

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

* Email address

[REDACTED]@natran-deutschland.de

* Name of organisation / company

NaTran Deutschland GmbH

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”**

n.a.

*** Country**

- ☒ EU-27
- ☐ Other

*** Please specify the country**

- ☐ 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
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- ☐ 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 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

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 ENTSG 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. [AC ER 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] ENTSOE 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] ENTSOE 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.

NaTran Deutschland considers that the liability provisions under the current contractual and legal framework are fit for purpose.

In this context, it is useful to recall the role and scope of the Interoperability and Data Exchange Network Code (INT NC) and of Interconnection Agreements (IAs), in order to identify the potential challenges and risks that could arise from modifying the existing liability framework.

The INT NC primarily focuses on Interconnection Points (IPs) and on TSOs. It is a technical network code designed to facilitate cooperation between TSOs for the management of cross border gas flows, rather than a civil law instrument governing contractual liability. The INT NC sets out provisions for IAs, which are contracts between adjacent TSOs defining specific technical arrangements, and, where relevant, general principles reflecting responsibilities between the signatory parties. Liability provisions, where included, remain subject to national legislative specificities, fall within the discretion of the parties, and are proportionate to the responsibilities defined in the IA. Applicable national law is commonly referenced in these agreements.

From a legal perspective, the principles of subsidiarity and proportionality under EU law must be respected. Network Codes should not go beyond what is necessary to achieve the objectives of the Gas Regulation, nor should they interfere with or bypass Member States' civil law regimes governing liability. Contracts between parties are already in place and are governed by the applicable law chosen by the parties. Moreover, EU level harmonisation of liability principles remains highly complex, given the significant differences between national legal systems.

For these reasons, IAs constitute the most appropriate instrument for defining the liability framework between the TSOs concerned. They are contracts with a clearly defined local scope (the relevant IP) and a technical nature. Where liability provisions are included, they relate to matters to be agreed between the signatory parties and cannot necessarily be harmonised through EU level regulation. This is particularly relevant as the impact of off specification gas may vary depending on the characteristics of each IP and the flow patterns of the connected systems.

By contrast, liability arrangements between TSOs and shippers typically extend beyond the scope of IAs and should not be conflated with TSO to TSO arrangements, as doing so would introduce unnecessary legal complexity or potential inconsistencies. Where contracts with shippers exist, these are generally based on General Terms and Conditions (GT&C) templates, which are usually published and subject to market consultation prior to any modification.

Altering the existing liability framework or the current allocation of responsibilities could give rise to unforeseen and undesirable system impacts. At the same time, the current arrangements are not considered problematic and do not constitute a barrier to cross border trade. Changes to liability regimes carry a risk of unintended consequences, inconsistencies, and the undermining of existing contractual rights and obligations, potentially increasing TSOs' operational risks and costs, and ultimately jeopardising security of supply. As regulated entities, any increase in TSOs' responsibilities or potential liabilities would need to be reflected in network tariffs, leading to higher costs for end users.

In light of the above, liability provisions should continue to be governed at national level and through existing contractual arrangements between TSOs or between TSOs and shippers. Maintaining the INT NC status quo avoids introducing unnecessary legal complexity to address a rarely occurring issue at EU level. The current

framework has demonstrated its robustness and effectiveness, while further harmonisation would be highly complex and risks increasing costs for TSOs and end users alike.

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?

NaTran Deutschland considers that the current framework does not lack provisions on liability, neither between TSOs nor between TSOs and shippers.

As mentioned above, the flexibility provided by the contracts ruling relations between Parties is very important as they are of civil and not administrative nature.

This flexibility as well as the local and technical nature of the contracts, provides the Parties with the prerogative to shape the liability rules. Also, TSOs cannot agree on liability rules that are not aligned with the law of their Member States (MSs). Hence, with neighbouring TSOs governed by different liability regimes under national law of each of them, it might be challenging to agree on harmonised liability rules in IAs (as different obligations might stem for each of them from their national law).

