

**Gas
Transmission**

nationalgrid

A Gas Market Plan research project

'Implementing the proposed gas
quality standards' final report



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Executive summary



If the UK is to meet its ambitious goal to reduce net greenhouse gas emissions to zero by 2050, it will require wholesale change across all sectors of society. Decarbonising sectors like heat, transport and industry will require a mosaic of innovative solutions.

Almost all future scenarios where the 2050 carbon reduction target is met include some level of low carbon gases, like hydrogen or biomethane, being included in the energy mix.

If low carbon gases are to play a key role, then there will need to be changes to the gas quality regime in the years ahead. Current legislation places strict limits on the types of gas allowed to enter the UK gas networks. This will need to shift to a regime that permits networks to accept a much wider range of different types of gases.



2050

Almost all future scenarios include some level of low carbon gases.

These regulatory changes will likely lead to an increase in the frequency and volume of change requests from parties at individual entry points to the national transmission system (NTS) and distribution networks (DN). These arrangements are currently managed through a contractual connection agreement process underpinned by Uniform Network Code (UNC) rules for NTS sites. It is therefore important that the market frameworks are set up to handle the likely increase in the volume of change requests.

This project has analysed the current UNC market rules related to changing a gas quality parameter in a connection agreement. It has highlighted short-term recommendations to deliver tangible improvements, alongside longer-term actions to be undertaken after a trigger event.

In the short term, the project recommends:

1 Developing new customer guidance to support the NTS contractual and market change process for changing a gas quality parameter.

Stakeholders have indicated that they would like to see additional support and guidance for those parties that wish to change a gas quality range in a connection agreement. With the potential for an increase in gas quality regulatory change over the next decade, this could subsequently lead to an increase in requests to change connection agreements. Additional support could help those parties who haven't been through the process before.

2 Raising a UNC modification to amend the "signatories of capacity holders" gas quality UNC process to allow for wider consultation.

The biggest risk of failure to the existing framework mechanism is the lack of a transparent alternative process to the standard UNC modification route to changing an existing entry agreement. The current "signatories of capacity holders" rules do not provide the transparency the industry needs or a way for them to engage in the process. Enhancing these market rules could help mitigate the risk of a large number of future requests being driven through a single framework process.

Executive summary

3 Publishing NTS contractual gas quality parameters and limits on a centralised industry platform to improve transparency.

Currently, different information is made available to the industry in different gas quality change scenarios. This recommendation aims to provide additional and consistent information to the industry in a centralised area.

4 Enhancing the NTS connections process, to remove framework inconsistencies, which could include allowing the industry to engage on gas quality requests for new NTS entry points which fall outside the *Gas Ten Year Statement* parameters.

There are gas quality framework inconsistencies that need to be addressed. A new entry point that wishes to connect to the network isn't obligated to make gas quality information public. Yet if an existing party wishes to change a gas quality parameter, there are formal UNC rules to manage this request. This recommendation has provided an example of how these inconsistencies could be managed and highlighted open questions that still need resolving. It sets a direction of travel with further industry engagement required.

In the longer term, the project has highlighted several recommendations linked to a trigger event or scenario.

The key triggers presented in the report are:

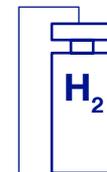
- further clarity on hydrogen blending policy; in particular, more defined information on where and how hydrogen blending could take place
- visibility of the enduring gas quality regulatory change process, including clarity on the role of government.



Stakeholders' views are important to the Gas Market Plan programme, they can help shape and enhance future deliverables to ensure stakeholder needs are continually met.

If you would like to discuss any aspect of this project or the wider Gas Market Plan programme, please contact our Gas Market Development team via their box account at:

box.FOGforum@nationalgrid.com to have your say



5GW

The Government is aiming for 5GW of hydrogen production, along with pioneering heat trials, by 2030.

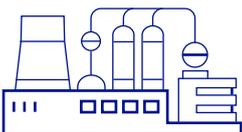


Gas Markets Plan

In collaboration with gas industry stakeholders and policy-makers, we have initiated the Gas Market Plan (GMaP) programme to help prepare the gas market for potential future transformations. The GMaP programme is currently undertaking a range of market-based research projects in four specific areas of industry interest, which are:

- gas quality
- hydrogen
- gas balancing
- long-term capacity access review.

