

Topic	Question	Answer
Markets Development	You mention how Net Zero and REMA market reform will dictate the direction of travel so is there a risk all the piecemeal sticking plasters that are working now might be all changed later with a new market design?	<ul style="list-style-type: none"> <li>•Market design could change dramatically, and we are deeply involved in the spectrum of potential options</li> <li>•Our MDF looks at how reforms are adaptable and coherent, not just with current designs but with potential future designs – we consider future REMA reforms in our balancing/AS reforms</li> <li>•The major potential changes are around locational pricing and central dispatch – we believe that our reforms are compatible with these</li> <li>•Such changes will take a while to implement, and we must continue to act to reform markets to drive down costs, ensure SoS and facilitate decarbonization. Of course we want to do all we can to ensure these reforms keep us on track for net zero. This is why the Market Roadmaps is so important.</li> </ul>
Enduring Auction Capability	Will the Balancing Reserve remain separate to the EAC and other Reserves (Quick and Slow)?	Balancing Reserve will remain separate to the other reserve services and we are exploring whether this will be procured on the EAC platform. This is currently under review and the BR team will continue to keep industry updated on our plans and seek feedback on changes to the service design
Thermal	Slide 7 refers to the NOA refresh forecast which only includes the HND update to the NOA 2021/22 published in Jan 22. Can the ESO assure us that it is using the most up-to-date data available for its forecasts?	Data was correct at the time of publication, and we continually ensure that the most appropriate datasets are being used within our forecasts. Centralised Strategic Network Plan will help to coordinate and improve these forecasts across stability and voltage workstreams going forward.
Response	Please can you provide more information on Static Recovery and the phase-out of Static FFR? e.g. how long will legacy Static FFR continue to be procured, and when does the ESO expect that the Static Recovery product could be introduced?	<p>We do not have a finalised timeline for the phase-out/replacement of Static FFR. We will continue to investigate our enduring requirements from Static Recovery over the coming months. It is not currently being considered for our Response Release 2 changes which are planned for go-live from March/April 2024.</p> <p>Changes after this have not been confirmed but an enduring market for our static requirements could be included in the scope of a release from Release 3 onwards.</p> <p>We will share any future updates or developments on this through the usual channels: eg Future of Balancing Services newsletter or Ancillary Service Reform webinars.</p>
Stability	Will there be any system resilience issues with the reduction in lowering the minimum inertia level?	Our Frequency Risk and Control Report sets out our intent to lower the minimum system inertia levels from the existing 140GVAs, eventually to 102GVAs. Extensive modelling supports these recommendations and we plan to do this in a staggered way – starting initially at 120GVAs - to ensure we can do this in a co-ordinated, measured manner which will of course ensure that the system can be operated safely and securely. It is also important to recognise the improvements made through our new Dynamic Response products which help us to manage the system securely at lower inertia levels.
Markets Roadmap	The ESO included a service stacking diagram in the 2022 Markets Roadmap document (page 91) which was a really useful summary, but there doesn't appear to be one for 2023. Please could the ESO produce one for 2023 which includes the new products introduced since the last one (e.g. DFS, Balancing Reserve)?	<p>Good to know you found this helpful – and sorry that you missed it this year. We'll remember this when we're developing the roadmap for next year.</p> <p>If you've got any other feedback about what you'd like to see in the next roadmap, please respond to the survey and put your suggestions in there.</p>
Stability	How is the stability market reform accounting for the stability actions being taken by the TSOs?	The Y-4 LT market will have opportunities for commercial market providers to compete against Transmission Owners (TO's) to provide stability services, mainly SCL and inertia, similar to how we have completed Stability Pathfinders.
Stability	Why do you have no long term stability requirements at the moment when only a 3rd of your requirement is covered by the pathfinders? What are you expecting to fill the gap in the meantime?	<p>We frequently run system studies to assess our requirements for stability and voltage. We get stability from several different sources, such as Pathfinders, but also from traditional TO network assets, synchronous machines providing energy, as well as demand users. In the future, this could be provided by non-synchronous generation, such as wind and battery storage, through the work done by industry and ESO on GC0137 to enable Grid-forming convertors.</p> <p>As articulated in the presentation, costs increased from re-dispatching units in the Balancing Mechanism in 2022, hence why we are planning to launch stability markets to procure our remaining needs more cheaply. Naturally, our requirements will change in the future, and we will use the Y-market to procure further new-build assets if required.</p>
Stability	Are the Y-4 auctions likely to be a similar basis to the CM auctions?	The Y-4 stability and reactive markets will be distinct ESO ancillary services, and therefore separate from the Capacity Market. The Y-4 market will most closely resemble our Stability Pathfinders which have been held to date.