With regard to gas quality, TSOs generally lack the technical capability to adjust off specification gas once it has entered the system. Their role is limited to monitoring gas quality at entry points, with off spec gas typically not being accepted. It is therefore appropriate that shippers, as owners of the gas commodity and parties holding upstream contractual relationships, remain responsible and liable for gas quality. This allocation of responsibilities reflects current practice in most Member States and has proven effective.

Finally, while IAs fall within the scope of the INT NC, contractual arrangements between TSOs and shippers are governed by national law and lie outside its scope. Introducing liability provisions at INT NC level could lead to parallel and potentially conflicting liability regimes, thereby increasing legal complexity without clear added value.

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.

NaTran Deutschland is not aware of any circumstances in which a liability regime, or the absence of liability provisions related to gas quality or other operational aspects, has led to unresolved issues or material market impacts.

Cross border situations involving gas quality remain rare in practice and, where they occur, they have been managed effectively under the existing regulatory and contractual framework. This indicates that the current allocation of responsibilities and liability arrangements does not constitute a barrier to cross border trade.

Overall, operational experience does not suggest that the absence of specific liability provisions in Interconnection Agreements has created issues requiring regulatory intervention.

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?

NaTran Deutschland considers that no regulatory action is required in this area. In particular, the inclusion of liability provisions in the INT NC is not necessary. Thus, NaTran considers that no regulatory action is required in this area and supports option "A".

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.

NaTran Deutschland considers that no regulatory action is required in this area. The current framework, based on national law and existing contractual arrangements, has proven robust and effective in practice. Liability matters related to gas quality are appropriately addressed at national or contractual level, and have not been identified as an obstacle to cross border trade.

Liability regimes are closely linked to national civil law, and contractual flexibility remains necessary to reflect legal, technical and regional specificities. Introducing liability provisions at INT NC level would risk creating parallel and potentially conflicting liability regimes, increasing legal complexity without clear added value.

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.

NaTran Deutschland does not support the introduction of a standardised EU level liability framework within the INT NC. Liability rules vary significantly across Member States, as they depend on national civil law principles and regulatory frameworks. Harmonisation at EU level would therefore be highly complex and could conflict with national law.

Moreover, altering the current allocation of responsibilities, in particular with respect to gas quality, could weaken incentives for compliance, increase operational risks for TSOs and ultimately affect security of supply. Any increase in TSO liabilities would also need to be reflected in regulated tariffs, leading to additional costs for end users.

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.

NaTran Deutschland does not see added value in adopting non binding EU guidance on liability. Previous experience has shown that, due to significant differences in national legal frameworks, it is not feasible to

develop common guidance or templates on liability that would be meaningful and applicable across all Member States.

In practice, the absence of EU level guidance has not prevented liability matters from being effectively addressed at national or regional level, nor has it hindered cross border exchanges.

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.

NaTran Deutschland does not support additional transparency requirements in interconnection agreements regarding liability. Liability provisions are governed by national law, and the existing regulatory framework already ensures an appropriate level of transparency.

Interconnection agreements are bilateral contracts between TSOs and do not govern contractual relations between TSOs and shippers. Introducing references to third party contractual arrangements would go beyond their scope and could create confusion or legal inconsistency. Contracts between TSOs and shippers are already subject to published general terms and conditions where required, while remaining covered by legitimate confidentiality constraints.

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/m³ to 54.00 MJ/m³, 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 $\leq 3,7$ 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/m³ to 54.00 MJ/m³ 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 suppress 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.

