

# CEER

**Council of European  
Energy Regulators**



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## **Security of Gas Supply**

### **A CEER Concept Paper**

**Ref: C15-GWG-122-04**  
**21 July 2015**



## INFORMATION PAGE

### Abstract

This document (Ref. C15-GWG-122-04) presents the Council of European Energy Regulators (CEER) views on security of gas supply. It sets out CEER's policy recommendations concerning measures to safeguard security of gas supply in both the mitigation and prevention stages.

In this paper CEER calls for the use of market-based measures (in the "prevention" phase), for supply standards and protected consumers to be defined at EU level, for greater regional cooperation (and an increased role for the European Commission in supporting cross-border cooperation efforts), for additional monitoring, and for an explicit role for National Regulatory Authorities (NRAs) in security of supply matters.

This Concept Paper is intended to serve as an input to policy makers in their current revision of the gas security of supply Regulation 994/2010.<sup>1</sup>

### Target Audience

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

### Keywords

3<sup>rd</sup> Package; gas; security of supply; Network Code on Gas Balancing of Transmission Networks; prevention phase; mitigation phase; preventive action plans; risk assessments; emergency plans; competent authorities; national regulatory authorities; gas coordination group; European Commission; transmission system operators; storage; liquefied natural gas; supply standards; protected customers; solidarity, shut-off plans.

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<sup>1</sup> [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](#)



## Related Documents

### CEER and ACER documents

- [CEER Final Vision for Regulatory Arrangements for the Gas Storage Market](#), 25 May 2015, Ref.C15-GWG-119-03
- [CEER response to EC Consultation on the Revision of Regulation \(EU\) No 994/2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC](#), 7 April 2015, Ref.C15-GWG-118-03
- [ACER European Gas Target Model: Review and update](#), January 2015

### External documents

- [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](#)
- [Regulation \(EU\) No 312/2014 of 26 March 2014 establishing a Network Code on Gas Balancing of Transmission Networks](#)



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## EXECUTIVE SUMMARY

### Background

Regulation 994/2010<sup>2</sup> concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC<sup>3</sup> (hereafter “Regulation 994/2010”) was adopted after the Russian-Ukrainian gas crisis of 2009, bringing along a greater degree of harmonisation concerning the measures to safeguard security of gas supply.

Following the worsening of the Russian-Ukrainian relations again in 2014 (when gas transports to the EU via Ukraine were curtailed for long periods), the European Commission carried out “stress tests” to identify the effects of a possible partial or complete disruption of gas supplies from Russia. In October 2014, the European Commission published its Stress Test Communication and a report<sup>4</sup> on the implementation of Regulation 994/2010 which highlighted that improvements to the Regulation could lead to more effective prevention and management of supply crises.

In January 2015, the European Commission launched a public consultation with a view to revising and improving Regulation 994/2010. The present CEER Concept Paper builds upon the concepts and ideas put forward in our CEER response<sup>5</sup> to the European Commission’s consultation which was presented to the 27<sup>th</sup> meeting of the European Gas Regulatory Forum (Madrid Forum) in April 2015.

### Objectives and contents of the document

By elaborating our policy recommendations in this Concept Paper, CEER hopes to assist the European Commission in their work of revising Regulation 994/2010.

The report is split into the following sections: Section 1 sets out the context and high level principles such as completing the Internal Gas Market as a crucial basis for any EU security of supply strategy. Sections 2 and 3 provide an overview of CEER’s recommendations for measures in the prevention and mitigation phases respectively. Section 4 describes in greater detail our ideas on supply standards, protected customers and triggers for declaring an emergency. Section 5 summarises CEER’s policy recommendations.

### Brief Overview

#### **Prevent first, mitigate later**

In terms of security of supply, CEER strongly advocates to prevent first, then mitigate. CEER promotes strongly using market-based instruments as long as possible (in the prevention phase), before moving into the mitigation phase (of state interventions via emergency plans).

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<sup>2</sup> [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.](#)

<sup>3</sup> [Council Directive 2004/67/EC of 26 April 2004 concerning measures to safeguard security of natural gas supply.](#)

<sup>4</sup> [Commission Staff Working Document: Report on the implementation of Regulation \(EU\) 994/2010 and its contribution to solidarity and preparedness for gas disruptions in the EU.](#)

<sup>5</sup> [CEER response to EC Consultation on the Revision of Regulation \(EU\) No 994/2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC, 7 April 2015, Ref.C15-GWG-118-03.](#)



In order to ensure the required level of security of supply is reached at lowest cost, a transparent and well-articulated borderline between prevention and mitigation needs to be drawn. Market-based measures available in the prevention phase should be allowed to continue as long as possible before shifting to mitigating measures. Where interventions are introduced, the impact on the market should be understood and minimised.

### **Full implementation of the 3<sup>rd</sup> Package and Network Codes**

CEER underlines that completion of the Internal Gas Market is a crucial basis for any EU security of supply strategy. This requires full implementation by Member States of the 3<sup>rd</sup> Package legislation and of the EU-wide Network Codes. The Gas Balancing Network Code creates the right framework for the value of security of supply to be incorporated into a market-based balancing regime. The Gas Balancing Network Code<sup>6</sup> (which Member States are obliged to implement by 1 October 2015) should play an important role, particularly in the prevention stage, since it provides the instruments to monitor the balancing situation. Within the balancing regime, incentives can be established for market participants in order to help keep the system in balance. When it comes to moving to different crisis levels, the information gained by the Transmission System Operator (TSO) through its balancing activities can provide the information needed to define the triggers for the declaration of an emergency.

### **Mandatory regional plans**

In order to prepare properly for an emergency, competent authorities and NRAs shall draw up mandatory regional plans, which would be complementary to the national plans (risk assessment, preventive action plan, and emergency plan). CEER foresees a role for the European Commission in appointing a security of supply mediator when regions cannot reach consensus on the content of a regional plan. Intergovernmental solidarity principles should be ready to use in all Member States. They should be transparent and agreed upfront.

### **Protected customers and supply standards**

CEER calls for supply standards and protected customers to be defined at EU level. CEER advocates for supply standards being an obligation on suppliers in order to guarantee supply to protected customers, and promotes an “obligation of results” rather than an “obligation of efforts” when it comes to fulfilling these standards. CEER acknowledges that in certain circumstances “obligation of efforts” may ensure that market players provide themselves with the means to procure flows as long as possible. If an entity other than the supplier (e.g. a TSO) has the obligation to fulfil the supply standard, this must be done in a market based way. The term “protected customers” should be more clearly defined at EU level, since this definition is part of solidarity between Member States. CEER calls for national shut-off plans to be coordinated regionally. A protected customer in one Member State should be treated equally by another Member State in case of an emergency (e.g. a Member State may not arbitrarily decide to reduce exit flows at the border in order to supply domestic consumers). There should be clear triggers for different crisis levels (e.g. early warning level, alert level and emergency level). CEER also calls for an explicit role for NRAs to be systematically involved in the security of supply decision making process including making NRAs permanent members of the Gas Coordination Group.

