

Consultation Q&A Summary - Local Constraint Market (LCM)

How ESO responded to feedback about our introduction of LCM.

15/02/2023



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Introduction

ESO is developing a Local Constraints Market as an interim and simplified service which can be introduced while avoiding some of the complex and often slow to integrations with control room systems and to minimise the dependencies on other ESO systems.

Plans for the LCM service will continue to be made available via this website:

<https://www.nationalgrideso.com/industry-information/balancing-services/local-constraint-market>

Trials are taking place in Q1 2023 with a gradual roll out in the Spring and we continue to take a learn by doing approach using continued market and stakeholder consultation.

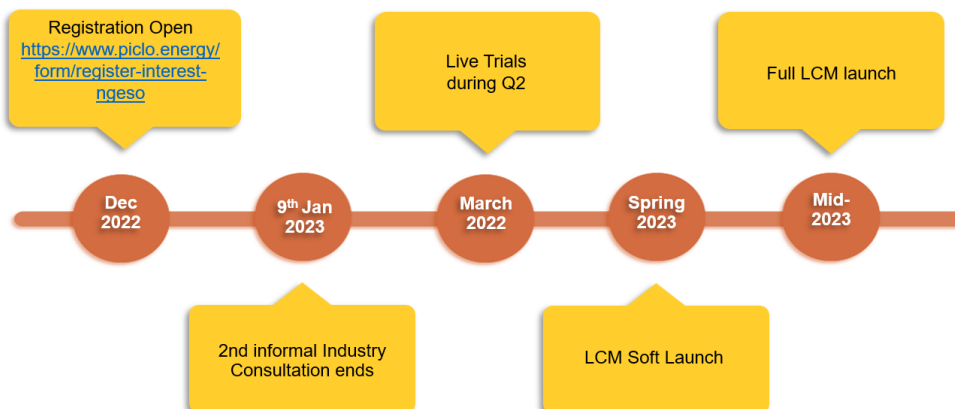
Summary of Responses

Thank you for responding to our two dedicated LCM consultations and for the additional feedback via ESO’s Operational Transparency Forum.

We have made several changes which were possible within the scope of the service – we hope these will widen our stakeholders’ participation in the new Local Constraint Market.

We are now providing an update to help summarise our responses and sharing this in Q&A format below.

LCM Trials & Launch



Subject	Question	Answer
Participation & Eligibility		
Aggregation, minimum MW limit	Will aggregation be limited by a 1 MW minimum?	No, based on consultation feedback we have worked to accommodate this additional market requirement. There will be no 1 MW limit and much smaller responses may be accepted subject to platform limits and trials. The requirement remains to aggregate these by GSP in order that ESO and DNOs can forecast flows to accommodate very localised congestion and DNO network needs.
ANM / GEMs	Will sites with ANM obligations be considered on a case-by-case basis? Will GEMs equipped assets be considered?	We do not foresee this at present due to LCM being scoped as a simple solution. If there is a business justification we may review in future but it would not be prudent to lift the ANM and stacking restrictions. The point of the service is simplicity and accelerated solution. GEM assets are excluded because LCM requires a commitment to respond to LCM.
Smaller assets in the BM	Can LCM be seen a step to facilitating smaller assets within the BM?	LCM is an interim solution that does not set out to integrate into control room live systems. LCM is stand alone and not to be confused with wider ESO BM evolution initiatives or to enable more enduring access to localised DER in future, such as Regional Development Plans (see ESO RDPs).
Assets south of B6	Can locations South of B6 play a part in LCM.	The LCM solution is focused on providers north of the B6 boundary.
	Can units South of B6 play a part in LCM.	The LCM solution uses distributed energy resource assets within Scotland and north of the B6 boundary only, such that permissible combined LCM response within Scotland reduces energy flows across constrained Scottish boundaries, including SCOTEX and SSE-SP.
Stacking with CM	We are a Capacity Market (CM) participant. Can LCM be included in the list of Relevant Balancing Services (RBS statement)?	You said ESO should take steps to accommodate RBS listing. We took this onboard and have applied via Ofgem to include LCM to assist our CM-market customers. We hope this will be successful and take effect in April. Please see the Ofgem published RBS consultation documents for details.
Stacking with other services	Is stacking permitted, for example if BESS sustained a 30-minute exclusive provision for LCM within the 07:00 - 06:59 service day, whilst acting for other services at other times?	Currently stacking is not permitted. This includes not be responding to other services within the service day, as there would be no way to verify if the response of the asset is genuinely assisting LCM across the service day; or verifying that LCM is not adding payment for a response that would be paid for by others.
	Did ESO received market support for using the Piclo platform?	We received no objections from any providers and received consultation feedback in support of using PicloFlex.
Integration with other Participation	Can ODFM participants roll over their Assets into LCM.	LCM is doing what we can to make asset registration as easy as possible and we note the feedback from our providers that repeated data input is an overhead. Strategic ESO work to support our future markets is focused on making it easier for providers and aims to avoid registering for every service separately. An example of this is our work on the Single Markets Platform. Whilst it was considered we found it was not possible for LCM to integrate with this because the LCM approach is by design a stand alone 3rd Party service and it would not be possible to integrate and still launch the service at a time to match the need and market potential.
Partial Turn-down	Can Generators turn down to a non-zero level? E.g. reduce to SEL.	Yes. Where these meet other platform requirements and assist constraint management over the service day, we have now removed this requirement and generators may now reduce (rather than zero) their output.

