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Security of Supply Network of Experts

Status Review on application of the Supply Standard foreseen in the Security of Supply Regulation

Status Review

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INFORMATION PAGE

Abstract

This document (C18-SOS-17-03) presents the status review on the application of the Supply Standard foreseen in the Security of Supply Regulation. The status review aims to gain insights regarding the application of the supply standard at national level, to identify current approaches and to share experiences as reported by the NRAs.

Target Audience

Example: European Commission, energy suppliers, traders, gas/electricity customers, gas/electricity industry, consumer representative groups, network operators, Member States, academics and other interested parties.

Keywords

Gas Security of Supply, Gas Supply Standard application, Security of Supply Regulation, Protected customers, Storage obligation

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EXECUTIVE SUMMARY

Background

According to article 8 of the Regulation (and article 6 of regulation 2017/1938), the Competent Authority shall require the natural gas undertakings that it identifies, to take measures to ensure gas supply to the protected customers of the Member State in the following cases:

(a) extreme temperatures during a 7-day peak period occurring with a statistical probability of once in 20 years;
(b) any period of at least 30 days of exceptionally high gas demand, occurring with a statistical probability of once in 20 years; and
(c) for a period of at least 30 days in case of the disruption of the single largest gas infrastructure under average winter conditions.

The supply standard requirements provided in article 8 of the Regulation provides some flexibility in the application of the regulation by the Member States. Member States may decide to apply an increased standard and may enlarge the definition of protected customers to which the supply standard is applicable.

Objectives and Contents of the Document

Based on the data collected from the questionnaire circulated to CEER members and observers, CEER aims to gain insights regarding the application of the supply standard at national level, to identify current approaches and to share experiences as reported by the NRAs. The status review provides a report of the responses to the questionnaire received from NRAs and is not aimed to evaluate or benchmark practices in individual Member States.

NRA responses are grouped under the following headings:

- Responsibility for the application of the supply standard and calculation method;
- Definition of protected customers;
- Increased of the supply standard;
- Storage obligation; and
- Monitoring of the supply standard.

The discussion of the outcome of the questionnaire is complemented with calculations based on most recently published Eurostat data (2016) in order to visualise the importance of the supply standard in terms of gas volumes. The gas consumption of household customers in the Member States is presented and may be considered as the minimum level of protected gas volumes.

Brief summary of the conclusions

With regards to application of the supply standard in 2017, most Member States apply the “1 in 20y” rule and compute the corresponding extreme gas consumption in a dynamic statistical manner (yearly update based on historical data). Denmark, France and Netherlands apply a more severe criterion to ensure “1 in 50y” while Ireland and the United Kingdom argue that their markets are able to ensure (at least) “1 in 50y”.

There are several definitions for protected customers ranging from households (e.g. Austria and Finland) to, in addition, small and medium-sized enterprises connected to the distribution

network and essential social services as long as they do not jointly represent more than 20% of the total annual final gas consumption in that Member State and district heating installations (heating for households, small or medium-sized enterprises or essential services) provided that no switch to other fuels is possible.

Every Member State may, in compliance with the Regulation (and the revised regulation 2017/1938), have a different interpretation of the supply standard and may impose different types of obligations according to the specific needs of its gas system. The questionnaire does not provide evidence to conclude that these different practices hamper market integration and/or hamper cooperation between Member States. However, particular attention should be put on the questions: a) whether a more uniform methodology would help competent authorities and avoid the possible creation of market barriers across Europe and b) whether a more uniform methodology would facilitate regional cooperation as well as the application of solidarity rules. A sharing of best practices among NRAs and competent authorities would be beneficial for limiting the burden on market functioning as well as on regional crisis management.

Various Member States apply, from light to strong, storage obligations regarding the filling levels for storage e.g. Belgium, Czech Republic, Denmark, Finland, France, Hungary, Italy, Latvia, Lithuania, Poland, Portugal and Spain. There are no storage obligations at all in e.g. Austria, Croatia, Estonia, Germany, Greece, Ireland, Luxembourg, the Netherlands, Slovenia, Sweden and the United Kingdom. There are strategic storage obligations in Hungary, Italy, Latvia, Lithuania, Poland, Portugal and Spain.

Calculations based on recently published Eurostat data for 2016 show that at least 36,9% of EU-28 gas consumption is protected according to the Regulation which amounts to 1823,20 TWh.

1 Introduction

This report provides a status review of the application of the supply standard as specified in article 8 of the EU regulation 994/2010[1] and resumed in article 6 in the revised EU regulation 2017/1938[2].

A CEER questionnaire was circulated among the members of CEER in 2017 addressing 16 questions regarding the supply standard. The questionnaire is provided in the annex 2.

Since the data collection for this report started in 2017, before the entry into force of the revised regulation 2017/1938, the status report refers primarily to the practice when regulation 994/2010 (hereafter the Regulation) was applicable. The revised regulation 2017/1938 did not modify the provisions for the supply standard. However, the revised regulation is currently under implementation in the Member States which makes an overall assessment of any changed practice under the revised EU regulation too early. Where changes have been reported by the National Regulatory Authorities (NRAs), they will be explained in footnotes.

2 NRA answers to the questionnaire

This section provides an overview of the answers received from the NRAs clustered around the main questions[3]. The answers received from NRAs allow to cover the EU-28 except Bulgaria, Malta, Romania and Slovakia. Two Member States (Cyprus and Malta) currently do not consume natural gas. Article 16 of the Regulation makes it clear that the Regulation shall not apply to Malta and Cyprus for as long as natural gas is not supplied in their respective territories.

2.1 Responsibility for the application of the supply standard and calculation method

Article 3 of the Regulation leaves it to the Member State to designate a competent authority responsible for security of supply and in charge of the application of the supply standard. Table 1 shows the designated authority in the Member States based on the response to the questionnaire.

[1] Regulation (EU) No 994/2010 of the European Parliament and of the Council of 20 October 2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC.

