Contribution ID: cd17d1cd-30e4-4c4a-80be-9f7b667df6ce
Date: 19/05/2026 15:22:29

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 2026, 23:59 hrs (CET)

2. Respondent's data

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

[redacted]

Phone number

[redacted]

* **Email address**

[redacted]@utilitalia.it

* **Name of organisation / company**

UTILITALIA

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"**

Associazione di categoria

*** 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
- ○ NL - Netherlands
- ○ PL - Poland
- ○ PT - Portugal
- ○ RO - Romania
- ○ SK - Slovak Republic
- ○ SI - Slovenia
- ○ ES - Spain
- ○ SE - Sweden

3. Data protection

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

ACER will not publish personal data.

Consent to the processing of personal data

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

4. Confidentiality

Following this consultation, ACER will make public:

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

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

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

5. Related documents

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

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

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

6. Document Structure

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

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

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

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

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

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

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

7. Liabilities provisions in Interconnection Agreements

7.1 Introduction

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

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

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

7.2 Market Status and Identified Issues

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

liability provisions between the IAs signatories (adjacent TSOs) are included in many IAs. The EU picture is diverse, since it is not mandated by the code's Article 3.

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

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

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

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

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

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

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

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

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

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

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

7.3 Areas for Improvement and Potential Regulatory Options

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

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

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

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

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

7.4 Proposed Public Consultation Questions

Question 1 — Assessment of Current Functioning

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

> The current liability framework is adequate, but for DSOs the stability of gas quality specifications at TSO–DSO interfaces remains critical. Distributors cannot intervene on parameters such as Wobbe index or oxygen content: any deviation directly affects distribution networks and end users, creating operational and safety risks. Since off spec events are rare and effectively managed under the existing system, additional EU harmonisation could introduce uncertainty without improving risk management. Clear responsibilities and strong upstream control of gas quality therefore remain essential for DSOs.

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?

> No regulatory gaps emerge that would justify EU intervention. For DSOs, improvements mainly concern clearer allocation of responsibilities across the TSO–shipper–DSO chain, especially in managing any gas quality deviations. Strengthening TSO interconnection agreements and clarifying national TSO–shipper contracts would help avoid grey areas that may create downstream operational risks. No significant conflicts between the different contractual layers are observed.

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.

> There is no evidence of recurring issues where liability arrangements for gas quality have caused operational or market problems. Known cases have been isolated and effectively resolved within existing regulatory and contractual frameworks, without affecting system flows or market functioning. This confirms that the current arrangements are robust and proportionate. For DSOs, maintaining this stability is essential, as any gas quality deviations can directly impact distribution networks, even though they are appropriately managed upstream.

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?

Given the possible implications on the activities of the DSO, the preferred option is A) Do nothing, considering that the current International Transmission Network Convention (INT NC) and the non-binding EU guidelines are adequate tools to establish a framework of responsibility for transmission system operators under all EU interconnection agreements. Therefore, no action will be taken.

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.

From a DSO perspective, the most appropriate option is to leave the Network Code unchanged. The current liability framework works effectively and does not show issues that would justify binding EU harmonisation. A standardised EU liability regime could reduce the flexibility needed to accommodate national legal and contractual contexts.
If additional support is considered useful, non binding EU guidance—such as best practice documents or enhanced interconnection agreement templates—would be the most proportionate approach. For DSOs, maintaining stable upstream responsibilities is essential to avoid operational uncertainty at TSO–DSO interfaces.

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.

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.

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.

8. Gas quality

8.1 Introduction

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

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

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

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

8.2 Market Status and Identified Issues

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

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

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

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

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

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

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

1. Short-term temporary deviation: Downstream sectors or relevant end-users shall be informed of deviations as soon as information is available. Stakeholders involved should cooperate to identify the appropriate mitigation measures to limit the impact of the temporary deviation.

2. Long-lasting or permanent deviation resulting in a possible class change: Downstream sectors and/or relevant end-users shall be informed of upcoming long lasting or permanent Wobbe index changes. An assessment of the consequences of the change of class in cooperation with the stakeholders involved shall be carried out. The downstream sectors or relevant end-users shall be informed about the assignation of the new class with an appropriate notice period.

