The voice of the energy industry

Energy UK response to ESO Flexibility Market Strategy, Call for Input (June 2024)

About Energy UK

Energy UK is the trade association for the energy industry with over 100 members – from established FTSE 100 companies right through to new, growing suppliers, generators and service providers across energy, transport, heat and technology. Our members deliver nearly 80% of the UK's power generation and over 95% of the energy supply for 28 million UK homes as well as businesses. The sector invests £13bn annually and delivers nearly £30bn in gross value - on top of the nearly £100bn in economic activity through its supply chain and interaction with other sectors. The energy industry is key to delivering growth and plans to invest £100bn over the course of this decade in new energy sources. The energy sector supports 700,000 jobs in every corner of the country. Energy UK plays a key role in ensuring we attract and retain a diverse workforce. In addition to our Young Energy Professionals Forum, we are a founding member of TIDE, an industry-wide taskforce to tackle Inclusion and Diversity across energy

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Our response/ summary

Energy UK welcomes the Call for Input (CfI) on the Flexibility Market Strategy. We support competitive markets as the key to unlocking the volumes and diversity of low-carbon flexibility that will be required to balance an increasingly weather-dependent supply and volatile demand.

Using demand to balance the system will require dedicated efforts. In addition to identifying and removing barriers, it will require new approaches, including designing grid services from the perspective of consumers and a look at how future savings can be reflected in the price offered to customers. The incoming Government has pledged to deliver power sector change faster. Keeping the electorate on board with rapid change is likely to require consumers seeing near-term benefits over the promise of 'jam tomorrow'.

Looking more narrowly at ESO services, the CfI marks an important inflection point in the transition - an acknowledgement that markets have not been technology neutral and that active steps to correct this will be necessary. Alongside accessible and competitive markets, a continued and increased focus on transforming the ESO's dispatch capabilities will be essential. We recognise the progress made here but highlight the risk that this area will be the key blocker in the midterm.

Whilst we welcome the initiative shown by the CfI and the work undertaken to date, we would like to see further ambition when the strategy is published in the autumn. The energy system could undergo significant change within the five-year timeframe of the strategy – both in terms of further renewables deployment and in LCT take-up. It is not clear that the ambition so far is commensurate with this scale of change.

1. Comments on Flex Markets Strategy map, vision, outcomes and principles?

Vision**:** We fully support the vision of enabling all flexibility resources to move seamlessly between markets, driven by effective market signals and delivering value to consumers. This would strengthen competition in the provision of balancing and ancillary services, contributing to greater efficiency, cost reductions and environmental benefits.

We agree with the rationale for the strategy – that market arrangements, designed for yesterday's system, need reform in order to support flexibility at both the supply and demand-side. Note – most members support evolutionary change – adapting the existing market via an Enhanced National Model. We further agree with the need for clear visibility of evolving market arrangements so all stakeholders can plan ahead.

Outcomes**:** We agree with the proposed strategic outcomes of competition, coordination and coherence but would add a fourth on consumer savings. We highlight the need for smarter metrics to quantify the benefit of the work – either by volume or cost/ volume (or development of the future market and the anticipated savings that would result).

We agree that digitalisation acts as an enabler for each of the other workstreams to achieve their specific goals. As with the point above, maintaining public support for the changes required (from hosting network and power infrastructure to changes to homes) is likely to require consumers seeing near-term benefit from the transition – digitalisation can enable this.

Principles: we broadly support the principles:

- Deliver in partnership (here we would suggest the addition of 'collaborative design'. Early industry engagement would avoid introducing new barriers)
- Consumer-value driven
- Digital-first mindset
- Transparent at every stage
- Technology-inclusive
- Be flexible and adaptable
- Encourage innovation and diversity

2. Comments/ feedback on success measures and milestones?

Define success: We would welcome a stronger focus on 'what good looks like' – both in terms of the overall market by 2029, and for the individual workstreams. Where relevant, this should be from a consumer perspective. For example, one of the success measures for coordinated markets is listed as 'stackable revenue streams'. In the full strategy, industry needs a clearer ambition setting out:

- Which markets will be stackable and how (via 'jumping', 'splitting' and/ or 'co-delivery')?
- The outcome - what level of consumer engagement/ investment in LCTs this will support?

Similarly, the market needs a clearer view of the volumes of consumer flexibility that might be economically (or technically) feasible/ optimal by 2029.