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<sup>6</sup> [Commission Regulation \(EU\) No 312/2014 of 26 March 2014 establishing a Network Code on Gas Balancing of Transmission Networks.](#)



## 1 Principles

### 1.1 Introduction

As the representative body for Europe's energy regulators, CEER welcomes the European Commission's planned revision of Regulation (EU) No 994/2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC.

This document sets out CEER's views concerning measures to safeguard security of gas supply (SoS) in general and the use of market-measures in particular. It builds on concepts and ideas put forward in the CEER response paper to the European Commission Public Consultation of 7 April 2015.<sup>7</sup>

### 1.2 Customer and cost perspective of security of supply measures

CEER believes that well-functioning gas wholesale markets can deliver the best outcomes for customers.

In order to allow the market to work as long as possible, CEER advocates for market-based preventive measures to be allowed to continue as long as possible before shifting to mitigating measures. Where interventions are introduced, the impact on the market should be understood and minimised.

In order to ensure the required level of security of supply is reached at lowest cost for customers, CEER advocates that a transparent and well-articulated borderline between prevention (market-based measures) and mitigation (state intervention via emergency plans) needs to be drawn. By setting out the European regulators' concept for security of gas supply, CEER proposes a framework which aims to achieve an appropriate balance between a sufficiently high level of security of gas supply and keeping the costs of gas at a reasonable level.

### 1.3 Complete the Internal Energy Market – a crucial framework for security of supply

Supply risks can either be endogenous and linked with the functioning of the market under normal circumstances, or exogenous and thus depend of factors external to the EU. The aim of the revision of the Regulation No 994/2010 should therefore be to ensure that the Internal Energy Market (IEM) can effectively respond to both endogenous and external risks. CEER advocates for full implementation of the 3<sup>rd</sup> Package and the Network Codes by Member States in our belief that a completed IEM will deliver well-functioning spot and forward markets. CEER reiterates its view expressed in our response to the Commission's consultation that completion of the Internal Gas Market is a crucial basis for any EU security of supply strategy. Well-functioning markets will set the framework for security of supply: they optimise flows by signalling scarcity and promoting efficient use of assets through price signals. One of the building blocks for a functioning market is transparency and well defined

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<sup>7</sup> [CEER response to EC Consultation on the Revision of Regulation \(EU\) No 994/2010 concerning measures to safeguard security of gas supply and repealing Council Directive 2004/67/EC](#), 7 April 2015, Ref.C15-GWG-118-03.



rules, which enables a proper degree of cross-border coordination which is required for a market response to a gas supply disruption.

CEER considers that a transparent and well-articulated borderline between *prevention* (market-based security of supply measures) and *mitigation* (state intervention via emergency plans) is crucial. These two dimensions have to be properly articulated in order to ensure the required level of security of supply at lowest cost.

Furthermore, CEER believes that the market-based measures present in the prevention phase should be allowed to continue as long as possible before shifting to mitigating measures. The prevention phase consists of different kinds of actions (e.g. implementing the Network Codes) aiming at enabling the market to be as resilient as possible without interventions of authorities which may hamper market functioning. Such an approach would accelerate moving towards more mature gas markets in Europe. It may also require incentives and obligations on gas suppliers (and shippers) when there is a market failure. It requires sufficient infrastructure, efficiently used (e.g. physical reverse flows) to ensure access to markets. The development of bi-directional gas interconnectors between Member States in certain regions might be of utmost importance. It is important that potential reverse flow interconnections, as well as existing exemptions, are regularly examined (through a rigorous and transparent market test followed by an economic evaluation) and that the views of stakeholders along the affected corridor are taken into account. In addition, alternative patterns for sourcing and re-routing of flows, and sufficient tools (e.g. storage, Liquefied Natural Gas (LNG) facilities) will allow the market to meet security of supply requirements. In other words, NRAs or other designated competent authorities need to ensure that the market has the means to work for as long as possible and that market-based instruments are able to function as much as possible.

It should be recognised that some regions will move more rapidly to the mitigation stage in case of an incident than others since market conditions (e.g. gas supply sources and routes), market maturity as well as physical conditions (e.g. producing vs importing countries) differ across the EU. CEER calls for this diverse reality to be reflected in the revision of Regulation (EU) No 994/2010 to avoid unintended consequences on the process to achieve well-functioning EU gas markets.

Security of gas supply is not a state that can be permanently achieved. Adequate policies and mechanisms should be put in place which gears the system towards maximising gas security of supply under the given circumstances. No policy choice itself can provide 100% security of supply, but any policy must bring a transparent framework for market participants which will become a cornerstone for creating sufficient level of security of supply. Any policy which aims to increase the level of security of supply comes at a cost. It is imperative that policy makers understand the trade-offs between different approaches to delivering appropriate levels of security of supply and make choices based on cost-benefit analyses.

The revision of Regulation (EU) No 994/2010 should take into account the landscape of the EU gas market. For example, European gas demand is in decline, which means all potential SoS-related measures should be evaluated carefully to see if they are economically affordable.

Finally, consideration should also be given to costs. A supply disruption of customers in the distribution network implies enormous costs (reconnection can take months and can have severe safety impacts, i.e. explosions in buildings). If these costs are fully considered and have to be borne by all system users, it might negatively influence gas demand further.





## **1.4 Fully implement the Gas Balancing Network Code**

CEER believes that ensuring that the short-term risk of supply deficits sits with those who are best placed to manage them would represent an appropriate framework for delivering security of supply to gas consumers. CEER believes that the Gas Balancing Network Code<sup>8</sup> creates the right framework for the value of security of supply to be incorporated into a market-based balancing regime as it puts the onus on suppliers to contract sufficient volumes of gas for their customers, provided that suppliers do not fail to anticipate some risks. As long as the network is in balance, there is sufficient gas to satisfy consumer needs. This market framework could be the basis for better reflecting security of supply requirements via imbalance fees. For instance disconnections, e.g. consumer shut-down, which currently have no cost element in imbalance charging could be given a shadow cost (e.g. cost of damage) to incentivise market participants appropriately. Where the market cannot respond to these signals, either through lack of liquidity or fundamental market structure problems, non-market based measures could be implemented in the mitigation phase. However, the use of non-market based measures should not impact the process of moving to well-functioning markets.<sup>9</sup>

## **1.5 Promote demand side measures**

CEER believes that customers using gas for industrial purposes have an important role to play in security of gas supply through their ability to respond to a crisis with demand-side measures, for instance voluntary demand reduction, interruptible contracts and fuel switching, as this directly impacts on the supply/demand balance. Establishing a market-based system for demand side management is already possible according to the current regulation. However, only a few Member States make use of this possibility. CEER encourages demand-side measures for large industrial customers to play a role in security of supply.

