UNC Workgroup 0849R Minutes
Commercial Framework Review to Enable Hydrogen Blending
Wednesday 02 August 2023
via Microsoft Teams

Attendees		
Rebecca Hailes (Chair)	(RHa)	Joint Office
Mike Berrisford (Secretary)	(MiB)	Joint Office
Andrew Pearce	(AP)	BP
Andy Clasper	(AC)	Cadent
Anna Shrigley	(ASh)	ENI
Anne Jackson	(AJ)	Representing REC Code Manager
Brett Ryan	(BR)	Hydrogen UK
Charlotte Gilbert	(CB)	BU-UK
Christiane Sykes	(CS)	Shell
Colin Paine	(CP)	Engie
Eric Fowler	(EF)	Association of Meter Readers
Emma Buckton	(EB)	Northern Gas Networks
Emma Robinson	(ER)	E.ON Energy
Guv Dosanjh	(GD)	Cadent
James Whitmore	(JW)	Cadent
Jeff Chandler	(JCh)	SSE
Joel Martin	(JM)	SGN
Joseph Leggett	(JL)	Interconnector
Julia Komar	(JK)	Energy Networks
Kevin Clark	(KC)	Utilita
Lauren Jauss	(LJ)	RWE
Megan Bray	(MB)	National Gas Transmission (Proposer)
Nick King	(NK)	CNG Services
Phoebe Finn	(PF)	Statera Energy
Richard Fairholme	(RF)	Uniper
Ritchard Hewitt	(RHe)	Hewitt Home and Energy Solutions
Rob Gaskell	(RG)	Kellas Midstream
Shiv Singh	(SS)	Cadent
Steve Britton	(SB)	Cornwall Insight
Steve Mulinganie	(SM)	SEFE
Sue Ellwood	(SE)	TPA for GasTerra
Tom Stuart	(TS)	Northern Gas Networks

The Workgroup Report is due to be presented at the UNC Modification Panel by 14 December 2023.

This Workgroup meeting will be considered quorate provided at least two Transporter and two Shipper User representatives are present.

Please note these minutes do not replicate/include detailed content provided within the presentation slides, therefore it is recommended that the published presentation material is reviewed in conjunction with these minutes. Copies of all papers are available at: https://www.gasgovernance.co.uk/0849/020823

1. Introduction and Status Review

Rebecca Hailes (RHa) welcomed everyone to the meeting.

1.1 Approval of Minutes (19 July 2023)

The minutes of the previous meeting were approved.

1.2 Approval of Late Papers

None.

1.3 Review of Outstanding Actions

A review of the actions took place in conjunction with the Actions list provided by National Gas Transmission. It was agreed that the actions tracking list will be maintained by National Gas Transmission going forward to avoid dual action tracking, with updates provided by the Joint Office.

Action 0701: *Action 2 – GCOTER:* Guv Dosanjh (GD) to provide link to the report that is looking at gas temperature on the HyDeploy project.

Update: G Dosanjh (GD) advised that whilst the HyDeploy Report was not ready at this time, once it is, he would provide a copy of the report or a link to access it. **Carried Forward**

Action 0702: *Action 7 - Managing a H_2 blend constraint:* National Gas Transmission (MB) to re-title the action to *Managing a H_2 blend Cap* and create a further action to track to cover when there is not enough or too much H_2 in the system.

Update: When M Bray (MB) advised that the updated information was included within the main presentation material, it was agreed to close the action. **Closed**

Action 0703: National Gas Transmission (MB) to seek a view from Ofgem and the Department of Energy (DESNZ) if Deblending and CCGT compatibility is in the scope of this Request.

Update: When MB explained that she was still awaiting a response it was agreed to carry forward the action. **Carried Forward**

Review of National Gas Transmission Action Tracker *(please refer to the Issues and Actions Tracker published here: https://www.gasgovernance.co.uk/0849/020823.*

Action 1- CCGTs

MB advised that work is progressing within National Gas Transmission in conjunction with discussions with other interested industry parties.

