

By email only RIIOElectricityTransmission@ofgem.gov.uk

23 June 2023

Dear Joanna

Centralised Strategic Network Plan: Consultation on Stage 1 – Modelling future supply and demand

Thank you for the opportunity to provide feedback on the modelling of future supply and demand. This response is on behalf of UK Power Networks' three distribution licence holding companies: Eastern Power Networks plc, London Power Networks plc, and South Eastern Power Networks plc. We are Great Britain's largest electricity Distribution Network Operator (DNO), dedicated to delivering a safe, secure and sustainable electricity supply to 8.5 million homes and businesses. We welcome Ofgem's progress on developing a Centralised Strategic Network Plan that aims to bring together existing tools and processes to better coordinate transmission system planning.

Our view is that decisions on future energy pathways or scenarios should be considered in the context of the wider suite of reforms of being proposed by Ofgem. We believe that clarity is needed around the interlinkages between proposed reforms and how existing responsibilities could be affected.

We therefore recommend that our response to this consultation is looked at alongside the recent responses we submitted to Ofgem on Future Systems and Network Regulation, as well as on Local Energy Institutions and Governance.

We support the development of a common energy scenario being established by the Future System Operator (FSO), as this will act as a single reference point between energy sectors and will provide clarity and consistency for industry. To ensure this reflects the different pace of change being seen at the regional level we expect to closely engage with the FSO to provide input data on Low Carbon Technology (LCT) trends using our annual Distributed Future Energy Scenarios (DFES) publication. By consulting with us and wider industry the FSO can improve the accuracy of its supply and demand models and thereby make more informed decisions on the transmission system's needs, which will help avoid unnecessary customer bill increases.

In the appendix to this letter, we provide responses to Ofgem's consultation questions. We look forward to engaging further with Ofgem to help shape future regulatory arrangements that will support delivering Net Zero at the lowest cost. If you have any queries please do not hesitate to contact Dan Saker in the first instance.

Yours sincerely

James Hope
Head of Regulation & Regulatory Finance
UK Power Networks



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Appendix – response to consultation questions

Q1. 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?

We understand Ofgem's intention is to use a pathway as this provides an aspirational common view of what is trying to be delivered i.e. what technologies and demand changes should happen, and where, to deliver Net Zero by 2050 cost efficiently, taking account of any current constraints to reaching Net Zero. On this basis we agree with the use of a central pathway and we believe this has the same meaning as setting a common energy scenario that acts as an industry reference. We also believe that scenarios can still have a role where there is uncertainty about policy, which for example remains the case for decarbonising heat.

Stage 1 of the CSNP should therefore define the different credible scenarios to reaching Net Zero whilst being clear on what the central pathway is. The potential or recommended pathway to decarbonisation could be equivalent to one of the existing scenario definitions, or it could be a separate new pathway. Whilst the FSO is expected to have a key role on developing pathways, a decision on this responsibility should avoid pre-empting the outcome of Ofgem's wider reforms on institutional governance. For example, the CCC already models pathways to Net Zero that feed into the FSO's and DSOs' own modelling at the national and regional level. There also needs to be consideration of the level at which the pathway is specified e.g. we expect this would specify a number of electric vehicles over a regional geography by a certain date as done in the current FES.

We believe that framing a pathway in the context of both the CCC's pathways and the FES worlds could be a more transparent explanation to stakeholders, compared to replacing the scenarios. Retaining the FES would also support the continued development of DFES (Distribution Future Energy Scenarios) with one or more overlaid pathways. The FES scenarios (which are energy not just electricity scenarios) are still required to provide the whole system context.

The outcome of this consultation should be clear on whether the FES will still be produced, how it may change as a publication and how its use will change.

We think the key change is that a national pathway would be produced in addition to scenarios, and then the pathway rather than the scenarios would be the input to the Network Options Assessment (NOA) or CSNP methodology. The NOA least regret methodology would need to be reviewed to consider the chosen pathway, rather than least regret over the illustrative credible FES scenarios.

Q2. Do you agree that there should be a single forward view of the near term for all pathways?