The ‘[Implementing the proposed gas quality standards](#)’ project is the first such research project from the gas quality area. It has investigated the market rules associated with changing a gas quality parameter within a connection agreement. It provides several recommendations to enhance the existing rules and processes, given the potential for future legislative change. Ensuring that the process for changing a gas quality parameter in a connection agreement works in an efficient and effective way will help support the UK’s long-term strategic goals.



GMaP

The Gas Market Plan programme is to help prepare the gas market for potential future transformations.

Role of low carbon gases

If the UK’s ambitious legislative targets are to be met, it will require industry collaboration and a mosaic of innovative solutions to deliver the carbon reduction required. Low carbon gases like biogas and hydrogen are expected to play a vital role in supporting the UK’s drive to achieve net zero.

Almost all future scenarios where the 2050 carbon reduction target is met include some level of low carbon gases within the energy mix. For example, in the Climate Change Committee’s recently published Sixth Carbon Budget, their balanced scenario showed hydrogen demand “to a scale that is comparable to existing electricity use by 2050”.¹

There is also an increased government focus on low carbon gases. The government’s ten-point plan and energy white paper set important medium-term targets for low carbon gases. The government is aiming for 5GW of hydrogen production, along with pioneering heat trials, starting with a hydrogen neighbourhood and potentially scaling up to a hydrogen town by 2030. This ambition shows the future strategic importance of low carbon gases, especially in helping to tackle the harder-to-decarbonise sectors like heat, transport and industry.

Gas quality and GS(M)R

Natural gas is not a uniform entity like an electron. Natural gas can have different compositions and characteristics, this is commonly known as gas quality. Natural gas currently transported within the UK is predominately made up of methane, however it may also contain trace amounts of other compounds like sulphur, oxygen and carbon dioxide. These impurities need to be regulated to operate the gas system safely and reliably.

Safety is of paramount importance to the operation, delivery and utilisation of gas due to its combustible nature and potential harm from flue gases, such as carbon monoxide, in appliances. To ensure safe operations the delivery of gas to networks must be within certain pre-determined limits as set out in legislation. The current gas quality limits are set out in the Gas Safety (Management) Regulation (GS(M)R).

¹ Climate Change Committee, The Sixth Carbon Budget, page 72.

GS(M)R places limits on the type of gas entering the network. It also obligates transporters to only convey gas in their networks that conforms to these limits. Currently GS(M)R only allows 0.1% of hydrogen within the gas mix (unless an exemption is granted from the Health and Safety Executive). Therefore, if low carbon gases are to play a role in supporting the UK in meeting its legislative targets, then the gas quality limits in GS(M)R will need to change and evolve to permit the entry of these gases to networks.

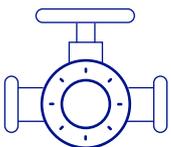
It should also be acknowledged that changes could also be required to other gas related legislation, such as the Gas (Calculation of Thermal Energy) Regulations, to facilitate an increase in low carbon gases. These Regulations provide a framework for how the industry bills end users in a consistent and non-discriminatory way.

IGEM review

Both GS(M)R and the Gas (Calculation of Thermal Energy) Regulations were legislated in 1996 and have been unchanged since then. The Regulations are increasingly not reflective of the need for gas networks to accommodate a wider range of gases, for example, they make no allowance for hydrogen.

Since 2016, the Institute of Gas Engineers and Managers (IGEM) has been leading a review of the UK gas quality specification contained in GS(M)R. It is currently proposing to:

- increase the upper wobble limit from 51.41 MJ/m³ to 52.85 MJ/m³
- reduce the lower wobble limit from 47.2 MJ/m³ to 46.5 MJ/m³
- increase the allowable oxygen content from 0.2mol% up to 1mol% for connections on systems below 38 bar
- remove the ICF and Soot Index and replace with a relative density upper limit of 0.7.²



0.1%

Current amount of hydrogen allowed within the gas mix.

The IGEM project also opens the way for greater frequency of change in the future³, including more systematic incorporation of hydrogen and biomethane, which is likely to mean more change with a greater frequency at individual entry points to the NTS and DNs. It is therefore important that the market frameworks are set up to handle this potential increase in the volume of changes which is what this project has explored.

The role of the market

Changing a gas quality limit in GS(M)R does not automatically mean that the extended range is available to parties that deliver gas to networks.