## **1.6 Ensure transparency of security of supply plans and regionally cooperate**

Security of Supply plans set the triggers for when to move from prevention phase into mitigation actions. Hence they must be clear and transparent to the market. Security of supply should not be considered as a separate aspect of the gas chain, rather it should be integrated into the market functioning as much as possible. As security of supply comes at a cost, incorporating it into the market through, for instance, appropriate balancing incentives, market participants can achieve an efficient level of security of supply, provided they do not fail to anticipate some risks. In most EU Member States this means that policy makers or regulators have a role to deliver policies for protected consumers who have no ability to signal their security of supply requirements, whereas large gas consumers often have the ability to specify their security of supply needs according to varying security of supply price premiums.

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<sup>8</sup> [Commission Regulation \(EU\) No 312/2014 of 26 March 2014 establishing a Network Code on Gas Balancing of Transmission Networks.](#)

<sup>9</sup> The [GTM Review and Update](#) provides metrics to assess the performance of a wholesale gas market and whether it is “well-functioning”. These metrics help to assess whether the following two key properties are in evidence: it meets market participants’ needs – products and liquidity are available such that effective management of wholesale market risk is possible. It has “market health” – the wholesale market area is demonstrably competitive, resilient and has a high degree of Security of Supply.



Markets need well-defined and clear obligations when the Security of Supply Regulation imposes specific measures - which should be evidence based (e.g. Cost Benefit Analysis (CBA)). Indeed, NRAs and competent authorities must be transparent with the market on the level of gas which is appropriate to meet security of supply requirements, as it is not only linked to market functioning but also to investment in infrastructure (where these are not sufficient).

In areas where there are no well-functioning markets (e.g. according to the criteria in the European Gas Target Model: Review and Update<sup>10</sup> (GTM2) and self-assessments of Member States), regional cooperation might be required to achieve faster market development. Based on a CBA, an integration of these markets should be evaluated in order to establish liquid and transparent markets. Depending on the particularities of cross-border market integration, market-based security of supply may also be integrated cross-border (e.g. through a common balancing regime).

CEER supports mandatory regional plans, which could be complementary to national plans. Within the regions coherent risk assessments, preventive action plans and emergency plans need to be elaborated and properly coordinated. This process could be facilitated if all regional plans were available in English. CEER further suggests that the current review period (2 years) of national plans could be prolonged, also reflecting a regional approach.

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<sup>10</sup> [ACER European Gas Target Model: Review and Update, January 2015](#)



## 2 Recommendations for the Prevention Phase

In order to prevent first, and mitigate later, CEER believes that it is important that NRAs and competent authorities undertake suitable market monitoring to understand how security of supply risks are being managed in a hub-based system. When monitoring the fulfilment of the supply standards, CEER recommends an “obligations of results” (e.g. to meet a “1 in 20 year” rule for households) rather than “obligations of efforts” approach (e.g. at least 3 different supply sources) in order to allow the market to choose the most efficient means to achieve the results. While the supply standards for households should be clearly defined in advance at European level, market participants should decide themselves how to meet the respective obligation, e.g. how to structure and source their portfolio. However, obligations of results may be accompanied by obligations of efforts, e.g. NRAs or any other competent authority ensuring that market players have the means to let the market work as long as possible.

The relationship between short-term gas sourcing at trading places (VTP) and long-term gas contracts of gas supply companies should also be considered. This relationship is of key importance for market liquidity. An efficient balance of both types of contracts is important as a mix of long and short-term contracts is likely to represent an efficient hedging strategy by gas suppliers. Since third countries are becoming more and more important to Europe’s gas supply, a dialogue between Europe and these countries becomes ever more important to facilitate commercial transactions of European gas supply companies to source gas in these countries (according to negotiated contractual conditions).

Risk assessments, preventive action plans and emergency plans remain important in security of supply policy. They clarify to market participants what happens before, during and after an emergency. Where possible, the value of security of supply should be established in the market without further intervention.

Many provisions in the Regulation 994/2010 have a regional component; therefore CEER supports further developing the idea of mandatory regional emergency plans, which could, together with Risk Assessments (RAs) and Preventive Action Plans (PAPs) become part of integrated security of supply plans.

The success and coherence of these plans imply the timely and coordinated implementation of the Network Codes. The regional plans would be complementary to the national plans. An obvious precondition in these planning exercises is the cooperation and joint approach of the Member States, including the sharing of information and the agreement on solidarity rules. As it will be challenging to update the documents every two years, CEER suggests prolonging the review period.

As markets grow and become more regional in scope, it is necessary to ensure that security of supply aspects, currently reviewed at Member State level, are better aligned through greater regional cooperation. Gas supply companies, rather than Member States, contract gas and deliver it to markets (Virtual Trading Points) and to customers. To ensure coherence in both the prevention (market) and mitigation (state emergency plans) phases, CEER would welcome explicit and complementary roles for NRAs and competent authorities.

A key element for creating functioning markets is diversification. In order to diversify, Projects of Common Interest (PCI) could be considered to connect the new sources/new routes to the EU markets. However, diversification needs to have a clear goal. Investments needed for the development of the infrastructure to reach this goal, taking into account that natural gas demand is declining in the EU, should be covered first by commitment of traders and in specific cases also by public funding.



To ensure that the focus is placed on the right projects, it is essential that critical strategic infrastructure is identified in the PCI selection process. Therefore, different alternatives and competing projects need to be understood and a selection needs to take place. The following principles should be applied in order to avoid non-selection of projects (i.e. a pure aggregation of all applicants for PCI status):

- Scenarios used for the evaluation of benefits of PCIs during CBA should be the one with the highest probability;
- Furthermore, it needs to be ensured that funding is not given to „parallel / competing“ initiatives unnecessarily; and
- Due to the high number of PCIs the possibilities for a case-by-case analysis of potential challenges for implementation and necessary support are restricted.

## 2.1 The role of gas storage and LNG in security of supply

Recognising the role that different sources of gas play in the market, CEER has already developed and published a report on the regulatory vision for storage<sup>11</sup> and is currently drafting a report on the role of LNG in regional security of supply.

