Minutes of the Offshore Transmission Coordination Group (OTCG) Briefing Session

Co-hosted by DECC and Ofgem at BIS Conference Centre, 1 Victoria Street, London, SW1H 0ET
19 September 2011, 10:30 – 12:30

Attendees

Co-chairs

Ofgem	Robert Hull	Ofgem E-Serve
Government	Jonathan Brearley	DECC

Coordinators

Ofgem	Jon Parker	Ofgem E-Serve
Government	Duncan Stone	DECC

Members

OFTO	Sean McLachlan	Balfour Beatty
Supply chain	Eoin Nolan	Alstom Grid
NETSO	Richard Smith	National Grid
Government	Mark Thomas	Infrastructure UK
Generators	Guy Nicholson	RenewableUK
Licensing authority	Ashley Holt	Marine Management Organisation
Environmental NGO	Nick Molho	WWF
Potential OFTO	Tsunenori Kato	Mitsubishi
Licensing Authority	Chaun Zhang	The Crown Estate
Generator	Fiona Navesey	Centrica
OFTO	Chris Veal	Transmission Capital Partners
Transmission owners	Colin Bayfield	Scottish Power Energy Networks

Apologies

Devolved administration	Michael McElhinney	Scottish Government
Generators	Allan Kelly	ScottishPower Renewables (OWDF sub-group nominee)
Generators	Philip Davies	Centrica Energy
Generators	Richard Sandford	RWE
Supply chain	Matthew Knight	Siemens Transmission and Distribution Ltd
Devolved administration	Ron Loveland	Welsh Assembly Government
Europe	Christophe Schramm	European Commission (attending on needs basis)
Devolved administration	Peter Hughes	Department of Enterprise, Trade & Investment, Northern Ireland Executive

Also in attendance

Government	Kristina Dahlstrom	DECC
Government	Bill Slegg	DECC
Government	Lawrence Avery	DECC
Government	Robert Towers	DECC
Government	Sandy Sheard	DECC
Government	Teresa Abu	DECC
Government	Lee Hossain	DECC
Ofgem	Stephanie McGregor	DECC
Ofgem	Elaine Yong	Ofgem E-Serve
Ofgem	Philip Smith	Ofgem E-Serve
Ofgem	Colin Green	Ofgem E-Serve
Ofgem	Martin Scarfe	Ofgem E-Serve
Consultant	Ilesh Patel	Redpoint
Consultant	Andrew Barker	Redpoint
Consultant	Graeme Bathurst	TNEI
Consultant	Neil Pinto	PPA Energy

1. Welcome and introductions

The chair welcomed members of the group to OTCG briefing session.

2. Overview of consultants' scope of work

Jon Parker provided an overview of the consultants' emerging findings. He confirmed that the findings do not represent the consultants' final conclusions, as they are still validating their work and Ofgem/DECC are seeking detailed feedback.

TNEI/PPA have been engaged to undertake an assessment of asset optimisation:

- Assess potential alternative cost effective network configurations which could be used to connect offshore generation to the NETS;
- Consider the deliverability and technical desirability of potential network configurations in light of different generation scenarios and available onshore network connection points;
- Consider the feasibility of the deliverability of different configuration scenarios. This consideration may include route and system design, construction timetables, system operation, onshore impact, technology availability, etc.

Redpoint have been engaged to provide a view on the economic rationale for making any market intervention to further facilitate the delivery of co-ordinated offshore networks:

- Review of the application of current regulatory framework and commercial incentives;
- Identify and assess a range of different measures (i.e. options) that might lead to the improved co-ordination of offshore networks;
- Provide an assessment of the costs, risks and benefits that might be expected were such measures to be introduced.

3. Work stream 1: TNEI/PPA emerging findings and Q&A

The chair invited Graeme Bathurst, TNEI, to speak on their work from Workstream 1: Asset Delivery. Members were referred to the information in the slides accompanying the meeting. Graeme Bathurst explained the methodology they have adopted to deliver the workstream, which includes analysis based around scenarios used as part of the ODIS 2010, to test cost sensitivity, key decision making points, options and flexibility.