NTS terminal operators or embedded producers within distribution networks who deliver gas are only allowed to flow gas that meets the ranges specified within their contractual entry connection agreement⁴ with the network operator.

For a new NTS gas quality range to be accessed, a requesting party would need to go through a contractual and market-based change process. This is to ensure that, as well as the safety considerations, the accommodation of new gases does not unduly affect the operation of the transmission and distribution systems.

The project has assumed that each entry party will have to individually update their connection agreement to access a new gas quality range.⁵



² Further information on specifics on the IGEM proposals can be found [here](#).

³ The IGEM GS(M)R review proposes to move Schedule 3 of GS(M)R into an IGEM Standard to allow greater agility in the process for changing the specification.

⁴ For clarity, this paper has used the term “connection agreement” to include the following type of contractual NTS Entry Agreements: (NTS Network Entry Agreements, Interconnection Agreements & Storage Connection Agreements). DN arrangements are specifically drawn out.

⁵ There is still uncertainty in how the IGEM Standard and associated governance for future change will develop. This project has assumed that existing industry process for changing a gas quality parameter on a site by site basis defined in the UNC will still be required post any change to the specification.

From an NTS perspective the processes to enable a gas quality parameter in an existing connection agreement to be changed are set out in the UNC. This differs at the DN level, where no equivalent rules exist for local distribution zone (LDZ) entry points and any such change is purely a bilateral matter between the entry party and the network operator.

The reason that there are UNC obligations and rules related to changing a gas quality range within a connection agreement is because a change could impact market participants other than just the parties to the connection agreement. For example, it changes the contractual entitlements of shippers who deliver gas at that location and may impact the composition of gas an end user receives, which could have a material commercial or operational impact on them, e.g., underground gas storage is sensitive to higher levels of oxygen due to increased risk of corrosion.

Therefore, the UNC rules allow industry participants who are not party to the connection agreement to have an opportunity to engage in proposed changes to gas quality limits before they are implemented.

However, there are no such rules when a new entry point wishes to connect to the NTS in relation to gas quality. For example, there is no consultation mechanism where a developer requests to deviate from the gas quality specifications published in the *Gas Ten Year Statement (GTYS)*. This already highlights the inconsistencies between the clear mandated UNC obligations for existing parties who wish to change a gas quality parameter compared to the lack of transparency for new entry points that wish to connect to the network.



Project aims and approach

The project assessed whether the existing market rules for changing a gas quality parameter are fit for purpose, with a lens on potential future change. It has provided recommendations to enhance those rules and processes where appropriate.

In collaboration with an industry expert working group, the project undertook a phased approach to delivering against the objectives. The following steps were taken:

1. Analysis of existing rules
2. Review of future uncertainty
3. Optioneering analysis
4. Key findings and recommendations

Market framework

In a future scenario, where legal limits for gas quality change more frequently, it is vital that the UNC has the appropriate market rules to ensure those changes are made in a transparent and efficient way. The UNC currently has four different potential ways for a gas quality parameter to be changed within a connection agreement⁶. However, only one of these existing routes for change is used regularly.

⁶UNC: Transportation Principal Document, Section I, 2.2.2 (a) & (b).

1. Enabling modification

The ‘enabling modification’ process is where a UNC modification is raised to make the gas quality change within an existing connection agreement. No text is changed within UNC as a result, rather its approval ‘authorises’ us and the relevant operator to execute the desired change in the connection agreement.

An enabling modification is required to go through the standard formal UNC governance processes which includes a workgroup, the creation of a modification report, a formal consultation and decision (by the UNC Panel if designated as ‘self-governance’ or otherwise by Ofgem). It is currently the primary way gas quality changes are made. It is an open and transparent process which the industry can fully engage with.

Whilst the average time for a gas quality change to go through this process is about a year and there are resource implications on industry parties for engaging in it, feedback from stakeholders engaged in this project was that the process is well valued due to its openness and transparency. In future, however, the potential exists for multiple terminal operators to seek change simultaneously, essentially clogging the system and increasing the resource burden on the industry. Going forward if we are to see an increase in gas quality regulatory change then it would therefore be desirable to have more than one viable market route for changing a gas quality value.

2. Signatories of capacity holders

The UNC does offer alternatives to the enabling modification, one such alternative is the so-called “signatories of capacity holders” process. These rules allow for a gas quality change to be made in a connection agreement with just the agreement in writing of the UNC shippers that hold NTS entry capacity at that relevant entry point. However, this means that downstream users could be adversely impacted by a change agreed between upstream parties, without any opportunity to participate.