[2] Regulation (EU) 2017/1938 of the European Parliament and of the Council of 25 October 2017 concerning measures to safeguard the security of gas supply and repealing Regulation (EU) No 994/2010.

[3] The questions from the questionnaire are presented in the Annex 2.

Table 1. Competent authority in charge with the application of the supply standard.

	NRA	Ministry	Other
Austria		x	
Belgium		x	
Croatia		x	
Cyprus	x		
Czech Republic		x	
Denmark		x	
Estonia		x	
Finland			x
France		x	
Germany		x	
Greece	x		
Hungary		x	
Ireland	x		
Italy		x	
Latvia		x	
Lithuania		x	
Luxembourg		x	
Netherlands		x	
Poland		x	
Portugal		x	
Slovenia	x		
Spain		x	
Sweden	x		
UK		x	
Total	*5*	*18*	*1*

Note: no response received from Bulgaria, Malta, Romania and Slovakia. Bulgaria, Romania and Slovakia have designated the ministry as competent authority. Note that there is currently (2017) no gas consumption in Cyprus nor Malta which makes the Regulation not applicable for those two Member States.

The majority of Member States have entrusted the responsibility for the security of supply to the ministry competent for energy. This does not necessarily mean that this responsibility is exclusively given to the ministry since NRAs are often closely involved and can have specific tasks as defined in the national gas laws (e.g. Austrian NRA is by national law responsible for monitoring the supply standard). The NRA is the competent authority in only 5 Member States.

National legislation often requires (retail) suppliers of protected customers to comply with the supply standard (e.g. Austria, Greece).

Most Member States apply the "1 in 20y" rule[4] for the definition of the supply standard and compute the corresponding extreme gas consumption in a dynamic statistical manner (yearly update based on historical data). This regularly updated calculation serves as an input for the risk-assessment as required by the Regulation.

Some Member States apply a more severe criterion or are able to achieve the requirements to ensure "1 in 50y" like France, Ireland, the Netherlands and the United Kingdom (see 4.3).

Two Member States translate the statistical probability in a temperature level at which gas supplies must be guaranteed for protected customers. Belgium considers a temperature formula based on -11°C (1 in 20y) while the Netherlands consider -17°C (1 in 50y) to be the appropriate trigger point.

In Ireland, the NRA places an obligation on shippers and suppliers to book capacity for a 1-in-50 peak day at the exit, as set out in Ireland's network code. The Irish Transmission System Operator (TSO) has oversight of this activity and ensures the capacity is booked. There is a similar practice in Belgium where the TSO arranges the capacity bookings to the distribution networks on behalf of the concerned shippers according to the 1-in-20 years rule. This ensures that shippers fulfil their capacity booking obligations to supply protected customers and that enough exit capacity is booked to meet the 1-in-20 years requirement.

In Germany, the calculation is only used for risk-assessment and it has no further implication. It is argued that the national balancing system in combination with a liquid wholesale market provides already the necessary incentives for the market participants to keep the system in balance.

The flexibility – which can be seen at the same time as a lack of precision - provided by the Regulation regarding the application of the supply standard is reflected in the divergence of the calculation methods used to quantify the supply standard. In this respect, differences in climate and temperature profiles play a role and explain why more efforts are required from suppliers in Member States with relatively severe winters.

The third requirement from the supply standard, coverage of a period of at least 30 days in case of the disruption of the single largest infrastructure under average winter conditions, does not require a statistical analysis and is more straightforward. However, section 4.3 will show that not all the Member States are limiting the calculation to the minimum required period: Denmark extends the 30 days period to 60 days and France uses a 6 months period as a reference.

[4] The « 1 in 20y » rule refers the statistical probability of once in 20 years as used in the specification of the supply standard in the Regulation. The e.g. "1 in 50y" rule is more severe and refers to a statistical probability of once in 50 years.

2.2 Definition of protected customers

Article 2 of the Regulation provides some flexibility to the Member States to define protected customers. Household customers (connected to a distribution network) are protected customers according to the Regulation but the Member State may decide to add small or medium-sized enterprises provided that they are connected to a distribution network as well as essential social services provided that they are connected to a distribution network or the transmission network. However, these additional customers may not jointly represent more than 20% of the final use[5] of gas in that Member State. District heating installations may also be added to the extent that heating is delivered to household customers and to essential social services as well as small or medium-sized enterprises if the Member State decides to add these customers to the definition of protected customers and provided that the district heating installations are not able to switch to fuels other than gas.

Table 2 provides an overview of the definition of protected customers in the Member States.

[5] The threshold of 20% of final use of gas in the Regulation is replaced by 20% of total annual final gas consumption in that Member State in the revised regulation 2017/1938. Unfortunately, final use of gas nor final gas consumption are legally defined. E.g. Eurostat uses the notion" total final energy consumption" and this excludes the gas use for power generation. It would be more accurate to specify that the total amount of gas consumed in the Member State should be considered for the calculation of the 20% threshold. This issue was raised by the Greek NRA - who is also the competent authority - with regard to the application of the definition of protected customers.

Table 2. Definition of protected customers.

	households	SME	social services	district heating
Austria	x			
Belgium	x	x	x	x
Croatia	x	x	x	x
Cyprus				
Czech Republic	x	x	x	x
Denmark	x	x	x	x
Estonia	x			x
Finland	x			
France	x		x	
Germany	x			x
Greece	x	x	x	x
Hungary	x		x	x
Ireland	x	x	x	x
Italy	x	x	x	x
Latvia	x		x	
Lithuania	x			
Luxembourg	x			
Netherlands	x	x	x	
Poland	x		x	x
Portugal	x		x	
Slovenia	x		x	
Spain	x		x	
Sweden	x			
UK	x	x	x	
Total	*23*	*10*	*17*	*11*

Note: no response received from Bulgaria, Malta, Romania and Slovakia. Note that there is currently (2017) no gas consumption in Cyprus nor Malta which makes the Regulation not applicable for those two Member States.