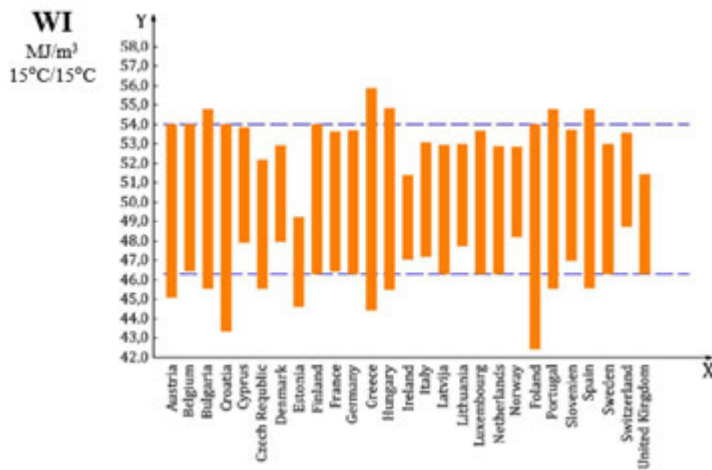


Figure 1 - National WI ranges as in Annex E revised EN16726 (October 2024)

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 unknown 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.

NaTran Deutschlands IAs include GQ parameters and limits reflecting national specifications and bilateral cooperation with adjacent TSOs. The current practices related to gas quality under the INT NC and IAs have allowed to handle cross-border flow restrictions related to gas quality ensuring unhindered stable cross border flows also thanks to the cooperation between TSOs, as shown in the INT NC Implementation Monitoring Report from ENTSG. NaTran Deutschland considers those practices generally fit for purpose. For example, flexibility measures have been introduced in the IA for cross border flows between France and Germany to handle the difference in acceptable level of oxygen in the gas flow.

If GQ restrictions should arise at IPs, Art. 21 of the Gas and Hydrogen Regulation can be followed.

Moreover, the new transparency obligations from the Gas and Hydrogen Regulation require NaTran Deutschland to publish values of WI, GCV, H₂, O₂ and methane content in specific points of the grid. This is a supplementary step towards full transparency on gas quality aimed at facilitating discussions between operators.

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?

Due to the crisis-induced changes in flow scenarios since 2022, flowing gas from France to Germany through the Interconnection Point Medelsheim is another mean of diversifying gas import routes.

However, in France, gas is odorized at transmission level and sulphur limits are higher than in Germany. The BNetzA provision "VOLKER" in Germany on volatile costs for various aspects of natural gas transport enables, among other things, the transport of odorised gas from France to Germany, as any claims for damages resulting from the acceptance of gas that does not comply with the provisions of the German DVGW worksheet G 260

might be recognised as volatile costs.

Since October 2022, this provision made import of odorised gas from France via Medelsheim, under specific conditions (e.g. publication requirements), possible without increased risk of compensation claims for the TSO, thereby making a valuable contribution to the security of supply. The BNetzA has extended the “VOLKER” provision beyond March 31, 2024, until September 30, 2026. In order to ensure that odourised gas can continue to be transported from France to Germany in the future, an indefinite extension of VOLKER would be supportive.

To note that in Germany, to date, no issues have been reported caused by the flow of odorised gas from France.

As mentioned in question 4, differences in acceptable levels of oxygen on the same flow between France and Germany have been handled through the close cooperation between TSOs.

If issues should reoccur, Art. 21 of the Gas and Hydrogen package could be followed.

Developments in recent years have clearly demonstrated that diversifying gas import points is a key factor in ensuring security of supply in Germany and Europe. With the discontinuation of Russian pipeline supplies and the changing geopolitical landscape, Germany has increasingly become a central hub for gas flows to Austria, the Czech Republic, and other Eastern European countries. This shift has led to a more complex gas mix, reflecting the blending of supply sources from different regions. At the same time, demand for natural gas is rising, particularly in southern Germany, driven by the phasing out of conventional generation capacity and the planned construction of new gas-fired power plants. Since the majority of import capacity is located in the north, this is placing additional strain on the existing north-south transport corridor.

Against this backdrop, southern import options—particularly at the interconnection point with the French grid (VIP FR GER)—are of particular importance. The Network Development Plan and current market analyses assign southern import points an explicit role in alleviating the north-south bottleneck and strengthening security of supply in southern Germany, Austria, and Eastern Europe. The expansion and long-term safeguarding of these feed-in options represent a key contribution to the stability of the gas supply system. Taking into account the strategic relevance of southern import points and the need for a diversified import structure in further deliberations and regulatory decisions is of great importance for Germany’s future security of supply.

