Contribution ID: 65ecc358-d4b1-4b13-83b0-4374aa99b121
Date: 10/06/2026 14:15:41

Public consultation on amendments to the gas network code on interoperability and data exchange

Fields marked with * are mandatory.

Introduction

The European gas market is evolving in response to ongoing policy and technological developments. This is essential to meet the decarbonisation and market integration objectives established under the European Green Deal.

To contribute to this goal — and following a mandate introduced by the 2024 Gas Decarbonisation Package — ACER has initiated a gradual review of all EU gas network codes. ACER's reviews started in 2024 with proposing amendments to the Capacity Allocation Network Code, currently under discussion in a comitology process with Member States.

Responses to the European Commission's latest Network Code Review Priority List survey, conducted in autumn 2024, highlighted the importance of looking into a possible revision the Interoperability and Data Exchange Network Code (INT NC) in second place after the CAM NC. The INT NC outlines the technical procedures applied by Transmission System Operators (TSOs) within the EU — and, where relevant, by operators in the Energy Community and non-EU neighbouring countries — to facilitate the coordinated operation of gas systems. The possible revision of the INT NC could help to better align the existing gas system operation rules with the Gas Decarbonisation Package policy ambitions but also with an evolving EU gas market.

Important in this context, the 39th Madrid Gas Regulatory Forum in April 2025 welcomed the new gas quality standard EN 16726 developed by the European Committee for Standardization (CEN), highlighting its importance in removing barriers to the free flow of natural gas within the internal energy market. The Forum called for a public consultation to assess the need, timing, and scope of a potential amendment to the Interoperability Network Code for ensuring consistent implementation of the standard across EU markets. This is a mandate ACER is fulfilling via this public consultation.

With this Public Consultation, ACER invites stakeholders to actively participate in the INT NC potential review, providing feedback on the proposed scope for improvement and submitting proposals on areas that could be considered for amendment.

The input from the consultation will be used for the Agency's evaluation on the need for the amendment and in preparing a potential proposal to amend the code. Should the need for a revision be established, the actual proposals for amendment would be reviewed in a second public consultation.

1. Target group

This consultation is addressed to gas transmission system operators operating in the EU, gas network users, National Regulatory Authorities, consumers associations and government as well as any interested market participants. [...]

Deadline

Replies to this consultation should be sent: by ~~20 May~~ 10 June 2026, 23:59 hrs (CET)

2. Respondent's data

* **Name and Surname of the contact person**

[redacted]

Phone number

[redacted]

* **Email address**

[redacted]@fgw.at

* **Name of organisation / company**

FGW - Association of Gas and District Heating Companies Austria

Type of organisation

- ○ Gas transmission system operators (TSOs)
- ○ Network users (e.g., gas shippers, traders, suppliers)
- ○ Virtual Trading Point (VTP) operators
- ○ Capacity booking platform operators
- ● Industry associations (e.g., ENTSOG, ETE, IFIEC, CEN, EASEE-gas, Marcogaz)
- ○ Renewable gas and hydrogen producers
- ○ Consumer and environmental organisations

- Academic and research institutions
- Other interested stakeholders
- NRAs

*** Please specify "other"**

Industry Association

*** Country**

- (x) EU-27
- Other

*** Please specify the country**

- (x) AT - Austria
- BE - Belgium
- BG - Bulgaria
- HR - Croatia
- CY - Cyprus
- CZ - Czechia
- DK - Denmark
- EE - Estonia
- EU - European Union, for associations covering all EU
- FI - Finland
- FR - France
- DE - Germany
- EL - Greece
- HU - Hungary
- IE - Ireland
- IT - Italy
- LV - Latvia
- LT - Lithuania
- LU - Luxembourg
- MT - Malta
- NL - Netherlands
- PL - Poland
- PT - Portugal
- RO - Romania
- SK - Slovak Republic
- SI - Slovenia
- ES - Spain
- SE - Sweden

3. Data protection

ACER will process personal data of the respondents in accordance with Regulation (EU) 2018/1725, taking into account that this processing is necessary for performing ACER's consultation tasks. More information on data protection is available on ACER's website and in ACER's data protection notice.

ACER will not publish personal data.

Consent to the processing of personal data

☑ Your personal data may be processed by the Agency.
Please refer to privacy statement to learn about such processing and your rights.

4. Confidentiality

Following this consultation, ACER will make public:

- the number of responses received;
- company names, unless they should be considered as confidential;
- all non-confidential responses; and
- ACER's evaluation of responses. In the evaluation, ACER may link responses to specific respondents or groups of respondents.

You may request that the name of your company or any information provided in your response is treated as confidential. To this aim, you need to explicitly indicate whether your response contains confidential information. **You will be asked this question at the end of the survey.**

☑ I have read the information on data protection and confidentiality provided in this section.

5. Related documents

- Regulation (EU) 2019/942 of the European Parliament and of the Council of 5 June 2019 establishing a European Union Agency for the Cooperation of Energy Regulators.
- Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (recast).
- Directive (EU) 2024/1788 of the European Parliament and of the Council of 13 June 2024 on common rules for the internal markets for renewable gas, natural gas and hydrogen, (recast).
- Regulation (EU) 2024/1789 of the European Parliament and of the Council of 13 June 2024 on the internal markets for renewable gas, natural gas and hydrogen (recast).

- Commission Regulation (EU) 2015/703 of 30 April 2015 establishing a network code on interoperability and data exchange rules.
- EN 16726:2026 (CEN) – standard on gas infrastructure - quality of gas - group H superseding EN 16726:2015+A1:2018.
- ENTSOG Network Code on Interoperability and Data Exchange Rules – 5th Implementation Monitoring Report
- Functionality Platform (FUNC) issues:
    - 01/2018 on Communication protocol and encryption, reported by: GasTerra B.V.
    - 02/2018 on Communication protocol and encryption, reported by: ENGIE
    - 06/2018 on Communication protocol and encryption, reported by: EASEE-gas
    - 01/2019 on on Missing harmonisation of interfaces on capacity platforms, reported by: Equinor ASA

- CREG decision (B) 2738 - Décision relative à la proposition d'Interconnector Limited visant à modifier le contrat d'accès Interconnector (IAA), le règlement d'accès Interconnector (IAC) et le programme d' accès Interconnector (IAAS), 2024.
- ACER Guidance Note on Consultations

6. Document Structure

To help identify the scope of any potential amendment to the INT NC, ACER has conducted since June 2025 a series of stakeholder workshops and technical consultations. These engagements resulted in the identification of three core areas for potential refinement:

- Two identified topics pertain to areas already addressed within the current code, namely **1. Gas Quality** and **2. Data Exchange**
- The third topic introduces an element not directly addressed by the current code: **3. Liability provisions in Interconnection Agreements.**

Accordingly, this consultation is structured into three chapters, each focusing on one of these core areas.

It is important to underline that this initial consultation is not a formal document setting out concrete legal proposals to revise the rules governing gas transmission interoperability and data exchange in Europe. Instead, the consultation adopts an exploratory and discussion-oriented approach to explore the actual needs of the different market participants and the system in general. The intention is to ensure that any future regulatory framework is firmly grounded in operational realities and the expectations of different stakeholders.

Each chapter begins with an introduction describing the relevant provisions of the existing code. This is followed by an assessment of the implementation status and/or a description of the technical options chosen when implementing those provisions at the different EU systems. In doing so, ACER mostly but not only relies on the recently published INT NC implementation monitoring report prepared by ENTSOG and published in

March 2026 (Network Code on Interoperability and Data Exchange Rules – 5th Implementation Monitoring Report).

The chapters then outline how the current provisions could be progressed, and they close with questions addressed to stakeholders on whether there is a need to revise the current provisions or whether the existing framework should be maintained, possibly complemented by targeted adjustments and/or non-binding guidance.

7. Liabilities provisions in Interconnection Agreements

7.1 Introduction

General liabilities, including those related to off-specification gas quality, are not currently covered in the INT NC. Nevertheless, during the assessment of potential amendments to the INT NC, this issue was raised with ACER. In turn, ACER requested that ENTSOG include the topic of liabilities for off-spec gas quality in the Network Code on Interoperability and Data Exchange Rules – 5th Implementation Monitoring Report. At this stage, two key points from the report can be highlighted:

1. Off spec gas quality can occur within EU gas systems; however, such cases remain infrequent.
2. In 2018 liability discussions were extensively deliberated upon during the development of the GT&C template,

In what the review of the INT NC is concerned, if that is the need/option of the stakeholders it could aim to set clearer EU wide-harmonised guidance to address liability concerns arising from the exposure of market participants - be it end-users, shippers or TSOs - to penalties or losses resulting from the delivery and redelivery of non-compliant gases that need to be aligned to agreed standards. Further guidance could be particularly offered to situations when deviations arise at the transportation of gas through interconnection points, and aspect that could be addressed via a review of Interconnection Agreements (IAs).

7.2 Market Status and Identified Issues

Interconnection Agreements, transmissions agreements, national regulations and/or gas contracts General Terms & Conditions (GT&C) [1] define the general duties and responsibilities among gas TSOs on the one hand, and between TSOs, shippers and users on the other hand. The IA provisions among TSOs as detailed in Article 3 of the INT NC must include rules for flow control; measurement principles for gas quantities and quality; rules for the matching process; rules for the allocation of gas quantities; communication procedures in case of exceptional events and settlement of disputes; and amendment process for the IAs themselves. Since it is not in their remit of scope, they lack specific liability provisions related to shippers (e.g., liabilities in the event of an operational failure resulting from non-compliant gas quality, after entering the system with the proper specification, as those will be covered by gas contracts or national law, not IAs). Regarding TSOs, liability provisions between the IAs signatories (adjacent TSOs) are included in many IAs. The EU picture is diverse, since it is not mandated by the code's Article 3.

The absence of specific provisions or general principles effectively reflecting responsibilities and potentially implied liability of involved parties in such cases could affect the non-discriminatory operation of the system and – depending on the scale of the deviations and the cost of the correction measures needed – may also have certain local impact on the affected markets. ACER has knowledge of only one case where concerns related to the above mention issue were raised - CREG decision (B) 2738 paragraph 141 to 145.

According to the latest ENTSOG Implementation Monitoring Report, , IAs are generally considered stable and functional instruments that support the management of technical constraints and the smooth operation of cross-border points. The report states that off-spec gas quality cases seldom lead to disputes or disruptions - three contained examples have been cited in ENTSOG's report that required some TSO interventions but did not constitute disruptions to the normal functioning of the system.

The question on possibly harmonising broader liability regimes was previously discussed during the development of the GT&Cs [2] of gas transport contracts in 2018. Then, it was concluded that no harmonisation was possible as liability frameworks vary widely across Member States due to national laws. ACER Opinion No 06-2018 [3] on Template for main terms & conditions for bundled capacity products for Gas stated at the time, mentioned that while the topic was not suitable for harmonisation in that template, it should be foreseen at least as a subject to be covered in the individual contracts. Likewise, the same thinking could be extrapolated to IAs; if harmonisation is not possible, at least IAs could mention the key provisions governing liabilities. ACER's opinion No 06-2018 also underscored that, wherever possible, best practises should be provided, which could apply for the case of liabilities.

Although the ENTSOG GT&C gas contracts' template as said does not include a chapter on liabilities, it indicates the overall responsibilities regarding gas quality, as follows:

1. Responsibility for fulfilling the gas quality specifications at the entry point of the transmission system lied with the network user.
2. Responsibility for fulfilling the gas quality specifications at the exit point of the national transmission system subject to the country and the TSO's network specific conditions of any sort (statutory and contractual conditions, operational constraints, etc.) lied with the TSO.

The ENTSOG report also tables information about the current liability clauses for gas quality issues and their application:

- 85% of TSO–shipper contracts define gas quality liability provisions in the General Terms and Conditions of the contracts, even in cases when national legislation also applies. Overall, 58% of TSOs rely on both national law and contractual liability rules, 27% relies solely on defined contractual liability rules while the last 15% of them rely solely on national legislation.

- 65% of TSOs already apply gas quality liability clauses in at least in one of their agreed Interconnection Agreement, with other TSOs.

[1] ENTSOG Template Contract of Main terms and conditions for the offer of bundled capacity products in accordance with article 20 of Commission Regulation (EU) 2017/459 establishing a network code on capacity allocation mechanism in gas transmission systems (“CAM NC”) (link)

[2] ENTSOG Template Contract of Main terms and conditions for the offer of bundled capacity products in accordance with article 20 of Commission Regulation (EU) 2017/459 establishing a network code on capacity allocation mechanism in gas transmission systems (“CAM NC”) (link)

[3] ACER Opinion 06-2018 on Template for main terms & conditions for bundled capacity products_Gas.pdf

7.3 Areas for Improvement and Potential Regulatory Options

Some stakeholders have expressed interest in clearer repartitions of responsibilities and underlying liabilities, as well as in developing general rules translating the principle of making parties responsible for the tasks on which they truly have control, particularly regarding gas quality aspects.

Ahead of exploring the more detailed views of market participants in Section 7.4, regarding potential regulatory options, including a 'business-as-usual' scenario, ACER puts forward an initial practical suggestion on how a potential amendment to the Network Code could tackle the liability question:

Update Article 3, Article 4 and Article 5 to include liability for gas quality matters

- **Article 3 on IAs General Provisions** could include, an additional paragraph (h) requiring operators to include in their interconnection agreements information regarding the liability regime applicable for gas quality issues, among operators involved in the interconnection agreement.
- Complementarily, **Article 5 of IAs Template** could be amended accordingly, so that the IA template includes a section on liabilities in which TSOs could include information on the liability regime applicable among operators for gas quality issues (general and non-confidential provisions).
- Finally, **Article 4,** requires that before concluding or amending an Interconnection Agreement TSOs shall seek network users’ comments, for the rules referred to in Article 3(c), (d) and (e). This article could be amended accordingly to extend the consultation to an additional paragraph (h) in Article 3 on liabilities.

