

## System Flexibility Update

### Transmission Workstream 1<sup>st</sup> October 2009

National Grid NTS met with two other industry participants during September and the main points of those discussions are documented below. It is currently planned to hold another industry workshop during October, date and location to be advised. Any further feedback, comments or questions should be directed to [philip.hobbins@uk.ngrid.com](mailto:philip.hobbins@uk.ngrid.com), tel 01926 653432.

#### Meeting 1

NG NTS explained the rationale for the review of system flexibility and that it was currently exploring what data indicators should be considered / provided to the industry to help understand the magnitude of the issue. The participant considered that information provision and the level of transparency was already a hallmark of the UK regime.

The participant wondered whether the current programme of work on system flexibility might lead to a within day balancing regime. The UK's daily NBP market was a model that the participant valued as it enables increased volumes of gas to be produced via enabling them to renominate within day to deliver on flexibility obligations in their contracts. Any change to this arrangement would have to be carefully considered by the participant but in their view would be likely to lead to lower volumes of gas being delivered to the UK to the detriment of security of supply. NG NTS stated that there were currently no plans to shorten the gas balancing period for the UK, rather we are at the stage of investigating what data indicators may tell us that the NTS SO may in the future be unable to deliver the level of service that customers require and that the development of any solutions was some way off at this stage.

The participant asked how a more flexible system fits with the proposed implementation of entry capacity substitution. NG NTS considered that substitution could affect the patterns of supply on the NTS, resulting in a migration away from the current well distributed pattern to one where supplies are concentrated in fewer locations and that a tightening of the system may result. Equally, NG NTS considered that it was also possible for substitution outcomes to help the system flexibility position.

NG NTS described the various potential drivers that exist for greater demands on system flexibility going forward, including that UKCS supplies were expected to decline and display a reduced swing capability as a result. The participant considered that UKCS producers may provide more swing as they seek to extract the most value from the remaining reserves, although accepted that this would become less material due to lower volumes.

The impact of the review of system flexibility on new storage projects was discussed. The participant considered that project economics would be based on certain assumptions and that any uncertainty about the commercial regime could result in uncertainty in the fixed costs for developers which may affect the attractiveness of the UK to build new storage. NG NTS accepted that any regime uncertainty created risk for new projects but was of the view that any regime change would be more likely to work in favour of new storage rather than against it, given the design of the majority of new storage to be price responsive within day. NG NTS believed that new storage was expected to help the system from a security of supply perspective but may act as a consumer of flexibility as well as a provider.

NG NTS explained that the speed of supply chain response was a key factor in the review eg. in a high wind generation world, if wind speeds drop, can supply turn up in time to deliver the gas for CCGTs / OCGTs to make up the difference. It was noted that the response time of CCGTs is slower than that of OCGTs.

The participant asked if network volatility was increasing. NG NTS replied that an increase in supply volatility had been experienced, and noted that aggregate entry capacity baseline figures are far in excess of daily demand which creates more uncertainty about where in what volumes gas will be landed in the UK. The accuracy of information provision to NG NTS via OPNs and DFNs was therefore key in enabling efficient system operation and this is therefore one of the areas under investigation as part of the review.

## Meeting 2

The participant agreed with the views quoted in the September Workstream update that swing capability from existing UKCS is expected to decline and that gas will be the primary new build source of generation over the next decade as retirement of some existing coal and gas plants force its adoption between 2016 and 2020.

The participant observed that the current level of exit flexibility usage was low on a sample day of 14 Aug 09 (4 mcm, excluding flex creation) but agreed that a significant expansion of wind generation could displace gas fired generation and depending on the time of day may increase demand for flexibility from this sector of the industry.

The participant stated that it had investigated the impact of wind on gas CCGT operation in other European markets and concluded that the ability to accurately and timely forecast wind was the key factor in managing the impact. The participant was of the view that within day wind forecasts were usually reliable (less so before the day). NG NTS wondered whether the ramp rates and associated notice periods in current Network Exit Agreements would remain appropriate in a high wind generation world.

Regarding new storage, there was agreement that the UK needs more storage from a security of supply perspective. The participant expected new gas storage facilities to respond to market signals and therefore would expect it be a benefit to the system. The participant was unclear why NG NTS thought that storage could potentially consume system flexibility. NG NTS explained that the new storage projects planned tend to be sizeable with greater capability to switch between injection and withdrawal during the day. If significant quantities of gas were to be taken off the system early or late in the day rather than spread across the day then this has the capability to create locational pressure issues on the NTS. In addition, NG NTS thought that plant efficiencies may drive storage operators to batch flow gas at particular times in the day rather than on a 1/24th basis again this can create local pressure issues. The participant advised that as the electricity price is typically lower overnight than during the day then this may be an attractive time for storage operators to inject gas into store and therefore generally positive for system operation. NG NTS agreed that an incentive to inject overnight was a favourable one from a system flexibility perspective. The participant noted that there was potential for more storage services to be offered to the NTS SO in this area in addition to the current Operating Margins and that the prospect of such long term contracts may help with the economic viability of new projects. It was considered that new storage facilities should be able to achieve flow rate changes within 1 hour. The participant also highlighted the long lead times and large upfront investment associated with building new storage and that commercial regime complexity and instability may act to deter such investment. However the participant also considered that an increase in wind generation would possibly create more volatility in gas prices which may add support for funding of such developments.

With regard to new LNG supplies, NG NTS explained that it had received mixed feedback to date – with some participants being of the view that, given the size of the investments, LNG terminal behaviour would be akin to a traditional beach terminal (i.e. high utilisation rates), while others argued that LNG deliveries would be more intermittent due to greater price sensitivity driven by their linkage into a global market and associated arbitrage opportunities. The participant expected future LNG to operate to a fairly high load factor (but probably lower than existing beach terminals) but that their within day response capability would be limited to what was already in the tanks. Therefore the primary source of within day flexibility would need to come from storage. NG NTS noted that approximately 1 bcm of LNG was now

connected with further increases planned, so the amount of gas available to meet within day requirements from LNG sources could be significant.

NG NTS observed that, given the various possible causes of within day flow rate changes there appeared to be potential for a conflict between the current commercial regime which is focused on end of day quantities and a potentially increasing requirement for System Operator within day physical changes to manage the effects of customers' entry and exit changes and asked the participant for their views on this. The participant responded that non-physical players create beneficial liquidity in the daily NBP market which may dry up if the NTS were to move to within day balancing or require more physical / locational actions in its residual balancing role which may in turn push up gas prices.