A single pathway or single common energy scenario would give greater clarity for system planning. We believe that this should be set to 2050 as this aligns to delivering the UK's Net Zero target. We do not understand the rationale for a near term single view as this would lead to an arbitrary time boundary and risks creating greater confusion instead of clarity. The reality is that any forecast, whether it is a pathway or scenario, is uncertain and this level of uncertainty is generally correlated with time. By setting for example a 10-year single forward view there would be a false impression that there is a high degree of certainty over this time. This could have significant negative consequences if it is used to justify major investment decisions that may in fact not be needed. Instead we recommend that the central pathway has sensitivities to represent the level of

uncertainty over time e.g. fanning out to 2050. This would be similar to what the OBR does when it publishes its economic forecasts as shown in Figure 1.

A single pathway would be analogous to the best-view planning scenario in the distribution networks, but would be defined in a common way across all networks rather than the choice of best view being decided by each network licensee and not aggregating to a consistent total. It would also help provide a single cross-vector view of supply and demand that would facilitate Ofgem's cost benchmarking analysis, thereby helping to reduce the risk of asset stranding and unnecessary customer bill increases.

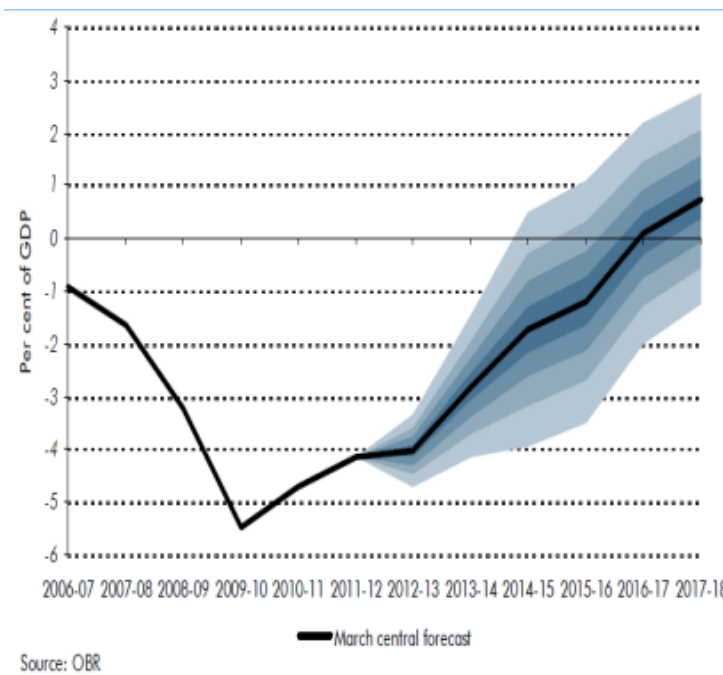


Figure 1: Example of how the OBR defines a range of sensitivities around its central forecast

Furthermore, the divergence from the central pathway could be larger when considered at a regional level or a specific transmission-distribution interface point (a Grid Supply Point) as they are dependent on the progress of specific large projects and associated constraints. This also helps to explain why a single pathway may be used as a key tool for macro decisions on transmission system planning, but is often less suitable for more local decisions which need optioneering and greater consideration of risk.

Q3. 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?

We agree that the common pathway set must be Net Zero compliant, however we still see merit in defining a scenario that is based on current trends even if this is not Net Zero compliant. Given the importance of avoiding unnecessary increases to customers' bills by speculative upgrading networks, it is imperative to model and test against all credible scenarios.

Whilst it is important to have an aspirational pathway as the key reference point this does not mean it is guaranteed to happen – this is pertinent at the distribution-level where uncertainty is higher and there is a much greater need to make demand based decisions (whilst transmission has less

than 500 substations, distribution has over 600,000). We do not think the framing around “planning to fail” is appropriate as the real issue here is about planning in a way that recognises the time it takes to respond to any supply and demand changes i.e. facilitating Net Zero. Mistargeted investment based on a forecasting error can in fact divert resources away from where they are needed and therefore bring bigger risks than investing using a just-in-time approach.

Q4. Do you agree that the pathways should run to 2050, and if not, why not?

