MINUTES OF THE MEETING OF

THE NETWORK OPTION ASSESSMENT COMMITTEE (the "NOA Committee" or the "Committee")

Held in

National Grid House, Warwick Technology Park, Warwick CV34 6DA
On

Wednesday 9 January 2019 at 10:00

Present:	Duncan Burt (Chair) Roisin Quinn Richard Smith Julian Leslie Marcus Stewart
In attendance:	Hannah Kirk-Wilson – Technical Secretary Jingchao Deng – NOA 2018/19 Lead James Greenhalgh – Electricity Customer Connections Manager Nick Harvey – Network Development Manager Audrey Ramsay – Network Access Planning Manager Matt Magill – Strategy Manager Iain Shepherd – NOA CBA South Lead Tomas Poffley – NOA CBA North Lead – for minute 5 Kelvin Lambert – NOA Lead Jason Hicks – NOA CBA Lead Mark Pearce – NOA CBA Technical Specialist Richard Proctor – Senior Power Systems Engineer – for minute 5 Gary Dolphin – NOA for Interconnectors Lead – for minute 7 Frances Vary – System Access Planning Engineer – for minute 6 Roddy Wilson – Transmission System Planning & Investment Manager, SHET – for minute 5* Paul Neilson – Technical Policy Manager, SHET – for minute 5* Eric Leavy – Head of Transmission, SPT – for minute 5* Gareth Hislop – Transmission Commercial and Policy Manager, SPT – for minute 5* David Adam – Transmission Networks Manager, SPT – for minute 5* Kirsten McIver – Senior Design Engineer, SPT – for minute 5* Mark Perry – Network Development Manager, NGET TO – for minutes 5 & 6 Le Fu – NOA Lead, NGET TO – for minutes 5 & 6 Nicola Todd – Connection Portfolio Manager – Network Investment, NGET TO – for minutes 5 & 6 Clothilde Cantegreil – Head of RIIO Electricity Transmission, Ofgem Okon Enyenihi – Interconnector Team, Ofgem

*Joined by teleconference

1	**APOLOGIES AND INTRODUCTIONS**
	Mr Burt welcomed all attendees and introductions were made.
2	**MEETING GOVERNANCE**
	Redacted due to administrative nature
3	**MINUTES OF THE NOA COMMITTEE MEETING HELD ON 11 DECEMBER 2018**
	The draft NOA Committee minutes for the meeting held on 11 December 2018 (the "**Minutes**"), as circulated prior to the meeting, were taken as read. Mr Burt 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	**ACTIONS ARISING FROM THE NOA COMMITTEE MEETING OF 11 DECEMBER 2018**
	Redacted due to administrative nature.
5	**SCOTLAND AND THE NORTH OF ENGLAND**
	The following document distributed prior to the meeting was taken as read: • NOA Committee Briefing – actions and NOA IC
5.1	**East coast onshore upgrades update**
	Mr Burt summarised the discussion on East coast onshore upgrades from the NOA Committee on 11 December 2018, which was deferred to this meeting to allow time for consideration of construction outages. Mr Burt invited Mr Poffley to present information relating to the ECU2/ECUP and ECU 4 outage considerations. Mr Poffley presented material and the following points were noted: • The two extreme FES scenarios were considered (maximum and minimum constraints) • ECU2 and ECUP are still the preferred option compared to ECU4. • This is due to the earlier delivery which has system benefits. • [Redacted due to commercially sensitive nature.] The Committee noted the points raised and **AGREED** with the recommendations.
5.2	**Actions relating to Power Flow Control Devices**
	Mr Perry presented the following material: • Power flow control device technology – NOA Committee Jan 2019 Mr Perry summarised the discussion from the previous NOA Committee on 11 December 2018. The following matters were highlighted regarding Action 10.4: • Mr Perry highlighted the benefits of the technology. • Technology is very similar to a Quad Booster but is modular power electronics. It is VSC technology so can be capacitive and inductive. • [Redacted due to commercially sensitive nature].