These types of changes could potentially be formalise in the network code with the aim of increasing clarity among TSOs. However, this transparency enhancement proposal is without prejudice to the level of harmonisation and the scope of an EU-level framework versus more general guidance, which are addressed in the following set of questions.

7.4 Proposed Public Consultation Questions

Question 1 — Assessment of Current Functioning

1. Do you consider that the liability provisions in the current contractual and legal framework – set out in current IAs or included in the transport contracts and national law – and particularly, those related to gas quality are fit for purpose?
In your response, please describe, if possible, the relevant framework governing liabilities and explain how it informs your view.

> Yes, we strongly consider the current liability framework to be entirely fit for purpose. Liability matters, specifically regarding off-specification gas quality, are traditionally and appropriately governed by national civil law across individual Member States.
>
> The INT NC is a technical net code rather than a civil law instrument. Attempting to introduce an EU-wide harmonised liability framework would create parallel, highly complex regulatory layers that would induce unnecessary administrative and compliance costs without adding tangible benefits to market operation.
>
> Furthermore, the existing contractual structures are balanced and functional: responsibility for meeting gas quality standards at entry points rests with the network users (shippers), while TSOs stand for quality at exit points in accordance with national regulations. Because TSOs are heavily regulated entities, shifting additional operational risks or enforcing a standardized, case-based liability framework onto them would inevitably necessitate compensation via higher network tariff adjustments, ultimately increasing energy costs for downstream end-users. Therefore, we firmly support maintaining the business-as-usual approach regarding liability provisions.

Question 1.1 – Potential gaps in current framework; including IAs design and scope affecting TSOs, as well as related national law and transport contract provisions extending to shippers

1.1. What are the most important liability related elements that are missing in the current framework, if any? Should possible gaps chiefly be addressed with respect to (a) liabilities among TSOs via IAs review and/or (b) liabilities between TSOs and shippers at the national law and transport contracts and/or (c) conflicts between the two?

> We do not support the proposed amendments to explicitly mandate the inclusion of specific liability regimes within Articles 3, 4, and 5 of the INT NC.
>
> Introducing an obligation to include information on a liability regime within Interconnection Agreements (IAs) shifts the technical focus of these bilateral TSO contracts into complex civil law territories. The current structure under Article 3 is highly efficient because it isolates technical and operational guidelines from diverse national civil law preconditions. Mandating a transparent liability framework or a standardized, case-based mechanism would lead to parallel systems and severe regulatory friction across different jurisdictions.
>
> Furthermore, extending the network users' consultation process under Article 4 to liability aspects in IAs is impractical. Shippers and network users are already fully protected by their respective transparent transport contracts and General Terms & Conditions (GT&Cs), which are approved by National Regulatory Authorities (such as E-Control in Austria). Since IAs do not govern the contractual relationships between TSOs and

shippers, conflating these distinct legal layers will only introduce artificial complexity, legal uncertainty, and potential incompatibilities without creating tangible market benefits.

Question 2 — Is this a concern?

2. Do you know of any circumstance where a liability regime/ provision, or the lack of it related to gas quality, and/or other operational aspects was an issue? Please describe the case and how it ended in terms of liability taken.

We are not aware of any operational circumstances or disputes regarding gas quality liability within our grid area, except for the isolated reference cited in the consultation document regarding the Belgian regulatory framework (CREG decision (B) 2738).

The fact that cases of off-specification gas remain extremely infrequent across the European network demonstrates that the existing contractual chain is entirely functional. Shippers successfully assume liability for the commodity they inject at entry points, backed by their upstream commercial agreements, while TSOs safely manage the infrastructure within the boundaries of national legislation.

We strongly caution against using a single, isolated national regulatory case as a pretext to enforce a sweeping, EU-wide reallocation of rights and obligations. Local or regional technical anomalies should continue to be resolved effectively at the national level by the respective technical experts and NRAs, rather than triggering a disproportionate and costly amendment to the European Interoperability Network Code.

Question 3 — Scope of Potential Amendments on Liabilities relating Gas Quality

3. Regarding the potential treatment of liability in relation to gas quality, what are your views on the following options when/if considering amendments to the Network Code?

We strongly support the "Do nothing" approach regarding the treatment of liability in the context of the INT NC. There is no operational justification to introduce additional liability rules for gas quality into the Net Code or via non-binding EU guidelines.

A) **Do nothing:** Neither the INT NC nor non-binding EU guidelines are appropriate avenues for establishing a TSO liability framework within all EU interconnection agreements. Therefore, no action will be taken.

Please explain your views on this approach.

We strongly support the "Do nothing" approach regarding the treatment of liability in the context of the INT NC. There is no operational justification to introduce additional liability rules for gas quality into the Net Code or via non-binding EU guidelines.

The existing legal and contractual frameworks at both European and national levels are robust, mature, and fully appropriate for handling operational realities. The current framework has repeatedly demonstrated its stability, as off-specification gas events remain extremely rare across the European network.

Attempting to enforce an EU-wide regulatory mechanism through the INT NC or supplementary guidelines is disproportionate and runs counter to the principle of subsidiarity. Local technical configurations and commercial arrangements are best managed by national expert bodies and regulatory authorities. Maintaining the business-as-usual approach avoids the introduction of structural risks, legal conflicts, and additional administrative overhead, ensuring that network operations remain cost-efficient for end-users.

B) **Standardised EU liability framework:** Introduce a standardised, case-based liability framework within all EU interconnection agreements, establishing a formal EU-level framework that governs liabilities at interconnection points. This framework would further define responsibilities between TSOs and should not be diminished by contracts signed between TSOs with shippers.

Please explain your views on the feasibility, advantages, and challenges of this approach, and how it could be implemented.

As the Austrian Association of Gas and Heat Supply Undertakings (FGW), representing national transmission system operators (TSOs), distribution system operators (DSOs), and storage operators, we strongly oppose the introduction of a standardized, EU-wide liability framework within Interconnection Agreements (IAs).

Our assessment of this approach is structured as follows:

1. Feasibility: Highly Impractical
A standardized EU-level framework is highly impractical due to the profound structural differences in national legal systems, civil liabilities, property laws, and energy regulatory regimes across Member States. Forcing a uniform, top-down liability regime onto bilateral technical contracts (IAs) between adjacent TSOs fails to respect national subsidiarity and disrupts proven local market arrangements.

2. Advantages: None in Practice
While a standardized framework aims to create theoretical uniformity across borders, it delivers no measurable or auditable benefits to everyday operational activities or system security. The existing decentralized mechanism—where adjacent operators bilaterally negotiate liability terms in IAs based on applicable national laws and established ENTSOG guidelines—is fully robust, fit for purpose, and has caused zero systemic market failures.

3. Challenges: High Structural Risks and Tariff Burdens
- Material System Risks: Introducing highly prescriptive or rigid EU-wide liability rules creates unintended knock-on effects. It significantly reduces the operational flexibility needed by TSOs to dynamically blend and route changing gas streams, such as decentralized low-carbon gases.
- Severe Diversion of Resources: Implementing and adapting to such a framework would trigger complex legal overhauls, high transition risks, and massive administrative overhead. This would divert critical technical and legal staff away from higher-priority operational challenges and ongoing decarbonization initiatives.
- Tariff Shocks for End-Users: Increased liability risks and parallel insurance or legal costs for network operators would ultimately be socialized, placing an unjustified financial and tariff burden on downstream end-users and final consumers without any added value to market liquidity.

4. Implementation: Preservation of Bilateral Subsidiarity
Liability regimes must remain governed at the national level through the established market rules and bilateral Interconnection Agreements. To protect market stability, avoid artificial compliance costs, and focus on the practical challenges of energy transition, the INT NC should remain unchanged in this area. A "business-as-usual" scenario is strongly preferred.

C) Non-binding guiding EU measures: Adopt non-binding measures (e.g. guidance, best-practice documents, or improved IA templates) to support TSOs in interconnection agreements and enhance clarity and consistency on liability provisions, without introducing formal EU-level amendments to the Network Code.

Please explain your views on the feasibility, advantages, and challenges of this approach, and how it could be implemented.

As the Austrian Association of Gas and Heat Supply Undertakings (FGW), representing national transmission system operators (TSOs), distribution system operators (DSOs), and storage operators, we support the adoption of non-binding guiding EU measures as the only acceptable approach if the topic of liability must be addressed.

Our assessment of this approach is structured as follows:

1. Feasibility: Fully Feasible and Fit for Purpose
This approach is highly feasible because it respects the principle of subsidiarity and the voluntary nature of such technical tools. Utilizing non-binding guidance, best-practice documents, or voluntary Interconnection Agreement (IA) templates allows the market to evolve naturally without introducing rigid, top-down legislative changes to the Network Code.

2. Advantages: Maintaining Flexibility and Regulatory Stability
- Preserves Operational Subsidiarity: It allows adjacent operators to retain the necessary flexibility to adapt liability provisions to their unique national legal frameworks, distinct network configurations, and regional gas quality management practices.
- Zero Operational Disruption: Because these measures are non-binding, they do not trigger unintended knock-on effects across existing systems and processes, ensuring functional daily operational activities are maintained.
- Prevents Financial Overhead: This tool avoids the severe migration costs, intensive resource reallocations, and parallel legal overhead associated with mandatory overhauls, successfully protecting downstream end-users from unjustified network tariff increases.

3. Challenges: Risks of Creeping Prescriptiveness
The primary challenge lies in ensuring that these measures remain strictly non-binding in practice. There is an inherent risk that non-binding templates or guidance notes could be used by regulatory authorities as a "de facto" mandatory benchmark during national approval processes for IAs. If applied prescriptively, it would recreate the exact same structural friction, loss of operational blending flexibility, and unjustified compliance costs as a formal code amendment.

4. Implementation: Leveraging Existing Expert Frameworks
Implementation should be driven efficiently through established decentralized mechanisms rather than creating new administrative layers. The most appropriate path is to task ENTSOG with developing voluntary best-practice guidelines or modular IA templates based on the proven, practical experience of adjacent TSOs. This maintains regulatory stability, avoids artificial complexity, and allows market participants to keep their resources focused on pressing operational challenges and ongoing decarbonization initiatives.

D) **Transparency-focused approach:** Do not develop an EU liability framework, nor non-binding measures but require TSOs to include greater transparency in interconnection agreements regarding existing liability arrangements between TSOs. Furthermore, and while IAs do not govern contracts between TSOs and shippers, references could be brought into the IA about the terms and responsibilities agreed by TSOs with shippers.

Please explain your views on the feasibility, advantages, and challenges of this approach, and how it could be implemented.

As the Austrian Association of Gas and Heat Supply Undertakings (FGW), representing national transmission system operators (TSOs), distribution system operators (DSOs), and storage operators, we view a transparency-focused approach with heavy caution.

While we generally support the principle of transparency, any requirement to include sensitive commercial arrangements or shipper contract references within Interconnection Agreements (IAs) introduces significant operational risks. In close alignment with the positions of Gas Connect Austria (GCA) and Wiener Netze, our assessment of this approach is structured as follows:

1. Feasibility: Partially Feasible but Structurally Conflicted
Publishing basic, high-level operational liability principles between TSOs is feasible. However, forcing the inclusion of references, terms, or responsibilities agreed between TSOs and shippers within an IA is highly impractical and legally conflicted. IAs are strictly technical, bilateral operational contracts between adjacent system operators. Mixing these with commercial shipper relationships violates basic principles of contract law, as shippers are not parties to the IA.

2. Advantages: Limited to General Information
The only potential advantage is a higher theoretical level of information clarity for market participants regarding how liabilities are handled across borders. However, this delivers zero measurable or auditable benefits to functional daily grid operations or system security, as the current decentralized framework already ensures stable market performance without systemic communication failures.

3. Challenges: High Commercial Risks and Inefficiencies
- Severe Confidentiality and Legal Risks: Shippers' transport contracts and associated liability terms contain highly sensitive, commercially confidential information. Forcing references to these terms into semi-public or regulatory-monitored IAs violates non-disclosure boundaries and could distort market competition.
- Increased Administrative Complexity: Shipper contracts and balancing portfolios change dynamically, whereas IAs are stable, long-term technical documents. Constantly updating IAs to reflect evolving shipper arrangements would create parallel administrative overhead and high process risks.
- Diversion of Operational Focus: Managing this artificial compliance layer would reallocate critical legal and technical resources away from higher-priority challenges, such as integrating low-carbon gases and maintaining backbone grid stability.

4. Implementation: Strict Separation of Technical and Commercial Layers
If transparency is pursued, it must be implemented strictly outside the scope of the Interconnection Agreements. TSOs should only be required to publish general, high-level liability principles on their public websites as part of their standard terms and conditions. Contractual arrangements with shippers must remain completely confidential and separate. This maintains regulatory stability, respects commercial boundaries, and prevents unnecessary tariff increases for downstream end-users.

8. Gas quality

8.1 Introduction

Gas quality considerations are primarily addressed in Chapter IV of the INT NC, which establishes a reference framework for managing gas quality (Article 15) and odourisation (Article 19) at IPs in the gas transmission system across the EU. Although not highly prescriptive, the main objective of these provisions is to enhance cooperation and ensure that technical differences in gas quality and odourisation practices do not create barriers to the free flow of gas in the EU.

