

**UNC Workgroup 0799 Minutes**  
**UNC arrangements for the H100 Fife project (100% hydrogen)**  
**Friday 11 March 2022**  
**via Microsoft Teams**

**Attendees**

Eric Fowler (Chair)	(EF)	Joint Office
Mike Berrisford (Secretary)	(HB)	Joint Office
Alex Travell	(AT)	BU-UK
Andy Clasper	(AC)	Cadent
Ashley Adams	(AA)	National Grid
Cara Yates	(CY)	Ofgem
Chris Wright	(CW)	Exxon Mobil
Clare Manning	(CM)	E.ON Next Energy
Darren Dunkley	(DD)	Cadent
David Mitchell	(DM)	SGN
Fiona Cottam	(FC)	Xoserve
Graeme Cunningham	(GC)	British Gas
Harry Brazier	(HB)	Ofgem
Jaimee LeResche	(JL)	Xoserve
Joel Martin	(JM)	SGN
Lauren Jauss	(LJ)	RWE
Lorna Archer	(LA)	SGN
Martin Shannon	(MS)	Cadent
Michele Downes	(MD)	Correla on behalf of Xoserve
Michelle King	(MK)	Energy Assets
Michelle Niits	(MN)	Correla on behalf of Xoserve
Oorlagh Chapman	(OC)	Centrica
Richard Fairholme	(RF)	Uniper Energy
Richard Pomroy	(RP)	Wales & West Utilities
Sally Hardman	(SH)	SGN
Shiv Singh	(SS)	Cadent
Stephen Tomlinson	(ST)	SGN
Steve Mulinganie	(SM)	Gazprom Energy

Copies of all papers are available at: <https://www.gasgovernance.co.uk/0799/110322>

The Workgroup Report is due to be presented at the UNC Modification Panel by 21 April 2022.

**1.0 Introduction and Status Review**

Eric Fowler (EF) welcomed parties to the meeting.

**1.1. Approval of Minutes (25 February 2022)**

The minutes of the previous meeting were approved.

**1.2. Approval of Late Papers**

None.

### 1.3. Review of Outstanding Actions

**Action 0201:** *Reference background to the H100 Fife project* – Ofgem (CY) to look to provide clarification of the Governmental view on the H100 Fife project.

**Update:** In referring to the discussions undertaken at both the 20 January and 17 February 2022 Panel meetings in relation to the Modification, Cara Yates (CY) advised that she could confirm that Ofgem are the Regulator for Hydrogen projects such as H100 Fife – a view supported by Richard Pomroy (RP).

Thereafter, Workgroup participants in attendance agreed the action could now be closed. **Closed**

**Action 0202:** *Reference Condition 5 – Safety April 2022 deadline* – Ofgem (HB) to discuss the proposal around Panel making a decision on the H100 Fife project timeline and provide a view at the next Workgroup meeting.

**Update:** When Harry Brazier (HB) explained that consideration of this action remains ongoing, Workgroup participants in attendance agreed to carry forward the action. **Carried Forward**

**Action 0203:** *Reference Condition 5 – Safety Energy UK Timeline Concerns* – SGN (JM) to consider providing a clear H100 Fife project and Modification timeline and a view on any potential interaction areas.

**Update:** Please refer to the presentation provided under agenda item 4.0 below.

Thereafter, Workgroup participants in attendance agreed the action could now be closed. **Closed**

**Action 0204:** *Reference Panel Questions 1 and 2* – SGN (JM) to provide a brief presentation at the next Workgroup meeting in response to the questions posed.

**Update:** Please refer to the presentation provided under agenda item 5.0 below.

Thereafter, Workgroup participants in attendance agreed the action could now be closed. **Closed**

**Action 0205:** *Reference High-Level H100 Fife Project Costs* – Xoserve (ER) to provide copies of the projected implementation costs and associated timelines.

**Update:** Please refer to the presentation provided under agenda item 3.0 below.

Thereafter, Workgroup participants in attendance agreed the action could now be closed. **Closed**

## 2.0 Overview of Multiplication Factors

### 2.1. Mod 0799 H100 Fife – Proposed Solution

During an overview of the ‘*Mod 0799 H100 Fife Proposed Solution*’ presentation by Michelle Niits (MN) the following key items were noted (by exception), as follows:

#### Example of use of a derived Multiplication Factor for H100 trial sites – slide 3

When Alex Travell (AT) enquired as to why not simply look to change the Calorific Values, MN made reference to the discussions undertaken at the initial Workgroup meeting on 25 February 2022, explaining that it boils down to a combination of factors being taken into consideration (i.e. it is a trial only involving extremely tight timescales). Joel Martin (JM) supported this stance further by explaining that in an ideal world, SGN would have considered creating a separate LDZ, whilst at the same time perhaps adopting a different approach methodology.

