Panel 157/04

Meeting name	BSC Panel
Date of meeting	9 July 2009
Paper title	Standing Issue 37 Report
Purpose of paper	For Decision
Synopsis	On the Panel's request, the Issue 37 Group considered three issues regarding metering and BM Unit configurations, two of which relate to offshore generation. The Group has identified potential solutions to the issues and believes it would be desirable to amend the BSC to implement them. In this paper we summarise the Group's conclusions and discussions (Attachment A). The Group invites you to note its conclusions that Modification Proposals should be raised to address the issues, and agree that Issue 37 be closed.

1 Objectives of Issue 37 Group

1.1 On 14 May 2009 the BSC Panel asked the Issue 37 Group to investigate three metering and BM Unit configuration issues identified by the Imbalance Settlement Group (ISG):

- Issue 1 - For offshore wind farms that have multiple connections to shore, there are a number of scenarios in which a Party may wish to switch the output of individual Wind Turbine Generators from one connection to another (e.g. in response to faults or maintenance). The rules governing BM Unit configurations in Section K of the BSC do not support this capability;
- Issue 2 - The BSC requires flows of energy to be separately measured at every Boundary Point. However, offshore transmission Grid Code changes (introduced on 24th June 2009) allow flows at several Boundary Points, for offshore wind farms, to be combined and treated as a single BM Unit for Settlement purpose. This Grid Code change would be undermined if the BSC continued to require separate metering of the flows at each Boundary Point; and
- Issue 3 - The BSC requires any Generating Unit large enough to be licensable in its own right to be separately metered. This has the unintended side-effect of making existing Combined Cycle Gas Turbine (CCGT) Modules, where two or more such Generating Units may be treated as a single BM Unit for Settlement purposes, non compliant.

1.2 The Group met twice (on 3 June and 27 June) to consider these issues.

2 Summary of Discussion

2.1 The unanimous view of the Issue 37 Group is that all three issues are genuine problems with the current BSC drafting, which should be resolved through the Modification process.

2.2 In each case the Group identified solutions which would address the issues:

- Issue 1 - Amend the BM Unit registration process in Section K of the BSC to recognise groups of BM Units ('Switching Groups'). Generating Plants may then switch between the BM Units in a "Switching Group", as required, for operational reasons. For example, two BM Units at an offshore wind farm could be registered as a Switching Group, allowing the Lead Party to move Wind Turbine Generators from one 'group' to the other without having to re-register the BM Units;

- Issue 2 - Amend Section K of the BSC to allow the electricity Exported by a BM Unit at an offshore wind farm to be treated as a single flow of electricity for Settlement purposes. This would allow the Lead Party to measure the total amount of energy generated by the BM Unit as a whole, rather than the energy flowing through each of the individual Boundary Points; and
- Issue 3 – Amend Section K of the BSC to exclude Generating Units in CCGT Modules from the requirement to meter separately each Generating Unit large enough to be separately licensable.

2.3 Attachment A contains full details of the Group's discussion of these three issues.

3 A Fourth Issue

3.1 The Issue 37 Group identified a fourth issue related to the issues detailed above.

3.2 Currently, a Power Park Module (as defined in the Grid Code) is one of the standard BM Unit configurations recognised under the BSC. In the case of Offshore Power Park Modules, the Group believe that in some cases it will be more efficient to combine a number of Power Park Modules into a single BM Unit. Therefore an aggregation of Offshore Power Park Modules should be recognised as a standard configuration.

3.3 Attachment A contains full details of the Group's discussion of this issue.

4 Group's Conclusions

4.1 Three of these four issues relate specifically to the new regime for Offshore Transmission, which came into effect ('Go Active') on 24 June 2009, and is expected to 'Go Live' in June 2010.

4.2 Amending the BSC would reduce administrative costs for Generators operating under the new regime, and (for those with more than one connection to shore) maximise their ability to generate in the event of network faults or maintenance.