Action 2- GCOTER

When MB advised that she has spoken with Dave Lander who has agreed to present his report findings at the 06 September 2023 0849R Workgroup meeting, J Martin (JM) suggested that Transporters should also discuss the impact on temperature, pressure and compressibility safety regulations. He went on to note that the report that was created by

Dave Lander[1] for Ofgem focuses more on temperature and pressure aspects rather than any future billing requirements.

MB went on to thank E Fowler (EF), for providing IGEM information following their meeting being held on 19 July 2023, regarding whether a new set of standards are likely to be set for temperature and pressure or if the existing ones would be utilised.

Action 3a - Existing NExA gas specifications

MB confirmed that SGN, Cadent and National Gas Transmission have indicated that their NExAs seem to be okay and that the Safety Case may need to be looked at to check if it refers to methane as they may need changing to accommodate hydrogen blend.

When JM made reference to UNC Section J provisions (effectively GS(M)R), R Hewitt (RH) pointed out that Interconnection Exit Agreements (IEAs) are NEAs.

MB suggested that in light of the discussion, this action should now be closed and a new IEA / CSEP / NExA related one raised to consider aspects / interactions with the Offtake Arrangements Document (OAD) and Independent Gas Transporter Arrangements Document (IGTAD).

New Action 0801: *Reference IEA/CSEP/NExA to UNC Interactions* – National Gas Transmission (MB) to consider aspects / interactions with the Offtake Arrangements Document (OAD) and Independent Gas Transporter Arrangements Document (IGTAD).

Action 3b - Existing NExA (reference to GS(M)R)

MB suggested that as this action naturally flows through to GS(M)R- it should now be closed.

Action 3c – Safety case / data sheets

When MB enquired if anyone knows how she might best approach checking whether this is really a HSE Safety Case related matter, rather than a UNC one, JM responded by suggesting that it could relate to both Transporter and End User Safety Case aspects.

L Jauss (LJ) went on to note that 'warranting' within the appropriate NExAs is the key and that the HSE would need to grant approval for these H_2 sites.

R Fairholme (RF) observed that in terms of the individual Safety Cases, it is extremely difficult to assess, as we do not have visibility of the details (i.e. it is not public information) and as a consequence, it is the HSE and interested (directly involved) parties that need to discuss requirements.

Noting that Gas Transporters are obliged to have Safety Case(s), N King (NK) pointed out that some parties sometimes need to have HSE Safety Case exemptions (as per GS(M)R requirements).

S Mulinganie (SM) suggested that the Review Group would need to ensure that parties involved are allowed sufficient time to undertake any necessary changes and that communication and engagement with 'stakeholders' is of paramount importance.

When A Jackson (AJ) enquired as to how we would know the difference between methane and blended gas when a Safety Case needed to be tweaked, JM responded by explaining that in instances such as these, the HSE would need to consult on GS(M)R changes which would provide End Consumers with an opportunity to comment / feedback on the H_2 20% aspects etc.

RF went on to advise that 'variability' in blend of the gas remains a concern for larger user parties (i.e. Power Stations / Power Generation) for which ultimately he believes that the

[1] https://www.ofgem.gov.uk/sites/default/files/docs/2014/08/dlc_report_final_-_gas_energy_measurement_1.pdf

HSE would need to make a decision on how best to manage the safety risk. Although the UNC has a valuable role in educating industry parties, the earlier any issues are highlighted the better (i.e. not awaiting HSE Safety Case related decisions).

SM reiterated that he believes that stakeholder engagement is crucial in order to support the (excellent) technical solution, supported by a cohesive strategy, as previous gas data sheet related issues remain a prime example of how the process falls down.

When RF observed that anything the industry can do to assist the various governmental agencies (Ofgem, BEIS (DESNZ) or REC), the better the H_2 related process would become, MB advised that National Gas Transmission (NGT) are aware of the need for good industry wide engagement and acknowledge that communications play a key role.

Concluding, SM pointed out that parties will be reliant on the provision of accurate data sheets for blended gas going forward, and that if we wish to benefit from the strong technical solution being proposed, proactive engagement would be crucial.

Action 5a – GT License exemption for Hydrogen DFO (NTS)

MB clarified that this action is progressing with Ofgem and the Department of Energy (DESNZ) (who establish the framework) involvement.

