160/07

Meeting name	BSC Panel
Date of meeting	8 October 2009
Paper title	Request to Raise a Standing Modification Group Issue - Potential Improvements to Credit Checking Rules to Support High Levels of Embedded Generation in North Scotland
Purpose of paper	For Decision
Synopsis	There is a defect in the method used by BSC credit checking processes to estimate how much energy Suppliers have used. This defect only becomes material if the amount of embedded generation in the GSP Group is nearly as large as the amount of demand. In September the North Scotland GSP Group came close to this for the first time. We are therefore asking the Panel to refer the issue to the Settlement Standing Modification Group, in order that an appropriate solution can be identified.

1 Introduction and Background

1.1 For settlement purposes the various electricity distribution networks within Great Britain are grouped into fourteen Grid Supply Point Groups (GSP Groups). Twelve of these are in England and Wales, and two are in Scotland. The two Scottish GSP Groups came under BSC governance with the introduction of the British Electricity Trading and Transmission Arrangements (BETTA) in April 2005.

1.2 The BSC arrangements for calculating the energy used by each Supplier in each GSP Group date back to the days of the Electricity Pool, and were not originally designed to cope with significant quantities of embedded generation (i.e. generators connected to distribution systems, rather than the high voltage Transmission System).

1.3 Prior to the introduction of BETTA, ELEXON investigated whether the BSC arrangements would continue to function satisfactorily if the level of generation in a GSP Group came close to equalling the level of demand. This investigation was particularly motivated by the North Scotland GSP Group, which has a relatively low level of demand for electricity, and a relatively high (and increasing) level of embedded generation.

2 Potential Settlement Issues

2.1 The results of our investigation were reported to both SVG and ISG in January 2005 (see papers SVG/47/005 and ISG/38/013). The overall design of the BSC arrangements was found to be robust to significant increases in the level of embedded generation. However, five potential issues were identified with the detail of individual BSC processes. The following table lists these:

TABLE 1 – POTENTIAL SETTLEMENT ISSUES

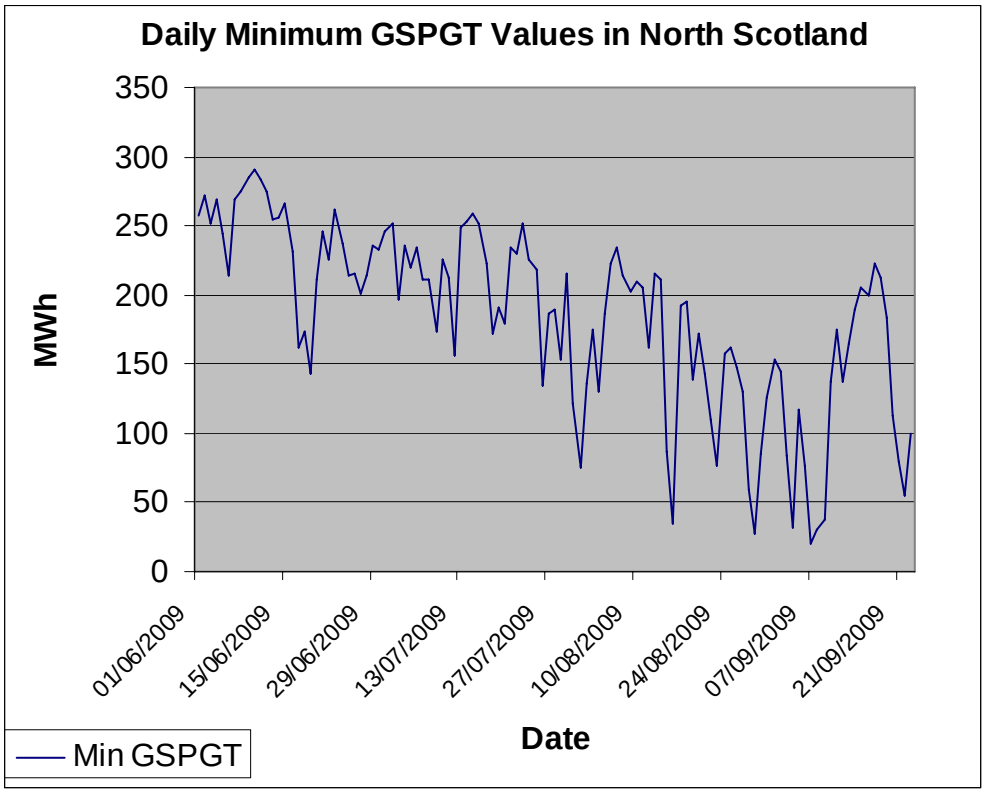
No.	Issue	Impact
1.	**Reduced Accuracy of Credit Checking Process**. The Credit Checking process relies on estimates of how much energy	This is likely to be the first issue to arise, and also one of the most serious. Even a single Settlement Period in which GSP

