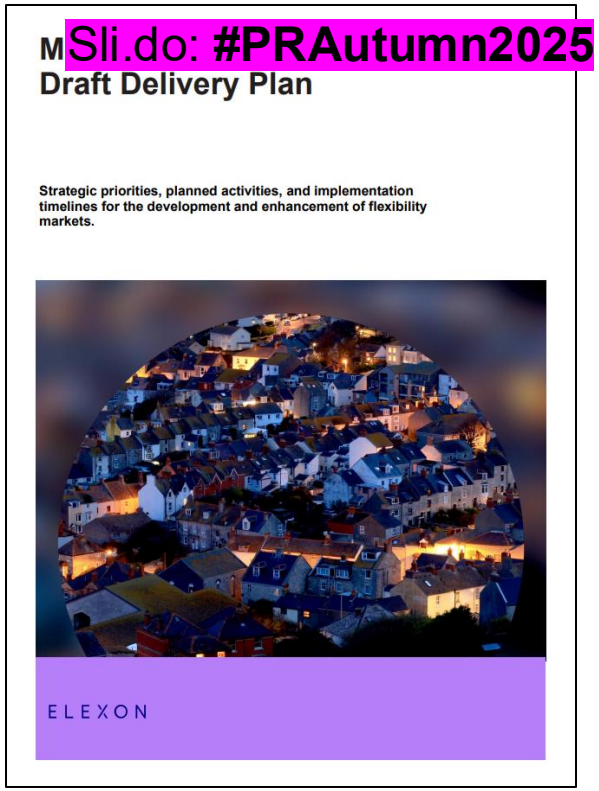

The draft delivery plan sets the strategic roadmap for the market facilitator's first delivery period, which runs from 1 January 2026 to 31 March 2028.

Objectives:

- Deliver frictionless market entry
- Align market operation
- Develop robust definitions of markets
- Enhance revenue stacking and coordination schemes across markets

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Demand Side Flexibility Routes to Market Review

Damien Kelly

Distributed Flexibility Strategy Lead

NESO

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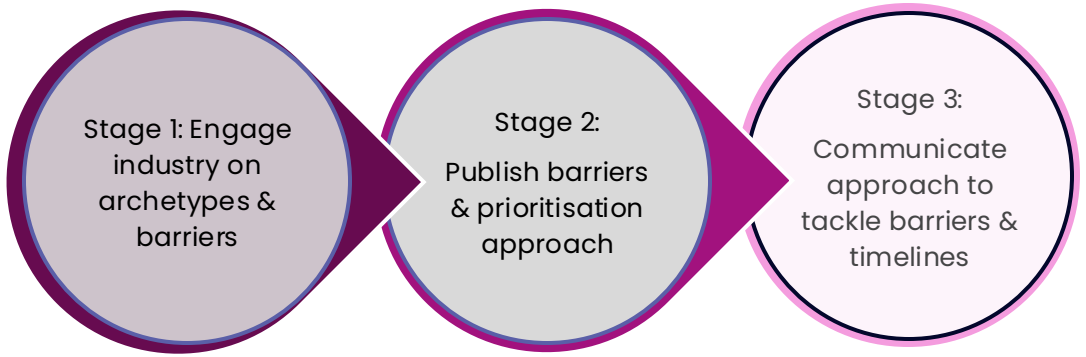
We are removing barriers for demand side flexibility

The Routes to Market Review for Demand Side Flexibility is NESOs project for **removing barriers** to NESO services for demand side flexibility.

It is a part of the Enabling Demand Side Flexibility in NESO Markets programme that is seeking to deliver increased **competition**, **coordination** and **coherent** market arrangements for GB, in collaboration with DESNZ, Ofgem, Elexon, DNOs and industry.



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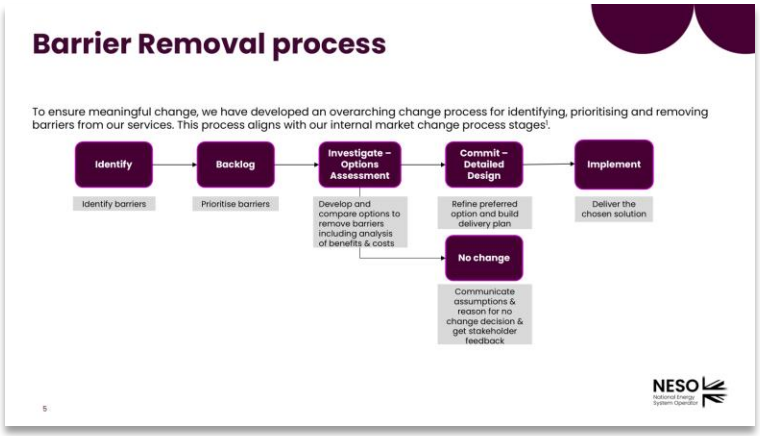
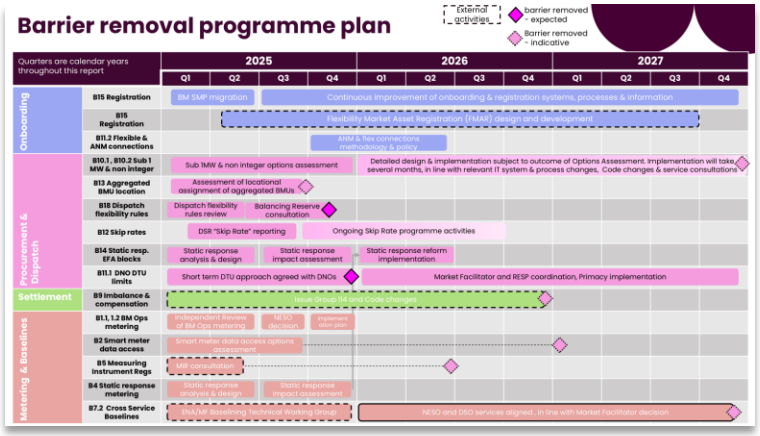
We have put in place a prioritisation & delivery framework

We have a **prioritisation** framework and a **process** for assessing barriers from options assessment through to implementation, in line with our service development & reform activities.



Barrier removal projects are tracked across the process stages & programme managed by the **EDSF programme** & **governance**.



