

Modification proposal:	Uniform Network Code (UNC) 799: UNC arrangements for the H100 Fife project (100% Hydrogen)		
Decision:	The Authority ¹ directs this modification be made ²		
Target audience:	UNC Panel, Parties to the UNC and other interested parties		
Date of publication:	18 November 2022	Implementation date:	To be confirmed by the relevant parties ³

Background

H100 Fife (the 'project') is a SGN Network Innovation Competition project which plans to convert at least 270 existing natural gas consumers in Fife from a methane-based energy source to a 100% hydrogen energy source. The project aims to provide evidence to inform the wider roll out of 100% hydrogen use for heat on the GB gas network. The Proposer said that the evidence derived from the project will include safe operation of the network, security of supply as well as the ability to utilise commercial arrangements laid out in the UNC for a hydrogen-based energy source.

The modification proposal

Modification proposal UNC799: UNC arrangements for the H100 Fife project (100% hydrogen) was raised by SGN (the 'Proposer') in January 2022. The purpose of the modification is to introduce amended arrangements into the UNC to facilitate the use of 100% hydrogen gas specifically required for the industry H100 Fife project.

¹ References to the "Authority", "Ofgem", "we" and "our" are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day to day work. This decision is made by or on behalf of GEMA.

² This document is notice of the reasons for this decision as required by section 38A of the Gas Act 1986.

³ The Final Modification Report (FMR) dated 21 July 2022 states that "Implementation Date should be triggered as soon as possible after the following points are confirmed: - 1. The relevant Ofgem H100Fife specific conditions are satisfied. 2. The H100Fife regulatory model is agreed with Ofgem. 3. The HSE provide a letter of assistance to the H100 project in relation to the H100FIFE Project Case for Safety. 4. The relevant Xoserve system requirements detailed in XRN5298 are implemented."

The proposal outlines that the project aims to utilise the existing natural gas industry commercial framework laid out in the UNC to facilitate 100% hydrogen gas supply to consumers.

Some minor changes will be made to the current UNC arrangements where necessary to ensure that the project runs as intended. Some of the key changes that are proposed include:

- widening the definition⁴ of 'gas' to include hydrogen within UNC arrangements associated with the H100 Fife project; and
- changing the definition of Metered Volume⁵ to include a further adjustment to reflect the conversion of the hydrogen recorded volume to that of an equivalent natural gas volume by means of a Multiplication Factor applied to the calculated Metered Volume.

The proposed changes to the UNC will be included as transitional text covering the period the project will operate. The changes will also be restricted to the relevant Supply Meter Points associated with the project. As noted in the Final Modification Report (FMR) dated 21 July 2022, implementation, and the timing of implementation, of the proposed UNC changes depends upon confirmation of H100 Fife project specific regulatory and legal requirements being satisfied.

UNC Panel⁶ recommendation

At the UNC Panel meeting on 21 July 2022, **the UNC Panel unanimously considered that UNC799 would better facilitate the UNC objectives and recommended its approval.**

Among the Panel members representing consumers, both the domestic consumer voting member and the non-domestic consumer voting member recommended implementation.⁷

The UNC Panel considered that UNC799 would better facilitate UNC Relevant Objectives (a), (c) and (d).

⁴ UNC General Terms Section C – Interpretation 3.1.1 – definition of gas.

⁵ Metered Volume is defined under UNC TPD M 1.5.3 (d)

⁶ The UNC Panel is established and constituted from time to time pursuant to and in accordance with the UNC Modification Rules.

⁷ [Determinations Record 21 July 2022.pdf \(gasgovernance.co.uk\)](#)

Our decision

We have considered the issues raised by the modification proposal and the FMR. We have considered and taken into account the responses to the industry consultation on the modification proposal which are attached to the FMR.⁸ We have concluded that:

- implementation of the modification proposal will better facilitate the achievement of the relevant objectives of the UNC;⁹ and
- directing that the modification be made is consistent with our principal objective and statutory duties.¹⁰

The Authority's principal objective is to protect the interests of existing and future consumers in relation to gas conveyed through pipes and electricity conveyed by distribution or transmission systems. Those interests of existing and future consumers are their interests taken as a whole including their interests in the reduction of gas-supply emissions of targeted greenhouse gases.

