

**Bruegel Policy Contribution**

# **Rethinking the Security of the European Union's Gas Supply**

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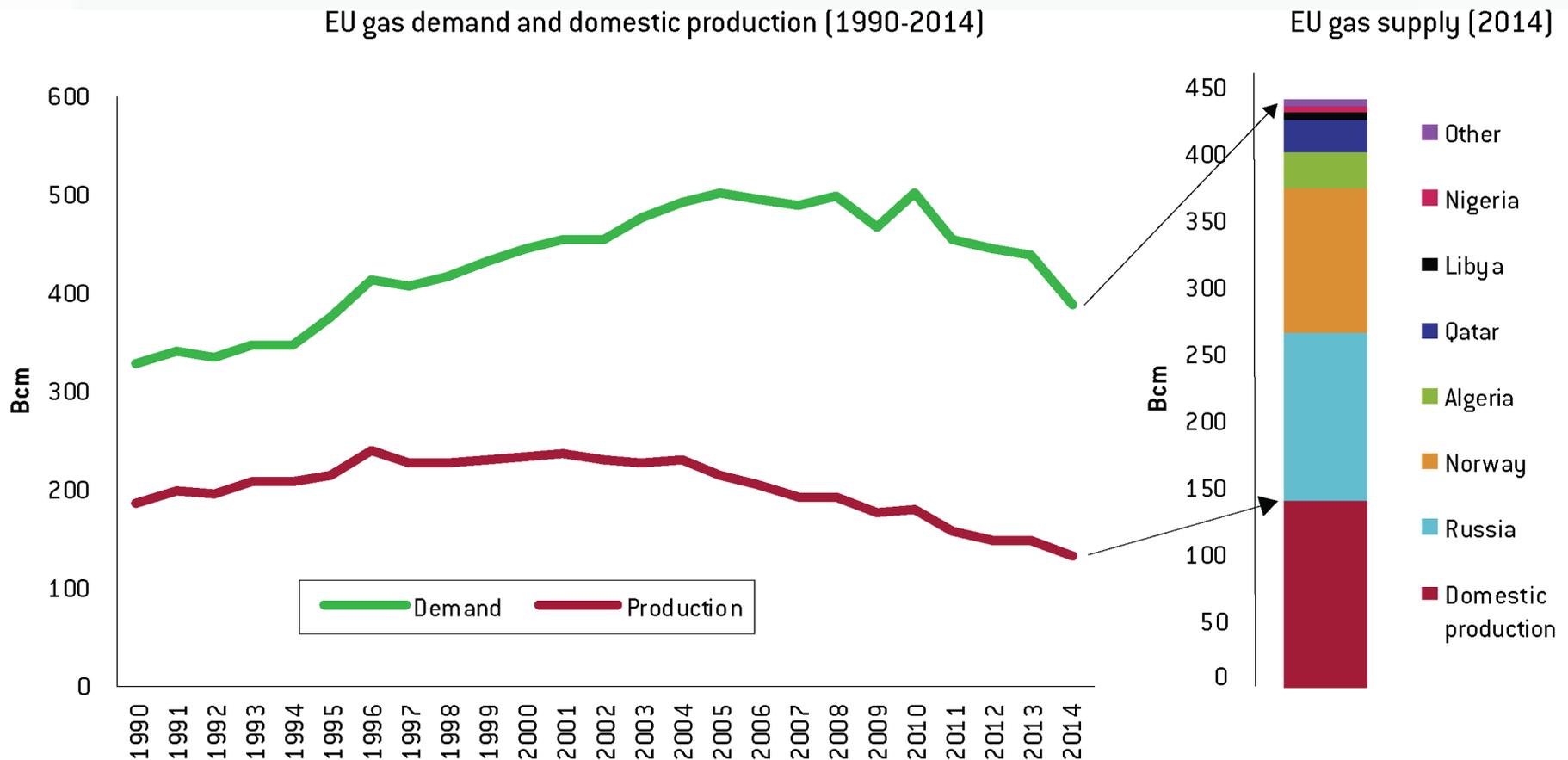
