



Bringing Energy
Together

ADE Response to Ofgem paper on Distribution System Operation | 15 October 2019

Context

The ADE welcomes the opportunity to respond to **Ofgem's paper on Distribution System Operation**.

The ADE is the UK's leading decentralised energy advocate, focused on creating a more cost effective, low-carbon and user-led energy system. The ADE has more than 150 members active across a range of technologies, including both the providers and the users of energy equipment and services. Our members have particular expertise in demand side energy services including demand response and storage, combined heat and power, heat networks and energy efficiency.

Response

Q1. Do you agree with our strategic outcomes?

The ADE agrees with Ofgem's strategic outcomes. While high-level, they provide a useful framework within which to progress DSO policy. In particular, we welcome the focus on clear boundaries around service provision, neutral tendering of network management and reinforcement requirements, with a level playing field between traditional and alternative solutions, and effective competition for balancing and ancillary services.

Q2. Do you agree that our work programme will help to deliver the strategic outcomes?

The ADE agrees with Ofgem's work programme and believes that it will be a valuable first step in delivering the strategic outcomes, though insufficient by itself.

Q3. Do you have anything to add to the thinking and analysis that informs how we propose to deliver our programme of work?

The ADE recommends that Ofgem move beyond setting expectations in this piece of work to requiring DNOs to undertake many of the tasks mentioned via the RIIO-ED2 price control. An essential prerequisite of these reforms will be ensuring that flexibility providers have access to sufficient data to compete on a level playing field in tenders; all data held by the DNOs should be presumed open and released in machine readable formats.

There is also a need for guidance around procurement timeframes, which should be standardised across DNOs; in our key asks for RIIO-ED2, which we outline below, we suggest that flexibility be procured across three timeframes: day-ahead, 1-2 years in advance, and permanent/semi-permanent reinforcement avoidance auctioned on a rolling yearly basis.

Finally, Ofgem should make decisions around which roles are to be contestable over the period leading to RIIO-ED2. As it will not be possible to have made all of these decisions before several important decisions regarding the design of the price control have been made, Ofgem should ensure that nothing in RIIO-ED2 prevents these roles being contestable at a later date.

Key asks

Visibility of opportunities and accessibility of markets

Goal: medium-term flexibility needs (one-to-two years ahead) procured via competitive auctions, with standardised procurement methodology and technical requirements in all DNO zones by 2023, with automated dispatch by 2028. Day-ahead markets for reactive power and constraints and long-term markets for permanent demand reduction where there is a system need are fully established by 2028. The markets below could start at EHV but should be extended down to all voltage levels over the RIIO-ED2 period.

- Establish close to real-time (e.g. day-ahead) markets for constraint management and reactive power via competitive auctions accessible to all technologies that can provide the services. Automated dispatch should be employed as soon as possible. The main value of these services would derive from relieving real-time constraints on the network, enabling the DNO to manage high levels of renewable generation without resorting to curtailment. These markets can build on learning from Power Potential, which trialled procurement of reactive power from distributed resources. The EPRG report on auction design for Power Potential recommended procurement via day-ahead, pay-as-clear markets¹; this approach should be employed for the close to real-time markets suggested here. The ESO's high voltage pathfinder projects in the Mersey and Pennine regions may also provide useful learning².
- Establish a one-to-two year ahead market for contracts for reinforcement deferral, procured via competitive auctions. The main value from these services is allowing DNOs to analyse the growth of demand and generation in different locations before deciding whether to reinforce. This could be based on a version of the balanced scorecard suggested in Western Power Distribution's consultation on delivering a flexibility first approach³. Under this approach, assessment would be based on a number of categories, including Financial NPV, Whole System Benefits, Uncertainty and Optionality, Decarbonisation, and Accelerated Benefits to Consumers. This could be used as the basis for a pan-DNO approach, developed through detailed consultation with industry and Ofgem. It is important to recognise that the benefits of flexibility can cut across multiple categories. For example, the per day value to customers of faster connections allowing faster rollout of low-carbon generation fits into both 'Decarbonisation' and 'Accelerated Benefits to Consumers'.
- Establish a market for long-term network reinforcement avoidance, procured via auctions. Contracts would be auctioned yearly and run on a rolling basis, with providers continuing to receive payment as they continue to dampen demand in response to increased loading at the GSP. This would enable the procurement of an incrementally increasing flexibility 'shape' in response to a changing demand profile, allowing DNOs to tailor their need. Value from these services would derive from permanently reducing reinforcement through measures such as energy efficiency or storage. PJM and ISO-NE could be used as models.
- Commitment that DNOs will not use renewable curtailment to manage network constraints by 2028, instead procuring flexibility. This will form a major part of DNOs' contribution to achieving net zero and mirror the ESO's commitment to ensuring zero carbon system operation is possible by 2025.