Storage obligations on suppliers/shippers and strategic storage have been widely discussed in recent years. CEER's Gas Storage Vision advocates a solution tailored to the relevant market. Gas storage competes with other sources in a flexibility market and therefore the regulatory arrangements within Member States should facilitate, not stifle, this open competition. CEER recognises that solutions could include interventions where there is evidence that the market does not, or cannot<sup>12</sup>, appropriately value security of supply. CEER notes that other flexible sources of gas, such as LNG and interconnectors, also provide an insurance value to the market and that the insurance value of different sources is dependent upon their technical characteristics as well as contractual arrangements. Where intervention is introduced, the impact on the market should be understood and minimised. For example, where strategic storage or storage obligations are introduced, clear rules, responsibilities and boundaries are needed to minimise the impact of such measures on the functioning of the wholesale market. Therefore, the use of storage obligations on suppliers/shippers and strategic storage should be considered in a case-by-case approach with a transparent analysis of the pros and cons, including cross-border effects.

LNG can be considered as a key source of flexibility and the main alternative to the historical suppliers in terms of security of supply. The contribution of LNG to security of supply depends on the upstream (contracts with LNG producers and attractiveness of the European market) and the downstream (capacity to transport re-gasified LNG to areas where it is needed).

The role of LNG in contributing to security of supply has to be considered in the light of the characteristics of the LNG chain, where logistics remain rather rigid upstream on a short-term basis (it can take days or even weeks to get a spot cargo, destination clauses may restrict the redirection of LNG volumes to high demand markets) while terminals offer flexible services based on LNG storage or trucks.

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<sup>11</sup> [CEER Final Vision for Regulatory Arrangements for the Gas Storage Market](#), 25 May 2015, Ref.C15-GWG-119-03.

<sup>12</sup> Responses to the public consultation on the CEER Vision Paper for Regulatory Arrangements for Gas Storage Markets have shown that not all market participants believe that under the current frameworks in Europe, the insurance value of storage can be realised.



Regarding LNG, the prevention phase covers two main aspects: the EU's ability to attract LNG when needed (third party access to infrastructure, contracts, levels and types of infrastructure, market dynamics), and then the possibility to transport it to adjacent gas markets or remote areas. There is currently a potential mismatch between the location of potential LNG demand in times of crisis and the location of EU regasification capacities.

To ensure security of supply, whether in normal operation or a crisis, it is necessary to have effective price signals. Well-functioning markets (with a high level of liquidity) with effective balancing arrangements can ensure that wholesale market prices reflect security of supply. This incentivises market participants to choose the most efficient means of delivering security of supply. In the case of LNG, market participants may take actions such as:

- Agreeing contracts that provide for deliveries in times of supply disruption or extreme events;
- Procuring additional LNG cargoes on spot markets where needed;
- Using temporary storage at LNG terminals to provide flexibility; or
- Procuring flexible delivery technology (such as floating storage and regasification units) and developing connection infrastructure for these.



### 3 Recommendations for the Mitigation Phase

CEER advocates using market-based instruments as long as possible (during the prevention phase), before moving into the mitigation (state intervention via emergency plans) phase.

In case of an emergency, the management of the flows at the cross-border Interconnection Points (IPs), according to existing contracts, should be agreed by the involved Member States in line with the shut-off plans. Inter TSO-agreements already cover emergency procedures to some extent. Besides the guarantee of minimal gas flows according to existing contracts (which is a minimal solidarity requirement), Member States may agree on further programmes to help each other in case of an emergency. Such inter-governmental solidarity agreements in case of an emergency should be part of the emergency plans. They may include cross-border compensation and should help avoid free-rider behaviour.

Inter-governmental solidarity principles should be ready to use in all Member States. Access to functioning markets and operational assistance agreed upon between TSOs are best suited to support Member States in an emergency situation. “Last-resort” inter-governmental solidarity principles should only apply in case of emergency situations and between countries in the emergency situations. These solidarity principles should be clear, agreed upfront and transparent to the market.

In CEER’s view, solidarity mechanisms should

- (a) provide sufficient guarantees that they do not distort market signals and
- (b) be truly complementary to national measures without impacting on them negatively:
  - Unless otherwise agreed bilaterally between Member States, solidarity mechanisms may only be activated during emergencies caused by extreme disruption scenarios not foreseen in the standards currently in Regulation 994/2010.
  - The activation of any solidarity clause does not harm the continuity of supply situation in any Member State asked to provide assistance.

CEER recognises that in certain cases interventions may be required to correct proven market failure. Where there is clear evidence of market failure, interventions may be necessary but they must be designed to minimise the impact on market functioning and not foreclose the growth of wholesale markets. Any intervention should be reviewed regularly to ensure that it is fit for purpose and should be removed when market conditions allow. Any intervention must be transparent, non-discriminatory and publicly known.



## **4 Regional Cooperation and role for the European Commission**

CEER supports the idea of regional cooperation in fostering competitive markets. In our belief that Member States are no longer the only appropriate reference point for a security of supply policy within the internal market, CEER supports mandatory regional plans, which could be complementary to national plans. CEER encourages policy makers to reflect on the regional impact of security of supply interventions as they may affect neighbouring market areas. Since market areas are increasingly integrated across national borders, cooperation becomes more important. Member States should work together when drafting regional RA, PAP and EP (Emergency Plans) to ensure that they're not relying on the same molecule of gas in an emergency situation.

At EU level, the European Commission could draw up plans related to energy policy, producing and transiting third countries, e.g. Energy Community countries. The process of developing regionally coordinated plans could be facilitated if the European Commission designed one standard template and if all regional plans were available in English.

Where a region cannot reach consensus on the content of a regional plan, the European Commission could help by appointing a Security of Supply-mediator who would enter the process and try to help the parties find an agreement.

### **4.1 How CEER's key concepts might work in practice supply standards, protected customers and solidarity**

Definitions for supply standards, protected customers, and solidarity are closely related. Cross-border coordination is particularly important in the mitigation phase when market measures are exhausted. This section defines these concepts and explains how CEER considers they should apply in normal (prevention) market situations and in security of supply emergencies (mitigation).

It is important to bear in mind that there is still a properly working gas market in the prevention phase. This means that the "sanctity of contracts" still rule the gas flows. The mitigation phase starts as soon as the market no longer works properly. The responsible authority takes control of the emergency situation and supply contracts are overruled by measures taken by the responsible authority to safeguard safety and civil protection. This means that a shut-off plan controlled by the responsible authority overrules the contracts committed on the market. That responsible authority may release gas from one consumer to another without considering the contracts committed between the parties.

