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The role of LNG role in the security of supply context

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Fostering energy markets, empowering **consumers**.

The role of LNG in security of supply

- **LNG is a strong asset in terms of security of supply as it offers access to diversified sources:**
  - 17 countries exporting LNG at the end of 2013
  - Key exporters for Europe are Qatar, Algeria, Nigeria and Trinidad

- **The EU has 19 regasification terminals and their current rate of utilization is low (20% on average in 2013)**
  - Total regasification capacity of 186 bcm in 2013
  - Total LNG deliveries in 2013 of around 49 bcm

- **What could be the role of LNG imports in a worst-case scenario as regards as gas deliveries to the EU?**

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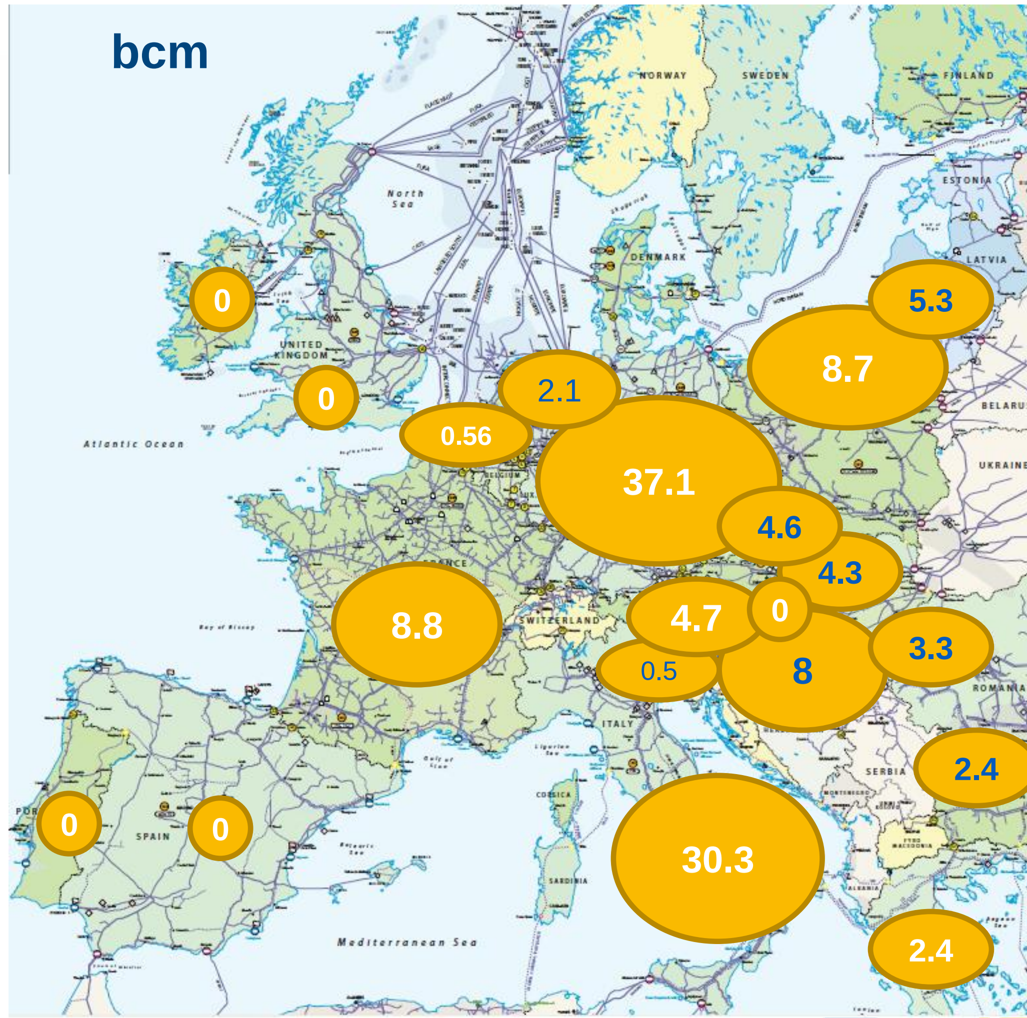
Russian gas imports in 2013

✓ The Russian gas imports in 2013 were aprox. 130-140 bcm.