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

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

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

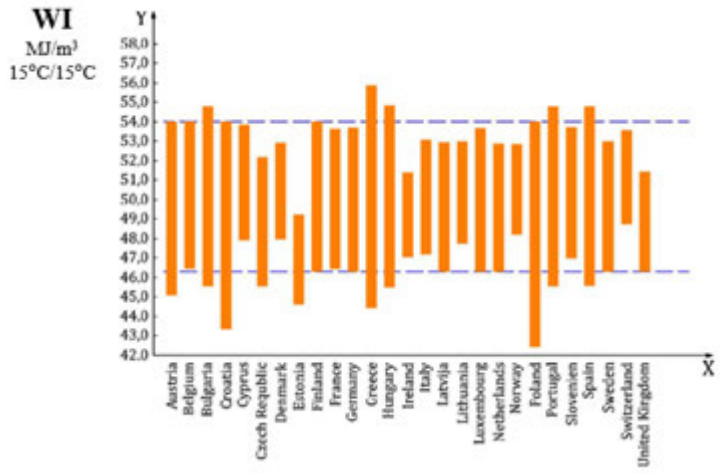

Figure 1 - National WI ranges as in Annex E revised EN16726 (October 2024)

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

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

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

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

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

8.3 Areas for Improvement and Potential Regulatory Options

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

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

fluctuations at exit points.

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

1. **Do nothing**: Neither the INT NC nor non-binding EU guidelines are appropriate avenues for establishing the European framework required for the Wobbe index classification system. Therefore, no action will be taken to create the framework mandated by the standard.
2. **Non-binding approach:** The gas sector (i.e., relevant associations and NRAs) could develop non-binding EU guidelines outlining key principles and elements that Member States should consider when determining entry ranges at IPs and when establishing mechanisms to identify and supply sensitive users within their national systems. These non-binding guidelines should take the CEN standard as the main reference but can also propose other options.
3. **Roadmap approach:** The non-binding guidelines described in Option 2 could also serve as a basis for establishing CEN standard implementation roadmaps. These roadmaps could be supported and referenced in the INT NC and, over time, provided the proper consultation is done in each individual national system, evolve into a mandatory and harmonised implementation of the standard across national systems.
4. **More prescriptive approach:** The INT NC could be amended to establish an EU regulatory framework ensuring mandatory and harmonised implementation of the standard across national systems (this is, for exit classes, while IPs entry Wobbe Index ranges remain recommendations within the standard). The framework, developed by new INT NC provisions, would define key principles and elements for implementation, including cost distribution, class allocation responsibilities, governance arrangements, and compliance mechanisms.

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

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

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

Potential amendments to address those aspects could be the following:

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

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

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

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

8.4 Proposed Public Consultation Questions

Question 4 — Assessment of Current Functioning

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

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

The current gas quality provisions set by the INT NC and interconnection agreements are adequate. The existing framework ensures stable cross border flows, sufficient flexibility for national system conditions, and effective cooperation among TSOs. Operational experience shows that gas quality differences rarely create obstacles and that current mechanisms successfully manage variability. From a DSO perspective, this stability is essential, as distribution networks rely on consistent upstream gas quality specifications and cannot adjust quality parameters downstream.

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?

Cases where differing gas quality requirements affected cross border flows have been rare and always resolved through targeted technical solutions (flow segregation, infrastructure adjustments, operational measures to meet stricter specifications). No structural market barriers have emerged. For DSOs, these cases highlight the need for strong upstream control of gas quality: investments in monitoring, threshold management and TSO coordination are essential to prevent operational impacts on distribution networks, which cannot correct gas quality downstream.

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?

Current gas quality practices remain broadly effective as low-carbon gases and hydrogen blends increase. However, the growing variability of renewable gases makes certain parameters—especially oxygen content in biomethane—more critical, given their impact on storage, transmission assets and industrial uses.
DSOs cannot adjust gas quality and therefore rely on stable upstream specifications and balanced oxygen limits to avoid disproportionate costs that could hinder biomethane development.
For hydrogen, the current 2% molar limit at interconnection points is manageable, provided adjacent TSOs retain flexibility to agree on different levels. The emergence of dedicated hydrogen networks highlights the need for future harmonised H_2 quality specifications.
Overall, the existing framework provides sufficient flexibility to support decarbonisation. Any challenges should be addressed through technical solutions, operator cooperation and gradual adjustments—not through major regulatory revisions.

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.

> The preferred option is a no intervention approach, complemented, if needed, by non binding guidance and a targeted roadmap limited to key EN 16726 aspects such as Wobbe Index classification and oxygen limits. For DSOs, this balance is crucial: a prescriptive EU approach could reduce the flexibility and upstream stability needed to ensure safe and reliable distribution networks. The increasing integration of renewable gases requires attention but can be effectively supported through CEN based technical guidance rather than binding regulatory changes.

