

# Best practice guidance for liquefied natural gas

## European Harmonization on Gas Quality

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**Background**

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# 1. Background

## Previous:

- **2005:** EASEE-gas approved the CBP on gas quality. Up to now, the only European reference on gas quality, but not binding.

## EC MANDATE M/400

- **2007:** The European Commission (EC) approved a Mandate (**M/400**) to elaborate a gas quality specification in Europe for H natural gas. **Initial reference would be the EASEE-gas CBP** and two premises should be taken into account:
  1. **A specification as wide as possible in order to guarantee the security of supply, and**
  2. **Maintaining adequate security levels at reasonable cost**

Work was structured in **two phases:**

### First phase

**Analysis of appliances working conditions and performance due to gas quality variations.** Final report was issued by **CEN/BT WG 197** “Gas quality” in 2011. The main conclusion was that a single WI range for all of European countries was not realistic and a roadmap for implementation in each country was proposed.

### Second phase

**Development of the Standard by CEN/TC 234 WG 11**, which was constituted in September 2011.

✓ Public Inquiry from May to October 2014.

✓ Formal Vote from July to September 2015 (without including the Wobbe Index range).  
**European Standard: EN16726:2015 approved by 74% in December 2015.**

# 1. Background

## EN 16726:2015 “Gas infrastructure - quality of gas - Group H”

The European Standard specifies gas quality characteristics for H-gases in Europe.

A band for the **Wobbe Index was not included** in the standard as no agreement was reached on this point.

### Standard Implementation

- ✓ The EC foresees making the standard binding by means of the Network Code on interoperability and data exchange rules. The EC has invited ENTSOG to prepare a detailed analysis on the impacts and issues associated with codifying the standard, and to submit to ACER a proposal to amend the NC INT by **30 June 2017**.
- ✓ The key elements should be the **implementation timing and scope of application**.

### Wobbe Index Range

- ✓ Before definition of further normative requirements, pre-normative work with broad involvement of stakeholders is necessary.
- ✓ Pre-normative phase in a WG within Sector For a Gas Infrastructure and Utilization (3 years): preparation of the further development of EN 16726:2015 including elaboration of Wobbe Index aspects.
- ✓ Normative phase within CEN/TC 234 WG 11: Revision of EN 16726:2015 on the basis of the results of the pre-normative work.

# 1. Background

## EU strategy for liquefied natural gas and gas storage

The EC's “**Sustainable Energy Security Package**” dated 16<sup>th</sup> February 2016 gives concrete expression to the EU's ambition to bring about a transition to a sustainable, secure and competitive energy system. In this context, one of the key points is the “EU strategy for liquefied natural gas and gas storage”.

The “**EU strategy for liquefied natural gas and gas storage**” aims to exploit the **potential of LNG** and gas storage to make the EU gas system more **diverse and flexible**, thus contributing to the key EU objective of a **secure, resilient and competitive gas supply**.

It needs to ensure that the necessary infrastructure is in place to complete the internal market and allow all Member States to benefit from access to international LNG markets.

The EU needs to complete the internal gas market so that it sends the right price signals - both **to attract LNG** to where it is needed and to allow the necessary investments in infrastructure to take place.

Cooperation with international partners to promote, liquid and transparent global LNG markets. This means to **remove obstacles to the trading of LNG** on global markets and to **eliminate the remaining regulatory, commercial and legal barriers** and provide access for these markets to effective regional gas hubs.

# Current Situation

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## 2. Current situation

- **A broad gas quality specification for all Europe together with a reasonable implementation roadmap** is the best way to proceed. This transitional period will allow the whole population of gas appliances in Europe to cope with the standard.
- A wide specification will provide to European gas customers **secured supplies at competitive prices and will avoid to create new constraints to the European Gas Market.**
- **Diversification and flexibility** of supplies is crucial for Europe.
- The origin of the main discussion comes from those old appliances that cannot cope with a wide range. Wouldn't it be time of thinking on a **steady renovation of appliances, taking into account their useful life, so that they are able in the midterm to work safely and efficiently with a wide gas quality range, in line with the EU Energy Efficiency policies?**
- **Maintenance and adjustment procedures**, adequate measurement-systems and process-control mechanisms in combination with operators measures to limit variations work well in some countries in Europe.

