



# Local Constraints Market (LCM) Futures and Fairer Access Webinar

Tuesday 16<sup>th</sup> January 2024

- Webinar will start shortly
- Please ensure your cameras and microphones are turned off

# Agenda

- Introduction to LCM
- LCM progress to-date
- Opportunities and Future plans
- Q&A

# Introduction



# What is the Local Constraint Market (LCM)

The LCM was established to save overall costs for the consumer on actions at the Anglo-Scottish B6 boundary, the most constrained boundary on the GB system.

## Why

The Anglo Scottish boundary (B6) currently has the highest constraints and these are set to increase over time.

Our most congested boundaries are constrained 85% of the time. Between now and 2025 we will require a range of innovative solutions to manage some of the increase in thermal constraint costs.

## How

Trials have shown Distributed Energy Resources (DER) can provide more flexibility and competition. Regional Development Programmes will offer an enduring approach. **Ahead of RDPs we can accelerate market participation with LCM above B6 Boundary**

Live Operation means the local constraint market can invite more market participation and helps ESO in our consumer cost saving drive, by engaging wider distributed energy resources, EVs, industry & local renewables.



Day ahead flows and limits, and the 24 month constraint limit forecast are published on the ESO Data Portal:  
<https://data.nationalgrideso.com/data-groups/constraint-management>

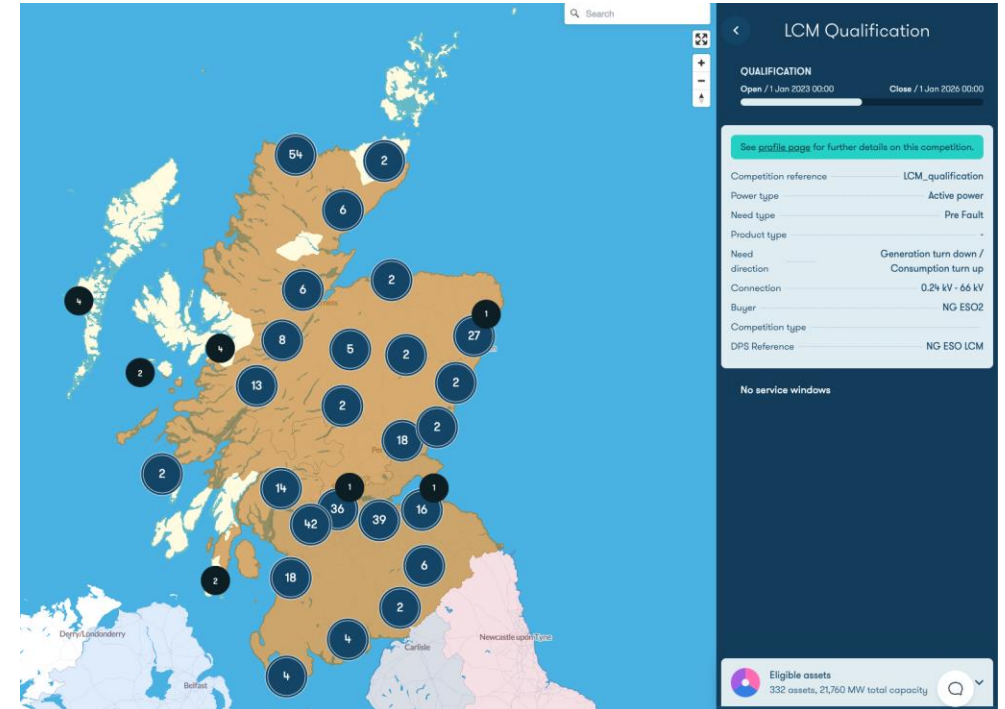
**Pre-fault spend on constraints set to rise across the B6 boundary**  
...with this in mind, ESO industry consultations about this service began in March 2022

- **LCM runs when** wider operational data shows it could be **operationally safe & lower cost** vs. Balancing mechanism (BM)
- **Generation turn down / demand turn up service**
- Trials shifted to **Operational Pricing**: bids with savings vs. BM can be considered (**October 23**)
- Control room adopts LCM into Operational workflow – bids reviewed by OSM Desk (**December 23**)



# LCM and Piclo

- Flex provider journey hosted in PicloFlex from procurement through bidding, dispatch notification and settlement
- Day ahead and intra day instruction windows
- Control room decisioning and dispatch via a 3rd party SaaS platform (an ESO 1st)
- Designed to reduce barriers to entry and encourage participation from large range of flex providers from traditional generation through to DER



**The primary objective remains: to reduce costs to consumers by providing an alternative to the balancing mechanism as a tool for alleviating constraints**

# LCM Progress to Date



# What Have We Achieved So Far?

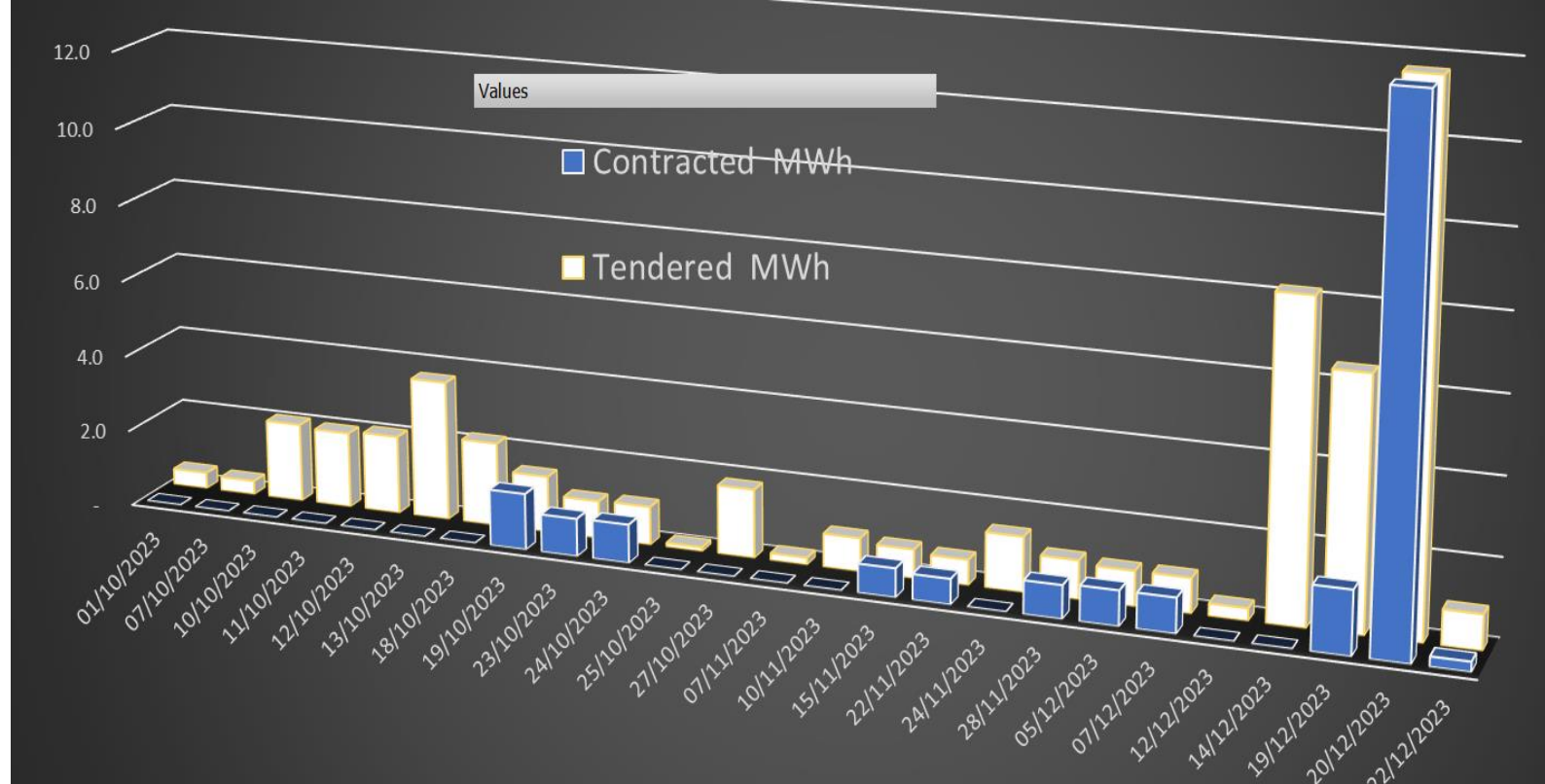
- ✓ **First 3<sup>rd</sup> Party SaaS system live in ESO's control room**
- ✓ **Live & Operational** - Now dispatching whenever possible for B6/B4 constraints
- ✓ **LCM is stackable** - not an exclusive service; stacking is permitted (in distinct SP timeslots)
- ✓ **No minimum MW threshold** - LCM is 1st ESO open-access ancillary service to make assets from 1kW eligible
- ✓ **21 approved providers set up in PicloFlex** – Capable of bidding into live competitions
- ✓ **Working closely with Scotland DNOs** – Enabling safe distributed demand turn up
- ✓ **Wide coverage** of much of Scotland; clear view of areas via PicloFlex
- ✓ **Historical BM pricing information now available** - helping LCM Providers to compete with BM by being more transparent about constraint actions, available to access on the ESO LCM web page:

[Local Constraint Market | ESO \(nationalgrideso.com\)](https://www.nationalgrideso.com/local-constraint-market)

# LCM Market activity since October:

## Volume chart LCM MWh

- Cols show **days LCM Open to bids**
- **Contracted** vs. provider bids **Tendered**
- Operational use after 11 Dec
- Peak contracted 14 MWh 20/12/2023



## Average Price chart (lower)

- Balancing Mechanism (**BM**) vs. LCM
- £ bids: **more negative = higher cost**
- LCM Prices becoming economic
- Dispatch growing, *if LCM saves cost*



NB: In the absence of operational-use LCM historical data prior to 11<sup>th</sup> December, BM prices are shown on a selection of days only, where sustained constraint action took place via the BM.



# What is the range of full LCM Market Potential

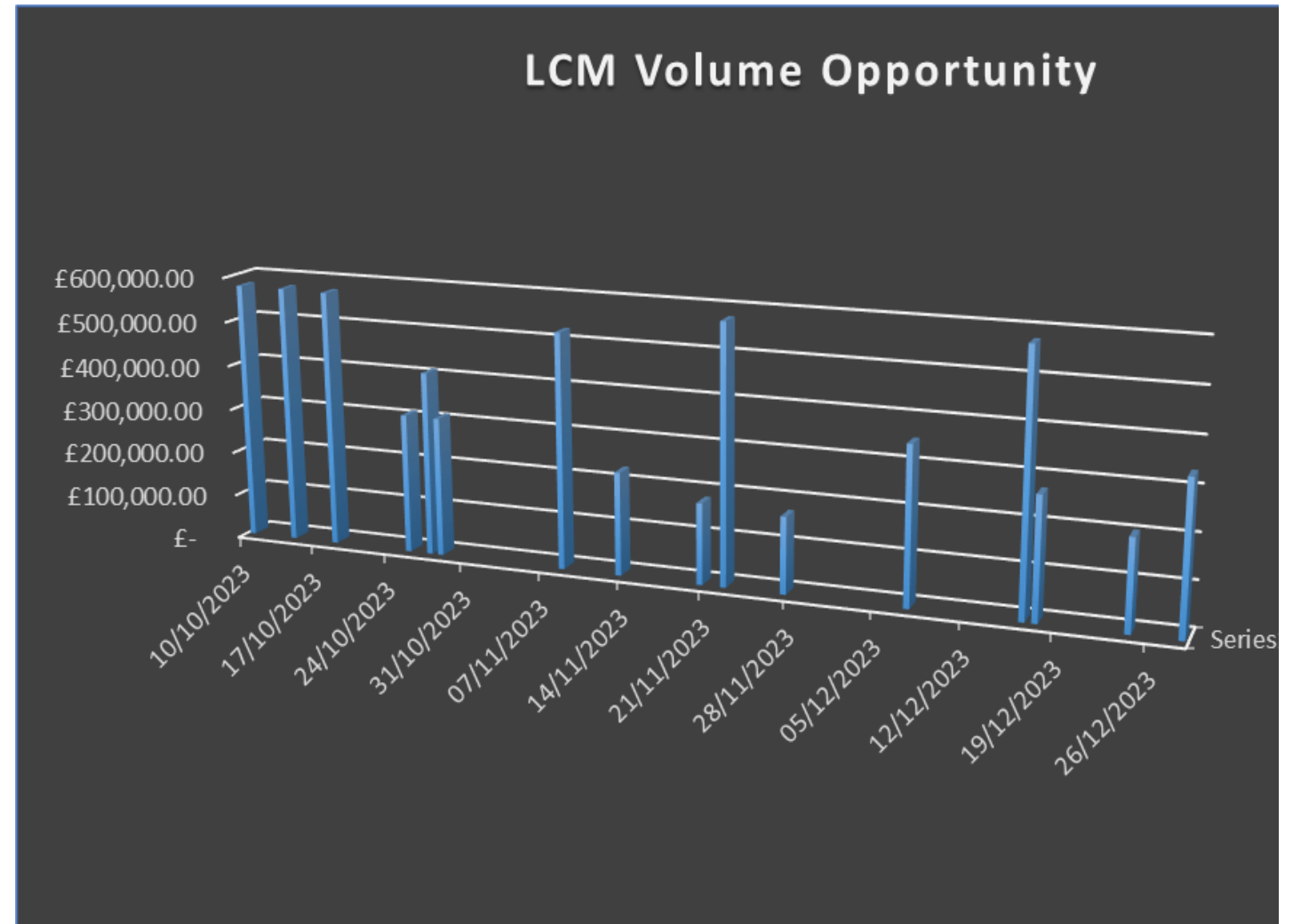
## Assumptions for theoretical limit:

- Day of constraint action across Scotland
- BM-actions/£ can be 100% forecast
- **Unlimited market response, below BM prices**
- **Control Room sees no other limits**  
(operational limits/local constraints)

## Unmet LCM Opportunity is large –

- *Perfect DA Competition* could be £0.5m /day
- Today, the real **LCM limit = bids received**
  - Volume tendered by providers
  - Economic prices vs. the BM

**Graph: potential market opportunity (£) on days when LCM bids could have replaced BM volume taken**

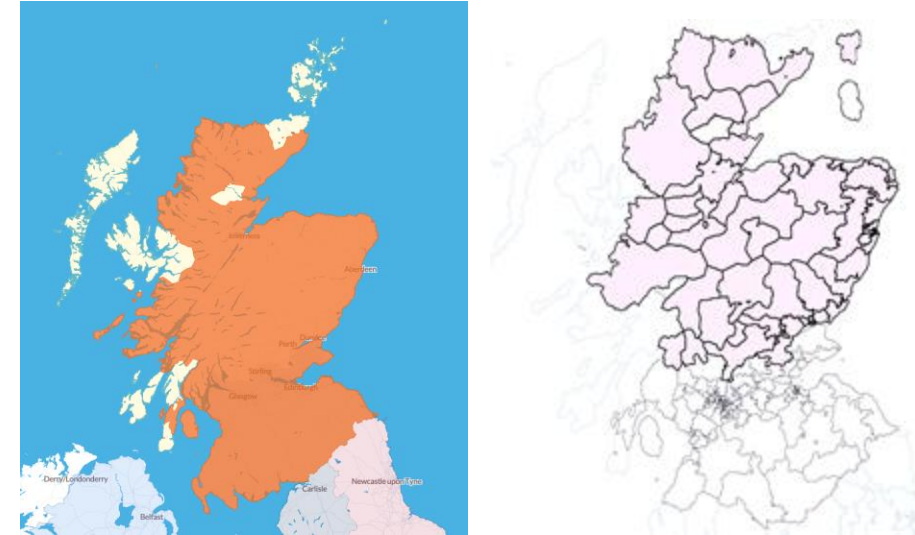


*NB: 3mo shown is often the most constrained, not typical of YTD*

# Piclo Updates for Flex Providers

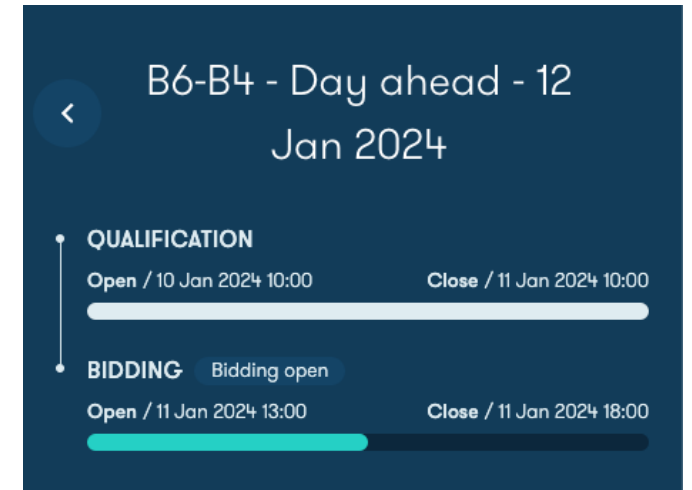
## Changes to technical qualification of assets in the LCM:

- MPAN now required to be entered in asset upload (import / Export meter ID or both if applicable) - otherwise not qualifying
- Qualification area revised to remove SSEN ANM zones, also referenced in [ESO webpage](#) (Document Library > LCM Scotland asset catchment area)



## Iterative improvement to Flex Provider experience:

- Clearer deadlines and competition phases
- Improved baseline upload experience FSPs are now prompted to upload baseline data after bidding and a customised template to [upload metering data](#) via file or upload via [API](#) is provided
- Automated dispatch acceptance FSPs integrated with the Piclo Flex API can now [accept dispatch instructions](#) via API eliminating manual steps
- Integrated education - FSPs are now promoted to find guides and support on initial log in



# LCM Opportunities and Next Steps



## Asset type participation

- **Supplier** – Seeing some competitive prices; volumes slowly growing;
- **Aggregator** (Half-hourly-metered) - bid price dominated by lack of fair energy compensation
- **EV responses** – controls on gaming add cost/overhead (boundary metering vs. asset metering)
- **Onshore Wind (non-BM)** – occasional volume but bids generally uneconomic (ROCs/Subsidies)
- **Competitive BM alternative to LCM:** *We continue to see significant volumes (>3GW) of volume in BM priced at <£60 MWh (very competitive prices)*

## Next Steps

- **Optimising usability of LCM & simplify functionality for control room**
- **Build new volume from market**
- **Evaluate options for improved energy compensate mechanism**
- **Evaluate potential opportunities around asset vs boundary metering**
- **Maintain provider engagement and continuous improvement** - Engaging closely with our internal & external stakeholders

# Informal Consultation on LCM ABSVD\* Findings

An ABSVD compensation alternative (LCM provider optional) proposal for the LCM service was included within the informal C16 consultation, seeking industry feedback.

We are committed to progressing the best possible alternative. Based on feedback received so far, we welcome further industry views by responding to the formal C16 consultation by **14 February**, to support a ESO decision on a solution.

- Eligible LCM Providers would have the option to opt out explicitly consenting MPAN LCM volumes from ABSVD. This would have the net result that Suppliers who receive increased LCM energy payments would no longer also benefit from energy imbalance position correction via ABSVD.
- As a result, a credit would flow back to Residual Cashflow Reallocation Cashflow (RCRC) at a level determined by the system price in effect at the time of imbalance.
- We wish to explore with our stakeholders whether energy compensation can be made by NGESO directly to those providers who opt out eligible MPANs. To offset this cost, the resulting imbalance credits would be offset by NGESO BSUoS charges. This approach aims to eliminate any net RCRC effects on the bill payer

Thank you to all parties that have already provided us with responses. We welcome further industry feedback to the proposition within the formal C16 consultation.



\* ABSVD = Applicable Balancing Services Volume Data. Corrects imbalance volume due to ESO system actions, exempting Suppliers from costs of balancing energy from such actions, where their MPANs are concerned



# Summary of ABSVD feedback received through the informal C16 consultation

## Positive Market Feedback

- Should result in growth in participation, increasing competition, improving price-discovery and reducing the cost of constraints to consumers
- The alternative compensation mechanism should be implemented for any case where the registered Supplier is not the contracted LCM provider.
- Aligns with Ofgem's vision for RIIO-2 BP 2 to ensure that "all types of technology and solution are able to fully compete to provide the electricity system's short, medium and longer-term needs".

