Meeting minutes

NOA Committee May 2021

Date:	05/05/2021	**Location:**	MS Teams
Start:	10:00 AM	**End:**	12:00 PM

Participants

Attendee	Role in meeting	Job role	Attend/Regrets	Minute(s) attended
Matthew Wright	Chair	Head of ESO Strategy and Regulation	Attend	1-12
Rob Rome	Committee member	Acting Head of National Control, ESO	Attend	1-12
Matthew Magill	Committee member	Market Requirements Senior Manager, ESO	Attend	1-12
Julian Leslie	Committee member	Head of Networks, ESO	Attend	1-12
Lauren Moody	Committee member	Energy Analysis Senior Manager, ESO	Attend	1-12
Nicholas Harvey	Support member	Network Development Manager	Attend	1-12
James Greenhalgh	Support member	Electricity Customer Connections Manager	Attend	1-12
Victor Matilla	Technical Secretary	Power System Engineer	Attend	1-12
Alex Haffner	Participant	Strategic Insight Manager	Attend	1-5
Toby Thornton	Participant	Energy Demand Manager	Attend	1-12
Rob Nickerson	Participant	Electricity market modelling manager	Attend	1-12
Emmanouil Belivanis	Participant	Power System Engineer	Attend	1-12
Kelvin Lambert	Participant	Power System Engineer	Attend	1-12
Richard Proctor	Participant	Power Systems Engineer	Attend	1-12
Jason Hicks	Observer	Technical Economic Assessment team Manager	Attend	1-12
Paul Wakeley	Observer	Economic Assessment team Manager	Attend	1-12

External Participants				
Thomas Johns	Observer	Ofgem	Attend	1-12
James Norman	Observer	Ofgem	Attend	1-12
Neil Copeland	Observer	Ofgem	Attend	1-12
Niall McDonald	Observer	Ofgem	Attend	1-12
Bless Kuri	Presenter	Head of System Planning and Investment – SSEN Transmission	Attend	6-8
Roddy Wilson	Presenter	Network Planning Manager – NOA Committee October agenda	Attend	6-8
Eric Leavy	Presenter	Head of Transmission Network – SP Transmission	Attend	6-8
David Adam	Presenter	Transmission Network Manager – SP Transmission	Attend	6-8
Kirsten McIver	Presenter	SP Transmission	Attend	6-8
Mark Perry	Presenter	Network development - NGET	Attend	6-10
Nicola Todd	Presenter	Connection Portfolio Manager – NGET	Attend	6-10
Le Fu	Presenter	NOA Lead – NGET	Attend	6-10

Discussion and details

#	Topics to be discussed

1. Apologies and introductions

Mr Wright welcomed all attendees and introductions were made

Mr Wright explained that he would be succeeding Mr Dyke as Head of ESO Strategy and Regulation and is now the new Chair of the NOA Committee.

2. Meeting governance and process

2.1. Terms of Reference

The changes in Committee memberships due to leadership movements were noted by the meeting.

2.2. Conflict of interests

None

2.3. Proxies to the meeting

Ms Haigh sent her apologies and Mr Rome has been appointed as replacement

Ms O'Neill sent her apologies and Mr Magill has been appointed as replacement

2.4. SOFI confidentiality

None

2.5. Risks

None

3. Actions arising from the NOA Committee meeting of 12 January 2021

3.1 A brief was provided to the Committee following the January 2021 NOA Committee meeting on Friday 15 January in order to reach a final recommendation for PTNO of "Delay". Further details can be seen in agenda item 9 of the January 2021 meeting minutes here.

After reviewing the brief and based on the evidence presented, the Committee agreed with the recommendation to "Delay" option PTNO. on Tuesday 19 January 2021.

As a result, **Action 17.1** was closed.

3.2 Mr Wright invited Mr Belivanis to provide an update on **Action 16.6 - Consider the recommendation of options delayed only due to outages in the next review of the NOA methodology,** and the following points were noted:

- During the previous NOA 2020/21, it was noted that the final recommendations could have been impacted by unoptimised outage requirements submitted by the Transmission Owners.
- New additional steps will be implemented in the outage requirement assessment to allow:
  - The TOs to review outage interactions and restrictions initially identified through ESO analysis
  - The TOs can challenge the assessment or update their requirements
- The aim is to have outage restrictions agreed at an earlier stage before they are used in the NOA cost benefit analysis (CBA) process.

If the results or recommendations of some options are still primarily and adversely affected by the submitted outage requirements the options will be brought to the attention of the NOA Committee. Mr Norman stated that because of this issue, EISDs had been delayed and affected the CBA, resulting in higher constraint costs, he asked whether this new process would mitigate risks of EISD delays.