In certain circumstances there is an opportunity for this process to enable changes to be made in a quick way, however, the process is very rarely used as it lacks industry transparency; the wider industry would have no visibility of a change going through this process until it is notified at the end of the process. Yet, in the future, with a potential increase in regulatory change it will be important for gas quality changes to be made quickly and efficiently, where appropriate. So, it is important that alternatives to the enabling modification process are available to the industry.

⁷ UNC: Transportation Principal Document, Section I, 2.2.3 (b) & 2.2.7 (a).

3. Inert gas limit change

The UNC inert gas limit rule currently allows changes to certain inert levels to be made without industry consultation. For the purposes of the UNC, inert gas limits mean specifically that the carbon dioxide limit shall be not more than 2.5% (molar), while there is no direct limit on nitrogen levels⁷.

4. Legislation change

The final way a gas quality parameter can be changed within an NTS connection agreement is if changes were required to comply with a legal requirement. In that scenario gas quality changes could be made quickly without industry consultation. This rule acts as an insurance policy to the network operator and delivery facility operator(s) (DFOs), allowing contractual change to be implemented quickly, for example if a limit or range were to be narrowed/reduced or became no longer applicable.



Summary of existing rules

Through the enabling modification process, the UNC market rules play an important role giving the wider industry a voice in the gas quality change process.

There are certain aspects of the existing market rules, like the enabling modification process, which work well and are valued by industry. Having only one viable market route for changing a gas quality parameter in a connection agreement increases the risks on the industry, especially if it were to see large volumes of simultaneous gas quality changes requested.

It is important to stress that the aim is not for all future gas quality changes to have to go through the enabling modification process. Even though this process is valued, it is still a time-consuming and resource-intensive process. A one size fits all approach isn't what is needed, there needs to be usable, scalable rules to allow changes to be made quicker, where appropriate. As shown, there are alternative existing processes that could reduce the pressure on the enabling modification process, but enhanced transparency would be desirable before wide-scale adoption.

Distribution networks

Traditionally, DNs received GS(M)R compliant gas from the NTS and delivered that same gas to consumers and industrial users within their networks. However, over the last decade embedded supply from within a distribution network has come on line, through the growth in 'green gas' biomethane production.

The network entry agreements at the DN pressure tier are signed bi-laterally between the DFO and the network operator, but there are no UNC rules underpinning any change process for gas quality limits as seen at the NTS level. These LDZ Network Entry Agreements are the contractual mechanisms that confirm gas quality ranges for an embedded entry point. The gas quality set out in these documents is purely a matter between the DFO and the network operator, subject to GS(M)R and any relevant DN policy or exemptions.

During engagement with the distribution network operators, it was recognised that gas quality changes could become an area where new processes and rules may be desirable to support decentralised supply changes. If there is an increase in low carbon embedded supply over the next decade, how to mitigate the risk to sensitive end users will be key to ensure a just transition. This applies equally to both NTS and DN pressure tiers.

It should also be noted that some stakeholders that contributed to this project wished to have greater consistency of rules across pressure tiers. The distribution network operators are already looking at how they can make their entry arrangements more consistent through the ENA Gas Goes Green programme. Wider engagement with the industry and more transparency on gas quality changes will be crucial in the coming years when considering the potential for further embedded supply to come on line.



Recommendations

Recommendations categorisation

Based on the analysis undertaken, it is apparent that there are some existing market mechanisms that could be improved in the short term to deliver a process that better meets stakeholders' needs. The most significant risk to the smooth running of the existing process is the potential increase in the volume of enabling modifications in the years ahead.

If there is a considerable increase in the number of modifications being raised to change gas quality ranges within connection agreements, then this could impact the industry's and our ability to resource those changes. We are already proactively engaging the industry to try and understand the interest in the first proposed gas quality regulatory changes. A survey of DFOs has been undertaken, and this could lead to a more coordinated approach for those entry parties who want to take advantage of the updated gas quality specifications (e.g. grouping requests).

It was also recognised that there is still a lot of uncertainty around how gas quality legislation and government policy could develop, especially in relation to hydrogen. The technical feasibility and safety case for injecting hydrogen into the network at different blends is still in progress. This means it is currently very difficult to design a hydrogen market framework.

