

**Gas
Transmission**

GMaP Gas Quality: 'Implementing the Proposed Gas Quality Standards' Project Scope

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Project Context

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Project Context

The Gas Safety (Management) Regulations (GS(M)R) 1996 were introduced as a statutory instrument, to ensure the safe use and management of the flow of gas through the gas network in the United Kingdom (UK).

It places obligations on all UK gas transporters which includes the need to ensure the content and characteristics of gas conveyed in the system are within certain limits. These limits were based on the make-up of North Sea natural gas from the UK continental shelf (UKCS) and on testing of gas-appliances in the 1970s and 1980s.

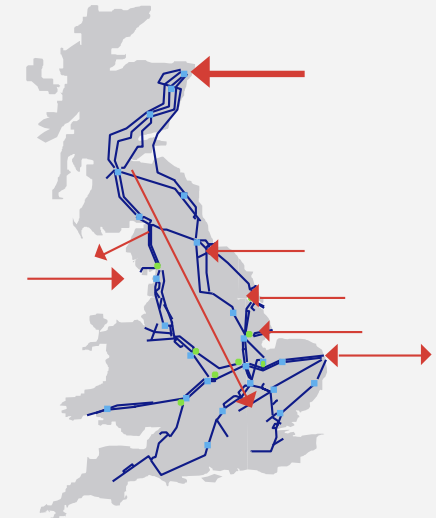
The introduction of ambitious legally binding environmental targets will require the decarbonisation of each sector of UK society. Low carbon gases could have a key role to play in facilitating the decarbonisation of sectors such as home heating or heavy goods transport.

The current limits defined in GS(M)R have been identified as a blocker to change, for example it restricts the proportion hydrogen that can enter the network to 0.1%.

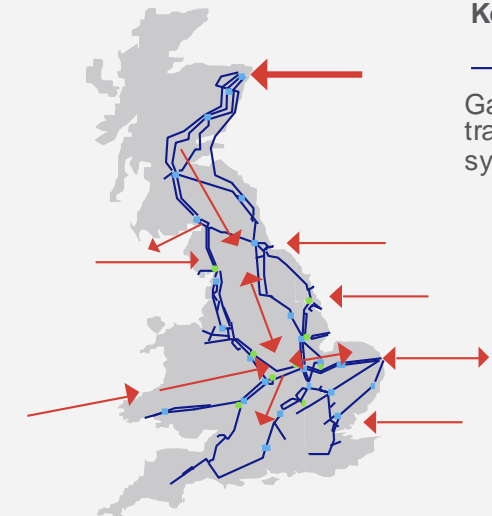
Gas supply sources have changed dramatically over the last 20 years. The UK has gone from being 100% self-sufficient to importing about 50% of its annual gas supply. It is expected this pattern will continue. Yet, there are now a wider range of available sources of supply including UKCS gases with lower calorific value, higher caloric value LNG and other imports that currently cannot enter the system due to GS(M)R without being treated or blended. It is important that the system can deal with all of these variations from a security, diversity and competition perspective.

Major gas flows in GB

Mid 90ss to late 00s



Late 00s to 2020



Key:

—
Gas
transmission
system

Project Context Continued

The Institute of Gas Engineers & Managers (IGEM) has set-up a Gas Quality Working Group comprising of stakeholders from across the gas value chain, to support its work to review the current gas quality specification within GS(M)R.

The changes proposed by that group would enable the safe injection of a wider range of gases into the UK gas network, along with moving Schedule 3 of GS(M)R into an IGEM standard.

It is anticipated that if low carbon gases are to play a significant role in the energy transition, this standard will need to be changed multiple times during the next decade.

Existing Implementation Processes

Terminal operators who bring gas onto the network, are only allowed to flow gas that meets the ranges specified within their Network Entry Agreement (NEA) with National Grid.

NEAs are the means by which National Grid ensures that it complies with GS(M)R. The Health and Safety Executive (HSE) has a role in monitoring compliance and, eventually, enforcement.

The Uniform Network Code (UNC) has a multilateral process governing access to the transmission network. Whereby if an operator wants to change their gas quality ranges, one option they have is to raise an 'enabling modification'. This process was originally introduced with the expectation that these changes would be minimal and infrequent.

