



Enabling Biomethane Connections to the NTS

Transmission Workgroup
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Overview

- Biomethane is a fuel which can improve the sustainability of the natural gas network and reduce GB's dependency on natural gas imports
- At present, the maximum level of oxygen content that such sites may deliver into the NTS is limited by GS(M)R to 0.2mol%. The oxygen limits for most NTS entry points are more stringent, allowing up to 0.001mol%
- We have several biomethane connection applications and have received requests for a higher oxygen limit of 1.0mol%
 - The process to ensure biomethane is acceptable on to the NTS includes the additional of oxygen in order for chemical reactions to take place
 - Removal of oxygen is costly; can become a deciding factor in project viability
 - Relatively low volumes of gas delivery
- As GB Transmission System Operator, we want to support and enable the transition to Net Zero

Current Situation

- The GS(M)R review formalised the Gas Distribution Networks' 'class exemption' granted by the HSE which allows for projects to connect with an oxygen limit of up to 1 mol% on networks where the pressure is up to 38 barg
- The Irish TSO, GNI, commissioned a study¹ in 2018 which concluded that increasing the oxygen level to 1 mol% would be acceptable provided that a dry network is maintained
 - **The key to maintaining acceptable corrosion rates within the pipeline systems is to control the water content rather than the corrosive species**
- We are in the process of commissioning our own study which has specific questions relating to the NTS

¹ <https://www.gasnetworks.ie/docs/corporate/gas-regulation/Oxygen-concentration-report-17985-AI-RPT-001-Rev-5-Biomethane-review-Penspen.pdf>

What's next

- We are in the initial stages of preparing an evidence case to submit to HSE to permit us to offer up to 1 mol% oxygen limit on the NTS
- This will be a two phased approach;
 - A site specific GS(M)R exemption
 - NTS-wide GS(M)R exemption
- **If these exemptions are granted, we envisage that the 1 mol% oxygen would be applied on a case by case basis, for which the entry connection would have to request**
 - Given the relatively low expected volumes delivered by biomethane sites, it is expected that the elevated oxygen content would readily blend away
 - However, we envisage undertaking a risk assessment and network analysis to determine whether elevated oxygen content could reach an offtake that is sensitive to oxygen
 - Our current understanding is that this includes storage sites and potentially offtakes that use gas as a chemical feedstock

UNC Modification

- Under UNC, TPD, Section I, there is a requirement for NGT to consult with industry if operators wish to make a change to Network Entry Provisions (which contain the gas quality limits)
- No such transparency exists if NGT wishes to agree ‘non-standard’ gas quality limits with new entry connections
- This was recognised as a ‘gap’ in the GMaP² project that reviewed the UNC change processes in relation to gas quality
- We believe that our planned approach to the oxygen limit creates a greater need to address this and therefore propose to progress a UNC Modification in parallel

2. <https://www.nationalgas.com/future-of-gas/gas-quality>