
















UNC Final Modification Report	At what stage is this document in the process?
<h1>UNC 0714:</h1> <h2>Amendment to Network Entry Provision at Perenco Bacton Terminal</h2>	<div>01 Modification</div> <div>02 Workgroup Report</div> <div>03 Draft Modification Report</div> <div>04 Final Modification Report</div>
<p><b>Purpose of Modification:</b></p> <p>This Modification will enable the current Wobbe Index lower limit that applies between National Grid and Perenco at Bacton to be temporarily reduced from 47.2 MJ/m<sup>3</sup> to 46.5 MJ/m<sup>3</sup>.</p>	
	<p>The Panel recommends implementation</p>
	<p>High Impact:</p>
	<p>Medium Impact:</p> <p>GB gas transporters, interconnector operators, shippers, consumers</p>
	<p>Low Impact:</p>

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Timetable		
<b>Modification timetable:</b>		Contact: <b>Joint Office of Gas Transporters</b>
Initial consideration by Workgroup	06 February 2020	 <a href="mailto:enquiries@gasgovernance.co.uk">enquiries@gasgovernance.co.uk</a>
Workgroup Report v1.0 presented to Panel	16 April 2020	 0121 288 2107
Workgroup Report v2.0 presented to Panel	21 May 2020	Proposer: <b>Riccardo Rossi</b> <b>Centrica Energy Limited</b>
Draft Modification Report issued for consultation	21 May 2020	 <a href="mailto:riccardo.rossi@centrica.com">riccardo.rossi@centrica.com</a>
Consultation Close-out for representations	12 June 2020	 07557 613603
Final Modification Report available for Panel	15 June 2020	Transporter: <b>National Grid</b>
Modification Panel decision	18 June 2020 ( <i>at short notice</i> )	 <a href="mailto:philip.hobbins@nationalgrid.com">philip.hobbins@nationalgrid.com</a>
Ofgem decision (if required)	20 August 2020	 01926 653432
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## 1 Summary

### What

This is an enabling Modification to facilitate a temporary amendment to the Wobbe Index (WI) lower limit within the Network Entry Provisions between Perenco and National Grid at Bacton. It is proposed to reduce the limit from 47.2 MJ/m<sup>3</sup> to 46.5 MJ/m<sup>3</sup>.

### Why

Gas produced from the Cygnus field has a Wobbe Index around 1% below the existing Gas Safety (Management) Regulations, (GS(M)R), lower limit, but within the emergency limit. Blending upstream of entry to the NTS is utilised to enable this new gas field to produce and deliver gas into the gas transmission network. However, since commissioning, Cygnus production loss due to insufficient blend gas availability has been significant, and this loss is projected to increase from early 2021. Alternative upstream blending and treatment solutions will not be available in the same timeframe to mitigate impacts.

The impacts include significant loss of lower cost, lower carbon UK Continental Shelf (UKCS) natural gas to UK consumers and a threat to the ability to Maximise the Economic Recovery (MER) of this largest single gas field in the UK in addition to that of other more mature gas fields in the Southern North Sea.

### How

The Proposer is seeking to amend the Network Entry Provision described above via this enabling Modification. The proposed limit of 46.5 MJ/m<sup>3</sup> is below the GS(M)R lower limit, therefore gas with a Wobbe Index within the range of 46.5 MJ/m<sup>3</sup> and 47.2 MJ/m<sup>3</sup> would only be accepted into the National Grid terminal where a compliant blend of gases can be achieved.

## 2 Governance

### Justification for Authority Direction

The Modification was previously assessed as requiring Authority Direction due to potential competition impacts as, subject to Health and Safety Executive, (HSE), approved exemption to GS(M)R being granted, gas with Wobbe Index below the existing lower limit could flow to downstream connected parties.

The effect of this amended Modification on competition is no longer deemed material due to the restricted time period it applies for and that appropriate mitigations will be put in place such that the risk of non-compliant gas reaching consumers or downstream connected parties is not increased.

No other pipeline incomers entering the NTS at Bacton have gas sources below the existing GS(M)R Wobbe Index lower limit, therefore this amendment will not unduly discriminate. The ability to flow gas outwith the Wobbe Index GS(M)R limit would not apply at any other NTS entry point as a result of this proposal being implemented, however should any other party wish to apply for such an arrangement at any other location it would be free to raise its own proposal and each case would be assessed on its own merits. Existing upstream commercial arrangements for blend gas supply will also remain unchanged.

## Requested Next Steps

This Modification should:

- be considered a non-material change and subject to self-governance
- be assessed by a Workgroup

A significant, extended upstream infrastructure outage is planned to start in May 2021, limiting blend gas availability for the Cygnus supply. The proposed timeframe recognises the significant commercial impact on Cygnus and downstream infrastructure owners and the potential benefit for consumers if an amendment can be made prior to this outage.