Subject	Question	Answer
B6 Boundary Definition	What defines the B6 and B4 Boundaries?	The boundary names are a guide and daily boundaries can vary slightly according to state of the transmission network. These nominally align with the published ESO Thermal Constraints boundary map references, designated as SCOTEX and SSE-SP. For each LCM competition (Day Ahead/Half Day and on a maximum of a daily basis) the platform will automatically indicate locational boundaries for each LCM competition. This is to accommodate cases where one or other (B6 or B4) boundary is the priority for the Control Room daily plan on that day. Also highly localised DNO, GSP capacity/voltage consideration and local import constraints may cause localised variations and 'Swiss cheese' exclusions to the LCM catchment on a given day.
Keeping DNOs informed	Will LCM involve DNOs who manage networks connected Distributed Energy Resources (DER) and may be affected by LCM?	LCM is ensuring DNOs are offered good visibility of intended LCM participation and where DNO preferences affect providers the Piclo platform aims to assist this. DER providers will be ultimately responsible for updating their availability and participation in LCM where DNOs provide this information, in order to meet any DNO-specific requirements for distribution network constraints/outages.

Onboarding & Unit Registration

Form ABC Process	Is the onboarding process using a familiar approach e.g. ABC process?	Yes, we have retained the elements of the Form A, B, C, using the PicloFlex platform features to facilitate this through the PicloFlex web interface wherever possible.
Terms and Conditions	Is it possible to advance SMP to speed access or carry-over previous registration data from ODFM?	Thank you for the feedback - we know this is important to our providers and ESO is working hard to streamline access to multiple services. The LCM service itself is required ahead of SMP and integration not possible because of LCM's simplified and minimum integration approach.
DNO Coordination	Will DNOs have visibility at the outset of the process when providers are being registered?	The DNOs within the territory have been involved and briefed from the outset, have been offered access to the LCM platform to get visibility and will be involved throughout the use of the service and also have the option to express non-availability at GSP-level in advance of daily instruction at 21:00 (and 13:00). We expect to refine the process of viewing intended LCM actions and provide options to DNOs to express specific preferences where a particular day's use of flexibility may cause complications in the local distribution network.
Engagement	Is support and information being provided for onboarding. And how can queries be raised about the details of using the platform? We welcome LCM and would like to participate in Trials. How can we get more detail of the service terms and operation?	ESO has chosen Piclo to facilitate onboarding, Provider registration and asset qualification via the PicloFlex platform. Briefings and support are already provided. Interested parties can start here https://www.piclo.energy/form/register-interest-ngeso NGESO recognises limited information was available about the planned platform and service terms at the time of consultation. You can now receive information about using the PicloFlex platform and details you need for LCM Trials. Please continue to liaise via our LCM service provider Piclo who can offer information about using the platform. The service terms are currently with Piclo and we intent to publish them this month via Piclo and on ESO's website.
Non-ANM	We note LCM excludes sites with ANM conditions from the service. Will this be considered on a case-by-case basis in future?	Beyond LCM we agree an enduring approach is likely to be needed and may be developed in future through the joint DNO/ESO work or primacy rules. Given its simplified approach for the interim, LCM expects that ANM assets will remain excluded.