Action 5b – GT License exemption for Hydrogen DFO (DN)

MB clarified that this action is progressing with Ofgem and DESNZ (who establish the framework) involvement.

MB explained that she will expand this action prior to consideration at the September meeting.

Action 6 – European Interconnection Document

MB advised that work is progressing in conjunction with discussions with other interested industry parties.

Action 7a - Managing the H_2 blend cap (decrease in H_2 availability)

MB explained that this blend cap issue implies that a (commercial) mechanism is required to assist increasing H_2 levels for instances where there is insufficient H_2 available for blending purposes – in short, a mitigating solution is required.

When MB suggested that this action could be removed, J Chandler (JCh) pointed out that this would/could potentially become an issue for End Users. Responding, MB explained that this subject has now been catered for under the 'de-blending' aspects.

When RF pointed out that H_2 storage across the Network could be utilised to help manage H_2 availability, MB enquired where this potential solution should be captured. RF suggested that perhaps the Networks need to consider how best to manage instances where there is too little or too much H_2 available for blending. However, having stated that, RF suggested that should the industry accept the concept of H_2 variability, the issue potentially becomes less of a problem than if we adopt a 'fixed' H_2 blend based model.

RF went on to point out that due to the fact that H_2 has no blending history to speak of, variability becomes more of an issue, so in this instance, storage helps offset any potential risk.

Noting the point, RHe suggested that the 'core' question relates to whether the industry/Government want a variable or fixed blended gas quality based approach, which in short, is more of a legislative (governmental) question than a Code related one – it is perhaps not a question that this Review Group is able to answer.

SM wondered whether we need a CPA for potential variability-based model issues, especially bearing in mind that adopting a variable approach would potentially 'drive' H_2 production and utilisation, whereas a fixed based model potentially stifles development – in short this rests on a legislative policy decision.

Mindful that Power Generation parties could always adopt a full (100%) H_2 based approach (and source their H_2 elsewhere), RF suggested that care is needed to avoid damaging the Gas Network reputational aspects going forward.

Accepting the points being raised, MB recognises that these issues need to be 'teased out' and considered in more detail in forthcoming Review Workgroup meetings.

Action 7b - Managing the H_2 blend cap (when limited NG to blend)

MB advised that work is progressing with the assistance of the National Gas Transmission Capacity Team in order to obtain more clarity around the matter.

RHe suggested that there might be benefit in NGT also looking at the previous Morecambe Bay (Lupton) blending model to help guide discussions / developments.

Action 8 - Clarification on the role of H_2 Blending into networks (reserve offtaker or maximised production)

In explaining that the H_2 Blending Consultation has yet to be published, J Komar (JK) provided a link to the Energy Networks Association library[2] of related H_2 documentation where such items as the Government response to the consultation will become available.

Acton 9 - Gas Quality changes in existing and new NTS NEA's

When MB advised that work is progressing with National Gas Transmission looking at Entry provisions, RF enquired whether this links in with NGT providing more network gas blending related information. Responding, MB suggested that the matter relates more to downstream connectivity and CV related information provision.

RF went on to explain that some of the Uniper sites have experienced inconsistent pressure in the past and when approached, NGT appeared to be 'constrained' as to what information they could provide – having information published via standard data sets would be beneficial in alleviating concerns, especially as this is clearly a UNC related matter.

Action 10 - Gas Quality changes in existing and new DN NEA's

MB advised that work is progressing.

Action 11 – De-blending

Noting that this matter had been discussed at a previous Workgroup meeting, MB pointed out that it also links into the discussions around Governmental Policy requirements undertaken earlier in the meeting.

Action 12 – Assumptions

When MB advised that she would update the action based on the discussions undertaken during the meeting, RF suggested that following today's publication of the Government response to the Transport & Storage consultation, this could also be added as a new action that might provide the answer to several of the other actions the Review Workgroup are considering.

[2] *ENA H_2 related documentation library can be found at: https://www.energynetworks.org/industry-hub/resource-library/?search=hydrogen+blending+infrastructure&id=267*

2. Review New Issues and Assumptions

MB provided an update on the Issue Tracking List *(please refer to the Issues and Actions Tracker published here: https://www.gasgovernance.co.uk/0849/020823*, as follows:

Issue 1a – Deblending

MB explained that she is hoping to be able to share the HyDeploy report and Progressive Energy project information at the October / November Review Workgroup meeting.

New Action 0802: *Reference HyDeploy Report* – National Gas Transmission (MB) to double check with the GDNs whether the report is available to publish and/or share with Review Workgroup parties.

When MB went on to explain that any new Business Rules required to support a potential new UNC Modification might not be available for November 2023, as currently, we only have some of the jigsaw pieces to hand, RF suggested that if the Review Workgroup could have some recommendations / conclusions to take forward into a subsequent UNC Modification, that would be extremely helpful.

Issue 1b – CCGT compatibility with H_2 blend

Please refer to the discussion under Issue 1a above.

Issue 1c – Blend variability

Please refer to the discussion under Issue 1a above.

Issue 3 – CCUS

Referring to the 'comment' column statement, MB explained that whilst there is no answer as yet, the Review Workgroup does need to consider the matter in due course.

Issue 4a – Interconnectors

MB explained that whilst work remains ongoing within National Gas Transmission in relation to this matter, she will 'pull' this item out for inclusion within a new action assigned to her.

New Action 0803: *Reference Interconnectors & European Interconnection Document Issues* – National Gas Transmission (MB) to consider as part of the development of the EU-UK Strategy Paper development.

Issue 4b – European Interconnector Document

Please refer to the discussion under Issue 4a above.

Issue 5 – Reverse Compression

MB explained that work remains in progress and therefore the Review Workgroup should continue to monitor the issue.

Issue 6 – Connection Agreements

MB suggested that discussions indicate that this should reside with the HSE.

Issue 7 – Control of Major Accidents Hazard (COMAH)

MB advised that this issue relates to the timeline for rollout of blending considerations.

Issue 8 – GCOTER

MB indicated that this would be 'covered off' as part of the D Lander presentation at a future Review Workgroup meeting.

Issue 9 – Limitation to blend volume percentages

In advising that this issue relates to a concern raised by J Cox at a previous meeting, MB pointed out that National Gas Transmission is not looking to introduce a lower blend limit within Code.

Issue 10 – Changes to Existing NEA's to enable blending

MB advised that this issue is being progressed.

Issue 11 – New NEA's for blending

MB advised that this issue is being progressed.

Issue 12 – Blend Cap Management

MB explained that this matter is being progressed (and reviewed) with the help of the National Gas Transmission Capacity Team.

Issue 13 – Command and Control

Referring to the *'Case Study Design'* diagram provided by J Whitmore (JW) in the *'Gas Goes Green'* slides in the main presentation, MB advised that she would double check with the DNs as to how the proposed loop injection mechanism is expected to function and whether this sits comfortably with them.

Issue 14 – Delivery Facility Operators

In noting that JW had indicated that this 'links' into who owns the blending skid equipment, MB suggested that this issue could now be removed.

Issue 15 – Buffer Service

MB advised that work remains ongoing in respect this storage and linepack related matter, RF suggested removing the reference to 'storage' as it is simply a linepack matter.

Issue 16 – NExA Safety Case / Data Sheets

MB advised that this matter would now progress via a new action assigned to her.

Concluding the consideration of the *'Issue Tracking List'* items, MB explained that she has highlighted a couple of new issues around licenses and the definition of gas within GS(M)R which would be added to the issue and action listing.

MB requested that should anyone have any additional comments / points of interest after the meeting, please contact her directly to discuss.

3. Review Assumptions

MB provided an overview of the *'Hydrogen Blending: Commercial framework review and amendments'* presentation during which the key points were captured (by exception), as follows:

Hydrogen Blending: Commercial framework review and amendments – slides 1 - 4

Assumptions and Parameters – slide 3

Referencing the 1st highlighted statement, RH suggested that whilst this is uncomfortable, it is what it is. MB advised that National Gas Transmission are continuing to progress work on the GS(M)R aspects.