Member States apply the flexibility to enlarge the default definition from the Regulation, where households are considered as protected, in different ways. Austria, Finland and Sweden apply the standard definition of protected customers, to households only. For Finland, it is mentioned that customers other than protected customers have the legal responsibility to have an alternative fuel.

A range of definitions for protected customers can be observed: from households only to, in addition, small and medium-sized enterprises connected to the distribution network and essential social services as long as they do not jointly represent more than 20% of the total annual final gas consumption in that Member State and district heating installations (heating for households, small or medium-sized enterprises or essential services) provided that no switch to other fuels is possible.

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Sometimes, there are thresholds defined in terms of maximum consumption, for the categories added to households as protected customers. In Lithuania, non-household consumers are protected if they consume up to 20 000 m³ of natural gas per year. The Netherlands apply a 40 m³ per hour cap for protected customers, including households and small enterprises.

Some Member States have lists of protected consumers which differ considerably across the EU. The Czech Republic includes municipal waste incineration plants, customers providing public and medical services and the national bank. In some Member States also "airports" (Greece) and "prisons" (Czech Republic) are defined as protected while in other Member States they are not.

Verifying the compliance with the 20% threshold for the definition extension is often critical and difficult since metering on the distribution network generally does not allow a detailed breakdown per type of consumer. In Greece, the Ministry of Energy (note: the NRA RAE is the designated authority for security of supply) checks annually whether the consumption of the protected customers respect the less than 20% threshold.

Divergence in defining protected customers leads to different security of supply levels in the Member States and different impacts on the responsibilities and obligations of suppliers and/or other natural gas undertakings. Every Member State may, in compliance with the Regulation (and the revised regulation 2017/1938), have a different interpretation of the supply standard and may impose different types of obligations according to their specific needs of its gas system (proximity to gas production sources, winter average temperatures, etc.) The questionnaire does not provide evidence to conclude that these different practices hamper market integration and/or hamper cooperation between Member States especially regarding the application of the revised regulation 2017/1938 where explicit provisions are included regarding regional cooperation and solidarity. However, monitoring the possible market impact remains relevant as security of supply regulation becomes more and more integrated within the market.

Most NRAs answered the question addressing the quantification of the demand volumes of protected customers. However, several NRAs mention problems to precisely assess consumption figures for protected customers due to the limited granularity of metering on distribution networks. Obviously, the broader the definition of protected customers, the higher the share of national gas consumption they represent. In order to provide a coherent picture which allows for comparison, section 5 addresses the consumption of household customers in the EU-28 based on recent Eurostat data. Household customers correspond to the default defined protected customers in the Regulation

2.3 Increased supply standard

Article 8 of the Regulation allows the Member State to apply an increased standard. Table 3 shows whether Member States apply an increased supply standard for protected customers. The table presents whether an increased supply standard is applied (e.g. more severe rule than "1 in 20y" or more severe period than at least 30 days) but does not indicate whether the Member State applies any additional obligation for reasons of security of supply which often results from the risk-assessments (e.g. several Member States impose rules on gas-fired power plants to guarantee their gas sourcing e.g. Portugal and Greece).

Table 3. Application of an increased supply standard for protected customers.

	Yes	No
Austria		x
Belgium		x
Croatia		x
Cyprus		
Czech Republic		x
Denmark	x	
Estonia		x
Finland		x
France	x	
Germany		x
Greece		x
Hungary		x
Ireland		x
Italy		x
Latvia		x
Lithuania		x
Luxembourg		x
Netherlands	x	
Poland		x
Portugal		x
Slovenia		x
Spain		x
Sweden		x
UK		x
Total	*3*	*20*

Note: no response received from Bulgaria, Malta, Romania and Slovakia. Note that there is currently (2017) no gas consumption in Cyprus nor Malta which makes the Regulation not applicable for those two Member States.

There are 3 Member States applying an increased supply standard for protected customers.

France as well as the Netherlands apply a '1 in 50y' rule for calculating the supply standard for protected customers.

The French NRA explains the application of the increased supply standard ('1 in 50 y' and 6-months coverage of disruption of the single largest infrastructure) by the fact that France imports almost all of its gas consumption and is located at the end of the European gas network.

The existing Dutch standard for infrastructure and security of supply under peak circumstance is related to a situation occurring when there is an average daily temperature of -17°C (e.g. observed on 14.01.1987), corresponding to a probability of once in 50 years. It is interesting to note that until -9°C, the supply responsibility lies at the end-suppliers while between -9°C and -17°C the TSO is responsible for meeting the supply standard. Both are free to determine how to fulfil their responsibilities in meeting their part of the supply standard.

Furthermore, Ireland and the United Kingdom apply a '1 in 50y' rule. In Ireland, the '1 in 50y' rule is applied for the design of the network (to ensure sufficient capacity to cope with '1 in 50y' events) but there is no increased supply standard. Ireland reports that the TSO applies a '1 in 50y' rule and this is used for the risk assessments to forecast future peak days.

The United Kingdom argues that (at least) the '1 in 50y' rule is met, not as a result of specific regulation but thanks to the well-functioning of the market.

About half of the Member States does not specify instruments to be used in order to meet supply standards and rely rather on the market for securing gas supplies at affordable prices (e.g. Germany, United Kingdom). Suppliers, traders and shippers generally indicate that they prefer such arrangements as they deem that specific legislation on instruments to be used by suppliers to protect customers may represent a burden on their market operations.

Denmark extended the period of 30 days to 60 days in case of disruption of the single largest gas infrastructure under average winter conditions. It is argued that Denmark depends on gas imports from offshore pipelines (North Sea fields) and the repair time for such pipelines is expected to be 60 days. France applies a 6-month period in this case.

2.4 Storage obligations

The Regulation provides no specific requirements to meet the supply standard. About half of the Member States leave it to the market to choose the tools and another half puts obligations on the use of storage. Within the group of Member States with storage obligations, there is a wide range from light obligations on suppliers to strong obligations to keep gas in storage. Table 4 shows whether the Member State applies any kind of storage obligations.