In relation to embedded supply (e.g. bio-methane sites that connected directly to a distribution network), the current process for changing their gas quality ranges is purely a bilateral one between network operator and supplier.



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Project Rationale

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Project Problem Statement

The range of gases allowed into the UK network will need to change and evolve over the next decade to facilitate the introduction of low carbon gases to support ambitious government targets.

The work being undertaken by the IGEM gas quality working group is focused on updating GS(M)R ranges primarily taking into consideration the safety of the public.

“It is important to remember that the GS(M)R are primarily intended to ensure the safety of the public and Schedule 3 of the Regulations is the baseline for the changes. Safety will continue to be the primary aim of the proposed new gas quality standard”

Source: IGEM A key step on the pathway to Net Zero emissions - EVIDENCE REPORT.

Whilst safety is of the upmost importance, there are other important aspects that need to be taken into consideration before changes to gas quality ranges can be implemented.

Gas Quality ranges and fluctuations can have considerable impact on operational or commercial activities of industry parties. Therefore it is important that there is a robust process in place that considers these impacts before allowing new gas quality ranges to be utilised.

The UNC has an existing implementation process for modifying gas quality ranges within a connection agreement, but it is uncertain whether this process will continue to be fit for purpose over the next decade, with the range of potential changes proposed and their potential impact on the industry.

With the increase in embedded supply within a distribution network, there is also an open question regarding how parties who could be impacted from these gas quality changes raise their concerns.

This project proposes to review the existing implementation processes to see if they are still fit for purpose. It will engage with a wide range of industry stakeholders and review any industry best practices. It will deliver process recommendations which ensure changes to gas quality ranges are implemented in a fair, just and transparent way.

Project Benefits

The key benefits to undertaking this project are:

- It will provide the gas industry with a recommended approach on how future gas quality changes could be implemented, taking into consideration the wider industry impacts.
- It will engage a cross section of industry stakeholders to examine the problem statement(s) and develop solutions, that take into consideration industry concerns.

These benefits are designed to give the gas industry the confidence that if Schedule 3 of GS(M)R is moved in to an IGEM standard, there is a fair and transparent implementation process.

Providing this to the industry aligns to the strategic objective of trying to facilitate additional gases on to the network to support security of supply and the legally binding government environmental targets.



Gas Market Plan (GMaP) Progress

The initial Gas Market Plan (GMaP) was published in December 2019, it concluded there was a need for further market development in three specific areas in 2020. These priority areas were, hydrogen, balancing and gas quality.

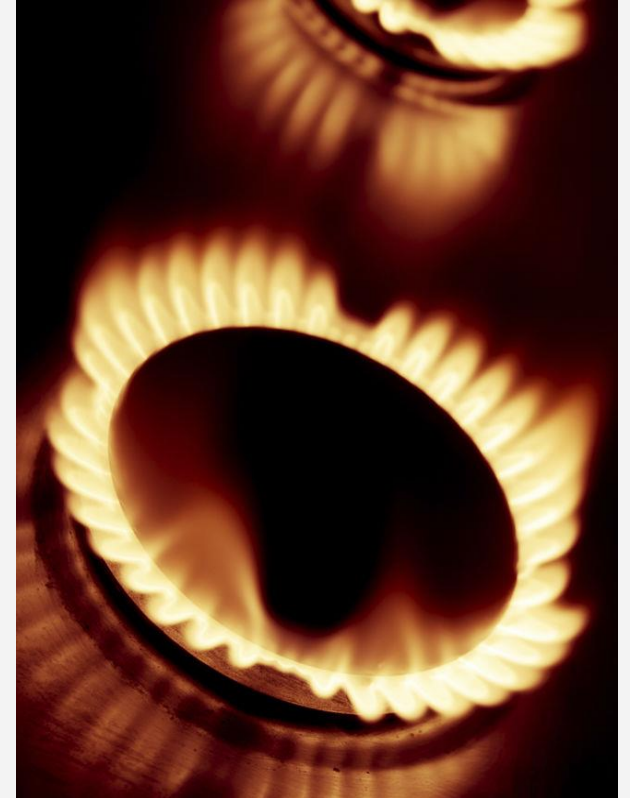
After investigating and analysing potential issues in the gas quality sphere over the 2-10-year time horizon, these issues were shared with the Future of Gas Steering Group for direction, discussion and prioritisation.