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?

In the context of progressive growth of low-carbon gases, divergencies at IPs related to gas quality, and specifically oxygen, are expected to increase.

While EN 16726 sets a general oxygen limit of up to 1% (10 000 ppm), significantly stricter thresholds (e.g. 100 ppm or 10 ppm) shall be applied in the presence of sensitive users. However, the basis and process for justifying the applicable thresholds are not defined.

This lack of clarity, combined with the very restrictive O₂ limits of 10 ppm included in the revised standard EN16726 are not suitable for facing the challenges due to increasing injections of biomethane into the grid. However, the standard recognizes that “most applications can accept a level of 0,01% of oxygen or higher” (Note 1 on table 1 of EN16726:2025) and Note 2 states “Considering the expected development of biomethane production, the lower maximum limit of 0,01% will probably have to be reassessed upwards in the coming years”.

Therefore, NaTran Deutschland does not support the mandatory application of the European standard EN16726 for addressing gas quality issues at IPs.

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.

NaTran Deutschland supports the “Do nothing” approach, as it guarantees MSs flexibility in the application of gas quality standards in line with the principles defined in the Gas and Hydrogen Package, and gives TSOs the flexibility to adopt the most efficient solution for managing gas quality. Due to the different national configurations and assets, establishing prescriptive EU measures to implement standards would lead to high increase in costs for managing GQ and unnecessary investments.

Moreover, EN16726 introduces a system of WI classes for exit points. Since this new obligation only concerns exit points where gas is delivered to end-users, there is no reason to apply such WI classes at IPs. The non-binding guidelines under development in ENTSG can provide a valid instrument to facilitate implementation of the standard at national level for the countries deciding to implement the standard, without undermining Member State’s competence or introducing rigid EU level requirements.

On the same note, the CEN TF on O2 is currently working on a technical paper addressing the practicalities of the implementation of O2 limits from the standard that can be used by the MSs who decide to implement EN16726 at nation level.

7.2 What are the reasons behind your preference?

Prescriptive standards based on EN16726 will lead to significant and unnecessary costs of implementation and uncertainty over technical or operational consequences.

Concerning WI classes at exit points, only a few industries are particularly sensitive to WI variations. Implementing a new system of WI classes at all the exit points of the country will lead to very high costs (IT resources for estimation of WI variations and classes, installation of additional equipment, allocation of classes etc.), while the benefits of such WI system for industrial users has not been demonstrated.

As already explained in the previous answer, the O2 limits from EN16726 are too low with regard to biomethane development, especially considering its crucial role in covering the future energy demand.

It should be reminded that the system is already functioning properly, and complaints from sensitive users are very rare. For this reason, the adoption of EN16726 should remain a decision of the MS, based on the local needs and configurations.

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

NaTran Deutschland is not in favour of a prescriptive approach concerning gas quality standards. Moreover, the INT NC is not the right venue for a prescriptive action regarding the implementation of EN16726. Indeed, the INT NC mainly focuses on interconnection points, which are out of the scope of EN16726.

Any amendment to the INT NC to enforce the implementation of WI exit classes would result in TSOs having to install additional costly measurement, monitoring or forecasting equipment, while the benefits of such a system have not been demonstrated. Moreover, considering the voluntary nature of the CEN standard EN 16726,

making the Wobbe Index classification system prescriptive through the INT NC would contradict the flexible approach set out in the Gas and Hydrogen Regulation, which explicitly preserves Member States' ability to implement gas quality standards within their national systems.

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

A decision on making any implementation mandatory should primarily rest within the competence of national authorities, in accordance with the principle of Member States decision on gas quality matters defined in the Regulation 2024/1789. Any such decision should also take into account economic considerations, impact assessment, proven system user's needs, and be done in consultation with relevant stakeholders.

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

NaTran Deutschland is not in favour of a mandatory implementation of EN16726.

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?