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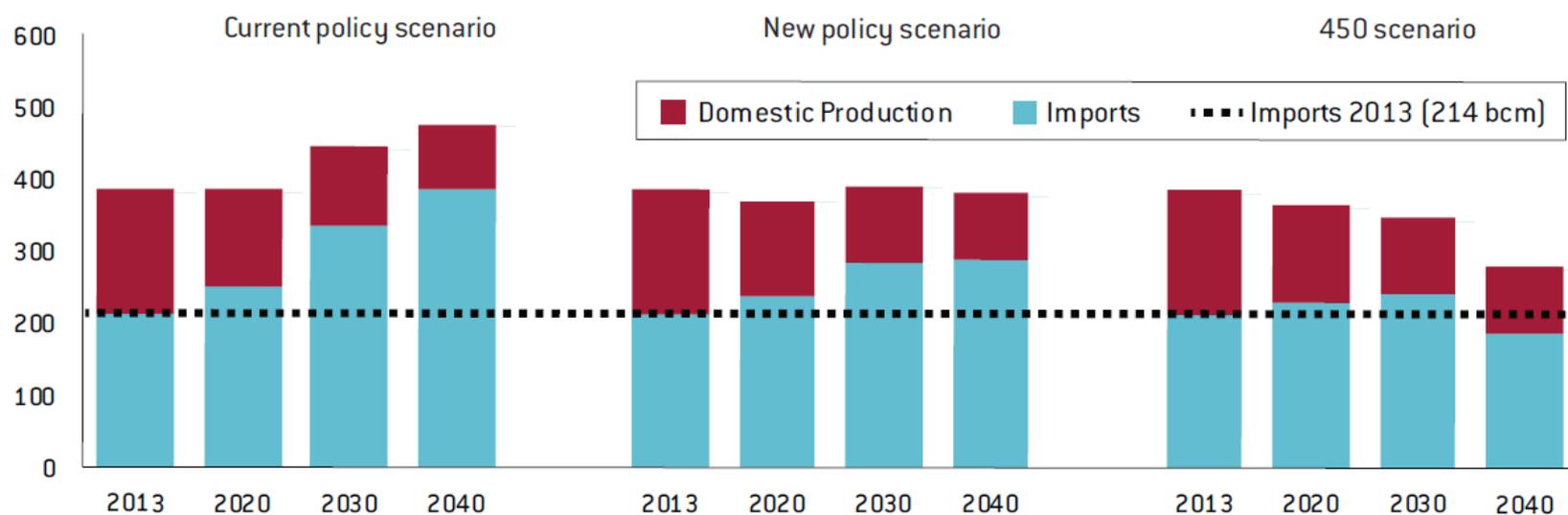
# The relevance of the security of the EU's gas supply issue