4.3 The Group therefore unanimously believes that it is would be desirable to progress these issues through the Modification process as quickly as possible, in order to minimise regulatory uncertainty during the transition to the new regime.

5 Way Forward

5.1 The BSC Panel has only very limited powers to raise Modification Proposals, and these issues fall outside their scope. It will therefore be up to the affected Parties to raise Modification Proposals to progress the Group's recommendations.

5.2 On 26 June, Centrica raised Modification Proposals to address issues 2 and 4 respectively:

- Modification Proposal P237 ('Standard BM Unit configuration for Offshore Power Park Modules') seeks to implement the Group's recommended solution to issue 4; and
- Modification Proposal P238 ('Removal of the requirement to Meter each Boundary Point for Offshore Power Park Modules') seeks to implement the recommended solution to issue 2.

5.3 Initial Written Assessments of these two Modification Proposals will be presented to the BSC Panel meeting on 9 July. Currently no Modification Proposals have been submitted to address the

other two issues. However one Party has indicated to ELEXON that it intends to raise two Modification Proposals in time for the August Panel meeting.

6 Recommendations

6.1 The BSC Panel is invited to

a) **NOTE** the Issue 37 Group's discussions of, and solutions to, the identified issues;

b) **NOTE** the unanimous view of the Issue 37 Group that it would be desirable for the BSC to be amended to resolve these issues;

c) **NOTE** that these Modification Proposals would need to be raised by a BSC Party (or Parties); and

d) **AGREE** that Issue 37 be closed.

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List of Attachments

Attachment A - Detail of Issue 37 Group's Discussions

Detail of Issue 37 Group Discussions

This Appendix provides detail of the Group's discussion of each of the issues. Note that issue 4 is discussed immediately after issue 1, as this is the logical order in which to consider them, and was also the order in which they were discussed at the meeting on 23 June.

1 Issue 1 – Switching of Generating Plant between BM Units

1.1 The Group agreed that there are (as previously described in paper ISG99/08) a number of scenarios in which wind farms with more than one connection to shore may wish to switch the output of certain Wind Turbine Generators from one connection to the other. This would typically occur when one of the offshore circuits cannot be used (due to faults or maintenance), and the generator therefore wishes to reconfigure the network to make full use of the remaining capacity.

1.2 The Group agreed that the BSC does not currently allow this type of operational reconfiguration, for the following reasons:

- Switching Generating Plant to a different connection to shore would necessarily mean switching it to a different BM Unit (as Transmission Company requirements would not allow two separate connections to shore to be treated as a single BM Unit);
- A BM Unit is made up of Plant and Apparatus (K3.1.1), and it is not possible for a Party to place the same Generating Plant in more than one BM Unit (K3.1.3).
- Paragraph K3.6.1 does allow a Party to transfer Plant to a different BM Unit, but only by re-registering BM Units in accordance with the process in Section K3.2 and BSCP15. Such a process currently takes at least 30 Working Days, whereas an operational reconfiguration in response to a fault would be expected to take place in much shorter timescales (hours or days).

1.3 The Group therefore agreed that the current BSC drafting will severely constrain the ability of Generators with more than one connection to shore to maximise their generation during conditions of network fault of maintenance. The Group further agreed that amending the BSC to resolve this issue would potentially facilitate the following Applicable BSC Objectives:

- Objective (c) ("promoting effective competition in the generation and supply of electricity"); and
- Objective (b) ("the efficient, economic and co-ordinated operation of the national electricity transmission system")

1.4 The proposed solution identified by the Group is to amend the BM Unit registration process to allow a Lead Party to identify a group of two or more BM Units (a 'Switching Group') between which Generating Plant may be switched for operational reasons. A new process would then be introduced to allow Plant within a Switching Group to be reconfigured more quickly than under the normal BM Unit registration processes.

1.5 The Group noted that some Switching Groups may require Aggregation Rules[1] to be amended when the configuration changes, while for others (depending on the configuration of the wind farm and the location of metering) a single set of Aggregation Rules may suffice for all operational configurations.