UNC799 sets out the changes required in the UNC to allow the H100 Fife project to proceed as planned. The project aims to gather evidence to help inform decisions on heat decarbonisation. The decarbonisation of heat is an integral part of meeting the UK's greenhouse gas emission reduction targets.

After requesting information from suppliers on the costs of implementing the changes outlined in the modification, we have come to the following conclusion. We do not expect these changes to require suppliers to implement costly system upgrades. Given the small number of customers participating in the trial, we expect that any changes to normal business processes that are required by suppliers could be done as manual workarounds for the duration of the trial to avoid any unnecessary costs to consumers.

⁸ UNC modification proposals, modification reports and representations can be viewed on the Joint Office of Gas Transporters website at www.gasgovernance.co.uk

⁹ As set out in Standard Special Condition A11(1) of the Gas Transporters Licence, available at: <https://epr.ofgem.gov.uk/Content/Documents/Standard%20Special%20Condition%20-%20PART%20A%20Consolidated%20-%20Current%20Version.pdf>

¹⁰ The Authority's statutory duties are wider than matters which the Panel must take into consideration and are detailed mainly in the Gas Act 1986 as amended.

We consider that implementation of UNC799 is in the interest of existing and future consumers and is consistent with our principal objective and statutory duties.

Reasons for our decision

(a) the efficient and economic operation of the pipe-line system to which this licence relates

The Proposer considers that the modification's impact on UNC Relevant Objective (a) would be positive.

Having reviewed Ofgem's "Guidance on the treatment of carbon costs under the current industry code objectives"¹¹ the Proposer considered that the reduction in greenhouse gas emissions resulting from the H100 Fife project will be positive in terms of the efficient and economic operation of the pipe-line system. A Panel Member agreed that the project will enable reductions in carbon for the future.

Some Workgroup Participants stated that the Modification will enable parties to test the ability to transition to hydrogen. This will enable re-use of some of the infrastructure and allow for planning towards a future transition. Some Workgroup participants also considered that the use of the Multiplication factor model, proposed in the modification, is better for the consumer than other billing methods, for example, using the Guaranteed Standards of Service payments used in the HyDeploy blended hydrogen trial.

Panel members considered the modification would have a positive impact on UNC Relevant Objective (a) because it facilitates the use of 100% hydrogen gas required for the H100 Fife project. Almost all panel members also considered that it puts in place measures to enable the

¹¹ Guidance on the treatment of carbon costs under the current industry code objectives:
https://www.ofgem.gov.uk/sites/default/files/docs/2010/07/ghg_guidance_july2010update_final_080710_0.pdf

Greenhouse gas emissions values ("carbon values" or "carbon costs") are used across government for valuing impacts on GHG emissions resulting from policy interventions. They represent a monetary value that society places on one tonne of carbon dioxide equivalent (£/tCO₂e). They differ from carbon prices, which represent the observed price of carbon in a relevant market (such as the UK Emissions Trading Scheme).

The government uses these values to estimate a monetary value of the greenhouse gas impact of policy proposals during policy design, and also after delivery.

licensee's pipeline system to operate efficiently when the system transports both natural gas and hydrogen.

A Panel Member argued that the establishment of a parallel hydrogen pipeline is not de facto evidence of efficient and economic operation. This viewpoint was shared by a respondent to the consultation. They argued that it is unclear how the Proposer can claim that the modification will facilitate the more efficient and economic operation of the pipe-line system when it requires the installation of a completely separate parallel network, with customers' services being moved back and forth between networks as they join/leave the project. They stated that the modification would negatively impact (a).

We agree that the modification will facilitate the use of 100% hydrogen gas required for the SGN H100 Fife Network Innovation Competition project. We consider that the trial is a key step to inform decisions on the decarbonisation of heat and how to meet the government's Net Zero target. The trial will allow industry parties to test their ability to transition to hydrogen, which is an efficient and economic way of testing future technologies for the pipe-line system. The modification puts in place measures to enable to pipe-line system to operate efficiently during the trial, when the system is transporting both natural gas and hydrogen. Furthermore, the modification will allow for a reduction in greenhouse gas emissions which is positive in terms of the efficient and economic operation of the pipe-line system. It is for these reasons that we consider that the modification's impact on Relevant Objective (a) would be positive.

