CONSULTATION REPORT

National Grid Gas Quality Consultation

February 2018

ABOUT THIS DOCUMENT

National Grid consulted the GB gas industry about a number of issues in relation to gas quality in November 2017.[1] We would like to thank those parties who took the time to respond. The purpose of this document is to:

- Re-cap our reasons for consulting;
- Summarise the responses we received; and
- Set out our views in response and proposed next steps.

If you require further details about any of the information contained within this document please contact Phil Hobbins on 01926 653432 or by email at philip.hobbins@nationalgrid.com.

[1] http://www.talkingnetworkstx.com/gas-quality-consultation.aspx

BACKGROUND

In the coming years, National Grid expects supplies of UK Continental Shelf (UKCS) gas to the GB market to decline and import dependency to grow. Lower UKCS supplies may also be supplemented by other indigenous sources such as shale gas, biomethane and bio-substitute natural gas.

We are also mindful of the UK government's objective as set out in its Maximising Economic Recovery strategy to secure that the maximum value of economically recoverable petroleum is recovered from the strata beneath relevant UK waters.

A number of recent UNC modification proposals have been raised which sought to increase oxygen or carbon dioxide limits at individual NTS entry points. The most recent of these – Modification 0607 'Amendment to Gas Quality NTS Entry Specification at the St Fergus NSMP System Entry Point' – generated debate about how National Grid should accommodate such increases where its ability to do so is, or may in the future, be constrained.

National Grid therefore consulted the GB gas industry during November 2017 seeking views on:

- What these future change drivers may mean for gas quality; in particular, whether requests to deliver GS(M)R-compliant gas into the NTS with limits outside our current GTYS parameters (i.e. increased oxygen and carbon dioxide limits) are likely to increase;
- The adequacy of current processes going forward in managing such requests for new and existing NTS entry connections;
- Industry preferences for how available gas quality flexibility should be allocated by National Grid where that flexibility is scarce; and
- Demand for National Grid to provide additional gas quality services such as gas processing and/or blending at NTS entry points and the provision of gas quality information to enable offtaking parties that are sensitive to gas quality fluctuations to better manage the potential impacts.

CONSULTATION RESPONSES

We received 13 responses to this consultation, six of which were confidential. The seven non-confidential responses were received from the following parties:

- **Centrica**;
- **RWE Supply and Trading GmbH;**
- **British Ceramic Confederation;**
- **South Hook Gas;**
- **Statoil UK;**
- **Anton Industrial Services;**
- **Energy UK;** and
- **SSE**

All of the above responses have been published on our 'Talking Networks' website at http://www.talkingnetworkstx.com/gas-quality-consultation.aspx. Respondents that submitted views confidentially agreed to have their views represented in this report; therefore what follows is a summary of all responses to the consultation questions, without attributing comments to particular parties.

1. Do you expect the number of requests by existing NTS entry parties to amend gas quality limits in NEAs that are within GS(M)R but outside Gas Ten Year Statement (GTYS) limits to increase in the coming years?

Respondents' Views:
Most respondents did not have access to information to answer this question definitively. Some thought it likely given the expected UKCS decline, increase in unconventional supplies and new sources of LNG. One respondent suggested that it would be worthwhile conducting a review of the GTYS limits to consider whether they are unduly restrictive, with particular attention being given to oxygen and carbon dioxide content.

National Grid Response:
We note the information provided from the Oil and Gas Authority (OGA) to the Modification 0607 workgroup which indicated that some UKCS field developments projected to flow first gas within the next 5 years have an expected CO_2 content above our current GTYS limit of 2.5mol%[2]. However, we have no knowledge about whether such fields could be blended with lower CO_2 gas offshore prior to entry into the NTS.

At this stage, we do not see a compelling case to review the GTYS limits. We are not aware that the industry in general sees a need to review the GTYS limit for CO_2, and despite the recent number of UNC modifications that have sought to amend oxygen limits at NTS entry points, we consider it best to leave the GTYS limit unchanged and manage requests for change on a case by case basis. Further explanation is provided in our response to Q10.

2 & 3. Do you believe that National Grid's current method of assessment for individual NEA parameter changes is appropriate? Which of the NEA change options do you prefer?

Respondents' Views:
Most respondents considered that a 'first come, first served' approach where each case is decided upon on its own merits based on information available at the time is a reasonable approach that has worked well. Most did not think that it could result in National Grid acting in a discriminatory manner, provided that a consistent approach to assessing requests is followed.