Methodology - Transmission

TNEI's work is seeking to understand the range of benefits and risks of different grid configuration options under different generation scenarios, and whether there are benefits associated with certain strategic pre-investments.

They have analysed the two main approaches taken to transmission design for the individual zones, T1 - Connect and Reinforce (Radial) and T2 - Networked (Integrated), but acknowledge that some zones have considered alternative approaches. TNEI have based their transmission design assumptions on full build out scenarios and will therefore undertake further analysis to consider aspects of phased build and how this aligns with generation build, decision points for pre-construction, investment and construction activities, and trigger points and technology requirements. One of the key messages that came out of TNEI's current analysis is that the presence of uncertainty is likely to mean that coordinated outcomes will carry increased stranding risk.

Methodology - Zone scenarios

TNEI explained their methodology for developing zonal scenarios, clarifying that each zone was assessed using three generation construction timelines and build rates. They cautioned that the modelling they have undertaken is to be used as a tool to highlight key issues, in order to inform policy, rather than as a forecast of outcomes. The objective of this work is to test the impact of transmission construction rates and stranding exposure periods and to identify key decision points.

Generic examples

TNEI have developed a number of generic examples of zone layout designs, which are useful for establishing materiality of benefits. Their approach is to use typical distances, layouts and relative capabilities of larger Round 3 zones with the objective of testing the relative value of:

- Coordination during zone build-out and method of such, including anticipatory investment where required;
- Effect of minimum levels of network security;
- Effect of zone shape on relative value;
- Value of higher capacity technology (i.e. 2GW HVDC links);
- Value of offshore interconnection to provide SQSS benefit.

Zonal case studies

TNEI presented two zonal case studies, in order to outline the approach of their analysis and to demonstrate the high level results. The two zones selected were West of Isle of Wight (a 'relatively' small and simple zone) and the Irish Sea (a larger, more complex zone).

In the case of the Isle of Wight Zone, TNEI explored two transmission development options for offshore integration:

- a single 900MW platform, 3 x 220kV AC circuits
- two 450MW platforms, 4x220kV AC circuits

T1 (Connect and Reinforce) was identified as the most expensive option overall, but T2 (Networked) was likely to involve higher array cabling costs for the developer. In addition, T2 anticipatory spend was identified as being 50% higher than T1 stage 1 Capex.

In the case of the Irish Sea Zone, TNEI explored the following transmission development options:

- independent phased build with reinforcements as required
- coordinated long-distance reinforcements with field to provide boundary improvement

T1 (Connect and Reinforce) was identified as the option that would provide developers with more freedom, but it also presented deliverability challenges in terms of cable routes and onshore substation. It would also trigger significant onshore network reinforcements and be subject to cable supply chain challenges. The T2 (Networked) option could provide a Capex reduction, but it would carry an increased technology risk. Moreover, network security requirements would be an important funding consideration and there was also the risk of stranded assets, network complexity and cable supply chain challenges.

The Chair asked members if they agreed with the analysis and invited any other comments and questions.

Two members expressed the general view that the findings were in accordance with expectations. Another member made a number of queries, as follows:

- Whether TNEI's work looked at links between zones, or just considered zones in isolation. TNEI confirmed that linkages between zones has been included in analysis for some zones, however it appeared that in a number of cases these benefits are not material, and depend on a number of factors, such as the technical assumptions being made and how the project is phased.
- Whether TNEI's work had looked at interconnection. TNEI noted that their core analysis had not included interconnection in as much detail as inter-zonal connections because of the different drivers involved. It was noted that work being undertaken by the North Sea Countries Offshore Gris Initiative (NSCOGI) is currently exploring the benefits of inter-zonal links at a European level and the Ofgem/DECC Coordination Project will feed its analysis into this process.
- Whether the TNEI study was looking at the onshore grid developments/ investment that may be required. It was confirmed that TNEI's analysis assumes the same level of onshore and offshore boundary reinforcements that are included in National Grid's 2010 ODIS.
- Queries were raised regarding what percentage of savings result from avoided onshore reinforcement.

Action 1: Chair agreed that DECC/Ofgem would respond in writing to the OTCG, with the breakdown of savings figures.

