

Power Responsive Flexibility Forum

23rd October 2018 – Summary

The Power Responsive Flexibility Forum took place on Tuesday 23rd October 2018 at the Siemens Crystal, London.

This document provides a summary of the autumn Power Responsive Flexibility Forum. It represents one of 3 Flexibility Forums hosted by Power Responsive annually. Previous Flexibility Forums in 2018 took place in January and June. Outputs from each can be viewed on the Power Responsive website – www.powerresponsive.com, or from the following links:

1. [January 2018 – Flexibility Forum Summary](#)¹
2. [June 2018 – Power Responsive Flexibility Forum and Summer Reception Summary](#)²

The objective of the forum is to provide a working level platform from which flexibility stakeholders and interested parties can;

- a) hear the latest updates from across the industry;
- b) seek clarification from industry experts and;
- c) contribute / input into industry and market developments.

Overview

The agenda for the day saw the forum split into three distinct sessions:

1. **Policy, Regulation, & Electricity System Operator Updates**
2. **Current Landscape: Changes affecting Demand Side Flexibility**
3. **Future Outlook for Demand Side Flexibility**

Speakers contributing to day included representatives from BEIS, Ofgem, National Grid Electricity System Operator (ESO), and the Association for Decentralised Energy.

125 delegates attended the day, representing a broad spectrum of the industry including; end-consumers, aggregators, distributed generators, suppliers, policy, and networks.

A small number of exhibitors were present, allowing delegates to engage with ESO and Electricity Networks Association (ENA) experts. Exhibitors present included:

- National Grid SO Innovation
- National Grid ESO:
 - Platform for Ancillary Services (PAS)
 - NIC Projects
 - Account Management Team
- ENA Open Networks Project

Questions were encouraged throughout the day with plenty of time allocated for Q&A panel sessions. Feedback collected from delegates throughout the day including the feedback will help to form the future work of programmes across the industry.

Welcome and Introduction

Rhiannon Marsh, Power Responsive Manager at National Grid ESO, welcomed delegates to the forum and the Crystal. The agenda for the day was introduced, and delegates encouraged to ask as many questions as possible whether from the floor or through the Slido platform provided.

Agenda:

- Session 1 - Policy, Regulation and System Operator updates
- Session 2 – Current Landscape: Changes affecting Demand Side Flexibility
- Session 3: Future Outlook for Demand Side Flexibility

¹ **Power Responsive Flexibility Forum Summary** – January 2018 - <http://powerresponsive.com/wp-content/uploads/2018/02/Power-Responsive-Flexibility-Forum-summary-document-11th-January-2017.pdf>

² **Power Responsive Flexibility Forum and Summer Reception Summary** - <http://powerresponsive.com/wp-content/uploads/2018/07/Power-Responsive-Summer-Reception-26-June-2018-Summary.pdf>

An overview of Power Responsive activities since the last Flexibility Forum in June 2018 was provided. During this time, the Power Responsive team have been engaging with stakeholders through various channels, including:

- At July's Power Responsive Steering Group meeting flexibility from local authorities and electric vehicles was discussed, including - opportunities that different stakeholders see as challenges to accessing these routes to flexibility. [July's Steering Group Summary](#)³ and its [discussion snapshot](#)⁴ can be viewed on the Power Responsive website.
- Following the Steering Group meeting Power responsive hosted [a local authorities workshop](#) at the end of Sept to around 50 local authority representatives. The agenda for the day included, routes to market, revenue streams, case studies, and discussions on barriers to entry.
- The 13th Power Responsive Steering Group was held on 3rd October. Discussions focused on 'Barriers to Demand Side Flexibility' with the most prominent being identified as data, uncertainty, and code governance. A written summary from the [Steering Group discussion](#) has been published.

Power Responsive have also commenced work on the 2018 annual report - due in January 2018. It will contain metrics on demand side flexibility participation, the current state of play in the demand side sector and insights from demand side stakeholders.