**Note: At the April Workgroup, the proposed conversion of the proposal to self-governance was discussed. The majority of Workgroup participants that expressed a view judged that the proposal should continue to follow an Authority Decision governance route, the rationale being set out in Section 6.**

## 3 Why Change?

### Driver for change

The Cygnus field, owned by Neptune Energy (Operator) and Spirit Energy, is located in a previously underdeveloped area of the Southern North Sea. Cygnus Alpha started production in December 2016 and Cygnus Bravo in August 2017, with gas exported through a new 50km extension to the existing 165km ETS pipeline to Perenco's gas terminal at Bacton.

The Cygnus gas exported to Bacton has a Wobbe Index in the range of 46.6 to 46.8 MJ/m<sup>3</sup>. It commingles within the ETS pipeline with gas from Trent and Tors fields and, at sales conditions, this stream will generally range from 46.5 to 46.7 MJ/m<sup>3</sup> and above. There are five gas pipelines flowing into the Perenco terminal (see Appendix I schematic), with all four others meeting NTS specification. Fortuitous blending takes place with gas from these fields within the Perenco terminal. In addition, a 'blend line' links the SEAL reception facilities in the neighbouring terminal and there is contractual access to a proportion of gas from this source for supplemental blending. No further infrastructure exists to link to any other gas sources in the Bacton area. The higher-pressure arrival of gas from the ETS pipeline results in the potential for a greater proportion of Cygnus gas to fill the common facilities during moments of pressure reduction on other incoming pipelines, including during pig receipt and offshore unplanned outage. To mitigate the risk of shut-in of all on-spec fields - due to gas below 47.2 MJ/m<sup>3</sup> in the terminal unable to be received by National Grid - an additional Wobbe Index margin above 47.2 MJ/m<sup>3</sup> is required to be met. This is managed by an automated gas quality control system, whereby on rate of change of reducing Wobbe Index on the common terminal outlet, control valves progressively close on the ETS pipeline to reduce and finally enact full shut-in of the pipeline at 47.45 MJ/m<sup>3</sup>. This system clearly also takes action in the event of reduction or loss of blend gas source.

Extended and shorter duration (planned and unplanned) offshore and onshore outages in 2017 to 2020 have resulted in frequent production curtailment and shut-in of the Cygnus field. This is of concern to the Oil and Gas Authority (OGA) as stewards of MER UK.

The situation is set to deteriorate in 2021 with planned outage of upstream infrastructure in Q2, which will significantly impact Cygnus production for up to forty (40) days. Following this extended outage, one of the two offshore SEAL producing hubs will reroute gas from Bacton to St Fergus. Combined with the declining rates and availability of more mature blend fields, the ongoing availability of blend gas for Cygnus from existing arrangements and infrastructure has the potential to reduce appreciably.

Collaboration between the Cygnus owners, the OGA and all Bacton infrastructure owners has been strong to date and continues in order to further increase contractual access to remaining SEAL volumes for blending, prior to 2021. This will limit impact when this source is available but not resolve the issue. Other solutions explored include facilities modification to tie-in to additional sources of gas at Bacton, National Grid blending service and nitrogen removal facilities; however, these options are not achievable within the coming year. Propane injection onshore has also been considered but discounted on grounds of safety and practicality.

### Potential Impact

Ongoing and increasing production loss from the Cygnus field has several effects. During the planned infrastructure outage in Q2 2021 alone, the reduction in lower cost, lower carbon gas to the UK from the Cygnus field alone could range from 94 to >350 MCM. Production loss will add to this on an ongoing basis from Q2 2021, when connected sources of blend gas at Bacton reduce. Increased UKCS gas and reduced reliance on imported sources is recognised to have the positive effect of applying downward pressure on wholesale gas price and benefit security of supply.

The limitations affecting the field has delayed further investments and will likely continue to do so if the framework does not evolve.

## 4 Code Specific Matters

### Reference Documents

Link to: [Gas Safety \(Management\) Regulations \(GS\(M\)R\) 1996](#)

### Knowledge/Skills

No additional knowledge/skills, above those available, required to assess this Modification.

## 5 Solution

This Modification seeks to amend the Network Entry Provision between Perenco and National Grid at Bacton for a specified time period of not more than 40 consecutive days starting not earlier than 1<sup>st</sup> May 2021 and not later than 30<sup>th</sup> June 2021. It is proposed to reduce the Wobbe Index lower limit from 47.2 MJ/m<sup>3</sup> to 46.5 MJ/m<sup>3</sup> for this period subject to the conditions set out below.

Gas with Wobbe Index from 46.5 to 47.2 MJ/m<sup>3</sup> from the Perenco terminal incomer at Bacton National Grid terminal will be accepted provided sufficient higher Wobbe Index gas is available to blend, such that National Grid is able to ensure that all feeders that convey gas away from its terminal and all connected parties at Bacton (Great Yarmouth power station, Interconnector UK (IUK), BBL and the Cadent DN offtake) receive gas with a WI  $\geq$  47.2 MJ/m<sup>3</sup>. Flows can be configured within the pipework arrangement at National Grid Bacton to route available on-spec gas to commingle with gas from the Perenco terminal at the earliest opportunity on entry to National Grid terminal. If insufficient gas is available to ensure the existing GS(M)R limits for all feeders and offtakes are met, the allowable Perenco terminal flow will be reduced and, if necessary, cease immediately via the Transportation Flow Advice process.

