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LNG TERMINALS TRENDS AND DEVELOPMENTS

Vincent Demoury, General Delegate



GIIGNL

88 Members in 26 countries – LNG importers and LNG terminal owners and operators

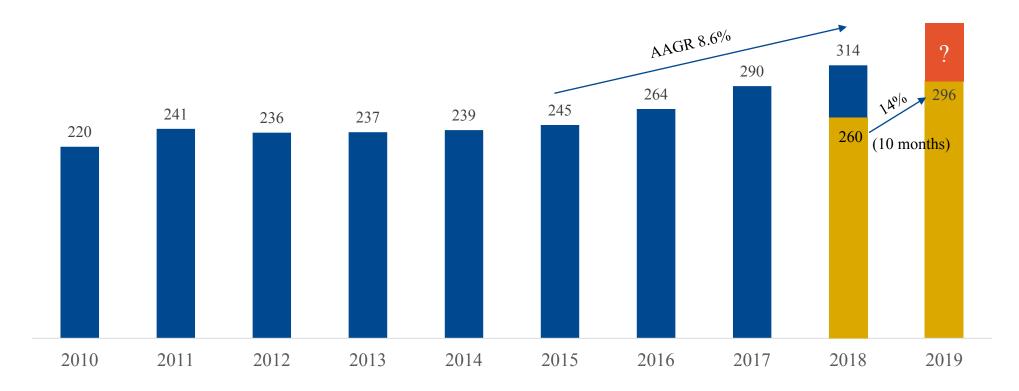
Promoting
cooperation
between leading
players in the
LNG industry



LNG IMPORT GROWTH ACCELERATING

LNG trade has grown consistently and more LNG flows into the world

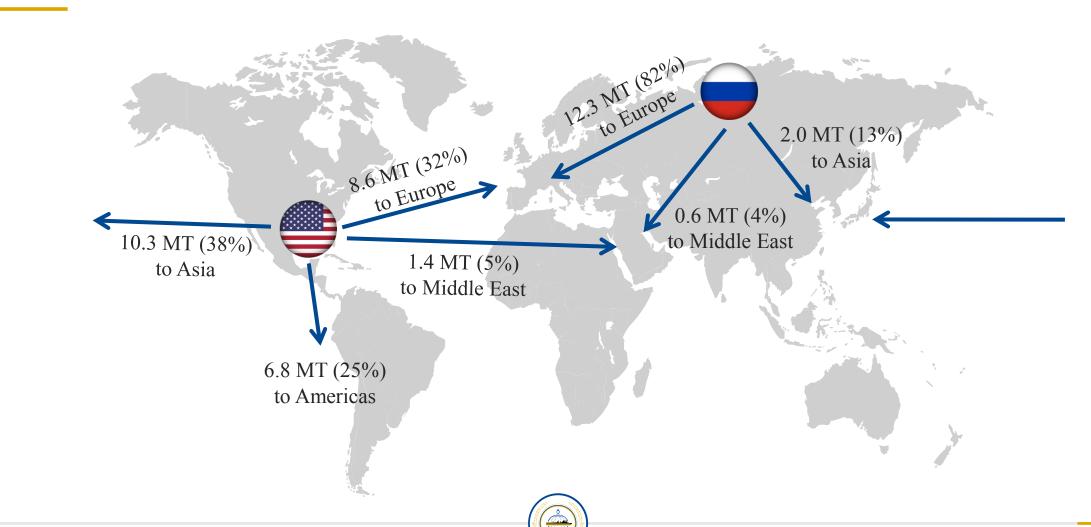
LNG imports 2010-2019 (MT)





US AND YAMAL ADD LIQUIDITY

US exported 27 MT of LNG to 30 countries, Yamal did 15 MT to 19 countries (first 10 months)



REGASIFICATION TERMINALS IN 2019

7 new terminals were commissioned, adding a combined 13 MTPA of new regasification capacity



Jaigarh FSRU (5.0 MTPA, H-Energy)

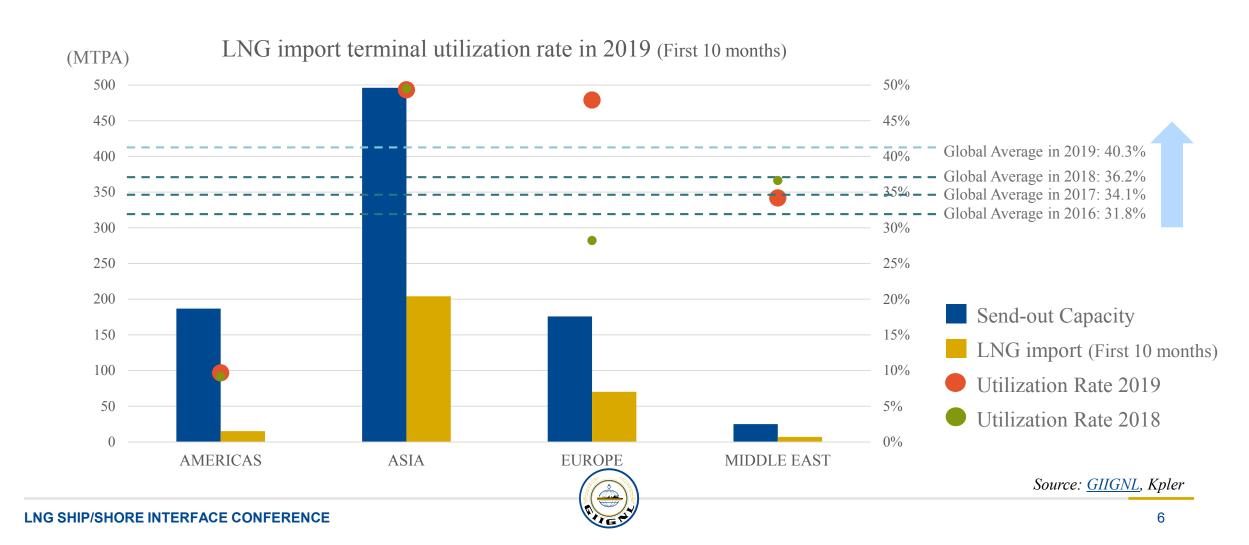
Regasification Capacity 881 MTPA

(vs. 868 MTPA in 2018)