However, one respondent considered that a later application for a similar variation that is subsequently denied could have the unintended consequence of offering a competitive advantage to one party over another. The idea of National Grid opening a window of time – similar to the PARCA arrangements – in which other parties could come forward with similar requests was considered by many respondents to have merit and would help overcome any charge of discrimination against National Grid. One respondent considered that although this could serve to encourage more speculative requests that did not have an immediate need, such outcomes could be mitigated by a requirement for parties to submit information to National Grid that demonstrates a genuine requirement.

A 'lowest common denominator' approach where National Grid would only agree to a limit outside the GTYS specification if it were capable of accommodating

[2] https://www.gasgovernance.co.uk/sites/default/files/ggf/book/2017-07/OGA_North%20Sea%20Developments%20%25%20CO2.pdf

that change at all other locations was universally opposed as this could limit what may have been possible in isolation, potentially leading to gas being locked out unnecessarily. The Modification 0607 solution under which an increased CO_2 limit would be time-limited and National Grid would have a right to reduce it in the event of other requests arising in the future in order to share available flexibility was also not supported as an enduring solution due to the uncertainty it creates.

Respondents regarded the UNC process as a vehicle to achieve NEA changes as thorough and transparent, though time-consuming. One respondent suggested that a UNC Modification template specifically designed for NEA parameter changes could reduce the administrative burden of the change process.

National Grid Response:
Having considered the views of respondents, we propose to progress the following reforms by way of a UNC modification in summer 2018:

- In the event that a new or existing Delivery Facility Operator (DFO) requests a gas quality limit that is GS(M)R compliant but outside GTYS and our ability to accommodate that limit is scarce, National Grid would be obliged to open a window of time, akin to that within the PARCA process, within which any other DFO may request an increase to that particular parameter. This would help to ensure that National Grid could continue to meet its licence obligation not to unduly discriminate between parties in its transportation arrangements and would enable requests to be considered together, thereby utilising network modelling resources efficiently. We would also expect such a measure to obviate the need for National Grid to seek the right to unilaterally reduce a gas quality limit in the event of future requests, thereby giving the DFO greater certainty of its specification relative to the Mod 0607 solution.

- To state in UNC that National Grid shall not agree to non-GTYS limits unless the DFO agrees to provide actual gas quality data to National Grid on an ongoing basis which demonstrates its continuing need for that limit. In the event that such information is either not provided or no longer demonstrates a need for the requested limit, such limit would revert either to the GTYS limit in the case of a new connection or to its pre-existing level (if different from GTYS) in the case of an existing connection. This provision would also help to ensure non-discrimination as well as help mitigate 'speculative' requests without genuine need.

We also consider that it would be appropriate to charge DFOs that request gas quality limits for a new or existing NTS entry point that are GS(M)R compliant but are outside GTYS limits. These requests principally seek to benefit a specific party at a specific location, hence charging such parties to reflect the costs that we may incur[3] should achieve more accurate targeting of such costs as well as mitigate the risk of more speculative requests disrupting those with a genuine need. We plan to develop proposals on this and bring them forward for industry discussion with the proposed UNC Modification in summer 2018.

We agree with respondents that the UNC process is time-consuming and are also supportive of further measures to speed up the UNC Modification process.

[3] These may include outsourced asset integrity assessments, network modelling, re-ranging of telemetry equipment as well as UNC process engagement.

We therefore intend to raise this Modification in line with the 'rapid mod' principles that we have recently been developing.

4. Does the process of agreeing gas quality parameters for new NTS entry connections require reform?

Respondents' Views:
One respondent considered that the current process was adequate, a number of others were unclear what the current process is. A number of other respondents considered that greater transparency was required; that the presumption should be that any new connection adopts GTYS limits and any request to deviate from this should be subject to some level of stakeholder engagement.

National Grid Response:
The current process for agreeing gas quality parameters for new NTS entry connections forms part of the NEA development and as such is a purely bilateral discussion between National Grid and the prospective DFO. UNC TPD section I2.1.1 obliges National Grid to make available a copy of the Network Entry Provisions (which include the applicable gas quality parameters) available that apply to any System Entry Point to any shipper on request.

