Modification Proposal

Title of Modification Proposal (mandatory by proposer):

Neutrality for CCGT BMUs Switching Between Gas and Distillate

Submission Date (mandatory by proposer): 3rd October 2005

Description of Proposed Modification (mandatory by proposer):

During the winter months (from the start of November to the end of March or the clock changes) at times of stress on either the gas or electricity system, in the event of a (distillate) CCGT BMU with the capability of switching fuel; in the form of either gas to distillate or distillate to gas; doing so and as a result of this switching operation the plant trips off completely or fails to achieve its expected output levels (as notified beforehand) the BMU will be held neutral to any resulting cashout exposure arising from the reduced output levels.

Description of Issue or Defect that Modification Proposal Seeks to Address (mandatory by proposer):

Background

It has been clear for some time that the availability of gas within the GB market will be tight for this coming winter, and perhaps next winter as well. This, in turn, is expected to lead to increased use of demand side response within the gas market, principally (given their large usage), through interrupting gas supplies to CCGT stations.

As Ofgem pointed out in its "Notice of Exclusion" for Modification Reference UNC No. UNC 044, dated 16th September 2005:-

"Ofgem also notes that, given the importance of gas as a fuel source in the generation of electricity, a gas deficit such as may arise [in the coming winter] may also have a material adverse effect on the availability of electricity for meeting the reasonable demands of consumers in Great Britain."

This matter was brought into sharp focus by the publication, in May, by the Authority of the NGT Consultation on Winter 2005/06 and by the Secretary of State's Report to Parliament on Security of Gas and Electricity Supply in Great Britain, published in July.

For example, the NGT consultation document notes (at para136) that:-

"...analysis implies a potential for further response from CCGTs, including those on firm transportation arrangements. The extent of this response is clearly influenced by the level of electricity demand, the availability of back-up fuels and the attractiveness to the power market of switching to non-gas fired generation, as indicated by the gas and coal spreads. Whilst there may be a potential for a high degree of price-response from CCGTs, the level of price responsiveness experienced and required to date has only been a fraction of that required to ensure a supply-demand balance in a 1 in 50 winter."

Having considered the situation with respect to gas the NGT consultation goes onto look at the situation with respect to electricity and states (at para 178) that:-

"...it is provisionally estimated that, under Scenario 2 the electricity sector could lower its gas demand by around 3 bcm in severe weather conditions provided that the market sought to minimise CCGT gas demand throughout the winter. Specifically, this would require extensive switching from gasfired generation to coal, those CCGTs capable of running on distillate doing so for 4 hours and 5 days a week all winter..."

The Issue

It is clear that a high level of fuel switching; from gas to distillate and back to gas; is likely to be required for this coming winter (and perhaps beyond). CCGT plants are designed primarily to operate on gas and whilst some are equipped to operate on distillate this mode of operation presents additional operating risk. This is because each time such a CCGT switches fuels from gas to distillate and back again there is a risk that these operations cause the plant to trip-off or fail to switch as intended. This, in turn, creates an exposure to electricity cashout prices.

As NGT notes, they see "those CCGTs capable of running on distillate doing so for 4 hours and 5 days a week all winter". With circa 22 weeks of 'winter' this implies approximately 220 individual switches. Such a high number of fuel switches will, inevitably, lead to a heightened number of plant failures which, in turn, would expose those CCGT BMUs with fuel switching capability to a disproportionate risk to electricity cashout exposure; whilst providing a valuable service to the electricity (and gas) system(s).

In addition there is an increased risk that CCGT plant with distillate capability (given the heightened risk of switching, as noted above) will opt not to '2 shift'; e.g. they will run all day on distillate, rather than switching back to gas. This will lead to distillate stock levels being exhausted more quickly (particularly given the problems with re-stocking) which cannot be an efficient use of this limited resource and would affect the electricity system's plant margin.

The Solution

It is proposed that this defect be rectified by holding CCGT BMUs that have the capability to switch between gas and distillate neutral to any cashout exposure that arises during the period of fuel switching at times of stress on either the electricity or gas systems. In this way the number of switches that will occur will increase which should help ensure that supplies of electricity (and gas) are maintained to consumers across Great Britain. Without this 'neutrality' such distillate CCGT BMUs will have little choice but to shut down which, in turn, has significant implications for plant margin and thus for the security of electrical supply over the winter period.

It is proposed that holding a distillate CCGT BMU 'neutral' would only occur if three, distinct, situations 'occur'.

First, only during the 'winter' period (which might be defined as either from 1st November to the 31st March or from the autumn clock-change to the spring clock-change).