Unit Availability & Price Submits

Forecasting	Can Hydro assets self-declare output forecast ?	Declarations of forecast will be entered as Nomination Baseline via the PicloFlex platform and may be updated as permitted in the platform as long as they represent the forecast of the asset and cover the required
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Subject	Question	Answer
		Settlement Periods and leading/trailing settlement periods specified in the Service Terms. This must be submitted in advance as a forecast of pre-delivery (default) output and output during delivery which represents their LCM-dedicated-response that providers are comfortable they can deliver.
	Can providers submit detailed forecasts and responses e.g. daily, MW responses profiles across settlement periods and different prices per-period.	Yes. Piclo can advise how to do this subject to platform capabilities.
Pay-as-Bid v Pay-as-Clear	Is it possible to consider a pay-as-clear mechanism?	The platform is proceeding as planned with pay-as-bid. We agree for balancing energy products there is also a case for considering pay-as-clear. However LCM is designed as a 'system' balancing product that may prove more cost effective compared with BM bids and pricing and therefore pay as bid is an appropriate competitive mechanism. It may not be possible to transition within the scope of LCM as a simple service - we will however review this as the market progresses.
Participation payments	How do Participants declare availability?	At present this will be via discussion with Piclo as platform functions are still being rolled out. Piclo will be receive from each provider a typical MW profile (of available flexibility and may aggregate this up to GSP level) across the settlement periods for each day of the week. Providers may update this to reflect expected response availability at late as D-1. Participants should update availability at least weekly. We remain in discussion to determine if DNOs expect a best view of the week ahead to be valid by a given day each week.
Roll-over of submissions	For easy ongoing use, will roll-over submissions be possible?	Piclo can advise how the platform supports easy set up and reuse of past submission information in order to quickly and easily access the next LCM competition.
Dispatch Profiles	Will the service allow a variety of different dispatch profiles and for many sites to be managed by a single operator?	Yes, subject to the platform and service terms and within requirements for aggregation at GSP-level, these are all possible. Please discuss how to access this with our platform provider Piclo.
CMZ Contracts	Will CMZ restrictions be considered?	LCM requires that providers do not stack services and it is the responsibility of the provider to not make themselves exclusively available to LCM. This may not be possible if they have a CMZ or other contract for a specific period and providers should not bid.
Instruction Windows	Can the Provider respond to an instruction on behalf of the Asset? Or does the service expect individual assets to also respond?	The Flexibility Service Provider needs to respond to an instruction. Where an FSP acts on behalf of an Asset or group of multiple Assets, there is no requirement on an Asset to respond to the instruction, that obligation lies with the Flex Service Provider.
	Regarding declarations, we note that users will submit "asset or unit volumes (forecasts and expected delivered volume)". We would welcome clarity - are these volumes of flexibility (up/down response) or the total energy flow?	Forecasts are measures of total energy flow - entered into Piclo as a 'nomination baseline' - your forecast the meter readings assuming no LCM response. In contrast, LCM bids (responses) of the flexible assets are measures of flexibility - the generation turn down response or demand turn up response that the asset can deliver. Availability and ratings figures supplied with your asset data is also to be given as an indication of typical flexibility (up/down response) available to LCM from the asset. The 'nomination baseline' data or forecast data will be submitted by providers on a daily basis for 30 minute settlement periods (kWh). The bids, which are up to the FPs discretion, are submitted in MW and for 30 minute settlement periods and represent the value by which an FSP can deviate from the nomination baseline.

Subject	Question	Answer
Price Submissions / timing	Providers should be able to submit prices daily. What is the permissible timing?	Providers may submit bids at any time prior to the Close. No objection to daily availability or daily prices. Providers can submit weekly if they choose. The limit is that prices may be submitted up to the Competition Close time advertised in the Piclo platform. This is expected to be 17.00 for the Day Ahead competition and 09.00 for the Intraday (Half Day) LCM competition.

Assessment

Baselining	How will LCM validate the response has been delivered for the service?	Forecasts of default (non-delivery) energy output at the meter will be used - these will be entered into the platform as the PicloFlex Nomination Baseline. This will include Leading/trailing settlement periods. Verification of LCM response will be by comparing the bid volume with that which was delivered (metered-minus-baseline) for each asset and across each of the settlement periods in each service window. The forecast 'nomination baseline' will also be checked for accuracy against submitted boundary meter readings of actual output.
Auction v Continuous Market	Did LCM receive market support for Auction-based approach versus a continuous one?	Yes. From several consultation response recognising the need for a simple approach that can minimise time to live and no objections.
B4 vs. B6 Boundary	How will LCM decide to address B4 boundary?	B4 lies within B6. If it needs resolving, it will always have to be addressed first. There may be some cases where B4 potentially needs resolving and a possible B6 requirement can also be entirely addressed by acting above B4. Because above B4 benefits both boundary constraints, this measure with its two system benefits would always be considered first.
Dispatch		
Two Window Strategy	Why are there two windows per day and how and when does ESO decide to use each?	The two windows give the ESO Control Room Strategy team flexibility to consider trading action for the full day on a consistently windy day and action closer to real time as the wind forecast and the outage patterns are more established for the latter half day.
Volume Requirement	What are the dominant drives determining ESO's volume requirement?	As with all constraints, key drivers include a combination of Transmission system conditions and generation patterns. The volume targeted via LCM versus the BM will be based on market price comparison.
API	Can API dispatches be sent rather than via email.	PicloFlex uses a variety of methods to send instructions which are then accepted, followed by self dispatch for the settlement periods of asset delivery. We note the feedback that APIs are more efficient than email for some providers. API rather than email instruction may be discussed with Piclo, subject to platform capability.
Ramp Rates	Is more guidance on Ramp rates available?	Still being explored - Ramp rates for the overall service are expected in-line with BM use, ramping up to full volume within a Settlement period and to keep rates manageable for operational reasons.
DNO Coordination of Dispatch	Are you coordinating with DNOs to accommodate distribution level needs?	We are providing DNO-specific capabilities for visibility, giving information about dispatch and enabling DNOs to express non-availability preferences on the occasions these are needed. Scottish DNOs have now been offered training to access the LCM platform and participation is welcomed.

