

Modification proposal:	<b>Uniform Network Code (UNC) 714: Amendment to Network Entry Provision at Perenco Bacton Terminal (UNC 714)</b>		
Decision:	The Authority <sup>1</sup> directs this modification be made <sup>2</sup>		
Target audience:	UNC Panel, Parties to the UNC and other interested parties		
Date of publication:	29 March 2021	Implementation date:	29 March 2021

## Background

The Cygnus field, situated on the United Kingdom Continental Shelf ("UKCS"), exports gas through a 50km extension to the existing 165km Esmond Transportation System ("ETS") pipeline to Perenco's gas terminal at Bacton. Cygnus gas commingles with gas from Trent and Tors fields within the ETS pipeline and, at sales conditions, this stream will generally have Wobbe Index<sup>3</sup> ("WI") below the Gas Safety (Management) Regulations ("GS(M)R") limits of 47.2 MJ/m<sup>3</sup>. To bring the gas up to GS(M)R specification (the required "spec"), blending takes place with gas from all fields within the Perenco terminal prior to entry into the National Transmission System ("NTS"). There are five gas pipelines flowing into the Perenco terminal at Bacton. The ETS pipeline is the only one that does not meet the required spec for entry into the NTS.

Planned and unplanned offshore and onshore outages between 2017 to 2020 have meant that there has not always been sufficient gas available at the Perenco terminal for the ETS pipeline to blend with. This has resulted in frequent production curtailment and shut-in of the Cygnus field. This situation will deteriorate further in 2021 with a planned outage of upstream infrastructure in Q2 of 2021. The planned outage will significantly impact Cygnus production for up to forty days. There are no alternative upstream blending and treatment solutions

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

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

<sup>3</sup> Wobbe index is the measure of the energy of gas within a given volume.

available to mitigate production curtailment and shut-in of the Cygnus field within the required timeframe.

This modification proposal seeks to facilitate the implementation of a short term solution to mitigate the risk of curtailment and shut-in of Cygnus field gas during the period of planned outage.

### **The modification proposal**

UNC714 was raised by Centrica Energy Limited (the Proposer). The proposed modification ("the modification") would allow the Network Entry Provision between Perenco and National Grid at Bacton to be amended for a specified period of not more than 40 consecutive days between 1 May 2021 and 30 June 2021. That period will cover the planned outage of upstream infrastructure impacting Cygnus field gas. We note that the Network Entry Agreement would also need to be amended to facilitate the solution proposed in this modification.

The modification proposes to reduce the WI lower limit for gas from the Perenco terminal incomer at Bacton National Grid terminal from 47.2 MJ/m<sup>3</sup> to 46.5 MJ/m<sup>3</sup>. This is contingent on there being sufficient higher WI gas 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 receive gas with a WI greater than or equal to 47.2 MJ/m<sup>3</sup>. 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. Further measures National Grid propose to ensure all gas exiting Bacton meets the GS(M)R limits are outlined below under the heading 'Reasons for our decision'.

### **UNC Panel<sup>4</sup> recommendation**

The UNC Panel consulted interested parties on the modification on 21 May 2020. It received six responses to the consultation, all of which supported the proposal.

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<sup>4</sup> The UNC Panel is established and constituted from time to time pursuant to and in accordance with the UNC Modification Rules.

The UNC Panel members voted unanimously to recommend implementation of the modification. The Panel published its Final Modification Report<sup>5</sup> (“the FMR”) on 19 June 2020. The FMR sets out the Panel’s reasons for its decision in full.

The Panel considers the modification would better facilitate, than current arrangements, UNC Objective (a) *efficient and economic operation of the pipe-line system*, by improving the efficient use of the existing terminal infrastructure, and UNC Objective (d) *securing effective competition*, by allowing for greater supply diversity through improved flexibility in gas transportation.

## **Our decision**

We have considered the issues raised by the modification proposal and the Final Modification Report (FMR) dated 19 June 2020. We have considered and taken into account the responses to the industry consultation on the modification proposal which are attached to the FMR<sup>6</sup>. We have concluded that:

- implementation of the modification proposal will better facilitate the achievement of the relevant objectives of the UNC;<sup>7</sup> and
- directing that the modification be made is consistent with our principal objective and statutory duties.<sup>8</sup>

## **Reasons for our decision**

We consider this modification proposal will better facilitate UNC objectives (a) and (d)(i), and has a neutral impact on the other relevant objectives.

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<sup>5</sup> UNC modification proposals, modification reports and representations can be viewed on the Joint Office of Gas Transporters website at [www.gasgovernance.co.uk](http://www.gasgovernance.co.uk)

<sup>6</sup> UNC modification proposals, modification reports and representations can be viewed on the Joint Office of Gas Transporters website at [www.gasgovernance.co.uk](http://www.gasgovernance.co.uk)

<sup>7</sup> As set out in Standard Special Condition A11(1) of the Gas Transporters Licence, available at: <https://epr.ofgem.gov.uk/Content/Documents/Standard%20Special%20Condition%20-%20PART%20A%20Consolidated%20-%20Current%20Version.pdf>

<sup>8</sup> The Authority’s statutory duties are wider than matters which the Panel must take into consideration and are detailed mainly in the Gas Act 1986 as amended.

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

The modification allows for increased volumes of Cygnus field gas to be processed through existing network infrastructure for a period of up to 40 days, coinciding with the planned outage of upstream infrastructure in Q2 2021 that would severely limit Cygnus field production.

Current arrangements require gas to be on spec at the Perenco terminal incomer at Bacton National Grid terminal. The modification allows for lower specification gas (down to WI of 46.5MJ/m<sup>3</sup>) to enter Bacton from the Perenco terminal provided that it meets the required spec upon exiting Bacton National Grid terminal. The modification will therefore increase the utilisation of existing NTS infrastructure while ensuring that GS(M)R limits for all feeders and offtakes at Bacton are met by reducing and ultimately ceasing the allowable Perenco terminal flow as required. We consider that this will improve the efficient and economic operation of the pipe-line system at Bacton.