Emissions: Most members felt that reducing carbon emissions need to be a explicit objective (given the 2035 grid decarbonisation target and the NESO's new duty) and that carbon pricing would not be sufficient in this case.

Ambition: We would support higher ambition for the strategy. Members note that many of the activities are already in progress (and, in the case of the Open Network activities have been in train for some time). The next five years could see a large increase in variable renewables on the grid as well as a big uptick in consumer LCTs. This will be challenging to manage and higher ambition in this strategy would be better placed to support this system shift. We note too that front-loading ambition is likely to reduce the efforts and cost from 2030-2035.

We would support the work being prioritised to focus on the areas that can deliver the greatest benefits to consumers (both near-term and in the future), with an early focus on 'low hanging fruits' to deliver these benefits to consumers faster.

3. Any gaps within any of the six workstream summaries (or general feedback)

Workstream 1 – Develop 5-year Strategy for System Requirements

Members would like to see these activities prioritised on the basis of those with the best potential to deliver strong benefits for consumers. This 'consumer lens' should looks at both near-term and longer

term savings including where ongoing medium term benefits would outweigh slightly higher costs in the near-term.

Workstream 1 – Develop 5-year Strategy for System Requirements - Activity	*Timeline*
Model flex req., (within day and adequacy) to understand needs & growth required; *Thermal constraints – developing strategy;* *Highlight actions to progress now, promoting new trials (including BM, DFS, LCM)*	*Today – 2025*
Build model for long-term response and reserve requirements *Understand how flex requirements interact (frequency, with-in day and adequacy)* *Develop long-term market strategy for ESO balancing services; co-optimise services* *Implement thermal constraints service*	*2025-26*
Publish holistic flexibility requirements *Develop flexibility procurement strategy* *Build ESO capabilities to utilise flexibility* *Implement thermal constraint service*	*2026-8*
Update 5yr strategy and visibility of how to meet system needs (markets roadmap)	*Ongoing*

Workstream 2: Identify and remove barriers

Broad 'end-to-end' scope: We would support the scope including barriers outside of the ESO's remit (for example, resolving the issue with conflicting metering standards in smart standards regulation[1]) with the relevant owners clearly noted. Without this overview, there is a risk of barriers remaining and value being fragmented across the system (and lost as inefficiencies).

This broad scope should include the Capacity Market (CM). Whilst not an ESO market, there are clear independencies (the CM provides availability payments without which some DSR would be unviable/ unable to operate within the merit order - from 2024/5 this will include the Demand Flexibility Service). These interdependencies means that barriers in the CM will impact ESO and DNO flex markets. Examples here include unnecessary data requirements in the CM design (for example, requiring address level data rather than MPANs for CERs) and software (designed for large assets) unable to process the required data for aggregated assets.

Ongoing process to avoid new barriers in emerging markets: This risk could be mitigated by involving more stakeholders in early stage designs (from FSPs, the control room and the regulator). The collaboration between the control room engineers and FSPs played an important role in the success of the Demand Flexibility service (DFS). This approach could prevent default assumptions being copied over to services that are aiming to encourage participation from assets with very different characteristics. Balancing Reserve was suggested as a negative example of where a lack of industry involvement resulted in poor design against DSF as a positive example of where early engagement improved the design and led to high user engagement. As part of this work we would welcome ongoing work to review product specifications to assess whether they could be adapted to facilitate the participation of a wider range of low carbon assets.

Removing barriers is necessary but may not be sufficient: It is unclear where this might sit (in Workstream 2 or 5 for example) but there is potentially a gap within the strategy whereby resolving barriers, and standardising markets etc may not be sufficient to bring onboard the volumes of DSR that the analysis suggests would deliver savings in the future market.

As an example, whilst increased revenue stacking across markets will help, aggregated domestic Turn up may still be uncompetitive as a means to reduce thermal constraints due to the cost of the additional supply. Other policy changes, for example, rebalancing/ removing the levies that sit on the electricity price could change this but presumably sit outside of this strategy. Members would support a broader scope to facilitate a wider sector conversion about how the existing markets can be adapted to work with newer asset classes.