Second, only at times (during this 'winter' period) of system stress within either the electricity or gas sectors, which would be defined as only if one or more of the following 'trigger' events occurred, either:-

(a) when a distillate CCGT BMU receives an instruction (in accordance with the UNC) from the relevant (gas) Transporter to cease or reduce using gas; or

(b) a potential or actual Network Gas Supply Emergency (including, but not limited to either (i) a Gas Deficit Emergency – Insufficient Gas Supplies to the Primary System, or (ii) a Gas Deficit Emergency – GS(M) R Safety Monitor Breach, or (iii) a NGSE Critical Transportation Constraint Emergency) is declared (in accordance with the UNC); or

(c) a Local Gas Supply Emergency is declared (in accordance with the UNC); or

(d) a Localised (gas) Transportation Deficit is declared (in accordance with the UNC); or

(e) a P70/P71 Notification shall be issued for the distillate CCGT BMU (gas) Supply Meter Point (in accordance

Modification Proposal

MP No: (mandatory by BSCCo)

with the UNC); or

(f) a GB (electricity) Transmission System Warning (as listed in OC7.4.8.4, and detailed in OC7.4.8.5-7.4.8.10 of the Grid Code) is issued; or

(g) when a distillate CCGT BMU receives an Emergency Instruction (as detailed in BC2.9 of the Grid Code) from the GB (electricity) System Operator; or

(h) there is a cessation, or revocation or replacement of any of these said instruction, or declaration or notification.

Third, that as a result of any of these 'trigger' events occurring, acting as a reasonable and prudent operator, the (distillate) CCGT BMU switches from gas to distillate or from distillate to gas.

Finally, the distillate CCGT BMU will have had to have either tripped off or failed to meet its intended load levels for that distillate CCGT BMU to be out of balance for it to require to be held 'neutral' to the cashout exposure for up to four hours.

Impact on Code (optional by proposer):

Impact on Core Industry Documents (optional by proposer):

Impact on BSC Systems and Other Relevant Systems and Processes Used by Parties *(optional by proposer)*:

Impact on other Configurable Items (optional by proposer):

Justification for Proposed Modification with Reference to Applicable BSC Objectives (mandatory by proposer):

This modification would ensure that the distillate CCGT BMU (that has the capability to switch between gas and distillate) will remain cost neutral as a result of responding to the system stress 'trigger' event(s) removing any potential commercial disincentive to respond to the system stress 'trigger' event(s) which may arise if their prevailing BOA price did not adequately compensate it for the action(s) taken in response to the system stress 'trigger' event(s).

In addition, by ensuring that distillate CCGT BMUs are held 'neutral' to the cashout exposure that arises from tripping off completely or failing to achieve their expected output levels (as notified beforehand) this Modification Proposal will ensure that these plants receive the appropriate price signals to incentivise them to provide this capability at times of system stress.

It is particularly important that at such times of actual or potential system shortage in either the gas or electricity sectors (or both) that such distillate CCGT BMUs provide this capability otherwise there could be a threat to the security of supply for electricity (and potentially gas).

Times of energy shortage are most likely to be seen over the winter period as this is when the peak demand for electricity is greatest. As the defect to be addressed potentially affects security of supply during these times, Urgent status is requested for this Modification Proposal in order to implement the new methodology and provide more appropriate signals to distillate CCGT BMUs in the shortest possible timescale, lowering the risk that Demand Control (as detailed in Grid Code OC6) or Electricity Supply Emergency Code measures will be required over the winter period. Clearly if such measures were invoked over the winter period this would be likely to have a materially adverse effect on the availability of electricity or gas for meeting the reasonable demand of consumers in Great Britain.

In this respect the modification proposal will better facilitate the applicable BSC Objective (b) "the efficient, economic and co-ordinated operation by the Transmission Company of the Transmission System".

Furthermore, this Modification would remove any potential distortion to Balancing Mechanism Prices brought about by the distillate CCGT BMU attempting to factor the costs of responding to a system stress 'trigger' event(s) into their BOA prices. By including an explicit mechanism for determining appropriate compensation for responding to a system stress 'trigger' event(s) this removes the need the distillate CCGT BMU to factor the potential costs associated with responding to a system stress 'trigger' event(s) into their BOA prices.

Noting that such system stress 'trigger' event(s) are not within the control of the distillate CCGT BMU it is inappropriate that a party who responds to such an event(s) has the potential to be exposed to financial losses as a result of complying with the instruction. This modification would, by removing the potential for such losses promote effective competition in the generation and supply of electricity and (so far as consistent therewith) promote such competition in the sale and purchase of electricity. In addition it seems inappropriate that the wider Industry should similarly be exposed to losses or gains resulting from a system stress 'trigger' event(s) through any consequential impact on Industry cashflows. This will better facilitate the applicable BSC Objective (c) "Promoting effective competition in the sale and purchase of electricity, and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity.

Modification Proposal

MP No: (mandatory by BSCCo)

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Attachments: NO

If Yes, Title and No. of Pages of Each Attachment: