

HM Treasury has published its formal [response](#) to the recommendations in *Smart Power*, the National Infrastructure Commission's report on future-proofing the UK's energy networks. The centrepiece of future policy development in this area will be a smart systems route map to be prepared by the Department of Energy and Climate Change (DECC) and energy regulator, Ofgem. A call for evidence is to be launched shortly with concrete proposals for reform promised by spring 2017.

More concrete developments include the promise of at least £50 million in support for innovation in energy storage, demand-side response and other smart technologies over the next five years to aid the development of new technologies and business models to the point at which they are competitive. In addition, Ofgem will be looking at ways in which its Network Innovation Competition (currently worth £100 million annually for gas and electricity) might be reconfigured so as to better stimulate innovation by non-licensed companies.

Electricity Storage

In response to the Commission's recommendations for positioning the UK as a world leader in electricity storage, DECC and Ofgem will be bringing forward proposals to reform the regulatory and legal status of electricity storage. Reform will be focused on reducing the exposure of electricity placed in store to transmission and distribution system charges, and renewable energy and energy efficiency levies – potentially a handy windfall for existing hydro pumped storage. Ofgem will be monitoring the RIIO (Revenue = Incentives + Innovation + Outputs) price control framework to ensure that network companies use storage and other forms of flexibility to defer capital expenditure, support cheaper and more timely connections, and generally improve network management.

On 15 April, National Grid released its first invitation to tender for an enhanced frequency response service. The aim of the service is to improve pre-fault system frequency management, maintaining system frequency closer to the central 50Hz target. Although the tender is nominally technology neutral, battery storage, with its capacity to deliver both high and low frequency response almost instantaneously, looks most likely to fit the bill. National Grid will be awarding four-year contracts for a total of 200 MW of response.

Demand-Side Measures

As part of its work on the smart systems route map, Ofgem will review the regulatory and commercial environment for demand-side services, with a focus on the role of aggregators – the primary issue being the impact of aggregators' activities on the imbalance positions of end users' electricity suppliers. DECC will look at introducing changes to the capacity market in order to reduce the barriers to entry for demand-side participation. The government estate will be encouraged to set an example of engagement in demand-side services, with the installation of battery storage for existing solar pv being one option under consideration.

Interconnectors

As recommended by the Commission, the government is encouraging interconnectors to other European countries where this offers the greatest benefits, for example, to markets with abundant flexible low carbon electricity, believing that an additional 9GW of interconnection capacity, possibly more, would be of benefit to UK consumers. There is ongoing dialogue with Norway on further interconnection (a 1.4 GW interconnection is already under construction), and a task force set up by the Prime Minister to work with the government of Iceland is due to report in May. The Treasury agrees with the Commission that interconnector investment decisions should continue to sit primarily with the private sector, but fails to comment on the observation that for projects such as the Iceland interconnector, which will depend upon the development of a new generating plant, "existing regulatory mechanisms may not provide the appropriate support".

Independent System Operator

Many in the industry have pointed to National Grid's investments in interconnectors, and transmission system infrastructure more generally, as creating a conflict of interest with its roles as transmission system operator and electricity market reform delivery body. The Commission stops short of recommending divestment of National Grid's system operation function to a fully independent system operator; though, it believes the option should be kept under review. The Treasury's response indicates that DECC and Ofgem are working alongside National Grid to consider how to reform the current system operator model to make it more flexible and independent. In the meantime, National Grid has come out fighting, stating, according to a recent [Guardian](#) report, that "there is little evidence that an independent system operator model would deliver value to justify the significant consumer costs and risks to security of supply".

Less controversially, Ofgem will be consulting on a revised system operator incentives scheme to stimulate greater innovation on the part of National Grid, and to make the market for ancillary services more transparent. A separate initiative, overlooked both in the Commission's report and the Treasury's response, is Ofgem's plan to introduce a competitive tendering regime, modelled on the OFTO regime for transmission lines for offshore wind farms, for the development and ownership of new onshore transmission assets.

Strategic System Planning

There is a rather less ringing endorsement of the Commission's recommendation that distribution companies (DNOs) should be encouraged to develop their networks in anticipation of future demands for connections. The Treasury's response points to trials that Ofgem is currently promoting; though, these are relatively modest in scope, and fall within the existing regulatory framework. Nonetheless, there is at least some scope for interested parties such as property developers and development agencies to explore more innovative approaches to paying for system reinforcement. DNOs are also looking at ways of withdrawing customers' rights to capacity which is not actually being utilised, potentially bringing an end to the secondary market in grid connection agreements which has developed in recent years.

Distribution System Management

In response to the Commission's calls for a transition to more actively managed distribution systems, the Treasury points to DECC's December 2015 position paper [Towards a Smart Energy System](#) which focuses on the contribution role that storage and demand side management. It might also have referred to Ofgem's position paper [Making the Electricity System More Flexible and Delivering the Benefits for Consumers](#). Again, storage and service aggregation are seen as key elements in delivering active distribution system management.

Conclusion

It is curious that HM Treasury should be setting itself up as an authority on energy policy development – the terms of reference given to the Commission did not even require it to engage with DECC or Ofgem in preparing its report. Be that as it may, the Commission's recommendations, and the Treasury's response, are pretty much in line with efforts that are already under way.

The portents are good for aggregators of demand response and battery storage. The announcement of £50 million in funding to support innovation is notable for bucking the recent trend in the UK toward the reduction of subsidies for clean and specifically renewable energy. The emphasis on Ofgem making better use of existing mechanisms, such as RIIO price control and the Low Carbon Networks Fund, to encourage greater efficiency on the part of DNOs, is welcome. Yet to fully engage the demand-side and make electricity distribution truly smart, far more radical change is required, not least to system balancing and charges for use of distribution and transmission systems.

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