nationalgridESO

Meeting minutes – redacted

NOA Committee May 2020 meeting

Date:	06/05/2020	Location:	Webex
Start:	13:15PM	End:	15:00PM

Participants

Present	Attend/Regrets
Craig Dyke	Attend
Julian Leslie	Attend
Roisin Quinn	Regret
Kayte O'Neill	Regret
Lauren Moody	Attend

Attendee	Role	Minute(s) attended
Jingchao Deng	Technical Secretary – ESO	1-14
Nicholas Harvey	Network Development manager – ESO	1-14
Jason Hicks	Technical Economical Assessment manager – ESO	1-14
Paul Wakeley	Economical Assessment manager – ESO	1-14
James Whiteford	System Capability manager – ESO	1-14
Richard Proctor	Power System Engineer – ESO	1-14
Sean Williams	Economics Engineer – ESO	1-14
Mostafa Nick	Power System Engineer – ESO	5
Faith Natukunda	Power System Engineer – ESO	5
Griffin John	Power System Engineer – ESO	5
Shurooque Baloch	Power System Engineer – ESO	5
Toby Thornton	Energy Demand Manager – ESO	7-8

Rob Nickerson	Electricity market modelling manager – ESO	7-8
Roddy Wilson	Network Planning Manager – SHE Transmission	8-10
Bless Kuri	Head of System Planning and Investment – SHE Transmission	8-10
David Adam	Transmission Network Manager – SP Transmission	8-10
Kirsten McIver	Lead Design Engineer – SP Transmission	8-10
Le Fu	NOA Lead – NGET	8-11
Nicola Todd	Connection Portfolio Manager – NGET	8-11
Niall McDonald	Ofgem	1-14

#	Topics to be discussed
1.	**Apologies and introductions** Mr Dyke welcomed all attendees and introductions were made.
2.	**Meeting governance and process** [Redacted due to administrative nature.]
3.	**Minutes of the NOA Committee meeting held on 09 January 2020** The draft NOA committee minutes for the meeting held on 09 January 2020 (the "Minutes"), as circulated prior to the meeting, were taken as read. Mr Dyke requested the members and attendees to provide any final comments. There were no further comments and accordingly the Minutes were **APPROVED** as an accurate record and **APPROVED** for signature by the Chair.
4.	**Outstanding actions from the previous meetings** Mr Dyke invited Dr Proctor to provide an update on 'Action 14.1 – to study/investigate B7a flows in more detail including to see if there are ways to use impedances to relieve the boundary', and the following points were noted: • The capabilities used in NOA were maximised. Further investigations showed that no additional boundary capability can be achieved by 'using impedances' including applying QB tapping, switching reactive devices and utilising power flow control devices. Mr Dyke invited Mr Matilla to provide an update on 'Action 14.5 – to work with TOs on improving the NOA process communication', and the following points were noted: • The action arose from the miscommunication on BTNO's earliest in-service date (EISD) during the NOA 2019/20. • One of the improvement projects this year is to implement a query management system to improve communications with the TOs during the NOA 2020/21. • The new system features a central registry on SharePoint with logs of dialogues kept that we can refer back to or escalate with the NOA committee. It provides better transparency and visibility to all parties involved. • Similar query management metrics as those in the currently ESO (Customer Relationship Management) CRM system will be applied but the system also allows TOs to access. • TOs are happy with the proposal. Mr Dyke remarked the good progress on the NOA improvements.

5. NOA Pathfinder projects updates

Mr Dyke invited Mr John to provide an update on Constraint Management Pathfinder, and the following points were noted:

- ESO is currently processing Request for Information (RFI) results received. So far, 11 parties have expressed their interest in participating during the RFI with around 70 options.
- ESO virtual team is reviewing how the requirements of the service will look like and running cost-benefit analysis (CBA) to compare system benefits with and without the product.

Mr Dyke invited Ms Natukunda to provide an update on High Voltage Pathfinder, and the following points were noted:

- The short-term Mersey high voltage management contract up until March 2021 is in service
- The long-term tender CBA has been finalised and results will be announced on 22 May 2020.
- The next step is to look at the Pennines region.

Mr Dyke invited Ms Baloch to provide an update on Stability Pathfinder, and the following points were noted:

- Stability Pathfinder phase 1 service contracts have all been signed by March 2020. Phase 1 focused on national inertia needs.
- Stability Pathfinder phase 2 will look at Scotland's regional stability needs. An RFI will be published to see how COVID-19 will impact on the market's ability to respond and participate in a tender process.
- Connections reviews are being considered during Stability Pathfinder phase 2 tender, similar to Voltage Pathfinder Mersey.