NaTran Deutschland does not identify concerns if differences across Member States in the implementation of exit classes exist, in case Member States decide to implement the standard. Gas transmission and distribution systems across Europe differ significantly in terms of network configuration, gas supply sources, operational tools, availability of data, and the types of end^o.users served. As a consequence, different technical and operational solutions should be foreseen to implement WI exit classes effectively at national level. Considering that the stakeholders involved (e.g. TSOs, DSOs, end users) are subject to national specificities and different operational needs, a flexible approach that takes these requirements into account would lead to a more efficient outcome, rather than imposing rigid EU-level requirements on TSOs and end users.

In this regard, EU-level non-binding implementation guidelines can play a valuable role by providing a common reference framework and facilitating a shared understanding of the standard, while preserving the flexibility needed to account for national specificities and operational needs.

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 absence of a regulatory framework is not expected to bring significant consequences for end-users, especially in the case of Wobbe Index classes and oxygen limits. Indeed, the gas delivered to end-users would remain compliant with existing national specifications, and the system would continue to operate under the existing configuration and practices, which have so far ensured a high level of operational reliability.

The implementation of the CEN standard should be, as today, within the responsibility of Member States, in line with the principles stated in the Regulation (EU) 2024/1789. For this reason, NaTran Deutschland does not see

a need to establish prescriptive EU measures to implement the standard. Doing so would result in higher costs, increased technical and operational uncertainty, greater legal, regulatory, and contractual complexity, as well as heightened risks to the EU's security of supply. This reasoning also applies to the risks associated with any changes to the framework at interconnection points.

Prescriptive limits on gas quality parameters, being oxygen or others, should therefore not be established through the INT NC. Such limits are better handled via national frameworks or contractual arrangements between TSOs and network users, to reflect specific network topologies, operational conditions and downstream system characteristics.

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.

No comment

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.

ENTSOG has established an internal task force to develop recommendations and guidance for TSOs on how to implement the WI class system. The work under development in ENTSOG suggests solutions to identify and assign WI classes questions in the framework of non-binding recommendations at EU level.

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?

NaTran Deutschland considers that the procedures to assign WI classes, if applied, would entail additional costs. Indeed, the WI classification system introduced by the revised EN16726 would need adaptations of IT and operational processes. A proper assessment of costs arising from installation of new measuring equipment and tools should be carried out, with involvement of national authorities. Any additional costs incurred by the operator as a result of implementing WI classification schemes should be recognised by the national regulatory authorities.

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

ENTSOG is currently working on recommendations to implement the WI classification system. Relevant ideas on how to coordinate the interactions among concerned players will be available once the deliverable is published.

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.

No comment

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.

NaTran Deutschland would like to raise some remarks on other aspects of this public consultation, specifically with reference to the proposed amendments to Articles 15 as outlined in Chapter 8.3.

NaTran Deutschland recalls that gas quality provisions under the INT NC are designed to facilitate cross border interoperability, and are primarily concerned with the operation of transmission systems in relation to interconnection points. Article 15 addresses handling of cross border trade restrictions resulting from gas quality differences. In this context, the Article establishes a governance process whereby, in the event of disagreement, the concerned transmission system operators consult their respective NRAs.

Similarly, Article 21 of Regulation (EU) 2024/1789 sets out a framework for cross border coordination with regard to gas quality in the natural gas system. It requires TSOs to cooperate in order to avoid restrictions to cross border gas flows due to gas quality differences at interconnection points, taking into account the characteristics of final customers' installations. Where a restriction to cross border flows due to gas quality differences cannot be avoided by the TSOs concerned in their standard operations, they are required to inform the relevant NRAs without delay, which shall then coordinate and, where necessary, escalate the matter to ACER. Article 21 therefore also provides an overarching framework on governance arrangements for addressing cross border gas quality related flow restrictions.

From this perspective, NaTran Deutschland does not identify a clear need to further expand or detail governance rules within the INT NC for situations that are already addressed by both Article 15 of the INT NC and Article 21 of the Gas Regulation, as far as interconnection points and cross border transmission operations are concerned.