Price as a barrier: Here members highlighted price as a barrier, citing the difference between the prices that the ESO and DNO markets pay for flex. Whereas DNOs reward flex based on the level of reinforcement costs that it can delay or avoid, the ESO cannot pay more than the prices in the Balancing Mechanism (BM)/ opportunity cost of turning off wind (with the exception of 'enhanced

[1] Measuring Instruments Regulations 2016 (MIR) and The Electric Vehicle (Smart Charge Points) Regulations 2021 (EVSCPR)

services' such as DFS). Members highlight the disparity here and question why the ESO is not able to provide equivalent contracts for services that would reduce future investment in network and generation infrastructure.

Members highlight that as well as reducing the overall costs of the transition (ultimately born by customers), these measures can be delivered faster than physical infrastructure. The Local Constraint Market (LCM) was again highlighted as an example where the requirement to 'beat the balancing mechanism' price made consumer Turn up unviable.

Workstream 2: Identify and Remove Barriers *Activity*	*Timeline*
Define process for barrier and pain points identification and removal	*2024*
Publish routes to market review for demand side flex	*2024*
Publish barrier removal commitments and roadmap, coordinating with workstream 4 to ensure cross GB market alignment	*2024-5*
Identify and map customer journey pain points for ESO services and GB markets	*2024-5*
Publish customer journey improvements roadmap	*2024-5*
Track and communicate roadmap for change and progress	*Continuous*

Workstream 3: Transform GB Flexibility Markets Digital Infrastructure

We support this workstream to transform the digital infrastructure and agree with the key deliverables presented in the table below.

Dispatch capability: As part of this, we support the ongoing efforts to address issues such as skip rates and to improve the dispatch of batteries and smaller aggregated assets (e.g. bulk dispatch, the "30-min rule" and GC0166 to introduce new dynamic parameters for limited duration assets).

We recognise the difficulty of this work and thank the ESO team for the progress made to date. At the same time, the ability of the IT systems (legacy and transitional) to optimise these new assets could be a key barrier to faster decarbonisation. For example, Modo Energy highlights that 14 GW of BESS are planned to begin operating by the end of 2027. This would take the installed capacity from 4GW now to 18GW. Members would like reassurance that ESO resourcing here is commensurate with the scale of the transformation that will be required to optimise these assets effectively.

Demand forecasting: members identified a gap on improving demand forecasting noting that that accuracy has reduced over recent years as more distributed assets have been added to the grid. Members cited the Danish transmission system operator, running a power system with a large share of intermittent renewables, to show that a strong focus on improvements in forecasting can help to reduce renewables curtailment. We would support the ESO in doing more work to understand how it can improve its demand forecasting with associated metrics to monitor progress. Improved forecasting tools, close ESO-DNO cooperation, benchmarking and closer works with market participants (such as load controllers to develop predictive approaches to forecasting variable loads such as EV charging) are all options here

Alongside this, we would caution the ESO against requiring PNs for ever smaller loads. This approach is not feasible for CERs and would result in new barriers for demand side flexibility. Instead we would support wider industry discussion on the best approach. Of potential merit is an approach used in Australia where suppliers/ FSPs complete an annual survey to supply relevant data on CERs/ DER/ consumer archetypes/ tariff info. This data is used by the SO for predictive modelling in their demand forecasting.

Workstream 3: Transform GB Flexibility Markets Digital Infrastructure *Activity*	*Timeline*
Upgrading control room capability, building infrastructure for DER and CER visibility	*2024-8*
Enduring Auction Capability (EAC) quick reserve and slow reserve	*2024-5*
All balancing services procured through the Single Markets Platform (SMP)	*2025*
Enhancing Balancing Capabilities in Control Room – Open Balancing Programme	*Iterative release*
Coordinating with industry programmes to deliver smooth customer journey and coordination of GB data and digital systems, including Flex Digital Infrastructure (FDI) programme, data sharing infrastructure and asset registration infrastructure.	*2024-2028*

Workstream 4: Standardisation across all Flexibility Markets

We support this workstream as important but note that it is largely the remit now being delivered by the ENA's Open Network programme, and which will sit under the Market Facilitator. Whilst delivery has improved, most still feel that the work is still progressing too slowly. When the full strategy is published we would like to see clearer delineation of which body is responsible for which outputs in this area. There is some concern that the Market Facilitator will not have sufficient powers to bring the DSOs into sufficient alignment - so the role of the regulator to do this will be key. Given the length of time that this work has been in train and the additional resources that will be available with the Market Facilitator, we would like faster resolution of existing work areas.