CY also explained that Ofgem considers that a multi-factor approach is suitable in this instance as it is a relatively small-scale trial, involving circa 300 customers, with an approach endorsed by Energy UK, which reduces potential Supplier impacts and consumer billing related risk.

When asked, JM advised that rather than seek a Gas Act exemption, it was agreed to use the exercise in order to 'test' the Regulatory Framework, especially baring in mind forthcoming future Hydrogen projects.

EF observed that the consumers involved in this project would be embedded in an LDZ Network that just happens to be utilising hydrogen gas, rather than methane.

It was confirmed that separate hydrogen meters would be utilised and that the 0.294 estimated multiplication factor was derived to take into account the differing energy values between hydrogen and methane gas, whilst providing a stable figure. Furthermore, parties are asked to note that the multiplication factor cannot be flexed on a daily basis – more information would be provided in a later presentation.

JM noted that the '*Customer Annual Quantity (AQ)*' figure of 13,000kWh would change over time as more meter readings are provided – in essence, the 13,000kWh's value is utilised as the 1<sup>st</sup> read from the hydrogen meter.

Steve Mulinganie (SM) suggested that in keeping with standard statistical analysis, we should be using 5 not 4 decimal places for the calculations – a point acknowledged by those in attendance.

MN then advised that the next hydrogen project expected to come on stream would be the 'Hydrogen Village' project, and this would be assessed on its own merits.

#### Updating Metering Details – slide 5

Providing in response to previous discussions around the Business Rules (BRs) at the 25 February 2022 Workgroup meeting.

Updating of the Supply Point Register is in keeping with the current Uniform Network Code (UNC) rules.

#### How to identify H100 sites in Central Systems – slide 6

In noting that this had been discussed at the 25 February 2022 Workgroup meeting, JM pointed out that the information contained in the red boxed section would be provided by the Transporter (SGN).

When asked, MN confirmed that a new Meter Type definition had not yet been added to the DES / DDP systems as yet.

SM requested that Xoserve considers issuing an industry wide communication relating to the H100 Fife project in order to provide transparency, instead of simply relying on the Retail Energy Code Company (RECCo) to inform the industry – a point acknowledged by the Xoserve representatives in attendance.

EF pointed out that the Metering Expert Panel already has a role in the MDD table related aspects and could also get involved in highlighting the project within its various industry engagements. SM suggested that it would be imperative to ensure that the MDD table is updated correctly to potentially avoid serious 'knock on' impacts on the wider industry. In acknowledging the point, EF advised that he would consider how best to undertake a 'shepherding role' offline.

JM pointed out that whilst he would be focusing on ensuring that the H100 project's hydrogen meters are logged on the MDD system, he had not yet considered the wider REC industry impacts. When EF advised that he would look

to engage with JM offline in order to consider a suitable approach and engagement with the correct parties (i.e. meter manufacturers etc.), Lorna Archer (LA) advised that the MAP / MAM model is currently being considered by the project team at a meeting later in the day and she would look to provide an update at the next Workgroup meeting.

**New Action 0301:** *Reference MDD System Requirements* – Joint Office (EF), SGN (JM) to consider a suitable approach and engagement with the correct parties (i.e. meter manufacturers etc.).

## 2.2. Multiplication Factor Calculations

In providing a high-level overview only of the '*Multiplication Factor Calculations*' presentation, MN advised that she did not intend to undertake a detailed review, as the matter had already been considered in detail at the previous Workgroup meeting on 25 February 2022.

Thereafter, the following key items were noted (by exception), as follows:

### Content – slide 2

In noting that this presentation provides the supporting details behind the presentation provided under item 2.1 above, MN advised that it has also been utilised to aid discussions between Xoserve, SGN and Ofgem.

When asked, MN confirmed that the multiplication factor would be a fixed value for the duration of the H100 Fife project.