Complementarily, Article 17 sets out how TSOs may identify the parties that shall be informed about variations in gas quality, enabling end users to align their processes, mitigate potential impacts, and make more informed operational decisions. Distribution system operators (DSOs), storage system operators (SSOs), and directly connected final customers are entitled to receive indicative information regarding such changes.

Overall, Member States and/or TSOs maintain their respective competences in these two areas, with the INT NC generally mandating reinforced cooperation.

Chapter IV further establishes monitoring obligations for TSOs and ENTSOG, aimed at ensuring that gas networks operation remain transparent, resilient, and adaptable. TSOs are required to publish updates on gas quality parameters at their websites at least once per hour during the gas day (Article 16). While Article 18 mandates ENTSOG to publish a long-term gas quality monitoring outlook every two years, providing projections on potential trends and variability over a ten-year horizon (the latest from 2024 can be consulted here: ENTSOG Gas Quality Outlook).

8.2 Market Status and Identified Issues

When assessing the current market status and potential issues around gas quality, this public consultation focuses on two key questions:

- First, whether the existing rules governing gas quality parameters and ranges at system entry points may hinder cross-border flows or decarbonised gases uptake.
- Second, whether the mechanisms used to identify and supply gas quality-sensitive users — who require clear gas quality information and/or follow stricter gas quality specifications at exit points — should be revised.

The CEN standard EN 16726 provides proposals on both aspects. Accordingly, this section of the public consultation firstly assesses the status of these two aspects, while section 8.4. will seek to determine whether a revised framework is necessary and supported by stakeholders, including possibly amending the code for implementing the CEN standard across EU systems. It should be noted that the scope of the INT NC primarily focuses on IPs and is mostly directed at TSOs, whereas elements of the standard call for a broader framework - at either national or EU level - covering points beyond IPs and entities other than TSOs.

The new CEN standard proposes a twofold distinction for Wobbe Index limits.

1. For gas entries into the system (H-gas) – including biomethane – the standard recommends a broad entry Wobbe Index range of 46.44 MJ/m^3 to 54.00 MJ/m^3, to allow EU imports from most different supply origins.
2. For exit points out the system, the standard defines two possible classes of users. Class Specified would be assigned to exit points (or a cluster of exit points) where the Wobbe index bandwidth shall be maintained ≤ 3,7 MJ/m3, within a total range of 46,44 MJ/m3 to 53,00 MJ/m3 [15°C / 15°C at 1013,25 mbar].

- Alternatively, Class Extended would be assigned to all other exit points (or a cluster of exit points) outside the specification covered by Class Specified. At those points, the recommended entry range of 46.44 MJ/m^3 to 54.00 MJ/m^3 should be maintained. Allocating Class Extended to exit points (or clusters of exit points) would then require: unbiased assessment of the presence of users' applications sensitive to Wobbe index at the concerned exit point or cluster of exit points and, if any, the implementation of appropriate mitigating measures in cooperation with all parties involved.[4]

Downstream sectors and relevant end-users should be informed about the assigned class of their relevant exit points, as well as about the lower and upper Wobbe index limit values. Exceeding the upper and lower limits of the defined class Wobbe index values (deviations) can occur provided information and action is taken as following:

1. Short-term temporary deviation: Downstream sectors or relevant end-users shall be informed of deviations as soon as information is available. Stakeholders involved should cooperate to identify the appropriate mitigation measures to limit the impact of the temporary deviation.
2. Long-lasting or permanent deviation resulting in a possible class change: Downstream sectors and/or relevant end-users shall be informed of upcoming long lasting or permanent Wobbe index changes. An assessment of the consequences of the change of class in cooperation with the stakeholders involved shall be carried out. The downstream sectors or relevant end-users shall be informed about the assignation of the new class with an appropriate notice period.

ENTSOG report has analysed several key aspects connected to these gas quality aspects, whilst revising the Wobbe Index, oxygen, and sulphur limits currently in place at the different national systems and borders. Furthermore, it examined some of the broader issues the CEN standard aims to resolve, including a) if cross-border flow restrictions had been caused by gas quality divergences in the past and b) the prevailing mechanism used to implement Article 17 regarding information for on short-term gas quality variability, the number of sensitive end-users per system and examples of mechanisms to serve them.

Of the 115 Interconnection Agreements at Interconnection Points covered by the ENTSOG report, 100 specify gas quality ranges. Most IAs have a Wobbe index range within the recommend entry range limits, while 10 IAs exceed the maximum limit and around 20 are below the low- limit specified in the standard. As a general rule systems with higher relative presence of LNG see their maximum limits increase, while IPs with higher relative presence of biomethane see their lower limits decrease, deviations of these conclusions are nevertheless possible. While changes in gas quality ranges can take place across borders, these differences do not create critical problems as identified by ENTSOG.

CEN and gas appliance producers associations, have stressed the need to adhere to narrow range limits at exit points to reduce emissions and avoid efficiency losses and/or appliances malfunctions. On the one hand, sudden quality variations are perceived as more disruptive than static ones, while a gradual WI shift over an extended period is easier to manage, enabling users to adjust equipment. This would underscore the need of for proper access to gas quality data and/or a firmer definition of system user classes. On the other hand, gas producer associations warn that too rigid limits should not supress domestic gas production, nor hinder the diversity of gas import sources, especially in regions with more variable gas compositions. This can be the case for Central and South-Eastern Europe Energy Connectivity (CESEC) countries, where WI limits tend to differ most from EN 16726, as shown in Figure 1.

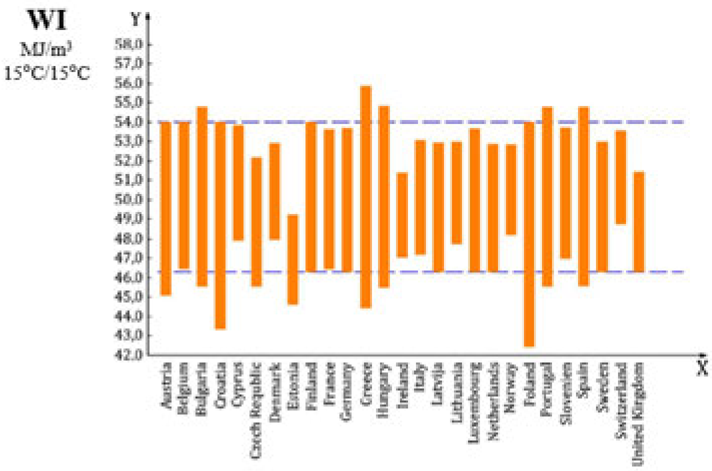

Figure 1 - National WI ranges as in Annex E revised EN16726 (October 2024)

Regarding oxygen, the new CEN standard establishes a 1% concentration limit, with provisions for stricter thresholds (ranging from 0.001% to 1%) if gas flows to sensitive units. The ENTSOG report reveals that limits currently set in IAs can be significantly smaller than the ones set in the new standard. Nevertheless, two points are worth considering when making the comparison, these limits were set in line with the old EN16726 – that set a default value of 10ppm - and that the reason for these stricter limits is unknow and might be related to questions of safety or system integrity. Specifically, 50% of surveyed IAs cap oxygen concentration at 100 ppm (0.01%), 24% at 10 ppm (0.001%), and only 21% allow up to 200 ppm (0.02%). More restrictive limits can hinder the adoption and cross-border use of biomethane. Nevertheless, technical solutions can exist; for example, Energinet in Denmark utilizes a double piping system to satisfy the strict 0.001% limit at the German border, using one pipeline for exporting natural gas with limited amount of oxygen, while the other pipeline handles biomethane delivery to Danish consumers in that area.

On sulphur most IAs contain limits equal to the ones set in the CEN standard – 20 and 30 mgS/m3 – there is nevertheless IAs with different limits.

Regarding sensitive users requiring short-term flow quality information under Article 17, most TSOs report having fewer than 10 users receiving gas quality information. Five TSOs report between 10 and 30 users and only one TSO reports to more than 100 users.

It is also worth highlighting that the process to identify users that receive gas quality information is done on a case-by-case analysis. Sensitive users can be identified through public consultations or bilateral discussions at the request of such users.

[4] If a Class Extended allocated to a specific exit point (or to a cluster of exit points) is proven by confirmation with historical data to be a continuously experienced case (see 3.18), then no assessment for the presence of applications sensitive to Wobbe index is needed. This can also apply for exit points (or for a cluster of exit points) having the same application technologies as in another area with continuously experienced gas quality variations (demonstrated by initial assessment).

8.3 Areas for Improvement and Potential Regulatory Options

The integration of the CEN standard EN 16726 is the primary issue of this public consultation. The consultation specifically seeks to determine what kind of approach to foster the standard implementation, is more appropriate.

The CEN standard and gas quality aspects need to be also pondered with the aim to advance the decarbonization of the gas sector. The integration of hydrogen blends and biomethane will result in larger gas quality variations requiring higher system oxygen limits and increased Wobbe index ranges,. These changes might also lead to variation in gas quality, requiring more precise identification and handling of sensitive users. EN 16726:2025 standard aims at providing support for increasing renewable gas adoption, while enhancing security of supply at network entry points and protecting vulnerable consumers from significant Wobbe Index fluctuations at exit points.

While the adoption of the new quality CEN standard is voluntary, it calls for a corresponding national/European framework to support the implementation of the Wobbe index classification, mentioning that the system shall only be applied if the framework exists. This system should cover at least the assessment procedure for identification of applications sensitive to Wobbe index, the assignation and change of classes, related time scales and responsibilities need to be stipulated to enable an implementation of the classification system. In order to pursue this requirement and in what the INT NC is concerned four possible approaches are generalised and put forward:

1. **Do nothing**: Neither the INT NC nor non-binding EU guidelines are appropriate avenues for establishing the European framework required for the Wobbe index classification system. Therefore, no action will be taken to create the framework mandated by the standard.

2. **Non-binding approach:** The gas sector (i.e., relevant associations and NRAs) could develop non-binding EU guidelines outlining key principles and elements that Member States should consider when determining entry ranges at IPs and when establishing mechanisms to identify and supply sensitive users within their national systems. These non-binding guidelines should take the CEN standard as the main reference but can also propose other options.
3. **Roadmap approach:** The non-binding guidelines described in Option 2 could also serve as a basis for establishing CEN standard implementation roadmaps. These roadmaps could be supported and referenced in the INT NC and, over time, provided the proper consultation is done in each individual national system, evolve into a mandatory and harmonised implementation of the standard across national systems.
4. **More prescriptive approach:** The INT NC could be amended to establish an EU regulatory framework ensuring mandatory and harmonised implementation of the standard across national systems (this is, for exit classes, while IPs entry Wobbe Index ranges remain recommendations within the standard). The framework, developed by new INT NC provisions, would define key principles and elements for implementation, including cost distribution, class allocation responsibilities, governance arrangements, and compliance mechanisms.

In regards to the last two options different suggestions on how to integrate the standard in the INT NC are discussed next.

Since the entry-level provisions are non-binding recommendations in the standard itself, ACER suggests that the INT NC amendments are focused on the changes to the exit-level classification system. This could involve, but may not be limited to:

- Defining timelines and stakeholders' responsibilities,
- Procedures for assessing applications sensitive to Wobbe Index changes,
- Assigning and updating classes,
- General principles on cost assignments,
- Establishing mitigation measures [5].

Potential amendments to address those aspects could be the following:

1. **Article 15 of the INT NC** addresses the management of cross-border trade restrictions arising from gas quality differences. Article 21 of the new Gas Regulation (EU) 2024/1789 builds further on this by assigning clearer roles and responsibilities - for example, stipulating that if TSOs fail to agree on a solution, the matter is escalated to the relevant NRAs and possibly to ACER. Hence, Article 15 of the INT NC could be either deleted, or further developed in light of Article 21, by providing more detailed implementation guidance, such as elaborating on the cost-benefit analysis requirements or any further mitigation actions required and its handling in case of deviations.
2. The CEN standard exit-class considerations could be implemented as referred in a more binding or less binding manner.

- **a more prescriptive approach** would require adding new articles to address aspects related to exit users' classification. For example, a new full article could be included – or alternatively considerations integrated in the current Article 17 – to enforce the assignment of exit classes tied to the CEN standard definitions, including the principles to follow in doing necessary assessments and the procedures to liaise among stakeholders when assigning case classes and information sharing for sensitive users. (e. g., TSOs and/or DSOs shall assign 'Class Specified' or 'Class Extended' to each exit point or a cluster of points in accordance with the definitions given in the CEN standard (…); In doing so, national authorities, TSOs and DSOs should jointly evaluate the technical options of their systems and establish a clear and transparent mechanism for sensitive users to declare their preferences built on (…); Regarding the cost assignment to implement the relevant classes, the following key principles should be maintained (…); Moreover, regarding biomethane, Article 17 could be deepened to deal with identification of oxygen sensitive users. Additionally, Article 16 could be changed to support the information require in case of short term temporary deviation of class and to establish a process of Deviation of Classes in case of long-lasting or permanent deviation of the original class, resulting in a need for a class change.

- **a Roadmap approach,** which would require the introduction of a new article in the INT NC mandating relevant associations and/or NRAs, to develop non-binding EU guidelines outlining key principles and elements that Member States should consider when determining entry ranges at IPs and when establishing mechanisms to identify and supply sensitive users within their national systems. These non-binding guidelines should take the CEN standard as the primary reference while also allowing for alternative implementation options where appropriate. Those non-binding guidelines could become binding after a few years, if, national authorities opt so, also following further consultation, a cost benefit analysis as well as pondering if more challenging issues are identified during the period.