Under normal circumstances, with all fields that deliver gas into the Perenco terminal online, the WI of gas leaving the Perenco terminal is expected to be above 47.2 MJ/m<sup>3</sup> (in the range 47.17 to 47.62 MJ/m<sup>3</sup>). The range of expected WI with one of four on-spec offshore hubs completely offline is 47.03 to 47.35 MJ/m<sup>3</sup>. Less than 1 MCM/day would be required to blend from 47.0 MJ/m<sup>3</sup>, with around ten times this rate generally available. In a worst-case scenario with Cygnus only flowing from the Perenco terminal, 3.5 MCM/day would

be required to ensure the National Grid terminal remained GS(M)R compliant. It is intended that the required flow rates and Wobbe Index of on-spec gas will be continually monitored by National Grid such that any reduction below the minimum flow required will trigger immediate curtailment action of Perenco supplies before blending occurs, thereby ensuring that no gas with a Wobbe Index lower than 47.2 MJ/m<sup>3</sup> penetrates into the National Grid terminal beyond the point at which the relevant gas streams meet.

## 6 Impacts & Other Considerations

### Does this Modification impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?

No impact identified.

### Consumer Impacts

A benefit to consumers through downward pressure on gas prices could result, through increased UKCS gas flow. Security of supply would be facilitated by enabling ongoing supply from the largest single gas field in the UK, capable of providing up to 6% of UK demand, when other upstream sources are offline.

If this proposal is implemented, the calorific value of gas entering the NTS at Bacton is expected to be lower than would otherwise be the case. However, analysis carried out by National Grid, and presented to the Workgroup in March 2020, indicated a low likelihood of flow weighted average Calorific Value (CV) capping occurring as a consequence and hence a low risk that consumers would be charged materially differently to the energy received.

The presentation on CV Shrinkage due to CV capping can be found here: [Modification 0714: CV Shrinkage Analysis](#), and shows the CV Flow Weighted Average values across all LDZs for a Base Case and 3 further flow scenarios, each scenario has a high flow case and a low flow case, analysed at two points in time; Gas Years 2019/20 and 2025/26.

The principal conclusion of the analysis is that Scenarios 1 & 3 do have the potential to give rise to CV Shrinkage due to CV capping, although these scenarios represent flow configurations which are more hypothetical than likely to occur in practice. Furthermore, this analysis was completed based on a previous version of the Modification which contemplated National Grid being granted an exemption from the HSE to allow sub-GS(M)R Wobbe Index gas onto the NTS pipelines. With the proposal having been amended to blend any gas in the Wobbe range 46.5 – 47.2 MJ/m<sup>3</sup> within the National Grid terminal such that only GS(M)R compliant gas would be made available for offtake by consumers, Scenarios 1 and 3 are no longer applicable because there would be no source of blend gas for the Cygnus flows in those scenarios meaning that any such gas would not be admitted into the National Grid terminal. Scenario 2, which assumes 46.5 MJ/m<sup>3</sup> Wobbe Index for Perenco inputs and 2019 average Wobbe Indexes for all other Bacton supplies, is the most realistic flow configuration and remains relevant for the amended solution. This scenario does not give rise to CV Shrinkage due to CV capping as a result of factors pertaining to Bacton flows. (Any CV Shrinkage due to CV capping that could occur would be due to inputs from biomethane delivery facilities.)

## Consumer Impact Assessment

(Workgroup assessment of proposer initial view or subsequent information)

Criteria	Extent of Impact
Which Consumer groups are affected?	The proposed National Grid within-terminal blending solution should have no effect on consumers. While the solution proposed carries a marginal rise in inherent risk for a small sub-set of consumers whose connections are embedded within the National Grid terminal, the contractual arrangements would permit the deployment of operational flow management tools between National Grid and Perenco to mitigate this risk.
What costs or benefits will pass through to them?	No costs would pass through to consumers. Such that there are any directly attributable operational costs, these would be contained within the organisations in which they occur. <sup>1</sup>
When will these costs/benefits impact upon consumers?	N/A
Are there any other Consumer Impacts?	None identified

### General Market Assumptions as at December 2016 (to underpin the Costs analysis)

Number of Domestic consumers	21 million
Number of non-domestic consumers <73,200 kWh/annum	500,000
Number of consumers between 73,200 and 732,000 kWh/annum	250,000
Number of very large consumers >732,000 kWh/annum	26,000

## Cross Code Impacts

No impact identified.

## EU Code Impacts

No impact identified.

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<sup>1</sup> National Grid NTS has identified some implementation costs that they propose to recover from Neptune Energy. Please refer to their Representation in Section 10 page 15: “Such that there are any directly attributable ~~operational~~ costs of operating this arrangement, these would be contained within the organisations in which they occur. National Grid NTS proposes to recover its implementation costs from the party that benefits most from this Proposal.”



## Central Systems Impacts

No impact identified.

