EUROMOT

The European Association of Internal Combustion Engine and Alternative Powertrain Manufacturers

EUROMOT POSITION

Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the internal markets for renewable and natural gases and for hydrogen (recast) - 2021/0424(COD)

4th of October 2022

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1. Abbreviations

ACER	Agency for the Cooperation of Energy Regulators
DSO	Distribution System Operator
ENNOH	European Network of Network Operators for Hydrogen
ENTSO	European Network of Transmission System Operators
EU	European Union
HHV	Higher Heat Value or Gross calorific heat
LNG	Liquefied Natural Gas
MN	Methane Number
PEM	Proton Exchange Membrane fuel cell
RoC	Rate of Change
WI	Wobbe Index

2. Document introduction & summary

The EU Commission adopted on 15.12.2021 a legislative proposal to recast the 2009 EU Gas Regulation /1A, 1B/. According to the legislative proposal transmission and distribution system operators shall make (publish) public detailed information regarding the *quality of gases* transported in their network *which might affect network and gas users*. Gas quality has a fundamental impact on amongst others safety, emissions, product quality and energy efficiency and thus sufficient information is a pre-requisite for all network (end) and gas user operations.

EUROMOT supports the ambition of the proposal. However the gas quality specification referred to in the legislative proposal needs to be revised and extended to reflect the future gas composition development and end user´s needs. The growing volumes of biomethane, hydrogen but also LNG and synthetic natural gas from various sources can affect the gas quality and thereby the design and operation of gas infrastructure and end-user applications. In addition, differences in gas quality and

in hydrogen blending levels can negatively impact cross-border flows and end-user applications.

The *current and for the future proposed gas quality rules are not fit to deal with the future developments*.

In the proposal regarding the public detailed gas quality (other than pure H_2) reporting obligation a reference is made to Regulation (EU) 2015/703 (Articles 16 and 17) – which specifies only a very few mandatory gas parameters to be measured and reported. For the transmission system operator an alternative approach (with some additional gas parameters and a different time-line measurement obligation) is also listed in Annex 1. Unfortunately this text is not fully in line with the relevant Article and thus a check of the content has to be made.

According to the proposal, the Commission is empowered to establish network codes including rules on amongst all short- and long-term gas quality monitoring, information provision, reporting on gas quality, etc.

In the text below the gas quality topic is discussed in more detail and a proposal is given to enable an adequate gas quality data information flow to the gas end users/final customers.

The way forward could be:

- A direct reference to the (currently under revision) EN 16726 H-gas standard in the proposed legislative Regulation proposal **or**
- Regulation 2015/703 to be revised

in order to better reflect future gas quality information needs.

The Commission should also aim for an obligatory application (e.g. via network codes) of the revised standard EN 16726 in the EU. Having different gas quality rules between the Member States hampers the free exchange of gases in the EU, limits a uniform product specification for the equipment manufacturers and increases the costs for the gas end users.

3. Gas quality information obligations and future need

The integration of growing volumes of renewable and low-carbon gases in the European natural gas system will change the quality of natural gas transported and consumed in Europe. To ensure an unhindered cross-border flow of natural gas, to maintain the interoperability of markets and to enable market integration, it is necessary to increase transparency on the gas quality. On the costs of its´ management, a harmonised approach on the *roles and responsibilities of regulatory authorities and system operators* should be provided. While ensuring a harmonised approach on gas quality for cross-border interconnection points, Member States' flexibility as regards the application of gas quality standards in their domestic natural gas systems would anyway be maintained (according to Recital (42)).

Recital (44) quote: "..*Enhanced transparency requirements on gas quality parameters, including on gross calorific value, Wobbe Index and oxygen content, and hydrogen blends and their development over time combined with monitoring and reporting obligations should contribute to the well-functioning of an open and efficient internal market in natural gas*."