[5] Mitigation measure is defined in the new standard as 'any measure to prevent or reduce significant adverse effects of gas quality changes.

8.4 Proposed Public Consultation Questions

Question 4 — Assessment of Current Functioning

4. Do you consider that the current practices related to gas quality provisions either related to the current Interconnection Agreements or through other means are fit for purpose?

In your response, please describe, if possible, the relevant framework governing gas quality aspects and explain how it informs your view.

> Yes, as the Austrian Association of Gas and Heat Supply Undertakings (FGW), representing national transmission system operators (TSOs), distribution system operators (DSOs), and storage operators, we consider the current practices and frameworks governing gas quality provisions to be highly effective and fully fit for purpose.

In Austria, the regulatory framework is mature and well-structured. Gas quality tracking, monitoring parameters, and Wobbe Index bands are established under national technical rules and market codes overseen by the National Regulatory Authority (E-Control). This is complemented by bilateral technical arrangements in Interconnection Agreements (IAs) between adjacent TSOs to handle interface parameters seamlessly.

The fact that cross-border gas transmission operates without systemic technical barriers proves that this localized and contractually stable setup works perfectly. Any attempt to introduce rigid, over-prescriptive European harmonization into the Network Code would undermine the principle of subsidiarity. It would strip local infrastructure operators of the regional flexibility needed to dynamically blend gas streams or handle native gas characteristics.

Crucially, maintaining this flexibility is an operational prerequisite to protect highly sensitive downstream assets under our members' purview. For instance, underground gas storage facilities represent the backbone of European security of supply but are technically vulnerable to chemical impurities. They require the strict enforcement of lower oxygen (O_2) and CO_2 limits at interconnection points to prevent irreversible technical damage—including accelerated steel asset corrosion, impaired efficiency of corrosion inhibitors, pore blockages from biofilm formation (leading to a direct loss of working gas volume), and microbially influenced corrosion (MIC) triggered by sulfate-reducing bacteria that create toxic and explosive hydrogen sulfide (H_2S).

Therefore, the current framework is fit for purpose precisely because it allows national technical experts and adjacent TSOs to adjust parameters locally to preserve system integrity, which a centralized European code could not safely duplicate.

Question 5 — Concerns

5. Do you know of any circumstance where different gas quality requirements hindered cross-border flows? If yes, please provide more details? What solutions solved/could effectively solve such matters?

As an industry association, we are not aware of any operational circumstances within our national grid area where differing gas quality requirements have actively hindered cross-border flows. The lack of widespread physical flow disruptions across the European network demonstrates that current bilateral coordination mechanisms at Interconnection Agreements (IAs), overseen by National Regulatory Authorities (NRAs), are fully effective and fit for purpose.

To resolve potential regional variations without creating market barriers, solutions must rely strictly on local technical cooperation, such as operational blending or dynamic gas stream routing, managed by adjacent TSOs. We strongly caution against attempting to solve localized issues through an over-prescriptive, centralized European harmonization of parameters.

Furthermore, while maintaining market liquidity is vital, our members emphasize that it must never compromise the technical integrity of critical downstream infrastructure. Underground gas storage facilities are backbone assets for European security of supply and are uniquely sensitive to chemical impurities. They cannot tolerate elevated concentrations of CO_2 or oxygen (O_2) without experiencing severe, irreversible damage—including microbially influenced corrosion (MIC) of steel assets, degradation from sulfate-reducing bacteria generating toxic hydrogen sulfide (H_2S), and pore blockages due to accelerated biofilm formation, which leads to a direct loss of working gas volume.

Therefore, any effective solution for cross-border flow management must grant network operators the flexible mandate to strictly enforce necessary lower oxygen and CO_2 safety limits at interconnection points leading directly to gas storage assets.

Question 6 – Decarbonisation

6. With the progressive growth of low-carbon gases and hydrogen blends, do you consider the current practices related to gas quality remain effective? Would you expect rising concerns in respect to cross-border flows impediments or biomethane injections related to gas quality, and would you have specific suggestions to address those?

Yes, we consider that the current gas quality practices remain fully effective even with the progressive growth of low-carbon gases, biomethane injections, and hydrogen blends. The existing cooperative mechanisms set out under the current Interoperability Network Code (INT NC), paired with the overarching provisions of the Gas and Hydrogen Decarbonisation Package, provide a robust and flexible framework capable of handling changing gas stream compositions.

While we acknowledge potential concerns regarding gas quality variations—particularly as diverse production sources like biomethane enter the grid—we do not expect these to systematically impede cross-border flows, provided that the principles of technical subsidiarity and localized operational flexibility are strictly maintained.

Rather than enforcing rigid, centralized European parameters that could artificially restrict native production or disrupt cross-border dynamics, we propose the following specific suggestions based on the expertise of our member companies:

1. Utilizing Existing TSO Tools: Any localized variations or constraints resulting from low-carbon gas entry should be managed dynamically via existing bilateral coordination tools within Interconnection Agreements (IAs), including physical blending, pressure management, and real-time gas quality tracking.

2. Protecting Infrastructure Integrity and Sensitive Downstream Assets: Market integration must not come at the expense of system safety. Critical infrastructure—most notably underground gas storage facilities managed by our members—acts as the backbone of European security of supply but exhibits unique chemical vulnerabilities. These formations cannot tolerate elevated concentrations of CO_2 or oxygen (O_2) without experiencing severe, irreversible damage. This includes pore blockages due to enhanced biofilm formation (leading to a direct loss of working gas volume), accelerated steel asset corrosion, reduction in the effectiveness of corrosion inhibitors, and microbially influenced corrosion (MIC) driven by sulfate-reducing bacteria that form toxic and explosive hydrogen sulfide (H_2S). Therefore, any regulatory evolution must explicitly preserve the network operators' mandate to enforce strict, lower oxygen and CO_2 safety thresholds at interconnection points leading to gas storage assets.

3. Cross-Sectoral Harmonization in Market Communication: As the grid transitions to accommodate low-carbon gases and hydrogen, the data models and market communication systems must remain strictly uniform across all energy sectors and gas carriers. We strongly advise against establishing separate, isolated data-routing tracks or centralized management systems (such as a centralized Meter Data Management System - MDMS) specifically for hydrogen or low-carbon gases. Centralization fails to address the primary source of operational data errors, which consistently occurs on the physical path between the local meter and the respective MDMS. Creating parallel, centralized administrative IT structures will not yield process or data-quality improvements; instead, it will introduce unnecessary cost, operational complexity, and systemic risk. Technical alignments should continue to be managed efficiently through the established ENTSOG CNOT governance framework.

Question 7 — Fostering the implementation of the CEN standard

This block of 5 questions tests the views about the CEN standard EN 16726 requiring a prescriptive implementation grounded on a defined EU-wide regulatory framework or instead promoting a non-binding approach, possibly followed by a Roadmap, as discussed in Section 8.3.

7.1 In relation to the CEN standard EN 16726, do you support i. do nothing approach, ii. a non-binding approach or iii. a roadmap approach or iv. a prescriptive implementation approach – as discussed in Section 8.3.

We support a combination of a non-binding approach and a flexible roadmap approach managed strictly at the national level, while strongly opposing any immediate prescriptive implementation approach via the Network Code.

The implementation of the CEN standard EN 16726 must respect the principles of subsidiarity and proportionality, leaving the enforcement and timeline to individual Member States, national regulatory authorities (NRAs), and local technical experts. Grid architectures, historical supply configurations, and downstream asset requirements vary significantly across Europe.

A rigid, prescriptive EU-wide application fails to recognize that unique regional technical sensitivities require localized handling. Most critically, underground gas storage facilities represent the backbone of European security of supply but possess highly sensitive chemical limitations. From the perspective of our members, they are extremely vulnerable to elevated concentrations of CO_2 and oxygen (O_2). Increased oxygen levels lead to severe, irreversible negative impacts: accelerated steel infrastructure corrosion, pore blockages from increased biofilm formation (leading to a direct loss of working gas volume), reduction in the effectiveness of corrosion inhibitors, and microbially influenced corrosion (MIC) triggered by sulfate-reducing bacteria that form toxic and explosive hydrogen sulfide (H_2S).

Therefore, a flexible roadmap or non-binding framework is necessary to ensure that network operators retain the mandate to enforce strictly lower oxygen and CO_2 safety limits at interconnection points leading to gas storage assets, rather than being forced into a centralized, uniform standard that could compromise system safety.

7.2 What are the reasons behind your preference?

Our association's preference for a flexible, national roadmap or a non-binding framework—as opposed to an immediate, prescriptive EU-wide mandate—is dictated by the profound differences in regional network topologies, native gas compositions, and the safety requirements of critical infrastructure across individual Member States.

A centralized, prescriptive application fails to account for these specific regional constraints and introduces significant system safety and economic risks for our members:

1. Threat to Underground Storage Integrity: Underground gas storage facilities represent the critical backbone of European security of supply. These geological formations possess acute technical sensitivities and are highly vulnerable to elevated concentrations of CO_2 and oxygen (O_2). Forcing a rigid, uniform EU standard that does not allow network operators to enforce lower, stricter oxygen and CO_2 limits at interconnection points leading to storage assets carries severe, irreversible operational dangers:
- Pore Blockage: Increased oxygen levels accelerate biofilm formation, causing pore blockages and a subsequent permanent loss of working gas volume.
- Infrastructure Degradation: Oxygen acts as a strong oxidizing agent, heavily accelerating the technical

corrosion of steel assets and impairing the effectiveness of chemical corrosion inhibitors.
- Microbially Influenced Corrosion (MIC): Oxygen promotes the growth of sulfate-reducing bacteria, triggering the formation of highly toxic and explosive hydrogen sulfide (H_2S), which severely degrades infrastructure materials.

2. Disproportionate Economic Burdens: Forcing TSOs to universally comply with uniform exit-class boundaries would mandate extensive, unnecessary investments in gas-blending facilities, physical stream routing, and real-time gas quality tracking systems. These inflated technical and administrative compliance costs would inevitably be passed through to network tariffs, increasing the financial burden on downstream consumers without delivering any measurable enhancement to cross-border market liquidity.

3. Preservation of Efficient Market Communication: The transition toward low-carbon gases must not be used as a pretext to disrupt proven data architectures. We strongly oppose separate, centralized administrative data tracks (such as a centralized Meter Data Management System - MDMS) for new gases like hydrogen. The primary source of data errors remains on the physical path between the local meter and the respective MDMS. A centralized administrative layer fails to solve this technical bottleneck, meaning centralization would induce high transition costs and structural complexity without yielding process or data-quality improvements. Technical advancements are most effectively handled via the established, flexible ENTSOG CNOT governance framework.

7.3 Do you believe that the INT NC is the right venue for a prescriptive action?

No, as an industry association, we firmly believe that the Interoperability and Data Exchange Network Code (INT NC) is not the right venue for a prescriptive action regarding the mandatory implementation of the EN 16726 standard or fixed exit classes.

Our position is informed by several distinct regulatory, legal, and structural reasons:

1. Operational and Legal Scope of the INT NC: Legally, the INT NC is a technical network code designed explicitly to govern cross-border technical cooperation, data exchange protocols, and operational coordination between adjacent Transmission System Operators (TSOs) at Interconnection Points (IPs). Extending its scope to mandate downstream exit-level classifications or prescriptive sensitive-user management would directly infringe upon national distribution system operator (DSO) domains, local grid architectures, and national governance frameworks.

2. Violation of the Gas and Hydrogen Decarbonisation Package: A prescriptive action via the INT NC would contradict the flexible implementation mechanisms established in the overarching European Gas and Hydrogen Regulation. The current legal framework explicitly preserves the competence of individual Member States and National Regulatory Authorities (NRAs) to handle gas quality parameters internally based on localized infrastructure setups.

3. Protection of Critical Infrastructure (Storage Integrity): Prescriptive, uniform European mandates strip network operators of the local flexibility required to safely manage the grid and protect highly sensitive, backbone infrastructure. Specifically, underground gas storage facilities are essential for European security of supply but have acute technical limitations regarding chemical impurities. They require the strict enforcement of lower, customized oxygen (O_2) and CO_2 thresholds at interconnection points to prevent severe, irreversible physical and economic damage. Regional technical experts and NRAs must retain the full mandate to handle these safety margins locally.

4. Efficiency in Market Communication and Data Routing: Prescriptive technical alignment must also respect

decentralized and streamlined market communication. We strongly oppose parallel centralization efforts or centralized administrative data routing tracks (such as a centralized Meter Data Management System - MDMS) for new energy carriers like hydrogen. Centralization does not solve the primary source of structural data errors, which consistently occurs on the physical and analytical path between the local meter and the respective MDMS. A centralized European IT layer introduces high complexity and structural transaction costs without providing any measurable process or data-quality improvements. Technical upgrades should instead be driven flexibly via the established ENTSOG CNOT governance framework.

7.4 If you would opt for a non-binding approach possibly resulting in a roadmap – which would be referenced in the INT NC? Please check 4 options below.

7.4. a) With whom do you think the decision to make any implementation mandatory should hold, the national regulatory authority and/or the national ministry – both conducting a public consultation -, an independent impact assessment, other

The decision to make any implementation of the standard mandatory should strictly rest with the National Regulatory Authority (NRA) and/or the competent National Ministry, following a comprehensive national public consultation and a country-specific independent impact assessment.

Gas transmission and distribution network configurations, native gas quality profiles, and regional supply patterns differ drastically across individual Member States. National authorities and regional technical experts are the only entities positioned to properly evaluate the local technical and economic implications of such an implementation for the domestic market.