## Workgroup Impact Assessment

Discussion at the Workgroup, in the context of the “blending solution” that this Modification now proposes, is summarised below:

### Governance

The latest version of the proposal has been redrafted to advocate Self-governance, which prompted a significant debate of the merits, and counter-points of pursuing self-governance. The collective Workgroup provided two schools of thought, which are summarised below:

Of those supporting self-governance, the view was that in terms of gas exiting the National Grid terminal and terminal-embedded offtakes, they would be no more likely than now to receive sub-GS(M)R specification gas and that the inherent increased risk of this occurring could be resolved operationally, with modified and enhanced operating procedures between National Grid and Perenco. The new operating procedures would be coupled with National Grid rights to curtail flows from the Perenco terminal in the event that there was insufficient blend gas available. As such, the view was this was a low risk solution which would, in any event, be time-limited and therefore is not expected to have a material effect in respect of the self-governance criteria.

Of those not supporting the self-governance route, the point was that for this arrangement to occur, the HSE would need to be consulted, with a potential need for a temporary derogation for National Grid from its Safety Case covering the entry specification of the gas entering the National Grid terminal at the Perenco entry point. Sub-GS(M)R specification gas is not normally permitted to flow into a National Grid terminal and such a unique arrangement should be considered by Ofgem & the HSE, potentially requiring HSE approval for the arrangements prior to an Ofgem decision on the Modification.

At the May Workgroup, participants requested further clarification regarding the governance arrangements that would apply once the proposal entered the consultation phase and asked, if the proposal became self-governance, how it could be implemented if the necessary consents were not forthcoming from the HSE. The Workgroup was reminded that approval of this Modification Proposal is just one stage of governance required to enable the National Grid - Perenco lower Wobbe Index limit to be reduced, and that unless both the UNC and Safety Case aspects of governance aligned, and consented to the change, the bilateral entry agreement could not be modified.

On balance, of those expressing an opinion, the view was that the proposal should adopt a governance route that concludes with Authority Direction.

### Operational Matters

The Workgroup were very keen to understand the operational details that would permit the blending solution to be delivered.

National Grid explained that the sub-GS(M)R specification gas would only be permitted into its terminal under strict operational controls. For the gas to flow, National Grid operational staff at Bacton would have to be satisfied that there was sufficient blend gas available to ensure that the co-mingled streams of gas leaving National Grid Bacton via the NTS feeders, interconnectors and the connection to Great Yarmouth power station were within GS(M)R specification. Where there was a risk that this could not be achieved, the Perenco stream would be either restricted to ensure a compliant blend, or curtailed entirely, where flows could not be managed to provide a compliant output. The Workgroup was advised that the National Grid gas quality measurement equipment monitoring the specification of the Perenco gas entering had a reporting interval of 2.5 - 3 minutes, which should allow the gas flows entering the NTS to be managed to be within specification



with an appropriate level of control, provided the measures that are more specifically described below are implemented.

National Grid is currently working with Perenco and Neptune to establish the detailed operational solution. At the May meeting of the Workgroup, National Grid advised that it proposes to determine the required flow-rate and Wobbe Index of the relevant on-spec gas stream based on a fixed 'worst case' Perenco flow and Wobbe Index scenario (i.e. a high flow-rate and Wobbe Index assumption of 46.5 MJ/m<sup>3</sup>). Whenever Perenco are delivering gas with a Wobbe Index between 46.5 and 47.2 MJ/m<sup>3</sup>, monitoring would take place against a pre-defined assessment of whether there is sufficient flow and Wobbe Index from the on-spec stream to deliver a compliant blend. This solution would also include a suitable tolerance that accounts for flow metering and gas quality measurement uncertainty. The parties are also exploring whether a solution based on the flow ratio of off-spec to on-spec gas would be a more appropriate alternative. National Grid will need to share the eventual solution with HSE, who will need to be convinced that such arrangements would result in no increased risk of non-compliant gas leaving the National Grid Bacton terminal.

National Grid also proposes to install additional alarms onto its DCS control system on the instantaneous repeat telemetry signals that are received from the relevant on-spec gas stream in order to alert Bacton shift staff / Gas National Control Centre, (GNCC), that there is a risk of insufficient blend gas and that curtailment action may shortly be required, if Perenco are at that time flowing in the range 46.5 – 47.2 MJ/m<sup>3</sup>. This will minimise the human factor risk of non-compliant gas arriving in the National Grid terminal undetected and allow an operator more time to take action, if necessary. National Grid also proposes to install 'low Wobbe Index' alarms set just above 47.2 MJ/m<sup>3</sup> on the NTS pipelines to alert Bacton shift staff that the blend of gases may be approaching non-compliance.

Relevant National Grid procedures will be updated to document what action should be taken in the event that on-spec flows reduce below the minimum requirement, Perenco flow within the 46.5 MJ – 47.2 MJ/m<sup>3</sup> range and if low Wobbe Index within the GS(M)R range is detected on an NTS pipeline leaving the National Grid terminal. National Grid will also seek to put in place formalised and documented procedures which clearly articulate differing accountabilities, roles and responsibilities of all parties (National Grid Bacton / GNCC / Perenco).