Whilst we know certain fundamentals, e.g. a hydrogen connection agreement will need to include rules related to the quality of the gas entering the system, until the commercial regime for hydrogen is developed it will be very difficult to pinpoint specifics. Hence the project has chosen to highlight a number of related longer-term recommendations which can be undertaken as and when required.

These two contrasting aspects led to the project recommendations being split into two categories.

- ‘Low regret’ actions to be implemented in the short term.
- Longer-term ‘trigger’ recommendations to be undertaken once a certain event or scenario comes to pass. These recommendations will be kept under review by us.

The project, in collaboration with stakeholders, has created an outline of what a new customer guidance document could include which can be seen in **Annex A**.

Target timeframe: To be delivered by end of 2021. We propose to publish this deliverable on our website and present its content at the ENA Entry Customer Forum and Transmission Workgroup.

Overview of low regret recommendations

No	Recommendation	Timeframe
1	Develop new customer guidance to support the NTS contractual and market change process for changing a gas quality range within a connection agreement.	End of 2021
2	We will raise a UNC modification to amend “signatories of capacity holders” change process.	Q3 2021
3	We will improve transparency of gas quality information, through publishing NTS contractual gas quality parameters and limits on a centralised platform.	Underway
4	Enhancing the NTS connections process to remove framework inconsistencies, which could include allowing the industry to engage on gas quality requests for new NTS entry points which fall outside the Gas Ten Year Statement parameters.	End of 2021

Low regret recommendations

1. Develop new customer guidance to support the NTS contractual and market change process for changing a gas quality range within a connection agreement.

Stakeholders have indicated that they would like to see additional support and guidance for those parties that wish to change a gas quality range in a connection agreement with us. There is the potential for an increase in gas quality regulatory change over the next decade, which could subsequently lead to an increase in requests to change connection agreements from parties who haven’t been through the process before.

In addition, we have recently changed its cost recovery arrangements for this type of change, weighted more towards the party requesting the change, so it is important that customers are clear on what to expect from us in return for this funding. If this process becomes more widely utilised, additional support for customers could help deliver greater efficiency.

2. We will raise a UNC modification to amend “signatories of capacity holders” change process.

The “signatories of capacity holders” change process is rarely used. This is because it only requires the holders of NTS entry capacity at a designated entry point to provide written confirmation to make a gas quality change at that related entry point. However, the ability to have a process to make quicker changes could reduce the burden on the enabling modification process in the future.

The project therefore proposes that a UNC modification should be raised to enhance the existing process. It is recommended to add a short engagement window stage into the process. This stage should provide additional transparency regarding the change and related network analysis, along with providing a vehicle for the industry to raise any concerns they have regarding a change. This proposal is similar to an established UNC process used when changing the permitted range of a DFO’s flow metering.

⁹Further information on the funding approach for gas quality changes can be found [here](#).

If an objection is raised during the engagement window, then the gas quality change should default to the enabling modification process for further investigation.

Target timeframe: We will aim to raise this UNC modification by Q3, 2021

3. We will improve transparency of gas quality information through publication of contractual gas quality parameters and limits that apply at NTS entry points on a centralised platform.

Currently, how a connection agreement is changed dictates the amount of information available to the industry about that specific change. The project recommends removing the inconsistencies in the amount of information available to the industry in relation to gas quality change.

- This project proposes that consistent information related to gas quality changes be published in a centralised area, most likely on the Joint Office website. The type of information suggested for publication is site name, gas quality parameter to be changed, network analysis and date of implementation. For clarity this recommendation does not propose making “real-time gas quality data” available.
- A consistent stakeholder theme was to improve transparency of existing arrangements. Therefore, we propose to seek consent from all operators that deliver gas to the NTS to make the existing gas quality parameters and limits in connection agreements publicly available.

Target timeframe: We will seek to consent from operators to publish existing NTS entry point contractual parameters and limits data in Q2 2021.



4. Enhancing the NTS connections process to remove framework inconsistencies, which could include allowing the industry to engage on gas quality requests for new NTS entry points which fall outside the Gas Ten Year Statement parameters.

There are currently framework inconsistencies in relation to gas quality when a new NTS entry point wants to connect to the NTS compared with when an existing entry point wants to change a gas quality limit. As this report has highlighted there are numerous UNC rules that govern how a gas quality change is to be completed, yet there is no such transparency for when a new site connects to the NTS.