Crucially, an independent impact assessment at the national level is required to safeguard critical, backbone infrastructure assets managed by our members. In Austria, underground gas storage facilities represent a cornerstone of energy security but possess acute technical sensitivities to chemical impurities. These geological formations cannot tolerate elevated concentrations of CO_2 or oxygen (O_2) without facing severe and irreversible operational damage:

- Pore Blockages: Increased oxygen levels accelerate biofilm formation, causing pore blockages and a permanent loss of working gas volume.
- Asset Degradation: Oxygen acts as a strong oxidizing agent, heavily accelerating the technical corrosion of steel assets and diminishing the chemical effectiveness of injected corrosion inhibitors.
- Microbially Influenced Corrosion (MIC): Oxygen promotes the growth of sulfate-reducing bacteria, triggering the formation of highly toxic and explosive hydrogen sulfide (H_2S), which severely degrades infrastructure materials.

Furthermore, national authorities must oversee these decisions to ensure that any regulatory evolution remains aligned with established decentralized market communication systems. We strongly oppose separate, centralized administrative data tracks (such as a centralized Meter Data Management System - MDMS) for new gases like hydrogen. Centralization fails to address the primary source of operational data errors, which consistently occurs on the physical path between the local meter and the respective MDMS. National governance ensures that technical upgrades are handled efficiently via the existing ENTSOG CNOT framework, preventing artificial legal complexities or unjustified network tariff increases for downstream end-users.

7.4. b) What is the timeline that you consider could be established to make any implementation mandatory?

We do not support the establishment of a fixed, mandatory EU-wide timeline within the Network Code.

Instead, any specific implementation schedule must be determined dynamically at the national level by the respective National Regulatory Authorities (NRAs) and ministries, following a thorough evaluation of local technical readiness, infrastructure configurations, and market frameworks.

A centralized, rigid timeline fails to account for regional technical constraints and risks compromising system security. For instance, underground gas storage facilities act as the critical backbone of European security of supply but possess strict, highly sensitive geological and chemical limitations. They cannot tolerate elevated concentrations of CO_2 or oxygen (O_2) without facing severe, irreversible operational damage—including pore blockages from biofilm formation (causing permanent loss of working gas volume), accelerated technical corrosion of steel assets, a reduction in the effectiveness of chemical corrosion inhibitors, and microbially influenced corrosion (MIC) triggered by sulfate-reducing bacteria that form toxic and explosive hydrogen sulfide (H_2S). Network operators must be granted the necessary time and operational flexibility to ensure that strict lower oxygen and CO_2 thresholds can be safely maintained at storage interconnection points before any mandatory shift in wider gas quality bands occurs.

Furthermore, implementation timelines must align naturally with cross-sectoral IT lifecycles rather than forced regulatory milestones. While we strongly support keeping data standards and market communication completely uniform across all energy sectors and gas carriers (explicitly including hydrogen), we firmly oppose the accelerated introduction of separate, centralized data-routing frameworks (such as a centralized Meter Data Management System - MDMS). Operational data errors consistently arise on the physical path between local meters and the respective MDMS, an issue that higher-level administrative centralization does not solve. Transition timelines must remain flexible to avoid artificial structural complexities, unnecessary investment costs, and unjustified network tariff increases for downstream end-users.

7.4.c) Would you be concerned if deviations were taking place across national systems in the establishment of exit classes? If yes, what deviations seem to you to be of concern and how would you mitigate those?

No, as an industry association, we do not identify any structural or operational concerns regarding deviations across individual national systems in the establishment of Wobbe Index exit classes, provided that these national applications remain fundamentally consistent with the overarching technical guidelines of the EN 16726 standard.

European gas transmission and distribution networks differ drastically across individual Member States in terms of physical grid architectures, historical supply pathways, regional production profiles (such as biomethane entry), and localized market topologies. Permitting and respecting national variations is an operational necessity. It ensures that National Regulatory Authorities (NRAs) and local technical experts can safely tailor gas quality boundaries to the specific requirements of their regional networks and sensitive domestic assets.

A centralized, rigid imposition that tries to eliminate these natural national variations would strip network operators of the precise flexibility required to protect highly sensitive downstream infrastructure. For example, underground gas storage facilities represent the absolute backbone of European security of supply but possess acute geological and chemical vulnerabilities. These formations cannot tolerate elevated concentrations of CO_2 or oxygen (O_2) without facing severe, irreversible operational and structural damage. This includes pore blockages due to accelerated biofilm formation (leading to a permanent loss of working gas volume), accelerated technical corrosion of steel assets, a sharp reduction in the effectiveness of injected corrosion inhibitors, and microbially influenced corrosion (MIC) triggered by sulfate-reducing bacteria that form toxic and explosive hydrogen sulfide (H_2S).

Allowing national frameworks to handle exit-class setups avoids the risk of forced, uniform European parameters inadvertently overriding localized oxygen and CO2 safety margins. Any potential regional friction or cross-border quality variations can be successfully mitigated on a case-by-case basis through existing bilateral TSO-to-TSO cooperation mechanisms within Interconnection Agreements (IAs)—such as physical gas stream blending, real-time quality tracking, and coordinated network routing—rather than through an over-prescriptive European code revision that would inflate network tariffs for downstream end-users.

7.5 How do you perceive the consequences to end-users in the short and long term if a well-defined regulatory framework, either created by amending the INT NC or by other means, for the identification of exit classes as well as other limits, namely for oxygen is not implemented?

The short- and long-term consequences to end-users of failing to implement a well-defined regulatory framework—specifically one that leaves national authorities with the flexible mandate to enforce localized safety limits for oxygen and other gas quality parameters—would be severe, both technically and financially.

Our perception of these consequences is structured as follows:

Short-Term Consequences:
1. Operational Risk to Grid Security: Without clear regulatory backstops at the national level, the sudden or uncoordinated entry of diverse gas streams (such as shifting import dynamics or varying low-carbon gas injections) could lead to rapid, localized fluctuations in gas quality. This creates immediate process-stability risks for sensitive industrial end-users who require stable combustion characteristics.
2. Compromised Infrastructure and Volume Loss: Underground gas storage facilities, which act as the absolute backbone of European security of supply, are acutely vulnerable to even minor trace amounts of oxygen (O2) and CO2. In the short term, a lack of clear enforcement of low oxygen safety limits at storage interconnection points would lead to immediate chemical and biological reactions. Increased oxygen concentrations accelerate biofilm formation within geological formations, causing rapid pore blockages and a subsequent irreversible loss of pore space and working gas volume.

Long-Term Consequences:
1. Severe Asset Degradation and Safety Hazards: Over the long term, sustained exposure to elevated oxygen levels triggers microbially influenced corrosion (MIC) and heavily accelerates the structural corrosion of steel infrastructure. This promotes the growth of sulfate-reducing bacteria, leading to the formation of highly toxic and explosive hydrogen sulfide (H2S), alongside a severe degradation of storage and pipeline assets. Furthermore, residual oxygen impairs the long-term effectiveness of injected chemical corrosion inhibitors, permanently reducing the lifespan of transport and storage systems.
2. Escalating Costs and Tariff Shocks for End-Users: Infrastructure operators would face substantial long-term financial, capital, and civil liability risks to keep the system safe from technical failures and asset degradation. Because network operators are heavily regulated entities, these ballooning operational, maintenance, and mitigation costs would inevitably have to be socialized. The long-term consequence would be a significant and permanent pass-through into network tariffs, triggering tariff shocks that place a heavy, unjustified financial burden on downstream end-users and final consumers.
3. Inefficiencies in Digital Transition: If the framework fails to maintain strict, uniform cross-sectoral data standards via existing decentralized architectures (such as the ENTSOG CNOT governance framework) and instead yields to separate, centralized IT architectures (like a centralized Meter Data Management System - MDMS for hydrogen), it will introduce high long-term transaction costs. Centralization at a higher administrative level completely fails to address the primary source of operational data errors, which consistently arises on the physical path between the local meter and the MDMS. The resulting structural complexity and parallel IT overhead would further inflate utility bills for end-users without yielding any measurable improvements in data quality or process efficiency.

Question 8 – Application of EN 16726 – key elements and principles

This block of questions revolves around the key principles that will need to be defined for implementing the CEN standard exit classes classification, either in a more prescriptive or in a non-binding approach. Those principles would relate to aspects such as e.g., distribution of costs, governance aspects, responsibilities and obligations of TSOs, NRAs and final users.

8.1 Are you aware of the specific impact that the adoption of the CEN standard has in the Member State in which you are located? For example, if this might be implemented into National Law? Please describe your view.

Yes, as the Austrian Association of Gas and Heat Supply Undertakings (FGW), representing national transmission system operators (TSOs), distribution system operators (DSOs), and storage operators, we are fully aware of the specific impacts and the existing regulatory status of the CEN standard EN 16726 within our Member State.

The CEN standard has already been officially adopted at the national level as a technical standard (ÖNORM EN 16726). Furthermore, the corresponding system of gas quality monitoring and tracking is structurally integrated into the national regulatory framework through the Austrian market rules and technical directives, which are overseen by the National Regulatory Authority (E-Control).

While the technical parameters of the standard are well-integrated into our national architecture, our members emphasize that any prescriptive step toward hardcoding mandatory, rigid exit-class classifications or centralized EU-wide parameters into the Network Code would create severe operational, infrastructure, and financial concerns across the Austrian sector:

1. Grave Threat to Underground Gas Storage Integrity:
In Austria, underground gas storage facilities represent the absolute backbone of national and regional security of supply. These geological formations possess unique technical sensitivities and are exceptionally vulnerable to chemical impurities. They cannot tolerate elevated concentrations of CO2 and oxygen (O2) without facing irreversible, catastrophic physical damage:
- Pore Blockages: Increased oxygen levels directly accelerate biofilm formation, causing localized pore blockages and an irreversible loss of pore space, which results in a direct loss of working gas volume.
- Infrastructure Corrosion: Oxygen acts as a powerful oxidizing agent that significantly accelerates the technical corrosion of steel assets and heavily diminishes the operational effectiveness of chemical corrosion inhibitors.
- Microbially Influenced Corrosion (MIC): Elevated oxygen levels promote the rapid growth of sulfate-reducing bacteria. This leads to the formation of highly toxic and explosive hydrogen sulfide (H2S), triggering severe material degradation.

Therefore, the national framework must explicitly retain the flexible mandate for network operators to enforce strictly lower oxygen and CO2 limits at interconnection points leading to gas storage assets, rather than having these local safety margins overridden by a rigid, centralized EU-wide application.

2. Disruptive Centralization Risks in Market Communication:
Our view is also strongly informed by the need to protect efficient national data exchange architectures. As low-carbon gases and hydrogen blends enter the system, market communication must remain completely uniform and streamlined across all sectors and energy carriers.

We view separate harmonization tracks or centralization efforts—such as a centralized Meter Data Management System (MDMS) for hydrogen or new gases—as highly critical and flawed. Centralization at a higher administrative level completely fails to address the primary source of operational data errors, which consistently occurs on the physical path between the local meter and the respective MDMS (the meter-to-MDMS connection). Since administrative centralization does not solve this baseline technical issue, it will yield zero process or data-quality improvements. Instead, it will induce high structural transition costs and artificial legal complexities that would ultimately be passed through to network tariffs, increasing the financial burden on downstream end-users. Technical upgrades must instead be handled through the established, flexible ENTSOG CNOT framework.

8.2 Would you have proposals / how would you plan to proceed in the identification and assignment of exit classes within your purview of future activities? Please explain the changes you could expect in your specific role in your answer.

As an industry association representing gas and heat infrastructure operators, the Austrian Association of Gas and Heat Supply Undertakings (FGW) does not anticipate any changes to our organizational role, as we do not operate networks, manage storage assets, or act as a regulatory authority. This question is primarily directed toward asset-operating entities such as TSOs or DSOs.

However, from our perspective as a national association coordinating the overarching technical, regulatory, and political interests of the Austrian gas sector, our role in future activities will center on supporting our member companies in managing the practical and regulatory rollout of exit-class systems through industry-wide coordination, standard alignment, and technical consensus-building. Based on the consolidated expertise and operational requirements of our members, we propose the following methodology and principles for market operators tasked with the identification and assignment of exit classes:

1. Methodological Principles for Network Operators:
- Historical and Predictive Modeling: The initial identification of exit classes by operators must be based on a combination of historical gas quality tracking data and forward-looking system evolutions (such as known grid developments, changing domestic production profiles like biomethane, and shifting import pathways).
- Informative Status of Classes: Exit classes must be treated strictly as informative tools for the market and downstream end-users. They must never be interpreted as a permanent physical or legally binding guarantee of gas quality, as doing so would artificially restrict dynamic grid operations, cross-border flexibility, and localized blending configurations.
- Objective Consumer Assessments: The assignment of specific bands (such as Class Specified with a Wobbe Index variation ≤ 3.7 MJ/m^3 or Class Extended) must rely on transparent, non-discriminatory technical procedures that objectively evaluate the specific tolerance margins of downstream sensitive industrial users.

2. Safeguarding Critical Infrastructure and Storage Assets:
A central focus of our association's coordinating and standard-setting role remains the rigorous protection of critical infrastructure under our members' purview. Underground gas storage facilities represent the absolute backbone of European security of supply but possess acute chemical and biological vulnerabilities to trace impurities. They cannot tolerate wide quality fluctuations or elevated concentrations of CO2 and oxygen (O2) without facing irreversible operational and physical damage. This includes pore blockages due to enhanced biofilm formation (leading to a permanent loss of working gas volume), accelerated steel pipeline corrosion, impaired efficiency of chemical corrosion inhibitors, and microbially influenced corrosion (MIC) triggered by sulfate-reducing bacteria that form toxic and explosive hydrogen sulfide (H2S). Consequently, any implementation roadmap or national assignment framework must explicitly preserve the network operators' mandate to enforce strictly lower oxygen and CO2 safety thresholds at all storage interconnection points.