Delivery

Delivery Flexibility	Is there a limit to the min/max duration of flexibility within an instruction window?	Apart from the given day's settlement periods where a response is required that day, there is no ESO limit on minimum / maximum duration of delivery within the service window.
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Subject	Question	Answer
Delivery Date	How soon can the service be expanded to make fuller use of the available flexibility of DER in Scotland?	Expanding the service will depend on trials being successful through the spring and on the subsequent releases of capability in the platform to enable larger volume of response and good usability. Operational and wind conditions will also determine how soon sound control room practices can be established.
Unit Recovery Period	What is the purpose of Unit Recovery Period?	The recovery period allows the ESO / platform algorithm to understand what 'rest period' each unit requires after a period of delivery and should therefore not be considered again for redispatch. If units can always provide immediate redispatch after a delivery period, they would be advised to submit '0'
Multiple periods of acceptance.	Will multiple periods of service response by provider be considered permissible?	Provider will have the opportunity to declare individual Settlement Periods for which they are available/unavailable to respond.

Settlement

Pricing basis & revenue certainty.	Why is LCM paying only for utilisation and not offering any other incentives?	The service is providing an alternative to BM participation and only on days the plan shows boundary constraints as active. It must be as simple as possible to assess against the BM. Therefore it is appropriate to implement the LCM as a pay as bid utilisation only service as per the BM.
Baselining	How is forecasting or baselining used to evaluate and settle bids ?	The PicloFlex platform supports this by providers entering forecast default (non-delivery) energy volumes as a Nomination Baseline and submitted meter data will be used to evaluate the flexibility delivered and settle the difference (or the accepted volume, whichever is less).
Non-Delivery Penalties	Are there any penalties to declining an instruction after bidding?	There are no penalties for not accepting an instruction but penalties may apply if accepted and the stated volumes are not being delivered. Non-acceptance will be assumed if not accepted within one hour of competition close.
Metering Data	How can meter data be easily submitted following the service window?	Administrative overhead is reduced as much as possible with the support of the Piclo platform, from asset qualification through to settlement. Piclo are working reduce administrative burden on FSPs for uploading 'nomination baseline' and metering data enabling data upload by spreadsheet and APIs.
Metering Data	What Metering data is required?	Active Energy volumes at the boundary meter point for settlement periods spanning 12 hours before the service window to 12 hours after the end of the service window. The assets, boundary meter data, the aggregated volume bid, collective their flexibility response and forecast data must all be consistent.
	Why is metering data prior to / following delivery period necessary?	This additional Metering data is required to ensure that the provider has delivered the required change (up or down) from their original position. The Piclo platform is used to make this as easy as possible.
	What metering can be submitted.	Network Boundary Meter data can be submitted after the delivery.

For LCM purposes a Boundary Meter is defined as a MPAN meter at the boundary with the electricity network, with the MPAN comprising up to one import MPAN and up to one export MPAN number. For the foreseeable future assets must make their response within a GSP area in PicloFlex and the volume(s) of bid(s) may be aggregated no wider than GSP level, across the settlement periods. Bids will need to reflect this and FSPs must fulfil the platform requirements for information at GSP level. This will include nomination baselines (forecasts) per GSP