Yes, we understand the logic of scenarios and the pathway running to 2050 as it aligns to the current Net Zero policy horizon. However, as network assets can have lifetimes of 40+ years, to perform a Cost Benefit Analysis (as in Stage 4 of the CSNP) of investments in the next ten years will require assumptions beyond 2050. The impacts of climate change on energy demand and supply (climate change adaptation) will also have effects beyond 2050. As a result, there needs to be consideration of how the pathways are extended beyond 2050 to enable those CBAs.

Q5. 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, the ability to test extreme data ranges in HILP events as sensitivity is sensible. They should not be part of the standard pathways. We recommend that the FSO consults on the HILP events that they are going to model.

Q6. Do you agree with our consultation position on modelling network constraints?

Yes, for electricity transmission we agree the pathways from FES modelling should factor in network constraints and the impacts on generation in the near term and then model an unconstrained network in the long term. This gives the pathway a higher confidence level in the near term and allows action to be taken to encourage energy sources in the longer term. This would be an important benefit relative to the current illustrative FES scenario approach. As part of this it is important that the FSO works with DNOs to agree what assumptions are used e.g. around distributed generation connections that impact the transmission network. To clarify, we do not believe that the FSO’s modelling of network constraints should cover any of our distribution network assets as this would duplicate the activity we undertake. We do, however, recognise that the FSO could provide a high-level regional view on the total capacity (GW) requirements using their central energy pathway and standard industry assumptions.

Q7. 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?

Yes, access to the data and assumptions is key. However, what is also important is a transparent process by which these assumptions are developed with a formal mechanism for key stakeholders to raise issues with the FSO’s approach and latitude for stakeholders including DSOs to use or develop their own approaches. We believe it is appropriate for the FES to specify certain key modelling assumptions such as contribution of EVs/heat pumps to peak demand in a standardised way.

Q8. Are there specific stakeholder needs cases for publication of data, including the format of outputs?

Scenario and pathway data would be used by DNOs and pathway data would be used by Local Authorities in development of their local plans for Net Zero delivery.

Changes to the FES would also have implications for DNOs' Network Development Plans (NDPs) – these currently include a report on interventions which deliver capacity framed around delivery of a best-view scenario and a Network Scenario Headroom Report framed around unused substation capacity in different DFES scenarios. The use of the scenarios is described in the Methodology of the NDP. The NDP licence condition is not a barrier to changes to the FES to introduce pathways; but highlights that there will be consequential implications that need to be considered by Ofgem. The current common approach by DNOs to delivering the NDP licence condition is described in a form of statement developed via the Energy Networks Association, and could be further amended in future.

Q9. Are there specific data outputs associated with the FES that we should mandate?

It may be appropriate for the FES to specify certain key modelling assumptions such as contribution of EVs/heat pumps/AC per unit to peak demand at a stated diversity level. This could simplify the business plan development process by making licensees' submissions consistent and comparable, whilst leaving discretion for licensees to submit their own best view.

Q10. Do you agree that regional and/or industrial hub pathways should be included in the FES?

For pathways to reflect near-term transmission constraints, it is necessary for those pathways to be specified down to GSP level (thus reflecting both local and wider system constraints). However, those near-term constraints would then need to be fully reflected each year. There would also need to be a clear process for transmission-distribution information sharing (based on the FES/DFES building blocks).

It should also be acknowledged that there will very likely be differences in the GSP-level views from the FSO and DSO on supply and demand based on their different data sources and assumptions. Whilst effort should be made to align views, there could be legitimate reasons for parties having different views at the GSP level. However, where the FSO recommends a different view on future demand and supply that results in defining capacity requirements that the affected network licensee does not agree on, there needs to be a dispute resolution process led by Ofgem.

For clarity we have set out below where we see the scope of the DSOs' DFES overlapping with the FSO's setting of scenarios and a pathway. We do not believe that the FSO should be modelling supply and demand at granular level below the GSP as this would duplicate what we do and would lead to a greater risk of conflicting views and lack of clarity to industry.