5.3	**Action on power flow control devices in the north-east region**
	Mr Burt invited Dr Pearce to provide an update on Action 10.6. The following points were noted: • Dr Pearce presented information on the two schemes LNRE (reconductoring) and LNPC (power flow control). • [Redacted due to commercially sensitive nature.] The Committee **AGREE** to proceed with LNRE but caveated that it is subject to further consideration of power flow devices in the area. Redacted due to commercially sensitive nature. Action 10.6 is now **CLOSED**.
5.5	**Action on accelerated delivery of HSRE**
	Mr Burt invited Mr Perry to provide an update on Action 10. [Redacted due to commercially sensitive nature]. No update was available. **Action 11.2:** Mr Perry to provide an update on action 10.7 by email by 11/01/19
5.6	**Action on Commercial solutions**
	Mr Burt invited Dr Pearce to provide an update on Action 10.12 [redacted due to commercially sensitive nature]. The following points were noted: • Dr Pearce provided an update on the consideration of different asset lives for any commercial scheme. Dr Pearce highlighted that variable lives would increase complexity of the CBA beyond the capability of present resources as it would increase the number of options that need to be considered. • [Redacted due to commercially sensitive nature]. • Dr Pearce commented that what improvements can be made for the next year are being looked into. [Redacted due to administrative nature].
5.7	**Action relating to further consideration of power flow devices in the North West**
	Mr Burt invited Dr Pearce to provide an update on Action 10.5 [Redacted due to commercially sensitive nature]. The following points were noted: • Dr Pearce highlighted that the analysis suggest loading issues on the north-west circuits are less of an issue than on the east. Therefore, there is little benefit seen by placing additional control on the western circuits. • [Redacted due to commercially sensitive nature]. • Mr Perry commented that they are continuing with analysis in this area. • [Redacted due to commercially sensitive nature]. On the balance of the evidence provided the Committee **AGREED** with the recommendation that a power flow control device is not required, and that the current proceed recommendations for LDQB are subject to the note that further analysis is ongoing in this area of the network.
6	**ENGLAND AND WALES excl. NORTH**
	The following document distributed prior to the meeting was taken as read: • NOA Committee Briefing – actions and NOA IC

6.1	**Action relating to notional reinforcements**
	Mr Burt invited Mr Hicks to provide an update on Action 10.14 [Redacted due to administrative nature]. The following points were noted: • [Redacted due to commercially sensitive nature]. This action is now **CLOSED**.
6.2	**Action relating to Bramford – Twinstead New Overhead Line**
	Redacted due to commercially sensitive nature.
6.3	**Action relating to power flow control devices in the south**
	Redacted due to commercially sensitive nature. This action is now **CLOSED**.
6.4	**Action relating to outage clashes**
	Mr Burt invited Mr Hicks to provide an update on Action 10.10. [Redacted due to commercially sensitive nature]. The Committee note that if KLRE can be optimised as part of business plan then FLR2 should also be included for earlier delivery. [Redacted due to commercially sensitive nature].This action is now **CLOSED**. • As part of business planning, Ms Ramsay is to consider whether the additional constraint for FLR2 is manageable.
6.5	**Action relating to ancillary service consideration**
	Redacted due to commercially sensitive nature. On the balance of evidence the NOA Committee **AGREE** to a change in recommendation for PTC1 from Proceed to **DELAY.**
7	**NOA FOR INTERCONNECTORS**
	The following document distributed prior to the meeting was taken as read: • NOA Committee Briefing – actions and NOA IC Mr Burt invited Mr Dolphin to present the material and the following points were noted: • The NOA IC is a thought piece which highlights what the optimal level of interconnection capacity to GB may be. • It aims to provide a market signal quantifying what level of interconnection would be beneficial. • Uses the same iterative process as last year, but removes least worst regret and uses all four scenarios to provide a range. It uses the output of the NOA 2018/19 analysis for the base network. • Baseline is current 4GW capacity plus those with regulatory certainty taking to 15.9GW. • Still significant potential opportunities for additional GB interconnection. • Total interconnection range of 18.4GW and 21.4GW. Redacted due to commercially sensitive nature.

8	**Date of next meeting**
	w/c 13th May, 10am start
9	**ANY OTHER BUSINESS**
	As there was no other business the meeting was closed.
10	**SUMMARY OF OUTSTANDING ACTIONS**
	Redacted due to administrative nature.

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Chairman Date