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Consultation on Future System Operator supply and demand modelling

Contact:

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Summary

Energy Systems Catapult (ESC) welcomes the opportunity to respond to Ofgem's consultation on the approach to supply and demand modelling (evolution of the Future Energy Scenarios) that the Future Systems Operator (FSO) should take.

ESC was set up to accelerate the transformation of the UK's energy system and ensure UK businesses and consumers capture the opportunities of clean growth. ESC is an independent, not-for-profit centre of excellence that bridges the gap between industry, Government, academia, and research. We take a whole systems view of the energy sector, including in policy design and implementation, helping us to identify and address innovation priorities and market barriers, to decarbonise the energy system at the lowest cost.

As Ofgem is aware, we have been supporting National Grid ESO in thinking about the changes it needs to make as it becomes the FSO. Moreover, I was personally involved in the delivery of the FES in a previous role within the ESO.

We provide a response to the detailed consultation questions in the annex. We would be happy to further discuss the topic with you.

Sincerely,
Daniel Murrant

Response to detailed consultation questions

[1]. Do you agree that we should move towards pathways instead of scenarios, to provide greater clarity on the type of investments required under the CSNP?

Yes, although how these pathways are created needs detailed consideration. Ofgem acknowledges that FES analysis should support FSO's advisory role; to do this, it would be beneficial if FES pathways had a metric they were comparing against. Cost would be one appropriate metric – there are others that should be considered, including emission/carbon, security of supply, reliability and resilience. We think government and/or Ofgem should direct the FSO as to which metrics to use – it would not be appropriate for the FSO itself to decide, for example, whether cost should be prioritised over other metrics.

In any case, FES pathways should be fully costed and these costings published as part of the FES analysis.

FES has always taken a whole system approach – it is important this is continued in the future. There could be additional value by highlighting key interactions between multiple vectors or sectors (e.g. interaction between electricity demand, hydrogen production via electrolysis and hydrogen storage).

[2] Do you agree that there should be a single forward view of the near term for all pathways?

A single short-term pathway before branching out into a range of strategic pathways to recognise uncertainties would seem to have value, but this should recognise that there are key uncertainties that can occur in the relatively short-term – for example, the government's decision on the role of hydrogen for domestic heating could result in diverging scenarios from early 2030s. So the length of the single short-term pathway needs careful consideration.

[3] Do you agree with our proposal to have Net Zero compliant pathways (number to be determined by FSO), with a separate counterfactual demonstrating the scale of activities and investment that falls short?

Agree with Ofgem's position that four neutral pathways are no longer useful if the FSO has an advisory role. All pathways should reach net zero. Nevertheless, we agree that there is value in a counterfactual, even if not presented as a scenario.

[4] Do you agree that the pathways should run to 2050, and if not, why not?

Overly focusing on 2050 can result in somewhat misleading and inefficient plans. While the 2050 target is important, given that energy assets tend to be long-lived, we would encourage having plans that take at least a 25-year horizon.

[5] Do you agree that the model should develop the capacity to include extreme data ranges when requested of the FSO in its role as strategic advisory body?

Yes. Utilising a Monte Carlo approach to generating pathways could be beneficial to assessing uncertainties and potentially help explore low-probability high impact events. However, we think the analysis needs to go further and reckon with some long-term risks to system security of supply (as distinct from purely network security of supply) – this is an important consideration for how we then value the assets and capabilities that address some of those long-term extreme risks.

[6] Do you agree with our consultation position on modelling network constraints?

Yes. Near-term investment and planning in the energy system is being hampered by network constraints; therefore, reflecting this in the short-term would be valuable and present a more realistic view. In the longer-term there are potentially quite complex interactions between planning / modelling assumptions and what happens in practice on the network.

[7] Do you agree with our consultation position, and do you have a view on which data principles should be possible to adopt for the first FES?

Not answered

[8] Are there specific stakeholder needs cases for publication of data, including the format of outputs?

Not answered

[9] Are there specific data outputs associated with the FES that we should mandate?

FES pathways should be fully costed and these costings published as part of the FES analysis. This will support FSO when advising decision makers on the implications of following, all, or parts of specific FES pathways.

[10] Do you agree that regional and/or industrial hub pathways should be included in the FES?

Yes. Ideally, these would be informed by coordinated local plans – such as Local Area Energy Plans – that are developed by or with the assistance of the Regional System Planners that Ofgem has recently proposed to introduce.

[11] Do you agree with our proposal for a 'major' FES in the year prior to the main CSNP publication, with smaller annual updates in the intervening years?

Yes. However, contingencies should be in place for major externally driven changes that might require a more fundamental rethink of forecasts – e.g. a fundamental change in government strategy.

[12] Do you consider that longer-term evolution of energy supply and demand modelling should head in the direction outlined above and if so how?

Not answered