Mr Belivanis responded that:

- This process will allow the TOs to understand how the outage requirements could affect the CBA and early engagement will allow any conflicts to be captured and resolved earlier.

Mr Leslie highlighted that this NOA was the first time outages had caused such conflicts. Mr Harvey added that:

- Analysis was undertaken both delaying reinforcements and also bringing them forward as part of the optimisation process to understand the benefit to consumers.
- The current NOA process will still indicate the optimal delivery years and the impact of outage requirements to delivery.

Following this discussion, **Action 16.6** was closed.

Transmission Owners enter the meeting

4. FES 2021 update

4.1 Electricity Demand

Mr Wright invited Mr Thornton to provide an update on FES 2021 Electricity Demand and the following points were noted:

4.1.1 FES 2021 Framework

- Three of the four scenarios this year also meet the net-zero scenario.
- ACS demand is the assumption used in the analysis

4.1.2 FES 2021 key assumptions

- COVID-19 transport efficiency
  - The annual energy use has gone down due to the effect of COVID-19, and annual peak remain largely unaffected
  - There will be a lag from annual demand as businesses return
  - It is assumed that electric cars will be consuming more energy overall, which has increased by about 30%
- Industrial efficiency and fuel switching
  - The assumptions have been updated to soften the combined effect of fuel switching and energy efficiency, which increased the energy forecasted in the scenarios for industrial processes
- Building fabric efficiency
  - The assumptions proficiency has been lowered after reviewing stakeholder's feedback and undertaking further research
- Heat peak shaving
  - The heating demand can be shaved by using a hot water tank and phase changing materials, by preheating them prior to the expected peak, reducing the demand. The assumptions relating to consumers' ability to use heat peak shaving have been reduced compared to FES 2020. This has the effect of increasing peak heating demand compared to FES 2020.

4.1.3 Annual underlying FES consumer demand

- Leading the Way has the strongest increase in consumer demand and strongest level of efficiency
- In 2020, due to COVID-19, this caused a dip in demand which was affected at an industrial and commercial
- Compared to last year the demand has increased in heat, industrial switching and transport

4.1.4 Peak national transmission demand

- There is a relatively thin timeframe up to around 2030 before the range gets much larger.
- Further sensitivities will be done on those ranges
- Compared to last year there is a similar range but with increased demand.
- The main message for demand is similar to last year with increased usage of energy and reduced forecast of energy efficiency.

From 2035 according to the demand growth, this potentially means that further reinforcements will be needed on the network and to be thinking about demand in the context of the NOA.

Mr Norman, asked about the assumption used on the impact of COVID-19, and asked about the material impact on the scenarios.

- The speed of vaccinations which should bring life and businesses back to normal, however with small suppression. This means that industrial and commercial levels will go back to their pre-COVID-19 levels.
- Sustained financial support to businesses by the Treasury.
- Limited impact on peak demand as compared to last year and everything is being supressed at some level
- Within the bounds of the modelling, the new scenarios will cover the impact of COVID-19 going forward.

Mr Wright asked about the assumptions, that the energy efficiency is going to be reduced, as well as EVs.

- Department for Transport (DFT) numbers have been looked at, a report was written on this. This looked at the energy usage of individual cars and two factors were updated
  - A data point had been used which did not account for the weight of cars. Bigger and heavier cars are expected to come to market as opposed to the single point of smaller cars. As luxury cars become more prevalent.
  - The speed efficiency curve assumed that the electric cars as they are today are used for lower average speed and miles. As they become more prevalent the speeds and ranges will increase. Therefore, with these higher speeds this has an impact on reduced energy efficiency.

4.2 Electricity Supply

Mr Wright invited Mr Nickerson to provide an update on FES 2021 Electricity Supply and the following points were noted:

4.2.1 Power Sector developments since FES 2020

- There have been a number of significant developments since FES 2020 that will have an impact on the power sector.
- This includes announcements made in the Ten Point plan, the Energy White Paper and proposals set out in the Climate Change Committee's (CCC) Sixth Carbon Budget
- These have been reflected in the FES 2021 assumptions. Most notably moving Steady Progression towards further decarbonization in the power sector
- The Ten Point plan reaffirmed the manifest pledge for 40GW offshore wind by 2030
- Up to £385 million in an Advanced Nuclear Fund with the aim for the first Small Modular Reactors (SMR) and Advanced Nuclear Reactors (AMR) demonstrator deployed in the UK in the early 2030s.
- An aim to bring one largescale nuclear project to the point of Final Investment Decision (FID) by the end of this Parliament.

