

Power Responsive Steering Group

Note of Eighteenth Meeting

5 March 2020, 13:00-17:00 hrs, held at Elexon's offices, 350 Euston Rd, London NW1 3AW.

This note was prepared by National Grid Electricity System Operator (ESO) and Sustainability First on behalf of the Power Responsive Steering Group.

1. Welcome and introductions

Colm Murphy (chair) opened the discussion, held under the Chatham House rule.

The steering group on 2nd December 2019 focused on ***What should be the role of Demand Side Flexibility (DSF) in ensuring a resilient system.*** Reflecting on the events from the 9th of August power outages including a detailed overview of what steps were taken in the ENCC during the event and an in depth look at how DSF could contribute to preventing this from happening in the future. The group also discussed the Distribution Future Energy Scenarios and how the DNO's are looking to expand DSF opportunities in the future. During the second part of the meeting, the group discussed flexibility market coordination and achieving whole electricity system efficiencies whilst ensuring confidence in DSF is not impacted.

This steering group meeting focused on ***achieving zero-carbon operation of the GB Electricity System.***

2. DSF Horizon Scan

BEIS covered the following current and upcoming activities:

- [Approach to EU trade negotiations](#) – in the context of Brexit. The Government is open to considering an agreement on energy as long as it fits with the UK approach, to maintain continuity and trading arrangements including via the interconnectors.
- [Contracts for Difference \(CfD\) consultation](#) – on Allocation Round 4. The consultation considers the following points:
 - Enabling onshore wind and solar projects to bid in to help drive the transition to net zero (floating offshore wind platforms are also included).
 - Extending the negative pricing rule to ensure offshore wind does not receive CfD payments if prices are negative in the day-ahead markets.
 - Call for Evidence on what happens beyond CfD round 4 – looking more holistically at market signals.
- **Energy White Paper** – due shortly, but unlikely to be published before the end of March 2020. The White Paper will focus on transforming the energy system to deliver the aims of the industrial strategy – including decarbonisation of electricity and heat for industry, buildings and households; and the future of oil & gas.
- **Smart Systems and Flexibility Plan & progress update** – BEIS has delivered 23 out of 38 actions so far, the remainder will be delivered through 2020. There is also a further [consultation](#) on the treatment of storage in the planning regime i.e. removal from the Nationally Significant Infrastructure Projects (NSIPs).
- [Developing smart appliance standards](#) – the British Standards Institute (BSI) is facilitating the development of technical standards for smart appliances and Electric Vehicle (EV) charge points. A consultation is expected summer 2020.
- [Smart Systems Forum](#) – there was a discussion on consumer protections on 7 February 2020.
- **Open data** – [energy data taskforce report](#) was published last year, with a formal launch/parliamentary [event on 9 March 2020](#) to reiterate the Government's commitment to the digitalisation agenda. Including:
 - Developing a data catalogue – central listing of data to a certain standard. The ONS is leading the discovery phase of this work, starting in early April. Further user research data is required including who the users might be and what their needs are.

- Digital systems map – an early prototype has been developed by the ENA – for sharing energy systems data in a coherent way.
- BEIS and the Energy Systems Catapult have commissioned Energy Data Best Practice Guidance – the first version is available online [here](#).
- **[Smart Export Guarantee](#)** – came into force in January 2020. All the big suppliers are offering smart export tariffs – currently these are all fixed tariffs, but we are likely to see dynamic tariffs in future, reflecting benefits of flexibility provided to the system.
- **[Flex Competition Update](#)** – The first winning projects (Piclo Exchange and Electron's Project TraDER) have been selected for funding, totalling more than £2.1 million. The projects are expected to be operational by March 2021 with final trials and reporting to be completed by December 2021.

Ofgem covered the following current and upcoming activities:

- **[Market wide half hourly settlement](#)** - Ofgem is holding stakeholder workshops to discuss their draft impact assessment for settlement reform.
- **[Enabling retail innovation](#)** – Ofgem has produced a [blog](#) with plans for expanded innovation sandbox, greater powers to derogate, more permissive arrangements based on geography.
- **[Whole system licence condition](#)** – statutory consultation will be published shortly.
- **[Consultation on CLASS sales](#)** – closes 23 March.
- **[Ofgem decarbonisation action plan](#)** – published on 3 February 2020 and is underpinned by the importance of flexibility.
- **[RIIO 2](#)** – Consultation has closed, but there are still opportunities to input views including via an [open hearing on the 2nd April 2020](#). A draft determination is expected late June/early July.
- **[Wider questions about the future of GB System Operation](#)** – terms of reference have been published for feedback.

3. Achieving zero-carbon operation of the GB Electricity System

The UK energy sector is working towards the Government commitment to reduce greenhouse gas emissions by at least 100% per cent by 2050 when compared to 1990 level, by transitioning to a more flexible energy future. This is the area of focus for the Steering Group and will be separated into a two-part discussion. Part one of the discussion is:

3.a National Grid ESO introduced their ambition to ensure the ESO is zero-carbon capable by 2025 to set the scene for discussion.

The group discussed what zero carbon capability by 2025 means and how realistic the ambition is. Specific areas covered were:

- How do we achieve net zero capability, what the implications are for the:
- Electricity System Operator; and
- Demand side flexibility providers and their assets?
- Will carbon free providers be ready to offer the system balancing and ancillary services needed by 2025?

National Grid ESO set the scene for the discussion with an overview of their 2025 ambition – to be capable of operating a zero-carbon system by 2025. The ESO highlighted the huge changes needed, whilst giving assurance that the target is achievable. The discussion covered what we can do today to get us in the right place for tomorrow.