Table 4. Storage obligations with view to respect the supply standard.

	Yes	No
Austria		x
Belgium	x	
Croatia		x
Cyprus		
Czech Republic	x	
Denmark	x	
Estonia		x
Finland	x	
France	x	
Germany		x
Greece		x
Hungary	x	
Ireland		x
Italy	x	
Latvia	x	
Lithuania	x	
Luxembourg		x
Netherlands		x
Poland	x	
Portugal	x	
Slovenia		x
Spain	x	
Sweden		x
UK		x
Total	*12*	*11*

Note: no response received from Bulgaria, Malta, Romania and Slovakia. Note that there is currently (2017) no gas consumption in Cyprus nor Malta which makes the Regulation not applicable for those two Member States.

Various Member States apply, , different obligations regarding the filling levels for storage e.g. Belgium, Czech Republic, Denmark, Finland, France, Hungary, Italy, Latvia, Lithuania, Poland, Portugal and Spain.

Finland applies legislation regarding the storing of imported fuels (not limited to natural gas). Gas users (not protected) of important fuels need to have a certain amount of stock based on previous years consumption and also the government has stocks.

In Lithuania, gas reserves can be used only in the case of partial gas supply disruption, a major gas supply disruption, gas supply interruption or an emergency situation declared according to legislation.

In Portugal, to fulfil the requirement of the supply standard, traders must maintain natural gas stocks in the storage facilities (strategic reserves) corresponding to an inventory of 30 days of previous year's average consumption of the protected customers plus the non-interruptible consumption of electricity consumers.

There are storage filling levels to be respected by storage users in Belgium: a filling level on the 1st of November of at least 90% of booked storage capacity is required, and this level must achieve 30% on the 15th of February. In the Czech Republic there is an obligation to keep 30% of the total supply standard in storage. In France, each supplier of household customers and of customers providing public services is obliged to store gas for its protected customers to a level that is defined annually by the Minister of Energy[6].

In Hungary, on 1st of October each year suppliers have to be in possession of a natural gas stock in domestic gas storage corresponding to at least 60% of the last 120 month's highest winter consumption of the given supply area.

In Slovenia, suppliers have an obligation to ensure secure gas supplies for protected customers and report regularly how they do it, they are free to use gas storage in neighbouring states.

There are no storage obligations at all in e.g. Austria, Germany, Greece[7] (no possibility of long term storage in the country), Netherlands, Slovenia, Sweden and the United Kingdom.

There is strategic[8] storage in Hungary, Italy, Latvia, Lithuania, Poland, Portugal and Spain.

Poland has adopted a scheme of storage obligations as a measure to meet the supply standard. Energy undertakings that engage in international trading in natural gas and entities importing natural gas are obliged to maintain mandatory stocks of natural gas. The general main obligations for these undertakings and entities cover: a) obligation to maintain mandatory stocks of natural gas in volume corresponding to at least 30 days average daily imports of gas, b) obligation to maintain mandatory stocks of natural gas with the use of storage facilities whose technical parameters ensure that the stocks in question may be released into the gas system in their entirety within a period not exceeding 40 days. Mandatory stocks of natural gas may be maintained physically (also under the so called "stock ticket contract" formula) both in the territory of Poland within the storage facilities connected to the gas transmission or distribution system and outside the territory of Poland in the territory of another Member State of the European Union or Member State of the European Free Trade Agreement (EFTA), a party to the Agreement on the European Economic Area, within the storage facilities connected to the gas system – under the conditions laid down in the Act on Stocks.

In Latvia the cabinet of Ministers takes a decision on the use of the strategic stock (Incukalns UGS) when an energy crisis is declared. The TSO is legally obliged to establish a strategic natural gas stock. This strategic stock must be settled in order to allow fulfilling the requirements of the supply standard.

In Italy, 4,6 bcm out of 16,8 bcm total storage capacity can only be used in case of a security of supply situation (crisis). The related costs are paid by producers of gas in Italy and importers.

[6] However, this rule has been changed in 2018 with the introduction of a new regulation for storage. As a result, storage obligation is no linger in place in France.

[7] Recently (mid 2018), Greece applies a provision to have a LNG stock at the Greek LNG terminal (Revithoussa LNG Terminal) for seasonal storage for gas-fired power plants without dual fuel capability. However, if the power producer is able to provide sufficient evidence of an alternative and equal solution (e.g. storage in another Member State) is could also be accepted by the competent authority (NRA).

[8] This report uses the notion strategic storage while different notions may be used in Member States, e.g. Latvia refers to emergency stocks.

This brief overview demonstrates that there are various types of storage obligations throughout Europe. It would be useful to gain insight whether the national storage obligations put on suppliers to respect the supply standard must be achieved in the concerned Member State or might be achieved in storages elsewhere in Europe as well. This information is relevant for the cross-border management of a gas crisis in Europe.

2.5 Monitoring of the supply standard

The heterogeneity in the EU regarding the application of the supply standard as observed from the previous sections, holds also for monitoring. Most NRAs mention difficulties in monitoring the supply standard in a hub-based trading environment with internationally operating supply companies. Market monitoring is argued to be more efficient than monitoring the individual suppliers' compliance with the supply standard. Table 5 shows whether there is specific monitoring regarding compliance with the supply standard and who is responsible for this task.

Table 5. Monitoring of the compliance with the supply standard.

	NRA	Mnistry	Other	no specific monitoring
Austria	x			
Belgium				x
Croatia		x		
Cyprus	x			
Czech Republic	x			
Denmark		x		
Estonia				
Finland			x	
France		x		
Germany				x
Greece	x			
Hungary	x			
Ireland	x			
Italy		x		
Latvia		x		
Lithuania	x	x		
Luxembourg		x		
Netherlands	x			
Poland		x		
Portugal		x		
Slovenia	x			
Spain			x	
Sweden	x			
UK				x
Total	*10*	*9*	*2*	*3*

Note: no response received from Bulgaria, Malta, Romania and Slovakia. Note that there is currently (2017) no gas consumption in Cyprus nor Malta which makes the Regulation not applicable for those two Member States.