(c) so far as is consistent with sub-paragraphs (a) and (b), the efficient discharge of the licensee's obligations under this licence

The Proposer states that the modification's impact on UNC Relevant Objective (c) would be positive.

The Proposer considers that UNC799 will support the delivery of the H100 Fife project which is funded under their licence conditions. The Proposer said that these licence conditions were Special Condition 3.9 (Net Zero Pre-construction Work and Small Net Zero Projects Re-opener) of the Gas Transporter Licence & Special Condition 5.2 (RIIO-2 network innovation allowance) of the Gas Transporter Licence. Workgroup participants agreed with this view.

Panel members considered that UNC799 will further Relevant Objective (c) as it will put in place arrangements that allow the licensee to discharge its obligations when transporting hydrogen.

One respondent to the consultation argued that the modification would have a negative impact on Relevant Objective (c), stating that despite the modification facilitating the Proposer's recovery of the costs of the H100 Fife project under Special Condition 3.9, they were not persuaded that the project itself can be described as an obligation.

The H100 Fife project is funded by the Network Innovation Competition licence condition from RIIO-1.¹² We note it is therefore not funded under Special Condition 3.9 Net Zero Pre-Construction Work and Small Net Zero Projects Re-opener and Special Condition 5.2 RIIO-2 network innovation allowance of SGN's Gas Transporter licence. Innovation projects relate to working towards Net Zero. Gas Transporters have specific licence conditions¹³ under RIIO-2 to deliver innovation projects, including the H100 Fife project so we consider that this modification will allow the effective discharge of the licensee's obligations more efficiently. For this reason, we consider that UNC799 will have a positive impact on Relevant Objective (c).

(d) so far as is consistent with sub-paragraphs (a) to (c) the securing of effective competition:

(i) between relevant shippers;

(ii) between relevant suppliers; and/or

(iii) between DN operators (who have entered into transportation arrangements with other relevant gas transporters) and relevant shippers

The Proposer states that the modification's impact on UNC Relevant Objective (d) would be positive.

¹² Special Condition 1I The Network Innovation Competition of the Gas Transporter licence as in force on 31 March 2021: <https://epr.ofgem.gov.uk/Content/Documents/Southern%20Gas%20Networks%20Plc%20-%20Special%20conditions%20consolidated%20-%202013-02-2020%20-%20Previous%20Version.pdf>

¹³ See Special Condition 7.7 (RIIO-GD1 network innovation competition) Scotland Gas Networks Limited - Special conditions consolidated: <https://epr.ofgem.gov.uk/Content/Documents/Scotland%20Gas%20Networks%20Limited%20-%20Special%20conditions%20consolidated%20-%20Current%20Version.pdf>

The Proposer states that the implementation of the modification proposal would ensure the continuation of consumers' ability to switch gas supplier (and shipper) for hydrogen consumption. Whilst Workgroup Participants agreed that the modification will allow the continuation of existing arrangements, they considered this will have a neutral impact on Relevant Objective (d).

Three out of six consultation responses agreed that the modifications would have a positive impact on Relevant Objective (d).

One other respondent to the consultation provided "no response" for Relevant Objective (d), while another assessed the impact on Relevant Objective (d) as "none". However, we note that the latter respondent then detailed in the reasons for support / opposition section of its submission that the changes put "in place arrangements that secures that competition will continue when hydrogen is transported".

The remaining respondent to the consultation gave a negative response. That respondent argued that the continuation of supplier switching for consumers on the trial cannot be said to better facilitate switching than the status quo. They said that the Proposer seems to be attempting to suggest that competition will not be undermined, which does not meet the objective. They also argued that given the costs to implement the system and process changes that would be demanded by these proposals, they think that shipper and supplier competition for the trial customers included in the project is likely to be severely dampened, especially in the current climate.

All Panel Members concluded UNC799 would have a positive impact on Relevant Objective (d) because the trial is continuing to facilitate customer switching as is currently available.

Given that consumers will be able to switch between suppliers, and shipping arrangements will be the same as the current gas market, we are satisfied that competition will be maintained. We do not expect suppliers to make costly system upgrades to implement these proposals as given the small size of the trial we understand manual workarounds may be cost-effective. We therefore don't expect any supplier administrative costs to be significant, and these costs will be borne by all shippers and suppliers, so competition for these consumers should not be

dampened. As such, we consider that the impact of the modification on Relevant Objective (d) will be neutral.