National Grid will require the ability to suspend the arrangement and reinstate the 47.2 MJ/m<sup>3</sup> Wobbe Index requirement with Perenco in the event that its ability to meet its obligations is threatened by other factors which may include any relevant equipment malfunction, infrastructure failure or emergency situation.

There was a general view that these safeguards mitigated Participant concerns that non-GS(M)R specification would exit the National Grid terminal and would be further mitigated given the time limited arrangement proposed.

Given these proposed controls and operational safeguards, and in contrast with the prevailing arrangement where the Cygnus contribution to the Perenco gas inputs may simply not have been permitted to enter the terminal during the forthcoming upstream outage period, the National Grid view was there should be no greater risk of off-spec gas leaving the terminal than is currently the case, subject to the necessary procedures being agreed with Perenco. The operation of this temporary blending service would also provide National Grid with some valuable operational experience and could pave the way for further commercial blending services.

In conclusion, National Grid asked the Workgroup if they had any fundamental issue with what was trying to be achieved and allowing this stream of gas to flow through the terminal.

None of those who replied expressed a view that the initiative should not be proceed and most welcomed the fact that National Grid were exhibiting a degree of pragmatism and flexibility in working with the relevant parties towards the proposed solution. This was caveated by one respondent who stated that it would be acceptable, provided any costs arising from the revised work procedures did not fall on a wider customer base,

(and would be contained between the parties accruing the benefit) and by another who stated that the obligations and upon whom they fall are clear.

## 7 Relevant Objectives

Impact of the Modification on the Relevant Objectives:	
Relevant Objective	Identified impact
a) Efficient and economic operation of the pipe-line system.	Positive
b) Coordinated, efficient and economic operation of (i) the combined pipe-line system, and/ or (ii) the pipe-line system of one or more other relevant gas transporters.	None
c) Efficient discharge of the licensee's obligations.	None
d) 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.	Positive
e) Provision of reasonable economic incentives for relevant suppliers to secure that the domestic customer supply security standards... are satisfied as respects the availability of gas to their domestic customers.	None
f) Promotion of efficiency in the implementation and administration of the Code.	None
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 Regulators.	None

The implementation of this proposal would better facilitate the following Relevant Objectives:

- a) The efficient and economic operation of the pipeline system is positively impacted by this Modification because it would facilitate additional volumes of gas to be processed through the existing network infrastructure than would otherwise be the case. One Workgroup participant offered a counter-view that the proposed solution would require more National Grid resource to develop and operate which could lead to less efficient system operation.
- d) At the same time, the proposal will secure greater flexibility in the transportation of gas allowing more sources to be 'eligible' to enter the NTS; securing of effective competition between Shippers would be better facilitated by maximising available UKCS production into the NTS. Greater supply diversity would result in more shippers bringing gas to the UK and making the NBP more competitive.

## 8 Implementation

The Proposer is seeking implementation by July 2020 in order to facilitate contractual and operational activities ahead of the extended blend gas outage in Q2 2021. *(please also refer to the 21 May 2020 Panel question in Section 10 below.)*

## 9 Legal Text

As this is an enabling Modification, (in accordance with UNC Transportation Principal Document Section I paragraph 2.2.3 (a)), no UNC text changes are required; implementation would enable National Grid NTS and Perenco to temporarily amend the Wobbe Index limit, which is constituted within the Network Entry Provisions that apply between the parties.

## 10 Consultation

Panel invited representations from interested parties on 21 May 2020. The summaries in the following table are provided for reference on a reasonable endeavours' basis only. It is recommended that all representations are read in full when considering this Report. Representations are published alongside this Final Modification Report.

Implementation was unanimously supported in the 6 representations received.

Representations were received from the following parties:

Organisation	Response	Relevant Objectives	Key Points
BBLC	Support	a) None d) Positive	<ul style="list-style-type: none"> <li>• Supports the efforts to facilitate additional sources of gas being made available to the market in GB through investigating the provision of on-shore gas blending services. As the energy market transitions to greener forms of energy it will become more important for network operators to introduce innovative solutions to the issues that arise such as how new / additional supplies can be accommodated whilst retaining the integrity of the network and the safety of consumers.</li> <li>• However, BBLC expressed concern that allowing non-GS(M)R gas onto National Grid's network should only be done once the safety and commercial risks have been suitably identified and the roles, responsibilities and accountabilities for managing these risks is clearly documented and understood by all parties that are involved in, and or impacted by, the management of these risks.</li> <li>• Noted that during the Workgroup discussions, National Grid assured parties that facilitating this strictly time-limited proposal would not increase the current level of risk of non-GS(M)R compliant gas leaving its terminal at Bacton either</li> </ul>