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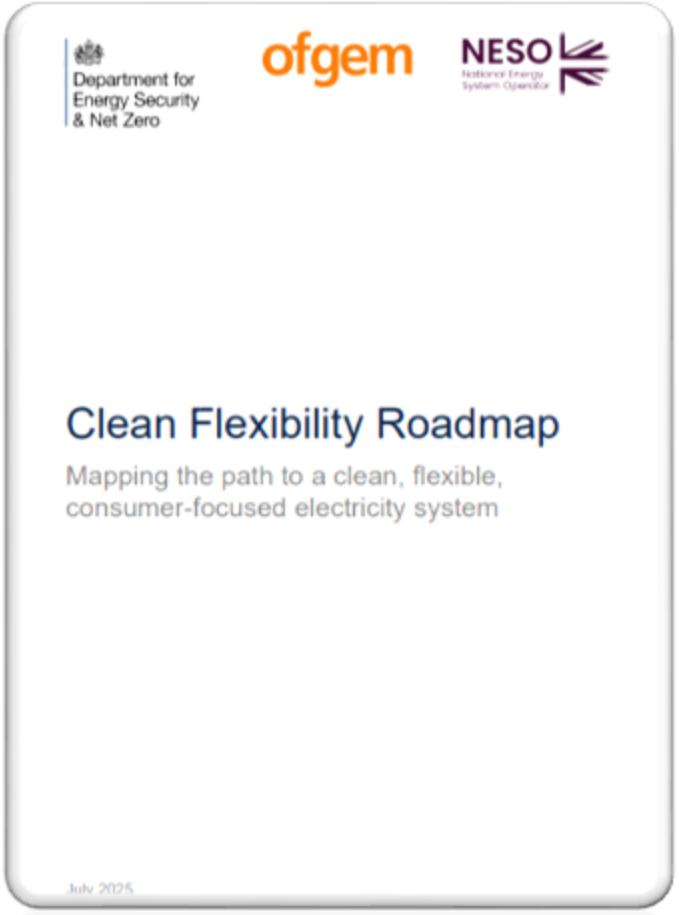
We have made commitments as part of the Clean Flexibility Roadmap

We have reinforced our commitment to removing barriers for demand side flexibility by adding a DSF Routes to Market Review action in the **DESNZ, Ofgem & NESO Clean Flexibility Roadmap** & are reporting into roadmap governance and monitoring.



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Keeping you involved & up to date

Quarterly engagement & updates

- We are holding quarterly sessions with the Power Responsive Challenge Group, ADE flexibility forum, the Energy UK DSR working group, & with DESNZ & Ofgem.
- We will publish quarterly updates on the Markets Forum webpage including progress, service RAG update & change log, and DSF volume in NESO markets dashboard.

Reporting

- We will include an annual update in the Markets Roadmap.

Clean Flexibility Roadmap

- We will participate in the Annual Roadmap Forum and workshops.

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Recent progress in removing barriers

Balancing Mechanism

- Operational Metering requirements will be relaxed for aggregated assets in early 2026 following the DNV review (details).
- The derogation which allows up to 300MW of aggregated assets to access the BM is being retained: currently 2 providers, 17.73MW registered.
- **P483**: Asset metering systems now approved for BM settlement with non-half hourly boundary metering (details).
- **P444**: Compensation between suppliers and VLPs to be implemented in November (details).

Recent progress in removing barriers

Demand Flexibility Service(DFS)

- Reform of DFS commenced with a focus on **ABSVD, baselines,** introducing a **bidirectional service** and **locational procurement**.
- We will consult on reforms later this year.

Local Constraints Market (LCM)

- extended until January 2027.
- We have seen recent growth in participation including a number of new demand-side flexibility providers.
- This growth is enabled by evolution of the LCM service including a progressive **asset metering** approach, **non minimum MW participation threshold**, and the **ABSVD opt out** to support aggregator participation.

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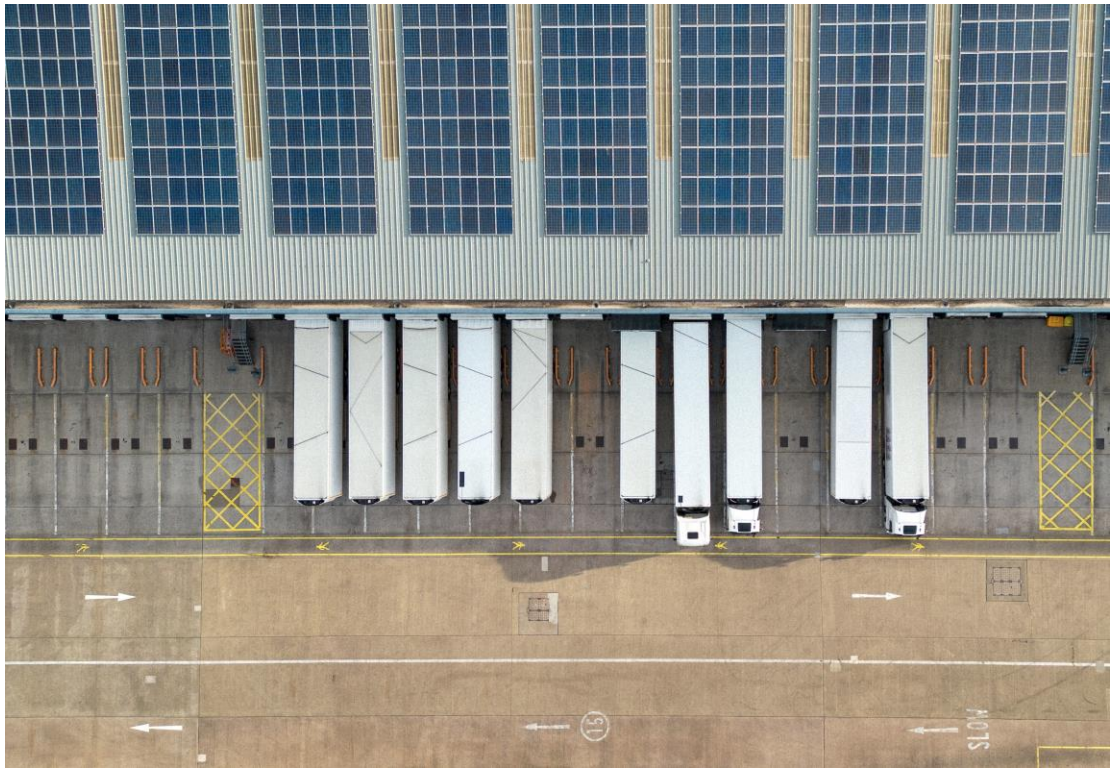
Recent progress in removing barriers

Static Firm Frequency Response (Static FFR)

- Service design for Static FFR reform options has commenced.
- Reform options include **metering requirements**, **EFA block** procurement, **sub 1MW and non integer** procurement, and on improvements to the service to provide additional value to the control room to aide system operation.
- We expect to consult on reform proposals later this year.



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Recent progress in removing barriers

Slow Reserve

- Ofgem has recently approved the Slow Reserve service design.
- The service design includes **operational metering** at a 15 second read frequency, which is more relaxed than the initially proposed 1 second requirement.
- Go-live of the Slow Reserve service has been delayed from the originally planned date of October 2025.