The revised Security of Supply Regulation must define solidarity. For the purposes of this paper, CEER defines "solidarity" as solidarity between Member States in the mitigation phase in order to control and share the impacted gas supply according to predefined rules. CEER emphasises that the concept of "sharing impacted gas supply" should only apply if a source of gas (e.g. import pipeline or gas field) in one Member State goes out of operation, while that source also supplies customers in other Member State(s). For the avoidance of doubt, solidarity between Member States could also mean that Member States provide assistance to one another in the case of an emergency. One example could be sharing additional volumes of gas – to the extent available – in case one Member State faces an emergency while others do not. For the avoidance of doubt, this concept should not result in the contributing Member State also going into an emergency and should only apply if gas can no longer be obtained in a market based way. Under all circumstances, "free riding behaviour" should be avoided. Obviously, the setting of 'predefined rules' in this definition is a challenge which goes beyond market principles and has a political dimension.



#### **4.1.1 How these concepts work in the Prevention Phase**

As long as markets function properly and TSOs are able to keep the network in balance, the definition of supply standards and protected customers (those customers for which the suppliers are obligated to guarantee supply) corresponds to a legal requirement which should be respected by suppliers. In order to internalise these requirements within the market mechanism, the definition of supply standards and protected customers should be clearly defined and transparent.

From a public interest point of view, CEER considers it to appropriate to specify supply standards for a group of gas consumers who are not able to negotiate effectively their required security of supply or those consumers who should be considered from a technical or social point of view as a group that needs some gas supply guarantees. So far the definition of protected customers given in Regulation 994/2010 leaves quite some room for interpretation to Member States. Different interpretations by Member States of the terms “supply standards” and “protected customers” could impact market functioning. There exists a trade-off between the level of protection delivered by a standard and the additional costs to meet the standard, with more protection meaning that suppliers have to organise their supply portfolio accordingly in order to meet the required level of protection. Higher protection requirements may lead to barriers at the entry of the market for small gas companies. For instance, some volume of gas may be stored by suppliers for hedging purposes and “just kept on hold” and it is used for an extreme event. There is no fundamental market problem related to higher supply standards but the (national) legislator has to find a beneficial balance between the level of protection and the market impact. The issue of solidarity (in terms of solidarity between countries in sharing gas), does not intervene in the prevention phase because gas should flow across borders freely according to contractual arrangements.

CEER recommends that “protected customers” should be defined in a clear and transparent way at EU level since this definition forms a key part of the “solidarity” between Member States. The definition should comprise those customers who are not in a position to negotiate their level of security of supply themselves (usually households).

#### **4.1.2 How these concepts work in the Mitigation Phase**

The definition of supply standards, protected customers, essential social services (which should be disconnected late in the shut-off process, just before household customers, but the supply standard does not apply to them) and solidarity is of major importance once market and non-market measures are exhausted and the system is in emergency.<sup>13</sup> The gas system enters into the final stage of incident management: there is not enough gas in the system anymore to supply all gas customers (e.g. demand side management and other market-based tools are fully exploited). In the worst case scenario, there is not enough gas to safeguard system integrity. The divergence between gas off-takes and gas injections into the network exceeds technical thresholds, leading to pressure drops in the network. In this extreme situation, gas transportation is not possible anymore. Before this threshold is reached, all means to restore the system must have been used, e.g. non-market based measures such as the use of strategic storages and peak shaving. It is only when all the previous measures have been used that a shut-off plan will be activated in order to control a

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<sup>13</sup> Protected customers are not solely a group of customers for which the supply standard is applicable, but refers to a category of consumers who are prioritized in the shut-off plan.





safe shut-off of customers. Without a shut-off plan, a dangerous uncontrolled automatic shut-off would occur due to the pressure drop in the network.

After the activation of interruptible contracts and any remaining incident tools, the shut-off plan curtails between 1 and 100% gas offtakes committed in however firm supply contracts according to a pre-defined ranking of consumer categories. In general terms, this procedure releases gas committed by “non-protected” customers in order to guarantee supplies to protected customers. Solidarity between Member States intervenes when compromised gas flows are not only committed for national consumers but also for downstream market(s). The national shut-off plan must explicitly consider the treatment of cross-border exit flows compared to flows to national consumers.

Importantly, in an emergency situation, a Member State should not be able to arbitrarily decide to reduce exit flows at the border in order to supply domestic consumers. This raises the question to what extent cross-border exit flows according to existing contracts may be reduced to supply national consumers according to existing contracts or alternatively, to what extent should national consumption be reduced in order to guarantee cross-border exit flows. This question is linked to the solidarity issue. CEER believes that a supply problem should be equally shared among the impacted contracts. CEER argues that if the emergency situation requires the curtailment of (firm) contracts, a protected customer in one Member State should be equally treated by the other Member States. However, there is a process before reaching this last resort stage (see the section 5.1.3 below on the shut-off plan).

It is important to keep in mind that solidarity is defined as solidarity between Member States in an emergency (the markets do not properly function anymore in the considered Member States). If one Member State still has a properly working market and another (e.g. adjacent) Member State is in emergency, the relationship between both markets is still commercial (based on contractual commitments). In this situation participants in the functioning market would likely flow gas into the higher prices area in an emergency. This highlights the importance of not restricting cross-border trade. This understanding of solidarity largely avoids free riding. The “search for gas” will have impacts on the market which still functions and in the short run lead to important price impacts. If one Member State has invested in means to postpone the emergency phase (e.g. storage obligations or strategic storage) while another Member State is less restrictive, the latter may likely evolve more rapidly to a situation of emergency (all the rest equal). However, there are no restrictions on cross-border trading and the country in emergency may, of course, still buy gas on still working markets.

### **4.1.3 Shut-off plan**

The shut-off plan (to cope with an emergency) is the measure of last resort in order to keep control of the emergency situation. In this mechanism, the definition of solidarity and protected customers is particularly important.

The market principle of “sanctity of contracts” should also be respected to a maximum extent in the emergency phase although state interventions may overrule. Therefore, the stages of curtailment should take this basic market principal into account.

#### ***Curtailment of (firm) supply contracts to customers***

##### *Stage 1*

In general, a TSO may apply nomination constraints on booked exit capacity of the impacted suppliers/shippers (domestic and cross-border) according to an interruption (e.g. technical



failure on a supply route) of gas injections into the network. By doing so, an upstream incident is shared between the domestic and the downstream market according to the contractual portfolio of the impacted suppliers. The flexibility in the system, the ease of the impacted suppliers to source gas elsewhere and the ease of impacted customers to source gas elsewhere, will help the avoidance to move to stage 2 of the process. This contractual procedure means a Member State avoids bearing the full impact of an upstream failure with the impacts spread across borders according to contractual border-to-border patterns.

