



GTE Position Paper on Gas Specification

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1. Context and scope

On the European Market, two main gas categories are supplied i.e. the low calorific (Slochteren) and the high calorific gas categories. Within each main gas category, the differences in gas quality specifications can lead to restrictions in interoperability. Up to now, this has only been the case within the high calorific gas category.

2. Aim of the study

The GTE Interoperability sub-group on gas specifications has investigated in detail the proposal for harmonisation made in the former Madrid Forum and proposes concrete actions. Those actions aim at improving interoperability between networks facilitating cross-border shipment of gas notwithstanding the prevailing difference in gas specifications on either side of the flange.

3. Starting situation

The gas specifications can be divided in three categories:

- Combustion properties

The combustion properties can be described by the Wobbe Index and others parameters like SI (Soot Index), ICF (Incomplete Combustion Factor) and H₂. Such parameters are safety related.

Up to now, three types of policy have been developed, the first two on the continent with the aim of allowing a large Wobbe range:

- Investment in Flexible burners (e.g.: France, Belgium);
- Investment in blending (e.g.: Germany, Netherlands);
- Adoption of a relatively narrow Wobbe range in the UK.

- Gross Calorific Value (GCV)

The billing process is based on the Gross Calorific Value. A limitation on the Gross Calorific Value of gas that can be distributed in certain areas can arise from billing practice and legal framework. These practices have been developed to safeguard consumer interests. Billing problems may arise mainly when two or more sources of gas managed possibly by two or more different suppliers are feeding the same local distribution network. (1)

(1) In addition, a consideration in setting the GCV range is that a low GCV reduces pipeline capacity and may result in additional investment being required.



- Additional components

Total Sulphur, H₂S, COS, Mercaptans, HC Dewpoint, H₂O Dewpoint, O₂, CO₂, N₂, Aromatic compounds, Impurities, ...

The contractual and legal components ranges differ in the various countries mainly for historical reasons but might, given the evolution of technology, be aligned more closely without compromising on safety.

4. Achievements & Recommendations

The sub-working group established the following criteria as a basis for its recommendations:

- Not to affect the safety for the pipeline operators from upstream to downstream;
- Be acceptable for end-consumers (safety, burners, processes);
- Not to imply huge investment for the producers;
- Not to have a detrimental impact on the current "image" of natural gas;
- Provide a tolerance towards the actual measured values (avoid frequent discussion about off-spec gas).

- Combustion properties

Recently,

- A problem of interoperability between the UK and Continental Europe was identified when the Interconnector came into operation because the UK manages the Wobbe limit using the concept of narrow band while the continent uses broad band.
- As a consequence of the unbundling of integrated companies, TSOs (who do not have purchase contracts) have little flexibility to manage a stable quality for the end-consumer as they increasingly have to manage with gas from diverse sources.

GTE believes that it would be possible to move towards a more consistent approach that permits the use of available gas sources area by area, thereby allowing cross-border transfers. This can be achieved through a policy of use of flexible burners, blending where feasible, or the setting of updated and compatible limits for the parameters describing the combustion properties (Wobbe Index, SI, ICF). This has to take into account: safety and economic considerations, fulfilment of existing commitments (including those made by Authorities) and the possibilities that are practically available to the various market participants in the changing environment.

Specific parameters for combustion (SI, ICF) should be removed by using a suitable parameter at an acceptable level. (2)

- Gross Calorific Value (GCV)

Billing considerations, which lead to restriction in the GCV range (restricting interoperability), should be reviewed in order to respect consumer rights on one hand and to ensure flexibility of choice of supply on the other hand.

- Additional components

The sub-working group has developed a first set of common values on gas specifications following the criteria listed above. The sub-working group has reached a broad level of agreement on these values although certain members have identified the need for further investigation in some areas. The first set of recommended values are (3):

(2) *Marcogaz is working on the definition of new parameter.*

(3) *Subject to implementing contractual/legislative change and to further contact with other stakeholders from upstream to downstream.*



Total Sulphur:	30 mg/m ³ (n) (*)
H ₂ S + (COS):	5 mg/m ³ (n)
Mercaptans:	6 mg/m ³ (n)
HC Dewpoint:	-2°C [0 - 69] barg
H ₂ O Dewpoint:	-8°C @ 69 barg
O ₂ :	1000 ppm
CO ₂ :	2 to 3%

Impurities clause: *"Shall not contain component exceeding levels that may interfere with the integrity or operation of pipes or any gas equipment which gas transporters could reasonably be expected to operate or which may be in conflict with European legislation".*

(*) Total Sulphur peak value: to be further discussed with other stakeholders

Gas outside the proposed ranges could be accepted by the TSO in specific areas on a case by case basis.

As far as hydrocarbon dewpoint measurement is concerned:

- Promotion of a Standard using automatic hydrocarbon dewpoint measuring method through ISO;
- Promotion of guidelines for concrete operational rules concerning HC dewpoint at border points.

GTE recommends that a similar approach be adopted for other parameters that could cause a problem.

5. Next Actions

1. Discuss the GTE proposal with the other stakeholders (upstream to downstream) (as soon as reasonably possible), EASEE-gas is the appropriate forum for this and, in the GTE's opinion, it could be done for the next Madrid Forum:
 - a- Consistent approach on combustion properties;
 - b- Review the billing arrangements that lead to restriction in the GCV range;
 - c- Agreement on common values on gas specifications (additional components).
2. Depending on the EASEE-gas recommendations,
 - a- The legal framework in some countries would have to be changed;
 - b- The necessary changes have to be implemented to all the supply & transport contracts from upstream to downstream (all stakeholders).