We agree with the argument about transparency because it is not only the shippers that will be delivering gas at that new entry point that would be affected by the agreed limits who may be consulted by the DFO, but also parties offtaking gas downstream of that connection who would not otherwise be consulted. However, we are also mindful that such a consultation obligation may not fit well with the small-scale NTS entry connections that Project CLoCC seeks to encourage given that this project seeks, among other things, to reduce the number of process barriers to NTS connection rather than create them.

We are minded to include such a consultation obligation for National Grid within our planned UNC modification referred to in the previous section of this report and will give further thought to how this could best be structured to balance the need for transparency with speed and ease of connection. .

5. Will the demand for new NTS entry connections to deviate from GTYS limits grow in the future?

Respondents' views:
Respondents offered no specific information but of those who expressed a view, the need for GB to attract a greater diversity of supply sources, maximise import capabilities and maximise the recovery of economic reserves from the UKCS were reasons that may well trigger such requests in the future.

National Grid's Response:
It is important to appreciate that this question is effectively limited to oxygen and carbon dioxide limits as we are currently unable to accommodate requests for limits that are outside the GS(M)R ranges. Should any GS(M)R ranges change then we would seek to accommodate such changes in a revised GTYS specification. We agree that the reasons cited by respondents may drive towards a wider specification but have no information as to whether they will actually materialise in requests from new NTS entry parties to deviate from the GTYS specification. Even for the new fields referred to in section 1 whose CO_2

content exceeds 2.5mol%, offshore blending may be possible such that the standard NTS entry specification could still be met.

6. How should National Grid manage and allocate scarce gas quality flexibility?

Respondents' Views:
A variety of views were submitted in response to this question. One respondent suggested that National Grid and/or shippers could provide chargeable blending services, another suggested contractual solutions could be employed with relevant DFOs – both of which could enable National Grid to accommodate competing requests.

Others suggested that the DFOs competing for flexibility may be able to reach a compromise solution, sharing what was available between them. Failing that, a value assessment could be developed to determine which requests should be granted and which rejected. Relevant criteria for such an assessment could include which request would deliver the greatest benefit against the Government's MER objective; others emphasised the need to consider the impact on NTS exit points.

National Grid's Response:
We are considering the development of blending services as outlined in our response to Q7 below. We support the idea of the DFOs working together with National Grid to reach a compromise solution based on available flexibility; if this is not possible, we consider that the relevant UNC Modification proposals should proceed to an Ofgem decision based on the relevant objectives. The Final Modification Reports could contain the value assessment that some respondents have suggested. We do not believe that National Grid should have a role to adjudicate between DFOs based on a set of criteria and then grant flexibility to one party and not another on the basis of such an assessment.

If the reason for the scarcity is an existing contractual obligation at offtake point from the NTS then a further option could be for National Grid to seek an amendment to the specification at that point.

7. Should National Grid reconsider blending and/or processing services for the RIIO-T2 period and are there any particular locations where this would be useful?

Respondents' views:
A majority of respondents stated that they had no objection to National Grid providing such services if a net industry benefit or lower costs to consumers could be demonstrated. This might be achievable if National Grid has greater purchasing power than individual terminals and economies of scale may be achievable. One respondent stated that all economic and safe options for delivery of gas to the NTS should be considered. A number of respondents stated that the charges for any such service provision should be targeted on a cost-reflective basis at those parties using them and that where fortuitous commingling occurs then this should be developed as a contractual solution with the relevant DFOs and should not be chargeable. One respondent did not support National Grid providing such services because the upstream industry has already made investments to meet the relevant NTS entry specification.

National Grid's Response:
We note that the majority of respondents are not averse to National Grid exploring such services further and we are open to further consider how we may be able to utilise our existing assets to play an enhanced role in helping bring gas to the GB market, and, in particular to support the government's strategy to maximise economic recovery of gas from the UKCS.

We would envisage that any blending services would be chargeable since National Grid would be taking on more risk. We also believe it would be appropriate to consider the inclusion of other relevant (compliant) streams of gas entering the NTS at the same location within any commercial arrangement.

A range of technical, commercial and safety assurance issues would need to be explored to take this forward and we therefore intend to include gas blending services within our RIIO-T2 planning activities this year.

We have considered the provision of gas processing services but have decided not to pursue this further. We have no desire to extend our role to include this activity at this time and continue to believe that the upstream parties who deliver gas to our network are best placed to perform this activity.