Session 1 – Policy, Regulation and Electricity System Operator Updates

Upgrading Our Energy System: Smart Systems and Flexibility Plan

David Capper, Deputy Director, Electricity Systems, BEIS

David introduced the Smart Systems and Flexibility Plan, published in July 2017. The plan highlights how the Government and Ofgem are taking action alongside industry to deliver a smarter, more flexible energy system, with three core objectives of:

- Removing barriers to smart technologies, including storage
- Enabling smart homes and businesses; and
- Making markets work for flexibility.

A [progress update](#)⁵ was published in October 2018, highlighting that 15 of the original 29 actions have been implemented. The update also acknowledged that 9 new actions have been identified, including the availability and access to data which is intrinsic to the transition to a smart system, including the efficient operation of electricity networks. This new action reveals opportunities for optimisation and allows innovators to realise where they can add value to the system. However, it also recognises that the lack of transparency of, and access to certain data sets limits competition for energy services, and can present a barrier for innovators entering the market.

The Government and Ofgem will therefore launch an Energy Data Taskforce that will look across the energy sector, identify gaps where data can be used more efficiently and make clear, actionable, recommendations for Government, Ofgem and industry. For stakeholders looking to get involved in the Energy Data Taskforce, please visit - <https://es.catapult.org.uk/projects/energy-data-taskforce/>

A further introduction was provided to the Electric Vehicle Energy Taskforce that brings together government, energy and the automotive sectors. The objective is to produce proposals to remove barriers to smart charging by mid-2019. Four work packages examining the challenges have been identified:

1. A common strategic understanding of the requirements of the energy system to support mass EV uptake.
2. Engaging EV users in smart charging and energy services.
3. Smart charging technical requirements.
4. Accessible data for decision making.

For more information please visit - <https://www.lowcvp.org.uk/projects/electric-vehicle-energy-taskforce.htm>

³ **Power Responsive Steering Group – July Meeting Note** - <http://powerresponsive.com/wp-content/uploads/2018/07/Meeting-Note-Power-Responsive-Steering-Group-5-July-2018.pdf>

⁴ **Power Responsive Steering Group – July Discussion Note** - <http://powerresponsive.com/wp-content/uploads/2018/07/Power-Responsive-snapshot-on-place-based-flexibility-and-electric-vehicles-5-July-2018.pdf>

⁵ **Smart Systems and Flexibility Plan: Progress Update** - https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/748125/ssfp-progress-update.pdf

Government had also noted that many in industry were identifying the current system of code governance a barrier to the development of a smart system. Government will consider how best to respond to this in the context of the Cost of Energy Review.

Finally, Government has made clear that DNOs should open-up network requirements to market competition on a business-as-usual basis. This means that storage, demand response, energy efficiency, heat networks, etc should be able to compete against traditional network reinforcements and upgrades. In doing so, the DNOs should address the conflict of interest that could arise from them being a specifier of network requirements and a potential provider of network solutions.

Ofgem Update

Louise van Rensburg, Interim Deputy Director, Energy Systems Transition, Ofgem

Following the Smart Systems and Flexibility Plan update from BEIS, an update was provided on specific Ofgem actions from the plan, including:

- Approval of the local implementation of Project TERRE, which will facilitate access to the Balancing Mechanism (BM) for demand side providers. Coupled to 'wider access to the BM' a derogation supporting demand side units in the BM which have already enabled one demand side aggregator to provide flexibility into the BM.
- Work is progressing to enact the legal separation of the Electricity System Operator from National Grid plc from April 2019. The new ESO branding launched in September.
- The statutory consultation to make distribution network licence changes, preventing generation operation has been published⁶
- Published the Framework Decision for the next set of network price controls.⁷
- Publication of the response to the Future Supply Market Arrangements.⁸
- The scope and form of Access and Forward looking Charges review has been consulted on. It is now closed and a decision is pending.