1.6 ELEXON has identified the following BSC changes that would be required to enable this solution:

- An amendment to paragraph K3.1.3 to recognise that Generating Plant may be moved between BM Units in a Switching Group for operational reasons;
- An amendment to K3.2 (Registration of BM Units) to allow the Lead Party to register a Switching Group;
- New provisions to allow the Lead Party to notify a change to the operational configuration of a Switching Group. This could potentially be included within K3.6 (Changes in BM Unit Registration) or in a new sub-section; and
- An amendment to R3.2 to allow for preparation of (and switching between) multiple sets of Aggregation Rules. The existing provisions for Range CCGT Modules[2] in R3.2.5 provide a potential model.

1.7 The Group noted that the Modification Group would need to confirm the criteria that a set of BM Units must meet in order to be eligible to form a Switching Group. These criteria could potentially include:

- That the BM Units have the same Lead Party; and
- That the BM Units are geographically related to each other. For example, it might be appropriate to require that all the BM Units are part of the same Power Station[3].

1.8 The Modification Group would also need to consider the process for registering a Switching Group, and for subsequently notifying changes of operational configuration. Issues to be considered include:

- The notice period required for a change of operational configuration. A short notice period would offer maximum flexibility to Generators, but the Group noted that the operational requirements of the Transmission Company (and the Grid Code) would also need to be taken into account; and
- The extent to which the Lead Party should be allowed (or required) to pre-register the possible operational configurations. Such a process would allow each configuration to be validated in advance, and potentially reduce the length of the notice period required for a change of configuration.

1.9 The Group also considered whether allowing Plant to switch between BM Units would require changes to the process for submitting Generation Capacities (under Section K3.4 of the BSC) and Registered Capacities (under the Grid Code). Generation Capacity is used under the BSC for

[1] Aggregation Rules are rules submitted by the Lead Party of a BM Unit that specify which meter registers should be aggregated to derive the Metered Volume for that BM Unit.

[2] A Range CCGT Module is a CCGT Module linked (via steam or hot gas) to another CCGT Module, with a capability to reconfigure the connection for operational reasons.

[3] The BSC refers to the Grid Code definition of Power Station, which is "An installation comprising one or more Generating Units or Power Park Modules (even where sited separately) owned and/or controlled by the same Generator, which may reasonably be considered as being managed as one Power Station".

credit checking purposes, and for determining the Production/Consumption status of the BM Units in a Trading Unit. The Group did not believe that either of these uses would pose issues for the types of BM Units likely to be included in Switching Groups (e.g. large offshore wind farms) for the following reasons:

- Such BM Units are likely to be Production BM Units, and Generation Capacity will no longer be used for credit checking of Production BM Units following implementation of Modification Proposal P215 ('Revised Credit Cover Methodology for Generating BM Units') on 25 June 2009; and
- Such BM Units are unlikely to be in Trading Units with a fine balance of demand and generation, such that a change to their Generation Capacity could flip the Trading Unit from Production to Consumption or vice versa.

1.10 For these reasons, any uncertainty on which operational configuration the Generation Capacity should be based on is highly unlikely to have any effect on Settlement processes.

1.11 One of the Group Members suggested that, given this, the BSC could be changed to remove the requirement for this type of BM Unit to submit Generation Capacity data. The Group noted that this was a possibility, but outside the scope of Issue 37.

1.12 Registered Capacity data is submitted under the Grid Code rather than the BSC, and is used for a number of purposes, including:

- Defining the frequency response requirements in Ancillary Services contracts;
- Categorising Power Stations into Small, Medium and Large; and
- Validating Physical Notifications (i.e. a Lead Party cannot submit a Physical Notification greater than Registered Capacity).

1.13 The Group noted that consideration would need to be given to the impact of Switching Groups on these uses of Registered Capacity, although this would fall outside the scope of the BSC.