RHe suggested, and MB agreed to change the current reference to *'IP'* in the 2nd highlighted

statement to read as *'EID Sections'* instead.

Assumptions and Parameters – slide 4

It was suggested that more clarity around the target CV and 20% H_2 definitions might prove beneficial, similar in context to those provided for Biomethane sites, especially when the system can be designed to complete this automatically.

It was also suggested that providing clarification around both the potential maximum (fixed) limit of 20% and the more dynamic H_2 blending limit might also be helpful (as per GS(M)R regulations etc.).

SM then proposed that the last sentence in the highlighted statement may not need rewriting (i.e. the process for CV targeting) and that it might be better if MB and JW look to consider what would work best.

When asked, MB confirmed that the changes to NEAs and Exit agreements have been highlighted previously and in her opinion a UNC enabling Modification(s) will be required in due course to facilitate requirements in this area – it was noted that the DNs will not be required to raise such an enabling Modification as this would focus on Entry Users, not Consumers per se.

When RHe suggested that there are a couple of options available under which to engage with impacted / interested parties over the NEAs requirements, the first possible option being to contact every party to the contract and/or the second being to raise a UNC Modification (which would possibly end up being the easier option in which to 'target' contracted parties). RHe also went on to observe that gas quality data provision work remains ongoing, and as a consequence, industry views on what blending information might be required, could be relatively easy to obtain.

MB agreed to consider 'tweaking' the statement in line with the points discussed.

Gas Goes Green – Functional Specification for Hydrogen Blending Infrastructure – slides 5 - 11

J Whitmore (JW) provided the overview for the Gas Goes Green selection of slides.

Project Objectives – slide 7

JW suggested that H_2 blending could follow the approach proposed by D Lander for Biomethane to Grid.

When asked, JW explained that the term *'reflective sites'* refers to three (3) types of representative sites which each have their own (unique) different infrastructure aspects with the aim being to identify what equipment might be needed to meet the various legislative and operational requirements – based on the assumption that H_2 would be available to blend.

Key Outcomes – Functional Specification – slide 8

JW explained that the diagram *(Figure 1: Asset ownership under Model 1 ("Minimum Connection")* was the most popular type of connection being considered.

When asked, JW confirmed that *'GCoTER'* refers to Gas (Calculation of Thermal Energy) Regulations whilst on the diagram *'HT'* refers to H_2 Transporter/Producer, *'GT'* refers to Gas Transporter and *'DFO'* refers to Delivery Facility Operator.

JW confirmed that the 'Comingled point' box on the upper right-hand side of the diagram represents the point for GS(M)R and CV Flow Weighted compliance. When asked, JW explained that from a Code comingling perspective, this would also be potentially used for capping (throttling back) purposes whereupon the GT would inform the DFO who would then undertake the throttling back action. Where the mixing CV is found to be of an incorrect specification it is the GT who is (legally) responsible, although they are able to 'back off' some if not all of the liability under certain circumstances. J Martin (JM) pointed out that where H_2 is utilised any UDI and CV capping is a process that falls under the Gas Calculation of Thermal Energy Regulations and not a direct legal requirement. In short, a CV target will be calculated by the DNO based on a forecast FWACV for the Gas Day and will require to be met at the natural gas/hydrogen gas

blend point. The following parameters (a), (b) and (c) will influence the prevailing rate of injection of 100% hydrogen by the hydrogen producer across the gas day. The parameters will ensure compliance with GS(M)R (20% volume parameter) and provide data to mitigate against CV Capping (natural gas CV and natural gas flow rate).

In considering the two 'Odorant injection' boxes, JW pointed out that this is an either/or situation and not necessarily undertaken at both points – it is expected that the siting of the odorant point would be undertaken as part of the gas quality and build assessment phase.

Key Outcomes – Technology Assessment – slide 9

Whilst pointing out that 4 to 5 options had been considered, in the diagram provided the hydrogen blender being utilised is a 'Green and Blue' T blender, JW also confirmed that full blending could be achieved within the confirmed of the site.

Key Outcomes – Case Study Design – slide 10

In the skid diagram provided, the following keys are used:

GQA = Gas Quality Analysis

GQI & M1 = Gas Quality Measurement & Metering

GQA#2 = Commingling Point

When asked, JW confirmed that in this example gas is flowing from North to South and that the example still constitutes direct injection.