**What kind of vision would Europe like to have regarding the gas sector and the gas quality**

- a short-sighted position ?
- a long-term vision with a reasonable implementation period ?

## 2. Current situation

- ❑ A broad gas quality specification is in favour of the European **security of supply, flexibility and the liquidity on the European gas markets**, guarantying **adequate security levels to gas end-users at reasonable cost**.
- ❑ **Long-term contracts renegotiation is not the appropriate tool** to adapt the gas supply to a gas quality specification. This renegotiation would have important economic consequences to European gas end-users.
- ❑ A narrow WI range favours some gas sources to the detriment of others, as **a kind of discriminatory practice**.
- ❑ **Future gas supplies** will require a broad gas quality specification.
- ❑ To **install ballasting facilities** have important economic consequences, in spite of not being needed today in some countries and it is not clear the frequency of their use in the future.

**The creation of a European harmonized gas quality standard should avoid:**

- **Restricting the gas security of supply in the EU**
- **Reducing the liquidity and flexibility of the gas markets unjustifiably**
- **Increasing the gas price that pays the end user**
- **Reducing the competitiveness of the European gas market.**



# European supply trends

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### 3. European supply trends



- During the next decade in Europe:
  - **New gas supplies via pipeline** will go on stream
  - The number of **LNG terminals will also increase**, receiving LNG from many different sources. It may lead to higher WI values.
  - Possible development of **non-conventional gas and renewable energies** (biomethane and hydrogen). It may lead to lower WI values.

↓ Probable evolution

- **Gas flows in Europe will change**
- **Actually no clear picture of future gas qualities available, but probably it will be on the extremes of the range.**

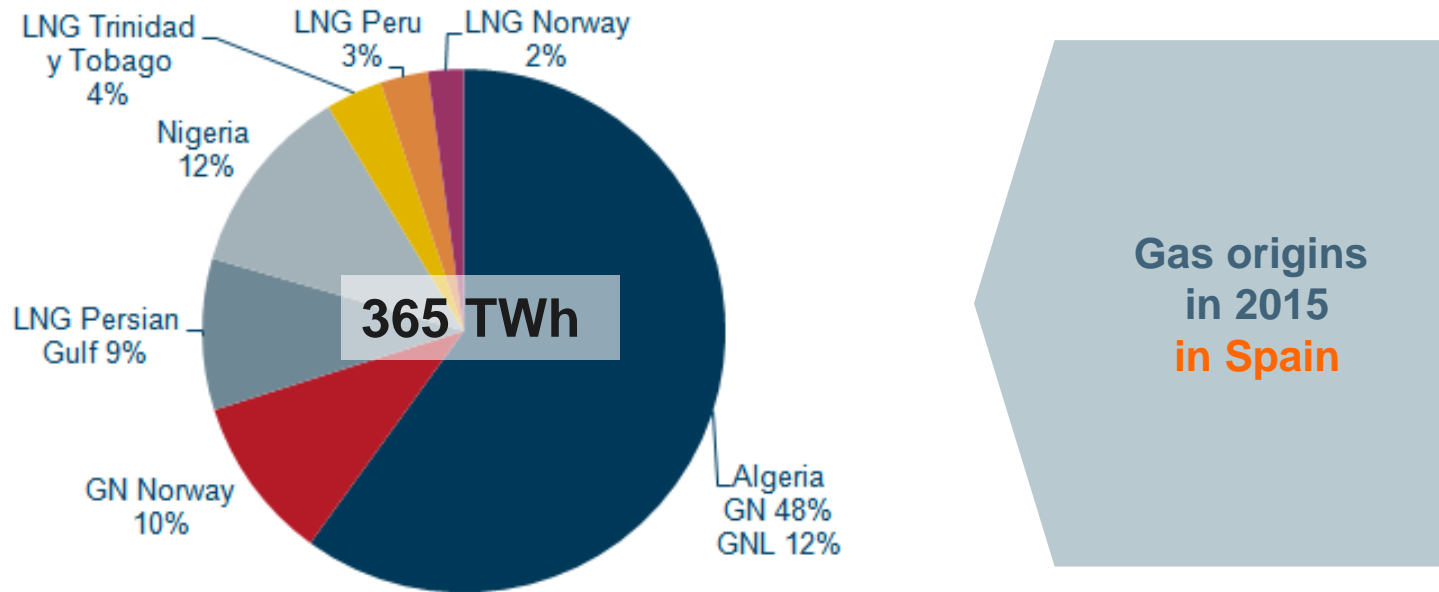
A broad gas quality specification is very important to guarantee **diversified and competitive supplies** in Europe in the future, particularly LNG...