(f) so far as is consistent with sub-paragraphs (a) to (e), the promotion of efficiency in the implementation and administration of the network code and/or the uniform network code

The Proposer stated that the impact of the modification on Relevant Objective (f) would be neutral. However, one respondent to the consultation considered that the modification would have a positive impact on Relevant Objective (f), as it makes clear the arrangements that apply in the case where a network chooses to transport hydrogen in accordance with the Gas Act and its licence.

The modification is transitional and all of the amendments are specific to the H100Fife Network and offtake of gas at H100 Fife Supply Meter Points. Therefore, we consider that the modification would have a neutral impact on Relevant Objective (f).

(g) compliance with the Regulation and any relevant legally binding decisions of the European Commission and/or the Agency for the Co-operation of Energy Regulator

The Proposer initially stated that the modification would have no impact on Relevant Objective (g).

However, some Workgroup Participants noted that there “may” be a case for the modification having a positive impact Relevant Objective (g) because it allows a path to be forged towards Net Zero targets, which are in legislation quoting the Climate Change Act 2008 (2050 target amendment)¹⁴ and the equivalent Scottish legislation.¹⁵ During the workgroup the Proposer agreed with this view.

¹⁴ <https://www.legislation.gov.uk/uksi/2019/1056/made>

¹⁵ <https://www.legislation.gov.uk/asp/2019/15/contents>

The legal link between (i) Relevant Objective (g), which references, for example, the “Regulation”¹⁶; and (ii) the Climate Change Act 2008 and the referenced Scottish legislation is not clear. We also note the initial view of the Proposer that the modification would have no impact on Relevant Objective (g). As noted at the outset of this decision, Ofgem is required to consider whether the proposed modification is consistent with our principal objective and statutory duties, which (for example) does involve consideration of the interests of existing and future consumers including their interests in the reduction of gas-supply emissions of targeted greenhouse gases. Please see above (under the heading “**Our decision**”) where we cover this point, which is the appropriate section for its consideration.

Therefore overall, we consider that the Modification would have a neutral impact on Relevant Objective (g).

Decision not to undertake an impact assessment

At the last workgroup it was suggested that Ofgem consider a financial impact assessment as this would not be achievable at workgroup and was seen as out of its scope. We considered this approach when gathering information from which to make our decision. However, for the reasons below we did not perform an impact assessment.

Section 5A of the Utilities Act 2000 (“UA00”) imposes a duty on the Authority (its “Section 5A duty”) to undertake an impact assessment in certain circumstances. In particular, the duty applies where it appears to the Authority that a proposal is important. A proposal is important for these purposes if its implementation would be likely to, among other things, “have a significant impact on persons engaged in the shipping, transportation or supply of gas conveyed through pipes.” Where this applies, the Authority is obliged to carry out an impact assessment.

The Authority does not consider it necessary to do an impact assessment in order to reach a decision and does not consider it is required to do so by Section 5A of UA00. Given the trial

¹⁶ “Regulation” is defined as “Regulation 2009/715/EC of the European Parliament and of the Council of 13 July 2009 on conditions for access to the national gas transmission networks and repealing Regulation 2005/1775/EC, as amended by Commission Decision 2010/685/EU of 10 November 2010” in the Gas Transporters Licence, available at: <https://epr.ofgem.gov.uk//Content/Documents/Standard%20Special%20Condition%20-%20PART%20A%20Consolidated%20-%20Current%20Version.pdf>.

area is small, impacting approximately 300 consumers, we have determined that the overall impact on the gas market and its participants would not be significant. For example, previous impact assessments carried out by Ofgem involved extensive socialised costs.¹⁷ It is for this reason we determined that it would not be proportionate to do an impact assessment for UNC799.

Decision notice

In accordance with Standard Special Condition A11 of the Gas Transporters licence, the Authority hereby directs that modification proposal UNC799: 'UNC arrangements for the H100 Fife project (100% Hydrogen)' be made.

Rebecca Pickett

Head of Future of Gas Policy

Signed on behalf of the Authority and authorised for that purpose

¹⁷ https://www.ofgem.gov.uk/sites/default/files/docs/2020/05/unc678_-_decision_0.pdf