### Multiplication Factor Information – slide 4

As far as the domestic end consumer education piece is concerned, SGN would be setting up engagement and education exercises in support of the project in due course.

### Annual hydrogen consumption – slide 7

When AT enquired if anyone had considered whether the conversion factor of 1.02264 is still a viable value for use in the project, JM pointed out that this figure is enshrined in the Thermal Energy Regulations. Furthermore, discussion with Dave Lander would suggest that it remains a viable figure to utilise for both hydrogen and methane gas purposes – a summary slide will be provided at the next Workgroup meeting.

### Options for the Multiplication Factor value – slide 11

JM reminded everyone present that the overarching principle behind the H100 Fife project is that the consumer will not (must not) be overbilled as a consequence of taking part in the trial.

In considering the three (3) options outlined, JM explained that in essence, option 3 has been discounted and that the multiplication factor will not be inserted into Code, especially as the primary driver remains to protect the customer whilst utilising a realistic multiplication factor for the Scottish LDZ – in short, as long as it remains reflective, the multiplication factor should be fine to utilise for the project duration.

SM suggested that care is also needed to ensure that the consumers that are taking part in the trial are not massively under-charged which would thereby establish unrealistic expectations – in short, the more accurate the multiplication factor the better.

In acknowledging that there might be other potential options over and above the three (3) already outlined, MN advised that consideration remains ongoing.

When asked whether there could be any potential (billing) methodology related implications involved with the project and its proposed multiplication factor, JM responded by advising that this is being considered as part of the ongoing development of the supporting legal text (and business rules), which could result in the Modification being amended in due course.

In concluding discussions, MN advised that the information on the final two slides (12 and 13) is incorrect and as a consequence she would provide an updated version of the presentation after the meeting.

*Post meeting note: an updated version of the presentation was provided and published on the Joint Office meeting page on 11 March 2022.*

### **3.0 Consideration of Project Implementation Costs**

Opening consideration of the H100 Fife project implementation cost discussions, MN made reference to the '*DSC Change Proposal Document*' provided ahead of the meeting requesting that Workgroup participants review the document at their leisure after the meeting.

Moving on, MN then provided a brief overview of the '*H100 Fife Project – Hydrogen Network – High Level System Solution Impact Assessment*' presentation during which the following key items were considered (by exception), as follows:

#### Change Overview – slide 2

MN pointed out that Option 1 has now been discounted on the grounds that it involves too much complexity, and has too many Supplier impacts associated to it, therefore Option 2 is the chosen route.

#### Option 2 – High Level Impact Assessment – slide 6

It was pointed out that a single meter capable of flowing either hydrogen or methane is no longer a feasible option. When asked whether this potentially could impact the projected costings, MN responded by advising that costing figures would be recalculated as part of the delivery assessment which is due to be considered at the May 2022 DSC Change Management Committee meeting.

When EF noted that this option 'covers off' the two main project considerations of time and cost, MN advised that the current expectation is that the system solution would be delivered as part of the November 2022 Release.

Parties are asked to note that the costs associated with delivery of the project, would not come out of the 'normal' Change Funding provision. The Change Proposal includes views on all options considered.

### **4.0 Consideration of Modification v's Project Timeline Interactions**

Introducing this item JM advised that the timeline had been provided by way of a response to both a Panel question and concerns raised by J Cox of Energy UK.

Moving on, LA provided a brief overview of the '*H100 Fife Regulatory Timeline – UNC Mod 799*' chart, during which she focused attention on the various key stages including the Ofgem Condition 3 and 5 milestones.

It was noted that it is hoped that the HSE indicative view on the supporting project safety case would be available for consideration at the 21 April 2022 Panel meeting.

JM pointed out that the proposed implementation timeline aligns with that of the Modification.

Concluding discussions, EF advised that he would be covering this again later in the meeting when reviewing the Draft Workgroup Report.

## 5.0 Consideration of Panel Question Responses

JM provided a brief overview of the 'SGN Response to Actions' email summary provided in response to both the actions assigned at the previous Workgroup meeting and the question posed by Panel at the 20 January 2022 meeting.

In short, as far as the question as to whether the Modification has a potential impact upon the (Switching) SCR is concerned, SGN has provided the following statement:

*"Faster Switching change proposal is due to be implemented in July 2022 by Xoserve. There are no system solution impacts on this change proposal stemming from XRN5298. The MOD 799 system solution design has taken into account faster switching functionality."*

In respect of the Workgroup agreeing with the Proposer's view on SCR, it was noted that this would be considered in more depth during development of the Workgroup Report.