4.2.2 Installed generation capacity

- Plan to have two Carbon Capture Utilisation and Storage (CCUS) industrial clusters operational by the mid-2020s with two more in the 2030s. Details of a revenue mechanism expected this year with the new CCUS business models finalised in 2022.
- Aiming to generate 5GW of hydrogen production capacity by 2030.
- The CCC called for an end of unabated fossil use in the power sector by 2035 subject to security of supply.
- Up to around 47% capacity could be decentralised by 2050.

Nuclear

- The upper range capacity is driven by large increases in small modular reactors
- Consistent with last year's scenarios, there is a large degree of uncertainty, so there is a large range from top to bottom capacity

Offshore wind: Round 4 leasing

- Scoping/early development projects have a noticeably high capacity
- High option price will drive developers to get the projects completed as soon as possible
- Some of the sites are looking to be operating within 7 years and are looking at whether any of the phases can be sped up.

Celtic Sea: Floating wind

- The Crown Estate has announced (March 2021) that it is commencing work to design and deliver a new leasing opportunity for early commercial-sale floating wind projects in the Celtic Sea.

Offshore Wind

- Steady Progression is the scenario that makes the least progress to the net-zero scenarios
- Stakeholder feedback was that this scenario ambitions were set too low. The increased level of progression towards net-zero has therefore been increased.
- The power sector has been further decarbonised.

Onshore wind

- The majority of onshore wind growth is assumed to be distributed in future.
- There is some growth in transmission-level onshore wind, particularly in Scotland.

Solar

- The projections have been increased in Leading the Way where solar is expected to be paired with flexible demands (e.g., electrolysis for hydrogen production).
- Price cannibalisation is reached within the limit of 50GW
- In order to get to the levels of 90GW some assumptions have been made in the way the market shifts in order to facilitate that level.

Carbon Capture Storage (CCS) Biomass (Bioenergy with Carbon Capture and Storage, BECCS for power)

- Some higher capacities to support higher winter demands.
- As the fuel source is limited by sustainable supply levels it has been assumed that the plant will run less than in FES 2020

CCS Gas

- We introduced CCS Gas into steady progression, this ensure that power sector emissions continue to fall.

Gas (unabated)

- Gas capacity falls in all 2050-compliant scenarios.
- It will help meet security of supply and provide a source of flexible generation whilst new technologies deploy

Hydrogen

- Hydrogen power plant introduced primarily as peaking plant to provide flexibility in a renewable dominated sector.

Interconnectors

- Capacity market agreements provides greater short-term certainty of new projects connecting
- Strong pipeline of projects could lead to interconnector capacity trebling by 2030

Summary

- Our energy demand modelling this year has identified higher peak demands compared to FES 2020. As a result, significant additional volumes of generation capacity have been added in FES 2021 to ensure security of supply can be met.
- We have increased the level of ambition in Steady Progression to reflect stakeholder feedback.
- There is limited opportunity for any unabated gas if we are to meet decarbonisation targets.
- We have included higher Biomass CCUS capacities compared to FES 2020 as this helps meet the higher winter demands in this year's analysis. Due to limited supply of wood pellets, we assume lower annual utilisation.

5. FES 2021 potential influence on NOA

Mr Wright invited Dr Proctor to provide an update on FES 2021 potential influence on NOA and the following points were noted:

- A lot of the NOA recommendations last year were based on high North and South power flows based on wind capacities.
- This year's FES will be similar where this is especially relevant in 2035 with onshore wind developments coming on the network. This will result in the need for large network reinforcement schemes.
- Last year's FES showed that in 2035 there would be 48GW of wind capacity in Scotland, however in this year's scenarios this number is now 59GW. This is stemming from offshore wind farms.
- East Anglia area continues to have large reinforcement drivers due to the offshore wind connections.
- An additional driver were interconnectors in the south coast and seems to be similar this year with a significant trend towards more interconnector exports to Europe.
- Another area that has changed due to the offshore wind connections is the North Wales area which has increased offshore wind. Last year in 2035 this was 2.5GW and now this year it is up to 8GW. this means there is a potential for new options to be required.
- South Wales is also seeing higher drivers due to the Celtic Sea as explained in the FES 2021 update.
- Demand is also seeing an increase as compared to last year due to EVs and heat demand. Further analysis is still to be done, although it is expected that this demand will predominately be in the south. It is also expected to have an impact on the north to south flows.

Mr Kuri asked about the modelling of the scenarios, and what could be done to make sure these scenarios remain realistic.

Mrs Moody answered that the FES are built on a bottom-up basis and what is realistic with regards to policy and ensuring they reach net-zero. The scenarios for FES 2020 were costed after the release and this year a similar exercise will be done.

Mr Leavy asked about the economic appraisal of the cost of the transmission if the medium is hydrogen and pipes rather than electricity lines.