7.2 What are the reasons behind your preference?

> The preference for a no intervention approach, complemented by non binding guidance, is based on the fact that the current framework effectively manages gas quality despite diverse and increasingly variable supply sources. Wobbe Index and oxygen content are sensitive parameters, but differences have so far been handled locally without impacts on end users. Flexibility is essential for security of supply, especially with growing LNG imports and renewable gases. Binding EU measures could restrict access to supply sources and reduce the adaptability of systems that currently work well. A non binding approach focused on WI and O_2 can support knowledge sharing and consistency without imposing obligations. Any future evolution should rely on evidence, pilot projects and cost benefit assessments, avoiding operational impacts on DSOs, who depend on stable upstream specifications and cannot adjust gas quality downstream.

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

> The INT NC is not the appropriate instrument for introducing prescriptive gas quality rules. Its scope should remain focused on interoperability at interconnection points, without expanding into broader gas quality regulation. A prescriptive EU approach would reduce the flexibility needed to manage diverse supply sources (especially LNG and renewable gases), interfere with national competences and create unnecessary operational constraints. For DSOs, preserving upstream flexibility and stable specifications is essential, as gas quality cannot be adjusted at distribution level.

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

> Decisions on any mandatory measures should remain at national level, taken by NRAs and/or national ministries, supported by public consultation and an independent impact assessment. For DSOs, it is crucial that

decisions reflect national system specificities and avoid uniform obligations that could create unnecessary costs or operational constraints. Non binding exchanges of best practices—such as on oxygen content—can be useful only if voluntary and system specific.

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

No EU wide harmonised timeline should be imposed. Any implementation should follow a gradual, nationally determined schedule, aligned with each system's needs and avoiding unnecessary operational or cost pressures on DSOs. Flexibility must remain the guiding principle to reflect diverse network conditions and supply profiles.

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?

A mandatory and uniform transposition of the EN 16726 standard at EU level would risk not reflecting the real needs of individual markets. In Italy, gas quality is already regulated in a timely manner by the Ministerial Decree of 18 May 2018 and monitored by ARERA through the RQTG, with continuous updates based on technical evidence and on the actual operational criticalities of the national system.
For this reason, any discrepancies between countries are not a concern for Italy, where the regulatory framework is already solid and fully functional. The greatest criticality would instead be to introduce overlapping European obligations that could create unnecessary duplication or rigidity. An approach that harmonises minimum principles is preferable, leaving Member States the possibility to maintain national regulations that are already effective and consistent with the specificities of their respective markets.

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 binding EU framework for exit class definitions or oxygen limits does not create significant risks for end users. Gas quality issues related to oxygen remain localised (e.g., storage, specific industrial uses) and are best addressed upstream, particularly at biomethane injection points.
For DSOs, this is crucial: distribution operators cannot adjust gas quality nor assess the sensitivity of individual end user appliances to the Wobbe Index. A prescriptive EU framework could therefore impose obligations that DSOs are technically unable to fulfil and generate disproportionate costs.
Maintaining the current approach ensures: • security of supply despite variable LNG and renewable gas qualities; • flexibility to accommodate diverse infrastructures and supply mixes; • avoidance of unnecessary regulatory burdens.
Non binding guidance focused on WI and O_2 may be useful, provided it remains voluntary and evidence based.

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

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

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

Yes, in Italy the adoption of the CEN standard would have a limited impact, because the issue of gas quality is already regulated in a very advanced way. National legislation – in particular the Ministerial Decree of 18 May 2018 – precisely defines the chemical and physical parameters of the gas injected into the network, while ARERA, through the RQTG, guarantees continuous monitoring and updates consistent with the real needs of the market and with the safety of end uses. For this reason, a mandatory and uniform transposition of the CEN standard would risk introducing regulatory overlaps without bringing additional benefits to the Italian system, which already effectively addresses operational criticalities. In our view, a European approach that harmonises only the essential elements is preferable, leaving it to the Member States to maintain consolidated and fully functioning national regulations.

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.

At this stage, it does not seem appropriate to introduce a prescriptive or binding framework for the identification of exit classes. Any evolution should follow a step-by-step approach, based on progressive pilot projects that allow realistic solutions to be tested, operational impacts assessed and compatibility with the flame appliances actually present in the different Member States, which is central to end-use safety. For DSOs, this aspect is particularly relevant: distributors do not have the technical tools to assess the sensitivity of individual equipment, nor can they intervene in the quality of the gas. The identification or assignment of exit classes must therefore remain upstream, the responsibility of TSOs and national authorities. Any future activities should be limited to non-binding guidelines, focused on key parameters such as the Wobbe index and oxygen content, based on historical data and on comparable points. Any implementation should remain optional, defined at national level and adapted to the specificities of individual systems

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?