- Concerns about gas SoS underpinned inception/evolution of the **Energy Union**
- **High priority** given to gas as:
- It covers  $\frac{1}{4}$  of EU mix -  $\frac{1}{3}$  imported from Russia - It is infrastructure-dependent (vs. oil/coal)



# The security of the EU's gas supply: just all about Russia?

- Russia key driver for EU policy in the area (2006, 2009 gas crises and 2014 Ukraine crisis)
- Gas SoS: traditionally an high priority for Central and Eastern EU Member States
- But gas **SoS much wider issue** (potentially involving all supplies from all suppliers):
  - Geopolitically volatile neighborhood (not just Russia but also Algeria, Libya...)
  - Commercial uncertainties (Norway production outlook, LNG market development...)
- **SoS: a structural issue** that will last for decades to come:



# A look at the utilization rate of the EU gas import infrastructure

## Pipelines (bcm/y)

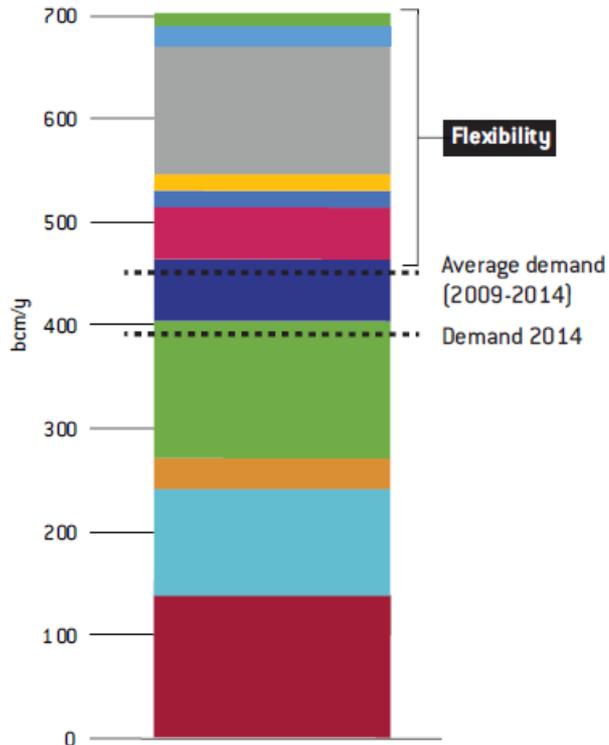
From	Capacity	Imports in 2014	Utilisation rate
Russia	230*	119	51%
Norway	127	101.1	79%
Algeria	54	19.5	36%
Libya	11	6	54%
<b>TOTAL</b>	<b>422</b>	<b>245.6</b>	<b>58%</b>

## LNG (bcm/y)

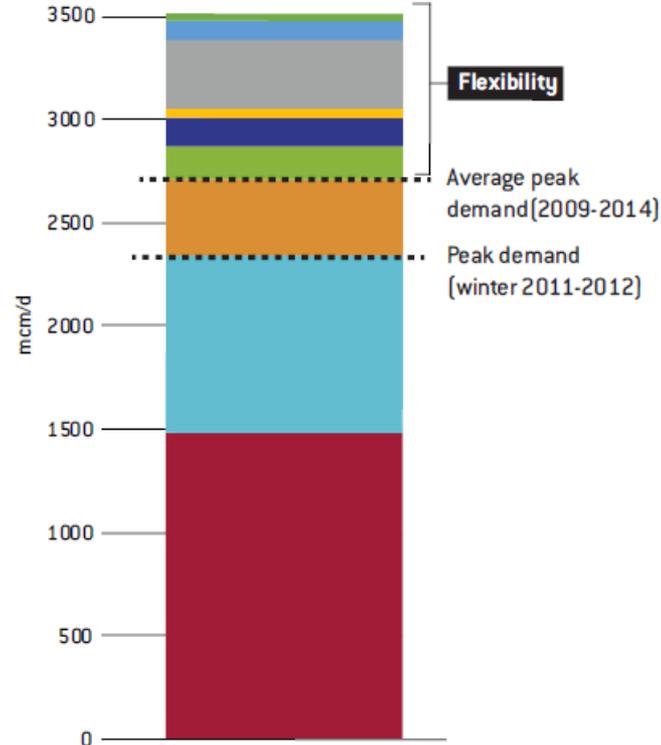
Country	Capacity	Imports in 2014 (Net of re-exports)	Utilisation rate
Spain	60.2	17.6	29%
United Kingdom	50.7	18.5	36%
France	25.3	10.1	39%
Italy	15.3	7.2	47%
Netherlands	12	0.9	7%
Belgium	9	2.1	23%
Portugal	5.5	2.1	38%
Greece	5.2	0.8	15%
Lithuania	4	n.a.	n.a.
Sweden	0.3	n.a.	n.a.
<b>TOTAL</b>	<b>183.5</b>	<b>59.3</b>	<b>32%</b>

# Estimating the margin of flexibility of the EU gas system

Yearly view



Peak day view



- Domestic production margin
- Pipeline import margin
- LNG import margin
- Interruptible clients
- Storage
- Fuel switching potential
- LNG import
- Domestic production
- Pipeline import from North Africa
- Pipeline import from Norway
- Pipeline import from Russia

- Declared total maximum technical withdrawal
- Peak-day pipeline import
- Domestic production
- LNG import
- Fuel switching potential
- Interruptible clients
- LNG import margin
- Peak-pipeline import margin
- Domestic production margin

At aggregate level the EU does have a considerable margin of flexibility

This margin could even accommodate the loss of the largest supplier

Due to limited interconnections between EU sub-regions this margin still theoretical. A well interconnected EU market key prerequisite for robust SoS strategy

# How to translate the (theoretical) margin of flexibility into reality

- **Current approaches not sufficient:**

- 1. *Market approach*

- Market tends to go for the cheapest supply without considering SoS issues

- 2. *National administrative approach*

- Risk of building infrastructure **without coordination** with others member states