Gas imports from Russia

Source: NRAs and EUROGAS (data in blue: 2012 Russian gas imports)

Regasification capacity available in Europe vs. Russian gas imports

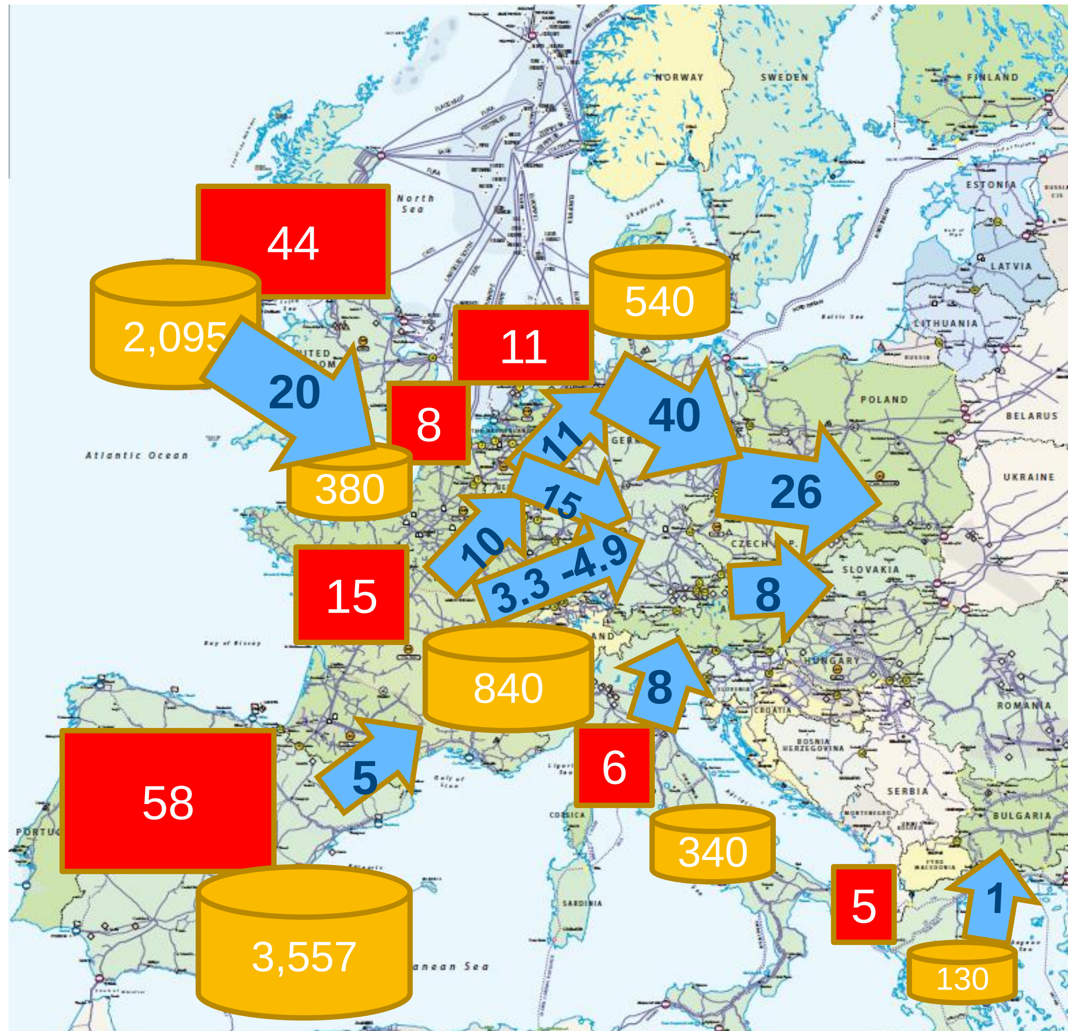
Year 2013

- ✓ 137 bcm of regasification capacity in Europe were not used in 2013 (73% technical capacity)

Regasification capacity not used in 2013 (bcm)

Technical transmission capacity at the Ips (bcm)
To be considered with caution; in a real crisis situation this capacity would be reduced Requirements of odorisation harmonization not considered as an obstacle.