The consensus from the Steering Group was that the specific market-based issues related to the first phase of IGEM GS(M)R Review project should be prioritised.

The rationale for this decision was related to the timescales of that project with the potential for new standards to be available by the end of 2021.

A session of 15 stakeholders scoped out and discussed potential projects in more detail and this project was prioritised.

As part of the GMaP ethos, of openness, transparency and collaboration the projects' scope and outputs will be publicly available.



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Project Details and Timeline

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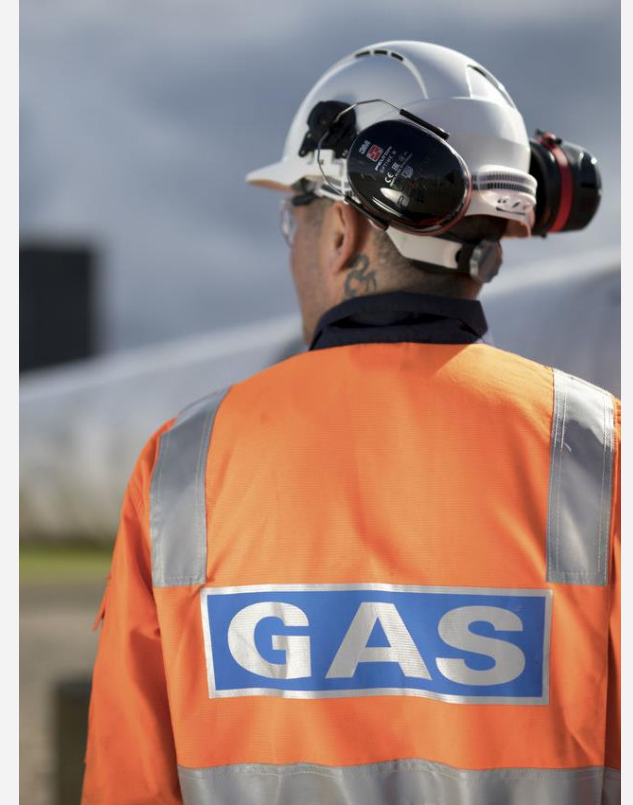
What is being proposed and why now?

The following activities are proposed to be undertaken, and delivered in a report at the end of the project:

1. Detailed analysis of the current gas quality change processes - NTS entry, NTS exit and Distribution Network (DN) embedded supply.
2. Engagement with industry to understand what levels of implementation and ongoing governance are desired (including what roles there are for key stakeholders like Ofgem and BEIS).
3. Seek and benchmark appropriate best practices of change governance processes from across the wider energy industry where appropriate.

4. Develop options for modifying the existing UNC gas quality change governance regime and analyse the options for DN embedded supply.
5. Recommendations on which options should be implemented and what further work is required for that to happen.

It is important to undertake this project now. The industry will need time to embed any recommended changes to the processes related to changing gas quality ranges. There is also a need to align with when the IGEM gas quality standard might be available for implementation.



Project Risks, Assumptions and Engagement Approach

It is proposed that a RAID (Risks, Assumptions, Issues and Dependencies) log will be created, monitored and kept up to date throughout the life cycle of the project.

The biggest risk to the success of this project, is that this project becomes a perceived dual stream of the on-going IGEM GS(M)R Review project, duplicating debate. This project should dovetail with the IGEM project where appropriate, but it will require a tight focus on the specific project requirements and deliverables.

It is assumed that IGEM's existing governance process for standards doesn't change and that it is legislatively possible for governance of UK gas quality limits to be transferred from government to IGEM.

The following is out of scope of this project:

1. The pros and cons of the content and characteristic changes to be included within the proposed IGEM gas quality standard is out of scope of this project.
2. How IGEM manage their change process related to their standards is also out of scope of this project.

Those discussions should be considered through the IGEM Gas Quality Working Group.

This project focus is on what additional governance processes or components would complement the proposed IGEM standard as to ensure a just and fair implementation of the proposed standards that also consider operational, commercial and end users impacts.