Balancing Reserve

- Ofgem have now approved a number of changes to the service.
- This includes changes to the **dispatch flexibility rules.**

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Recent progress in removing barriers

Other progress

Progress has been made in a number of other areas related to barriers to NESO markets including:

- BSC Issue 114, NESO taking forward a BSC code modification for issue1 **imbalance adjustments (ABSVD) and compensation** to introduce consistent arrangements across markets
- Progress on **Primacy** and the Risk of Conflict Reporting.
- Creating **definitions** for Domestic and Industrial and Commercial Demand Side Flexibility.
- **Measuring Instruments Regulations** consultation.

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NESO's Demand side flexibility vision is complementary to the Clean Flexibility Roadmap

Vision	**Enable flexibility resources to operate seamlessly between markets, driven by effective market signals, delivering whole electricity system value to consumers and supporting the transition to net zero**		
Outcomes	Fit for the future, **coherent** market arrangements	A level playing field and inclusive markets to maximise **competition** between all types of flexible resources	**Coordinated** flexibility markets across Great Britain
Objectives	**1.1** NESO markets evolved to address system needs with clear roadmaps and requirements to help Flexibility Service Providers maximise the potential of flexibility. **1.2** A coherent approach for enabling market arrangements, unlocking the demand side flexibility needed by the system.	**2.1** Ensure existing NESO markets are technology inclusive by removing barriers. **2.2** All new NESO markets to be technology inclusive. **2.3** Support demand side flexibility market innovation leveraging international best practice.	**3.1** Markets Facilitator coordination governance implemented. **3.2** Standardised NESO and DNO onboarding process. **3.3** Revenue stacking enabled across NESO-DNOs. **3.4** NESO market design standardised and aligned with DNOs market design. **3.5** Coordinated NESO – DNO network operations and planning
Enablers	Data, Digitalisation and Technology	NESO Capabilities	Policy	Network Access, Connection & Charging Reform	Consumer Engagement
Principles	Digital first mindset	Transparent at every stage	Deliver in partnership	Encourage innovation and creativity	Technology inclusive	Be flexible and adaptable	Consumer value driven

Clean Flexibility Roadmap — Markets and Consumer-led Flexibility actions → Clean Power 2030

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Next Steps October – December 2025

October

- Industry Engagement

November

- Market Forum communication

December

- Publishing EDSF and RTM progress quarterly update
- Request feedback from stakeholders

To stay informed, sign up to Power Responsive newsletter

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Demand for Constraints

Becky Hart

Head of Flexibility & Electricity Market Development

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The Constraints Collaboration Project (CCP) took the problem of increasing constraint costs to industry, asking for their solutions

Project aims

- Provide a platform where the NESO 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
- 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 NESO 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 NESO actions: send signals to reduce volume of curtailment required

Reduce the cost of managing constraints

- Reduce overall costs to consumers: lower cost of balancing actions in terms of £/MWh

Feasible – within the NESO's scope

Quick – can be introduced < 5 years

Effective – reduces constraints costs

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Industry ideas have been consolidated into several options below

1. Constraints Management Markets (CMM)

1A. Demand for Constraints / Long-term CMM

- amp: 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. Short-term Constraints Management Markets

- TEL the energy landscape: Constraints management markets (CMMs)
- Scottish Futures Trust: Long-term contract to manage a portion of the forecast constraint volumes
- ZENOBE: Pre gate closure constraint management product using schedule 7 trade
- sse Business Energy: Competitively allocated season ahead constraint management availability contracts
- sse Business Energy: Competitively allocated short-term constraint management contracts (D-7)
- EDF: Long-term auction of excess wind
- EDF: Discounted demand turn up
- EDF: Weekly generation turn down market
- Flexitricity: The 'Big Friendly Battery' for ~8 hours duration

2. Increasing how much can flow over boundaries

2A. Extended intertrip scheme 2B. Grid booster (post fault)

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

2C. Boundary flow smoothing: Pre-fault

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

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We are developing the detailed design of Demand for Constraints through CCP stakeholder engagement

	Initial Design of Demand for Constraints
Definition	Demand for Constraints is a long-term contract whereby NESO can ask a demand source to increase its consumption of electricity at times of constraints
Possible Contract Lengths	Multi-year contract. The longer the duration of the contract, the stronger the investment signal for flexible demand to be located behind constraints
Possible Contract Structure	- Availability payments - Utilisation payment (in £/MWh) - Stackable with other services
Who Could Participate	**- New:** Asset that is not operational now or an asset with new capability to flex* **- Strategic:** Large demand (BMU) which can provide sufficient scale to reduce constraints and aid NESO to unlock new flexibility needed for CP30 **- Flexible:** Ability to turn up their consumption of electricity at times of constraints with short notice from NESO
Where It Would Be Active	Scotland (B0-B1, B3-B4 and B6) and potentially East Anglia (EC5)
When would we contract?	Tender in 2026 (e.g. first tender in 2026, for phased delivery in 2028 (T-2) or 2030 (T-4))*

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* To be confirmed

NESO reserves the right to alter these at any stage in the process

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Summary of the value of Demand for Constraints and next steps

Type of benefits ● Economic ● System operation ● Wider system benefits

- **Saving consumer money.** Our cost benefit analysis (CBA) indicating potential consumer savings of £0.4bn to £1.2bn over the 2028 – 2035 period
- **Support CP30 delivery and is highly aligned with NESO strategic objectives** for driving up participation of industrial and commercial (I&C) demand-side response in NESO markets
- **Avoid curtailment and enables more effective use of GB homegrown renewable energy,** which ultimately helping to achieve zero carbon operation and reduce NESO balancing costs
- **Driving investment in and modernisation of infrastructure,** for example, investment in transmission for gas network development for hydrogen
- **Wider decarbonisation of sectors;** for example, heat and hydrogen. Assets enabled by DfC would increase domestic hydrogen production, which in turn could support decarbonisation of industrial and transport
- **Carbon savings.** Our CBA indicated the grid carbon intensity will decrease by ~2% as a result of the additional renewable generation and demand

Next Steps

- **NESO is working on the detailed design of Demand for Constraints**, conducting power system studies to determine the Megawatt (MW) requirements of demand and developing appropriate payment structure and dispatch mechanism
- **There will be opportunities for industry to provide input** through the Constraints Collaboration Project webinars

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Thank you!

To keep in contact, please visit our website or email us at

box.market.dev@neso.energy

Next CCP webinar link here

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Power Responsive update

James Kerr

Engagement Lead, Power Responsive

NESO

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Looking back

November 2024
EMEX 2024

January 2025
Supported the Clean Flex Roadmap development

February 2025
Flex Summit Glasgow

March 2025
Distributed Energy Show

April 2025
Publication of 2024 Annual Report **and Databook**

May 2025
Flex Summit London

Summer 2025
DFS & Demand for Constraints engagement support

Plus…

- Challenge & Operational Metering Working Groups
- Monthly newsletter

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Looking forward

Power Responsive
Clean Flexibility
Roadmap Actions

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1. **Capacity target:** NESO will set a public for how much non-domestic CLF capacity will be added to NESO markets for each year to 2030.
2. **NESO engagement:** NESO will launch an open call for industry to bring forward propositions for large loads that could participate in NESO flexibility markets and commit to working with them to explore how this capacity could be brought into NESO markets.
3. **Onboarding support:** NESO to set up a dedicated onboarding team to work with non-domestic consumers and their suppliers/aggregators to identify and bring forward new flexibility to NESO Markets.