### *Stage 2*

This sharing of an upstream incident does, of course, not exclude the possibility that the impacts in one Member State may be significant leading to the need to activate a (national) shut-off plan. The necessary reduction of gas off-takes in order to manage the emergency may be allocated proportionally between domestic exit points and cross-border exit points. If x% reduction of gas off-takes is necessary to control the emergency situation: the TSO should reduce domestic gas offtakes as well as the nomination rights at the border. Solidarity here means that 1 MWh gas for domestic offtake is treated equally as 1 MWh gas for exportation. This corresponds to the basic principle of no distinction between contracts. For a good understanding, this solidarity principle (which has to be elaborated in detail within the regional plan) holds in the emergency phase (when existing contracts are overruled by the shut-off plan which determines where the gas should flow).

### *Stage 3*

In stage 3, the definition of protected customers as well as of the supply standards comes into play. In accordance with CEER's view of the solidarity principle, no protected customers may be shut-off in a Member State in emergency if the related upstream or downstream Member State in emergency is still able to supply (some) non-protected customers. The solidarity should mean that in Member States in emergency, the gas supply should converge to the protected customers. In general, it is not desirable that one Member State has to shut-off more prioritised customers while the related Member State (upstream or downstream) has to shut-off less prioritised customers (e.g. it is not desirable from a solidarity principle that one country has to shut off households while the related Member State has to shut-off industry). Solidarity means that ultimately the customers are shut-off in order to control the emergency. According to this reasoning, it seems more important to have a regional definition of the multiple categories of customers in the shut-off plan than just the protected customers which determine the sequence of curtailment. Each category of customers has a certain protection level and the prioritisation of categories should be defined at regional level, where e.g. households are more protected customers than, in general, industrial plants.

**Supply standards** should continue to be defined at EU level and be clearly communicated to the market. The standard should be easy to understand and applicable for the market. The supply standard should only focus on gas consumers which are not able to negotiate their level of security of supply or which need a collective supply standard from a society point of view. This group of customers corresponds to "protected customers". Protected customers are defined here as those customers for whom the supply standard is applicable in the prevention phase.



**Protected customers** should be defined at EU level since this definition is part of solidarity between Member States. No distinction may be made between contracts for domestic consumers and cross-border contracts. A supply problem should be fairly shared among the impacted contracts. The definition of protected customers is of key importance once state measures intervene to curtail gas flows to less prioritised consumers so as to safeguard gas supplies to more prioritised customers (protected customers).

The categories of customers in the **shut-off plans** should be defined at regional level, generally starting with some categories of industrial plants and moving to more protected customers. It cannot be the case that in two countries with cross-border transaction contracts which are in an emergency, that one country curtails higher prioritised customers while the other is curtailing less prioritised customers. There should be solidarity in the curtailment across the consumer categories defined at regional level. The 1<sup>st</sup> category specifies the customers with the highest protection (e.g. latest in the shut-off plan), the 2<sup>nd</sup> category specifies the customers which will be curtailed before the 1<sup>st</sup> category and so on with the next categories. This priority ranking by category is key and should be equal in one region. Gas-fired power plants may be differently prioritised according to evidence provided by the national electricity production structure and taking account of the interrelationship between gas and electricity. This information would have to be part of the emergency plan.

**Solidarity** in the context of this paper intervenes when Member States in emergency share the remaining gas. As soon as customers must be curtailed according to the shut-off plan, the curtailment in the Member States in emergency should be spread in the same consumer categories, ranking the groups of consumers according to the priority. Any solidarity beyond this basic principle may be agreed among countries in the regional plans and may require compensations.

## 4.2 Triggers for the declaration of an emergency

### 4.2.1 Monitoring of balancing positions by the TSO<sup>14</sup>

The balancing framework provides useful information for monitoring and managing short-term continuity of gas supply. Based on historic information of the grid balancing position it is possible to assess whether the balancing incentives (imbalance fees) are appropriate. A TSO can, based on the balancing positions in the market and that of individual suppliers, where necessary, take preventative action.<sup>15</sup> Shippers/suppliers should on a regular basis be informed about their balance position and about the total system condition near real time in order to give room for market actions. The framework for such information provisions is already set in the Network Code on Gas Balancing of Transmission Networks. In the Figure 1 below, the balancing framework and applicability in crisis levels is explained.

### 4.2.2 Use of balancing framework in declaring crisis levels

Regulation 994/2010 currently defines the types of crisis levels: early warning level, alert level and emergency level. CEER considers these three types still to be valid and considers

<sup>14</sup> In some Member States there is a coordination entity for TSOs (e.g. the Market Area Manager, in Austria). These entities are responsible i.e. for registration in the market and for market area balancing. Thus, this chapter may also concern these entities.

<sup>15</sup> The aggregated market balancing position is not confidential while the balancing position of individual shippers is kept confidential.



that the current definitions already provide some guiding principles when a particular level is to be declared. CEER also recognises that it is difficult to develop a “one size fits all” approach. Competent authorities also take many factors into account (such as political developments, forecasts) when deciding to declare any of the crisis levels. At the same time, CEER considers that the balancing framework provides useful information that can be used to decide whether a crisis level should be declared.

CEER considers the Gas Balancing Network Code to be particularly useful for the early warning level. According to the definition in Regulation 994/2010, an early warning should be declared when concrete, serious and reliable information is available that an event may occur which is likely to result in significant deterioration of the supply situation and is likely to lead to the alert or the emergency level being triggered. Because no actual event has occurred – such as a supply disruption – there is not a specific trigger that call for declaring an “**early warning**”. CEER would suggest that the following developments (signalled by the TSO based upon balancing information) could be considered by a competent authority or NRA:

- The number (and depth) of physical balancing actions undertaken by the TSO is much higher than normal.
- Buying gas (at the hub or balancing platform) is proving to be more difficult.