When asked about the lack of an apparent 'odorant' step, JW advised he would ask D Lander and provide an update in due course.

JW explained that where the blended gas is out of the specification range at the comingling point, then the gas could be 'looped' back around by closing valve C and opening V2 which then forces the out of specification gas back through the blender.

When E Fowler (EF) enquired whether there is any flow / measurement design information available to support the proposed model (as the Remote Operable Valves (ROVs) would need to be very quick acting for this to work efficiently), J Komar (JK) provided the several links within the meeting chat.[3]

JW went on to explain that whilst the example provided represents a 'direct injection' based model, the Review Workgroup needs to consider the 'blending operator' (DFO) responsibilities in more detail, especially if this role is deemed not to be undertaken by the GT. This is because how gas is taken off and returned back to the Network would need clarifying in far more detail within any follow up UNC Modification – this would also require consideration of any charging related aspects.

When JM voiced concerns relating to out of specification blending cap in relation to a direct injection option, EF suggested that perhaps it might be beneficial to take a look at an historical example such as the old Transco Morecambe Bay (Lupton) blending facility model.

In referring to previous Biomethane GS(M)R aspects. JW highlighted that the definition for gas in this proposed H_2 model would need further clarification as there potential HSE related impacts (i.e. GS(M)R Schedule 3 definition for gas and comingling).

In pointing out the reference to the Gas Act 86, N King (NK) suggested that this should include 'as amended' to be more accurate before going on to advise that the Act stipulates whether a GT Licence would be required – a view from Ofgem on any potential conveyance of gas aspects

[3] *The following hyperlinks were provided: Resource library – Energy Networks Association (ENA) Resource library Search our resource library to find what you need. www.energynetworks.org*

would be beneficial.

NK went on to point out that following a GS(M)R route would require provision of a suitable Safety Case – once again a view from the HSE on whether pure H_2 is 'covered' as well as blended gas would be extremely beneficial. Responding, JW advised that work is ongoing with the HSE regarding blending points, although he does acknowledge the point being raised and agrees that more detailed engagement with both Ofgem and the HSE would be potentially very beneficial.

In referring to the example skid model and concerns being voiced around gas leaving and thereafter re-entering the total system, NK pointed out that under the UNC Modification 0363V *'Commercial Arrangements for NTS Commingling Facilities'* proposed provisions[4], this would not invoke a charge. MB pointed out that 0363V was specific to Transmission blending points and that furthermore she had spoken with P Hobbins who supports the view that some of the elements of 0363V could be considered suitable for consideration.

In suggesting that the issue hinges around who 'owns' the blending facility, JM pointed out that in respect of potential DN Charges, if we were to utilise the proposed model today there would be charges involved, so the Review Workgroup will need to consider these.

R Fairholme (RF) pointed out that in respect of Gas Act Exemption Classes (i.e. storage, power stations and pipeline length etc.) there are blurred lines between Ofgem and former BEIS roles, so perhaps it would be preferable to refer to Governmental Exemptions instead – in short, Ofgem grants the licences, but BEIS granted the exemptions.

When NK suggested that this issue boils down to how the Gas Act defines 'conveyance' and that for him, it is the 'slipstream' gas that is interesting (100% methane out and up to 80% methane / 20% H_2 blend gas back in), especially how this would be assessed in terms of 'conveyance'. RF suggested that perhaps an exemption would be required under such a circumstance.

Next Steps – slide 11

In closing discussions, JW advised that he would be leaving Cadent at the end of the day so for future development related requirements please contact MB directly.

RHa thanked JW for his support to date.

Hydrogen Blending: Commercial framework review and amendments – slides 12 - 21

Actions and Issues List – slide 12

Covered under items 1.3 and 2. above.

Trading – slides 13 - 15

Trading Review: Existing Trading Regime – slide 14

RHa suggested that in terms of the system operator aspects, this seems more like a Transmission matter rather than a DN one on the grounds that the DNs do not trade.

