

Appendix 1 Ofgem's Consultation – Centralised Strategic Network Plan: Consultation on Stage 1 – modelling future supply and demand

Network Company	Electricity North West (ENWL)
Topic/Activity:	Consultation – Centralised Strategic Network Plan: Consultation on Stage 1 – modelling future supply and demand
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?
Response to Q1:	<p>Yes, we believe that the proposed use of pathways instead of illustrative scenarios will allow the FSO:</p> <ul style="list-style-type: none"> • to optimise the investment planning requirements for transmission connected generation (mainly onshore and offshore wind farms) • to proceed with strategic planning of the transmission network to facilitate the planned transmission connected generation; • to accelerate the connection of distribution connected renewable generation (mainly PV and wind generation) by removing existing transmission constraints and delays in the provision of transmission capacity <p>What we have observed for distribution connections of renewable generation is a “<i>chicken and egg</i>” issue due to transmission network constraints. More specifically, the delays in the provision of transmission capacity result in reduced volume of renewables in the connections pipeline. Subsequently the reduced pipeline is reflected to lower uptakes of renewable generation in the short-term in the forecasts. Based on the latest information from our engagement with the ESO that we also published in our Network Development Plan (NDP) workbook (online available at: www.enwl.co.uk/ndp) for the majority of Grid Supply Point (GSP) feeding areas across our network the earliest dates that DG units above 1MW exports can connect is by 2036-2037. Given that FES are currently forecasting scenarios that are informed by the DSO DFES forecasts (i.e. whole system FES building blocks and Embedded Capacity Registers), a lower uptake of distributed generation can be forecasted that will in turn result in lower requirements for additional transmission capacity. We understand that a similar “<i>chicken and egg</i>” issue applies to transmission connections of larger generation projects.</p> <p>This “<i>chicken and egg</i>” issue can be tackled with the use of strategic planning pathways by the FSO, which will unblock primarily national but also local renewable generation projects.</p>

	<p>Even though this “<i>chicken and egg</i>” issue is not currently affecting demand connections due to transmission constraints, demand connections are still affected by distribution network constraints in a very similar way. We have calculated lower confidence factors that are based on historical data showing how many projects moved from quotes and acceptance to energisation. From 2021 to 2023 we have observed an over 10% reduction of quoted and accepted projects that moved to energisation and we understand that this is partly due to the reduced distribution capacity headroom. We expect that with the implementation of access SCR charge changes in RIIO-ED2 this issue will be mitigated and a lot of these projects will be unblocked.</p>
Q2	<p>Do you agree that there should be a single forward view of the near term for all pathways?</p>
Response to Q2:	<p>Yes, we believe that the use of a single short-term forward view will remove the complexity of the use of multiple scenarios. It will provide clarity on the short-term planning requirements for transmission network capacity provision and the prioritisation of connections, eg of large wind generation and other technology units.</p> <p>However, given that the FES are currently used as scenarios for a wide range of activities, the implementation of additional functions will be required to capture uncertainties in some of these activities. For example, to deal with short-term uncertainties on the requirements for transmission system flexibility services, a sensitivity range around the single short-term pathway can be applied.</p>
Q3	<p>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?</p>
Response to Q3:	<p>Yes, we agree with the proposal. Since the pathways will be used to accelerate decarbonisation through strategic planning, this planning should facilitate the transition to future Net Zero world.</p> <p>It is also important to highlight via gap analysis the shortfalls between the pathways and the actions. We would propose that the Net Zero pathways should be published together with a piece of gap analysis, which focuses on the recent historical actions and their quantified decarbonisation impact, the gap between actions vs pathways and learnings/recommendations to recalibrate the pathways and inform policy making and actions.</p>
Q4	<p>Do you agree that the pathways should run to 2050, and if not, why not?</p>
Response to Q4:	<p>No, we believe that the pathways should run beyond 2050. We need to use a constantly moving 25 to 30 years planning horizon, as we need to not foreclose future requirements, optimise investment considering the long-life expectancy of assets etc.</p> <p>Moving forward the pathways should also consider the strategic planning on energy security. This means that the beyond 2050 targets of these pathways could be around objectives to secure local electricity supply, increase the reliability of networks, further reduce the dependence on foreign energy sources etc.</p>