- Risk of creating **unstable investment environment** for private investors

- Governments find difficult to consider systems and **complex trade offs**

- **Need for a new EU-wide approach:**

- **EU role key** to: risk-pooling, economies of scale, stronger internal market, solidarity

- Enhanced planning of **EU infrastructure + new EU Market for Gas Security Margin**

# Introducing the EU Market for Gas Security Margin

- i) To maintain a sufficient **level of flexibility** in the EU gas system;
- ii) To make it **available when needed**;
- iii) To **disincentivise excessive dependence** on individual supplier;

*we propose the creation of an*

**EU Market for Gas Security Margin**

# The concept in a nutshell

- Simply put, the new system would **extend the existing gas storage obligations** adopted by **some member states** for **SoS** reasons:
  - > **to the EU level**
  - > **to all gas system's flexibility options**

Country	Storage obligations	Security of supply responsibility
Bulgaria	Criteria are not disclosed; Current capacity equals 250 mcm	Bulgargaz
Czech Republic	At least the 20% of supply standards; Current capacity equals 225 mcm	Market parties
Denmark	Criteria are not disclosed; Storage capacity equals 215 mcm	Energinet.dk, with market based tools
France	Starting from 80% of the estimated seasonal storage requirements at the start of the heating season	Market parties
Hungary	Strategic storage and storage obligations by suppliers, totaling 24% of annual consumption	Market parties
Italy	Strategic storage of 4.6 bcm	Ministry sets the volume, storage companies dedicate to strategic storage reserves
Poland	Compulsory stocks of companies equivalent to at least 30 days of average daily imports of the gas brought in	Minister of the Economy and gas suppliers
Spain	Mandatory storage obligations for gas shippers, strategic stocks equivalent to 20 days of their firm sales in the previous natural year (4.78 bcm)	Spanish Government and gas suppliers

Who would be obliged to hold a security margin?

Each **importer**  
&  
each **domestic producer**

would be **legally required** to have  
a **certain amount of alternative supplies**

How large would the security margin be?

Size of the margin **to be determined at EU level** on the basis of an agreed **definition of emergency situation**

Example: 20% of contracted gas demand for 1 year

# What would count towards the security margin?

Up to each importer/domestic supplier to choose how to structure its portfolio to meet required margin

## **Wide range of options (more or less costly):**

- i) Interruptible contracts with industrial costumers
  - ii) Option contracts with LNG suppliers
  - iii) Option contracts with pipeline suppliers
- iv) Swap contracts with other countries' suppliers
  - v) Domestic production margin
  - vi) Fuel switching

**Pivotal suppliers not allowed to be part of security margin**

# How is the security margin activated?

**EU Council** declares emergency situation

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graph TD; A[EU Council declares emergency situation] --> B[Mandate to the ENTSO-G SoS Taskforce to coordinate infrastructure aspects]; A --> C[Mandate to the national competent authorities to ask suppliers to put the security margin into the market];
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Mandate to the **ENTSO-G SoS Taskforce** to coordinate infrastructure aspects

Mandate to the **national competent authorities** to ask suppliers to put the security margin into the market

## What will it cost?

- Cost of security margin to have **two components**:
  - i) Cost of **maintaining the flexibility options**;
  - ii) Cost of **reserving the corresponding transport capacity**
- Cost initially borne by **importers/producers** and **then passed through to final consumers**
- EU-MGSM would **reflect regional diversity**: due to different infrastructure endowment, less-interconnected regions will find more costly to ensure SoS