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Capacity target

- We're working with Guidehouse to develop the targets.
- The work aims to define realistic targets for non-domestic Consumer-Led Flexibility in GB by 2030, anchored in bottom-up modelling.
- Thank you for supporting the work so far.
- Publication by the end of December 2025.

1. Establish a set of actionable targets to integrate non-domestic CLF each year out to 2030
2. Conduct a detailed analysis of regional and sectoral opportunities
3. Establish strategies for enhancing participation in NESO services
4. Develop the skills and confidence of NESO teams to apply the strategy effectively

We need your help (next slide)

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Open call

- We're working with a creative agency to develop an engaging campaign, targeting non-domestic consumers.
- We want to showcase the opportunities to access flex markets right now across NESO and DSOs, supporting access through the onboarding support team.
- **We are looking for businesses and case-studies to appear on film.**
- We'll launch the first element of the campaign in early November. You'll see much more at EMEX 2025 and beyond.

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Onboarding support

We'll provide more support directly to non-domestic consumers to help them access flexibility services.

- Dedicated contact for pre-registration support
- Help selecting suitable services and routes to market
- Dedicated webpage
- Targeted guidance materials
- 1 to 1 calls

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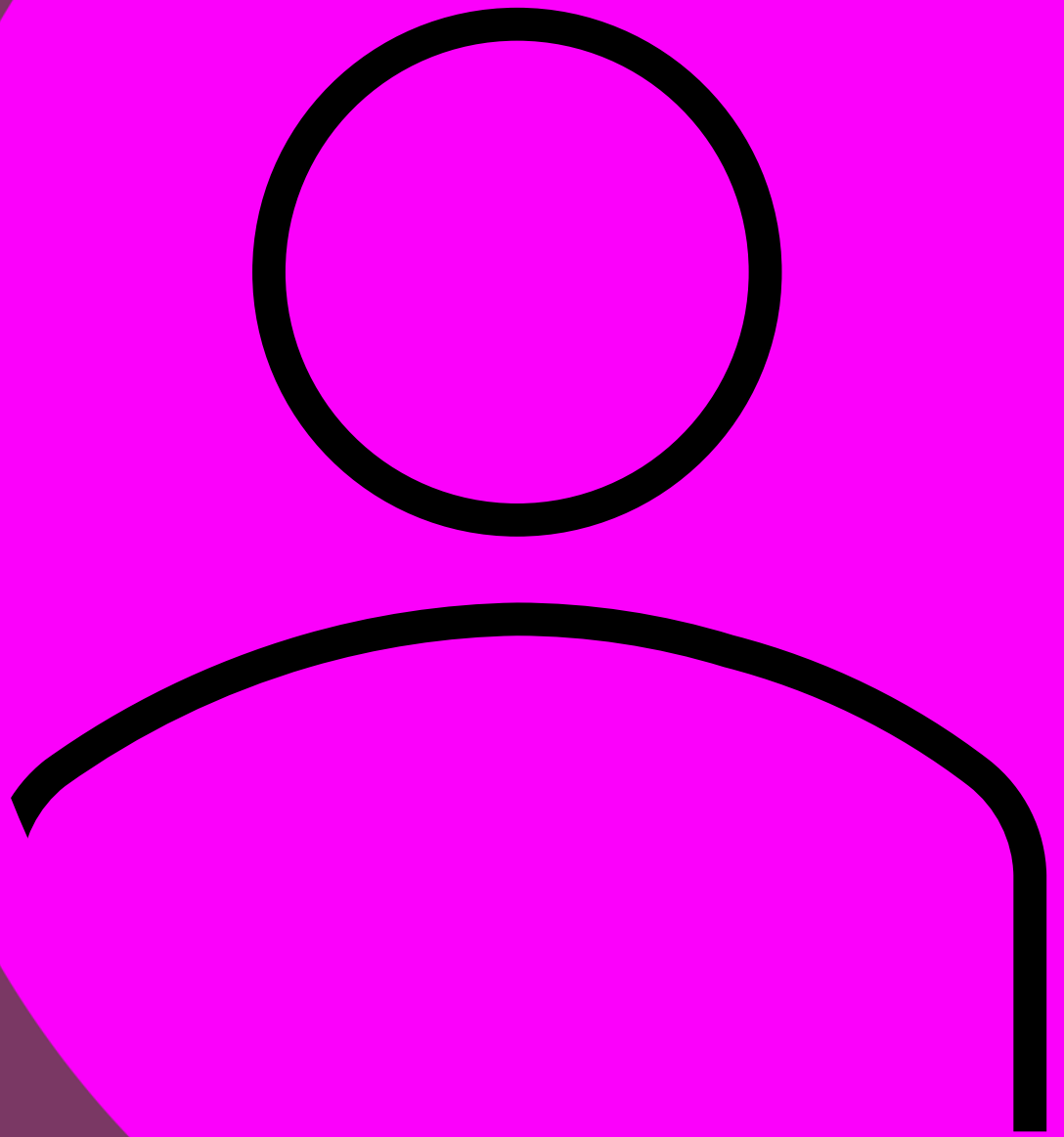
Operational Metering

Calum McCarroll

Technical Lead, Power Responsive

NESO



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Operational Metering Overview

What is operational metering?

- Measures and reports real-time electricity usage or output from assets participating in the BM.
- Provides NESO with an accurate, real-time view of BMU activity.

Why is it important?

- Enables NESO to monitor and balance supply and demand in real time and make efficient dispatch decisions.
- NESO can detect unexpected changes in a BMU's consumption or output in real-time and step in to maintain the balance of supply and demand.
- Metering data is used to inform forecasting and system planning decisions.

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Why are Changes Needed?

Emergence of Flexible Technologies

Small-scale flexible technologies like EVs, heat pumps, and smart appliances are rapidly transforming the energy system and cannot access the BM.

Challenges of Distributed Energy Resources

The rise in distributed energy resources increases grid complexity and requires active integration and management at scale.

Need for Market Adaptation

The current Balancing Mechanism was not designed for diverse small-scale assets, necessitating market accessibility changes.

Empowering Consumers

Opening markets to Consumer Energy Resources enables consumers to actively participate in system balancing and benefit from flexibility.

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Barriers for Small-Scale Assets

"Small-Scale Asset" Definition

Aggregated assets less than 1MW in size (e.g. EVs, heat pumps, domestic batteries)

Meter Accuracy Challenges

The 1% meter accuracy requirement is largely unachievable as most meter accuracies vary by up to 10%, requiring impractical and costly retrofitting to resolve.