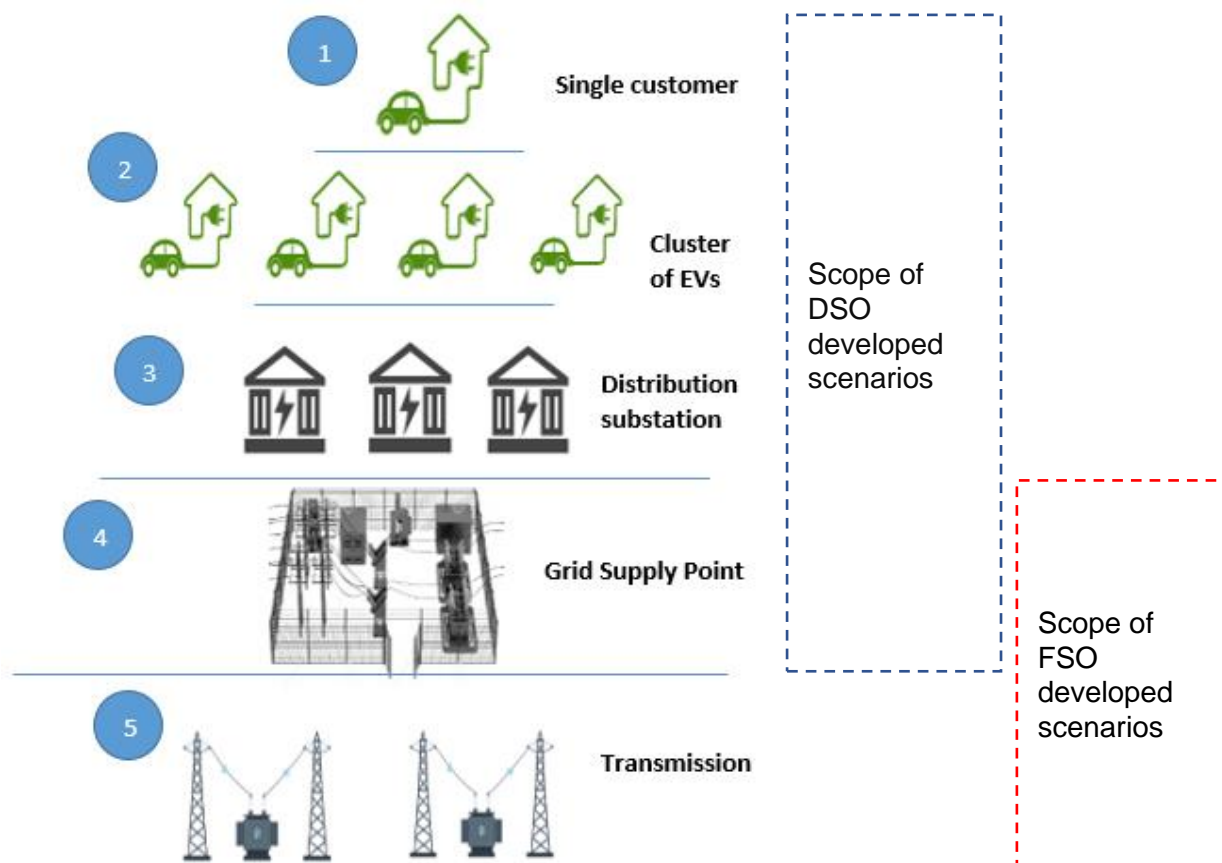


Figure 2: A representation of the electricity network and who is responsible for modelling supply and demand at the different distribution levels

Q11. 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?

No, we do not agree that there should be a change from the annual update process currently undertaken. We do not see a rationale for defining major and minor updates, nor do we see value in making major updates on a less frequent basis. Typically, policy decisions are happening on a continuous basis and there would be a very significant risk that taking a lighter touch would then fail to recognise policy developments, which in turn would create less accurate pathway/scenario outputs.

Q12. Do you consider that longer-term evolution of energy supply and demand modelling should head in the direction outlined above and if so how?

We support the FSO developing its capabilities to produce more accurate models that can help inform policy decisions and give industry better confidence to invest. Nevertheless we are unclear what Ofgem means when it refers to a fully optimised system and would question what the objective is here. In our view the focus for the FSO should be on modelling supply and demand in a way that creates clarity for industry on what is trying to be achieved through government policy, as well as the potential impact this will have on transmission networks and their interface with the distribution network.