



CODE OF OPERATIONS

NOTICE TO SHIPPERS

PURSUANT TO THE CODE OF OPERATIONS

APPROVAL OF MODIFICATION

CODE MODIFICATION A111 – ‘Amendment of Code of Operations to increase oxygen limit for biomethane entry points on the transmission network’.

COMMISSION INSTRUCTION

Pursuant to Section 13(1) of the Gas (Interim) (Regulation) Act 2002, the Commission approves Code Modification A111 ‘Amendment of Code of Operations to increase oxygen limit for biomethane entry points on the transmission network’.

This modification amends Appendix 1 of Part G (Technical) of the Code of Operations by specifying that the oxygen content for gas derived from Renewable Natural Gas at an Renewable Natural Gas Entry Point connected to the Transmission System shall be ≤ 0.5 mol%.

Signed:

Karen Kavanagh

Director of Networks & Economic Regulation

Issue Date:



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COMMISSION RATIONALE

Pursuant to Section 13(1) of the Gas (Interim) (Regulation) Act 2002, the Commission approves Code Modification A111 – ‘Amendment of Code of Operations to increase oxygen limit for biomethane entry points on the transmission network’.

Code Modification A111 increases the oxygen limit for Renewable Natural Gas entering the Transmission System at a Renewable Natural gas (RNG) Entry Point to ≤ 0.5 mol%. The previous limit was ≤ 0.2 mol%. The background and rationale for the modification are set out below.

Background

The Code of Operations specifies that the oxygen content limit for natural gas is ≤ 0.2 mol%. Biomethane is typically produced with an oxygen content higher than 0.2 mol%. In 2018, the Code was modified to introduce a new upper limit of 1.0 mol% for biomethane injected into the Distribution System. To date, there have been no adverse impacts of this change. GNI raised a Code Modification proposals, A111, to introduce an upper limit of 0.5 mol% for biomethane injected into the Transmission System. This aims to facilitate the injection of more biomethane into the gas network. Additionally, a limit of 0.5 mol% is more aligned with current European network parameters for biomethane oxygen content in similar networks.

Industry Consultation

GNI circulated its Proposal for Modification A111 to industry on 15th June 2023 together with an explanatory memorandum, legal drafting, network analysis on the potential impacts of the proposal, and a report commissioned from Penspen assessing the proposal. GNI made a presentation regarding the Modification at the Code Modification Forum meeting on 21st June 2023. Representations were made that the proposed changes would take time to assess and would require input from Original Equipment Manufacturers (OEMs). There was significant discussion at the Code modification Forum on this and updates were given re these assessments. Ultimately industry was given until 1st October 2024 to comment on the proposals. Three submissions were received from industry. Two responses focused on the implementation timescale, requesting that sufficient time be allowed for generators to carry out studies and implement upgrades if required.

The third response raised a number of concerns primarily focusing on the topic of discrimination. It stated that a single upper oxygen limit should apply to all RNG Entry Points and that GNI should provide non-discriminatory access to the gas network. GNI noted that there are inherent differences between the Transmission and Distribution networks that justify differing treatment and that the proposal for an upper limit of ≤ 0.5 mol% currently balances the interests of biomethane producers and sensitive end users that could potentially be impacted by a higher oxygen level.

This third response also raised a concern regarding GNI's flexibility within A111 to approve or reject future applications for new RNG Entry Points, highlighting a lack of clarity regarding the criteria applied by GNI in its decisions. GNI noted that this flexibility is intended to provide assurance to any potential end users that are sensitive to a higher oxygen content, such as underground storage facilities. GNI stated that there are currently no such facilities connected to the transmission network, but that such projects might arise in the future.

Throughout the industry review period, the Electricity Association of Ireland (EAI) also provided regular updates on progress within the power generation sector regarding the procurement of OEM reports. The final update from the EAI indicated that gas with an oxygen content up to 0.5 mol% would have no adverse impact on the functioning of generators.

Brief Outline of the Code Modification and CRU Engagement

Code Modification A111 proposes to increase the oxygen limit for biomethane entry points on the transmission network from ≤ 0.2 mol% to ≤ 0.5 mol%. As biomethane is typically produced with an oxygen content higher than 0.2 mol%, the aim of this modification is to facilitate the injection of more biomethane into the gas network.

Upon receiving the Code Modification proposal, the CRU engaged with GNI on a number of topics, including:

- Whether the maximum injection rate used in GNI's Mitchelstown network modelling reflects the real maximum injection rate at Mitchelstown:
 - GNI confirmed that the rate used in modelling matches the real maximum rate.
- How biomethane levels in the network will be affected as biomethane production scales up including developments beyond Mitchelstown:
 - GNI stated that all applications for Transmission RNG Entry Points will be assessed on a case-by-case basis to assess effects on the existing system.
- The meaning of the term "other applicable agreements" in GNI's proposed legal drafting:
 - GNI stated that for Mitchelstown, this includes a Producer Services Agreement. Other agreements may be needed for other RNG Entry Points based on technical analysis.
- Implementation of mitigation measures set out in the 2023 Penspen report:
 - GNI provided explanations of how it will adhere to each measure.
- Why GNI proposed an increase to ≤ 0.5 mol% rather than ≤ 1 mol%:
 - GNI stated that it had to balance the requirements of gas producers with the concerns of end users in relation to perceived potential negative consequences for their equipment.

- Whether higher-oxygen gas could enter the Transmission network via reverse compression from the Distribution network:
 - GNI stated that if reverse compression is introduced, GNI will implement appropriate mitigation measures to ensure compliance with gas quality parameters.
- How GNI will determine whether interested parties can avail of the higher oxygen limit in accordance with Note 3 in the Renewable Natural Gas Notes in Appendix 1 of Part G:
 - GNI stated that Renewable Gas Entry Points on the Transmission Network would be considered on a case-by-case basis, as the circumstances may differ for individual Entry Points depending on their capacity and location on the Transmission Network. Any proposed RNG connection to the Transmission System will require network analysis which would include hydraulic modelling of gas quality parameters and potential impacts on any adjacent gas fired power Stations. Furthermore, the Gas Quality parameter, including the 0.5% oxygen limit will be subject to assessment under the processes set out within GNI's existing Safety Case(s) for all new RNG connections and where necessary a submission regarding a material change to the Safety Case(s) will be made to the CRU. GNI does not expect any adverse outcomes, however this cannot be ruled out entirely. Any decision to vary the 0.5% oxygen limit will be notified to CRU and will be made on the basis of safety considerations and potential impacts on downstream users.

Reasons for the Approval of the Code Modification

The CRU is satisfied that Modification A111 will bring benefits through facilitating the injection of more biomethane into the gas network. Concerns were initially raised on the impact of the proposed changes on power generators. There was significant engagement and opportunity given to industry to assess these impacts. By the end of the industry engagement period, which was substantially extended to allow for assessments to occur, industry concerns were allayed and no material concerns remained. A standing agenda items remains at the Code Modification Forum for parties to raise any matters re gas quality.

The CRU would also note that CRU has accepted a Material Change to GNI's safety case for the Natural Gas Transmission system to reflect the increase the Upper Limit for Oxygen on the Transmission Network from 0.2 to 0.5 Mol%. That acceptance requires an assessment to be conducted for each new biomethane entry point. This is reflected in the code modification where applications for Transmission RNG Entry Points will be assessed on a case-by-case basis to assess its' effects on the existing system.

Issue Date: 4th June 2026