The opinion of the gas fuelled prime mover/appliance manufacturing industry is that a harmonised application of a common gas quality standards across the EU is needed. This would simplify the product design work and also make possible optimal operations (highest efficiency, lowest emissions etc.,) of the prime movers/appliances in the field.

Below are listed some Articles of the proposal describing the gas quality information details transmission and distributor system operators shall provide to network users (final gas customers/ end users, etc.).

- Article 30(7) quote: "*The transmission system operators shall make public detailed information regarding the quality of the gases transported in its network, which might affect network users, based on Articles 16 and 17 of Commission Regulation (EU) 2015/703.*"

- In Annex 1 of the proposal (partly copied in Annex 2 of this document) in chapter 3.3 point 4 is also specified requirements and time-line of the information to be published by the transmission system operators for network users. Gas parameters listed are WI, gross calorific value, H_2-, CH_4- and O_2-contents at all relevant points to be published on a daily basis. Preliminary figures to be published at the latest 3 days following the respective gas day. Final figures to be published within 3 months after the end of respective month.

- Article 35 quote: "*Where distribution system operators are responsible for gas quality management in their networks, they shall make public detailed information regarding the quality of the gases transported in their networks, which might affect network users, based on Articles 16 and 17 of Commission Regulation (EU) 2015/703.*"

- Recital 46 quote: "*Commission Regulation (EU) 2015/703 sets out interoperability and data exchange rules for the natural gas system, in particular with respect to …, measurement principles for gas quantity and quality, … , communication procedures in case of exceptional events; common set of units, gas quality, including rules on managing cross-border trade restrictions due to gas quality differences and due to differences in odorisation practices, short- and long-term gas quality monitoring and information provision; data exchange, and reporting on gas quality; transparency, communication, information provision and cooperation among relevant market participants."*

3.1. Discussion

In Annex 1 of this paper, Articles 16 and 17 of the Regulation EU 2015/703 /2/ can be found. I.e. only a few gas parameters *namely WI and gross calorific value (HHV)* are mandatory to be measured frequently (on an hourly basis) and to be reported by the transmission system operators**. Note!** according to 4th paragraph of Article 17 transmission system operators are **not obliged** to supply additional indicative gas quality information **if not required** by the national regulatory authority. The mandatory minimum gas quality information prescribed by Article 16 would **not** be enough for many network final customers – many final customers/end users need more gas quality parameter data in order to be able to operate their processes in an optimal way.

In Annex 1 of the proposal (see also Annex 2 of this paper) alternative requirements and timeline for the gas information to be published by the transmission system operators are given. These (slightly extended with parameters such as H_2-, O_2- and CH_4-contents) requirements and time-line (daily instead of hourly basis), preliminary figures shall be published at the latest 3 days following the respective gas day. Final figures shall be published within 3 months after the end of the respective month differ from the time-line specified via Article 30(7). This is confusing.

EUROMOT has in Position Paper /3/ shown that many additional gas quality parameters (such as MN, Rate of Change (RoC) of MN and WI) besides WI and gross calorific value (HHV) are needed of the future gases for the operational processes of the gas end users.

In addition, because the net calorific value of hydrogen is only 85% of the gross calorific value, while for natural gas and biomethane the net calorific value is 90% of the gross calorific value, it is important to also give the lower calorific value in case of hydrogen and hydrogen blends. Many gas applications cannot use the gross calorific value but rely on the net calorific value. (the net calorific value is the same as the lower calorific value).

3.2. Hydrogen

In the proposal is found only some general texts regarding the information hydrogen network operators shall supply, quotes:

- Article 48(3): "*The hydrogen network operators shall make public detailed information regarding the quality of hydrogen transported in their networks, which might affect network users*."

- Recital (59): "*Where the regulatory authority considers it necessary, hydrogen network operators could become responsible for managing hydrogen quality in their networks, within the framework of applicable hydrogen quality standards, ensuring reliable and stable hydrogen quality for end-consumers*."