			<p>via its feeder pipelines or via third party offtakes connected within this terminal complex. BBLC also note that assurances were given by National Grid that the provision of the blending services described in this Modification would not prevent National Grid from meeting all of its current regulatory and contractual commitments including those set out in BBLC's Interconnector Agreement.</p> <ul style="list-style-type: none"> <li>• Based on the assurances given by National Grid, and subsequently captured, BBLC offers support for implementation.</li> <li>• Based on National Grid's assurances BBLC does not envisage any additional on-going costs as a result of this time-limited Modification.</li> <li>• Noted that legal text had not been provided for the Modification as National Grid intends to set out the revised arrangements within the Perenco Network Entry Agreement (NEA). BBLC therefore considers it incumbent on National Grid to ensure that, if this Modification is implemented, the subsequent changes to the Perenco NEA accurately reflect the assurances it has given.</li> <li>• Considers that the Modification's governance should remain as Authority Direction on the basis that it is likely to require some form of HSE approval of a revision / derogation to National Grid's Safety Case.</li> </ul>
Centrica	Support	<p>a) Positive</p> <p>d) Positive</p>	<ul style="list-style-type: none"> <li>• Believes this Modification provides a pragmatic solution to an issue concerning the gas supplies entering the NTS at Bacton terminal and it would enable a more efficient operation of the pipeline system</li> <li>• Implementation will facilitate competition between different gas supplies to be made available to the GB market.</li> <li>• This low-cost, low-carbon UKCS natural gas sources would be otherwise suspended at the expense of entire system.</li> <li>• No adverse impact is envisaged to other parties flowing gas or connected to the Bacton Terminal or further downstream. The processes and controls that are recommended to be put in place by National Grid and the HSE to monitor, track and react to potential off-spec gas are sufficient to avoid concrete adverse impacts.</li> <li>• Experience can be used as to draw learning points for an extension of this service by National Grid to other entry points to further securing effective competition between shippers and different type of gas sources.</li> <li>• No specific lead-time for the implementation is necessary.</li> </ul>

			<ul style="list-style-type: none"> <li>• Believed considering that National Grid would require HSE approval before the associated Network Entry Agreement could be amended, the governance of this Modification should remain as Authority Direction.</li> <li>• Confirmed it does not expect to incur any cost as a shipper for the implementation of this Modification</li> <li>• Believes relevant objective a) is furthered as the Modification will enable the pipeline system to process additional natural gas resources through the existing terminal infrastructure with very limited additional resources needed to ensure the level of gas quality specifications for consumers is not impacted.</li> <li>• Believes relevant objective d) is furthered as the Modification Gas will enable effective competition between different shippers off-taking gas in the North Sea while alternative upstream blending and treatment solutions will not be available. This will also enable to maintain lower cost, lower carbon UKCS natural gas to GB consumers which is the ultimate rationale for competition between shippers.</li> </ul>
Interconnector UK Ltd (IUK)	Support	a) Positive d) Positive	<ul style="list-style-type: none"> <li>• Supports the Modification as it enables additional gas to enter the market thereby benefiting both competition and consumers. It is consistent with the UK objective to Maximise the Economic Recovery from the North Sea, allowing non-GS(M)R gas to enter the National Grid Bacton terminal however must not prevent National Grid from meeting all of its current regulatory and contractual commitments including those set out in the National Grid - IUK Interconnection Agreement.</li> <li>• IUK does not envisage any additional on-going costs. This is however on the assumption that the additional control measures National Grid are planning to implement for the relevant period will result in no increased risk in off specification gas entering the National Grid pipeline network or being delivered to IUK.</li> <li>• Agrees the Modification will further the relevant objectives and welcome National Grid's willingness to facilitate this provided it can be done without increasing the risk of non-specification gas entering the National Grid pipeline network or being delivered to IUK.</li> <li>• Believes relevant objective a) is furthered because the proposal facilitates more gas being processed through the existing infrastructure.</li> <li>• Believes relevant objective d) is furthered as the proposal facilitates more sources of gas thereby promoting</li> </ul>

			<p>competition in the supply of gas.</p> <ul style="list-style-type: none"> <li>• Does not comment of whether the governance of this Modification should remain as Authority Direction.</li> </ul>
National Grid NTS	Support	<p>a) Positive</p> <p>d) Positive</p>	<ul style="list-style-type: none"> <li>• Supports implementation of this Modification because it represents a pragmatic solution to a particular gas production challenge at Bacton. It believes that it facilitates gas supplies to be made available to the GB market at a future time that would otherwise be locked out without adverse impact to other parties connected at Bacton or further downstream.</li> <li>• Recognises that permitting the entry of non-GS(M)R compliant gas at the Perenco NTS entry point inherently increases the risk of off-spec gas getting onto the GS(M)R network. It will therefore need to satisfy both itself and HSE that the additional controls it is planning to implement for the relevant period next year will result in no increased risk of this happening.</li> <li>• National Grid confirmed it is assessing the feasibility and economic case for National Grid offering more enduring gas quality blending services at suitable NTS entry points, in respect of which this proposal is providing valuable learning.</li> <li>• It noted that as this is an enabling Modification; to enable a change to the Network Entry Provisions that apply between National Grid NTS and Perenco at Bacton, there is no particular lead-time for the implementation or legal text necessary.</li> <li>• National Grid stated that it expects to incur some costs in order to implement this proposed blend arrangement associated with the submission of an application to the HSE for an amendment to the National Grid GS(M)R Safety Case, development of operational procedures, operational management of change, SCADA system modifications and end to end testing. It proposes to recover such costs from Neptune Energy as the party that benefits most from the proposed arrangement.</li> <li>• Considering that National Grid would require HSE approval before the associated Network Entry Agreement could be amended, believe the governance of Modification should remain as Authority Direction.</li> <li>• Note that it does not think that the Modification will result in any undue discrimination between NTS entry parties, as it would engage with parties for similar request to assess the feasibility of such a request.</li> <li>• Has identified some implementation costs that it proposes to</li> </ul>