¹ <https://www.nationalgrid.com/sites/default/files/documents/EPRG%20Report%20SDRC%209.3.pdf>

² <https://www.nationalgrideso.com/publications/network-options-assessment-noa/network-development-roadmap>

³ <https://yourpowerfuture.westernpower.co.uk/have-your-say/delivering-a-flexibility-first-approach>

- Migrate existing Active Network Management (ANM) contracts to procurement via tradable constraints market, with flexibility providers and renewable generation able to bid in. This migration should be conducted in a gradual manner, in order to analyse the changes to planning standards required and to avoid generators having their connection agreement altered at short notice. It could be achieved, for example, by the DNOs committing to a fixed cap of curtailment for all current and any future ANM generation rather than the current estimates, with the DNOs facing a financial penalty if the cap is exceeded. This cap would slowly be reduced over time as more flexibility becomes available to the DNO.
- DNOs to publish views of future system requirements, based on the signposting and forecasting approaches suggested in WPD's consultation on delivering flexibility first. 'Signposting' provides a view of future system requirements over a five-year period, highlighting areas that are expected to become constrained for demand, with probabilistic assessments. 'Forecasting' provides a view of what flexibility is required in an area over a two-year period, advising what flexibility DNOs are seeking in expressions of interest. The ADE welcomes this approach but believes that it would need to be further developed in collaboration with industry. It is essential that these views be updated frequently; as an initial suggestion, 'signposting' should be updated annually, with 'forecasting' updated every three months. This approach could be achieved through the already announced review of the Long-term Development Statement that publishes a forward view of loading at GSPs. This should be reviewed so that it can be more easily used by commercial participants.

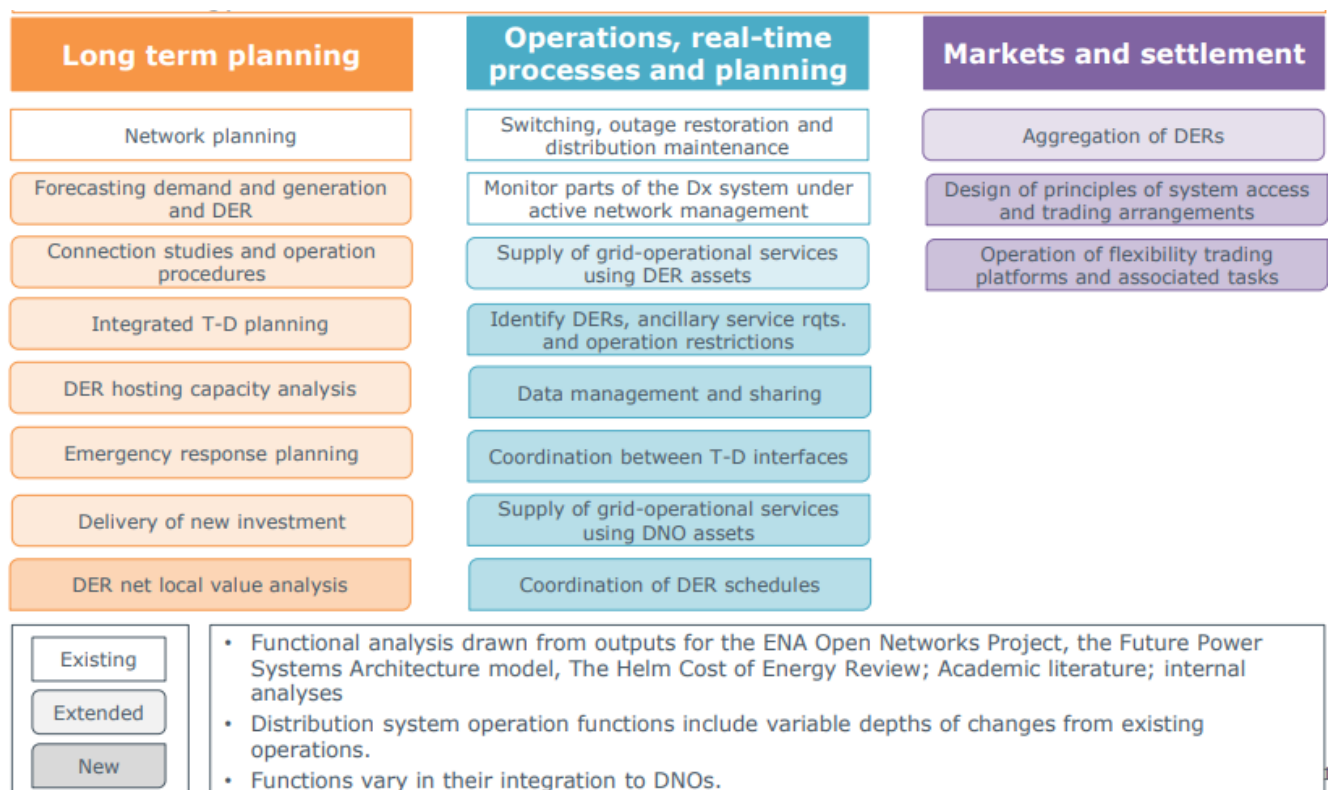


Figure 1: Ofgem analysis of DSO functions

Neutral market facilitation and removal of conflicts of interest

Goal: All prospective DSO functions able to be put out for competitive tender. Sufficient data transparency to allow competition on a level playing field for all competitive tenders.