8. How could National Grid help you to manage issues associated with variable gas quality?

Respondents' Views:
A number of respondents stated that provision of gas quality data by National Grid would help offtake customers that are sensitive to gas quality variation manage their risks. These respondents asked that we inform sensitive customers when a change in gas quality is foreseen and publish more gas quality information after the day to help industry understand the changing nature of supplies. We also heard that Distribution Networks (DNs) could also benefit from more information provision in advance, both in order to manage the 'target' CVs that they provide to certain DN entry connections and to provide information to offtakes in DN networks that may be sensitive to gas quality variation.

Other respondents provided opposite views. One stated that it would be very expensive for National Grid to publish real-time gas quality data, for which there is insufficient evidence to justify the investment. Another stated that CV variations affecting CCGTs can usually be managed by control systems already in place.

Another respondent raised a specific concern that increases in the amount of CO_2 in the network could cause inaccuracies in the setting up of new appliances due to the inability of some gas analysers to distinguish between CO_2 in the mains gas and that generated as a product of combustion.

National Grid Response:
We recognise that this topic has been under discussion for some time now and note the differing views of stakeholders about whether National Grid should offer additional gas quality information provision services. In our view, any such service offering would require some degree of investment, whether in IT systems or physical assets with associated lead-times and, as we have previously communicated, we also face challenges around the confidentiality of such data.

We need to understand more specifically what customers want and the extent to which such information requests are common across our customer base in order to determine how best to address them; for example, the merits of additional data publication where the costs would be shared by all users or on a site specific basis where costs could be recovered directly from those parties requesting the service.

As with gas blending services, we propose to include this issue within our planning work as part of a wider consideration on information provision to address the RIIO-T2 stakeholder priority 'I want all the information from you to run my business.'

We have passed the issue about CO_2 content and new appliance set-up to IGEM for consideration in the context of the GS(M)R review.

9. Is there a case to treat smaller CLoCC connections differently to larger coastal terminals in respect of gas quality limits?

Respondents' views:
The majority of respondents were not convinced that this would be necessary. It was noted that CLoCC type connections could operate in clusters which together could form a significant entry flow. Safety and commercial considerations were also considered to be relevant.

National Grid Response:
We note the views of respondents and refer to our response to Q4.

10. Would there be adverse consequences if the GTYS limit for oxygen were increased to the GS(M)R limit of 2000ppm?

Respondents' views:
This question elicited mixed views. Some respondents supported an increase in the GTYS limit while others preferred oxygen content to be as low as possible for gas offtaken for electricity generation purposes and for gas storage. We heard that the presence of oxygen is particularly undesirable for storage facilities because it can cause plant corrosion in wet gas high pressure systems and can also block coalescer filters which can affect withdrawal capability. Some respondents did not understand why the GTYS specification for oxygen was so much more restrictive than that required by GS(M)R.

National Grid Response:
The difference between the GS(M)R and GTYS specification for oxygen exists because of different requirements for safety and for processes downstream of NTS offtake. Historically, when NTS gas was offtaken for liquefaction and injection into LNG storage, molecular sieves were used to remove components in the gas that would otherwise freeze in the cooling process. The presence of oxygen in that gas would have reduced the performance of that process and reduced the life of those assets. As all the LNG storage facilities have now been decommissioned, from a National Grid point of view, the GTYS limit could potentially be increased. This could lead to fewer UNC modifications seeking increases at individual entry points and may benefit LNG and biomethane producers.

However, it is also clear from the consultation responses that there are other processes downstream of the NTS that remain sensitive to oxygen content – particularly in relation to storage facilities – for which the presence of oxygen remains undesirable. We are also mindful of our EU Interoperability Code obligation to cooperate with adjacent TSOs to avoid restrictions to cross border trade due to gas quality differences and, in this context, our understanding is that the usual specification for oxygen in Belgium and the Netherlands is 10ppm measured on a daily average basis. We would also highlight that the GTYS specification for oxygen is indicative; we are able to agree higher limits than 10ppm in NEAs with individual DFOs.

On balance, we therefore propose to retain the status quo; i.e. for the GTYS specification to remain at 10ppm and requests for a higher limit to be considered on a case by case basis.

CONCLUSION

Whilst this formal period of consultation has now closed, we are keen to hear industry views on our proposed next steps and as we move forward with the potential reforms that we have identified. There will be an opportunity to discuss this report at the Transmission Workgroup meeting on 1st March 2018 and feedback can be provided afterwards to philip.hobbins@nationalgrid.com (tel 01926 653432).