A timeline of activities was presented with an out look to Q2 2019.

Ofgem's first Mid-Year Review (MYR) of the ESO's performance was highlighted and will take place on Tuesday 20th November. The call for evidence submission has now closed, however Ofgem are still keen to hear from stakeholders and welcome attendance at the morning session of the MYR. The ESO has now published its [Mid-Year Report](#).⁹ Views on how reflective this is of the ESO's performance and to what extent the ESO is ensuring the rules and processes for balancing services maximise competition, and are simple, fair and transparent, are also welcomed. Feedback on this and requests to attend the MYR evidence session can be emailed to ESOperformance@ofgem.gov.uk.

National Grid Electricity System Operator Update

Adam Sims, Flexibility Manager, National Grid ESO

An overview of the ESO Forward Plan (published in June 2018) was provided to give context to current and future ESO activities. The Forward Plan present clear and transparent priorities to the ESO vision and thinking across networks, playing a more active role in the energy system and helping shape frameworks for markets.

A series of balancing services roadmaps have been published as part of this vision. They detail the principles that will govern the way that balancing services are procured in future, and include:

- Frequency Response and Reserve,
- Reactive Power,
- Restoration, and
- Wider Access to the Balancing Mechanism.

Actions to improve Reserve and Response markets include; work to improve the provider journey to demand side participation, outline change proposals for reforms to Reserve services, removal of contract exclusivity clauses to

⁶ **Enabling the competitive deployment of storage in a flexible energy system: changes to the electricity distribution license** - <https://www.ofgem.gov.uk/ofgem-publications/122285>

⁷ **RIIO-2 Framework Decision** - https://www.ofgem.gov.uk/system/files/docs/2018/07/riio-2_july_decision_document_final_300718.pdf

⁸ **Future Supply Market Arrangements** - <https://www.ofgem.gov.uk/publications-and-updates/future-supply-market-arrangements-response-our-call-evidence>

⁹ **National Grid ESO Mid-Year Report** - <https://www.nationalgrideso.com/sites/eso/files/documents/Mid%20year%20report%20Executive%20summary%20and%20deep%20dives.pdf>

allow providers the flexibility to play in multiple markets, simplified contract terms for STOR, FFR testing and compliance policy, and the implementation of Platform for Ancillary Services (PAS).

Of particular focus was the introduction to of the FFR auction trial platform that aims to address barriers to entry for providers by trialing the procurement of FFR closer to real-time. A letter to industry was published on 31st August outlining the detail of the trial and inviting parties to a webinar at the end of September – supported by over 300 parties. The estimated 'go-live' for the project has been pushed back to June 2019 in order to deliver the full benefits that satisfy our stakeholders.

The Reactive Roadmap sets out the actions it intends to undertake to improve current products and methods for procuring Reactive Power to control voltage levels across the electricity system. Our aim is to provide greater clarity and certainty on our needs and actions. One of the more significant deliverables occurring from the Reactive Roadmap are new service requirements in Mersey and South Wales. The services are to manage voltage in these locations, so only actions that will impact this area will be considered. The service is open to both BM and Non-BM providers.

In terms of Restoration, there are fewer traditional providers of system restoration services, also known as Black Start services, available to the ESO. There needs to be a significant change in the system restoration process, including flexibility on who can provide a Black Start service, to ensure that the system can always be restored in the quickest and most effective way. The roadmap discusses how the ESO will:

- improve transparency of our restoration costs and capacity requirements.
- increase service participation through removing barriers to entry and looking at alternative procurement methods.

Outside of balancing services further actions throughout the ESO are taking place to enhance greater demand side participation, including; facilitating code changes, improving forecasting confidence, increasing transparency of ESO decisions, improving information accessibility, and unlocking connections for distributed energy resources (DERs).

Session 2 – Current Landscape: Changes affecting Demand Side Flexibility

Wider Access to the Balancing Mechanism

Adelle Wainwright, Senior Commercial Lead, National Grid ESO

Opening up access to the Balancing Mechanism to non-traditional parties will create further opportunities for smaller players to provide flexibility services and significantly help the ESO manage operability challenges.