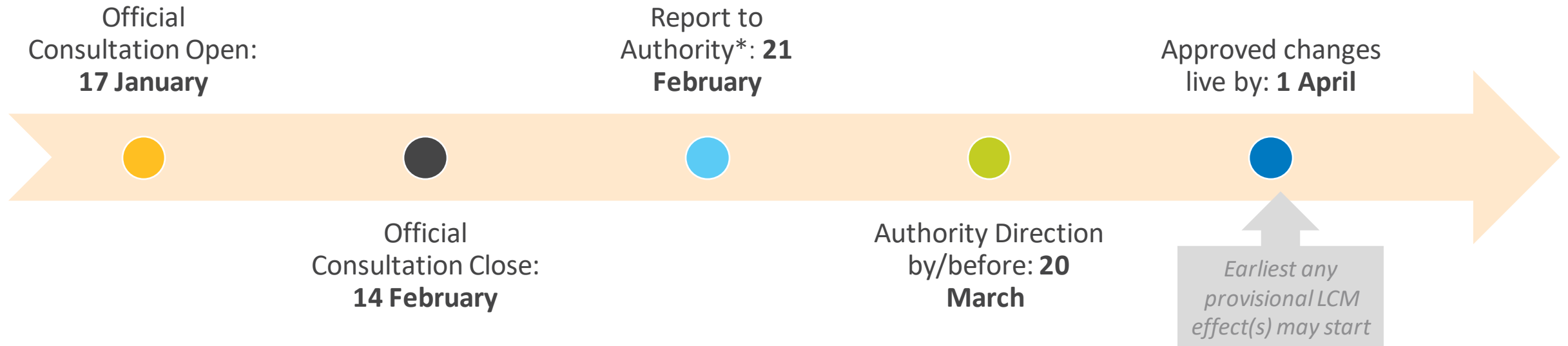
## Material Objections

- Larger issues should not be resolved by adjustments on a service-by-service basis as this risks unintended consequences elsewhere
- Creates further complexity for market participants (subsequently increasing operating costs & barriers to entry for new entrants)
- Creates an unknowable imbalance exposure for suppliers
- Risk of perverse incentives influencing both LCM bidding and consumer action

# ABSVD Next Steps

We will be formally consulting on the alternative compensation mechanism via the SLC 16 Annual Consultation process, to propose updates to the current LCM ABSVD arrangements within the ABSVD Methodology.

Any feedback received before **14 February** will support the ESO in making a decision on an alternative solution, prior to the submission of the C16 report to Authority.



Timeline shows the meshing with C16 timescales. Please sign up to the C16 mailing list [here](#), to receive notification of the published consultation and for further C16 updates. Published consultation material will be published on the [C16 Website](#).

\* Where we reference the Authority we mean Ofgem

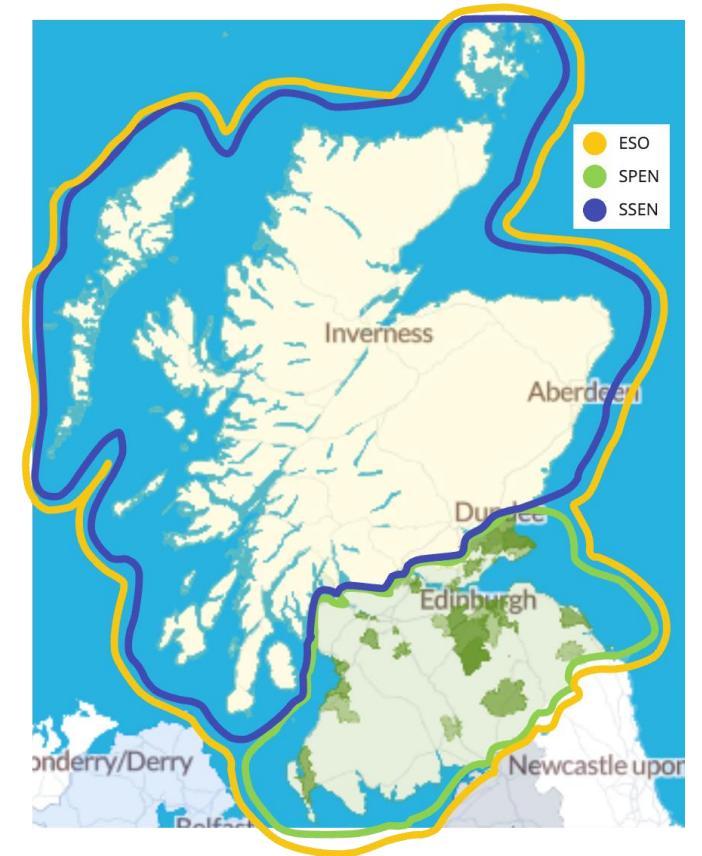
# ESO – DSO coordination

## Context

- Flexibility markets are bringing new focus to ESO – DSO coordination
- Project team regular meetings with DSO partners to streamline coordination
- Agreed LCM process for qualified asset data sharing at week ahead of bidding
- DSOs assist in rapidly qualifying grid-connected generation assets into LCM
- Demand turn up embedded in distribution brings particular challenges