TABLE 1 – POTENTIAL SETTLEMENT ISSUES		
No.	**Issue**	**Impact**
	each Supplier has used. Unfortunately the equations used to derive these estimates (in paragraph T4.2.2 of the BSC) have a defect which makes them increasingly inaccurate as the net volume of energy taken from the Transmission System in a Settlement Period (the 'GSP Group Take') approaches zero.	Group Take was close to zero could lead to noticeable errors in credit checking. The risk to Parties is mitigated by ELEXON's ability to invoke the 'material doubt' provisions to prevent Parties being placed into Credit Default erroneously.
2.	**GSP Group Could Be Treated as Production**. A sufficiently high volume of embedded generation could cause the entire GSP Group (i.e. all BM Units in the Base Trading Unit) to be treated as Production rather than Consumption. This was not intended when the BSC was drafted, and could materially affect Parties.	Although the potential impact of this happening is high, there does not appear to be any chance of it occurring in the foreseeable future.
3.	**BSC Description of Interface from SVAA to SAA**. Paragraph R5.7.1 of the BSC describes the data passed from the Supplier Volume Allocation Agent (SVAA) to the Settlement Administration Agent (SAA). The drafting assumes that GSP Group Take is positive. Were it to become negative the systems would still allocate the 'correct' amount of energy, but would not be consistent with the BSC drafting.	This is an issue with the BSC drafting rather than the systems. For clarity, the BSC drafting should be brought into line with the systems before the situation arises.
4.	**Reduced Share of Supplier Charges**. As the level of embedded generation in a GSP Group increases, its GSP Group liability cap (for purposes of Supplier Charges) will decrease, and that of other GSP Groups will increase.	This is not a major issue, although it could be argued that it is unfair for embedded generation in a GSP Group to protect Suppliers from Supplier Charges in that GSP Group.
5.	**Data Collection Obligations**. Embedded generators – unlike Suppliers – are not obliged to read meters in time for Initial Settlement.	A high level of estimated generation data could lead to reduced accuracy at Initial Settlement. On the other hand, Generators (unlike Suppliers) have a natural incentive to read their meters and get their generation data into settlement.

2.2 Of the five issues listed above, the first was judged to be the most significant, because it had a significant impact on Parties and could happen within five years. In order to monitor this risk, a graph of the minimum GSP Group Take in each GSP Group has been included in the Trading Operations Report since March 2005. Any values close to zero would indicate that action may be required.

3 Events in August and September

3.1 A few weeks ago, ELEXON's routine monitoring of minimum GSP Group Take showed unusually low values in North Scotland, with a continuing downward trend. The following graph shows daily minimum values from June to late September (the latest date for which data is available):



3.2 In early September the minimum values were so low that there appeared to be a significant risk of the line crossing zero. Since then the trend seems to have reversed somewhat. This is likely to be due (at least in part) to overnight demand increasing as customers switch on their electric heating.

3.3 The nature of the estimation equations in paragraph T4.2.2 of the BSC is such that any low value of GSP Group Take will affect estimates of how much energy Suppliers used in the equivalent Settlement Period three weeks later. For example, the low values of GSP Group Take in the early hours of Saturday 29 August led to erroneous estimates of consumption for the early hours of Saturday 19 September, and these entered the credit checking process on Friday 25 September.

3.4 The size of the error is inversely proportional to the size of the GSP Group Take, which means that it increases very rapidly as the GSP Group Take approaches zero. For example, the smallest GSP Group Take on Saturday 29 August was about 30 MWh, and this led to noticeable estimation errors. However, if the GSP Group Take were to fall to 0.3 MWh (i.e. a hundred times smaller) the errors in credit checking would be a hundred times larger. This makes the impact of the issue hard to predict – to date it has been easy to manage, but at some point in the future an unusual combination of low demand and high generation could lead to GSP Group Take values close to zero, and hence to very large errors in the automated credit checking process.

3.5 Fortunately, the BSC allows ELEXON to invoke 'material doubt' provisions to avoid placing Parties into Credit Default if there are known to be errors in the automated credit checking process. This mitigates the impact of the issue on Parties. However, the administrative impact on ELEXON's

credit team of major errors in the credit checking process would be high. For this reason it is important to resolve the issue.

4 Proposed Next Steps

4.1 Given the potentially severe impact on the automated credit checking process, we are asking the Panel to refer the issue to the Settlement Standing Modification Group. The Group should provide a report to the December Panel meeting that:

- Proposes changes to the BSC that allows the credit checking process to function effectively and accurately even when GSP Group Take is small (or negative); and
- Recommends whether it is now appropriate to raise Modification Proposals to address any of the other issues listed in Table 1.

5 Recommendations

5.1 The Panel is invited to:

a) **NOTE** that GSP Group Take values came close to zero for the first time (in North Scotland GSP Group) in early September;

b) **NOTE** that some BSC changes may be required to make BSC processes robust to very low values of GSP Group Take; and

c) **AGREE** that this issue be referred to the Settlement Standing Modification Group.

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