Wider access to the BM will therefore become increasingly important as a revenue opportunity to smaller distributed parties.

The Wider Access Roadmap sets out the current routes into the BM, their associated challenges, and how the ESO are working with industry between now and to the end of 2019 to:

- **Improving existing routes to market** to ensure their suitability for the participation of supplier aggregators in the BM.
- **Developing new routes to market** through framework changes to create a new way of entering the BM for parties wishing to provide near real-time flexibility. These may be from non-traditional providers or aggregators who are not currently licenced suppliers.
- **Enhancing IT systems** to improve data flows between the ESO and market participants so they are more efficient and cost-effective for smaller and aggregated units.

There are three main drivers influencing wider access to the BM; Maintaining operability - third party studies report benefits of wider participation in BM of £110-500m pa; Consumer benefits - distributed gen capacity could reach 67GW by 2050; Removing barriers to entry - addressing the link between equal treatment and equal access.

The enduring solution enabling wider access to the BM aligns with the implementation of Project TERRE in Q4 2019 with numerous operational and framework milestones in the lead up to meeting the target date.

Update on developments in network access and charging

Jon Parker, Future Networks, Ofgem

A review of network access and charging arrangements is being conducted through two linked projects, the Network Access project, and the Targeted Charging Review.

The Network Access Project

The project aims to ensure networks are used efficiently and flexibly enabling consumers to benefit from emerging technologies and services whilst avoiding unnecessary costs to energy bills.

The project will look to clarify users rights to access networks including small users, domestic households, whilst also improving choice and for larger users.

The project will also review forward-looking charges and the elements that signal how the actions of network users can either increase or decrease future network costs in different locations. It will review distribution use of system charges (DUoS), distribution connection charging boundary, the transmission use of system charges (TNUoS).

The Targeted Charging Review (TCR)

The TCR aims to ensure that residual network costs are recovered in a fair way and do not unduly distort behaviour.

Residual charges consist of 'top up' charges set to ensure that the network companies' efficient costs can be covered.

A working paper in November 2017 set out four bases for charging residual charges:

- **Fixed charges** (per user fixed charges)
- **Gross consumption charges** (based on all user's consumption incl. from onsite generation)
- **Ex ante capacity** (charges related to user's agreed or connected capacity)
- **Ex post capacity** (based on measure of individual peak system usage)

Refined versions of these options are to be consulted on later in the year and will include thinking on any transitional arrangements.

As part of the TCR embedded benefits will be reviewed to assess whether changes are needed to remaining "embedded benefits" for distributed generation. The future of BSUoS charges will also be taken into account to determine help determine the long-term direction, potentially through an ESO-led taskforce.

Stakeholders can engage by responding to written consultations, attending the Charging Futures Forum, or accessing materials such as summary notes, podcasts and webinars at www.chargingfutures.com.

DSR Code of Conduct

John Bryant, Director of Business Development, Association for Decentralised Energy (ADE)

The ADE was introduced as the representative body for the majority of demand side aggregators in the UK.

It was acknowledged that concern exists in the industry that aggregators remain unlicensed and regulated, although suitably highlighted no evidence of significant inappropriate behaviour exists. In fact, aggregators want to ensure a high level of customer trust in the market, and therefore a code of conduct should provide demand side customers with a confidence in their choice of provider.

The code under development is looking to address three problems of trust, transparency and a tool for comparison, through 5 core principles:

1. Sales & Marketing – suitably trained sales representatives delivering honest and factual marketing materials.
2. Proposals and pre-contractual information – ensuring energy assets, data, and infrastructure are safe from the threat of cybercrime.
3. Contracts – ensuring the pre-contracting process is transparent without falsifying claims to customers.
4. Technical Due Diligence & Site Visit - ensuring contracts are accurate and clearly indicate customer obligations and commitments.
5. Complaints Procedures & Audits – identifying a clear and transparent processes for recording, processing and responding to customer complaints.