- Recital (64): "*In order to fully take into account the quality requirements of hydrogen end-users, technical specifications and standards for the quality of hydrogen in the hydrogen network will have to consider already existing standards setting such end-user requirements (for instance, the standard EN 17124)* "

In Annex 1 of the proposal (partly copied in Annex 2 of this document) in chapter 4.3, quotes:

- In point 4 is specified requirements and time-line (on a daily basis) for the information to be published by the hydrogen network operator.
  Measured values of hydrogen purity and contaminants at all relevant points on a daily basis, preliminary figures to be published latest within 3 days. Final figures to be published within 3 months after the end of the respective month.
- Point 5 refers to network codes to be established for the information at relevant points.

3.2.1. Discussion

Note! standard EN 17124 is intended for "*Hydrogen fuel - Product specification and quality assurance - Proton exchange membrane (PEM) fuel cell applications for road vehicles*"!

In annex 1 of the proposal (see also Annex 2 of this paper) a timeline for the H_2- quality information to be published by the hydrogen network operator is given. A reference to future established network codes is also made regarding the information at relevant points to be published.

4. Establishment of network codes, etc.

The Commission may, subject to the empowerments adopt implementing or delegated acts. Such acts may either be adopted as network codes on the basis of text proposals developed by the ENTSO for Gas or the ENNOH, or, where so provided for in the priority list pursuant, by the EU DSO entity, where relevant in cooperation with the ENTSO for Electricity, the ENNOH and ACER.

Some quotes:

Article 53(1):“ *The Commission is empowered to adopt implementing acts establishing network codes in the following areas:*

- (*b) interoperability rules for the natural gas system, … **including** …, , **short- and long-term gas quality monitoring**, information provision and cooperation among relevant market participants, reporting on gas quality, …“*

Article 53(3): “*The Commission shall, after consulting ACER, the ENTSO for Gas, the ENNOH, the EU DSO entity and the other relevant stakeholders, **establish every three years a priority list,** identifying the areas set out in paragraphs 1 and 2 to be included **in the development of network codes**. If the subject matter of the network code is directly related to the operation of the distribution system and not primarily relevant to the transmission system, the Commission may require the EU DSO entity, in cooperation with the ENTSO for Gas, to convene a drafting committee and submit a proposal for a network code to ACER. “*

5. Conclusion

5.1. General

EUROMOT very much welcomes the initiatives by the Commission to create improved legislation that will ensure that the end users of gaseous fuels receive the information that is essential for ensuring a safe, reliable, efficient operation with minimum emissions including a fair billing. At the same time, up-to-date knowledge about the relevant gas quality in the EU gas transmission grid helps to enable cross-border transfer. **In case** the gas quality **is sufficiently stable**, information of the gas quality on an hourly basis is sufficient. However, in the opinion of EUROMOT, the aspect of a high Rate of Change (RoC) and especially Plug Flow is insufficiently addressed.

When for TSOs and DSOs a sudden change in the source of the gas occurs or when they suddenly change the blending of gas from different sources, a fast change in gas quality can occur which can detrimentally affect the process of the end user. Timely information provision to the end users is hardly possible then, also because of the slow reaction time of most gas quality meters.

Therefore, in order to avoid such situations when it is impossible to provide the required information on time – while even if the information would be provided timely the (gas) user installation cannot respond properly – part of this regulation should be that TSOs and DSOs should prevent Plug Flow and a high Rate of Change. This is technically possible by e.g. limiting the speed of the relevant control valves in the pipeline system, by installing control loops and by installing so-called mixing organs, Examples of such measures have been put in practice for already more than three decades by some gas transporters. In case Plug Flow and a high RoC is not prevented, the obligations for quality measurement and data provision will still be inadequate for preventing undesirable gas application situations.

5.2. Proposed path for needed revisions:

In above text it has been shown that the gas quality specification Articles (referring to Regulation 2015/703) in the legislative Regulation proposal /1A,1B/ needs to be revised to reflect the future (gas) development and gas end user´s need.