Engagement

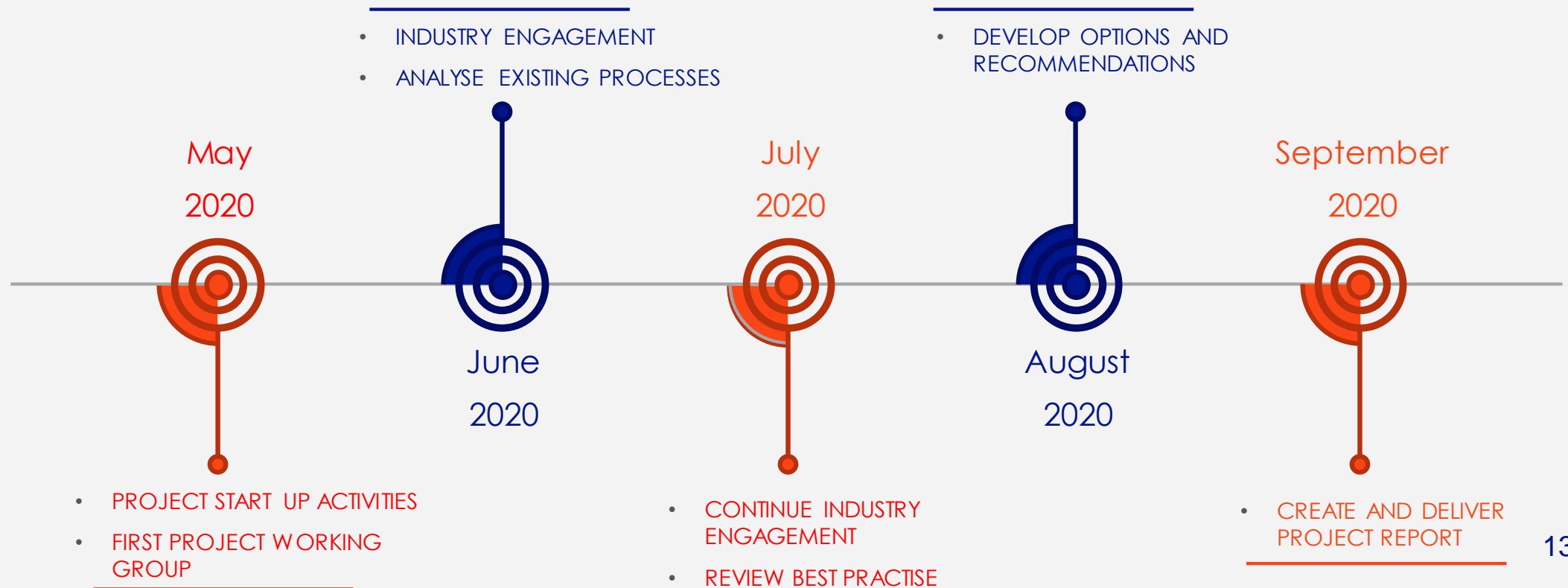
It is proposed that a project working group (to meet monthly) is set-up, to discuss progress and review findings along with providing insight, guidance and support to help move the project forward. It is anticipated that the working group will be a small group (4-5 people), to allow the project to be as agile as possible to meet the proposed timescales. The project will utilise the Future of Gas website, and box e-mail account to allow all industry parties to provide their input.

Resource and Timeline

The project commenced on 1st May 2020 and it is expected to complete within 4 to 5 months.

An indicative delivery timeline is shown below:

The National Grid Gas Market Development team will provide the primary resource for the project, with support from SMEs in the National Grid Gas Market Change Delivery team and the external working group.



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Conclusions

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Conclusions

National Grid has engaged stakeholders through a variety of methods to help derive this project scope.

This project should provide value to the gas industry. It aims to deliver a recommended approach on how changes to gas quality ranges should be implemented, taking into consideration impacts on market participants.

To meet the objective of delivering low carbon gases to UK consumers, GS(M)R will need to change and evolve. This project supports that ambition. However, it is vital for industry to have clarity on how changes to gas quality ranges will be implemented, taking into consideration operational, commercial and end user impacts. This project hopes to support that aim, helping to ensure a fair and just transition.

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