Introducing cost allocation mechanisms linked to gas quality classes would create significant challenges. For DSOs, such an approach would be technically unfeasible and economically prohibitive, because:
• distribution operators do not have the tools or information needed to assess the sensitivity of individual end user appliances to the Wobbe Index;
• performing such assessments would require interventions at millions of customer premises, resulting in extremely high and disproportionate costs;
• these responsibilities cannot be shifted onto DSOs, nor can differentiated tariffs be imposed on end users to compensate for such burdens.
Differentiated exit tariffs based on gas quality classes would also risk:
• adding unnecessary regulatory and administrative complexity;
• creating market distortions between users and regions;
• raising concerns about fairness and proportionality, especially in systems with many residential customers

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

Interactions between TSOs, DSOs, shippers and end users regarding the identification of exit classes should continue to follow the approach already used for other technical matters: • bilateral and multilateral cooperation; • case by case assessments; • reliance on existing consultation mechanisms.
This framework has proven effective and sufficiently flexible.
For DSOs, it is essential to underline that they do not have the technical means to assess the sensitivity of individual end user appliances to the Wobbe Index, nor can they influence gas quality. Therefore, their role should remain focused on sharing operational information and reflecting real distribution network conditions, without assigning them upstream responsibilities or classification tasks.
Any additional guidance should: • remain non binding; • be strictly limited to Wobbe Index classification and O_2 levels; • avoid introducing formalised procedures that would reduce operational flexibility and impose unmanageable obligations on DSOs.
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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.

From a European perspective, the priority should remain to: • ensure security of supply; • preserve system flexibility to accommodate different gas sources; • support efficient cross border trade without adding unnecessary regulatory burdens.
The current regulatory framework has proven effective over time, and there is no evidence supporting changes to the INT NC or the introduction of a prescriptive exit class system.
For DSOs, a critical point must be clearly stated: distribution operators do not have the information or technical means to know the sensitivity of end user appliances to the Wobbe Index. This lack of knowledge is not merely an operational limitation: it may also create potential safety risks, as particularly sensitive appliances could react unpredictably to WI variations, with no possibility for the DSO to foresee or manage such effects.
Therefore: • any exit class system must remain upstream, under the responsibility of TSOs and national authorities; • DSOs cannot be assigned operational or evaluative responsibilities; • no obligation should assume knowledge of the end user appliance stock.
If discussions on exit class definitions take place, TSOs and DSOs can contribute by facilitating dialogue and sharing information on historical and current gas quality conditions. Such discussions should be grounded in: • system specific conditions; • practical operational experience; • observed historical variations in gas quality; • proportionate and pragmatic assessments of impacts on end users.
Any further development should therefore: • avoid changes to the INT NC; • be limited, if needed, to non binding guidance on WI and O_2; • respect national system diversity and market conditions; • maintain a pragmatic, evidence based approach supported by existing mitigation measures.

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.

9. Data exchange

9.1 Introduction

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

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

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

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

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

Finally, while these common solutions are the standard, existing legacy data exchange systems may be retained if they meet the new security requirements, undergo network user consultation, and receive national regulatory approval as described in Article 23. In that regard, and to ensure long-term adaptability, ENTSOG

is tasked with developing Common Network Operation Tools (CNOTs) [6] and managing necessary technological updates (through Article 24 of the code). Any future changes to these data exchange solutions must be driven by transparent processes, including cost-benefit analyses and comprehensive public consultations.

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

9.2 Market status and Identified issues

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

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

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

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

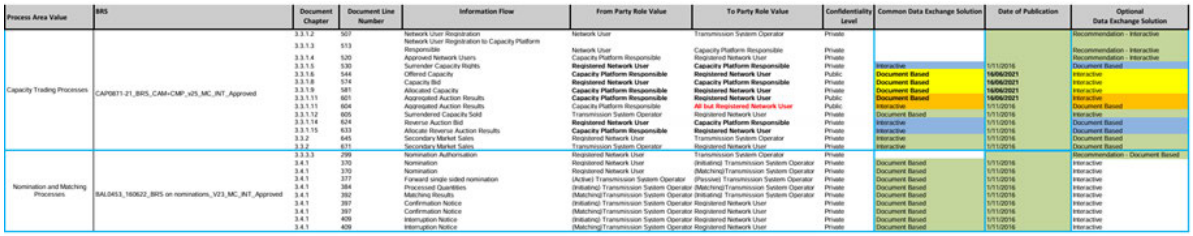
Even without full harmonization, the lack of uniformity is not perceived a barrier to reliable cross-border data exchange. It is also worth noting that the current application of CNOTs provides guidance on data exchange topics. While 70% of TSOs consider this current guidance sufficient, 20% believe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

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

inefficiencies and/or market harm, so further action would require a cost-benefit analyses.