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 through 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	BS	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	CAP001-21_BS05_CMA-CMP_v03_MC_INT_Approved	3.3.1.2	503	Network User Registration to Capacity Platform	Network User	Transmission System Operator	Private			Recommendation
		3.3.1.3	513	Response	Capacity Platform Responsible	Registered Network User	Private			Recommendation
		3.3.1.4	520	Approved Network Users	Registered Network User	Capacity Platform Responsible	Private			Recommendation
		3.3.1.5	530	Supplier Capacity Rights	Registered Network User	Capacity Platform Responsible	Private			Recommendation
		3.3.1.6	544	Offered Capacity	Capacity Platform Responsible	Registered Network User	Public	Document Based	16/06/2021	Document Based
		3.3.1.8	574	Capacity Bid	Registered Network User	Capacity Platform Responsible	Private			Document Based
		3.3.1.9	581	Allocated Capacity	Capacity Platform Responsible	Registered Network User	Private			Document Based
		3.3.1.11	601	Accepted Auction Results	Capacity Platform Responsible	Registered Network User	Public	Document Based	16/06/2021	Document Based
		3.3.1.11	604	Accepted Auction Results	Capacity Platform Responsible	Registered Network User	Public	Document Based	16/06/2021	Document Based
		3.3.1.12	605	Accepted Auction Results	Capacity Platform Responsible	Registered Network User	Public	Document Based	16/06/2021	Document Based
		3.3.1.14	624	Reverse Auction Bid	Registered Network User	Capacity Platform Responsible	Private	Document Based	16/06/2021	Document Based
		3.3.1.16	623	Allocated Reverse Auction Results	Capacity Platform Responsible	Registered Network User	Private	Document Based	16/06/2021	Document Based
Nomination and Matching Processes	NA0003_160021_BS05 on nominations_V03_MC_INT_Approved	3.3.2	645	Secondary Market Sales	Transmission System Operator	Registered Network User	Private			Document Based
		3.3.2	671	Secondary Market Sales	Transmission System Operator	Registered Network User	Private			Document Based
		3.3.2.3	299	Nomination Authorization	Registered Network User	Transmission System Operator	Private			Document Based
		3.4.1	370	Nomination	Registered Network User	Matching/Transmission System Operator	Private	Document Based	16/06/2021	Document Based
		3.4.1	371	Nomination	Registered Network User	Matching/Transmission System Operator	Private	Document Based	16/06/2021	Document Based
		3.4.1	384	Forward single sided nomination	Matching/Transmission System Operator	Registered Network User	Private	Document Based	16/06/2021	Document Based
		3.4.1	385	Forward single sided nomination	Matching/Transmission System Operator	Registered Network User	Private	Document Based	16/06/2021	Document Based
		3.4.1	387	Confirmation Notice	Matching/Transmission System Operator	Registered Network User	Private	Document Based	16/06/2021	Document Based
		3.4.1	387	Confirmation Notice	Matching/Transmission System Operator	Registered Network User	Private	Document Based	16/06/2021	Document Based
		3.4.1	409	Information Notice	Matching/Transmission System Operator	Registered Network User	Private	Document Based	16/06/2021	Document Based
		3.4.1	409	Information Notice	Matching/Transmission System Operator	Registered Network User	Private	Document Based	16/06/2021	Document Based
		3.4.1	409	Information Notice	Matching/Transmission System Operator	Registered Network User	Private	Document Based	16/06/2021	Document Based

[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?

NaTran Deutschland considers the current data exchange provisions as defined in the code fit for purpose. This is demonstrated in functional operational activities and that there has not been any systemic failure of the market as a result of a lack of provisions or refinement in the code.

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 measurable or auditable benefits. In addition, such changes could trigger migration costs and resource reallocations, could divert focus from higher-priority initiatives and ongoing operational activities and may affect market stability. Maintaining regulatory stability in this area is essential to allow market participants to focus on ongoing system operational challenges, whilst continuing to deliver efficient and interoperable data exchange across their market. In conclusion, NaTran Deutschland considers 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 capable of accommodating technological evolution through established 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?