			<p>recover from Neptune Energy and consequently wished to provide an update to the <b>'Consumer Impact Assessment'</b> section on <u>page 7</u>:</p> <p><i>"Such that there are any directly attributable <del>operational costs of operating this arrangement</del>, these would be contained within the organisations in which they occur. <u>National Grid NTS proposes to recover its implementation costs from the party that benefits most from this Proposal.</u>"</i></p> <ul style="list-style-type: none"> <li>• Noted that both HSE approval, and approval of this Modification, are required to authorise the implementation of the blend arrangement proposed, presenting a sequencing issue and believe that it should notify the decision-making body that HSE approval has or has not been granted before the final implementation decision on this Modification is made. It commented that it would be happy communicate this to the wider industry via the Joint Office if Panel considered that to be appropriate. However, if the Panel determines that this Modification should remain as Authority Direction, it believes that the Panel <u>are able</u> to make an implementation recommendation to Ofgem prior to the HSE decision. It noted that it expects to receive the HSE's decision during Summer 2020.</li> <li>• Believes relevant objective a) is furthered because any resource/development is likely to be outweighed by efficiencies associated with more gas being processed through existing terminal infrastructure than would otherwise be the case.</li> <li>• It reiterated that it agreed with the rational in this report that relevant object d) would be furthered by implementation</li> </ul>
Neptune Energy	Support	a) Positive d) Positive	<ul style="list-style-type: none"> <li>• This Modification will enable gas, produced very reliably and with low carbon intensity, to enter the UK network, which would otherwise simply not be possible.</li> <li>• The arrangements in place will ensure the National Grid terminal at Bacton remains GS(M)R compliant and that the risk to connected downstream parties is no greater than it is today. The potential benefits of increased volumes of domestically produced gas extend beyond infrastructure owners, from offshore to NTS, to include UK plc and consumers.</li> <li>• This is a temporary arrangement, for a defined period, therefore no further lead-time prior to implementation is deemed necessary.</li> <li>• Neptune Energy, on behalf of the Cygnus Joint Venture Partnership, confirmed it will cover any costs incurred by</li> </ul>



			<p>National Grid in the preparation and provision of this temporary arrangement, to ensure robust operational arrangements are in place.</p> <ul style="list-style-type: none"> <li>• Given confirmation by National Grid that HSE approval is necessary for this arrangement, Neptune Energy agrees that Authority Direction is appropriate.</li> <li>• This Modification has been amended significantly since original presentation. Stakeholders and Shippers views have been carefully considered and incorporated through this process, resulting in a pragmatic temporary arrangement which will increase domestic gas supplies to the UK without impacting downstream parties.</li> <li>• Believes relevant objective a) as the Modification enables additional volumes of gas to be facilitated through existing infrastructure.</li> <li>• Believes relevant objective d) objective is met by maximising available UKCS gas onto the NTS, increasing supply diversity which will ultimately make NBP more competitive.</li> </ul>
SGN	Support	<p>a) Positive d) Positive</p>	<ul style="list-style-type: none"> <li>• Supports this modification as it furthers relevant objectives a) efficient and economic operation of the pipe-line system, and d) Securing of effective competition, by allowing more sources of eligible gas to enter the NTS. This increase in supply diversity may result in more shippers bringing gas into the UK market, which may benefit UK consumers.</li> <li>• Supports this Modification provided the gas does not go below 46.5MJ/m<sup>3</sup> on the Wobbe index during the agreed period.</li> <li>• The implementation has no direct effect on SGNs processes so it believes this should be implemented at the discretion of the proposer.</li> <li>• Confirmed it had not identified any impacting costs to its operations.</li> <li>• Supports the decision to remain as Authority Direction due to the commercial advantages for parties using the facility.</li> </ul>

Please note that late submitted representations will not be included or referred to in this Final Modification Report. However, all representations received in response to this consultation (including late submissions) are published in full alongside this Report and will be taken into account when the UNC Modification Panel makes its assessment and recommendation.

## 11 Panel Discussions

### Discussion

The Panel Chair summarised that Modification 0714 would enable the current Wobbe Index (WI) lower limit that applies between National Grid and Perenco at Bacton to be temporarily reduced from 47.2 MJ/m<sup>3</sup> to 46.5 MJ/m<sup>3</sup>.

Panel Members considered the representations made noting that implementation was unanimously supported in the 6 representations received.