In considering the question as to whether the Modification has any potential IGT and/or other Code related impacts, SGN has again provided the following statement:

*"There are no IGT customers included in the H100 project trial area and therefore IGT supply points will not be impacted by UNC MOD 799. No changes required to the IGT UNC document. Existing REC rules/functionality associated with the MDD will facilitate the new multiplication factor linked to the H100 customer meter for hydrogen."*

When asked if it would be worth considering a 'carve out' provision with Ofgem and REC relating to tied arrangement aspects, JM agreed to consider what potential restrictions to MAM choices there might be as a consequence of the project, and what if any meter exchange concerns might arise.

**New Action 0302:** SGN (JM) to consider a 'carve out' provision with Ofgem and REC relating to tied arrangement aspects, what potential restrictions to MAM choices there might be as a consequence of the project, and what if any meter exchange concerns might arise.

When asked what would happen to the (legacy) natural gas meters when a customer switches to the hydrogen meter, JM confirmed that the MPRN number remains the same with the T&D charges remaining as per their natural gas values – LA advised that this matter is being considered in more detail by the H100 Fife project team, in order to avoid stranded asset related costs wherever possible.

When asked, JM confirmed that the standards of performance (GSOS) will remain the same as for natural gas.

When asked, LA confirmed that the odorant added to hydrogen also provides some colour to the normally translucent hydrogen gas flame, whilst EF pointed out that there has been some excellent research into such matters over recent years which is available via IGEM.

When asked, LA confirmed that the hydrogen production plant sits adjacent to the trial project customer premises. When asked whether there are any details around the hydrogen v's natural gas costs available, LA responded by explaining that this is a complex issue as the project is utilising both wind and network reinforcement aspects, although she will take an action to investigate and provide a response.

**New Action 0303:** Reference Hydrogen production costs v's Natural Gas costs - SGN (LA) to look to provide a view on the comparison of costs.

When asked whether there would be any potential difference between the boiling rates for a pint of water being heated by hydrogen or natural gas, JM responded by advising that whilst he did not have an answer to hand, he believes that this is possibly linked to the proposed appliance change aspects of the project. In short the natural gas appliances would be switched out for equivalent hydrogen appliances with the same energy output ratings.

**New Action 0304: Reference Hydrogen v's Natural Gas Appliance Performance - SGN (JM)** to look to provide a view on a potential appliance performance comparison.

When Clare Manning (CM) raised the point that her E.ON colleagues had voiced concerns around the single Shipper aspects discussed at the 25 February 2022 Workgroup meeting, JM responded by reiterating that the shipping arrangements in support of the H100 project from an exit (at a supply point) perspective would remain as per any current natural gas provisions - CM confirmed that this resolved her concern.

When CM asked a question relating to energy balancing aspects and what would happen where E.ON had sourced natural gas for its portfolio, and that includes any customers on hydrogen would balancing operate as normal for imbalance purposes. In other words if E.ON put in 100 units of normal gas, and its portfolio needed 99 units of normal gas and 1 unit of hydrogen, would they still be classed as balanced, FC responded by stating that they would still be deemed to be balanced.

Furthermore, within Gemini you would not see separate amounts of natural gas and hydrogen required on a day, because the H100 meter points will be in the same End User Category as today. It would just be a total gas requirement, that you would satisfy by supplying "normal" gas.

EF encouraged those parties who were unable to attend the 25 February 2022 Workgroup meeting to take an opportunity to review the meeting minutes and materials in order to have a broader understanding of what the project entails and hopefully allay any concerns.

When asked whether the project Safety Case covers the quality of gas and potential emergency concerns (as per Section 16 of The Gas Act), JM responded by pointing out that GSMR currently does not include a provision for hydrogen and therefore as Proposer of the Modification, SGN has ensured that the Modification includes a Business Rule which specifically points to the H100 Safety Case being an alternative to the GSMR requirement.

## 6.0 Consideration of Legal Text

### 6.1. UNC Modification 0799 – Modification Business Rules Focus

JM provided a brief overview of the presentation, as follows:

[UNC Modification 799 – Workgroup #2 – slide 2](#)

The information is provided in response to Workgroup discussions undertaken at the 25 February 2022 meeting.