NaTran Deutschland does not see any evidence that optional data exchange solutions defined in the common network operation tools (CNOTs) are being used in preference to the common data exchange solutions in a way that undermines interoperability or affects market operations.

The IMR results referenced in this consultation, Chapter 9.2, demonstrate that the primary common solutions (under the INT NC and the Common data exchange solution table aka CDES table) remain the predominant data exchange solutions, with around 85% of TSOs using AS4 and Edig@s. No trend has been identified suggesting substitution of common solutions by optional ones affecting cross border interoperability.

The availability of optional data exchange solutions reflects a deliberate and proportionate design choice, allowing TSOs and counterparties to accommodate different operational contexts, legacy systems and cost considerations whilst remaining within the current framework.

ENTSOG's internal TSO data exchange surveys further show that TSOs often offer multiple solutions in parallel. In practice, this is not a choice between one solution or another but rather the simultaneous availability of several options to best suit counterparties' needs and market context, without compromising harmonisation. Given the absence of identified interoperability issues, NaTran Deutschland does not consider this an issue requiring regulatory revision. Restricting optional solutions could introduce disproportionate migration costs and operational risks, while the potential gains in harmonisation appear limited.

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?

Whilst harmonisation is an important principle, it should not be pursued as an objective in itself. Any further harmonisation of data exchange solution types should be supported by a clear business, operational, legal, or security rationale and by evidence that the current framework is no longer adequate.

NaTran Deutschland does not see any such evidence at present. Reducing the number of data exchange solution types could risk constraining Electronic data interchange (EDI) operational flexibility and imposing additional implementation and migration costs, without a clear demonstration of commensurate gains. The current coexistence of document based, integrated and interactive data exchange solutions has not been shown to impede interoperability, efficiency, or market functioning.

ENTSOG's experience shows that TSOs often offer multiple solution types in parallel, allowing counterparties of different sizes and technical maturity to select the most appropriate option. This approach has delivered pragmatic harmonisation without adverse effects and has supported participation across a range of market participants at different levels of IT maturity and needs. Additionally, the application of optional data exchange models can be used as viable back-up solutions if the primary fails.

Any perceived gains from further harmonisation should be carefully weighed against the loss of proportionality and flexibility, the practical needs of different market participants and the costs and risks associated with forced transitions away from well-functioning solutions.

It is also noted that this question suggests the possible removal of the integrated data exchange paradigm.

Whilst underlying technologies may naturally evolve over time, such evolution can be accommodated within the existing INT NC framework. The integrated data exchange solution defined under Article 21 preserves the use of Edig@s XML as the payload format, thereby maintaining semantic and syntactical interoperability irrespective of transport or integration model.

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?

ENTSOG considers that the current levels of harmonisation for data protocols and data formats, including approaches to version adoption, are adequate, effective, and proportionate and reflect the current state of implementation and maturity across the market.

Edig@s XML data formats (primarily 5.1) and the ENTSOG AS4 v3.6 profile for communication are very widely adopted by the European gas community and continue to successfully enable secure and interoperable data exchange across the market. This demonstrates that the framework delivers harmonisation where it matters most, namely, at the level of semantic and syntactical interoperability.

ENTSOG's operational and monitoring experience has not identified material deficiencies or interoperability issues that would justify further harmonisation of protocol or data format versions at regulatory level. Limited variation in version deployment has been managed without adverse impact and reflects a pragmatic balance between standardisation, technological evolution and proportionality. In particular, versioning inherently requires a degree of flexibility to accommodate different investment cycles and IT landscapes to allow orderly migration and coexistence during transition periods. EASEE-gas, for example, maintain two versions of Edig@s for a minimum period of 4 years to facilitate version migration and avoids unnecessary disruption to established operational processes.

Attempting to mandate tighter alignment on versions at regulatory level could result in significant migration and compliance costs and increased operational risk during transitions, without clear evidence of commensurate gains.