3. Maintaining Streamlined, Uniform Market Communication:
As low-carbon gases and hydrogen blends are progressively integrated into the grid, we advocate for keeping data architectures fully uniform and integrated across all energy sectors and gas carriers. We strongly oppose separate, centralized administrative data tracks or platforms (such as a centralized Meter Data Management System - MDMS) for new energy carriers. Administrative centralization fails to address the baseline source of data errors, which consistently occurs on the physical path between local meters and the respective MDMS. Therefore, rather than creating parallel IT overhead and unnecessary capital investments that would inflate network tariffs for downstream end-users, technical communication upgrades should be driven efficiently within the existing decentralized ENTSOG CNOT governance framework.

8.3 Do you have any reflections on the potential cost allocation and cost distribution considerations that the assignment of classes might entail? For example, what would be your view as regards of applying differentiated exit fees among users based on differences in assigned gas quality classes?

Yes, as an industry association representing the full value chain of infrastructure operators (TSOs, DSOs, and storage operators), the Austrian Association of Gas and Heat Supply Undertakings (FGW) has clear reflections on cost allocation, and we strongly oppose the introduction of differentiated network exit fees based on assigned gas quality classes.

Our position is grounded in the core principles of non-discrimination, cost-causality, and the technical realities of grid operations:

1. Violation of Non-Discrimination and Equal Treatment:
Network tariffs and exit fees must remain transparent, non-discriminatory, and unbundled from the physical, fluctuating properties of the gas stream. Introducing differentiated exit fees based on Wobbe Index exit classes would penalize or reward end-users based purely on their geographical location within the grid and the historical or shifting nature of regional supply pathways. Since infrastructure operators must manage the grid dynamically to ensure overall system stability, gas routing can change rapidly due to import dynamics or the injection of local low-carbon gases. Tying network fees to these operational adjustments would introduce artificial market distortions and violate the fundamental principle of equal treatment for grid users.

2. Misalignment with Cost-Causality Principles:
Differentiated exit fees assume that managing specific gas quality bands creates isolated, assignable costs for specific end-users. In reality, gas quality management—such as operational blending, pressure adjustments, and stream routing—is an integrated, system-wide service performed by operators to maintain overall grid integrity and security of supply. The costs associated with these baseline operations cannot be neatly unbundled or attributed to individual exit points. Forcing such an allocation would create immense administrative complexity and legal friction, ultimately leading to arbitrary cost socialization.

3. Protection of Backbone Storage Infrastructure:
Cost allocation considerations must, above all, respect and protect the integrity of critical, backbone infrastructure. In Austria, underground gas storage facilities represent the absolute cornerstone of energy security but possess acute chemical sensitivities to trace impurities. They cannot tolerate elevated concentrations of CO_2 or oxygen (O_2) without facing irreversible, catastrophic physical and financial damage:
- Pore Blockages: Increased oxygen levels drive accelerated biofilm formation, causing localized pore blockages and a permanent loss of working gas volume.
- Infrastructure Degradation: Oxygen acts as a strong oxidizing agent that heavily accelerates the technical corrosion of steel assets and diminishes the chemical effectiveness of injected corrosion inhibitors.
- Microbially Influenced Corrosion (MIC): Elevated oxygen levels promote the growth of sulfate-reducing bacteria, triggering the formation of toxic and explosive hydrogen sulfide (H_2S), leading to severe material

degradation.

Any regulatory framework governing cost distribution must recognize that maintaining strict, lower oxygen and CO_2 safety thresholds at storage interconnection points is a system-wide security prerequisite. The costs for maintaining these safety margins must be handled through established national regulatory frameworks overseen by the National Regulatory Authority (E-Control), rather than being fragmented into artificial exit-fee structures.

4. Avoiding Unjustified IT and Administrative Overhead:
We strongly caution against using the implementation of exit classes or the integration of new gases like hydrogen to justify complex, centralized IT tracking

8.4 How should the interactions between the different players (TSO, DSOs, shippers, end-users) proceed in respect to the identification of classes?

The interactions between the different players—Transmission System Operators (TSOs), Distribution System Operators (DSOs), shippers, and end-users—regarding the identification of exit classes must proceed through a structured, transparent, and decentralized information flow integrated into existing national market rules, rather than through a newly created, centralized European administrative layer.

As an industry association, the Austrian Association of Gas and Heat Supply Undertakings (FGW) views the roles and interactions of these players as follows:

1. System Operators (TSOs and DSOs) as Coordinated Information Providers:
The primary interaction must take place between TSOs and DSOs. In network configurations with complex downstream topologies, reverse-flows, or increasing biomethane injections, TSOs and DSOs must closely coordinate their historical and predictive gas quality modeling. Operators are responsible for identifying and publishing the respective Wobbe Index exit classes on an informative basis. This cross-system cooperation ensures that the market receives consistent data without creating regulatory boundaries or friction between transmission and distribution levels.

2. Shippers and End-Users as Informed Market Participants:
Shippers and downstream end-users must utilize the published exit classes strictly as an informative planning tool. These classes must never be treated as a legally binding or physical guarantee of a permanent, fixed gas quality, as doing so would severely restrict operational flexibility and the dynamic routing of gas streams. Sensitive industrial end-users must interact with operators by objectively communicating their specific technical tolerance margins, allowing operators to map out regional gas quality profiles accurately during regular national consultation processes.

3. Rigorous Protection of Critical Infrastructure (Storage Operators):
The interaction framework must fundamentally prioritize the technical integrity of backbone assets. In Austria, underground gas storage facilities represent a cornerstone of energy security but possess acute chemical and biological vulnerabilities to trace impurities. They cannot tolerate elevated concentrations of CO_2 or oxygen (O_2) without facing severe, irreversible operational damage—including pore blockages from biofilm formation (causing a direct loss of working gas volume), accelerated technical corrosion of steel assets, a reduction in the effectiveness of chemical corrosion inhibitors, and microbially influenced corrosion (MIC) triggered by sulfate-reducing bacteria that form toxic and explosive hydrogen sulfide (H_2S). Therefore, the interaction rules must explicitly preserve the mandate for network operators to enforce strictly lower oxygen and CO_2 thresholds at all storage interconnection points, independent of downstream exit-class classifications.

4. Maintaining Decentralized Market Communication (Avoiding MDMS Complexity):
As the grid transitions to accommodate low-carbon gases and hydrogen blends, interactions between players must remain streamlined and uniform across all energy sectors. We strongly oppose establishing separate, centralized administrative data tracks or parallel platforms, such as a centralized Meter Data Management System (MDMS) for hydrogen. Centralization at a higher administrative level completely fails to address the baseline source of operational data errors, which consistently occurs on the physical path between the local meter and the respective MDMS (the meter-to-MDMS connection). Forcing players into a centralized administrative layer would only introduce high transaction costs and unnecessary structural complexity. Instead, interaction protocols and technical data updates should be driven efficiently within the established, decentralized ENTSOG CNOT governance framework, protecting downstream end-users from unjustified network tariff increases.

8.5 Please provide any additional information and views that you think relevant when considering mechanisms and rationale to implement a system of exit classes.

As the Austrian Association of Gas and Heat Supply Undertakings (FGW), coordinating the technical and regulatory interests of our national transmission system operators (TSOs), distribution system operators (DSOs), and storage operators, we believe that the implementation of a system of exit classes must be approached strictly as an informative tool rather than a prescriptive obligation.

When considering the mechanisms and rationale for such a framework, we emphasize the following core positions aligned with our members' operational realities:

1. Nature of the System as an Informative Tool:
The primary rationale behind implementing a system of exit classes should be to support downstream end-users' information needs regarding gas quality parameters and variability. It should serve as a transparent, forward-looking planning mechanism for market participants. The CEN standard EN 16726 itself explicitly mentions that such a system shall apply if the corresponding national or European framework is available to support it. This clearly confirms the current voluntary nature of the standard and underlines that enabling regulatory arrangements must be carefully tailored at the national level before any implementation—as is successfully the case in Austria, where gas quality monitoring is structurally integrated via the national market rules overseen by the National Regulatory Authority (E-Control).

2. Careful Consideration of National Circumstances and Subsidiarity:
We reiterate our firm view that the implementation of the Wobbe Index classification system requires a highly cautious approach that respects distinct national circumstances. Network configurations, localized grid architectures (including transmission-to-distribution interfaces), specific end-users' needs, and existing gas quality management practices vary fundamentally across Member States. Forcing a rigid, prescriptive EU-wide mandate would disrupt proven national balance points and limit the operational flexibility required by network operators to dynamically blend and route changing gas streams.

3. Safeguarding Backbone Storage Infrastructure:
Any national framework or roadmap enabling exit classes must explicitly protect critical system assets essential for European security of supply. In Austria, underground gas storage facilities possess acute geological, chemical, and biological sensitivities to impurities. They cannot tolerate elevated concentrations of CO_2 or oxygen (O_2) without facing severe, irreversible operational damage. Increased oxygen levels accelerate biofilm formation (causing pore blockages and a direct loss of working gas volume), heavily accelerate the technical corrosion of steel assets, impair the effectiveness of chemical corrosion inhibitors, and promote microbially influenced corrosion (MIC) via sulfate-reducing bacteria that form toxic and explosive hydrogen sulfide (H_2S). Therefore, the rationale for exit-class assignment must ensure that network operators retain the full mandate to

enforce strictly lower, localized oxygen and CO_2 safety limits at all storage interconnection points, fully independent of broader downstream bands.

4. Preventing Costly and Complex Administrative Overhauls:
As the energy sector integrates low-carbon gases and hydrogen blends, market communication must remain streamlined and uniform across all energy sectors and gas carriers. We strongly oppose utilizing the system of exit classes to justify separate, centralized administrative data tracks or platforms, such as a centralized Meter Data Management System (MDMS) for hydrogen. Administrative centralization fails to address the baseline source of operational data errors, which consistently occurs on the physical path between local meters and the respective MDMS. Introducing parallel, centralized data routing structures would only induce high transaction costs and unnecessary IT overhead that would ultimately be passed through to network tariffs. Technical communication upgrades should instead be driven efficiently within the existing decentralized ENTSOG CNOT governance framework.

Question 9 – Other gas quality topics

9. Are there gas quality improvements, non-related to the CEN standard that you would foresee, as relevant? Which ones? Please argue your point. They can also revolve around topics not currently covered in the INT NC.

Yes, we foresee relevant gas quality topics and technical considerations that are non-related to the CEN standard EN 16726 and extend beyond the current scope of the Interoperability and Data Exchange Network Code (INT NC). From the perspective of our members, these focus primarily on managing the technical realities of low-carbon gas integration, protecting critical asset integrity, and maintaining efficient market communication:

1. Dynamic Risk Management and Blending for Low-Carbon Gas Integration:
The progressive entry of decentralized low-carbon gases—such as varying biomethane profiles and future hydrogen injections—introduces increased variability in gas stream compositions. Rather than enforcing rigid, centralized European limits that could artificially restrict native production or disrupt cross-border dynamics, a key technical improvement lies in enabling network operators to manage these variations dynamically. This should be achieved via localized technical arrangements within Interconnection Agreements (IAs), leveraging proven operational tools such as physical gas stream blending, pressure management, and advanced real-time gas quality tracking systems managed directly by adjacent TSOs.

2. Critical Importance of Lower Oxygen and CO_2 Limits for Storage Integrity:
A fundamental area not sufficiently covered by the current INT NC framework is the explicit protection of underground gas storage facilities (UGS) against specific trace impurities. Underground storage assets represent the absolute backbone of a well-functioning security of supply in Europe, and guaranteeing their technically flawless operation is of immense importance.

These geological formations possess unique and acute technical sensitivities to chemical impurities and cannot tolerate elevated concentrations of CO_2 or oxygen (O_2) without facing severe, irreversible operational and physical damage. Increased oxygen levels carry catastrophic operational risks for our members' storage infrastructure:
- Accelerated Corrosion: Oxygen acts as a strong oxidizing agent, heavily accelerating the technical corrosion of steel assets and pipelines, while significantly impairing the operational effectiveness of injected chemical corrosion inhibitors.
- Pore Blockages: Increased oxygen levels drive enhanced biofilm formation within geological formations, causing pore blockages and a permanent loss of pore space, which results in a direct loss of working gas

volume.
- Microbially Influenced Corrosion (MIC): Oxygen promotes the rapid growth of sulfate-reducing bacteria. This triggers the formation of hydrogen sulfide (H2S), which is highly toxic, creates an explosive hazard, and leads to severe material degradation.

Therefore, an essential systemic improvement would be to explicitly guarantee that network operators retain the clear legal and technical mandate to enforce strictly lower, localized oxygen and CO2 thresholds at all interface points leading directly to storage assets, independent of broader network quality bands.

3. Cross-Sectoral Uniformity and Streamlined Market Communication:
As the European energy landscape decarbonizes, a vital improvement lies in keeping the underlying data models and market communication systems completely uniform and integrated across all energy sectors and gas carriers (explicitly including hydrogen).

We strongly caution against separate harmonization tracks or centralization efforts, such as the introduction of a centralized Meter Data Management System (MDMS) for hydrogen or new gases. Centralization at a higher administrative level completely fails to address the baseline source of operational data errors, which consistently occurs on the physical and analytical path between the local meter and the respective MDMS (the meter-to-MDMS connection). Because administrative centralization does not solve this baseline technical bottleneck, it will yield zero process or data-quality improvements. Instead, it will introduce unnecessary capital costs, high structural transition risks, and parallel IT overhead. To protect downstream end-users from unjustified network tariff increases, data exchange protocols should continue to be managed and upgraded efficiently within the existing decentralized ENTSOG CNOT governance framework.