Mr Leslie answered that this is part of the network planning review, of which at the later stage of the review will look at the whole system and how to plan the network across looking across the whole energy sector, including the gas network.

6. NOA methodology update

Mr Wright invited Mr Lambert to provide an update on the NOA methodology and the following points were noted:

- The license condition C27 obliges the ESO to submit the methodology to Ofgem by 1 August. Before then a formal consultation is held.

Key changes this year

- NOA Interested Persons' process has been revised.
- Least Worst Weighted Regret (LWWR) was trialled last year for the NOA Committee in December and is now permanent in the NOA process.
- NOA options outage requirements assessment have also been revised as part of Action 16.6 mentioned earlier.
- Consultation framework - we want to make this more flexible, allowing us to consult at different times for different parts of the methodology. We are seeking stakeholder feedback in this area.

NOA Interested Persons' process

- The process has been refined following feedback from stakeholders and an internal review.
- The process has been revised to be a year-round approach presented to Ofgem who supported it subject to consultation. The revised process checks that an Interested Person's option provides a demonstrable benefit in constraint management and the option's maturity. The process facilitates collaborative early development with the ESO and TOs as required.
- Storage provider options are not seen as suitable for the NOA Interested Persons' process at the moment.

Storage in NOA

- This provides a service but not increased boundary capability.
- There are many complex challenges that arise from this.
- Through the 5-point plan, we will seek to define the benefit for constraint management.

Mrs Todd asked about the messaging we need to give between how NOA and Offshore transmission interact. Mr Lambert acknowledged different timings of the NOA and OTNR review. He said that we have to be prepared for NOA 2021/22 to use the existing methodology though be prepared to update the methodology at the right time. The NOA team is in close contact with the offshore coordination project (OCP) and conscious of timings.

7. East coast SWW/LOTI update

Mr Wright invited Ms McIver to provide an update on the East coast SWW/LOTI update and the following points were noted:

- The initial needs case was submitted in October 2020.
- Progressing the final needs case will be by the end of the year
- Continued supplier engagement is going ahead to inform the technology choices

Mr Norman said that a formal consultation will be released soon.

Scottish TOs exit the meeting

8. South coast SWW/LOTI update

Mr Wright invited Mr Perry to provide an update on South coast SWW/LOTI update and the following points were noted:

- This area encompasses a number of projects such as:
  - AENC - a new 400kV double circuit in north East Anglia
  - ATNC - a new 400kV double circuit in south East Anglia
  - BTNO - a new 400kV double circuit between Bramford and Twinstead
  - SCD1 - new offshore HVDC link between Suffolk and Kent option 1
- These reinforcements are progressing and NGET are working closely with ESO on NOA CBA, for instance on SCD1 to determine which are the best connection points.
- NGET have are actively engaging with Ofgem and BEIS to find ways of how these projects can be taken forward and be delivered to support the Government's decarbonisation targets.
- Furthermore, collaboration is ongoing with the ESO on outages to find the best solution.
- There is a need for changes in the way LOTI projects are considered and looking into how they can be delivered strategically as one big group of projects rather than individually.
- Moreover, looking into planning policy to supporting timely consenting and in discussions with manufacturers.

9. BRRE change to recommendation following sensitivity analysis

Mr Wright invited Mr Belivanis to provide an update on the BRRE change to recommendation following sensitivity analysis and the following points were noted:

- Further sensitivities were performed following a change in a customer connection year which was confirmed in February 2021
- The NOA 2020/21 saw that the optimal year of BRRE being 2024, was no longer available due to outage restrictions
- The recommendation following the sensitivity analysis was that the BRRE should be brought forward to its EISD of 2023.
- Sensitivity CBA carried out to determine the optimal year for delivery

Mr Hicks pointed that one customer's connection could potentially cause a domino effect.

NGET exit the meeting

10. FES 2021 update AOBs

- Mr Harvey highlighted that there is a need to keep up the rate of network reinforcements based on the increases in generation seen in FES.

11. Date and time of next meeting

The next meeting is scheduled for 6 October 2021

12. Any other business

None

Action Item Log

Action items: In progress and completed since last meeting

ID	Description	Owner	Due	Status	Date
16.6	Consider the recommendation of option delayed only due to outages in the next review of the NOA methodology.	Mr Belivanis & Mr Lambert	05/07/2021	Complete	08/12/2020
17.1	Provide a short joint briefing paper (Energy Insights, Network Development and Customer Connections) on the generation background to the Committee and NGET about PTNO.	Mr Williams & Mr Moseley	15/01/2021	Complete	12/01/2021

Action items: New

ID	Description	Owner	Due	Status	Date
No new actions noted as part of this meeting					