- There was some concern that Round 3 projects are already being designed based on reasonable technology assumptions. As a result, members requested a more detailed breakdown of where the cost differentials lie for different build out options, i.e. is it through cable sizes, offshore platforms etc.

The Chair welcomed any further comments on the presentation by email.

4. Work stream 2: Redpoint emerging findings and Q&A

The chair invited Ilesh Patel, Redpoint, to speak on their work from Workstream 2: Regulatory, commercial and incentives. Members were referred to the information in the slides accompanying the meeting.

Redpoint have been developing case studies for two of the zones previously discussed by TNEI - West of Isle of Wight and the Irish Sea, undertaking aggregate cost benefit analysis for offshore generation build. They have also been further refining possible policy options.

Case Studies

Redpoint presented analysis based on the Irish Sea and Isle of Wight case studies, concluding with a high-level summary of the results of the analysis. Their analysis has yet to be fully validated, but their initial draft findings based on these two zones were that:

- A networked design with anticipatory investment, perfect foresight and for a given scale and type of zone, can deliver benefits versus a radial (or connect and reinforce) type approach. Radial plus not fully tested yet;
- The benefits need to be seen, however, in the context of the risks of stranding given the absence of perfect foresight. Benefits are also reduced under lower generation build-out scenarios;
- Consumers (through residual charges for onshore reinforcement) could be exposed to a considerable proportion of the cost of a radial network;
- Local charges to offshore generators could be higher under an integrated design;
- The treatment of HVDC bootstraps is a key driver of the distribution of costs and benefits;
- Current arrangements would allow some sharing of charges for anticipatory investment when a networked design results in less of a shift from onshore to offshore investment.

Aggregate cost-benefit analysis

Redpoint's analysis is still at the interim stage and further work is required to capture the risks resulting from the lack of perfect foresight. However, interim results indicate the magnitude of cost-benefit, across generation scenarios, of networked relative to radial transmission design. They will now undertake further analysis to look at how to evaluate the risks of stranding (as the impact of stranding on achieving the benefits of coordination could be high) and to explore radial plus scenarios.

Possible policy responses

Redpoint presented a revised version of the policy problem/ solution mapping and a review of the updated assessment criteria, which had been updated given input from participants from the previous expert workshop and OTCG meeting.

The Chair invited comments and questions from OTCG members on Redpoint's presentation.

Responses included the following questions and comments:

- There was discussion over TNUoS charging and Redpoint confirmed that wider locational charges had not been factored into their case studies as it is expected that costs would be recovered through the residual charges. Redpoint confirmed that their draft findings showed that pushing investment offshore would result in lower charges for consumers than the cost of network reinforcement onshore. However, whilst the risks and costs vary depending on various scenarios, someone will still have to bear the cost.
- There was a query over residual costs and whether it is onshore investment that largely becomes socialised. Redpoint confirmed that it is and that they will provide a short clarification of this, in writing, to the OTCG.

  Action 2: Redpoint to provide a written clarification to OTCG members regarding the socialisation of residual costs.
- One member acknowledged that the current analysis shows who pays for a networked design under the existing charging regime, but wanted analysis to go further and suggest what work is required to ensure the right design under the charging regime. The Chair confirmed that the analysis undertaken relates to the impacts of the existing charging regime on the design of the offshore network and that Ofgem are looking at a number of policy outcomes that could impact on charging.

The Chair again invited members to provide DECC and Ofgem with any further questions and comments relating to the presentation.

5. Next steps

Duncan Stone noted next steps for the project. Following the finalisation of the reports by the consultants, it is intended that the reports be published in October/November for comment.

A further OTCG meeting will then take place on 1 November from 14:00 to 16:00 at Ofgem's offices, as planned, whilst a fifth Expert Workshop will be held on 14 October, from 10:00 to 13:00.

DECC and Ofgem intend to publish its interim conclusions report for consultation in winter 2011/12, most likely now in early 2012.

Action 3: Members to provide DECC and Ofgem with questions and comments relating to the consultants' presentations, or more broadly, any further information relevant to consideration of potential problems, solutions and specific projects by Wednesday 28 September, to offshorecoordination@ofgem.co.uk.