Monitoring of the compliance of suppliers differs strongly across Member States: from only market-functioning control (collective security of supply provision) to individual compliance of suppliers (individual security of supply provision).

In some Member States (e.g. Austria) gas suppliers of protected customers are tested individually on a regular basis (e.g. annually) whether the requirements of the supply standard in article 8 of the Regulation are fulfilled.

In the Czech Republic, entities responsible for complying with supply standards are obliged to send monthly reports to the NRA and to the gas market operator for examination. Before the beginning of the winter season, suppliers are also obliged to send a copy of the contracts related to storage obligation to the NRA in order to prove their readiness for the coming winter season.

In Greece, the competent authority - who is also the NRA – currently requires from each supplier annual written proof demonstrating that the supplier can ensure the fulfilment of the supply standard. The competent authority can ask for additional measures to be taken if this proves to be insufficient.

In Denmark the supply standard is monitored by the TSO at an operational level.

In Germany, there is no specific monitoring of the supply standard. It is argued that a constant monitoring of this standard would impose an immense administrative burden since supply portfolios of every gas company must be examined against their delivery obligations. It is believed that a well-functioning balancing system in combination with a liquid wholesale market already achieves the purpose of the supply standard in an efficient manner. In this context, there are doubts whether the currently defined supply standard is a meaningful concept to increase security of supply. The United Kingdom is keener to ensure the right conditions exist in the market e.g. balancing system that incentivise suppliers to be in balance than monitoring individual compliance to a supply standard. The supply standard is the outcome of the performance of the well-functioning of the market.

Spain has a specific entity called CORES which contributes to guaranteeing the security of hydrocarbon supply by controlling both the obligations of holding security stocks in underground storages and the fulfilment with the requirement of diversification of gas supply. In case of non-compliance with these obligations, administrative fines are imposed.

Overall, there are more ex post measures (e.g. fines) than ex ante incentives in place to ensure suppliers fulfil the supply standard. Some Member States apply an administrative fine if suppliers fail to comply with the supply standard (e.g. Austria, Czech Republic, Latvia, Lithuania, Slovenia, Spain). Misbehaviour of suppliers may also result in the suspension or withdrawal of the supply license (e.g. Belgium, Greece, Lithuania, Luxembourg). There are no specific incentives in place in Portugal since the supply standard is considered as a binding legal obligation for the concerned suppliers which is monitored by the competent authority (ministry).

Some countries (e.g. Croatia) apply public service obligations to ensure sufficient quantities of gas for delivery.

NRAs signal the complexity of monitoring compliance with the supply standard in a hub-based market with internationally active suppliers. Individual monitoring seems therefore less opportune and adequate in competitive and liquid markets while an overall monitoring of market functioning and liquidity is considered to be more efficient.

Some NRAs signal difficulties of controlling entities who ensure the supply standard outside of the member State concerned (e.g. Czech Republic).

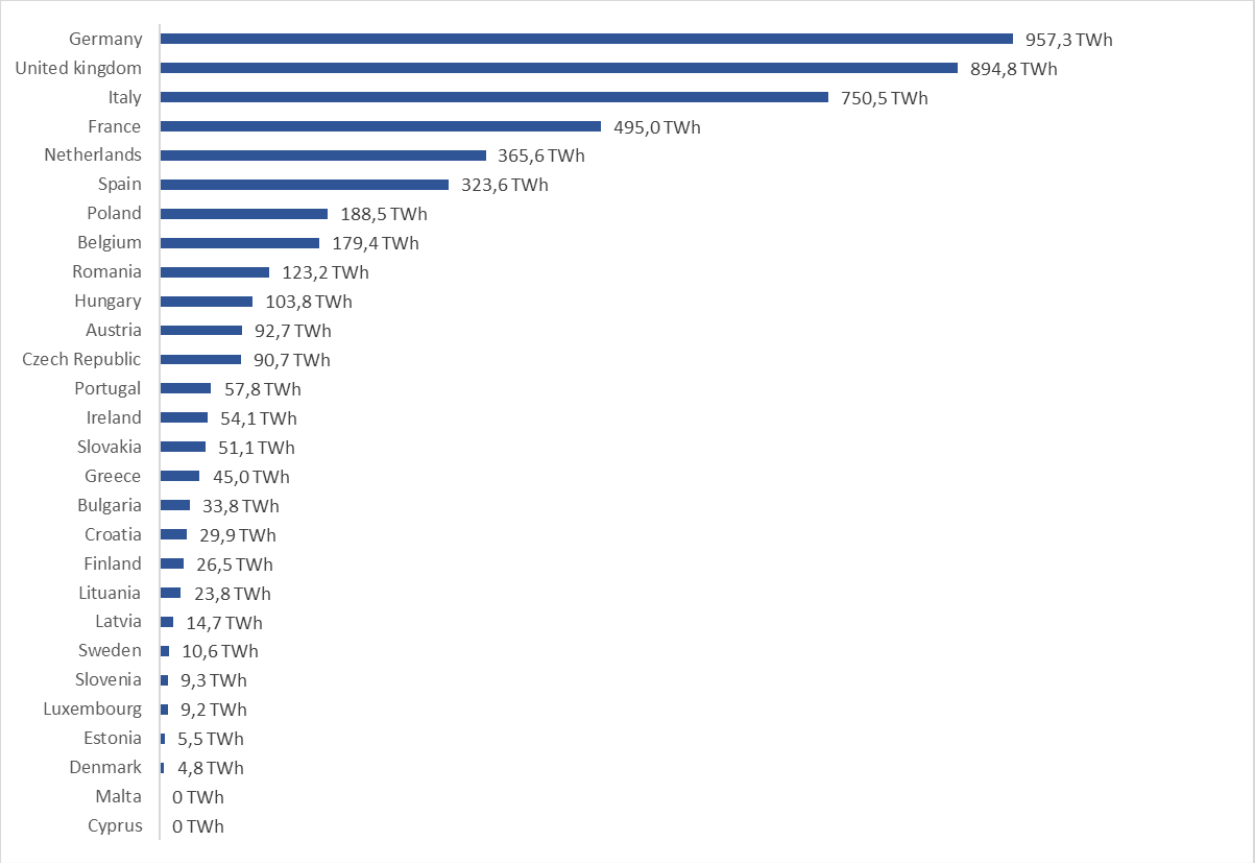
3 Protected gas volumes

This section provides insights on the gas consumption of household consumers in the EU-28. At least these consumption levels are protected according to the Regulation.