9. Data exchange

9.1 Introduction

Chapter V of the interoperability network code establishes the framework for operational-data exchange within the European gas market. These provisions are designed to fulfil data exchange requirements between TSOs and their counterparties, which the Regulation defines as network users active either at interconnection points or at both interconnection points and virtual trading points. By harmonizing the way information is shared, the code helps to facilitate smoother cross-border transmission activities.

The INT NC mandates the use of common data exchange solutions that standardize the protocols, data formats, and the network (universally specified as the internet). Depending on the specific operational requirements, operators may implement one or more of three distinct types of data exchange options described in Article 21 of the code.

1. The first is document-based data exchange, where data is wrapped into a file and automatically exchanged between the respective IT systems.
2. The second is integrated data exchange, which allows data to be exchanged directly between two applications on their respective IT systems.
3. The third option is interactive data exchange, where data is exchanged interactively through a web application via a browser.

To maintain a high degree of interoperability, the document-based and integrated exchanges rely on standardized formats such as Edig@s-XML, or an equivalent data format published by ENTSOG. While protocols for document based, integrated and interactive data exchange are ENTSOG AS4 Profile, HTTP/S-SOAP and HTTP/S respectively.

The code also mandates stringent security and availability measures trough Article 22. Operators and counterparties must secure communication chains using encryption and signatures, proactively prevent unauthorized IT access, and promptly report any breaches. Additionally, transmission system operators must guarantee system availability by preventing single points of failure and minimizing maintenance downtime.

Finally, while these common solutions are the standard, existing legacy data exchange systems may be retained if they meet the new security requirements, undergo network user consultation, and receive national regulatory approval as described in Article 23. In that regard, and to ensure long-term adaptability, ENTSOG is tasked with developing Common Network Operation Tools (CNOTs) [6] and managing necessary technological updates (through Article 24 of the code). Any future changes to these data exchange solutions must be driven by transparent processes, including cost-benefit analyses and comprehensive public consultations.

[6] CNOTs (Common Network Operation Tools) are technical standards developed by ENTSOG (European Network of Transmission System Operators for Gas) to ensure harmonized data exchange between gas transmission system operators (TSOs) and their counterparties. They define the technical, operational, and communication rules necessary to implement European network codes, specifically regarding data formats and protocols.

9.2 Market status and Identified issues

ENTSOG reports that data-exchange processes remain mature, fully interoperable, and compliant with the INT NC. The dominant setup across the sector is document-based data exchange, using Edig@s 5.1 as the main data format and AS4 as the communication protocol. However, a variety of alternative options remain in use across the industry.

Document-based exchange is clearly the most prevalent option, utilized by 80% of TSOs. Meanwhile, integrated data exchange is used by 25% of TSOs, and interactive data exchange by 20%.

For communication protocols, 85% of TSOs use the ENTSOG AS4 profile. Most TSOs currently rely on version 3.6 while version 4.0 is already available [7], while 5% still use AS2, which is now relegated to older, outlier implementations. To address this, the report states that there will be substantial, ongoing activity and support over the next few years by ENTSOG and EASEE-gas to facilitate the TSOs' migration to the latest ENTSOG AS4 version 4.0.

Finally, concerning data formats, TSOs frequently apply different Edig@s versions across various connections explaining the statistics overlap of the responses, which produce the following results: 90% of TSOs employ Edig@s XML 5.1, and 10% use Edig@s XML 6.1. Additionally, 35% of TSOs still utilize Edig@s 4, a legacy message format.

Even without full harmonization, the lack of uniformity is not perceived a barrier to reliable cross-border data exchange. It is also worth noting that the current application of CNOTs provides guidance on data exchange topics. While 70% of TSOs consider this current guidance sufficient, 20% believe it could be more specific to foster greater harmonization, something that would be valuable.

While the TSOs consensus is that no substantial changes are required, and while various market participants tend to agree that current standardization and guidance are sufficient, some stakeholders have also flagged that the actual adherence to common / primary solutions could be improved. This is because the alternative solutions defined in the CNOTs - the optional data exchange solutions in column 11 in Table 1 - might be preferred over the implementation of the primary solution - the common data exchange solution column 9 in Table 1. Nevertheless, it is worth pointing out that no evidence exists that this behaviour has caused inefficiencies and/or market harm, so further action would require a cost-benefit analyses.

Additionally, another topic that warrants amendment is extending the network code's data exchange rules to capacity booking platforms and clarifying how they apply to the virtual trading point operator throughout the relevant articles. The later has already been added into the network code remit, based on the solution for FUNC issues 01/2018, 02/2018 and 06/2018. The addition of booking platforms was also previously discussed into the FUNC case on Missing Harmonisation on interfaces on capacity platforms (01/2019) and prompted the review of the CNOTs table to include booking platforms. However, the amendment of the network code is missing, meaning that operators can still use their reference tools without the mandate from Union law. (See FUNC cases 01/2018, 02/2018, 06/2018 and 01/2019 links, and the update CNOT table below).

Table 1 CNOTs table (For better visibility please check this link)

Process Area Value	BRS	Document Chapter	Document Line Number	Information Flow	From Party Role Value	To Party Role Value	Confidentiality Level	Common Data Exchange Solution	Date of Publication	Optional Data Exchange Solution
Capacity Trading Processes	CAP0871-21_BRS_CAM+CMP_v25_MC_INT_Approved	3.3.1.2	507	Network User Registration	Network User	Transmission System Operator	Private			Recommendation - Interactive
		3.3.1.3	513	Network User Registration to Capacity Platform Responsible	Network User	Capacity Platform Responsible	Private			Recommendation - Interactive
		3.3.1.4	520	Approved Network Users	Capacity Platform Responsible	Registered Network User	Private			Recommendation - Interactive
		3.3.1.5	530	Surrender Capacity Rights	**Registered Network User**	**Capacity Platform Responsible**	Private	Interactive	1/11/2016	Document Based
		3.3.1.6	544	Offered Capacity	**Capacity Platform Responsible**	**Registered Network User**	Public	**Document Based**	**16/06/2021**	Interactive
		3.3.1.8	574	Capacity Bid	**Registered Network User**	**Capacity Platform Responsible**	Private	**Document Based**	**16/06/2021**	Interactive
		3.3.1.9	581	Allocated Capacity	**Capacity Platform Responsible**	**Registered Network User**	Private	**Document Based**	**16/06/2021**	Interactive
		3.3.1.11	601	Aggregated Auction Results	**Capacity Platform Responsible**	**Registered Network User**	Public	**Document Based**	**16/06/2021**	Interactive
		3.3.1.11	604	Aggregated Auction Results	Capacity Platform Responsible	**All but Registered Network User**	Public	Interactive	1/11/2016	Document Based
		3.3.1.12	605	Surrendered Capacity Sold	Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive
		3.3.1.14	624	Reverse Auction Bid	**Registered Network User**	**Capacity Platform Responsible**	Private	Interactive	1/11/2016	Document Based
		3.3.1.15	633	Allocate Reverse Auction Results	**Capacity Platform Responsible**	**Registered Network User**	Private	Interactive	1/11/2016	Document Based
		3.3.2	645	Secondary Market Sales	Registered Network User	Transmission System Operator	Private	Interactive	1/11/2016	Document Based
		3.3.2	671	Secondary Market Sales	Transmission System Operator	Registered Network User	Private	Interactive	1/11/2016	Document Based
Nomination and Matching Processes	BAL0453_160622_BRS on nominations_V23_MC_INT_Approved	3.3.3.3	299	Nomination Authorisation	Registered Network User	Transmission System Operator	Private			Recommendation - Document Based
		3.4.1	370	Nomination	Registered Network User	(Initiating) Transmission System Operator	Private	Document Based	1/11/2016	Interactive
		3.4.1	370	Nomination	Registered Network User	(Matching)Transmission System Operator	Private	Document Based	1/11/2016	Interactive
		3.4.1	377	Forward single sided nomination	(Active) Transmission System Operator	(Passive) Transmission System Operator	Private	Document Based	1/11/2016	Interactive
		3.4.1	384	Processed Quantities	(Initiating) Transmission System Operator	(Matching)Transmission System Operator	Private	Document Based	1/11/2016	Interactive
		3.4.1	392	Matching Results	(Matching)Transmission System Operator	(Initiating) Transmission System Operator	Private	Document Based	1/11/2016	Interactive
		3.4.1	397	Confirmation Notice	(Initiating) Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive
		3.4.1	397	Confirmation Notice	(Matching)Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive
		3.4.1	409	Interruption Notice	(Initiating) Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive
		3.4.1	409	Interruption Notice	(Matching)Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive

[7] The observation that many TSOs still use AS4 v3.6 does not indicate non-compliance. Version 4.0 is recent, depends on vendor readiness, certificate lifecycle constraints and ETSI library availability of EdDSA.

9.3 Areas for Improvement and Potential Regulatory Options

The discussions and status described in the previous chapter leads ACER to identify the following possible areas of improvement.

1. The introduction of capacity booking platforms as points where the INT NC defined protocols should be implemented and used by network users, as mentioned in article 20. This addition would lead to the amendment of articles 20 and 23. Where the application would be extended to be “between transmission system operators and from transmission system operators, VTP Operators or Capacity Booking Platforms to their counterparties shall be fulfilled by common data exchange solutions set out in Article 21.
2. Article 24 could be modified to a stricter and more binding wording, mentioning that the CNOTs “shall” also include business requirement specifications, release management and implementation guidelines, contributing in this way to further harmonize the common solutions used.

9.4 Proposed Public Consultation Questions

Question 10 — Assessment of Current Functioning

10. Do you consider the current data exchange provisions defined in the code fit for purpose? If not, where do you see potential for enhancing operation?

Yes, as the Austrian Association of Gas and Heat Supply Undertakings (FGW), representing national transmission system operators (TSOs), distribution system operators (DSOs), and storage operators, we consider the current data exchange provisions defined in the INT NC to be fully fit for purpose.

This is clearly demonstrated in the functional daily operational activities of our members and by the fact that there has not been any systemic market failure resulting from a lack of provisions or a need for refinement in the code.

Based on the operational expertise of our member companies, we strongly emphasize the following positions regarding potential revisions:

1. Risks of Increased Prescriptiveness:
Introducing changes—whether by adding, removing, or increasing the prescriptiveness of data exchange provisions—carries inherent risks for market participants. More stringent or restrictive requirements may lead to unintended knock-on effects across systems and processes, potentially without delivering any measurable or auditable benefits. Furthermore, such changes would trigger high migration costs and resource reallocations, diverting focus from higher-priority initiatives and ongoing operational activities, which could ultimately affect market stability.

2. Importance of Regulatory Stability:
Maintaining regulatory stability in this area is essential to allow market participants to focus on pressing system operational challenges, whilst continuing to deliver efficient and interoperable data exchange across their markets. This stability is particularly critical to safeguard the technical integrity of backbone infrastructure assets, such as underground gas storage facilities, which require operators to maintain uninterrupted focus on localized safety management and trace impurity tracking (such as oxygen and CO_2 safety thresholds) without the distraction of parallel regulatory compliance overhauls.

3. Rejecting Parallel IT Architectures:
In alignment with maintaining efficient market communication, we firmly oppose utilizing future data exchange discussions to introduce separate, centralized administrative data tracks, such as a centralized Meter Data Management System (MDMS) for hydrogen or low-carbon gases. Data bottlenecks and errors consistently

arise on the physical path between local meters and the respective MDMS—a baseline technical issue that higher-level administrative centralization fails to address. Such centralization would only induce high transaction costs and unnecessary IT overhead, creating an unjustified financial burden and tariff shocks for downstream end-users.

In conclusion, we consider that the data exchange provisions of the INT NC are fit for purpose and do not require revision at this stage. The existing framework has proven robust, flexible, and fully capable of accommodating technological evolution through established decentralized mechanisms without disrupting market stability.

Question 11 — Value of further harmonisation

This block of questions revolves around the need and benefits of reducing the optionality in the code data exchange solutions, and enforcing the harmonisation of more common practices:

11.1 Do you believe that the optional data-type exchange solutions in the CNOTs are being preferred in excess over the common data exchange solution? Is this an issue that should be tackled to enable further harmonization? If tackled, what do you see could be the costs and gains?

No, we do not believe that the optional data-type exchange solutions in the Common Network Operation Tools (CNOTs) are being preferred in excess over the common data exchange solutions, nor do we view this as an issue that needs to be tackled to force further harmonization.

From the perspective of our members, the existing balance between common and optional data-type exchange solutions is a deliberate, highly functional feature of the code, rather than a loophole. The optionality within the CNOT framework provides the necessary technical flexibility to accommodate diverse regional market models and distinct network topologies across Europe without imposing artificial barriers.

Our assessment of the costs and gains of attempting to eliminate this optionality is structured as follows:

1. Substantial Risks and Costs of Forced Harmonization:
Enforcing a rigid, uniform data exchange standard by removing optional solutions would trigger significant negative impacts for market participants:
- High Migration and IT Overhead Costs: Eliminating technical optionality would force many operators to abandon proven, fully functional local data paths. This would mandate extensive IT system re-engineering and costly data-migration projects.
- Operational Distraction: Forcing market participants to reallocate specialized technical personnel and financial resources to modify working data interfaces would divert focus away from far more critical operational and strategic challenges, such as the practical integration of low-carbon gases and the management of grid decarbonization.
- Increased Tariff Burdens: These unnecessary capital and operational compliance costs would ultimately have to be socialized, placing an unjustified financial burden and causing tariff shocks for downstream end-users and final consumers, without delivering any measurable increase in security of supply or market liquidity.