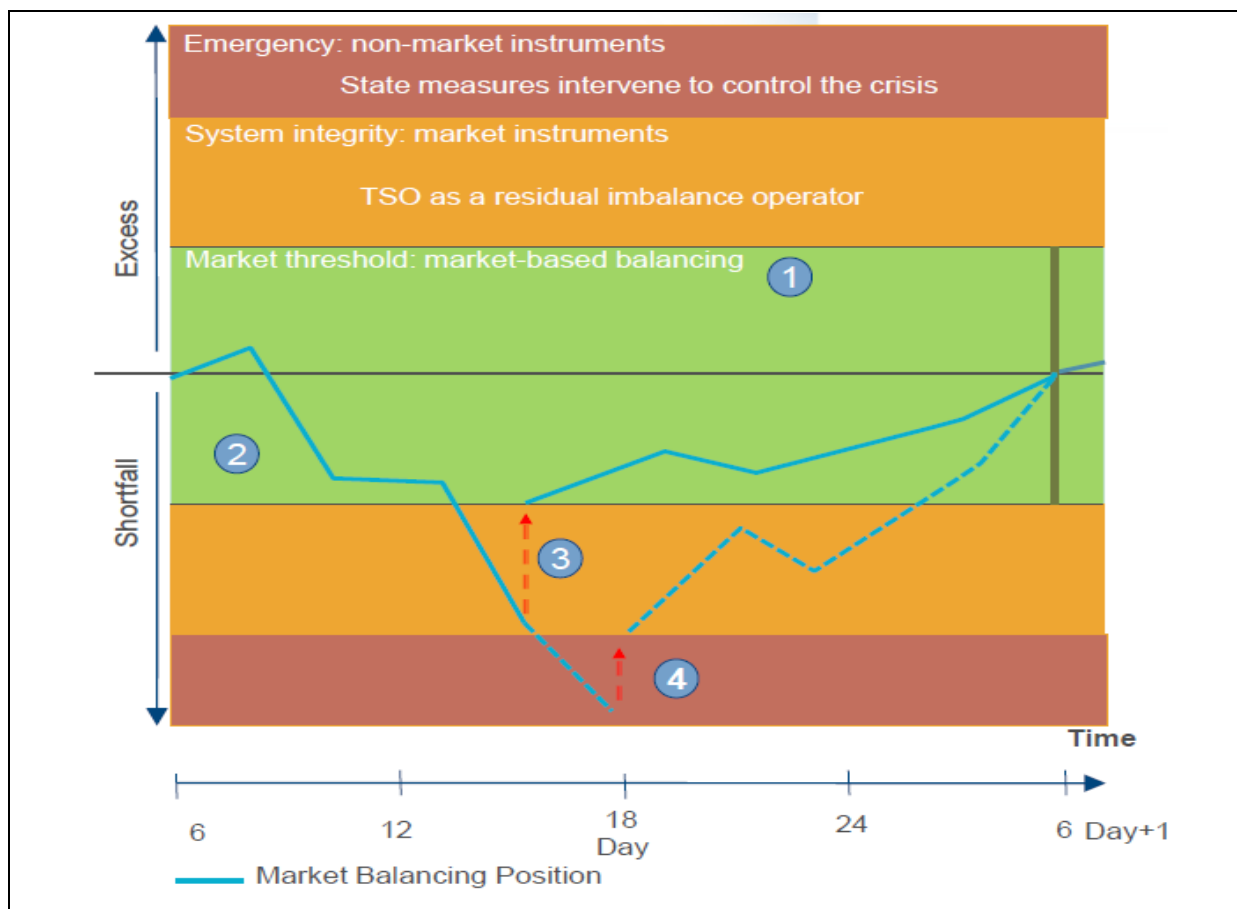
In accordance with Regulation 994/2010, the “**alert level**” should be declared when a supply disruption or exceptionally high gas demand results in significant deterioration of the supply situation but when the market is still able to manage that disruption or demand without the need to resort to non-market measures. CEER believes that this “**alert level**” crisis level could be declared based upon the following information:

- Information from the balancing information shows that the grid is approaching the point where a TSO is no longer able to keep the system in balance.
- The TSO signals that it is proving difficult to balance the grid and expects that it is not likely that it will be able to keep the system in balance.

With regard to the **emergency level**, CEER considers that an emergency should only be declared if a TSO is no longer able to keep the system within the ranges of the system (see threshold 4 in Figure 1). As long as the market and/ or TSO is still able to balance the system, non-market based measures should not be kicking into force.



Figure 1: Example of the balancing regime as indicator for crisis levels



#### 4.2.3 Monitoring and forecasting of the supply situation

The balancing regime gives no guarantees that market players do not fail in anticipating properly any supply risks but only a status-quo of the current supply situation. Thus, CEER considers that it is important to establish additional monitoring in order to be in a position to forecast the supply situation, at least for the several weeks ahead, based on current and historical data. For the evaluation and forecasting of the supply situation, it is important to collect and analyse the necessary physical and commercial market data. In a more and more hub-trading market and given the importance of sufficient liquidity on the VTPs for network balancing, it is crucial that hub operators have an efficient and transparent data collection system for the number of transactions and the traded volumes according to the different contract types (within day, day ahead, week ahead, and etc.). Another area consists of data which may include the physical imports and exports, injections of the domestic production, injections/withdrawals of storage facilities and respective working gas volumes and end consumer consumption, as well as information on existing long-term contracts (i.e. duration, volumes, delivery point, and flexibility clauses).

In order to have a legal framework for the collection of such data, mandatory data submission rules could be added to the Security of Supply Regulation (Regulation 994/2010) to ensure that the supply situation in the EU can be assessed regularly and in emergency cases. Examples of gas security of supply approaches adopted in Austria and Italy are provided below.



*Example 1 – Content of the Austrian Natural Gas Intervention Data Ordinance and forecasting*

Based on the Energy Intervention Powers Act 2012<sup>16</sup>, the Austrian NRA (E-Control) issued the Natural Gas Intervention Data Ordinance 2014 regarding the submission of relevant data for the preparation of interventions to secure the supply and in order to evaluate and forecast the supply situation for the consumers. The data submission obligations are split into: **(1) current and historical data**; and **(2) outlook data** and include data from operators of storage and production facilities, balance responsible parties and their members, natural gas traders, TSOs, large consumers, the market area manager, producers, storage undertakings, suppliers, the distribution area manager, Distribution System Operators (DSOs) and district heating undertakings.

The data submission obligations consider different timelines and include following data:

- physical imports and exports per cross-border interconnection point;
- injections from domestic production;
- injections and withdrawals from storage operators/undertakings per storage facility;
- the demand of large consumers per metering point;
- the demand of end consumer from Distribution System Operators (DSOs);
- overall working gas volumes and contracted storage capacities from storage operators/undertakings;
- storage volumes from natural gas traders (overall and stamped for the Austrian consumers);
- contracted production capacities from producers;
- demand of load metered end consumers/gas-fired power plants/large consumers and physical imports/exports from system operators;
- storage volumes movement including cross-border transports from storage operators/undertakings;
- overall domestic production from producers; and
- outlook data for the next and the upcoming four weeks.

Additional data submission obligations refer to the demand and potential of alternative fuels for district heating and contact details of all relevant data submission entities.

In case of severe supply curtailments and/or in times of crisis, the data submission obligations can be extended and requested in a shorter time period from the NRA.

*Example 2 – Description of the Italian Security of Supply monitoring approach*

The transport system operators, the storage and LNG operators, the electricity TSO, the network users, the gas suppliers of industrial consumers, the electricity power plants must submit every year to the gas TSO all the necessary information for the safe management of gas flows. The gas TSO, on the basis of the information received estimates:

- The gas demand forecast;
- The difference between maximum technical storage withdrawal capacity and the allocated capacity;
- Trend of daily temperatures;
- Actual data and forecasts on balancing.