2 Issue 4 – Standard BM Unit Configurations for Offshore Power Park Modules

2.1 Paragraph K3.1.4(a) of the BSC defines a Power Park Module as one of the standard BM Unit configurations. This means that each Power Park Module (as defined in the Grid Code) is treated as a BM Unit (unless the Lead Party applies for a non-standard BM Unit configuration).

2.2 The changes introduced into the Grid Code (on 24 June 2009) for offshore transmission amend the definition of Power Park Module to recognise Onshore Power Park Modules and Offshore Power Park Modules. An Offshore Power Park Module (unlike an Onshore Power Park Module) can include Power Park Strings connected to the Transmission System at more than one Boundary Point. It is however limited to Power Park Strings connected either to a single busbar[4], or to a "collection of directly electrically connected busbars".

2.3 The implication of this is that for some types of offshore wind farm, the Power Park Strings making up each Power Park Module may change depending on the operational configuration of the switchgear on the platform.

[4] A busbar is a conducting metal bar (typically found within a substation) onto which one or more circuits can connect.

2.4 The Group agreed that, in these cases, treating each Power Park Module as its own BM Unit would lead to unnecessary switching of Generating Plant between BM Units. While the Group was in favour of allowing a Generating Plant to move between BM Units, where this was necessary to meet the requirements of the Generator or Transmission Company (see issue 1 above), it did not see any benefit in a Plant moving between BM Units purely as an unwanted side effect of the way BM Units had been defined. Such unnecessary switching would impose an additional administrative burden on Generators, BSC Agents and the Transmission Company, by:

- Requiring Aggregation Rules to change more often;
- Increasing the number of meters required, and the volume of data collected from them; and
- Increasing the number of BM Units.

2.5 The Group identified a number of potential solutions to this issue, as follows:

- Option A – no change. The BSC already permits Parties to apply for a non-standard BM Unit configuration if they believe that several PPMs should be aggregated to form a single BM Unit.
- Option B – amend the standard BM Unit configurations in the BSC to include rules specifying when several PPMs should be treated as a single BM Unit.
- Option C – rather than attempting to define prescriptive criteria, amend the standard BM Unit configurations in the BSC to allow multiple Offshore Power Park Modules at an offshore wind farm to form a single BM Unit, if requested by the Generator (and subject to the consent of the Transmission Company).

2.6 The Group agreed that Option C was the preferable option. Option A would not provide developers with certainty about permitted configurations, in that the developer would not know whether ISG would agree a given non-standard configuration, while Option B would be potentially inflexible. ELEXON confirmed that Option C could be achieved by adding a new standard configuration to paragraph K3.1.4.

2.7 The Group agreed that this change is specific to Offshore Power Park Modules, as it relates to the Grid Code definition of that term.

2.8 The Group agreed that the Modification Group would need to agree the criteria for allowing a number of Power Park Modules to be treated as a single standard BM Unit configuration. In addition to agreement from the Transmission Company, these criteria could include a requirement that all the Power Park Modules shared the same connection to shore.

2.9 ELEXON reported to the Group that, in reviewing which paragraphs of the BSC would need changing to address this issue, a further potential issue had been identified. While the Group's solution would enable suitable BM Unit configurations to be defined for Offshore Power Park Modules, it would not cover Onshore Power Park Modules, so the only mechanism for combining more than one Onshore Power Park Module into a single BM Unit would be to apply for a non-standard BM Unit configuration (as currently). This process requires ISG to identify the BM Unit configuration that best satisfies the criteria listed in Section K3.1.2 of the BSC.

2.10 ELEXON's concern is that the K3.1.2 criteria are not ideally suited to renewables. In particular, criterion K3.1.2(e) appears designed to make BM Units as small as possible. This is appropriate for conventional thermal Power Stations made up of large Generating Sets, but not for wind farms comprising many small turbines. ELEXON therefore suggested that the K3.1.2 criteria should be reviewed. Potential additional criteria – which ISG appear to have taken into account

when considering previous non-standard BM Unit applications, but which are not currently included in K3.1.2 – would include:

- The needs of the Transmission Company in operating the Transmission System; and
- Avoiding the administrative burden on the Generator and Transmission Company that would arise from excessively small BM Units.