The aim for the ESO is to operate the grid for 1 hour zero-carbon which is a huge challenge. The UK is losing most of its traditional generation, which provide services that were not previously recognised such as – stability, voltage and reactive power. The grid is becoming more volatile, with intermittent generation sources and shifting demand profiles, so we need to ensure that we can react quickly and efficiently to those signals. Although there are many hurdles overcome, the industry already has answers to the challenges we face, and we need to enable those solutions.

An industrial customer gave a perspective on the steel industry and how more steel is being recycled, using an Electric Arc Furnace which does not require any coal to operate. Steel production with

Electric Arc Furnaces will be carbon neutral by 2030. There are potential revenue streams DSR, which reduces energy costs, but does not drive business decisions.

The group discussed what the industry needs to see in the next 5 years to aid zero-carbon ambitions. These include:

- Longer term certainty for investors;
- A need for investors to start ascribing value to ancillary services for renewable projects;
- Subsidy-free renewable energy;
- Data transparency;
- Sharper price signals; and
- Consumer culture change.

Steering group members also discussed the current decision by the ESO to class all aggregators as zero carbon, in the context of their ambition. Aggregators responded by saying they are happy to provide more information on their aggregated units to allow a more accurate classification.

Part two of the discussion built on the previous and covered the following:

3.b Building upon zero carbon capability- beyond 2025

What are the significant challenges that need addressing by the ESO and industry?

BEIS and Ofgem provided an overview of how climate commitments are influencing policy and regulatory developments to enable zero-carbon alongside other desired outcomes. These include:

- Flexibility needs to be built into all future business plans and valued.
- Ofgem wants the industry to take initiative and lead, rather than be directed.
- Ofgem is open to feedback on how they can do more.
- Need to ensure markets are developed in a coordinated way.
- There has been notable improvement in the coordination of DNOs.
- Data is critical, but the industry needs to specify what data is needed.

BEIS also noted several upcoming workshops to highlight areas where industry leadership is needed, to look at what has already been achieved and build a vision across markets for 2030. Workshops include:

- **Pathways to 2050 & monitoring (18th March 2020)**
What a monitoring strategy should achieve. Includes proposed data strategy & indicators.
- **Next phase of market reforms (27th March 2020)**
To ensure fair reward of flexibility, greater coordination national & local markets following the kick off workshop in February 2020.
- **Aggregator (30th March 2020)**
Covering current policy and regulatory landscape, cyber security and smart charging.
- **Data (1st April 2020)**
Giving a comprehensive view of actions underway and completed actions.
- **Storage (3rd April 2020)**
Health & Safety. Discussing barriers at all scales – from household to transmission connected storage.
- **Consumer Workshop (Date TBC)**
- **Buildings Workshop (Date TBC)**

National Grid ESO outlined the Future Energy Scenarios that will contribute to the 2050 ambition, and the perceived barriers that might prevent progress. The discussion covered:

- The various levels of societal change required to meet zero-carbon commitments.
- Possible outcomes if consumers are either fully engaged and pushing for quicker progress vs disengaged consumers.
- How the industry can lead the way through whole system transformation and how consumers can lead the way.

- The need for seamless integration between policy, regulation and technologies.
- Areas that need a deeper dive such as bioenergy and electric vehicles (EVs).

Northern Powergrid gave an overview of managing local networks to achieve zero-carbon ambitions. They covered an “aggressive scenario” which detailed several possible triggers such as- local authorities declare climate emergencies, the public calling for faster change and local political leaders committed to making change. Northern Powergrid wants to use its scenarios document to engage with political leaders and the wider industry.

What do we need to do to accelerate change and what needs to be done by when?

Steering group members expressed a wide range of views covering areas such as reducing thermal plant investment, reviewing carbon pricing, lifting the ban on on-shore wind in the UK (except Scotland) and ensuring we have a suitable 10 to 15 year horizon view.

In Ireland the transmission costs for wind are significant which creates a huge barrier for investment. There was discussion on whether anything could be done about this. There was also a consensus that although we are working to utilise the technology available to us now, this will change dramatically and very quickly over a short period of time, so we need to build that into our long-term thinking.

Other areas discussed that could potentially accelerate change were:

- Ensure understanding of the financial value of flexibility in the system.
- Bridging the gap between long term views/high level planning and immediate technologies, by analysing current state at a granular level.
- Top down models have been the focus previously, but a bottom up approach may be beneficial to understanding the short term at a granular level.
- Household heat efficiencies such as heat pumps need a lot more work and many current assumptions have not been tried and tested. This will delay the impact that heat could have.
- It may be beneficial to disaggregate technologies to consider how each one can contribute to change individually.
- The energy industry cannot class itself as an individual sector anymore, as the range of customer and stakeholder involvement in the transition to net zero is huge. Everyone from consumers to large manufacturers are providing services that are contributing to the reduction in carbon on the energy system.

4. Steering Group Actions

Power Responsive Update:

The ESO provided an update on the strategy for Power Responsive in the future, and how we are planning to increase engagement between the ESO balancing services development teams and DSF providers.

- Steering Group meetings will continue to be held on a quarterly basis.
- Group will be refocusing on balancing services developments. Including ESO, demand side and open networks.
- Surveys will be sent to all Steering Group members to identify barriers to market entry.
- Create action plans off the back of survey feedback.
- Potential to create working groups in specific areas that focus on certain topics.
- Power Responsive Annual Report 2019 will be launched on the 3rd of April with a [Webinar](#) and published the following week.

Actions:

- Identify system services required today and where they are provided from.
- Produce map of demand side assets and what services they could potentially provide to the system in future.
- Consider the level of risk associated with a statistical response (rather than direct control).

- Identify and resolve conflicts between CfD and SO products

Future Steering Group Dates:

- 10th June 2020
- 1st October 2020
- 21st January 2021