When it was also suggested that highlighting the H_2 energy to volume differences might be beneficial, RHe noted that in reference to locational and physical trades, whilst the trade involves energy, where we purchase H_2 at a locational point, someone is going to have to calculate the volumes involved – in essence, it is a volume and price driven process.

Responding to the points being raised, MB accepted that residual balancing aspects associated with higher H_2 volumes would need to be considered at some point in the future, especially as the H_2 market grows – it was agreed to raise a new issue to ensure that this is monitored and managed appropriately going forward.

[4] *Post meeting note: UNC Modification 0363V was implemented with effect from 01 October 2012, and documentation relating to the Modification can be viewed and/or downloaded from the Joint Office web site at: https://www.gasgovernance.co.uk/0363*

When NK outlined three possible variables (Natural Gas, Blended gas mix (variable or fixed) and Fixed H_2 and blend supported by a variable natural gas mechanism), a new action was assigned to both MB and NK to discuss the matter offline and report back in due course.

New Action 0804: *Reference Existing Trading Regime and potential gas blending variability* – National Gas Transmission (MB) and CNG Services (NK) to discuss the various gas variability options and how these would potentially impact the current trading regime.

Hydrogen Blending: Trading – slide 15

In referring to National Gas Transmissions view around flagging hydrogen facilities for OCM (physical market) requirements, RHe wondered whether the SO would want to know that they are buying H_2 (a potential Code related consideration). He also noted that care is needed to avoid potential discriminatory aspects. MB agreed to take a new action to discuss with her Control Centre colleagues and report back.

New Action 0805: *Reference Hydrogen Blending (Trading)* – National Gas Transmission (MB) to seek a view from National Gas Transmission Control Centre personnel as to whether they believe that the SO would want to know that they are buying H_2.

Charging – slides 16 – 20

Charging – slide 16

MB explained that whilst she did not propose to cover this matter in any detail at this meeting, it is focusing on blending aspects including potential 'double' charges for connection parties (i.e. entry and exit charges).

Existing NTS Charging Framework – slide 17

In reviewing the statements to the right of the diagram, MB focused attention on the definition for 'gas' and also made reference to the statements provided on slide 20 (TPD Section E1.10).

Existing LDZ Charging Framework – slide 18

When NK pointed out that distance is a factor, MB suggested that LDZ Charging could be covered in more detail at the October Review Workgroup meeting.

Hydrogen Blending: Charging – slide 19

MB provided a brief background to the information provided.

Slide 19 Statements (TPD Section E1.10 NTS Commingling Facility) – slide 20

When MB suggested that the definition of a NTS Commingling Facility could be tweaked to allow for a H_2 blend, RHe suggested that the wording as written would suffice as gas leaves the (total) system as mainly methane and returns to the (total) system as mainly methane, and what happens in between is not Code related.

NK pointed out that care is needed around which parties are involved and how the gas is taken and subsequently returned to the total system, although he acknowledges that the principle could work.

When SM wondered whether the matter relates to the definition of gas for commingling purposes, it was proposed that if we agree that the gas has not left the system then there are no charges involved.

RHe kindly provided an overview of the process involved for charging purposes explaining that it is the difference between the energy of the gas existing and then re-entering the system that forms the basis for the charges (i.e. net charges as per UNC 0363V provisions). NK observed that where a 3rd party (not NGT) owns the blending loop (as per the skid model example provided by JW earlier in the meeting) then the gas would be deemed to have exited and re-entered the total system and would therefore incur charges. When it was suggested that resolution of these

matters could result in only needing a relatively 'small' UNC Modification being required, MB agreed to double check with her NGT legal support colleagues.

When RHe suggested that we would also need to look at different commingling examples and establish what National Gas Transmission might actually want, it was also suggested that we need to make sure we do not 'limit' the options for getting H_2 into the system, and as a consequence, how we define gas becomes important, especially when using direct rather than looped blending.

New Action 0806: *Reference Hydrogen Blending / Commingling Models* – National Gas Transmission (MB) to provide examples of various commingling models and also confirm what NGT requirements might be.

4. Trading Review

Please refer to the discussions under item 3. above for more details.

