Energy Security in SE Europe & the Role of LNG

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Basic information about natural gas in the European Union

- Natural gas covers around 25 % of gross inland EU energy consumption

Period 2015 - 2035	Domestic production of natural gas in the European Union in bcma	Import of natural gas in the European Union in bcma	Total consumption of natural gas in the European Union in bcma
	120 - 80	250 - 400	350 - 500

- Natural Gas consumption declined in the power generation sector of the EU during the last few years due to:

  - low carbon prices

  - coal to gas ratio favourable to coal

  - increase of renewables

- Percentage of natural gas consumption per main sectors:

  - 26 % in power generation

  - 23 % in industry

  - 42 % in residential sector and services

Basic information about LNG in the European Union

- LNG has been a key driver of supply diversification for the European Union while being the principal instrument of gas market globalization
- EU considered LNG as a key source of flexibility and the main alternative to historical supplies

Year	EU 28 lng imports in bcma Long term contracts	EU 28 lng imports in bcma Spot & short term contracts	Total in bcma
2011	72,7	17	89,7
2014	46,1	2,2	48,3
Period 2015 - 2035			60 - 150

	EU 28 share of world lng imports (%)	EU 28 lng share of EU 28 natural gas imports (%)
2011	28	
2012		19
2014	14	12

Technical capacity of liquefaction and gasification of natural gas globally and in the European Union

Year	Global capacity in bcma		Gasification capacity in European Union in bcma			
	Liquefaction	Gasification	In operation	Under construction	Planned	Expected in operation
2014	415	999				
2015			195[a]	23[b]	146[c]	
2019						213
2020	603					

Oct. 2016, globally traded quantities of lng, around 300 bcma

Year	Global utilization rate of gasification infrastructure (%)	Utilization rate of gasification infrastructure in European Union (%)
2010		53
2013		25
2014	33	19

a, 22 terminals (TPA, 15, Exempted, 6, Hybrid, 1) b, 5 terminals 24 terminals

- Logistics remain rather rigid upstream
- Europe might remain the global balancing market for LNG, importing what other region do not need. The resilience of the EU LNG market remains to be seen

Prices and Trade

Prices of gas per global zone in $US /mmbtu			
	Sept. 2014	Sept.2015	Apr. 2017
Japan (lng)	17,1	9,0	7,8
Europe	8,3	6,7	5,3
USA	3,9	2,6	3,1
Lng trade			
By 2013, spot and short term market accounted for 33 % of global trade, (106,7 bcma)			
Contractual structures become less rigid with four basic trends:			
1. Volume per contract has become smaller. Gradually more open market with a higher number of buyers and sellers			
2. The predominance of oil indexation as the pricing mechanism has been diminishing. By 2014, gas to gas competition sets the price for 53 % of European gas supplies (80 % in North West Europe) with oil indexation setting the price for 42 % of them			
3. The share of contracts with flexible destination has steadily increased			
4. Longer contracts when the terms are flexible			

Global Gas Security Review, I

- **Comfort over markets ability to adjust to potential demand or supply shocks,** due to

a. Low natural gas prices

b. Expectations for well supplied lng markets over medium term,

due to expansion of lng export capacity and weaker than expected global gas demand

- **Little volume flexibility in lng liquefaction infrastructure**

15 % of export capacity is offline

Remaining capacity operates as baseload (since 2011)

Business model underpinning lng production is rigid

Lack of short term upswing capability in lng production

Little volume flexibility

Global Gas Security Review, II

- **Destination flexibility is increasing thanks to the arrival of US volumes**

  Wide range

  of contractual structures and

  of producers' attitudes towards allowing gas supplies to redirected

Demand for flexible lng supplies can be met via one of three ways:

- Volumes that are uncontracted (Half from Qatar)
- Volumes that are contracted to a specific destination but redirected (Nigeria, Trinidad & Tobago, Equatorial Guinea, Qatar)
- Volumes open to multiple destination. (US lng will remarkably increase the destination flexibility; Roughly half of incremental lng production between 2016 and 2021 is to come from USA)

Global Gas Security Review, III

- **Flexible power systems are a key contributor to global gas security**

The flexibility of the power sector has proved to be a major relief valve for gas in periods of tight markets, shortages or demand shocks

After the Fukusima accident,

Europe with lower demand and flexibility of a well diversified power generation mix

freed up the incremental lng volumes needed by Japan

Fuel switching capabilities in Europe are decreasing substantially having an effect on the ability of gas markets to adjust to potential shocks.