Mr Dyke invited Dr Nick to provide an update on Probabilistic Pathfinder, and the following points were noted:

- Further developments based on python are ongoing for the tool to consider automatic post-fault actions.
- An innovation project is being carried out to enable Year 1 voltage assessment.
- Webinars about the tool and methodology were held with the wider industry and academia.

Mr Dyke acknowledged the progress updates of all Pathfinder projects and asked when we would know the probabilistic tool and methodology would be fit for purpose and ready to be used. Mr Harvey responded that the initial benchmarking of the tool with the DC power flow algorithm had already been done and with the development of post-fault actions, more benchmarking studies would be carried out.

6. Mr Dyke invited Mr Wakeley to provide an update on 'High forecast constraint costs from NOA 2019/20', and the following points were noted:

- A more detailed analysis was conducted following NOA 2019/20 on forecast constraint costs.
- Forecast constraint costs were notably higher in Two Degrees and Community Renewables than those in NOA 2018/19 and expect to rise before large infrastructure projects are delivered.
- Similar analytical work will continue in NOA 2020/21 with the consideration of policy and market solutions such as pathfinders.
- ESO will keep working with the TOs on Strategic Wider Works (SWW) for the eastern links and south coast to ensure critical projects are included in NOA 2020/21.

7. **7.1** Mr Dyke invited Mr Thornton to provide an update on the 2020 Future Energy Scenarios (FES) and FES 2020 demand, and the following points were noted:

- All current FES analysis hasn't taken into account the impact of COVID-19.
- FES 2020 features four scenarios under two axes – the speed of decarbonisation and level of societal change.
- Steady Progression (SP) has the lowest level of decarbonisation and is the only scenario that misses the 2050 'Net Zero' target. The other three scenarios – Leading The Way (LW), Consumer Transformation (CT) and System Transformation (ST) – will achieve 'Net Zero' by 2050 with LW being the quickest to hit the target.
- Long-term peak demand sees a wider range across all scenarios than in FES 2019. CT's demand focuses on electrification groups which has much higher demand than in the other scenarios.
- The annual demand curves across the scenarios have similar trends as the annual demand.
- The current analysis doesn't include electrolysis in demand. With electrolysis, demand in LW and CT will rise significantly from around 450TWh to 700TWh per year near 2050. Energy Strategy teams are currently determining sensible locations for electrolysis.

Mr Leslie questioned whether consumer behaviour and smart charging have been considered when forecasting peak demand. Mr Thornton responded that consumer behaviour and load shifting have been considered to a certain extent with the assumptions aligned with the current views from the industry.

Ms Moody asked Mr Thornton to clarify the definition of 'peak demand'. Mr Thornton explained that the peak demand mentioned above is end consumer average cold spell (ACS) peak demand, not transmission demand and a portion of the demand will be met by embedded generation.

7.2 Mr Dyke invited Mr Nickerson to provide an update on FES 2020 generation, and the following points were noted:

- Generation mix in FES 2020 currently hasn't taken into account the impact of COVID-19.
- The analysis started without electrolysis so a comparison can be drawn between pre-electrolysis and post electrolysis. There will be uncertainties about electrolysis, and it may not be grid-connected.
- In all scenarios, transmission and distribution capacity is expected to see significant growth for decarbonising the sector. Negative emission plants were added to the 'Net Zero' scenarios so that the whole society can meet the 2050 target.
- 'Net Zero' target met by LW, ST and CT scenarios without deploying large-scale nuclear plants.
- High confidence in the growth of offshore wind. Growth in Scotland and Wales up to 17GW and a significant amount on the east coast.
- Limited opportunities for unbated Combined Cycle Gas Turbine (CCGT). Gas plants are expected to be peaking plants with lower running hours. Hydrogen turbines will eventually dominate with lower capital cost than natural gas.
- Developments in the power sector such as 'Net Zero', EU ending Capacity Market suspension, sector deal and clarifications on the next Contract for Difference (CfD) round are influencing the FES 2020 modelling.
- Long-term decentralised capacity dropped slightly since FES 2019 due to strong growth in transmission wind capacity.
- Projection of nuclear is similar to FES 2019.
- Projection of offshore wind is revised upwards across all scenarios due to a number of factors including 'Net Zero', sector deal and market intelligence about the next CfD auction rounds.
- Projection of onshore wind growth is more restricted and most of which are distributed.
- Projection of solar is growing and in line with 'Net Zero' benchmarks.
- Carbon Capture usage and storage (CCUS) are deployed in all scenarios except SP.