The CEER calculations are based on recent Eurostat data (https://ec.europa.eu/eurostat/data/database, updated in July 2018) for 2016 and are meant as a complement to the results from the questionnaire in section 4.2. The aim is to provide further quantitative information regarding the importance of the supply standard.

Figure 1 starts with a picture of the gas consumption in the EU-28 and shows the strong concentration of gas consumption in a couple of Member States.

Figure 1. Natural gas consumption in EU-28 by Member State (2016, in TWh)



Source: CEER calculations based on Eurostat data (update July 2018) for 2016. There is no gas consumption in Malta nor Cyprus.

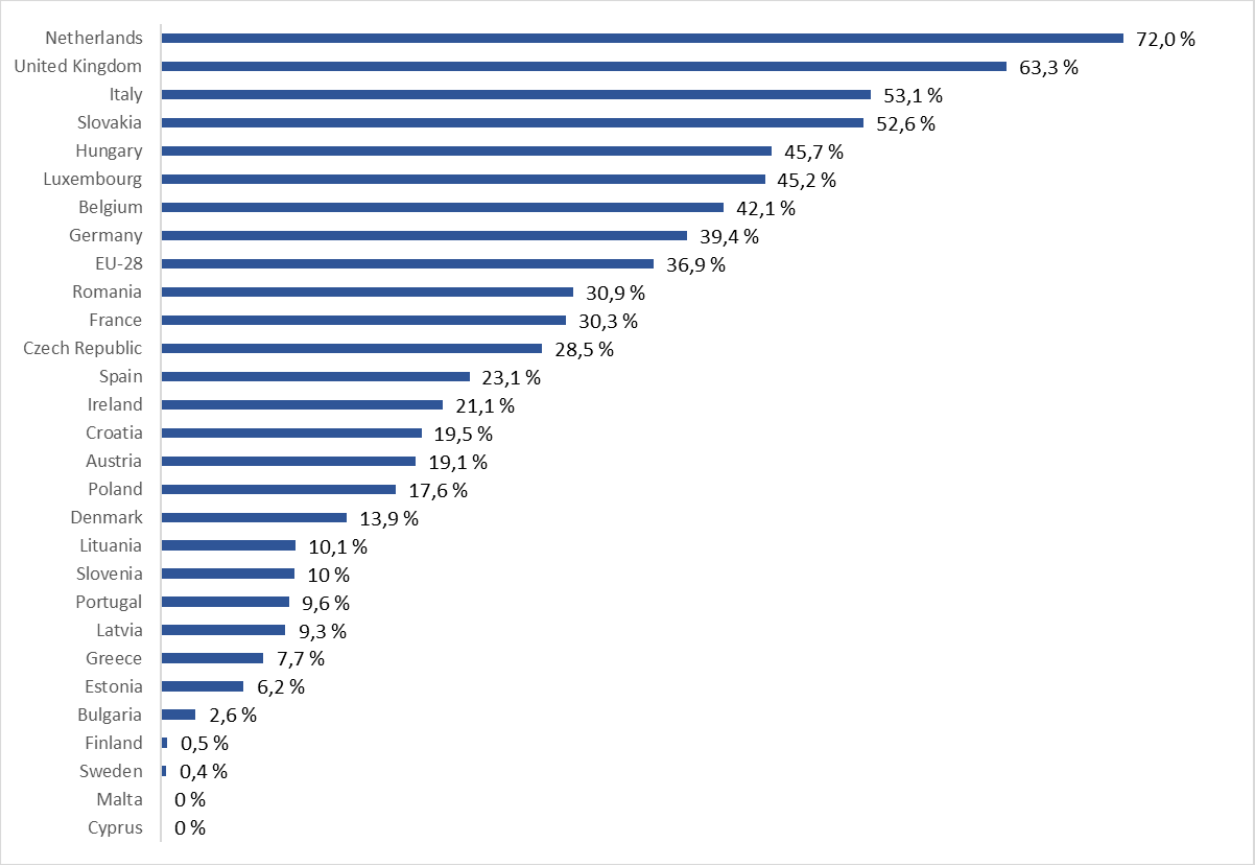
Germany (957,3 TWh in 2016; 19,4% of EU-28) is the largest consumer of natural gas in EU-28 (4940,9 TWh in 2016) followed by the United Kingdom (894,8 TWh in 2016; 18,1% of EU-28).

Gas demand in Germany is roughly equivalent to the one of the first 20 Member States ranked according to the increasing gas consumption level in 2016, which represents 965,8 TWh (17,5% of EU-28).

The three largest gas consumers in the EU (Germany, UK, Italy) represent 52,7% of the EU-28 gas consumption in 2016. National gas consumption represents in 22 Member States less than 5% of the EU-28 gas consumption

The share of households in national gas consumption in the EU-28 is presented in Figure 2.