# The Spanish case

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## 4. The Spanish case

### Supply diversification



**Spain has a high degree of supply diversification.  
A wide Wobbe Index range is crucial to preserve the level of security of supply**

## 4. The Spanish case

### Safety in appliances

#### Safety in gas appliances in Spain

- There has not been registered any evidence in Spain of problems found in gas appliances caused by gas quality variations either by the inspections, maintenance or urgency attendance systems.
- Malfunctions found in appliances are due to other causes (normally scarce maintenance or wrong installations).
- European existing reports (MARCOGAZ) about **fatalities by use of natural gas per million of customers** show that in Spain such ratio is lower than European average.

This better position in safety is mainly due to **safety inspections and maintenance**



# Conclusions

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## 5. Conclusions

- A broad gas quality specification is very important to **guarantee diversified and competitive supplies in Europe in the future, particularly LNG.**
- The **development of an implementation roadmap per country is a key element.**
- The **highest safety levels in appliances are compatible with a wide range of WI.**
- The EC should advocate for a **long-term vision with a reasonable implementation period** regarding the gas sector and gas quality .



**Contradictions between general principles and guidelines of EC gas policy and developments on specific aspects related to gas sector should be avoided.**

# Annexes

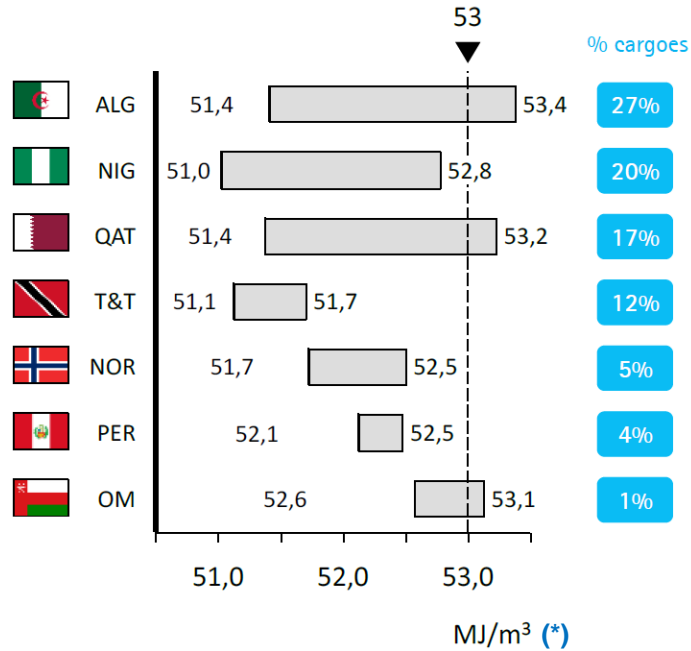
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# 6. Annexes

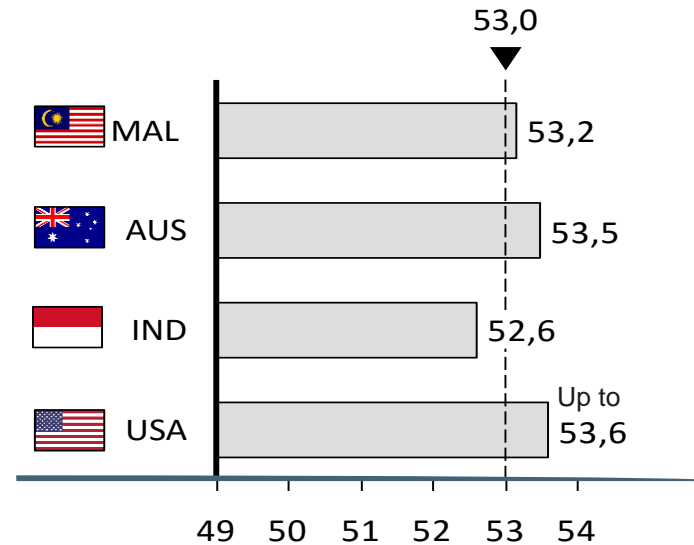
## Wobbe Index range by LNG origin

Figure 15: WI Range by origin reported in Spanish terminals 2008-2015



Source: Spanish LNG Terminals Operators

Alternative Origins Wobbe Index (MJ/m³)(\*)

