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| Network Innovation Competition 2020 Supplementary Answer form | | |

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| Project Name | H100 Fife | | |
| Question number | #24 | Pro forma section | 7 |
| Question date | 10/09/20 | Answer date | 14/09/20 |
| Question summary | SGN has proposed a letter of comfort from Ofgem to exclude hydrogen from the LDZ calculation as gas that cannot be billed. Can you set out specifically what such a letter would have to stipulate for the project to go ahead and further information on how the conclusion has been reached that a derogation is not required (with specific references to legislation and/or licence conditions). In this instance we will waiver the 2 page requirement on SQs. | | |

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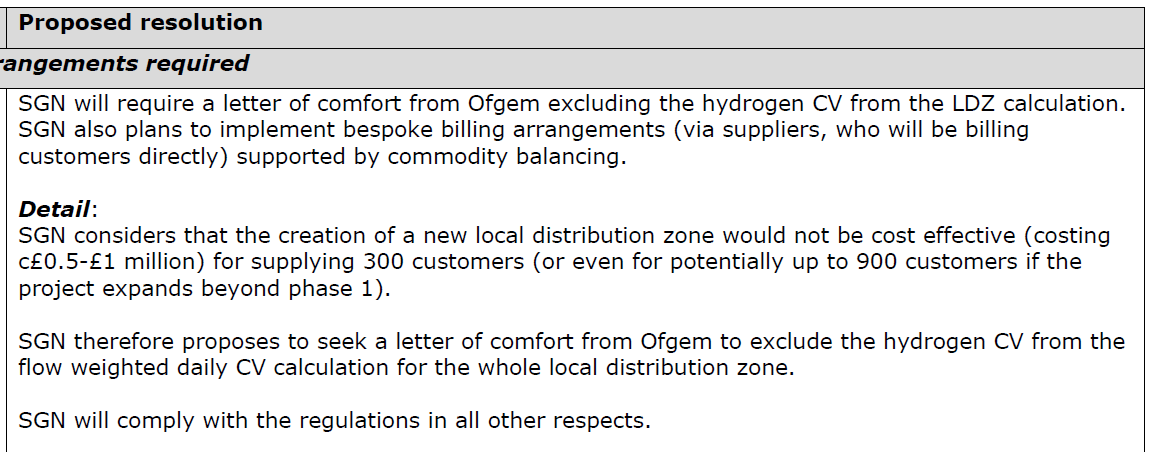
## Answer (please retain document formatting and do not exceed 2 pages unless otherwise agreed with Ofgem)

**The Gas (Calculation of Thermal Energy) Regulations (G(COTE)R)**

The requirement for a letter of comfort from Ofgem around The Gas (Calculation of Thermal Energy) Regulations is described in Section 7 of the submission, stating that this is the solution for implementing H100 Fife without any need for derogation, licence consent, licence exemption or changes to regulatory arrangements beyond the letter of comfort. Section 7.3.1 sets out the existing issue that the calorific value (CV) of hydrogen gas is significantly lower than that for methane (circa 11MJ/m3 versus 39MJ/m3). This will impact the flow weighted daily CV calculation for the Scotland local distribution zone, as the CV will effectively be capped at 1 MJ/m3 above the lowest CV value for that area. This will result in gas which cannot be billed being dealt with under the National Grid shrinkage scheme. As a result, we have identified a solution where Ofgem provide a letter of comfort that agrees to exclude the hydrogen CV relating to H100 Fife from the LDZ calculation. An example draft letter of comfort can be provided by SGN to Ofgem for review and discussion if this would be helpful.

The Gas (Calculation of Thermal Energy) Regulations stipulate when and where the CV of gas is measured, with the Director General of Gas Supply being able to direct the places, premises and times at which (and the manner in which) determinations of calorific values are to be made (Regulation 6).

We have sought specialist legal support from Addleshaw Goddard LLP to analyse the regulatory arrangements for the project. The detail on regulatory analysis for G(COTE)R is shown below, taken from Appendix O of the submission.