The compliance scheme will be in place to provide a mechanism to confirm that code requirements are adhered to.

Penalties for code members not adhering to their obligations will not be exposed to financial penalties, but, a name and shame mechanism is believed to be a strong enough deterrent.

The code is scheduled to be published on the ADE website at the end of October 2018, with the compliance scheme to be launched by the end of 2018. It is hoped that the code will be incorporated into framework agreements throughout 2019.

Whilst the current Code allows the contracting parties to agree their own dispute mechanisms, the emergence of the domestic provider in future will likely require a resolution process to be included in the scheme.

Session 3 – Future Outlook for Demand Side Flexibility

SO Innovation

Cian McLeavey-Reville, Innovation Manager, National Grid SO

The National Grid SO Innovation team has implemented a process to quickly turn ideas into innovation projects and deliver value, from 'ideation' to project delivery, close down and implementation. The team works both with internal stakeholders and industry partners to find innovative solutions to its innovation priorities. These priorities underpin the SO Innovation Strategy, and are based on the changing trends of the GB energy system, creating opportunities for new players and new markets, and presenting challenges to the way the electricity and gas systems are operated.

The team uses a robust Cost Benefit Analysis to identify whether an idea is worth developing further:

1. Technical merit – does the idea make sense, and is it innovative?
2. Benefits – a mix of quantitative financial benefits such as reduction in balancing costs or increased operational efficiencies, to qualitative carbon benefits from increased penetration of renewables, or reputational or societal benefits from increased participation of community energy assets in our balancing services
3. Strategic relevance – how well does the project tackle our SO innovation priorities?
4. Costs – not just of the innovation project, but of the rollout to achieve the benefits outlined above the line?
5. Risks to achieving the benefits, and what mitigations are in place?
6. What existing activities have been undertaken, either in the SO or in the industry in general?

Innovation projects can be funded from various sources, including:

- **Network Innovation Allowance (NIA)** – an annual pot of money for research, development and demonstration. A typical project might receive £300-400k, of funding over a 6-18 month lifespan, although 75% of NIA spend must be external to the SO, and strict rules around the treatment of intellectual property exist.
- **Network Innovation Competition (NIC)** – an annual competition between all network operators (£70m electricity, £20m gas). Funding is for development and demonstration only, and typically for multi-party projects of several million pounds over 3-4 years.

Those looking to find out more information about accessing funding for innovation projects should visit

www.nationalgrid.com/soinnovation and / or email box.SO.Innovation@nationalgrid.com

Facilitating Whole Electricity System Outcomes

Andy Wainwright, Business Lead – Whole Electricity System, National Grid ESO

The extent to which the GB electricity system is changing was highlighted including, 30 GW of distributed generation (50% from renewables), 9GW of distributed connection applications processed in 2016, and over 10 GW distributed solar in the South for much of the 2018 summer.

Smart technologies mean many consumers don't just use power – they can put it back into the system too, leading to innovative ways of designing and operating transmission and distribution networks. The traditional distinctions between transmission and distribution networks are blurring and we therefore need a whole system approach to deliver services efficiently and effectively. Ofgem recognises this need and, as one of four roles for the new, stand-alone ESO, has tasked us with 'facilitating whole system outcomes' working with other stakeholders to transform the industry.

The ENA Open Networks project brings together the main network owners and operators of electricity systems in the UK to develop thinking on whole electricity system. Open Networks creates a collaborative environment to share innovation and best practice.

Through the Open Networks the National Grid ESO and the ENA have consulted on the 'Future Worlds' publication – an introduction to five potential future industry structures in a decentralised, digitised, decarbonised energy landscape. The publication considers different scenarios in which system operators should be neutral facilitators of flexibility markets. The worlds are described through the eyes of a broad range of stakeholders including suppliers, aggregators and customers, however none of the worlds are intended to be a recommendation to industry.