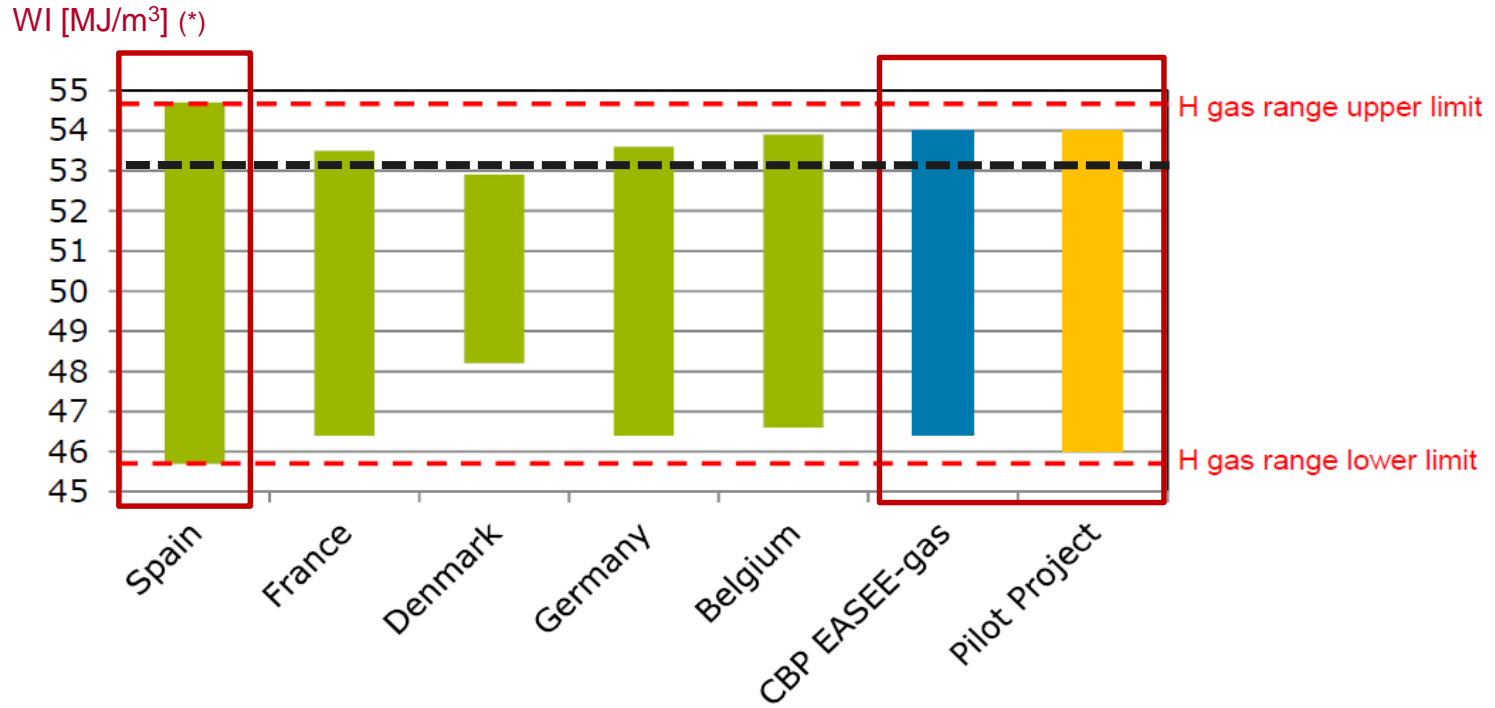


Source: GIIGNL, FERC

Note: (\*) Reference Conditions: [15°C, V(15°C, 1,01325 bar)]

# 6. Annexes

## Wobbe Index in different European countries



**Note:** (\*) Reference Conditions: [15°C, V(15°C, 1,01325 bar)]

**Thank you very much**