LNG storage capacity (1,000 m³ GNL)



Transmission capacity to move gas to Eastern Europe

- **Theoretically, the EU LNG terminals could receive 137 bcm of additional LNG in 2014 (on top of the 49 bcm delivered in 2013)**
- **Once substituted the Russian gas supplies to Western Europe, the potential flow of LNG eastward would be limited by constraints on the transmission network:**
  - EU system primarily designed to accommodate historical predominant flows from North to South and East to West;
  - Reverse flow capacities have substantially increased in the past years…
  - …but significant investments would be required to enable a major LNG 'counterflow' to Central and Eastern Europe.
- **Other limitations to the potential spread of LNG would appear in a crisis situation, taking into account**:
  - Scenarios of high demand;
  - Simultaneous maximization of all remaining import sources (excluding Russian gas) and of storage use.

Demand and supply worldwide - Liquefaction and regasification

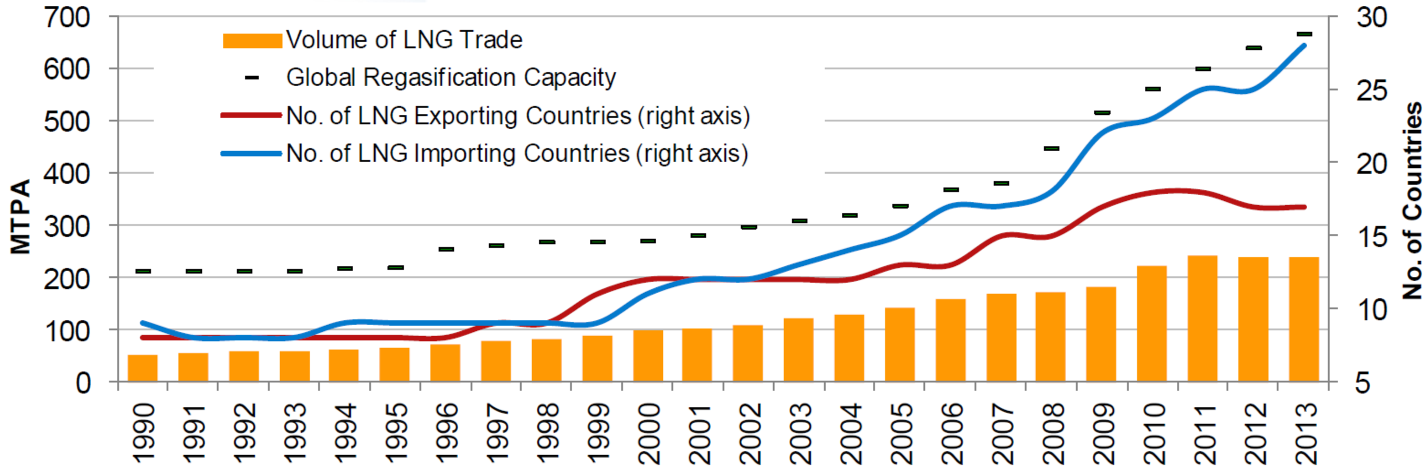
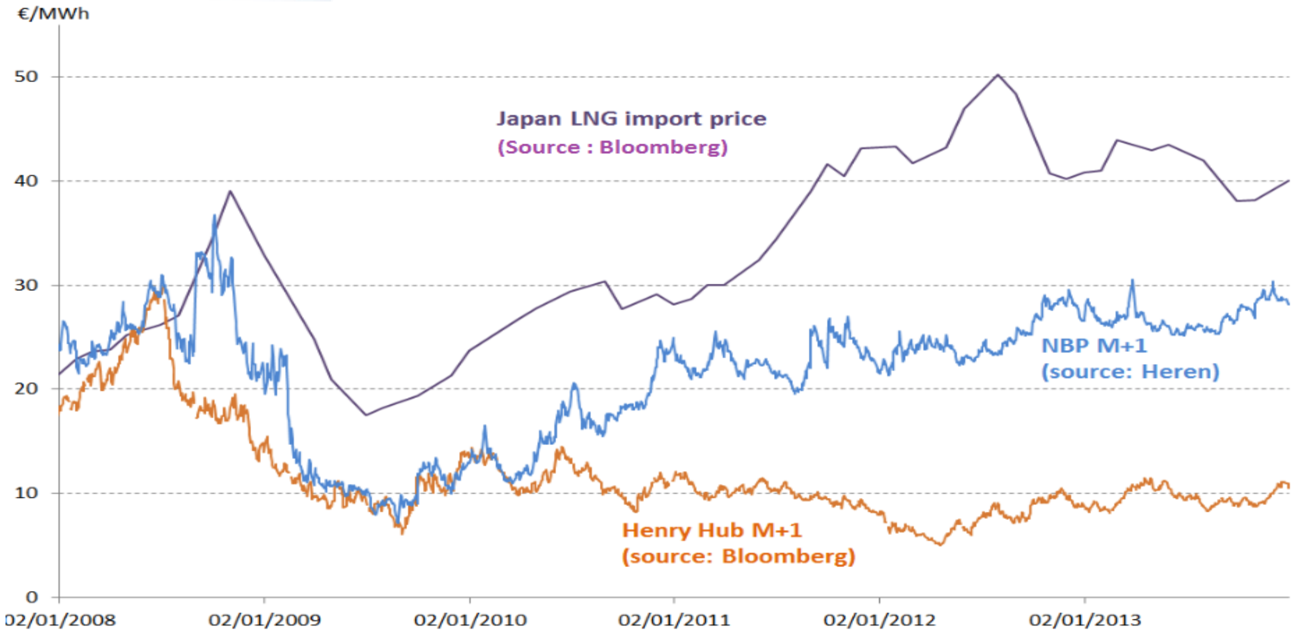