Panel Members agreed with respondents and the Proposer that this Modification would allow a time limited solution at the National Grid Terminal to a temporary problem at the Perenco Terminal without impact downstream on the NTS, providing National Grid can enact the necessary procedures and controls it has laid out in relation to this issue, recognising that HSE approval is also required to allow the solution to be fully implemented.

Panel Members agreed with consultation respondents that Authority Direction is appropriate for this Modification given the requirement for both a UNC Modification and HSE approval to make the change.

Panel Members asked National Grid to confirm what would happen if the HSE did not give approval. National Grid confirmed that if HSE approval was not given, National Grid would inform Ofgem and the Modification would not progress.

A Panel Member asked National Grid for confirmation as to whether the lower WI gas enters the Total System, National Grid confirmed that the Bacton Terminal is part of the Total System.

### Consideration of the Relevant Objectives

Subject to HSE approval, Panel Members considered **Relevant Objective a)** *Efficient and economic operation of the pipe-line system*, agreeing that implementation would have a positive impact because any resource/development is likely to be outweighed by efficiencies associated with more gas being processed through existing terminal infrastructure than would otherwise be the case.

Subject to HSE approval, Panel Members considered **Relevant Objective d)** *Securing of effective competition between Shippers and/or Suppliers*, agreeing that implementation would have a positive impact by allowing more sources of eligible gas to enter the NTS. This increase in supply diversity may result in more shippers bringing gas into the UK market, which may benefit UK consumers.

Panel Members confirmed the two Relevant Objectives have equal weighting in this case.

### Determinations

Panel Members voted unanimously that Modification 0714 does not have an SCR impact.

Panel Members voted unanimously that no new issues were identified as part of consultation.

Panel Members voted unanimously to recommend implementation of Modification 0714.

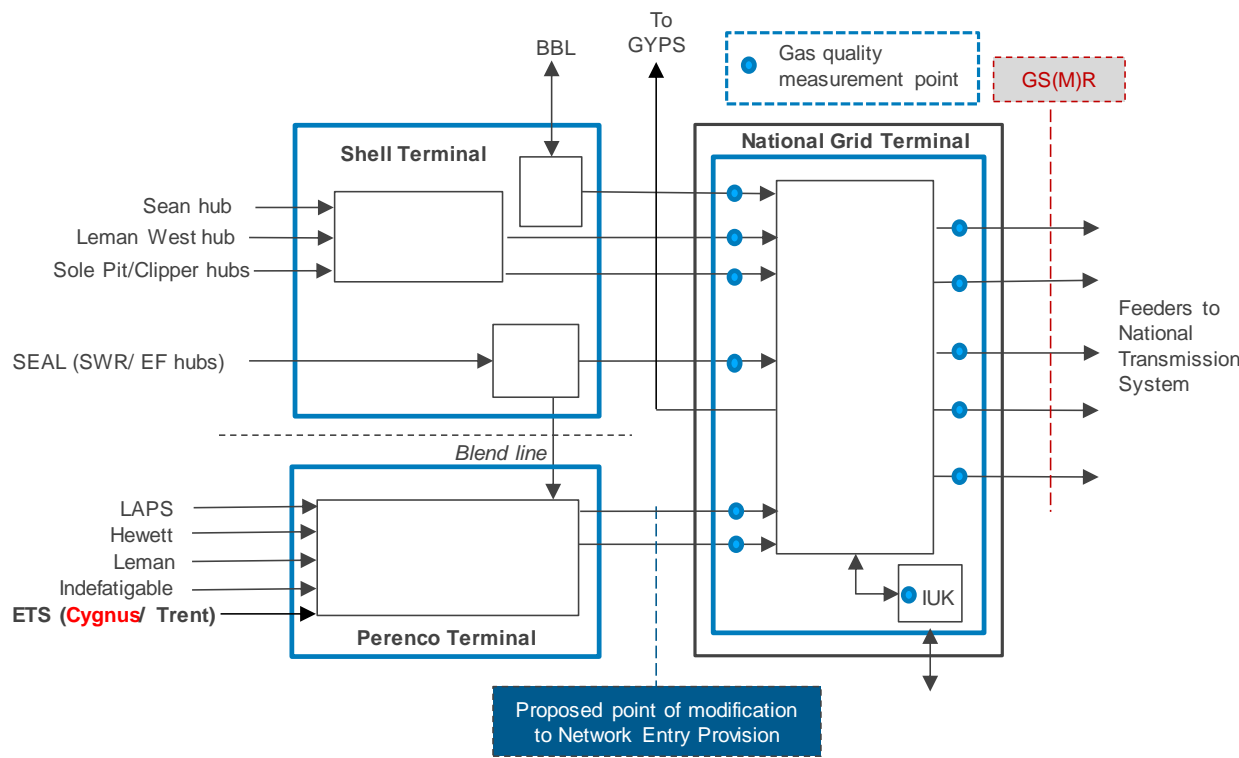
# 12 Recommendations

## Panel Recommendation

Panel Members recommended that Modification 0714 should be implemented.

# 13 Appendices

## Appendix I – Bacton Terminals schematic



Appendix II – Bacton Terminals Aerial photograph