- Ensure that DNOs tender for market and system needs as neutral market facilitators; this means that they cannot own or operate storage
- Ensure that no element of the RIIO-ED2 price control prevents the DSO functions listed in Figure 1 being put out to competitive tender at a later date. Ofgem should analyse whether any of the above functions can be put out to tender in advance of the price control. In any tender, the DNO in the relevant zone, all other DNOs and other commercial entities should be able to enter the tender and compete on level terms. This necessitates that sufficient data is made public for other entities to compete on level terms; data is key to maximising competition around these functions. Please see the ADE's asks around data for more details.
- Operation of all network assets that have been funded through RIIO or NOA should be contestable, with third parties bidding into an open tender. Subsidiaries of the relevant DNO would not be allowed to bid in, to remove the potential for conflicts of interest or information asymmetries

Valuing flexibility correctly

Goal: Flexibility is valued and procured according to transparent, Ofgem-approved methodology, which is common across all DNOs and takes all relevant costs into account. All network reinforcement justified by published cost-benefit analysis, any inefficient spending disallowed, and fast connections rewarded.

- ENA to publish criteria used by networks to decide whether to reinforce the network or procure flexibility
- All DNOs to follow common procurement methodology, designed in conjunction with the regulator and industry, which accounts for the risk of reinforcement proving unnecessary due to incorrect forecasting of demand growth and per day value to customers of faster connections, allowing faster rollout of low-carbon generation.
- Include an explicit incentive based on utilisation rate of the network
- All DNOs to explicitly justify, using Ofgem-developed cost-benefit analysis, any decision to conduct network reinforcement in preference to procurement of flexibility or smart grid services, and publish this justification
- Introduce a cost disallowance mechanism that enables Ofgem to disallow spending it is demonstrably inefficient
- Create an explicit incentive for speed of connection

Open and transparent procurement and dispatch

Goal: Procurement is sufficiently transparent to allow flexibility providers to give customers reliable estimates of price and regularity of dispatch. It is essential that any party undertaking the relevant DSO functions make significant investments in IT system development in order to fulfil this role effectively.

- Allow sufficient lead times between contracting of longer-term needs via auctions and delivery in order to allow flexibility to be aggregated in the area. This should be, for example, one to two years ahead
- Ensure that procurement and dispatch processes are automated and scalable, allowing large volumes of individually small capacity to be entered into markets and dispatched. This includes use of type testing for eligibility, objective and automatic pass/fail criteria, and limiting manual information inputs as far as possible

- Publish all tender results in accessible formats, containing similar details to those contained in STOR tender results
- Publish, in real-time, on an anonymised basis, where providers are being dispatched and for what volume
- Publish average number of times providers are dispatched in each procurement zone per year

Revenue stacking and service prioritisation

Goal: Flexibility providers face no unjustified barriers to revenue stacking and conflicting dispatch instructions are automatically reconciled to provide optimal system outcomes.

- In the short-term, all exclusivity clauses should be removed (except where explicitly justified) and clear prioritisation rules for dispatch be established
- In the medium-term, dispatch instructions should automatically be reconciled according to priority and fully reward providers who are providing a response that helps fulfil multiple system needs simultaneously. This function should be tendered and fulfilled by a neutral third party
- Ensure common standards across DNOs relating to market design, judgement criteria in tenders, interoperability and security standards, and approach to dispatch
- Create a Distribution System Design Authority, building on the key recommendations of the ENA's Open Networks Project, to co-design information systems

Transparent, high-quality data, monitoring and reports

Goal: Data is of sufficient transparency, quality and availability to allow all parties to compete in tenders, both of DSO functions and for provision of flexible services, on a level basis. All data is presumed open, unless explicitly and publicly justified. We welcome Ofgem's commitment to implement the recommendations of the Energy Data Taskforce through RIIO.

- By 2023, sufficient data should be publicly available such that commercial entities and other DNOs can tender for DSO functions in a zone and be able to compete on level terms, with access to the same information and data, as the relevant DNO for that zone
- Introduce license requirements for DNOs to share all information, via data sharing frameworks, about location and characteristics of DERs with flexibility providers and platform operators and all other network data necessary to allow third parties to carry out Flexibility Platform tasks
- Introduce Output Deliverable Incentives around quality and timeliness of this information
- All data should be 'presumed open' and published, with any decision not to release data explicitly justified
- Asset registration should be undertaken via a single registration portal
- A Digital System Map should be created to increase visibility of Energy System infrastructure
- A universal catalogue of data sets should be created, in accordance with the Energy Data Taskforce's recommendation, with DNOs submitting all relevant data to it

Delivering whole system outcomes

If a DNO takes an action that creates a saving for another DNO or the TO, a financial mechanism should be established that ensures that saving is shared, with the DNO taking the action receiving the majority of the saving

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