<sup>16</sup> [Non-binding English version of the Energy Intervention Powers Act 2012.](#)



## **Roles and responsibilities**

### **Competent authority:**

1. Declares and communicates the activation of the early warning, alert level and emergency level. It summons the emergency Committee and based on the proposal of the TSO decides which measures to adopt.
2. Communicates to the EU Commission and to other Member States' competent authorities the level of crisis. It starts to cooperate with other Member States according to the measures foreseen in the regional preventive action plan and emergency plan.
3. Liaises with the EU Commission, the Gas Coordination Group to manage the emergency plan.

### **Gas TSO:**

1. Monitors the daily situation of the gas system in cooperation with the adjacent TSOs. It publishes all the information on the internet website.
2. Notifies to the competition authority the possible worsening of the situation and it proposes the activation of the early warning, alert and emergency.

### **Electricity TSO, storages' and LNGs operators:**

1. Provide the necessary information to monitor the gas and electricity systems.
2. The electricity TSO coordinates the national electricity sector to manage the emergency plan.

### **Network users:**

1. Provide the necessary information to monitor the security of the gas system.
2. Implement directly or indirectly all the possible market based measures to reduce their gas demand or to increase supply of gas.
3. In case of emergency they should use all the capacity allocated to them on the basis of their contracts.
4. Implement the emergency non-market based measures foreseen in the emergency plan.

### **Suppliers:**

1. Ensure gas supply to the protected customers according to Article 8 of EU Security of Supply Regulation 994/2010.

### **Industrial clients:**

1. Ensure the reduction of their gas consumption according to the provisions of the competent authority.

### **Electricity power plants:**

1. Provide to the electricity TSO all the information needed to estimate the gas demand for electricity production.
2. Make available all the other power plants producing electricity with other fuels than gas.
3. Maintain stocks of other fuels than gas to produce electricity.
4. Follow the instruction of the electricity TSO.

CEER promotes the dissemination of information on national crisis levels as well as additional information about the supply situation and the findings of the European Network for Gas Transmission System Operator's (ENTSOG's) early warning system among the



members of Gas Coordination Group (a group established by the European Commission under Commission decision of 11 August 2011 to help coordinate security of supply measures amongst EU countries). TSOs and NRAs are best placed to collect and analyse market data, which shall be made available for discussion and coordination to the Gas Coordination Group.

Given national regulatory authorities' knowledge and experience of the markets, CEER calls the European Commission in revising the Gas Security of Supply Regulation to provide for an explicit role for NRAs to be involved in security of supply issues, and in particular for NRAs to be invited to be permanent members of the Gas Coordination Group.





## 5 Conclusions

CEER's policy recommendations:

1. **Full implementation of the 3<sup>rd</sup> Package** will deliver well-functioning spot and forward markets and should be considered as the primary objective for any EU Security of Supply strategy.
2. Rapid implementation of the **Network Code on Gas Balancing of Transmission Networks**: this network code puts the onus on suppliers to contract sufficient volumes of gas for their customers. As long as the network is in balance, there is sufficient gas to satisfy consumer needs. This market framework could be the basis for better reflecting security of supply requirements via imbalance fees.
3. Promote **demand side measures** for large industrial customers, e.g. voluntary demand reduction interruptible contracts or fuel switching.
4. Establish a transparent and well-articulated borderline between **prevention** (market-based security of supply) and **mitigation** (state intervention via emergency plans) phases in order to ensure the required level of security of supply at lowest cost.
5. CEER supports **mandatory regional plans**, which could be complementary to the national plans (risk assessment, preventive action plan, emergency plan); the regional plans should be available at least in English. The review period should be prolonged (currently 2 years).
6. Introduction of **Security of Supply Mediators**: Where a region cannot reach consensus on the content of a regional plan, the European Commission could help by appointing a Security of Supply Mediator.
7. **Explicit role for NRAs** in security of supply provisions, in case the NRA is not the competent authority.
8. Where **interventions** are introduced, the impact on the market should be understood and minimised.
9. Potential **reverse flow** interconnections, as well as existing exemptions, shall be regularly examined through a rigorous and transparent market test followed by economic evaluation and stakeholder inputs along the affected corridor have to be taken into account.
10. **Intergovernmental solidarity principles** should be ready to use in all Member States. They should be clear, agreed upfront and transparent to the market.
11. **Supply Standards**: Clear preference for “obligation of results” over “obligation of efforts” when it comes to fulfilling the standards. In certain circumstances “obligation of efforts” may ensure that market players have the means to procure flows as long as possible.
12. **Protected customers** should be defined in a clear and transparent way at EU level, since this definition is part of solidarity between Member States. The definition should comprise those customers who are not in the position to negotiate their level of security of supply themselves (usually households).
13. **Shut-off plans** should be coordinated regionally. The national shut-off plan must explicitly consider the treatment of cross-border exit flows compared to flows to national consumers. In case of an emergency, a Member State may not arbitrarily decide to reduce exit flows at the border in order to supply domestic consumers. If the



situation requires the curtailment of firm contracts, a protected customer in one Member State should be treated equally by the other Member State in case of an emergency.

14. Keep current types of **crisis levels**: early warning level, alert level and emergency level. CEER considers that the current definitions already provide some guiding principles when a particular level is to be declared.
15. Introduce clear **triggers for the different crisis levels**:
  - a. Trigger for the early warning level: number of physical balancing actions undertaken by TSO is much higher than normal; buying gas is proving to be more difficult.
  - b. Trigger for the alert level: TSO is no longer able to keep system in balance.
  - c. Trigger for emergency level: the TSO is no longer able to keep the system within the ranges of the system.
16. **Monitoring and forecasting of the supply situation**: Mandatory data submission rules could be added to the Security of Supply regulation to ensure that the supply situation can be assessed regularly and in emergency cases.

The European Energy Regulators are looking forward to the European Commission's proposal on the revision of Regulation 994/2010. Within CEER, we will continue to follow the revision closely and provide advice and input whenever necessary.



## **Annex 1 – 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 33 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 task forces, 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 Task Force of CEER's GWG Working Group.

CEER wishes to thank in particular the following regulatory experts for their work in preparing this report: Chris Cuijpers, Ronald Farmer and Karoline Entacher.

More information at [www.ceer.eu](http://www.ceer.eu).



## Annex 2 – List of abbreviations

Term	Definition
CBA	Cost Benefit Analysis
CEER	Council of European Energy Regulators
DSO	Distribution System Operator
IPs	Interconnection Points
LNG	Liquefied Natural Gas
NRAs	National Regulatory Authorities
PAP	Preventive Action Plans
PCI	Project of Common Interest
RA	Risk Assessments
SoS	Security of Supply (Gas)
TSO	Transmission System Operator
VTP	Virtual Trading Point