2.11 The majority of Group members agreed that a review of the criteria in K3.1.2 would be beneficial. However, views differed on the urgency of this, and whether it should be pursued at the same time as the offshore issue or separately.

3 Issue 2 – Metering Requirements for Offshore Power Park Modules

3.1 Currently, the BSC requires separate measurement of the flows of electricity at each Boundary Point. This is consistent with the current (onshore) definition of Power Park Module, which treats the Power Park Strings connected to each Boundary Point as forming a Power Park Module (and hence a BM Unit) in their own right.

3.2 The changes introduced into the Grid Code (on 24 June 2009) for offshore transmission amend the definition of Power Park Module, allowing an Offshore Power Park Module to include Power Park Strings connected to the Transmission System at more than one Boundary Point. This Grid Code change is specific to offshore i.e. an Onshore Power Park Module is still limited to a single Boundary Point. The Group believe that this drafting reflects the fact that for some offshore wind farms the boundary with the Offshore Transmission System may be at the Low Voltage side of the platform (on the individual strings). It would not be efficient to require each individual Power Park String to form its own Power Park Module.

3.3 The Group agreed that the efficiency benefits arising from this Grid Code change would be somewhat undermined if the BSC continued to require separate metering of the flows at each Boundary Point. ELEXON explained to the Group that it is not possible to issue a Metering Dispensation against this requirement, because it is a BSC requirement, and Dispensations apply only to Code of Practice requirements.

3.4 The Group agreed that requiring metering on each individual Power Park String, even in those cases where several Power Park Strings were being treated as a single Power Park Module, would provide no benefit to Settlement, and would potentially impose significant costs on Parties (particularly for existing projects where the cost of retro-fitting additional metering may be extremely high). It would also be inefficient for the Central Data Collection Agent (CDCA) to be required to collect additional unnecessary metered data.

3.5 The Group agreed that this issue could be solved by amending paragraph K1.1.4 of the BSC to allow all the Exports from (or Imports to) a BM Unit comprising Offshore Power Park Modules to be treated as a single Export (or Import) under the BSC. The Group agreed that this change would potentially facilitate Applicable BSC Objectives (c) and (d).

3.6 The Group noted that this Modification would not prevent Generators from metering each Boundary Point should they wish to (and aggregating the readings to the BM Unit level by submitting appropriate Aggregation Rules to CDCA). The Group noted that some Generators may already have designed or built offshore platforms on this basis.

3.7 The Group also believed that the Codes of Practice should be amended to give Generators some flexibility about where to place their metering. The Group proposed that there was no reason to be prescriptive about this, and that Generators could potentially be allowed to choose where on the offshore platform to place the Meters, provided that:

- The Metering was capable of measuring the Exports from (and Imports to) each BM Unit; and
- The metered data was (where necessary) adjusted to compensate for any losses between the metering and the commercial boundary.

4 Issue 3 – Metering Requirements for CCGT Modules

4.1 Section K1.1.4(e)(i) requires separate metering of each Generating Unit that is large enough to be licensable in its own right. The Group noted that this would apply to Generating Units within certain large CCGT Modules, even though each CCGT Module is treated as a single BM Unit, and it has never been the practice to meter each Generating Unit separately.

4.2 The Group agreed that requiring metering of each Generating Unit within the CCGT Module would provide no Settlement benefit, and would impose additional costs on the Generator and on the CDCA.

4.3 The Group agreed that it would be appropriate to resolve this issue by amending paragraph K1.1.4(e) to exclude Generating Units comprised within a CCGT Module. The Group agreed that this would potentially better facilitate Applicable BSC Objectives (c) and (d).