Beyond this, further work is needed on market standardisation – for example, procurement timescales and delivery windows. Currently, some flexibility markets require delivery by Settlement Period, others by Electricity Forward Agreement (EFA) blocks, whilst others require alternative approaches. Aligning delivery periods would support FSPs to revenue stacking across the markets, preventing value from being 'lost'.

Workstream 4: Standardisation across all Flexibility Markets Activity	Timeline
Review opportunity for standardisation by identifying prioritising pain points.	*2024-2025*
Contribute to Open Networks workstreams and deliver on commitments	*2024-2026*
Support design and implementation of Market Facilitator	*2024-5*
Implement changes identified by MF	*Continuous improvement*
Feed back pain points of non-ESO markets and contribute to solution design	
Adapt ESO markets to support standardisation across all flex markets	

Workstream 5: Coordination with DSOs

The limited revenue stacking between markets (ESO-to-DSO and ESO-to-ESO), is currently the highest barrier to domestic DSR. We support a stronger focus here and an approach that foregrounds changes that support FSPs to offer attractive domestic propositions to their customers. We are encouraged by recent engagement with the ESO stacking workgroup.

Offering domestic customers sufficiently attractive and consistent revenue streams here would support them to invest in flexible low-carbon technologies (LCTs) – thereby reducing the level of subsidy/ support elsewhere in the system.

Workstream 5: Coordination with DSOs - Activity	*Timeline*
Develop ESO-DSO coordination vision and engagement strategy. *Establish data sharing req. and develop processes/ systems to enable sharing.*	*2024-2025*
Facilitate ESO-DSO revenue stacking *Immediate focus for Yr24/5:* *Lead Open Networks stackability working group* *Review DFS exclusivity clauses* *Identify barriers for unlocking stacking*	*2024-2026*
Understand and appreciate DSO various req.s across the country	*Continuous improvement*
Implement changes identified by MF	
Leverage pioneer projects, such as: Single Market Platform data sharing trial: *Regional Development Programme (RDP) – the MW Dispatch service*	*2024-2028*
Design and deliver the DER CER Visibility and Accessibility project	*2024-2029*

Workstream 6: Pave the Way for Future Market Arrangements

We agree that this 'pave the way' workstream makes sense – for the REMA decisions and to ensure that existing sector programmes, such as Market Wide Half Hourly settlement (MHHS) mesh with other relevant work.

As noted in our comments for Workstream 2, it is not clear that removing barriers, or MHHS by itself will be sufficient to stimulate an economic level of demand side flexibility. An ongoing analytical focus here will help to identify any self-comings and additional action that may be required.

Most members are supportive of an Enhanced National Model – of exploring how the current market structure can adapt to the changing system needs. In this context there is support for exploring how future operability could be optimised within a market similar to that which we have today.

Activity	Deliverable
Develop reform options for REMA (priority), VLP access to wholesale market, TNUoS Task Force Closure Report/ Connection 5-point plan, Support P415 implementation	*2024-2025*
Support REMA design decision, MHHS migration, SSES Second legislation, GB connection reform project	*2025-2026*
REMA design and implementation, MHHS migration complete *ESA standards defined*	*2026 -2028*
Horizon scanning to identify future market interventions as landscape evolves	*Ongoing*
Create a cohesive overview, updating stakeholders for the future arrangements. *Advise wider net zero markets reforms for inclusive and effective flexibility*	*Ongoing*
Champion market opportunities, using system needs to influence arrangements	*Ongoing*

4. General feedback or further suggestions for areas of improvement?

Ongoing industry collaboration: Making demand side flexibility 'stack up' for customers will require tracking value through the system and removing the barriers (inefficiencies). It is an ongoing process and one that will need to be tackled from both the perspective of the system operator, the networks and that of different consumer archetypes. Members here agreed that the ESO's approach to engagement is improving, noting especially the recent Constraints Collaboration project in which the ESO came to industry with the problem rather than the solution. We support this approach being used as a template for further service design (whilst noting that more transparency on how the suggestions had been prioritised would be useful).

In an earlier response this year, we noted members comments on the inaccessibility of EBR consultations (EBR consultation process, January 2024). We encourage the ESO to look at how it could make these more consultations easier for industry to engage with (by combining the EBR and industry-focussed consultations?).