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

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



Process Area Value	BRS	Document Chapter	Document Line Number	Information Flow	From Party Role Value	To Party Role Value	Confidentiality Level	Common Data Exchange Solution	Date of Publication	Optional Data Exchange Solution
Capacity Trading Processes	CAP0871-21_BRS_CAM+CMP_v25_MC_INT_Approved	3.1.1.2	507	Network User Registration	Network User	Transmission System Operator	Private			Recommendation - Interactive
		3.3.1.3	513	Network User Registration to Capacity Platform Responsible	Network User	Capacity Platform Responsible	Private			Recommendation - Interactive
		3.3.1.4	520	Approved Network Users	Capacity Platform Responsible	Registered Network User	Private			Recommendation - Interactive
		3.3.1.5	530	Surrender Capacity Rights	**Registered Network User**	**Capacity Platform Responsible**	Private	Interactive	1/11/2016	Document Based
		3.3.1.6	544	Offered Capacity	**Capacity Platform Responsible**	**Registered Network User**	Public	**Document Based**	**16/06/2021**	Interactive
		3.3.1.8	574	Capacity Bid	**Registered Network User**	**Capacity Platform Responsible**	Private	**Document Based**	**16/06/2021**	Interactive
		3.3.1.9	581	Allocated Capacity	**Capacity Platform Responsible**	**Registered Network User**	Private	**Document Based**	**16/06/2021**	Interactive
		3.3.1.11	601	Aggregated Auction Results	**Capacity Platform Responsible**	**Registered Network User**	Public	**Document Based**	**16/06/2021**	Interactive
		3.3.1.11	604	Aggregated Auction Results	Capacity Platform Responsible	All but Registered Network User	Public	Interactive	1/11/2016	Document Based
		3.3.1.12	605	Surrendered Capacity Sold	Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive
		3.3.1.14	624	Reverse Auction Bid	**Registered Network User**	**Capacity Platform Responsible**	Private	Interactive	1/11/2016	Document Based
		3.3.1.15	633	Allocate Reverse Auction Results	**Capacity Platform Responsible**	**Registered Network User**	Private	Interactive	1/11/2016	Document Based
		3.3.2	645	Secondary Market Sales	Registered Network User	Transmission System Operator	Private	Interactive	1/11/2016	Document Based
		3.3.2	671	Secondary Market Sales	Transmission System Operator	Registered Network User	Private	Interactive	1/11/2016	Document Based
Nomination and Matching Processes	BAL0453_160622_BRS on nominations_V23_MC_INT_Approved	3.3.3.3	299	Nomination Authorisation	Registered Network User	Transmission System Operator	Private			Recommendation - Document Based
		3.4.1	370	Nomination	Registered Network User	(Initiating) Transmission System Operator	Private	Document Based	1/11/2016	Interactive
		3.4.1	370	Nomination	Registered Network User	(Matching)Transmission System Operator	Private	Document Based	1/11/2016	Interactive
		3.4.1	377	Forward single sided nomination	(Active) Transmission System Operator	(Passive) Transmission System Operator	Private	Document Based	1/11/2016	Interactive
		3.4.1	384	Processed Quantities	(Initiating) Transmission System Operator	(Matching)Transmission System Operator	Private	Document Based	1/11/2016	Interactive
		3.4.1	392	Matching Results	(Matching)Transmission System Operator	(Initiating) Transmission System Operator	Private	Document Based	1/11/2016	Interactive
		3.4.1	397	Confirmation Notice	(Initiating) Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive
		3.4.1	397	Confirmation Notice	(Matching)Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive
		3.4.1	409	Interruption Notice	(Initiating) Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive
		3.4.1	409	Interruption Notice	(Matching)Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive

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

9.3 Areas for Improvement and Potential Regulatory Options

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

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

9.4 Proposed Public Consultation Questions

Question 10 — Assessment of Current Functioning

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

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?

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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?

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?

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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?

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

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Question 12 — Other data exchange possible amendments

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

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.

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.

Question 15 - Any other comments?

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

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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