JM confirmed that he would now look to also add a Multiplication Factor definition within the Business Rules going forward – further information is available on the 0799 web pages.

### 6.2. UNC Modification 0799 – Draft Legal Text

JM provided a brief high-level overview of the draft Legal Text, during which he pointed out that paragraphs 1.3.4 and 1.3.5 cover off DES aspects.

When asked, JM clarified that the Multiplication Factors are applied in order to reflect gas volume changes between natural gas and hydrogen.

In considering TPD Section I paragraph 2.5(b) provisions, Richard Pomroy (RP) questioned whether these potentially sit outside of the regulated arena to which JM replied by stating that in essence they do. In short, SGN Futures H100 Limited is a non-regulated business and defined as a delivery facility operator under Code.

## 7.0 Draft Workgroup Report Development

EF undertook an onscreen review of the (draft) Workgroup Report (v0.1, dated 07 March 2022) during which updates were made in conjunction with discussions and feedback provided by those parties in attendance.

## 8.0 Next Steps

EF confirmed that next steps as being:

- Consideration of Amended Modification
- Consideration of Amended Legal Text / Business Rules
- Development / Completion of Workgroup Report

## 9.0 Any Other Business

None.

## 10.0 Diary Planning

Further details of planned meetings are available at: [www.gasgovernance.co.uk/events-calendar/month](http://www.gasgovernance.co.uk/events-calendar/month)

Workgroup meetings will take place as follows:

Time / Date	Paper Publication Deadline	Venue	Workgroup Programme
11:00 Wednesday 30 March 2022	17:00, Monday 21 March 2022	Teams Meeting	Standard Workgroup Agenda

### Action Table (as at 11 March 2022)

Action Ref	Meeting Date	Minute Ref	Action	Owner	Status Update
0201	25/02/22	1.0	<i>Reference background to the H100 Fife project</i> – Ofgem (CY) to look to provide clarification of the Governmental view on the H100 Fife project.	Ofgem (CY)	Update provided. <b>Closed</b>
0202	25/02/22	1.0	<i>Reference Condition 5 – Safety April 2022 deadline</i> – Ofgem (HB) to discuss the proposal around Panel making a decision on the H100 Fife project timeline and provide a view at the next Workgroup meeting.	Ofgem (HB)	<b>Carried Forward</b> Update due 30/03/22
0203	25/02/22	1.0	<i>Reference Condition 5 – Safety Energy UK Timeline Concerns</i> – SGN (JM) to consider providing a clear H100 Fife project and Modification timeline and a view on any potential interaction areas.	SGN (JM)	Update provided. <b>Closed</b>
0204	25/02/22	2.1	<i>Reference Panel Questions 1 and 2</i> – SGN (JM) to provide a brief presentation at the next	SGN (JM)	Update provided. <b>Closed</b>



**Action Table (as at 11 March 2022)**

Action Ref	Meeting Date	Minute Ref	Action	Owner	Status Update
			Workgroup meeting in response to the questions posed.		
0205	25/02/22	2.1	<i>Reference High-Level H100 Fife Project Costs</i> – Xoserve (ER) to provide copies of the projected implementation costs and associated timelines.	Xoserve (ER)	Update provided. <b>Closed</b>
0301	11/03/22	2.1	<i>Reference MDD System Requirements</i> – Joint Office (EF), SGN (JM) to consider a suitable approach and engagement with the correct parties (i.e. meter manufacturers etc.).	Joint Office (EF) & SGN (JM)	<b>Pending</b> Update due 30/03/22
0302	11/03/22	5.0	SGN (JM) to consider a ‘carve out’ provision with Ofgem and REC relating to tied arrangement aspects, what potential restrictions to MAM choices there might be as a consequence of the project, and what if any meter exchange concerns might arise.	SGN (JM)	<b>Pending</b> Update due 30/03/22
0303	11/03/22	5.0	<i>Reference Hydrogen production costs v’s Natural Gas costs</i> - SGN (LA) to look to provide a view on the comparison of costs.	SGN (LA)	<b>Pending</b> Update due 30/03/22
0304	11/03/22	5.0	<i>Reference Hydrogen v’s Natural Gas Appliance Performance</i> - SGN (JM) to look to provide a view on a potential appliance performance comparison.	SGN (JM)	<b>Pending</b> Update due 30/03/22