National Grid ESO believe that facilitating whole electricity system outcomes will ensure that industry arrangements develop in a way that maximises consumer value and are responding to the challenge through leadership, collaboration, and developing new ways of working. Later this year the ESO will be publishing its more detailed thoughts on how to facilitate efficient whole electricity system outcomes building on stakeholder feedback including those to the Future Worlds consultation.

Project TERRE and Project MARI

Sophie Hind, European Markets Analyst, National Grid ESO

Project TERRE (Trans European Replacement Reserve Exchange) and Project MARI (Manually Activated Reserves Initiative) are two new cross border balancing markets, as required by European Network Code (ENC), allowing Transmissions System Operators (TSOs) to fulfil their balancing needs. The codes aim to provide a sustainable, secure and competitive electricity market across Europe.

Providers with a minimum of 1 MW generation or demand (including aggregated units) can participate.

Project TERRE and Project MARI will effectively open up new market opportunities outside of existing GB markets. Implementation of the European Network Codes is underway and will continue for a number of years, bringing wide-ranging changes to the GB energy market.

Project TERRE is scheduled for delivery in December 2019 whilst Project MARI will follow two years later in December 2021. February 2019 will see the pre-registration of secondary Balancing Mechanism Units (BMU). In order to participate in TERRE, parties will be able to register secondary BMUs from February 2019.

More information on Project TERRE and MARI can be found on the following ENTSOE websites:

- [ENTSOE Project TERRE website - https://www.entsoe.eu/network_codes/eb/terre/](https://www.entsoe.eu/network_codes/eb/terre/)
- [ENTSOE Project MARI website - https://www.entsoe.eu/network_codes/eb/mari/](https://www.entsoe.eu/network_codes/eb/mari/)

Stands – the chance to speak to industry experts

Exhibitors present on the day to engage with stakeholders on project and industry updates included:

- Platform for Ancillary Services (PAS) - National Grid ESO
- SO Innovation - National Grid SO
- National Grid Account Managers - National Grid ESO
- Network Innovation Competition (NIC) Projects - National ESO
- Open Networks - ENA

Presentation Slides

Session 1

- [Policy, Regulation, & System Operator Update](#)

Session 2

- [Current Landscape: Changes affecting Demand Side Flexibility](#)

Session 3

- [Future Outlook for Demand Side Flexibility](#)

Q&A sessions

Questions were asked from the floor and through Slido. Our speakers have taken the time to address some of the questions they were unable to address on the day, due to such a volume received.

David Capper, Deputy Director, Electricity Systems, BEIS

- Will the EV Taskforce set out the customer protection framework around smart charging and where it will be enshrined?***
The EV Taskforce has a mandate to consider all aspects of smart charging, including the customer protection framework. We look forward to receiving its recommendations.
- Will the code announcement look at simplifying the current structures and access for industry parties?***
We are considering whether, and if so how, to respond to industry concerns about code governance. We will do this in the context of the Cost of Energy Review.
- Will BEIS be taking a view on the definition of DNOs as a neutral market facilitator and whether this should include participating in commercial services?***
Government will consider the outputs from the Open Networks Project, and then take a view on what should happen next. Based on feedback from industry, our understanding is that the definition of DNOs as neutral market facilitators is a welcome one. There are, of course, questions about how this is applied in practice. On storage ownership and operation, Government and Ofgem took a clear view in the Smart Systems & Flexibility Plan, and Ofgem has since taken that forward. Where other examples are brought to our attention, we will consider them.
- Are BEIS confident that the transition to DSO will promote and support local flexible community energy systems?***
If local flexible energy resources can provide value for consumers by fulfilling network requirements more cost-effectively than a network build solution, then these resources should benefit from opening up such requirements to competition. There is a test for the DNOs on whether they can open-up these requirements successfully.