Figure 3.1: LNG Trade Volumes, 1990-2013

Source: IHS, IEA, IGU

- **Tight supply-demand dynamics in the global LNG market:**
  - 2,5 times more regasification capacity than liquefaction capacity in the world today
  - Surge in LNG demand, 29 import countries
- **Most analyses suggest that the LNG market will remain supply-constrained in the medium term:**
  - Few new liquefaction additions in the short run
  - Demand in Asia Pacific likely to remain high
  - Nevertheless, new opportunities might arise (new exporting countries: shale gas)

LNG prices



- **LNG flow is currently driven away from Europe to the higher-paying markets in Asia and Latin America**
- **In case of supply disruptions, LNG prices at European hubs would rise:**
  - No more reloadings from EU terminal (5.9 bcm in 2013)
  - No more diversions of cargoes originally intended for Europe, delivery of spot LNG
  - Diversion of cargoes originally intended for other regions
  - In the medium term new sources of gas will develop (shale gas, new countries)
  - Additional LNG regasification terminals in Eastern Europe could be considered

Price spread EU/Asia

CONCLUSIONS

- In case of **supply disruption**, increased **LNG** deliveries in BE, PT, ES, FR, GR, IT, NL and UK **will help covering Europe's needs** and free up pipe-gas for other parts of the EU
- **Transmission capacity** seems to be a **limiting factor**; the European network has not been designed to flow gas from LNG terminals along Europe
- Due to the limited potential for **eastward flows** on the EU transmission network, the loss of Eastern gas supplies cannot be compensated only with LNG imports
- In such worst-case scenario, **a combined response** would be the most efficient (storage use, increased imports from all alternative sources, increased domestic production…)
- Given the tightness of the global LNG market, the return of LNG to Europe would imply **significant price increases** at European hubs

Thank you for your attention!

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