Where new developments have been necessary, notably for ENTSOG's AS4 v4 profile, which is a security driven upgrade, these issues are being addressed within the existing framework through governed CNOT updates and structured migration paths, rather than through changes to the Network Code itself. This approach preserves interoperability whilst allowing controlled and predictable evolution.

ENTSOG considers that version harmonisation is best managed through the existing CNOT governance and implementation mechanisms rather than through more prescriptive regulation.

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?

Where additional alignment or harmonisation of data exchange solutions is genuinely required, ENTSOG considers that the existing governance framework established under Articles 21(3) and 24 of the INT NC remains the most efficient and proportionate mechanism.

The current framework allows ENTSOG, either on its own initiative or at the request of ACER, to revise the common data exchange solutions and the CNOTs in response to demonstrable operational needs or technological developments.

In practice, the Articles 21 and 24 process provides, sufficient flexibility to evolve technical specifications and data exchange solutions, structured stakeholder involvement and transparency and appropriate regulatory oversight, whilst avoiding the rigidity and complexity associated with a revision to the Network Code itself. Importantly, this mechanism ensures that harmonisation efforts remain targeted, evidence based, and

proportionate. It enables technical evolution to be addressed at the appropriate level through the maintenance of CNOTs; standards, guidelines and protocols, rather than through binding legal changes.

No alternative mechanism has been identified that would deliver harmonisation more efficiently or more effectively. Revising the Network Code to achieve outcomes already delivered under Articles 21 and 24 would risk duplicating governance structures and increasing regulatory complexity without clear added value.

Furthermore, under the current framework, ENTSOG provides well established fora in which harmonisation issues can be raised, assessed, and resolved by organisations and expert groups with direct operational and technical competence. Addressing such matters primarily through regulatory revision would not necessarily result in better outcomes.

ENTSOG considers the existing Articles 21(3) and 24 framework to remain appropriate, efficient, and sufficient for addressing any future harmonisation needs.

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

As outlined in the previous responses, ENTSOG considers the current data exchange provisions under the INT NC to be fit for purpose and does not see a need for substantial updates or revisions at this stage. This position is supported by stable market operations and a high level of adherence to the existing CNOTs.

In this context, ENTSOG would support a "business-as-usual" scenario, since it continues to enable incremental harmonisation where justified. The INT NC provides a good balance between enforcement of the solutions of Data exchange processes and has enough flexibility to take into consideration smaller entities (TSOs or network users to have at their disposal the most efficient solutions) which reflects the current situation. Any proposed amendments emerging from this consultation should be clearly evidence-based, demonstrate tangible benefits for market participants and be supported by broad stakeholder consensus. At the same time, ENTSOG recognises the value of the established FUNC process. Issues that have been formally assessed through the FUNC process and for which solution notes have been issued should be considered within any potential revision of the Network Code. Their inclusion could, possibly, be achieved by targeted adjustments instead a full revision. This could result in the solution being developed faster as there has already been considerable stakeholder involvement and agreement and would not require a lengthy revision process.

Question 12 — Other data exchange possible amendments

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

Based on ENTSOG's experience and implementation monitoring, no additional amendments related to data exchange are considered necessary at this stage (Excluding the FUNC issues as previously mentioned).

The current data exchange provisions of the INT NC, together with the governance mechanisms established under Articles 21 to 24, have proven effective in ensuring secure, reliable, and interoperable data exchange across the European gas market.

Where clarifications, refinements, or adaptations have been required, these have been successfully addressed through the development and update of Common Network Operation Tools, implementation guidance and stakeholder coordination, without the need for changes to the Network Code itself.

In the absence of demonstrated market failures, interoperability issues, or regulatory gaps that cannot be resolved within the existing framework, no further amendments to the data exchange provisions are considered necessary.

Continued use of the established INT NC articles in Chapter V remains the most appropriate and efficient way to address any future needs.

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.

As already indicated in previous responses to this consultation, NaTran Deutschland does not see an urgent need to amend the INT NC.

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 opinion.

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?**

- ☒ 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
- ☒ No

Thank you!

Contact

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