2. Absence of Clear Gains or Market Benefits:
Forcing further data-type harmonization would deliver virtually no auditable or measurable process enhancements. The existing decentralized data exchange framework has proven robust and fully capable of ensuring cross-border interoperability. Daily operational activities and stable market results prove that the current level of optionality does not create systemic market failures or communication bottlenecks.

3. Maintaining Focus on Core Operational Challenges (Infrastructure Integrity):
Maintaining regulatory stability and technical flexibility in market communication allows infrastructure operators to concentrate resources on protecting critical assets. In Austria, underground gas storage facilities represent the absolute backbone of energy security but possess acute chemical and biological vulnerabilities to trace impurities. They cannot tolerate wide variations or elevated concentrations of CO_2 and oxygen (O_2) without facing irreversible operational and physical damage—such as pore blockages due to enhanced biofilm formation (leading to a permanent loss of working gas volume), accelerated steel asset corrosion, a sharp reduction in the efficiency of injected corrosion inhibitors, and microbially influenced corrosion (MIC) triggered by sulfate-reducing bacteria that form toxic and explosive hydrogen sulfide (H_2S). Retaining the current flexible, decentralized CNOT framework allows operators to seamlessly manage and track these critical, localized safety parameters without the burden of parallel, prescriptive data-routing overhauls.

4. Rejection of Administrative Centralization:
We reiterate our strong caution against using data harmonization discussions to introduce separate, centralized administrative data tracks or platforms, such as a centralized Meter Data Management System (MDMS) for hydrogen or new gases. Administrative centralization at a higher level completely fails to address the baseline source of operational data errors, which consistently occurs on the physical and analytical path between the local meter and the respective MDMS (the meter-to-MDMS connection). Centralization would only introduce high transaction costs and structural complexity without yielding any data-quality or process improvements.

In conclusion, we strongly advocate for maintaining the current structure of the INT NC data exchange provisions. The existing framework is fit for purpose, and preserving its balanced optionality is essential to protect market stability and avoid artificial compliance costs.

11.2 What do you see could be the potential gains from a further harmonization of the types of data exchange solutions? For example, would you see value in reducing the types of data exchange solutions – e.g., to only document based and interactive data exchange solutions?

No, we do not see any measurable or practical gain from further restricting or reducing the types of data exchange solutions, such as limiting formats exclusively to document-based and interactive solutions.

Our position is firmly aligned with maintaining technical flexibility and regulatory stability based on the following considerations:

1. Absence of Tangible Market Gains:
Reducing the types of data exchange solutions would not deliver any auditable benefits to market participants. The current multi-layered architecture within the Common Network Operation Tools (CNOTs) is already highly effective. It successfully supports stable cross-border interoperability and functional daily operational activities. The fact that the European gas market operates without systemic communication failures proves that the existing diversity in data exchange types is a functional asset, not an operational barrier.

2. Risks of Increased Prescriptiveness and System Costs:
Attempting to mandate a narrower set of data exchange types carries inherent risks and would introduce severe negative knock-on effects across existing systems and processes. Forcing the elimination of proven, fully operational data exchange solutions would compel many infrastructure operators to abandon working local interfaces. This would mandate expensive IT migration projects and substantial capital expenditure, diverting critical resources away from higher-priority operational activities and ongoing decarbonization initiatives. Ultimately, these unjustified compliance and migration costs would be passed through to network tariffs, creating a financial burden for downstream end-users without any corresponding benefit to system security or

market liquidity.

3. Rejecting Centralized IT Overhad:
In alignment with maintaining efficient market communication, we firmly oppose utilizing data harmonization discussions to introduce separate, centralized administrative data tracks, such as a centralized Meter Data Management System (MDMS) for hydrogen or low-carbon gases. Data bottlenecks and errors consistently arise on the physical path between local meters and the respective MDMS—a baseline technical issue that higher-level administrative centralization fails to address. Such centralization would only induce high transaction costs and unnecessary IT overhead, creating an unjustified financial burden for downstream end-users.

In conclusion, we consider that the existing data exchange provisions of the INT NC are robust, balanced, and fully capable of accommodating technological evolution through established decentralized mechanisms. Reducing the types of data exchange solutions would disrupt market stability without delivering any measurable benefit.

11.3 Do you consider that the harmonisation levels for data protocols and data formats versions should be enhanced? What do you see could be the potential gains and costs from a further harmonization of these solutions?

No, we do not consider that the harmonization levels for data protocols and data format versions should be enhanced.

The data exchange provisions of the INT NC are fully fit for purpose, and forcing a higher level of technical prescription or version alignment would disrupt a system that is already operating successfully.

Our assessment of the potential costs and gains is closely aligned with maintaining regulatory stability and avoiding unnecessary market risks:

1. High Risks and Material Costs of Enhanced Harmonization:
Increasing the prescriptiveness of data protocols or forcing uniform format versions carries inherent risks for market participants. It would introduce severe negative knock-on effects across existing systems and processes, compelling many infrastructure operators to abandon stable, fully operational data interfaces. Such a mandate would trigger substantial migration costs, expensive IT re-engineering, and intensive resource reallocations. This would inevitably divert technical personnel and financial focus away from higher-priority initiatives, ongoing operational challenges, and decarbonization activities. Ultimately, these artificial implementation costs would be passed through to network tariffs, creating an unjustified financial burden for downstream end-users without delivering any measurable benefit to system safety or market liquidity.

2. Absence of Practical Gains or Benefits:
Further technical harmonization would deliver virtually no auditable or measurable enhancements. Functional daily operational activities and the lack of systemic market disruptions prove that the current framework is robust, flexible, and fully capable of facilitating secure, interoperable cross-border data routing. The existing diversity in protocol implementations and format versions represents a necessary regional flexibility rather than a market barrier.

3. Rejection of Parallel Centralized IT Overhauls:
We firmly oppose using any data protocol enhancements to justify or introduce separate, centralized administrative data tracks, such as a centralized Meter Data Management System (MDMS) for hydrogen or low-carbon gases. Process bottlenecks and operational data errors consistently arise on the physical path between local meters and the respective MDMS—a baseline technical issue that higher-level administrative

centralization completely fails to address. Such centralization would only induce high transaction costs and unnecessary IT overhead, creating an unjustified financial burden for final consumers.

In conclusion, maintaining regulatory stability in this area is essential to allow market participants to focus on pressing system operational challenges, whilst continuing to deliver efficient and interoperable data exchange across their markets. The existing framework is robust and does not require revision at this stage.

11.4 What would be the most efficient way to achieve those possible harmonisations? Do you believe the process described in Article 21(3) and 24 – granting ENTSOG, on its own initiative or at the request of ACER, the role of revising the common data exchange solutions and the CNOTs in case of detected needs and technological developments is still fit for purpose?

Yes, we firmly believe that the process described in Articles 21(3) and 24 of the INT NC remains fully fit for purpose. Granting ENTSOG—either on its own initiative or at the request of ACER—the role of developing and revising the common data exchange solutions and CNOTs is the most efficient and technically sound way to manage necessary adaptations to technological developments.

Our position is guided by the following core principles:

1. Proven Efficiency of the Existing Governance Process:
The current governance framework is highly effective because it relies on the technical expertise of network operators who manage these data systems daily. This process ensures that any technical update undergoes rigorous operational assessment before implementation, avoiding systemic market disruptions. The fact that the European gas market has successfully integrated diverse data formats without communication failures or systemic market disruptions proves that this decentralized, expert-led process works perfectly.

2. Avoidance of Unintended Risks and System Costs:
Attempting to bypass or replace this established process with a more prescriptive, top-down legislative approach carries inherent risks. Restrictive or rushed data mandates introduce severe negative knock-on effects across existing systems, triggering high migration costs and unnecessary resource reallocations. This would inevitably divert focus and critical technical personnel away from higher-priority initiatives, ongoing operational activities, and decarbonization challenges. Any unjustified compliance costs would ultimately be passed through to network tariffs, increasing the financial burden on downstream end-users without delivering measurable or auditable benefits.

3. Rejecting Centralized IT Overhead:
In alignment with maintaining efficient market communication, we strongly oppose utilizing any technical revisions to introduce separate, centralized administrative data tracks, such as a centralized Meter Data Management System (MDMS) for hydrogen or low-carbon gases. Data bottlenecks and errors consistently arise on the physical and analytical path between local meters and the respective MDMS—a baseline technical issue that higher-level administrative centralization completely fails to address. Such centralization would only induce high transaction costs, unnecessary capital expenditure, and parallel IT overhead, creating an unjustified financial burden for final consumers.

In conclusion, maintaining regulatory stability and respecting the established ENTSOG revision process is essential. It allows market participants to deliver efficient and interoperable data exchange while focusing their resources on pressing operational challenges. The existing governance framework is robust, flexible, and does not require revision at this stage.

11.5 Would you prefer a ‘business-as-usual' scenario" where no change is introduced with the aim of supporting further harmonization?

Yes, we firmly prefer a "business-as-usual" scenario where no changes are introduced with the sole aim of forcing further data exchange harmonization.

Our preference for regulatory stability is guided by the following operational and economic realities:

1. Proven Effectiveness of the Existing Framework:
The current data exchange provisions under the INT NC are fully fit for purpose. This is clearly demonstrated in the successful daily operational activities of our member companies and by the fact that the European gas market has experienced zero systemic disruptions or failures due to a lack of data provisions or technical refinement. The existing framework has proven robust, flexible, and fully capable of accommodating technological evolution—such as the progressive integration of low-carbon gases—through established decentralized mechanisms.

2. Avoidance of Unnecessary Risks and Material Costs:
Introducing changes to increase the prescriptiveness of data exchange provisions carries inherent risks for market participants. More stringent or restrictive requirements often lead to unintended knock-on effects across interconnected systems and processes, without delivering any measurable or auditable benefits. Furthermore, such mandates would trigger significant migration costs and intensive resource reallocations. This would inevitably divert specialized technical personnel and financial resources away from higher-priority initiatives, ongoing system operational challenges, and critical decarbonization projects. Ultimately, these artificial compliance costs would be passed through to network tariffs, creating an unjustified financial burden for downstream end-users.

3. Rejection of Parallel Centralized IT Overhead:
In line with maintaining streamlined market communication, we strongly oppose utilizing any data harmonization discussions to introduce separate, centralized administrative data tracks, such as a centralized Meter Data Management System (MDMS) for hydrogen or low-carbon gases. Process bottlenecks and operational data errors consistently arise on the physical path between local meters and the respective MDMS—a baseline technical issue that higher-level administrative centralization completely fails to address. Such centralization would only induce high transaction costs and unnecessary IT overhead, creating an unjustified financial burden for final consumers.

In conclusion, maintaining regulatory stability in this area is essential to allow market participants to focus on pressing system operational challenges, whilst continuing to deliver efficient and interoperable data exchange across their markets. The data exchange provisions of the INT NC do not require revision at this stage.

Question 12 — Other data exchange possible amendments

12. Are there other amendments you would see fit related to data exchange?

No, we do not see any other amendments or revisions related to data exchange as fit or necessary at this stage.

11. Other

11.1 Proposed Public Consultation Questions

Question 13 — Other potential amendments

13. Have you identified other possible improvements to the network code? If so, what do they entail? Please describe in as much detail as possible.

No, we have not identified any further improvements to the network code.

As a general principle for this entire consultation, the Austrian Association of Gas and Heat Supply Undertakings (FGW) emphasizes that maintaining regulatory stability is our members' highest priority. The current framework under the INT NC has consistently proven robust, flexible, and fully capable of facilitating everyday operational activities without systemic market failures.

Forcing additional amendments or increasing the prescriptiveness of the code at this stage would deliver no measurable benefits. Instead, it would trigger unnecessary migration costs, divert technical resources from pressing decarbonization initiatives, and risk passing unjustified financial burdens onto downstream end-users via increased network tariffs. The existing provisions remain entirely fit for purpose.

Question 14 – Priority List

14. Have you identified other possible improvements to the network code? If so, what do they entail? Please describe in as much detail as possible.

No, we have not identified any further amendments or improvements to the network code at this stage.

We emphasize that maintaining regulatory and operational stability is the absolute priority for infrastructure operators. The data exchange and interoperability provisions under the current INT NC are fully fit for purpose. This is robustly demonstrated by functional daily grid operations across both transmission and distribution levels, and by the fact that the market has experienced zero systemic failures under the existing rules.

The framework already provides the necessary robustness and flexible decentralized mechanisms to accommodate technical evolution—including the integration of low-carbon gases—without market disruption. Introducing further modifications or increasing technical prescriptiveness would trigger unnecessary migration costs, reallocate critical technical staff away from higher-priority decarbonization projects, and create system risks without delivering any measurable benefits to market participants or final consumers.

Therefore, to protect market stability and avoid placing an unjustified tariff burden on downstream end-users, we strongly advocate for keeping the code unchanged at this stage.

Question 15 - Any other comments?

15. Do you have any other comments you would like to share with us?

No additional comments.

Question on confidentiality

* **ACER evaluates and may publish the received input. Do you consent that the submitted input is published?**

- (x) Yes, ACER may publish the submitted replies.
- ( ) Yes, ACER may publish the submitted replies **anonymously**.
- ( ) No, ACER may not publish the submitted replies.

* **Does your submission contain confidential information?**

- ( ) Yes
- (x) No

Thank you!

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