High Data Refresh Rate

A 1-second refresh rate leads to high data transfer and storage costs when scaled across thousands of assets, making it uneconomical.

Latency and Network Delays

In some cases, the 5-second latency requirement can be challenging due to multiple intermediaries and network infrastructure limitations.

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Independent Review & Derogation

Independent Review

- DNV conducted a review into the impacts of changing operational metering requirements.
- Balancing Consumer Energy Resource capabilities with system security needs.
- Provided NESO with thoroughly researched recommendations.

Operational Metering Derogation

- Introduced in parallel with independent review to incentivise immediate participation.
- Relaxed metering requirements allowing up to 300MW of <1MW aggregated assets to participate in the BM.
- Allows each provider to register up to 50MW of flexible volume.
- Derogation is not time limited.

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Implementation – Phase 1

Implementation Early 2026

Accuracy Requirement Changes:

1. Sub-asset Level: No extra requirement, as per applicable British Regulation *(previously 1%).*
2. Portfolio Level: 1% (calculation of improved portfolio accuracy through law of large numbers permitted).

Meter Read Frequency Requirement Changes:

1. Sub-asset Level: every 30 seconds *(previously every 1 second).*
2. Portfolio Level: every 1 second *(no change)*

Latency Requirement Changes:

1. Latency: 5 seconds end to end latency from the sub-asset to NESO's platform *(no change)*
2. Latency "compensation formula" allowed in the short term for assets that cannot meet 5 second requirement. *(new)*

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Implementation – Phase 2

Implementation 2026 - 2028

Explore Synthetic Metering Options

An innovation project will be launched to investigate the feasibility and relative performance of synthetic meter feeds being created by both NESO and aggregators.

Encourage Report on Change

NESO will collaborate with industry to define options for the use of report on change metering and will look to encourage its use with compatible asset types.

Additional Recommendations

- Refine reserve and response requirements to reflect CER growth.
- Integrate flexible demand and embedded generation into forecasting through system upgrades.
- Work with Market Facilitator to align data requirements across flexibility products.
- GSP Level Operational Metering.
- Implement robust testing and compliance.

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Local Constraints Market

Adam Roston

Lead Commercial Manager

Piclo

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Overview

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What is the LCM?

- Operational constraint management market
- Distribution connected flexibility to manage transmission level constraints between Scotland & England
- Reduction in generation / increase in demand resulting at lower power levels at the congestion point
- 2x instruction windows: day ahead & intra day hosted end to end in Piclo

The key objective of the LCM is to **reduce costs to consumers** by providing an alternative to the balancing mechanism as a tool for alleviating constraints.

What has changed?

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Market trends

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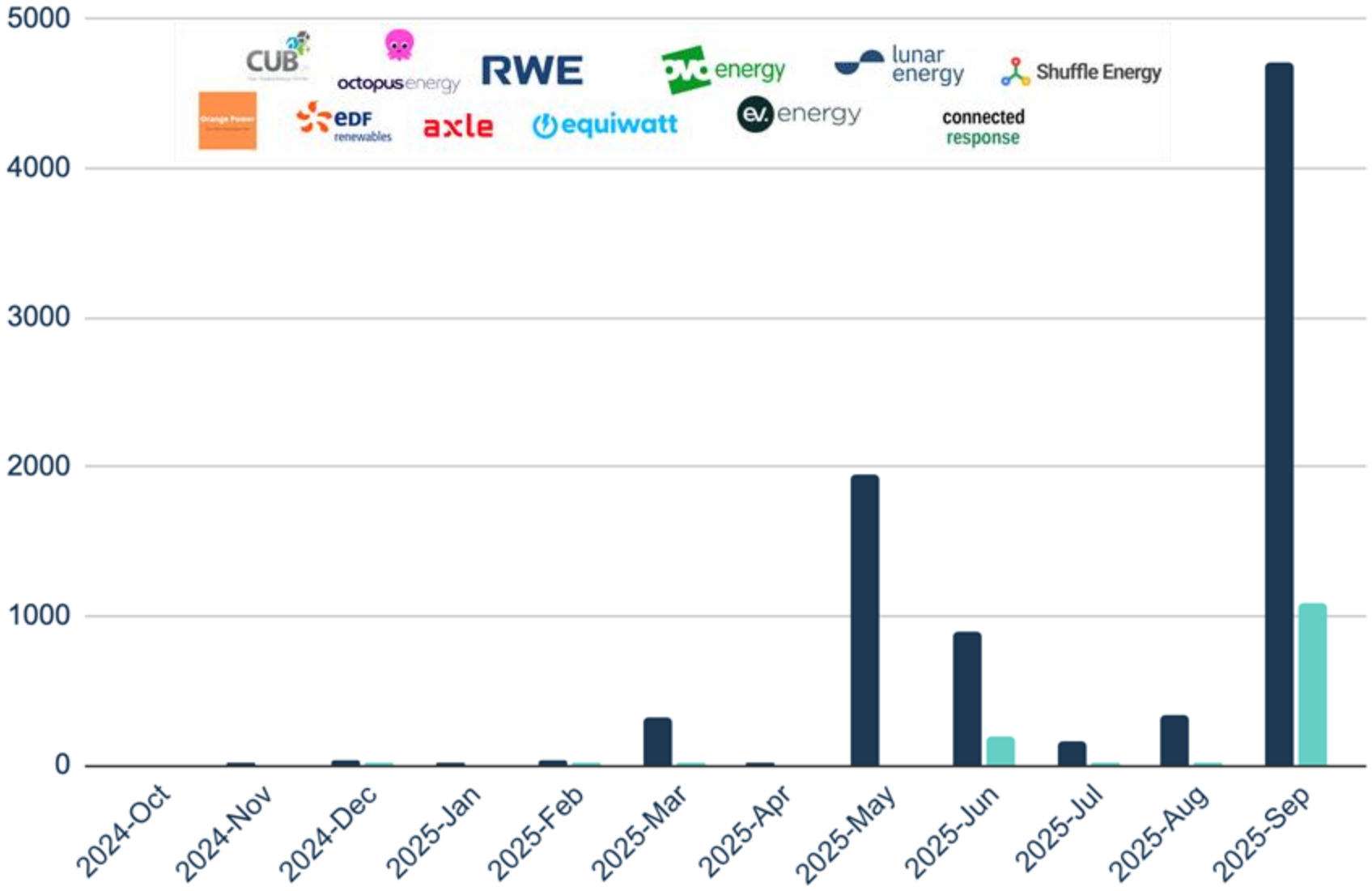
Total tendered & contracted volumes (MWh) - year to date



11 active FSPs

111k bids

36% of which contracted

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Engagement with Piclo

Great range of participation by asset type **and** the way FSPs engage with the platform:

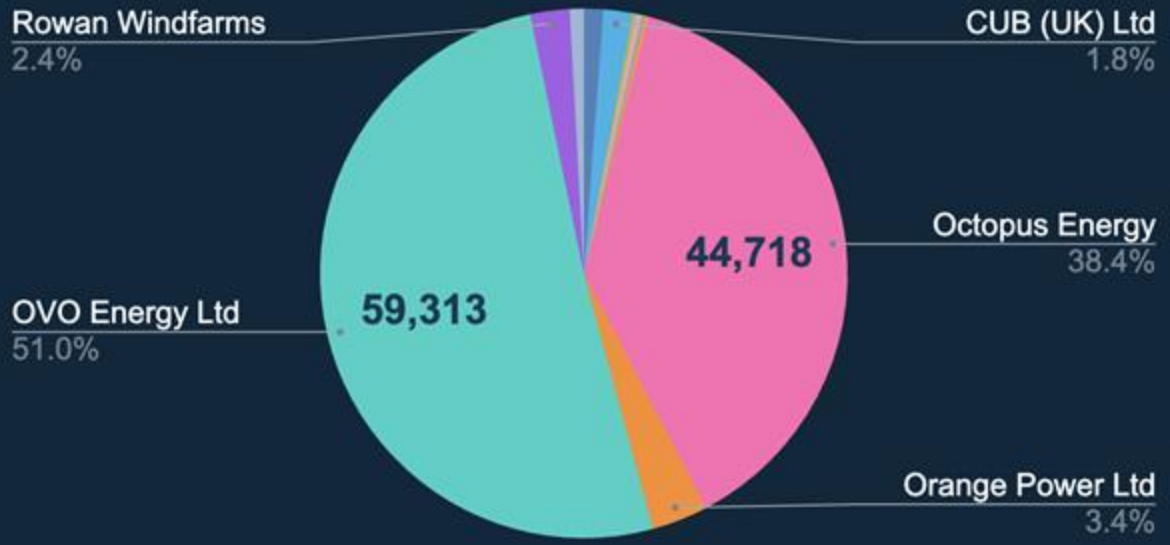
Asset level

- 60k bids from single FSP with individual EV chargers
- Fully automated via API

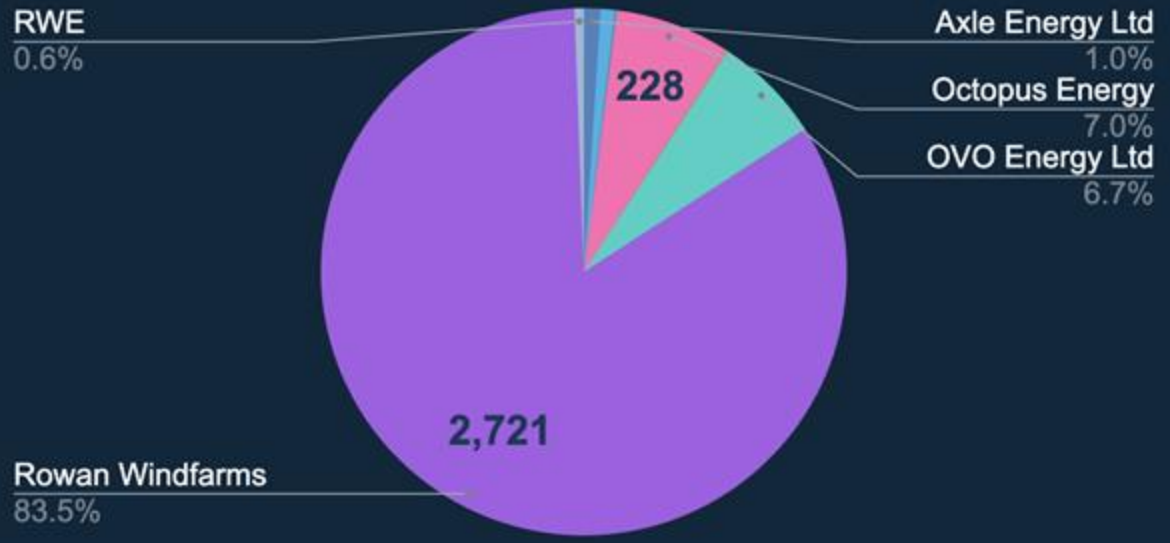
Utility scale

- Generators submit fewer bids, larger volumes
- Automation is partial, control room teams choose to engage with the UI for certain steps

Number of bids by FSP



Successful bid capacity by FSP (MWh)



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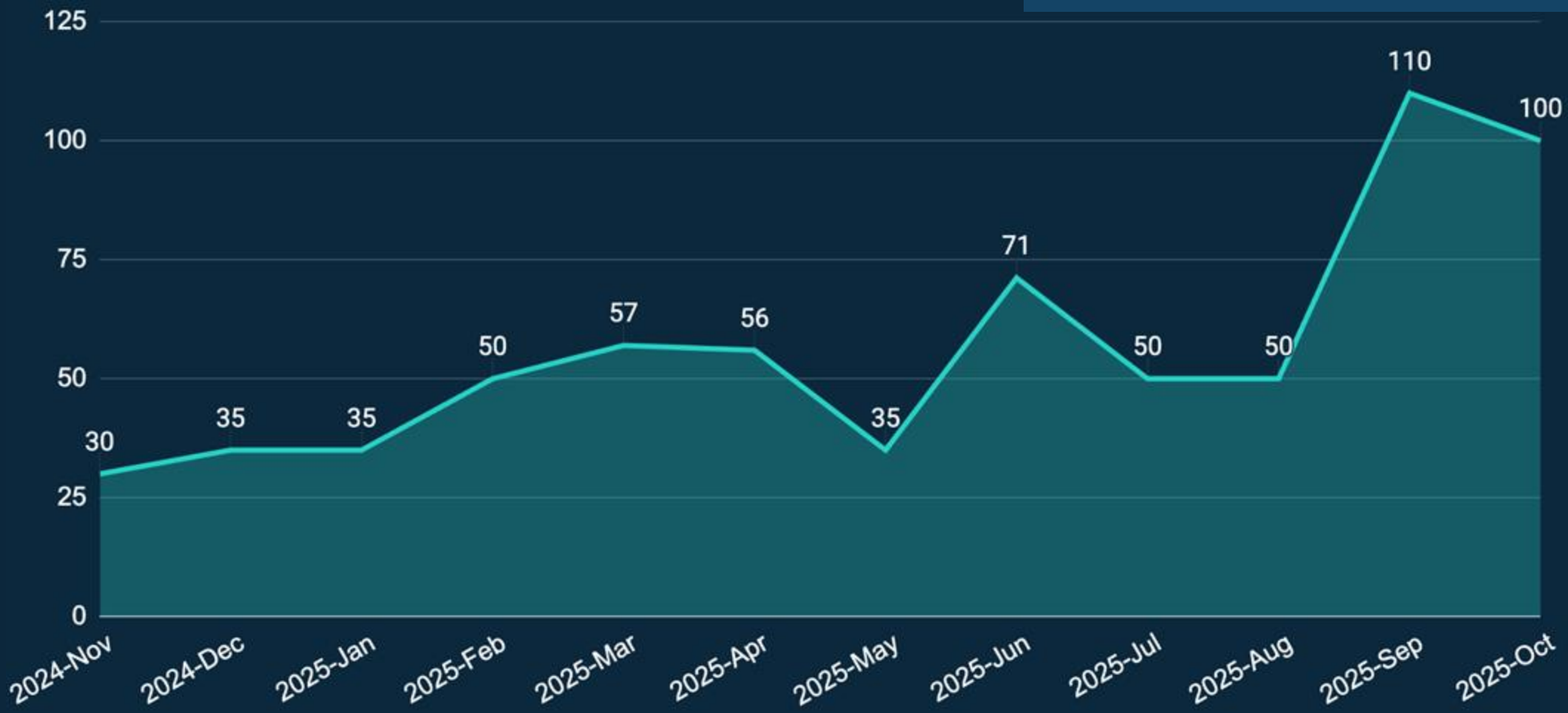
LCM max. awarded prices in 2025 (£/MWh)