## Looking forward

- Exploring solutions for increasing demand turn up (100kW temporary limit by GSP)
  - Presently the above default limit on distributed turn-up capacity is in place
  - Development of a fault escalation process
  - Available flexible capacity modelling accounting for hierarchical connectivity mapping
  - Bounded shared responsibility for stop instructions associated with fault conditions



# Q&A



# Resources

- **Piclo**
  - ESO profile - <https://www.piclo.energy/profiles/national-grid-eso>
  - Data hub - <https://data.piclo.energy/>
  
- **ESO Markets web page** – click on Documents tab  
for e.g. Service Design docs:  
<https://www.nationalgrideso.com/industry-information/balancing-services/local-constraint-market>
  
- **In the Press /media:**
  - +Current News - <https://www.current-news.co.uk/national-grid-eso-and-piclo-to-develop-local-constraint-market-to-limit-scottish-wind-curtailment/>
  
  - ESO News - <https://www.nationalgrideso.com/news/world-first-constraints-market>





**Thank you!**

*Market Change Delivery team*

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**ESO**

# What's new? Market transparency about Price data

- LCM is now LIVE – National Control using under operational conditions
- LCM new report - sharing sample data about BM prices
- Aimed at LCM Stakeholders & questions about LCM prices to-date:

BM data can be hard to analyse.. *What prices do our assets try to beat?*  
*Can you clarify what ESO needs to be able to make consumer savings?*

- ESO has responded, publishing an [FAQ and a sample of BM prices](#), selected on days since 2020 when B6/B4 constraints were more active
- Future Pricing - As a trusted partner we want to sustain **open dialogue** with providers: Assets considered if they offer cost savings versus the BM

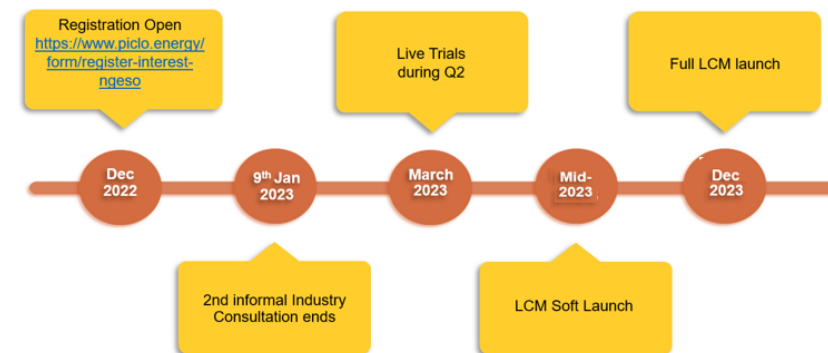
Table: Yearly weighted avg bid price within SCOTEX & SSE\_SP2 for BM actions longer than 6 hr and avg hourly bid vol no less than 1000MWhr & no GAS

Calendar YEAR	SUM_BID_VOLUME_MWHR	Sum of Weighted Avg Bid Price BID_ACCEPTANCE_COST	#SP	# Days with the event	
2020	-1,030,226	68,329,031	-66.32	1429	41
2021	-1,658,621	94,446,275	-56.94	2112	59
2022	-1,881,374	94,978,704	-50.48	2744	78
2023	-278,440	15,663,290	-56.25	467	17

Table 1. Extract from the new report available on the ESO [LCM page Document Library](#) (Select "Document Library" then "Sample BM data")

NOTE: The BM will continue to fulfil the System Requirement for managing boundary constraints

## LCM Trials & Launch



For other/related themes - wider ESO initiatives consult & collaborate on:

Wider existing initiatives (beyond LCM Market in Scotland) to address constraints

Thermal Constraint strategy & Road-mapping – a strategies team [Webinar on Thurs 18<sup>th</sup> Jan](#) will cover this  
[Scotland Intertrips](#) Local Constraint Management & [Pathfinders](#) – different from LCM and delivered via Intertrips

**Our team may not be able to answer right away - please ask we will direct you to appropriate forum/Teams to assist**