Figure 2. Share of households in national gas consumption in the EU-28 Member States (2016, in %)

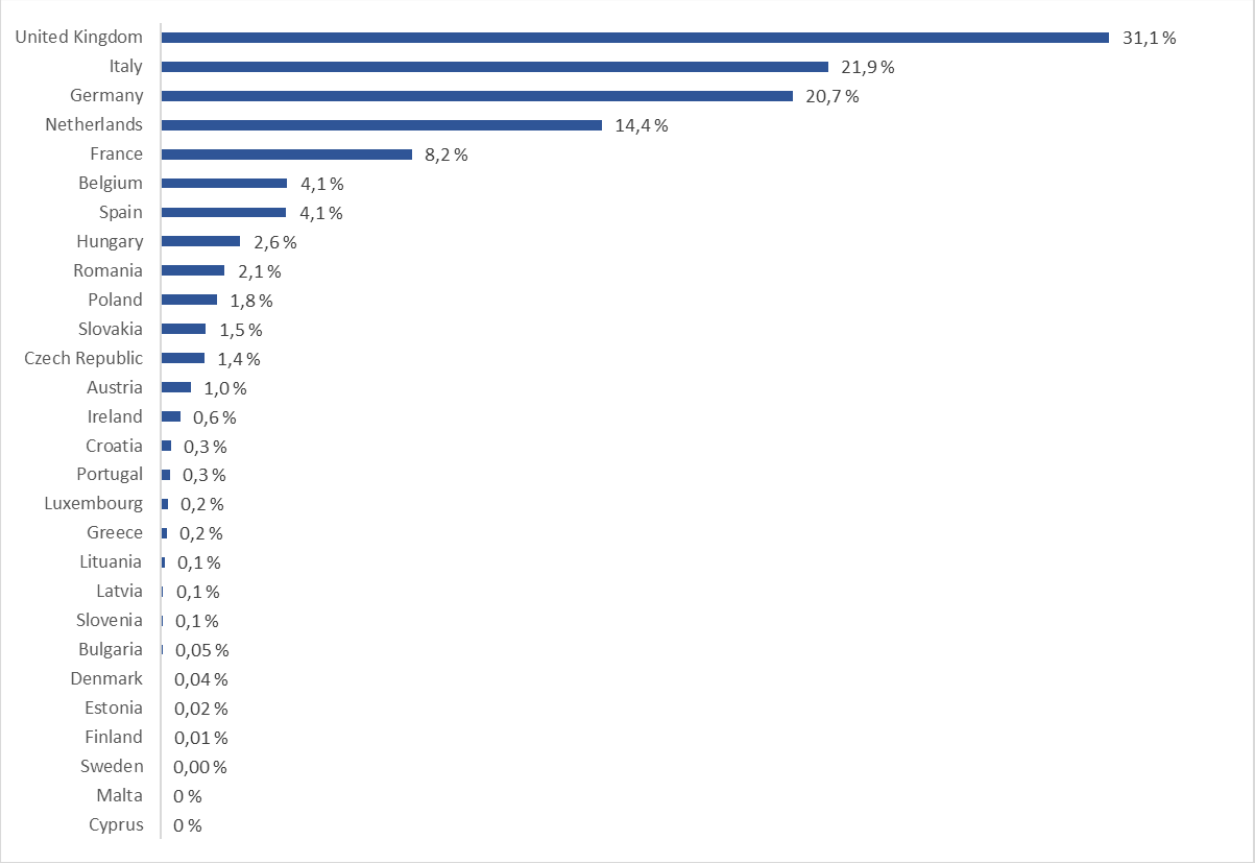


Source: CEER calculations based on Eurostat data (update July 2018) for 2016. There is no gas consumption in Malta nor Cyprus.

The share of households in national gas consumption is the highest in the Netherlands (72,0% in 2016; 377,2 TWh). Household customers represent more than 50% of national gas consumption in 4 Member States. Household gas consumption is lower than 25% of national consumption in 17 Member States. The EU-28 average gas consumption by households represents 36,9%(1823,20 TWh in 2016) of total gas consumption.

Figure 3 puts the gas consumption of household customers in each Member State as a share of total gas consumption of household customers in EU-28.

Figure 3. Share of national gas consumption by households in total gas consumption by households in the EU-28 (2016, in %)



Source: CEER calculations based on Eurostat data (update July 2018) for 2016. There is no gas consumption in Malta nor Cyprus.

The gas consumption of household customers in the United Kingdom (566,4 TWh in 2016) represents 31,1% of total gas consumption of household customers in the EU-28 (1823,20 TWh in 2016). The United Kingdom together with Italy represent 53,0% of the household gas consumption in the EU-28. The share of EU-28 gas consumption of household customers is less than 5% in 23 Member States.

These figures show that at least 36,9% of EU-28 gas consumption is protected according to the Regulation which amounts to 1823,20 TWh (2016 data). Volumes and shares in national gas consumption of protected gas vary considerable across Member States.

4 Conclusions

This report is primarily descriptive and provides insights regarding the 2017 mid-year practices in the Member States concerning the supply standard provisions in the Regulation. The discussion on NRA answers is complemented with gas consumption figures of household customers based on the most recently published Eurostat data (2016) in order to provide a view on the importance of the protected gas volumes.

The main observations from the assessment are summarised below.

Application of the supply standard

(1) Most Member States apply the "1 in 20y" rule and compute the corresponding extreme gas consumption in a dynamic statistical manner (yearly update based on historical data). This regular update serves as an input for the risk-assessment as required by the Regulation.
(2) Denmark, France and Netherlands apply a more severe criterion to ensure "1 in 50y" while Ireland and the United Kingdom argue that their markets are able to ensure (at least) "1 in 50y". France and the Netherlands have legal provisions to ensure "1 in 50y". Ireland applies the '1 in 50y' rule for the design of the transmission network but do not have an increased supply standard.
(3) Two Member States translate the probability in a temperature level at which gas supplies must be guaranteed for protected customers. Belgium considers a formula based on an outside temperature level of -11°C (1 in 20y) while the Netherlands consider -17°C (1 in 50y). In Belgium it is the responsibility of the end-supplier to meet the requirement of -11°C and the supplier is free to determine how to fulfil its responsibility. In the Netherlands it is a shared responsibility: the end-supplier is responsible until -9°C while the TSO is responsible between -9°C and -17°C where both are free to determine how to fulfil their responsibilities in meeting their part of the supply standard.