Tackling thermal constraints: We would like the ESO to use industry to help it prioritise the work on a semi-regular basis. Current costs suggest a higher focus should be directed at thermal constraints. We support a portfolio approach here – with a range of constraint markets covering all relevant timescales - from long-term contracts supported by availability payments to day ahead and intraday auctions procuring firm response or availability. Pathfinders could be used to assess new solutions.

Gate closure: Members responding to this consultation were generally supportive of moving gate closure closer to delivery. Intraday trading close to real time can have significant benefits in decreasing demand for balancing energy. Members cited Europe as an example, in which balancing energy bids can be submitted 25 minutes before delivery. In contrast, gate closure set at 60 minutes before delivery prevents market participants from making adjustments closer to real time even though this could alleviate some of the pressure for closer to real time adjustments.

Pace and detail: Members would like to see more detail on delivery, timelines and associated metrics. We recommend that this is published as a separate delivery plan which industry can provide comments on. We would also like to see an increase in pace – some of the activities listed (particularly those associated with the Open Networks programme) have been in progress for some years. Members would like more attention from the regulator, Government and the NESO to ensure that these can now be completed much faster. Similarly as highlighted earlier, some of the activities to understand the future system are pivotal and should be bought forward to 2025.

Governance: we would welcome much clearer delineation of roles and responsibilities between different parties - especially between the NESO, Market Facilitator and DNOs on the market standardisation and coordination activities.

5. From 1 to 10, rate clarity of strategy and roadmap explanation overall and rationale.

We rate the strategy as 8 out of 10

6. Please provide a reason for your rating

We support the initiative, the commitment to change and the work undertaken to date.
We would welcome a wider scope and higher ambition.

B - Routes to market

General comments on the Routes to Market: The focus is on barriers at the asset level but barriers also exist at the aggregated level (whether it is a supplier or VLP doing the aggregation). A portfolio of EVs can perform very differently to the specific assets themselves – this needs consideration.

Barriers matrix excel file
This maps out barriers for flexible CER/DER assets (behavioural, EV, solar & battery, heat, I&C - SME or large/ scheduled or interruptible) in accessing relevant ESO services.

Operational metering latency – on the need to regularly review product specifications to ensure that requirements are justified (where unwarranted, they can drive up costs for or exclude some asset classes), a point was highlighted on operational metering latency. Whilst accurate data is important, it may not always be essential to that the control room can access the data within 5 seconds of the action (providing an evidence trail after the event may be sufficient).

An example was given of the Dynamic Containment (DC) service in which the effective lack of a deadband (acceptance range) acts as a barrier to non-dedicated assets (such as aggregated EV chargers) providing the service. This prevents this asset class (which has the potential to provide this service at low cost), from participating. It is not clear that the current design (which requires participating assets to respond to even a small deviation in frequency), is justified given the barrier it creates for non-dedicated assets.

A related barrier is around delivery tolerances. Whilst strict standards were designed with large assets in mind, it is not clear they are justified for aggregated small assets (given that any frequency deviation would be small). These standards make it harder for these asset classes to participate. It is a characteristic of aggregated fleets that customers will drop in and out – the role of the aggregator is to minimise this within tolerances. Overly rigorous standards, however, will exclude this asset classes.

Members suggested ‘asymmetric tolerance’ as a tool for managing this risk. Here, if the frequency is falling and the FSP is providing an upwards response, then the FSP must deliver at least as much as was requested but over-delivery is accepted (with or without a upper threshold), and verse versa for a downwards response. There is a further point here of ensuring that any limits on over delivery are warranted and based on costs/ risk rather than assumed. Here an example was provided of a New Zealand service where the design penalised shortfall but not over-delivery. Concerns that the level of over delivery was creating risk, the SO imposed a 20 percent upper limit. However, when it analysed the potential costs of any over-delivery, it found that any plausible level of over-delivery would have a negligible impact and so cancelled the upper threshold limit as an unnecessary barrier.

In summary
We support this work from the ESO and thank the team undertaken to date. Our challenge to the ESO is to propose modified designs for services that could turn ‘red dots on the barriers matrix into green dots.’ We would be happy to collaborate in this work. The relatively low level of LCTs on the system now means that it is a good time to explore what tolerances and standards can be relaxed and which are needed (ahead of when deployment is higher when controlling volumes would be more challenging).