Recognising that there are framework inconsistencies that need to be resolved, the project does not, however, want to increase the bureaucratic burden on new sites connecting (as they are likely to be low carbon) unless there is a clear benefit for the industry. Therefore, this recommendation sets a direction of travel, with further industry engagement required.

The project recommends a two-tiered approach:

- If a new NTS entry point requests gas quality ranges that are consistent with or within those ranges that are published annually in GTYS then there is no change to the existing process.
- However, if a new site requests a gas quality range outside those published in GTYS (but still within GS(M)R ranges) that is acceptable to us, then an industry engagement stage is required. This additional engagement stage would then allow the wider industry to raise any operational or commercial concerns regarding the new site's gas quality ranges.

⁹ UNC: Transportation Principal Document, Section I, 2.2.2 (a) (i).

¹⁰Currently any shipper can request that we provide gas quality information for an entry point, but this was felt by stakeholders to be not sufficiently transparent (Transportation Principal Document, Section I, 2.1.1).

- We may also need to develop a process for consulting on changes to the GTYS gas quality specification.
- Further details on this recommendation and potential challenges have been provided in Annex B.

The recommendations highlight that an annual process might be needed where large end users would confirm the amount of hydrogen they can safely accept to their gas supplier, who would, in turn, feed that back into a centralised system. This process would be like the existing data collection process for annual and daily quantities.

Target timeframe: We will undertake further engagement by end of 2021.

Overview of trigger recommendations

No	Recommendation	Timeframe
5	Develop new customer guidance to support the NTS contractual and market change process for changing a gas quality range within a connection agreement.	Kept under review
6	Industry to develop a gas quality resolution mechanism to support efficient and fair hydrogen blending.	Kept under review
7	Develop how the proposed IGEM gas quality standards and UNC process for changing a gas quality range within a connection agreement can dovetail effectively.	Kept under review
8	Sense check project recommendations post implementation of the HSE assessment.	Kept under review

Trigger recommendations

5. Develop an end user hydrogen limit data collection process to facilitate the gas quality change process.

Trigger: When there is further clarity on hydrogen blending policy, including more defined information on where blending could take place.

Subject to further work and engagement on how changes to gas quality ranges for sensitive users are addressed, there may be a requirement to complete network analysis to help facilitate gas quality change requests. If hydrogen blending is introduced in a 'connect anywhere' scenario then it will be of paramount importance to understand what level of hydrogen blend an end user can safely accept.

Non-daily metered end users may have a standardised level of blend they can accept, whilst sensitive large end users could each have a range of acceptable limits.

6. Industry to develop a gas quality resolution mechanism to support efficient and fair hydrogen blending.

Trigger: When there is further clarity on hydrogen blending policy, including more defined information on where blending could take place.

In a 'connect anywhere' scenario, market rules and processes would need to be developed to ensure there is a clear process for managing diverging commercial interests during a hydrogen blending transition, which could require appropriate regulatory oversight and approval. This process would be important from a gas quality change process perspective as it would provide industry clarity on roles and responsibilities and remove the requirement for network operators to manage diverging commercial interests of end users and low carbon gas producers.

7. Develop how the proposed IGEM gas quality standards and UNC process for changing a gas quality range within a connection agreement can dovetail effectively.

Trigger: When or if Schedule 3 of GS(M)R is transposed into an IGEM Standard, and there is clarity on the enduring IGEM Standard change process, including the role of HSE and government.

In order to ensure the benefits of gas quality regulatory change are realised at the earliest opportunity, it will be vital to ensure both the IGEM Standards and UNC market framework processes dovetail efficiently.