Louise van Rensburg, Interim Deputy Director, Energy Systems Transition, Ofgem

- Will Ofgem pursue the reduction of losses and cost of operation of the grid, as an incentive for local generation and storage?***
The cost DNO's incur in efficiently operating (and investing in) their networks will be reduced by distributed energy resources, like storage and local generation, providing flexibility to manage issues like locational constraints. Also, DNOs have a number of incentives in the RII0-1 price control to manage losses.
- Are there any planned policy changes around storage, to start considering it in a category of its own, rather than a subset of generation?***
The planned policy changes on storage are those set out in the Smart System and Flexibility plan. To this extent, we remain of the view that for the time being a level playing field for storage can be achieved with storage defined as a subset of generation. As an aside, note that considering a separate category (i.e. 'asset class') for storage is a matter for Government as this would need to be set out in primary legislation.
- Are Ofgem confident that the transition to DSO will promote and support local flexible community energy systems?***
DNOs, performing DSO functions, will be neutral market facilitators. They will need to enable all providers of flexibility, including community energy schemes, to be able to realise the value their flexibility has across the wider energy system.

Adam Sims, Flexibility Manager, National Grid ESO

- ***What support is being given to encourage domestic DSR. Is there a roadmap plan for this?***

We are not planning to create technology specific roadmaps; our products and markets are technology neutral, however we are keen to remove any barriers to entry which hamper specific technologies.

- ***Is the intention to move all services currently procured in opaque bilateral arrangements to a market based procurement?***

We intend to move as many of our services and products to markets as possible, however there may be products which, by their nature, do not lend themselves to market approaches. However, we will ensure that we are as transparent as possible in those situations.

- ***Will the ESO publish more detail on procurement including:***

- ***hedging strategy for FFR, not simply the overall requirements***
- ***forecasts on the costs of alternative actions taken in the MFR market that are part of the FFR tender assessment process?***
- ***Can the new MBSS include a clear view of the average prices per MW of frequency response products? Or any plans to improve the tender result files?***

We will be publishing more information in the next MIR for FFR on the periods when there is a requirement for response, and we are considering the possibility that we release more information on specific volume requirements and cost assessment in future. We will feed back the requests to our information transparency workstream, who are looking at how we improve market information.

Adelle Wainwright, Senior Commercial Lead, National Grid ESO

- ***Can components in a BMU also be in a non-BM ancillary service e.g. in the BM as part of a secondary BMU in the day and in a non-BM FFR asset overnight?***

In terms of the specific question posed, it is not currently possible for a component to sit within BM and non-BM units. However, the ESO recognise that participation in ancillary services is an important revenue stream for many providers who wish to participate in the BM. We are working through options for non-BM to BM contract transition to ensure appropriate arrangements are in place and these will be outlined as part of relevant Outline Change Proposal processes.

- ***Which systems and processes have improved and when will the web-based platform be available?***

In terms of systems and process changes, we have outlined via our IS Change Forum activities that there a wide variety of systems and processes that will be impacted by wider access developments. As set out in our roadmap, we are working to deliver the web-based interface by December 2019 as part of the implementation of TERRE and wider access. However, interface specifications will be available prior to that date earlier in 2019.

Cian McLeavey-Reville, Innovation Manager, National Grid SO

- ***Why is EFCC persisting on the innovation timeline? National Grid SO stated in Qtr-1 that the capability is not required and system need will be addressed through other measures?***

National Grid has taken the decision not to develop an inertia based commercial product that would drive an inertia market. Analysis has shown that taking specific action to increase system inertia is less economic than reducing the largest credible loss. Whilst increasing the level of inertia on the system would reduce RoCoF, this option is less efficient than reducing the largest credible loss. Adding 3GW of synchronous generation to increase inertia will have

approximately the same effect on RoCoF as reducing the largest credible loss by 100MW. National Grid therefore does not intend to manage RoCoF in this way and would not advocate a specific inertia market. Instead we are investigating inertia as part of a broader picture of system stability, with elements such as fault level loss. These are being taken forward through innovation projects and expansion of the Network Operations Assessment pathfinder projects.

