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US LNG in Europe: Opportunities, Strategies, Challenges

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US LNG

- **Credible threat** to Russia's long-term dominance in Europe
  - Threat, i.e. does not actually need to flow to Europe to perform its role
  - US LNG plants situated to best serve markets in Atlantic Basis - Europe within 2 weeks sailing time
    - Flexible, can respond quickly to price driving events (in half time required to reach East Asia)
    - Perform best in terms of seasonal arbitrage
  - Threat to Gazprom's dominance taken seriously:
    - NS1 +NS2
    - Turkish Stream
    - LNG: Yamal, prospectively Baltic LNG etc.

US LNG: the "sunk cost" logic

- Liquefaction considered a "sunk cost": the HH vs. TTF spread not enough to cover liquefaction, shipping, regasification costs but enough to make contribution toward fixed costs
  - HH spot price of \$3/MMBtu, liquefying \$3/MMBtu, shipping to Europe \$1/MMBtu, and regasifying \$0.50/MMBtu. The trader thus faces \$4.50/MMBtu in variable costs. If spot gas is trading for \$5.50/MMBtu at the landing point in Europe, this means the trader makes a margin of \$1/MMBtu on the transaction.
- Liquefaction fees are effectively unavoidable costs until take-or-pay committed capacity is utilized
  - To date US LNG producers committed to long-term deals with take-or-pay (TOP) obligations covering approx. 80% of outbound capacity
  - More than 70 BCM/yr subject to sunk cost logic = 1.5 X production of Netherlands in 2016

Does Credible Threat Work?

- Prices decrease due to new infrastructure projects aimed at increased competition (Hinchey, 2017)
  - More than 130 million Euros (USD 144 million) of Lithuania's savings on gas purchases in 2016 are directly attributable to its decreased reliance on Gazprom as its natural gas supplier.

- US but also other LNG suppliers: Qatar, Norway, or even Novatek (possibly)

- The role of displacement

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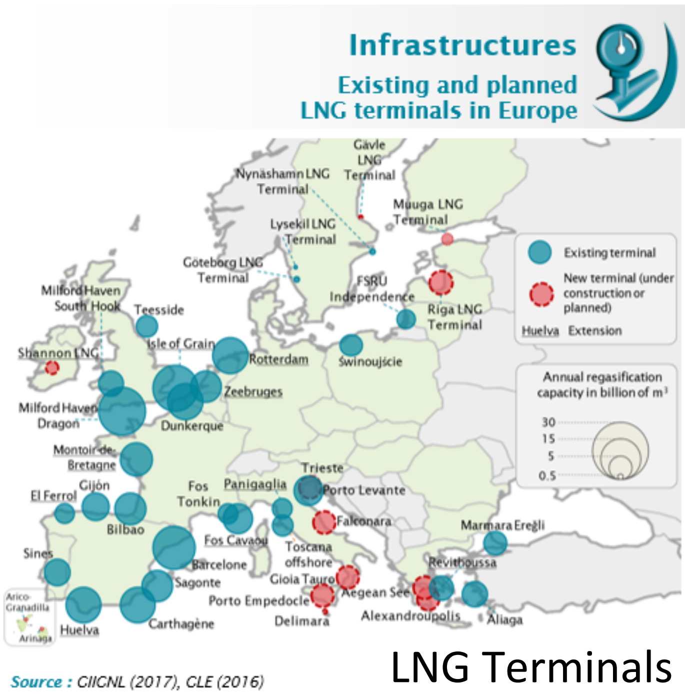
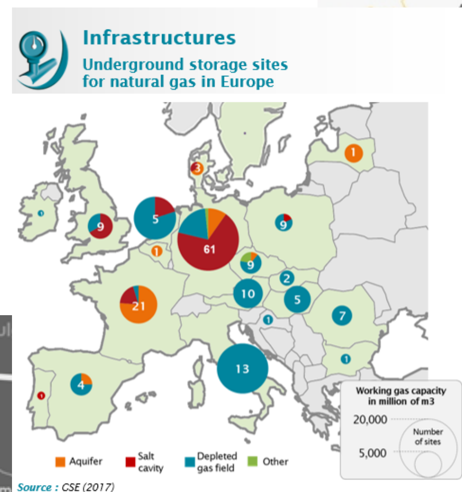