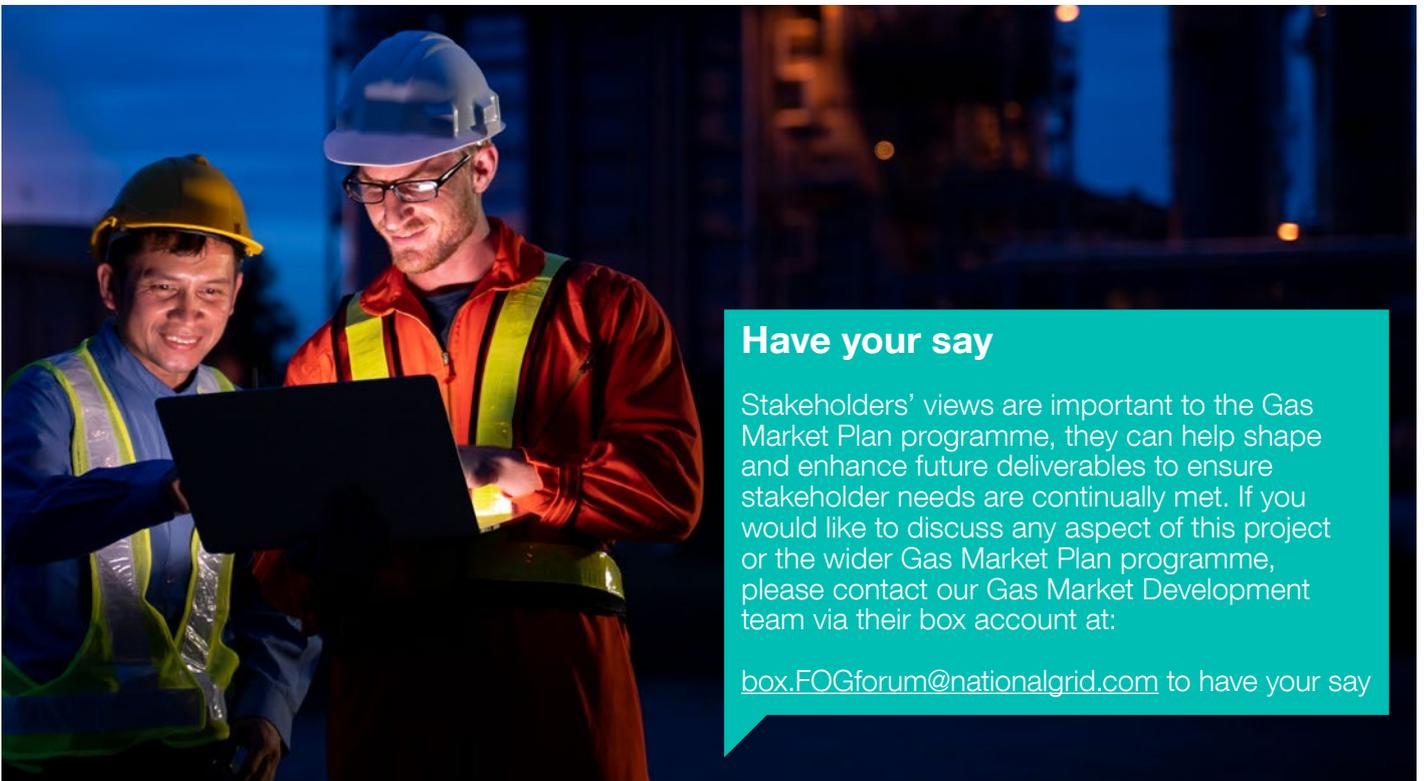
Once there is clarity around the regulatory change process, then work could begin to look at the options for when the ideal time for the market-based process to start would be. This is important because if the market-based processes were started too early, this places risk on the requester (as the initial regulatory change might not get approved), whilst starting the market-based processes too late means the benefits of such a change will be realised later.

8. Sense check project recommendations post implementation of HSE assessment.

Trigger: When or if Schedule 3 of GS(M)R is transposed into an IGEM Standard, and there is clarity on the enduring IGEM Standard change process, including the role of HSE and the Government.

The project has made several assumptions regarding how the Government will engage with the gas quality change process in the future. The project has assumed that regardless of any decisions made at the regulatory GS(M)R level, there will continue to be a need for an industry-led gas quality change process. It has also been assumed that gas quality changes will continue to be implemented on an 'as and when' basis with a request from an entry party.

If the Government mandates gas quality change on a unilateral basis then this would impact the existing UNC rules and would require further industry work and engagement.



Have your say

Stakeholders' views are important to the Gas Market Plan programme, they can help shape and enhance future deliverables to ensure stakeholder needs are continually met. If you would like to discuss any aspect of this project or the wider Gas Market Plan programme, please contact our Gas Market Development team via their box account at:

box.FOGforum@nationalgrid.com to have your say

Annex A: Customer guidance

During the project, one recurring theme was the request for additional support for new parties or those that haven't been through the gas quality change process in a number of years. This additional support could become especially pertinent if, as expected, we see an increase in gas quality regulatory change in the years ahead.