We are also currently developing an innovation project to demonstrate the Monitoring and Control System (MCS) that formed part of the Enhanced Frequency Control Capability (EFCC) project. If successfully demonstrated, we believe the MCS could potentially provide benefits from faster and more coordinated actions across a range of use cases within the future electricity system.

Andy Wainwright, Business Lead – Whole Electricity System, National Grid ESO

- ***Is the National Grid ESO view on Whole System outcomes different to the views outlined as part of the Future Worlds consultation?***

The ESO has been actively involved in the development of the Future Worlds and has led the delivery of the consultation. The Future Worlds consultation describes a wide range of potential future industry outcomes and therefore encompasses the ESO view that we need to work with the emerging DSOs in the development and operation of efficient flexibility markets. The ESO has responded to the consultation and our response is published on our website.

- ***Does a perfect future world not incorporate the ESO and system operations from the demand side (meaning the DNO should be split like National Grid SO)?***

Development of the DSO is still at an early stage and policy decisions by BEIS and Ofgem will be informed by thinking such as the Future Worlds work. Any changes to organisational arrangements need to be considered in the round, looking at both the industry costs and the benefits to the consumer.

Sophie Hind, European Markets Analyst, National Grid ESO

- ***Are you certain that the UK will remain in projects TERRE and MARI after the Brexit? Has National Grid ESO looked at Brexit and fallback processes in the event of 'no deal' or none IEM deal?***

We believe that continuing to be part of the IEM and these European coordination projects will deliver value for the end consumer, and so we are committed to being a part of them. There are still uncertainties around what the final Brexit deal will mean for our participation in these projects, but we continue to prepare to participate and ensure that we are in the best possible position once the deal is finalised.

- ***Are RR and mFRR completely new products, or replacing existing ones?***

For GB, they are completely new products, although many European markets already use very similar products in their national market. We will continue to require national products to balance the system economically and securely.

- ***Where can you find more info on how Virtual Lead Parties will work in addition secondary BMUs?***

Some information on VLPs and secondary BMUs is available in the Wider Access roadmap which was published this Summer. We know from feedback that there is still some uncertainty in this area, and so we are working on publishing an update note and running some stakeholder sessions to provide more detail.

- ***Can an asset contract to provide balancing services in the GB market AND the international market for the same block (one or more settle periods)?***

We are working to ensure that having a contract to provide balancing services will not preclude units from participating in TERRE. If you are contractually committed to provide balancing

services in a given time period then you will not be able to sell the same MW in TERRE. Aside from this you will be able to participate in TERRE as well as in National Balancing Services.

- ***How will TERRE/MARI recognise higher cost, lower carbon of English/Welsh plant vs potentially higher cost of EU plant? And will TERRE shrink the revenue potential for local service providers as competition (maybe better incentivised) will get access to the UK flexibility market?***

National services will not be replaced by TERRE, they will still be crucial to ensuring secure and economic balancing of the system. TERRE will give service providers access to offer their flexibility in a pan-European market, and will find the most economic solutions to TSO balancing needs which will deliver value to the end consumer. TERRE does not only mean that needs will be met from providers across borders but also from providers within the same national market.

- ***What is the differences between the project TERRE platform and the PAS platform? Is the intention to combine all services under one platform in the future?***

The Platform for Ancillary Services (PAS) project aims to better facilitate the participation of small and demand side response providers in balancing services. The project will provide an end to end solution for the ancillary services life-cycle enabling commercial and operational flexibility. Benefits will include a reduction in time to connect to National Grid, one access point to all services via a web service and a reduction in the amount of manual work involved.

We are developing alternative solutions for EDT / EDL (NGESOs communication capability which allows parties to submit data to us) which will be based on the technology which has been used in the development of PAS.