Weighted average accepted bid price is £70/MWh



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Next steps

- Industry engagement on instruction windows & timing
- Alignment with primacy & risk of conflict reporting
- Growing volumes & quantifying impact

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Demand Flexibility Service

Liz Hamer

Market Development Officer

NESO

Demand Flexibility Service

What is the Demand Flexibility Service (DFS)?

- Incentivises domestic, industrial and commercial (I&C) users to shift demand, helping to manage peak demand.
- Launched in November 2022 as an enhanced action, as part of a package of contingency measures
- Transitioned to a merit-based service for Winter 24/25 – part of our everyday toolkit
- All year-round service
- Derogation until March 2027

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Key Statistics

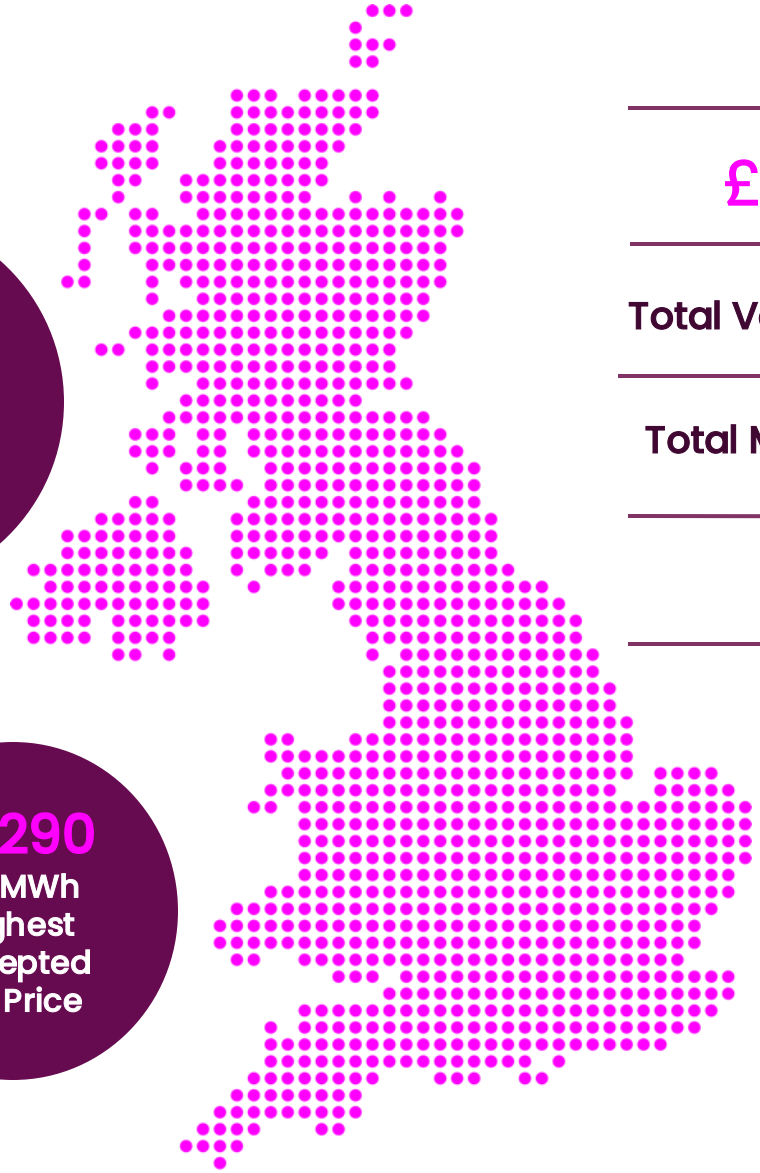
148
Live Events
&
Procured 117 times

32
Registered Providers
2.31m
Registered MPANs

597k
Forecasted Savings

£1,290
Per MWh Highest Accepted Bid Price

99.58%
MPANs manually instructed



£1,765,393	Total Accepted Bids
Total Volume Bid MWh	23,527MWh
Total MWh Accepted	10,095.7MWh
196.7MW	Peak SP volume

746 MW
Highest event volume during winter (GMT)

633.8MW
Highest event volume during summer (BST)

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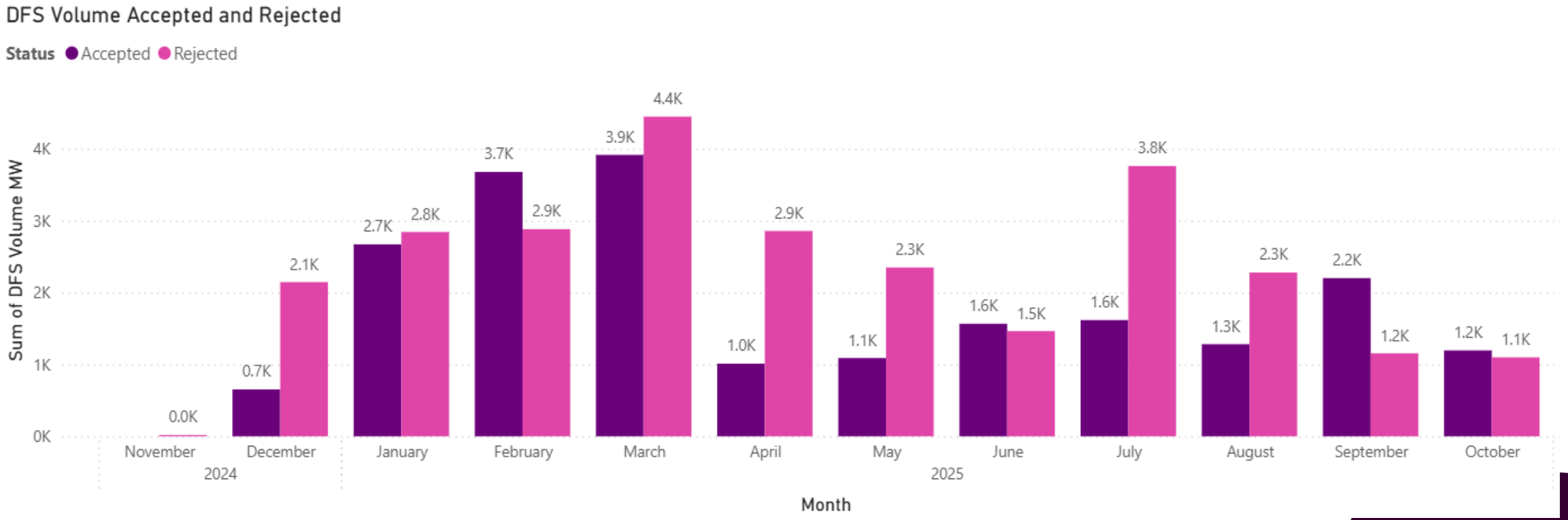
DFS Monthly Volume