Based on the feedback received, this project recommended the creation of new customer supporting guidance. The new guidance would help the reader understand the contractual aspects of changing a gas quality limit in a connection agreement, alongside providing more details on the UNC rules. The guidance needs to be as clear and simple to understandable as possible for maximum accessibility.

This annex highlights in further detail what the customer guidance document could cover. Ownership for creating the new customer guidance document will sit with us and we've committed to doing this by the end of 2021. The below table highlights specific aspects of what could be included within a customer guidance document and the potential structure of such a document.

These details are meant to provide a framework for what could be included, based on the feedback received. However, it should be noted that the team responsible for creating the document will have the flexibility to adjust and update these details as appropriate.

Phase	Detail
Introduction	<ul style="list-style-type: none"> • Detail which agreements are covered by this guidance (e.g. NEA, SCA & IA). • Feedback on document/how reader can get in touch. • Glossary (either with contents page or at end of document).
Pre-submission	<ul style="list-style-type: none"> • Details of the existing minor-mods process (A2O) which is used for contractual change, including information on costs and timelines for change. • Link to our annual connection charging statement, which also provides information on the process.
Submission	<ul style="list-style-type: none"> • Application process timescales. • How the contractual "offer" process works (timelines). • How network analysis will be shared with the requesters and when. • Joint risk assessment with the customer requesting the change (GQ/8).
Market rules	<ul style="list-style-type: none"> • Detail any appropriate UNC rules. • Provide guidance on timelines and highlight any potential hurdles for the requester (e.g. UNC party required to raise an enabling modification).
Preparatory activities	<ul style="list-style-type: none"> • Highlight what potential preparatory activities could be required to get systems ready for any change (e.g. Validation and modifications of telemetry and alarms). • Provide clarity on when it would be known if any physical work on site is required and how this would be undertaken.
Closedown	<ul style="list-style-type: none"> • Clarity on how costs are reconciled and any additional closedown requirements and timelines.

Annex B: Further detail on the challenges and options for providing additional gas quality information for new sites wishing to connect to the NTS.

Recommendation 4 highlights the need to **enhance the NTS connections process to remove framework inconsistencies, which could include allowing the industry to engage on gas quality requests for new NTS entry points which fall outside the *Gas Ten Year Statement* parameters.**

Industry feedback has highlighted that when a new site connects to the NTS there is a lack of transparency in respect of the gas quality ranges that the new site can flow to. This is important as changing gas quality compositions can have commercial and operational impacts on end users. If wider gas quality regulatory changes are introduced it could exacerbate this issue.

If a new site doesn't have to go through the market framework process, it could lead to a scenario where a new site on the network could access wider gas quality ranges than existing sites, without the industry understanding the impact.

While there have been few new NTS entry connections in recent years compared to the increase in embedded supply within a DN, in the future this trend could be reversed. If low carbon connections increase in the future, these will help meet legislative environmental targets. Therefore, it is important that barriers to entry are not placed on new sites that could help drive carbon reduction.

These opposing drivers are why the recommendation encompasses a two-tiered approach. The following examples show how a tiered approach could work, along with highlighting challenges and hurdles that need further development. The recommendation calls for additional industry engagement on this topic before the end of the year.

One option available is to utilise the gas quality specification in GTYS to create a two-tiered approach.

Tier 1

Keep the existing process when a new site requests gas quality ranges within those that are published annually in GTYS. This would minimise any new bureaucracy for a new site, while also providing the industry with the confidence that the new sites gas quality ranges are within those specified in GTYS.

Tier 2

If a new site requests a gas quality range outside those published in GTYS (but still within GS(M)R ranges) that is acceptable to us, then an additional industry engagement stage is required. This additional engagement stage would then allow the wider industry to raise any operational or commercial concerns regarding the new site's gas quality ranges.

There are still a number of open questions and challenges to be explored:

- a. The gas quality specifications in GTYS would hold a more formal role for the industry and this may mean that a new change governance process would need to be developed.
- b. What happens if industry concerns are raised, and who would be the final decision maker in the process?
- c. Where does this new process fit in the overall connections process and would this lead to additional costs?

There are framework inconsistencies that need to be resolved and there is a lack of transparency for the industry. Yet there is also a need to be cognisant of the potential amount of additional processing and bureaucracy required to deliver the transparency in a way that doesn't disincentivise or delay low carbon sites connecting to the NTS.

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