- Gas capacity falls significantly in ‘Net Zero’ scenarios as compared to FES 2019 but continues to be high in SP for peaking.
- Hydrogen capacity will replace gas and is primarily for peaking. Hydrogen growth is high in ST as compared to other scenarios.
- Interconnector capacity increases due to high renewables in the GB exporting to EU.
- Storage capacity increases across all scenarios.

7.3 Mr Dyke invited Dr Proctor to provide commentaries on how FES 2020 may impact NOA 2020/21, and the following points were noted:

- The new scenarios feature higher renewable levels across the scenarios, especially in the north of the country. Therefore, the NOA still expects to see high north-to-south flows, predominately triggering reinforcements in Scotland and North England.
- High East-Anglia flows are still expected, and high interconnector flows are still expected along the south coast, triggering major reinforcements.
- There aren’t many developments in the South East and Wales so the analysis does not expect large changes in these regions.
- The latest FES information is gradually feeding into the NOA process but the NOA analysis has not started yet. A more detailed update on this will be presented in the October meeting.

8. Mr Dyke invited Ms Moody to provide an update on FES 2020 timeline, and the following points were noted:

- The FES 2020 analysis was being finalised when COVID-19 lockdown commenced. The current FES has not been able to include the impact of COVID-19 into the scenario building.
- The FES 2020 is due to be delivered as planned.
- The target launch day has been pushed back from 2 July 2020 to end of July 2020.

Mr Dyke invited Dr Deng to provide an update on NOA 2020/21 timeline and the following points were noted:

- A high-level NOA 2020/21 delivery plan was drawn with the assumption that the entire NOA team has to work remotely.
- The current plan is very similar to the previous year. No major blockers are expected to stop or cause significant delays to the delivery of the NOA at this stage.
- The programme is on track at present with the next milestone being FES-NOA database handover in mid-May.
- Developments including further testing of virtual machines, scoping out backup plans and enhancing communications with the TOs are planned to ensure timely delivery of the NOA.

9. Mr Dyke invited Mr Lambert to provide an update on NOA methodology, and the following points were noted:

- Amendments were made to the NOA methodology to reflect C27 changes following Ofgem's decision after its statutory consultation in December 2019 and January 2020. Ofgem announced their decision on 23 April.
- A high-level stability methodology based on the most recent Stability Pathfinder project conclusions has been included
- Guidance on how the ESO will collaborate with TOs and other parties when developing alternative options has been expanded.

10. A briefing noted from the three TOs SWW working group was submitted to the NOA Committee prior to this meeting and was taken as **READ**. Mr Dyke invited Ms McIver to provide an update on the east coast SWW project and the following points were noted:

- TOs and supported by ESO with a comprehensive CBA, completed an Initial Needs Case submission and have together begun scoping the CBA required to support the submission of a Final Needs case.
- A seabed survey is expected to launch later this year; however, the current timeline has not taken into account the impact of COVID-19. The survey will proceed for the Torness to Hawthorn Pit and Peterhead to Drax routes as recommended by NOA 2019/20 with the option of Torness to Cottam to progress from a desktop perspective with a view to launch tender for this option in the future.

Mr Dyke questioned when exactly the seabed survey will take place. Ms Todd responded that it would start in late summer.

Mr Harvey remarked that there were two options with different landing points recommended by NOA5 for the Torness to England HVDC link, driven by different FES 2019 scenarios, and the analysis suggested progressing both options this year, prioritising Hawthorn Pit if either EISD was at risk.

11. Mr Dyke invited Dr Fu to provide an update on south coast SWW and the following points were noted:

- The outcome of NOA 2019/20 provided a strong signal for the south coast HVDC routes and NGET went back to the drawing board in developing the south coast options for the SWW and NOA 2020/21.
- NGET has conducted hundreds of studies in developing a variety of options and furthering their understanding of how these will impact south coast stabilities and boundary capacities.
- NGET is currently in the process of deciding which options to put forward into the pre-construction board meeting scheduled for May 2020. These options will then be submitted to the NOA 2020/21 and SWW.
- NGET is also working with the ESO modelling team to improve the study models for the south coast including detailed models for HVDC controllers. NGET is looking to use these models to refresh the analysis by the end of May which will lead to more conclusions on stability by mid to end of June.

12.	**The next meeting dates** The next NOA committee meeting will be held on Thursday 08 October 2020.
13.	**AOB** None.
14.	**Feedback** The meeting agreed to provide written feedback offline.