5. Charging Review

Please refer to the discussions under item 3. above for more details.

6. Next Steps

RHa clarified what will be on the agenda for the 06 September 2023 meeting as follows:

- DN Charging Review
- Gas Pressure / Temperature Data Review
- Connections and Capacity Methodology Review Part 1

It was agreed the next meeting will be held from 09:30 to 14:30 (lunch 12:30 to 13:00)

Post meeting note:

Next meeting will be Wednesday 04 October, with meetings 09 November and one in January 2024. Panel reporting date is planned to be extended if agreed by Panel on 17 August 2023.

7. Any Other Business

None

8. Diary Planning

Further details of planned meetings are available at: www.gasgovernance.co.uk/events-calendar/month

Time / Date	Paper Publication Deadline	Venue	Workgroup Programme
09:30 Wednesday 06 September 2023 CANCELLED	17:00 29 August 2023	Microsoft Teams	**Workgroup 4** • DN Charging Review • Gas Pressure / Temperature Data Review • Connections and Capacity Methodology Review Part 1 • Workgroup Report Development
09:30 Wednesday 04 October 2023	17:00 26 September 2023	Microsoft Teams	**Workgroup 5** • Capacity and Connection

			Methodology • Charging Review Part 2 • Connections and Capacity Methodology Review Part 2 • Workgroup Report Development
10:00 November 2023 (TBC)	TBC	Microsoft Teams	**Workgroup 6** • Final Considerations • Pre-Modification Review • Workgroup Report Completion

0849R Action Table (as of 02 August 2023)

Action Ref	Meeting Date	Minute Ref	Action	Reporting Month	Owner	Status Update
0701	18/07/23	1.3	*Action 2 – GCOTER:* Guv Dosanjh (GD) to provide link to the report that is looking at gas temperature on the HyDeploy project.	Sept 2023	Guv Dosanjh (GD)	**Carried Forward**
0702	18/07/23	1.3	*Action 7 - Managing a H_2 blend constraint:* National Gas Transmission (MB) to re-title the action to *Managing a H_2 blend Cap* and create a further action to track to cover when there is not enough or too much H_2 in the system.	Aug 2023	National Gas Transmission (MB)	Update provided. **Closed**
0703	18/07/23	3.0	National Gas Transmission (MB) to seek a view from Ofgem and the Department of Energy (DESNZ) if Deblending and CCGT compatibility is in the scope of this Request.	Sept 2023	National Gas Transmission (MB)	**Carried Forward**
0801	02/08/23	1.3	*Reference IEA/CSEP/NExA to UNC Interactions* – National Gas Transmission (MB) to consider aspects / interactions with the Offtake Arrangements Document (OAD) and Independent Gas Transporter Arrangements Document (IGTAD).	Sept 2023	National Gas Transmission (MB)	**Pending**
0802	02/08/23	2.	*Reference HyDeploy Report* – National Gas Transmission (MB) to double check with the GDNs whether the report is available to publish and/or share with Review Workgroup parties.	Sept 2023	National Gas Transmission (MB)	**Pending**

0803	02/08/23	2.	*Reference Interconnectors & European Interconnection Document Issues* – National Gas Transmission (MB) to consider as part of the development of the EU-UK Strategy Paper development.	Sept 2023	National Gas Transmission (MB)	**Pending**
0804	02/08/23	3.	*Reference Existing Trading Regime and potential gas blending variability* – National Gas Transmission (MB) and CNG Services (NK) to discuss the various gas variability options and how these would potentially impact the current trading regime	Sept 2023	National Gas Transmission (MB) & CNG Services (NK)	**Pending**
0805	02/08/23	3.	*Reference Hydrogen Blending (Trading)* – National Gas Transmission (MB) to seek a view from National Gas Transmission Control Centre personnel as to whether they believe that the SO would want to know that they are buying H_2.	Sept 2023	National Gas Transmission (MB)	**Pending**
0806	02/08/23	3.	*Reference Hydrogen Blending / Commingling Models* – National Gas Transmission (MB) to provide examples of various commingling models and also confirm what NGT requirements might be.	Sept 2023	National Gas Transmission (MB)	**Pending**