Markets Development	Please can you provide more information on which of these market products offshore wind farms can serve?	Offshore wind can technically participate within the BM, provide thermal constraint services, response and reserve services (but considerations on whether this is commercially viable under the CfD), Stability services but would need Grid Forming and we are exploring how best to incentivise through markets. We have also just closed our tenders for an Expression of Interest for the provision of restoration services. The next opportunity will be in the South west and midlands Tender next year.
Market Design Framework (answered by LCP)	How do you cluster the companies to calculate HHI? Do you consider the ownership?	LCP Delta uses its own data to analyse the concentration of the market based on the overarching owner of the assets and Special Purpose Vehicles.
Market Design Framework (answered by LCP)	In LCP Delta's HHI analysis, are they just looking at immediate ownership of each participating resource, or looking through this to identify common ownership of special-purpose vehicles?	LCP Delta uses its own data to analyse the concentration of the market based on the overarching owner of the assets and Special Purpose Vehicles.
Response	Please can you clarify when you expect to retire MFR?	To retire MFR we would need an alternative real time service. We are currently investigating options for moving to intra-day procurement which will not be delivered before Release 3 (expected April 2025) building on some internal changes we will be making as part of Release 2. Additionally we will require pre-requisite deliverables from our Open Balancing Platform which are currently planned within the next 2-4 years. With these steps completed we will be seeking to deliver real-time procurement as soon as possible which should allow MFR to be retired. We will share any future updates or developments on this through the usual channels: eg Future of Balancing Services newsletter or Ancillary Service Reform webinars.
Market Design Framework (answered by LCP)	Can LCP comment on the spatial delivery of the services procured? Is the whole country able to take advantage of this market place?	LCP Delta reviewed locational signals under the locational principle in the framework. There is a mixture of explicit locational signals as a pre-requisite in the tender (as in the case of many of the system services), implicit locational signals (as is the case for the energy balancing services) either through network charging, or historic/expected ESO dispatch decisions.
Markets Development	Does these interactions involve CIM models exchange between different partners and how complex is the UML ?	CIM models for operational data exchange are something we're looking at and we're working on with Ofgem with regards to interoperability of data between industry members.
Markets Development	For Zero Carbon Operation, do you add emission limiting constraints to the market clearing optimization problem, or you have added penalizing terms to the objective function of the market clearing problem?	No, our current obligation is to optimize for cost and security of supply. Our job is to facilitate a level playing field between carbon and zero-carbon assets. Optimising for carbon is something that is being looked at as part of REMA, and we will work with DESNZ on the options on the table and how they may or may not work.
Enduring Auction Capability	Within EAC, can I place a bid like the following: Bid for Market 1 for vol1, price1, and Market 2 for vol2, price2 If and only if that first bid is unsuccessful, Bid for Market 2 for vol1 + vol2, price3 I.e. to place a lined bid, and then a bid that only executes if the first one is unsuccessful	EAC will allow you to submit mutually exclusive orders and orders with conditional acceptance. In fact the auction allows the 'opposite' feature: a second ('child' bid in current DC/DM/DR auction) bid only executes if the first ('parent' bid in current DC/DM/DR auction) is successful. You can use mutually exclusive baskets to model the strategy in a similar way: place bid 1 into basket 1 and place bid 2 into basket 2. At most 1 basket will be executed. We also publish a Market Design Explainer which gives an overview of some of the elements of the EAC market design and contains simple examples of the construction of basic sell orders. We are planning to update this document in early May to include more advanced examples. The document can be found on this page Enduring Auction Capability (EAC)   ESO (nationalgrideso.com). If you have any feedback/questions on EAC market design/auction feature, please feel free to email box.futureofbalancingservices@nationalgrideso.com.
Markets Development	I'm interested that you didn't seem to ask LCP to comment on /look at some of the more controversial ideas in REMA, notably nodal pricing etc - given that they were looking at Wholesale Markets. Or did they? eem to ask LCP to comment on /look at some of the more controversial ideas in REMA, notably nodal pricing etc - given that they were looking at Wholesale Markets. Or did they?	LCP were asked to look at our ESO Markets Roadmap, and the coherence with the current wholesale market design.  However, we did commission Baringa to undertake an independent assessment of all market design options under REMA. Will post a link in the chat

Enduring Auction Capability	Is there a risk that the respective go-lives of EAC and Slow and Quick Reserve could be delayed again, given the Slow/Quick Reserve EBR consultation has been delayed again?	EAC is not dependent on QR and SR going live. Reserve Reform project team have always been open that there are dependencies within this project. IT solutions are still to be finalised, we're still working toward the original timelines. We will look to update industry in next month's FoBS newsletter
Markets Development	Could you please let us know about the importance of CIM models exchanged between the parties in the context of data management between the parties for the balancing markets.	The use of CIM models for data exchange is something we're looking into and working with Ofgem with regards to interoperability between industry members
Markets Roadmap	How does the ESO Market and its roadmap interact with the development of flexibility markets at the distribution network level?	Our markets are designed in the context of wider markets – includes Dx markets. Our MDF coherency principle drives alignment. We aim to achieve efficiency across the whole system. There was another question about stacking figure in the MR and we will look to update this asap.
Restoration	Can you remind us when you can next register new interest for Restoration services	The SW and Midlands Tender will open EOI around January 2024. We are planning a market engagement webinar around November time this year.
Market Design Framework (answered by LCP)	While practicality to ESO was decided not to be in scope, surely practicality of adoption for the wider industry should be in scope? With 5000+ BSC parties, small changes for ESO can involve large disruption	As this was a review of the framework, as the framework is currently designed practicality only considers the practicality of the ESO implementing the market based on their own processes and systems. The practicality of the adoption of change for external parties is out of scope of the 'practicality' principle.
Balancing Mechanism	How does ESO expect to integrate Interconnector service in the Balancing Capability? Noticed that in the Delivery plan there is "Interconnector Integration" from 2024 to 2026, what are the pre-conditions to allow it to happen?	ESO are looking at a staged approach to development of capabilities within the new Open Balancing Platform. The "Interconnector Integration" element within the Industry co-created roadmap in the Balancing Programmes is a ESO control room/ ENCC requirement. We would therefore not expect any pre-conditions to apply for participants