During Workgroup discussions National Grid explained the operational details that would permit the modification to be delivered at the request of Workgroup members. The operational measures proposed by National Grid to ensure that include: monitoring of the specification of the Perenco gas; determining the required flow rate of on-spec (GS(M)R compliant) gas using worst case scenarios; adding additional alarms to raise alert should there be insufficient on-spec gas for blending, and amending all National Grid procedures to document action to be taken under this proposal. National Grid also have in place at present an automated gas quality control system in order to mitigate the risk of shut-in of all on-spec gas fields (due to off spec Cygnus gas filling the common facilities). This system acts in response to the rate of change of reducing WI on the common terminal outlet, by progressively closing control valves on the ETS pipeline to reduce and finally enact full shut-in of the pipeline at WI 47.45 MJ/m<sup>3</sup>. The system also acts in the event of the reduction or loss of suitable blending gas source. We note that Workgroup members and UNC Panel consultation respondents were satisfied with National Grid's assurances that all feeders conveying gas from Bacton National Grid terminal and all connected parties at Bacton will receive gas within the required spec.

The responses to the UNC Panel consultation noted that the modification would require an amendment to the Perenco Network Entry Agreement and that approval to change the

National Grid GS(M)R Safety Case, in relation to Bacton, from the Health and Safety Executive (“HSE”) was therefore required. During July 2020, we consulted with the HSE who confirmed that it considers the proposed change to the GS(M)R Safety Case in relation to Bacton to be a non-material change. The HSE confirmed that it has no concerns with the operational measures proposed by National Grid and that the assurances provided by it to ensure that it will not breach GS(M)R limits. On the 7<sup>th</sup> March 2021, National Grid confirmed that the temporary blending arrangement and associated operational measures have been approved by their Responsible Engineer, and the updated Grid GS(M)R Safety Case was submitted to the HSE as part of the non material change process. The arrangement and operational measures will be formally approved by National Grid following completion of the necessary testing of the control methods. We consider that the arrangements in place to facilitate this modification are at an appropriate stage to allow us to make an informed decision on this modification.

In response to the UNC Panel consultation National Grid said that it expects to incur some costs<sup>9</sup> in implementing the proposed blend arrangement, but considers that the efficiencies of processing more gas through existing terminal infrastructure will outweigh those costs. National Grid also stated that it proposes to recover such costs from Neptune Energy, the party that will benefit most from the proposed blending arrangement. Neptune Energy said in its consultation response that it will cover any costs incurred by National Grid in the preparation and provision of the proposed blending arrangement.

For the reasons set out above, we consider that the modification maximises the volume of gas permitted to be processed through existing network infrastructure while ensuring GS(M)R limits for all feeders and offtakes at Bacton are met. We therefore consider that the modification will positively impact this UNC objective and is consistent with our principal objective and statutory duties.

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<sup>9</sup> The costs National Grid expect to incur are 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.

***(d) so far as is consistent with sub-paragraphs (a) to (c) the securing of effective competition: (i) between relevant shippers;***

The modification allows for increased volumes of Cygnus field gas to enter the network for a period of up to forty days, coinciding with the planned outage of upstream infrastructure in Q2 2021 that would severely limit Cygnus field production. During this period, the FMR estimates that the reduction of gas from the Cygnus field alone could range from 94 MCM<sup>10</sup> to more than 350 MCM. We consider the modification will enable increased supply of gas to the UK and therefore have a marginal benefit on competition.

The modification is contingent on there being sufficient on-spec gas available for blending within Bacton, such that all feeders at Bacton National Grid terminal and all connected parties at Bacton receive gas with a WI greater than or equal to 47.2 MJ/m<sup>3</sup>. The FMR states that 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>. Where one of four on-specification offshore hubs is completely offline however, the WI of gas leaving the Perenco terminal will reduce to between 47.03 and 47.35 MJ/m<sup>3</sup>. The FMR concludes that 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 therefore likely that sufficient on spec gas would be available for blending, allowing for increased volumes of Cygnus field gas production into the NTS than would otherwise be permissible.

National Grid's analysis on Calorific Value ("CV") Shrinkage<sup>11</sup> due to CV capping<sup>12</sup>, presented in the FMR, found the most credible scenario, assuming 46.5 MJ/m<sup>3</sup> WI for Perenco inputs and 2019 average WI for all other Bacton supplies, does not give rise to CV Shrinkage due to CV capping as a result of factors pertaining to Bacton flows. We therefore consider that there is a low risk that consumers would be charged materially differently for the energy received.

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<sup>10</sup> MCM is the abbreviation for a volume of gas of 1000m<sup>3</sup>

<sup>11</sup> Calorific Value Shrinkage is the difference between the measured energy in the Local Distribution Zone ("LDZ") and the billed energy in the LDZ.

<sup>12</sup> Calorific Value Capping is where the Flow Weighted Average Calorific Value used for customer billing cannot be more than 1 MJ/m<sup>3</sup> more than the lowest spec gas entering the charging area.

For the reasons set out above, we consider the modification proposal will have a positive impact on this UNC objective and is consistent with our principal objective and statutory duties.

### **Decision notice**

In accordance with Standard Special Condition A11 of the Gas Transporters licence, the Authority hereby directs that modification proposal UNC714: *'Amendment to Network Entry Provision at Perenco Bacton Terminal'* be made.

**Niall McDonald**

**Principal Engineer, Engineering Hub, Analytics and Assurance**

Signed on behalf of the Authority and authorised for that purpose