EN 16726 is indirectly referred to via Recital (5) – " .. *European-wide standard for high-calorific gas as is being developed by CEN pursuant to the standardisation process under mandate M/400 ..*" - in the Regulation 2015/703. EN 16726-2015 is currently under revision for inclusion of a range and bandwidth for the WI, the gross and net calorific values and possible changes of some present parameter values in the standard. As the gas legislative Regulation proposal text is written (reference to Regulation EU 2015/703 Articles 16 and 17) future needed gas quality information aspects will not be met in many cases and if additional gas parameters would be provided these are only of indicative/best estimates nature and mandatory ones only if the national authority requires it! A direct reference to the EN 16726 H-gas standard should be made in the proposed legislative Regulation proposal or Regulation 2015/703 revised in order to better reflect future gas quality information needs. Note Regulation 2015/703 Recital (5) is indirectly referring to EN 16726, this needs to be strengthened.

In Annex 1 of the Regulation proposal further text on the transmission system operator's obligation to publish gas information data and time-line are given. Text content of Annex 1 of the proposal differs from the requirement and time-lines which Article 30(7) refers to via Regulation 2015/703. This needs a check and correction.

There is a also need to develop "own" sector specific H_2 quality standards. Annex 1 of the proposal is referring to future technical codes (regarding information at relevant points to be published by network operator) to be established.

EUROMOT has in Position paper /3/ shown that many additional gas parameters besides WI, HHV (gross calorific value) are needed for the future gases in order to support the processes of the gas end users. This EUROMOT Position Paper was made for the ongoing revision of the EN 16726 H-gas standard. In addition, the LHV (net calorific value) in case of hydrogen and hydrogen blends should be given.

In the "Explanatory Memorandum" /1A/ is stated "*.. current gas quality rules are not fit to deal with future developments ..*"!

Thus, the following actions are needed in order to secure a sufficient public detailed gas quality information for the network users:

1. The Commission should urge CEN to finalize the revision and improvement of the gas standard EN 16726:2015, preferably in the year 2022.

2. CEN should take into account the needs of all end users and gas equipment manufacturers when finalizing the revision of EN 16726:2015.

3. The Commission should aim for an obligatory application (e.g. via network codes) of the revised standard EN 16726 in the EU, thereby taking away the prerogative of the Member States to set their own rules. Having different gas quality rules between the Member States hampers the free exchange of gases in the EU, limits a uniform product specification for the equipment manufacturers and increases the costs for the gas end users.

6. Sources

/1A/ Proposal for a regulation .. on the internal markets for renewable and natural gases and for hydrogen (recast), 15.12.2022, at web: https://eur-lex.europa.eu/resource.html?uri=cellar:0c903f5a-5d8b-11ec-9c6c-01aa75ed71a1.0001.02/DOC_1&format=PDF

/1B/ Annex at web: https://eur-lex.europa.eu/resource.html?uri=cellar:0c903f5a-5d8b-11ec-9c6c-01aa75ed71a1.0001.02/DOC_2&format=PDF

/2/ EU Regulation 2015/703 at web https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015R0703&from=EN

/3/ EUROMOT POSITION EUROMOT REVISION OF EU RULES ON GAS MARKET ACCESS – EUROMOT POSITION ON GAS QUALITY REQUIREMENTS, 2021, at web: https://www.euromot.eu/wp-content/uploads/2021/06/EU-gas-legislation-revision_EUROMOT-position-on-gas-quality-requirements_FINAL_16-June-2021.pdf

ANNEX 1 "EU Regulation 2015/703" /2/

- Recital (5) quote: "*The provisions of this Regulation relating to gas quality should provide effective solutions without prejudice to the adoption of a European-wide standard for high-calorific gas as is being developed by CEN pursuant to the standardisation process under mandate M/400* "

- Article 16: "*short-term monitoring on gas quality – data publication*":
  "Transmission system operators shall publish on their website for each interconnection point, with a frequency of at least ***once per hour*** *during the* ***gas day****, the* ***Wobbe-index and gross calorific value*** for gas directly entering their transmission networks at all physical interconnection points"

- Article 17 "*Information provision on short-term gas quality variation* ":

  1. In addition to interconnection points, this Article shall apply to other points on transmission networks where the gas quality is measured.