Subject	Question	Answer
	As well as Boundary metering, can participation of Asset Meters be enabled, to allow greater participation of independent aggregators	The ESO is keen to reduce barriers to entry to the LCM and we note the feedback about the benefit of Asset metering. For good performance monitoring and compliant service reporting including ABSVD, the service terms currently require metering data submitted from the boundary meter (the MPAN meter point with the electricity network boundary). Key drivers for this metering (rather than asset level metering) is to comply with ABSVD submissions to Elexon and to ensure the measured energy responses properly reflect the effect on energy flow at point-of-connection to the distribution system.
	Can you give details about the requirements on the meter data?	We welcome further feedback from FSPs and clarify that current participation in LCM presently requires the following: <ul style="list-style-type: none"> - each asset defined in PicoFlex must have a corresponding boundary meter and must submit metering reports at this meter point. - if a set of assets shares the same closest boundary meter, providers may combine a set of assets of the same technology type and define these in PicoFlex as one asset as long as the combined response of these assets is properly forecast, instructed and measured at that metering point. Your registered asset information, responses, forecasts and submitted meter data must all be consistent in order that the LCM platform can provide proper market reporting, validate the response for service payment in each settlement period and measure performance properly to validate your nomination baseline in PicoFlex.
Load Factor	Are load factors being used?	No because providers will be taking account of their technology type when they input the volume they judge they can deliver.

Cashout & ABSVD

ABSVD for Demand customers	ABSVD process worked fine for ODFM in 2020 to make sure parties were not exposed to cash out imbalance charges. How will Non-Energy costs (BSUoS and Transportation costs) be dealt with for contracted parties?	Data available from the Pico Platform will be used by ESO in a similar way to ODFM to assist eligible customers who would be otherwise exposed to imbalance costs. Customers should take into account consequential non-energy costs arising from response, such as increases in BSUoS and Transmission costs. The service is not able to act to for other costs incurred by customer actions but LCM does plan to assist with balancing reporting where it could reduce imbalance costs via Cashout, as detailed in the service design.
Market Reporting		
Trade Confirmation	How much notice of delivery would the market have in the amount of LCM contracted?	We intend that the platform will publish confirmed trades within six hours after they have happened. Reports will become available here and summary reports will be mirrored onto ESO's data hub: https://data.piclo.energy/

Other

Project Timelines	Please advise the planned timeline for live Trials of LCM.	We plan to begin trials in early March, progressively embed LCM in with Control Room and DNO daily operating practices during the Spring and we intend to be fully launched in the Summer. Please see the published timeline on the LCM website.
Service Interaction / Stacking	How will LCM interact with other balancing services?	There is no expectation of interaction with other ESO ancillary services. This is an interim Thermal Constraint Management Trading product and excluding stacking of services should also ensure there is no interaction within the service day.
Unit Size	Are there any caps on asset size?	There is no cap per-se, however assets managed as a unit exceeding 50MW should be in the BM and would then be excluded.

Subject	Question	Answer
Eligible Technologies	Is the service open to any Technology Type?	The service is open to any technology that can meet the Service Design requirements, Service Terms, Platform requirements and asset eligibility criteria.
Cyber Security	Has the service been designed with security in mind?	The concept, architecture, design and procurement have considered security from the outset. We have a strict set of IT Security questions as part of the procurement, configuration, testing, delivery and applying throughout implementation. These reflect National Grids mandatory Baseline Security Requirements which must be met for each IT project. An ongoing process of review including regular PEN testing is used to ensure that standards and governance are maintained through the life of the service.
ESO/DNO coordination	Will LCM support DNOs to restrict participation of assets on a granular basis (daily, hourly, settlement period) to “block” assets for as little time as possible and allow FSPs to make the most of their flexibility?	We are taking this feedback onboard. We are working with our DNO partners and offering to develop some interactive options via the platform. To determine if we can do this with LCM we will assess the need and extent to which this is possible and this may be limited by the interim and simplified approach of LCM.

How to stay involved in ESO consultation

Thank you for your interest in LCM - we hope you can be involved and continue to give feedback.

To give feedback about the *overall approach to thermal constraints* by ESO the Operational Transparency Forum aims to provide a weekly update and invites questions from industry:

<https://www.nationalgrideso.com/who-we-are/electricity-national-control-centre/operational-transparency-forum>

Questions about all ESO’s ancillary services can also be emailed to

Email: box.futureofbalancingservices@nationalgrideso.com

For onboarding and registration ESO has engaged Piclo to support the process. For LCM and any questions about using the PicloFlex market platform for LCM please contact Piclo. Please register your interest at:

<https://www.piclo.energy/form/register-interest-ngeso>

Please use this to get involved in LCM or register for LCM Trials. Detailed onboarding information is made available as well as training materials and onboarding presentations or webinars for trials participants.