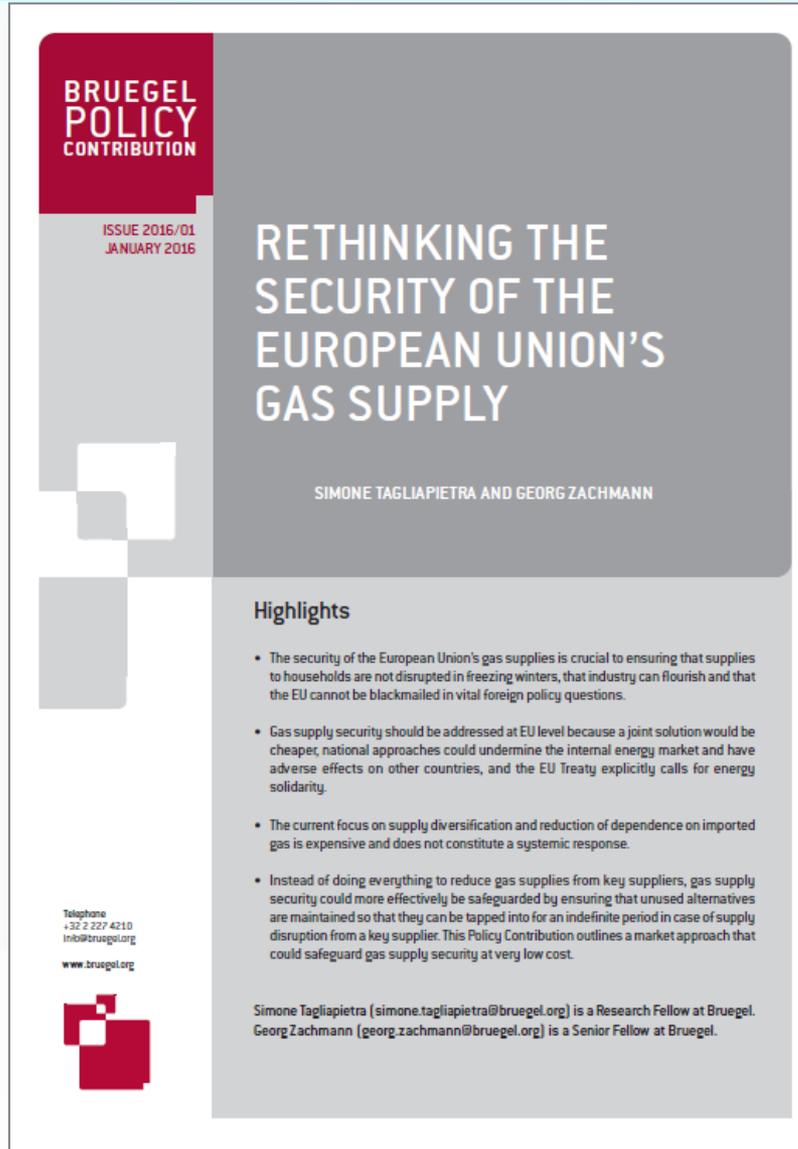
## How can it be ensured that the margin would be available where needed?

- Importers/producers will have to **book necessary transport capacity** to bring security margin to the delivery point
- **Incentive to TSOs to extend capacities and interconnections**
- This approach not sufficient: **additional measures** for development of an appropriate EU infrastructure **needed: ENTSO-G Ten Year Network Development Plan**

# The political acceptability of the EU-MGSM

- Economic considerations not sufficient to secure approval for EU-MGSM
- **Diversity** among member states (energy mix, SoS structure) a clear **obstacle**
- SoS: perceived as an Central and Eastern European issue
- But with **increasing import requirements, volatile neighborhood** and **unpredictable market conditions** a member state perceived today as secure might well become vulnerable in the future

For all the details...



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ISSUE 2016/01  
JANUARY 2016

# RETHINKING THE SECURITY OF THE EUROPEAN UNION'S GAS SUPPLY

SIMONE TAGLIAPIETRA AND GEORG ZACHMANN

## Highlights

- The security of the European Union's gas supplies is crucial to ensuring that supplies to households are not disrupted in freezing winters, that industry can flourish and that the EU cannot be blackmailed in vital foreign policy questions.
- Gas supply security should be addressed at EU level because a joint solution would be cheaper, national approaches could undermine the internal energy market and have adverse effects on other countries, and the EU Treaty explicitly calls for energy solidarity.
- The current focus on supply diversification and reduction of dependence on imported gas is expensive and does not constitute a systemic response.
- Instead of doing everything to reduce gas supplies from key suppliers, gas supply security could more effectively be safeguarded by ensuring that unused alternatives are maintained so that they can be tapped into for an indefinite period in case of supply disruption from a key supplier. This Policy Contribution outlines a market approach that could safeguard gas supply security at very low cost.

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**Thank you!**