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?
Response to Q5:	<p>It seems more sensible for the FSO strategic planning to model volatility from climate change and high impact low probability events not in the FES/pathways, but in the planning processes that use FES as inputs. It also seems sensible for the FSO to determine the methodology for these high impact low probability events in the open and transparent FES methodology, even if it is used in a later stage.</p> <p>The FSO should develop strategic planning tools that uses as inputs the FES/pathways data and combines this data with assumptions on high impact low probability events and/or longer-term climate changes.</p> <p>At the moment, both the DFES and FES forecasts model weather corrected electricity demand growth that excludes any volatility from weather variations. They also do not model very low probability events, given that this would result in very risk averse network planning that at the same time could come at very high cost. The pathways should not be any different from the current DFES and FES practice, but the high impact low probability volatility would be sensible to be modelled as a post-process in planning. By doing this the FSO stakeholders can understand:</p> <ul style="list-style-type: none"> • the impact of any longer-term climate change and or the modelling of unpredicted high impact low probability events • the level of risk modelled in strategic planning, given that the level of risk is associated with the level of probability (high/medium/low) in the assumptions.
Q6	Do you agree with our consultation position on modelling network constraints?
Response to Q6:	<p>We agree that short-term planning should consider network constraints. However, this seems inappropriate for longer-term planning, where the use of an unconstrained network model seems more appropriate.</p> <p>The use of pathways in FES will focus on the prioritisation and optimisation of network investment to deliver the designed strategy. This requires that network constraints should be neglected along the whole future horizon of the pathways, given that the pathways are not a forecast but a tool to unblock existing network constraints via strategic planning.</p>
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?
Response to Q7:	<p>Yes, we agree with the consultation position and in particular with the points on transparency, use of data best practice principals and the by default treatment of data as open.</p> <p>The first FES produced by the FSO should clarify the purpose and the uses of the provided data. This was a critical aspect also in the standardisation and alignment of DFES and FES processes, ie to clarify how DFES and FES forecasts are used. The first FSO produced FES pathway(s) need to clarify that the purpose of the data is to:</p>

	<ul style="list-style-type: none"> • inform as direct inputs the strategic planning of the transmission network and the coordinated penetration of transmission connected offshore and onshore wind generation • inform national system operability (similarly to the current use of FES) • inform indirectly DFES and the decision making for distribution connected technologies by reflecting the national and regional strategy to release transmission network capacity and large generation. <p>The first FES should also adopt the developed FES-DFES alignment process in the use of DFES data. More specifically, the FES should be using the DFES data inputs from the whole system FES building blocks provided by DNOs. This is a process established in ENA Open Networks between ESO and all DNOs and this data exchanged has evolved and standardised in the last 4 years. This will allow DFES capture the local trends on electricity demand growth from electrification of transport and heating, as well as capture the corresponding trends in distributed generation. Importantly, as DFES captures information from the engagement of DSO planning with local stakeholders, they can provide a well-informed view of short-term certainties and long-term range in demand and DG growth.</p> <p>However, we appreciate that even though DFES are forecasts that capture local trends, FES will be more strategic pathway(s).</p>
Q8	<p>Are there specific stakeholder needs cases for publication of data, including the format of outputs?</p>
Response to Q8:	<p>DNOs are best positioned to capture in their DFES their stakeholders' plans through their cycle of engagement with local stakeholders, and the FSO is expected to be best positioned to provide information on the future of transmission network development and transmission connected generation.</p> <p>The data publications that would be required to be published to enhance the DFES outputs are:</p> <ul style="list-style-type: none"> • national and regional forecasts of transmission connected generation per type, and • per Grid Supply Point (GSP) forecasts of transmission capacity headroom for demand and generation, i.e. similarly to the Network Scenario Headroom Report agreed to be published by all DNOs using their DFES for distribution capacity. This could be part of FES or CSNP publications. <p>Regarding the publication of data, we would like to highlight the existing annual ESO-DSO forecasting and planning cycle that we believe can also work for the future FSO-DSO cycle. The proposed cycle that aligns with current practice is shown in the following timeline graph. The FSO key publications of FES and CSNP (using current publication dates for ESO Electricity Ten Year Statements – ETYS) are currently allocated along the year to properly facilitate a feedback loop with DNOs to facilitate data sharing and the use of data to inform FSO and DSO planning. We firmly believe that it is crucial to maintain the developed timeline, as there is more processes where there are interdependencies between data publications by FSO and DNOs.</p>