Accepted and Rejected MWs



data taken from 27 Nov 24, up to and including 15 Oct 25

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DFS Revenue opportunities – 1MW

Scenario 1 1MW in every Settlement Period where we procured volume				Scenario 2 1MW in every event where we procured volume for 1 hour only		
Period	Number of SP's	Potential revenue based on lowest accepted bids	Potential revenue based on highest accepted bids	Number of SP's	Potential revenue based on lowest accepted bids	Potential revenue based on highest accepted bids
Winter	228	£16,732	£27,534	88	£6,349	£10,164
Summer	381	£18,500	£26,599	146	£7,195	£9,636
Totals	609	£35,232	£54,133	234	£13,544	£19,800

*These are indicative only and NESO would expect providers to consider their own commercial strategies when participating

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Average Prices per MWh

Period	Highest accepted bid per MWh	Lowest accepted bid per MWh	Weighted average prices of accepted bids per MWh
Winter	£1,290	£90	£226.31
Summer	£400	£50	£126.65
Overall			£178.67

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DFS Evolution

Demand Turn-Up

Add a Negative Margin element to the service

Locational Procurement & Primacy

5 Locational Zones

Introduce early Primacy process

Baselines

Introduce an additional Baseline for renewable assets (Wind & Solar)

Eligibility Rules

Reduce eligibility criteria from 1MW to 0.1MW

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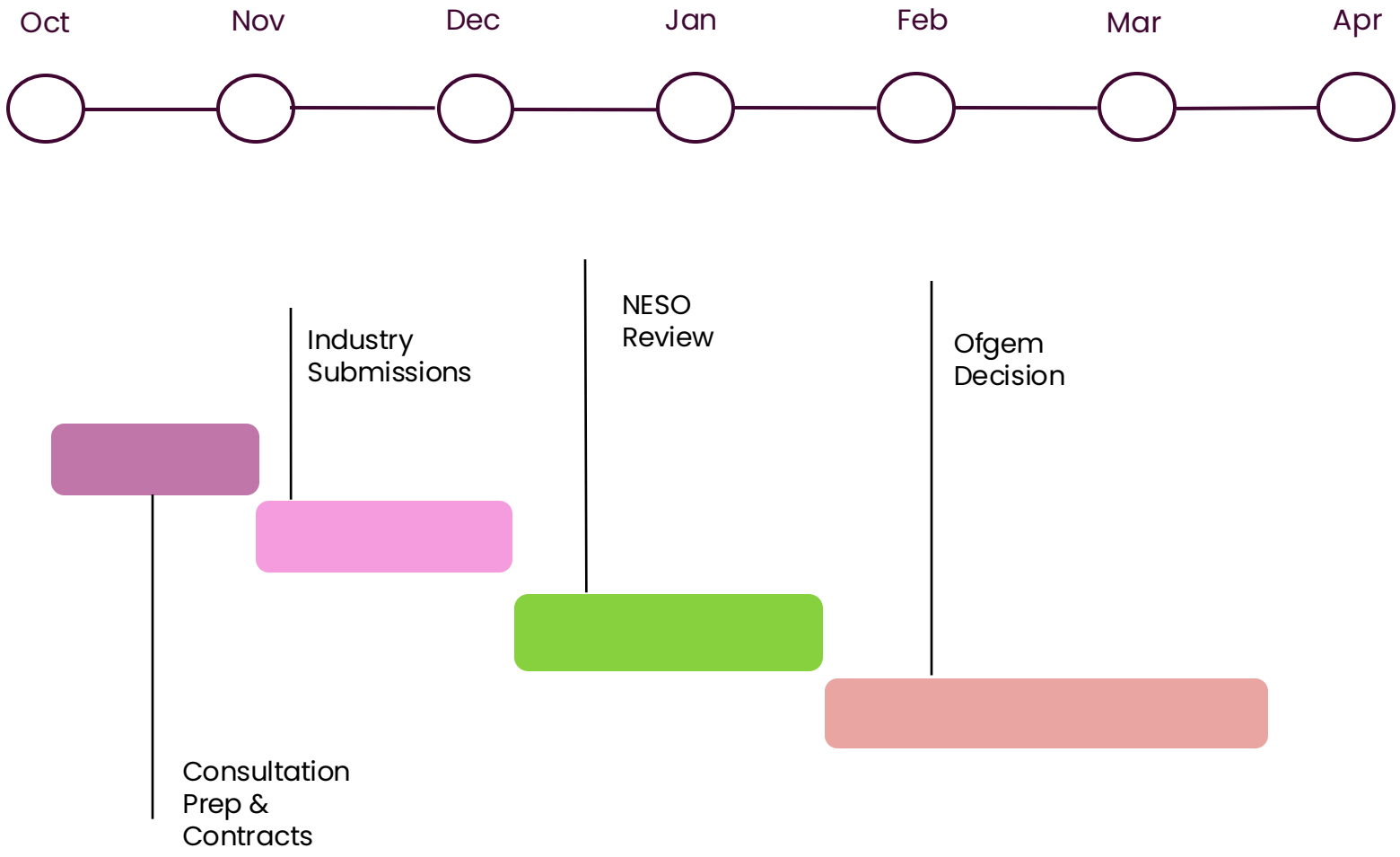
Indicative Timeline



Key Points:

- w/c 3 Nov 25 – Launch Consultation
- w/c 12 Jan 26 – Submission to Ofgem
- w/c 16 March 26 – Ofgem decision

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DFS Article 18 Consultation

Keep in touch

Any questions & queries or would like to arrange a direct call

demandflexibility@neso.energy

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Q&A

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Closing thoughts

Jon Wisdom

Head of Market Change Delivery

NESO