LNG Terminals

Baltic Pipe

Poland-Slovakia pipeline



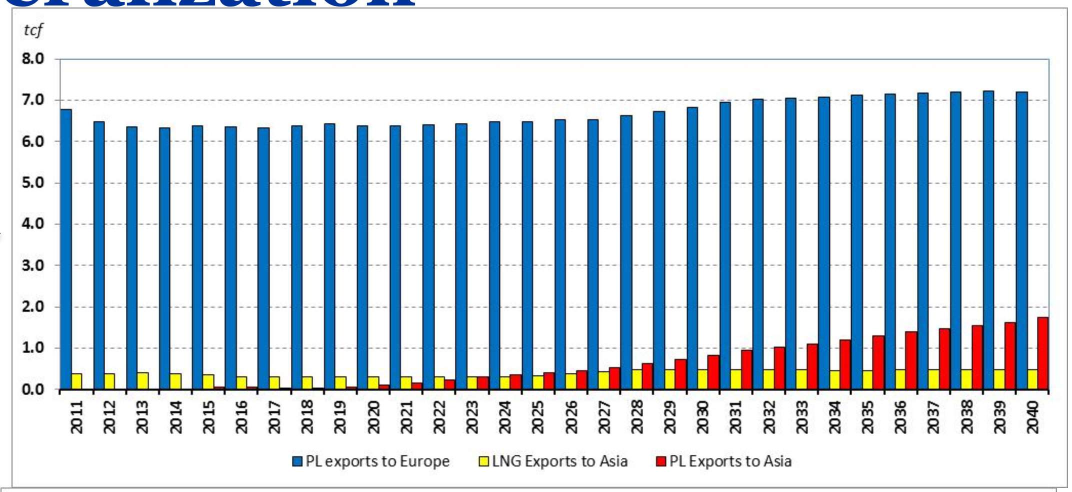
Storage

TANAP & TAP

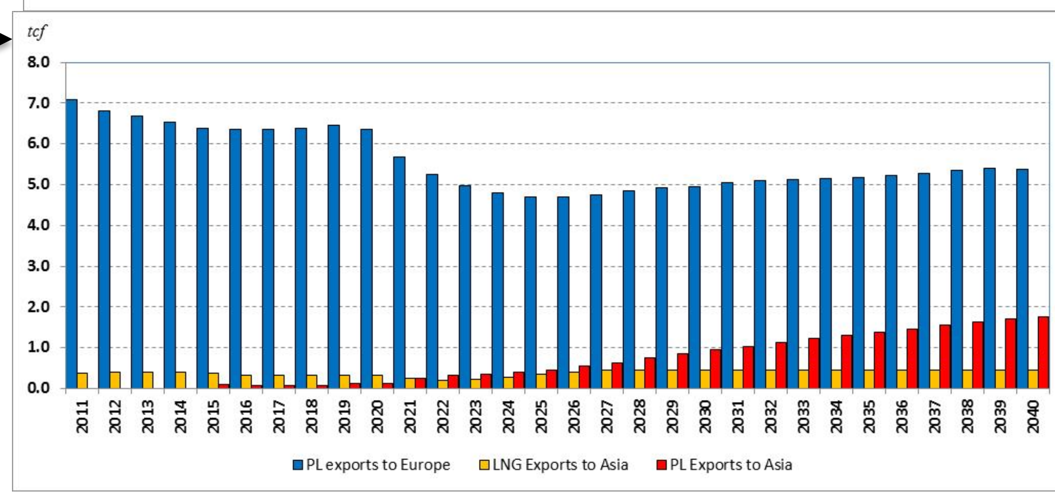
Natural Gas Hubs (EIA)

The Effects of Global Natural Markets "Liberalization"

- **Rice World Natural Gas Trade Model**
- **Status Quo**, Russia's position in Europe is unchallenged;



- "**Liberalized**" markets: Russia's position in Europe is affected dramatically.
  - This occurs because shale is more aggressively developed and LNG deliveries pick up due to positive supply responses outside of Europe as well.



- Hints at what the US and EU's policy should be…

Source: **Kenneth Medlock, Benposium, Baker Institute**
February 2014

Market Liberalization

Market liberalization & pricing transition can substantially facilitate the "credible threat"

- Competition
- Demand for wholesale trade
- Unbundling encourages use of **hubs** to manage risk portfolio, balance contracts, speculate→ increase liquidity)

Pricing transition → trading **hubs** + benchmark prices as alternative to oil indexing

- Key condition: supply surplus → lower spot prices, incumbents forced to renegotiating LTCs; <u>shift of bargaining power to buyers</u>

Market liberalization + pricing transition → trade + liquidity

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