Need for a balanced policy

Global Gas Security Review, IV

Due to

- declining fuel switching capabilities to deal with demand or supply shocks
- higher reliance on gas imports

- **Storage is a key component to a secure gas system in Europe**
- Optimizing the role of storage for security of gas supply
- European strategy on gas storage in the internal market

Need for appropriate incentives for gas storage operators to overcome the low spread between summer and winter gas prices

Working Gas Volume
of Natural Gas Underground Gas Storage
in the region around Greece, in bcm (Apr. 2016)

Country	In Operation	Under Construction	Planned
Bulgaria	0,6		2,2
Romania	3,1	0,1	1,2
Albania			1,3
Serbia	0,5	0,4	
Croatia	0,5		0,1
Italy	17,8	2,2	5,7
Turkey	2,6	0,6	3,0
Greece			0,4
EU28	112	4,1	22,8
In EU28, in 2014, strategic storage was 5,8 bcm against total storage of 98,2 bcm			
In EU28, utilization rate relatively low: gas in storage from 20,9 % to 84,3 % in 2013, from 44,8 % to 94,3 % in 2014 against working gas volume			
In EU28, in 2014, total storage capacity of lng terminals was 4,9 bcm with low utilization rate of 55, 1 % (2,7 bcm)			

EU lng and storage strategy, Feb. 2016
Basic elements, I

- **Optimizing the role of storage for security of gas supply**

- Shift from national to regional approach when designing and applying security of gas supply measures

- Solidarity among member states to ensure the supply of households and essential social services under crisis

- Strategic reserves and storage obligations

- Regional risk assessments / Regional preventive action plans / Regional emergency plans

- Ensure all market participants in member states have access to sufficient storage on a regional basis

EU lng and storage strategy, Feb. 2016
Basic elements, II

- **European strategy on gas storage in the internal market**

- Transmission tariffs to and from storage should reflect cost, as well as to ensure that they work as one of the competing flexibility instruments
- Development and provision by operators of new services, freely tradable on secondary markets and across borders, which do not discriminate among storage users
- Ensure competition among storage operators
- Better connected regional markets
- Avoid congestion problems while allocating storage and transmission capacity at interconnection points of member states and regions gas systems
- Facilitate increased use of storage capacity for biogas

EU lng and storage strategy, Feb. 2016
Basic elements, III

- European gas system **flexible** and able to respond to fluctuations in supply, as well as resilient to disruptions
- **Care to avoid stranded assets** in fossil fuel infrastructure including lng or gas infrastructure, especially in a context of possible declining gas demand
- **Things to be done by EU**:
  a. necessary infrastructure is in place
  b. complete the EU internal gas market so that it sends the right price signals
  c. EU cooperation with international partners to promote free, liquid and transparent global lng markets
- **Lng in transport** replacing:
  a. marine fuels in shipping
  b. diesel in heavy duty vehicles (e.g. lorries)
- **Small scale lng** in heat and power
- **Cross-border availability of stored gas** between member states has to be enhanced

EU lng and storage strategy, Feb. 2016
Basic elements, IV

- **Summary of views of public consultation on LNG in the European Union, I**
- Limited access to LNG in Central and South – East Europe, especially due to lack of interconnectivity, market depth, and access to liquid hubs. *The respective markets might struggle attracting cargoes when they need them most, especially if they competing with more liquid markets*
- Global liquefaction capacity is approximately half of regasification
- Europe described as a market of last resort for LNG
- Where new (LNG or other) infrastructure is needed, clear market interest should be demonstrated and respective investments be subject to a cost benefit analysis to limit the risk of stranded costs.
- Gas quality
- Tariffs regimes to reflect costs
- Access to sufficient or affordable storage capacity
- Storage issues

EU lng and storage strategy, Feb. 2016
Basic elements, IV

- **Summary of views of public consultation on LNG in the European Union, II**
- Transparency, in particular as regards “use it or lose it” procedures to prevent abuse of primary capacity holder status and allow secondary markets to function effectively. Need for standardization of such procedures all over the EU terminals.
- Availability of more innovative / flexible products at terminals (e.g. separate storage services, etc.) and a supportive regulatory framework
- Better implementation of
  a. 3rd Energy Package & associated network codes
  b. Gas Security of Supply Regulation
  c. TEN – E Regulation

Transparency Issues

- **Access Rules to LNG Terminals**

  - The status and regulation of LNG terminals may vary depending on whether they are considered as either essential infrastructure or competitive facilities

  - Co-existence of the two systems on the same LNG terminal should be examined by regulators with care

- **Access to Information**

  - Transparency on access to services and respective costs is crucial to improve market development and European Security of Supply

  - Publication of a standard level of information by LSOs on their websites by using specific Transparency Templates

Thank you
for your attention

Contact information

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