Definition of protected customers

(4) There is a range of definitions for protected customers: from households (e.g. Austria and Finland) to, in addition, small and medium-sized enterprises connected to the distribution network and essential social services as long as they do not jointly represent more than 20% of the total annual final gas consumption in that Member State and district heating installations (heating for households, small or medium-sized enterprises or essential services) provided that no switch to other fuels is possible. This is the legal EU definition range. For example, in some Member States "airports" and "prisons" are protected while in other Member States they are not.
(5) The security of supply requirements on suppliers resulting from the definition of protected customers differ from Member State to Member State.
(6) Monitoring of compliance of suppliers differs strongly across Member States: from only market-functioning control (collective security of supply provision) to individual compliance of suppliers (individual security of supply provision).
(7) Divergence in computing supply standards (1 in 20y) and divergence in defining protected customers lead to different security of supply levels in the Member States and different impacts on the responsibilities of suppliers and/or other natural gas undertakings. Every Member State may, in compliance with the Regulation (and the revised regulation

2017/1938), have a different interpretation of the supply standard and may impose different types of obligations according to the specific needs of its gas system (proximity to gas production sources, winter average temperatures, etc.). The questionnaire does not provide evidence to conclude that these different practices hamper market integration and/or hamper cooperation between Member States especially regarding the application of the revised regulation 2017/1938 where explicit provisions are included regarding regional cooperation and solidarity. However, particular attention should be placed on the questions: a) whether a more uniform methodology would help competent authorities and avoid the possible creation of market barriers across Europe and b) whether a more uniform methodology would facilitate regional cooperation as well as the application of solidarity rules. A sharing of best practices among NRAs and competent authorities would be beneficial for limiting the burden on market functioning as well as on regional crisis management.

Storage obligations

(8) Various Member States apply, from light to strong, storage obligations regarding the filling levels for storage e.g. Belgium, Czech Republic, Denmark, Finland, France, Hungary, Italy, Latvia, Lithuania, Poland, Portugal and Spain.
(9) There are no storage obligations at all in e.g. Austria, Croatia, Estonia, Germany, Greece, Ireland, Luxembourg, the Netherlands, Slovenia, Sweden and the United Kingdom.
(10) There are strategic storages in Hungary, Italy, Latvia, Lithuania, Poland, Portugal and Spain.

Protected gas volumes

(11) Calculations based on recent Eurostat data for 2016 show that at least 36,9% of EU-28 gas consumption is protected according to the Regulation (2016 data) which amounts to 1823,20 TWh. Volumes and shares in national gas consumption of protected gas varies considerable across Member States.

Annex 1 – List of abbreviations

Term	Definition
CEER	Council of European Energy Regulators
MS	Member States
NRAs	National Regulatory Authorities
TSO	Transmission System Operator
EFTA	European Free Trade Agreement
bcm	Billion cubic metres
TWh	Terra watt hour

Annex 2 – Questionnaire

The list of 16 questions addressed in the questionnaire among NRAs are provided below.

1. Who is the Competent Authority in your country in charge with the application of the supply standard?

2. Are any changes planned with regards to the Competent Authority?

3. How and based on which data is the first requirement of the supply standard in article 8 of R994/2010 computed in your country?

(extreme temperatures during a 7-day peak period occurring with a statistical probability of once in 20 years)

4. How and based on which data is the second requirement of the supply standard in article 8 of R994/2010 computed in your country?

(any period of at least 30 days of exceptionally high gas demand, occurring with a statistical probability of once in 20 years)

5. How and based on which data is the third requirement of the supply standard in article 8 of R994/2010 computed in your country? (for a period of at least 30 days in case of the disruption of the single largest gas infrastructure under average winter conditions)

6. Is the definition of protected customers in your country compliant with the definition of Article 2 in Regulation 994/2010? What exactly is the definition of protected customers in your country? Please describe any additional scope in detail.

7. Please, provide the demand volumes in TWh and market share of protected customers (for 2016, market share expressed in % of final natural gas consumption).

8. Do you make use of an increased supply standard in your country?

9. Is there specific legislation in your country regarding safeguarding gas supplies? Please describe in detail.

10. Does your country implement storage obligations, strategic stocks or other measures in your legislation with a view to meeting the supply standard? If yes, please describe the mechanism for its use.

11. When was the last amendment of legislation regarding the supply standard performed? Please provide a short description, including the reason(s), of the amendments.

12. Has the supply standard been consulted in the market? What were the reactions of the market?

13. How and by whom is the supply standard monitored in your country?

14. Which ex ante and/or ex post measures (such as incentives, or fines for non-fulfilment) are in place to ensure suppliers to fulfil the supply standard?

15. Do you as NRA/CA face any problems related to the application of the supply standard in your country?

16. Do you as NRA/CA have recommendations for the application of the supply standard?

About CEER

The Council of European Energy Regulators (CEER) is the voice of Europe's national regulators of electricity and gas at EU and international level. CEER's members and observers (from 36 European countries) are the statutory bodies responsible for energy regulation at national level.

One of CEER's key objectives is to facilitate the creation of a single, competitive, efficient and sustainable EU internal energy market that works in the public interest. CEER actively promotes an investment-friendly and harmonised regulatory environment, and consistent application of existing EU legislation. Moreover, CEER champions consumer issues in our belief that a competitive and secure EU single energy market is not a goal in itself but should deliver benefits for energy consumers.

CEER, based in Brussels, deals with a broad range of energy issues including retail markets and consumers; distribution networks; smart grids; flexibility; sustainability; and international cooperation. European energy regulators are committed to a holistic approach to energy regulation in Europe. Through CEER, NRAs cooperate and develop common position papers, advice and forward-thinking recommendations to improve the electricity and gas markets for the benefit of consumers and businesses.

The work of CEER is structured according to a number of working groups and work streams, composed of staff members of the national energy regulatory authorities, and supported by the CEER Secretariat. This report was prepared by the Security of Supply Network of Experts of the CEER's Gas Working Group.

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More information at www.ceer.eu.