  2. A transmission system operator **may** select one or several of the following parties to receive information on gas quality variation:
  (a) final customers directly connected to the transmission system operator's network, whose operational processes are adversely affected by gas quality changes or a network user acting on behalf of a final customer whose operational processes are adversely affected by gas quality changes, where a direct contractual arrangement between a transmission system operator and its directly connected final customers is not foreseen by the national rules;
  (b) distribution system operators directly connected to the transmission system operator's network, with connected final customers whose operational processes are adversely affected by gas quality changes;

  3. Each transmission system operator shall:
  (a) define and maintain a list of parties entitled to receive indicative gas quality information;
  (b) cooperate with the parties identified in the above list in order to assess:
  (i) the relevant information on gas quality parameters to be provided;
  (ii) the frequency for the information to be provided;
  (iii) the lead time;
  (iv) the method of communication.

  4. Paragraph 3 shall **not impose an obligation** on transmission system operators to install additional measurement or forecasting equipment, unless otherwise required by the national regulatory authority. The information under paragraph 3(b)(i) of this Article shall be provided as the transmission system operator's **best estimate** at a point in time and for the internal use of the recipient of the information.

Annex 2 "Annex 1 of the Gas Regulation proposal" /1B/

- Section 3: "*Definition of the Technical Information necessary for network users to get effective access to the natural gas system.. information to be published at all relevant points and time schedule according to which this information shall be published*"

  Chapter 3.3 point 4: "*Transmission system operators shall publish measured values of the gross calorific value, the Wobbe index, the hydrogen content blended in the natural gas system, methane content and oxygen content at all relevant points,* ***on a daily basis****. Preliminary figures shall be published at* ***the latest 3 days following the respective gas day. Final figures shall be published within 3 months after the end of the respective month.*** "

- Section 4; (Publication of technical information on network access by hydrogen network operators and information to be published at all points and time schedule)

  Chapter 4.3:

  - Point 4; "*Hydrogen network operators shall publish measured values of the hydrogen purity and contaminants at all relevant points, on a daily basis. Preliminary figures shall be EN published at the latest within 3 days. Final figures shall be published within 3 months after the end of the respective month*."

  - Point 5: "Further details required to implement points 4.1, 4.2 and 4.3, e.g. details on the format and content of the information necessary for network users for effective access to the network, information to be published at relevant points, details on time schedules, ***shall be set in a network code established*** on the basis … of this Regulation"

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With an ecosystem of working groups spanning current and future power and mobility systems, we facilitate cross-fertilisation of innovation across industries. EUROMOT provides an essential gateway to the EU Single Market and forms a bridge for the transition from traditional to alternative energy and advanced powertrains.

Since our foundation, we have been facilitating ever increasing environmentally friendly and sustainable products as well as the decarbonization of our sector and its transition to low/zero-carbon emissions and renewable energy. With a membership encompassing all major ICE and alternative powertrain manufacturers and well-established connections to regulators, EUROMOT is uniquely positioned to decarbonise entire industries from agriculture to construction and from land-based to marine alongside stationary power for heat and electricity.

Headquartered in Brussels, EUROMOT is a European interest group, and our profile is registered in the EU Transparency Register under the identification number 6284937371-73. We have been granted consultative status at the United Nations IMO (International Maritime Organization, London) and United Nations ECE (Economic Commission for Europe - Geneva) and other relevant stakeholders.

OUR MEMBERS

30 YEARS 1991-2021

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