**Customer Billing Arrangements**

Regarding bespoke billing arrangements, and in reference to The Gas Calculations of Thermal Energy Regulations 1996 and 1997 as amended, the definition of ‘charging area’ includes a carve out for take off points (Supply Points) included within the application of Para 4 (b) of Part 1. Para 4 (b) of Part 1 is applicable where  “where an agreement between a public gas transporter and a relevant licence holder or the owner or occupier of particular premises provides for the number of therms or kilowatt hours conveyed through a pipe to those premises to be calculated on the basis of calorific values determined by means of apparatus provided and maintained only for purposes connected with the conveyance of gas through that pipe to those premises” – This would require SGN to agree with the relevant shipper/suppliers (which could be met by a flag in Xoserve’s systems) or the owner occupier of the premises for the energy conveyed to their premises to be calculated on the basis of CVs determined by specific apparatus maintained only for gas conveyed to that premise. This aligns to the distinct & separate network configuration of the H100 Fife Network. In effect what we are proposing aligns to the G(COTE)R as we will be “calculating” the energy based on a specific CV. The “calculation” part is straight forward and would align to the G(COTE)R, i.e. volume (m3) x CV / 3.6 = energy(Kwh). The process for agreeing how the correct energy value is worked out and communicated to the supplier is still being mapped, however we have already begun engagement with Xoserve on this matter as the gas industry’s Central Data Service Provider (CDSP). This could be highlighted to the shipper/supplier through a proposed indicator flag in Xoserve’s systems. The objective here is to ensure customers are protected from the upstream system cost of hydrogen production associated with a ‘first of a kind’ demonstrator, and instead pay the energy unit cost of natural gas in their bills.

Xoserve are engaging with us on H100 Fife as well as the other gas distribution networks to understand how they can support the movement to decarbonisation and horizon planning. The key point of discussion with Xoserve on this project is the use of 100% hydrogen and potentially the ability to record a different meter correction factor against the mprn to correct the volume readings for increased hydrogen flows. We are aware that a similar flag system is being deployed in relation to NGN/Cadent’s HyDeploy Project.

**Licencing and Legislation Analysis**

The headlines of the key licencing conclusions and legislation standpoints are summarised below, with a full analysis provided in Appendix O of the submission.

**Gas Act:** Under 'Option 1' of our proposal, no activity of SGN Futures should require a licence, norshould ScGN need to obtain any additional licence or a derogation from its transporter

licence.

**Gas Act – Storage Facility:** The hydrogen storage will not comprise a storage facility under the Gas Act and so SGNdoes not need to further consider the unbundling, third party access and provision ofinformation provisions.

**Gas Act (implementing the provisions of the Gas Directive 2009/73/EC):** The unbundling regime does not apply given that ScGN does not carry out the

transmission of gas.

**Electricity Act and the Electricity (Class Exemption from the Requirement for a**

**Licence) Order 2001:** Neither ScGN nor SGN Futures will require a licence or exemption in relation to theElectricity Act. ORE Catapult will be generating, distributing and supplying electricity toSGN. However, it should be able to rely on an exemption in each case.

**Licence requirements:** SGN is satisfied that it would be able to comply with its licence conditions under Option1.

**Gas Safety (Management) Regulations 1996 (GS(M)R):** Our intention is that the existing gas network will remain in place without modifications

and that a new hydrogen network will be established. The networks are intended to

operate in parallel, to offer flexibility to customers to 'opt in' and switch back if desired.

This enables us to test a new hydrogen network without putting customers at any

disadvantage. We will continue to operate in the spirit of GS(M)R and to comply in full

with its licence conditions in relation to dealing with emergencies and gas escapes.

**Uniform Network Code:** We recognise that amendments to the UNC (e.g. the gas composition requirements) arelikely to be required, but that the nature of the required amendments will becomeclearer as the project progresses. SGN will effect such amendments using themodification procedure in the usual way.

**Funding:** As the funding position matures, the documentation will reflect that. Any NIC funding willbe ring fenced and it will be made clear that the pass down of funds will be subject tothe requirements of the NIC.

**Planning:** Our plan for the project contains sufficient time to obtain the necessary planning

permissions and consents.

**Treating customers fairly – supplier licence conditions:** It is our intention to obtain customer consent to the switch and this will also be requiredunder the licence conditions of the various licensed suppliers. SGN is also conscious ofthe need to ensure that the arrangements do not breach ScGN's obligations under itstransporter licence to avoid it, any affiliate or any supplier obtaining any unfaircommercial advantage.

**References to 'gas':** SGN shall ensure that, where it has the same obligations in respect of hydrogen as itdoes for natural gas, then it will comply with these obligations in full.

**Next Steps**  
Since the submission, we have set up a series of internal Workings Groups as sub-groups from the internal Advisory Group that are focused on specific areas of the project and draw on expertise from across the business. One of these is the Regulation Working Group, set up with the intention of continuing the engagement with Ofgem on the regulatory approach of the project, ensuring compliance and mapping a solution to delivering the project with a regulatory approach that mirrors the existing arrangements where possible and endeavours to provide simplicity, no disadvantage and minimal disruption to customers. This includes maintaining customer choice and flexibility around supplier selection.