	<p>annual FSO-DSO forecasting & planning cycle</p> <p>The diagram shows a 12-month timeline from Jan to Dec. Above the timeline: Jan-Mar is labeled 'FSO processing DFES inputs (whole system FES bb)'. Apr-May is labeled 'DNOs processing latest FY load data for Week 24 submission to FSO/TO'. Jun has an upward arrow labeled 'NDP publication (based on latest DFES)'. Jul has an upward arrow labeled 'FES publication'. Aug-Sep has a downward arrow labeled 'LI reports (DFES demand baseline)'. Oct-Nov has an upward arrow labeled 'CSNP publication (date used currently for ESO ETYS)'. Dec has an upward arrow labeled 'DFES publication'. Above the timeline, additional labels with downward arrows indicate: 'Week 24 submission by DNOs (to FSO/TO)' at Jun, 'LTDS Publication (uses DFES Best View)' at Nov, and 'whole system FES bb from DNOs (DFES inputs to FES)' at Dec.</p>
Q9:	Are there specific data outputs associated with the FES that we should mandate?
Response to Q9:	See answer to Q8 and in specific the two bullet points that describe the data publications. We would recommend that these data publications should be mandated.
Q10	Do you agree that regional and/or industrial hub pathways should be included in the FES?
Response to Q10:	<p>Yes, we agree that pathways for major industrial hubs should be included in the FES pathways, but only when it is large sized hubs (e.g. above 100MW) or there is a requirement for transmission assets. The regional / more local information is captured in a more holistic way in DFES together with all other local developments. So, the FSO should be using DFES data (i.e. utilisation of whole system FES-DFES building blocks shared by DNOs) to capture in a holistic way the more local/granular developments that are informed from the direct interaction of DSO planning with local stakeholder plans.</p> <p>We understand that the role of the FSO is among others to define the strategy for the coordinated and optimal penetration of transmission connected onshore and offshore wind generation to meet the UK government's 2050 Net Zero target and the national energy security objectives. Therefore it seems sensible that this role should be expanded to cover the strategic planning of some major industrial hubs where transmission assets could be required.</p> <p>We also agree with the consultation in that what is required is a coordinated data exchange between regional system planning (RSP) and FES pathways. If FES pathways have a clear focus on strategic planning of transmission networks, industrial hubs and transmission connected generation, then confusion can be avoided in their purpose compared to the corresponding of the RSP. Each RSP may account to a single region, but with a clearly wider scope for the strategic planning across all energy vectors.</p> <p>Regarding where we see FES, RSP process and DFES fitting in a world that builds on current best practices and with reference to the flowchart of our Q11 response, we believe that:</p> <ul style="list-style-type: none"> FES should continue to be informed by DFES data, ie whole system FES building blocksFES data (importantly for transmission connected assets) should continue feeding the DFES process

	<ul style="list-style-type: none"> if FES are pathway(s), then they should directly feed into RSP process and DSO planning should be getting a comprehensive view of whole system pathways from the RSP and avoid confusion of multiple pathways DSO planning should be using both RSP pathways (informed by FES) and DFES, as this would drive distribution network development to align with national / central government strategy (RSP) and local government and stakeholder plans.
Q11	<p>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?</p>
Response to Q11:	<p>Yes, we agree with the proposal for a “major” FES in the year prior to the main CSNP publication, with smaller annual updates in the intervening years. We expect that this would enhance the utility of FES.</p> <p>We would recommend that both RSP (Regional System Planning) and the FES processes use the DFES data as inputs as shown in the following flowchart diagram. However, the DFES data should be treated not as pathways, but as forecasts reflective of the local behaviours based on existing policy, economic and technological conditions. This is why we believe that DFES should be independent from the FSO pathways to capture the likelihood and uncertainties in local trends. At the same time the RSP and FES data and guidance will be reflected as a direct input into DNO network development plans. The DNOs would need to consider both the RSP/FES data / pathways and the DFES data, as the distribution network development needs to align both with national strategy as reflected in RSP/FES and with local area energy plans (LAEPs) and local stakeholder/customer plans.</p> <pre> graph TD subgraph FSO [FSO] FES[FES (annual)] CSNP[CSNP (bi-annual)] RSP[RSP (FSO or not)] FES --> CSNP FES --> RSP end subgraph DSO [DSO] DFES[DFES (annual)] NDP[Network Development Plan (bi-annual)] DFES --> NDP end NS[national strategy (DESNZ, central gov)] --> FES NS --> LAEPs[LAEPs / local plans (local gov)] LAEPs --> DFES FES --> CSNP FES --> RSP CSNP --> TNP[transmission network planning] RSP --> TNP FES --> DFES DNOs[whole system FES building blocks from DNOs] --> FES DNOs --> DFES CSNP --> NDP NDP --> DNO[DNO] NDP --> FS[Flex Services] NDP --> CSNP NDP --> FES </pre> <p>We would recommend that the smaller annual updates of FES should focus purely on modifications from the latest major FES and any other additions/adjustments. We would also recommend that any major changes in the FES methodologies should be published as stand</p>

	<p>alone publications. This will provide more clarity on the FES process and will allow a better use of the FES data from our side and other stakeholders.</p>
Q12	<p>Do you consider that longer-term evolution of energy supply and demand modelling should head in the direction outlined above and if so how?</p>
Response to Q12:	<p>Given that the consultation proposal recommends that FES should become pathways rather than forecasting scenarios there is additional flexibility in this type of modelling. Thus, we welcome the proposal that the FSO should develop new capabilities to model types of uncertainties not currently captured in FES e.g. high impact low probability events etc, but this modelling should be limited to the national system with DNOs adopting the same or similar modelling approach tailored to the regional networks to deal with high impact low probability events at the local level.</p> <p>Given that our recommendation outlined in our response to Q11 is that DFES remain forecasting scenarios and there are interactions between FES/RSP data and our network development planning, there is an increased need for more transparency in FSO modelling assumptions and methodologies. The increased transparency can also enhance the sharing of data and learnings in modelling of national/regional by the FSO and more local/granular by the DNOs, especially relevant for the modelling of high impact low probability events.</p> <p>We recommend that the DNOs can use and publish methodologies and data from such models in their Network Development Plans, as such types of models are not relevant to DFES forecasts but more relevant to how different types of uncertainties inform local network plans.</p>