EUROPEAN TERMINALS ARE BUSIER IN 2019

Asian countries such as China, India, Taiwan and Pakistan need more capacity



DIVERSIFYING NATURAL GAS SOURCES

But European dependence on Russian gas is remaining due to the increasing LNG imports from Yamal LNG



LNG TO PLAY KEY ROLE IN POWER

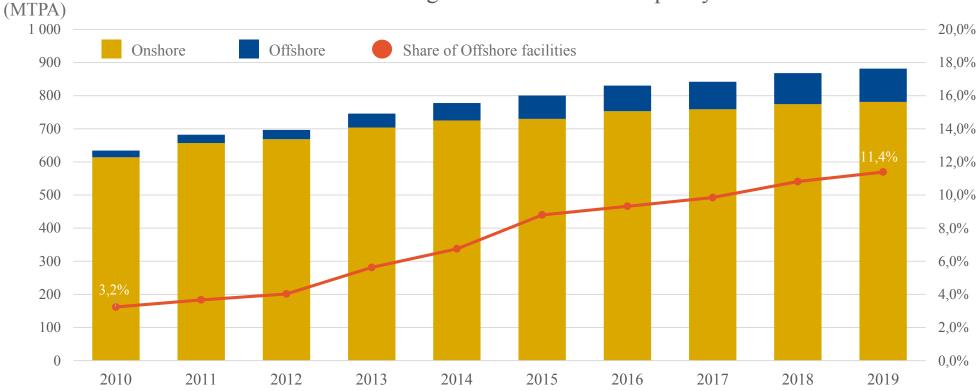
Financing and infrastructure development challenges remain



FSRU: FAST AND FLEXIBLE OPTION

Offshore facilities account for 46% of total send-out capacities newly added from 2015 to 2018

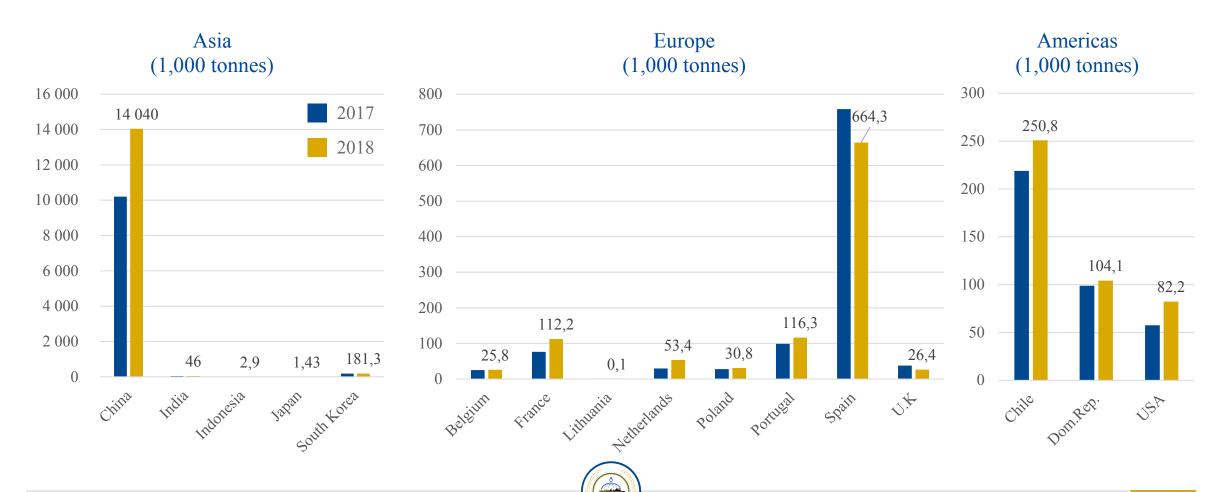
Cumulative regasification send-out capacity





EXPANDING ACCESS TO LNG VIA TRUCKS

LNG terminals will be a regional focal point for the clean energy but volumes remain marginal



NEW AREAS FOR LNG TERMINALS

Many terminals provide various LNG-related services and expanding their areas to new business

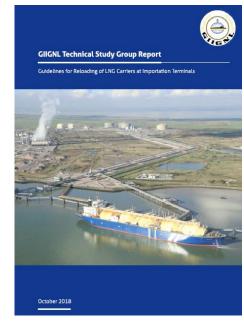
- In last 3 to 5 years, many European terminals have added various services such as LNG storage, Reloading, Transshipment, Truck loading, Cooling down in addition to their traditional services.
- Truck-to-Ship LNG bunkering operations take place in the ports of Belgium, France, Germany, Japan, Netherlands, South Korea, Spain, UK.



Truck-to-Ship LNG bunkering for *ECONURI* by KOGAS at Incheon port



Truck-to-Ship LNG bunkering for *Sakigake* by Tokyo Gas at Yokohama port



Guidelines for Reloading, GIIGNL

Source: KOGAS, Tokyo Gas

LATEST DEVELOPMENTS IN EUROPE

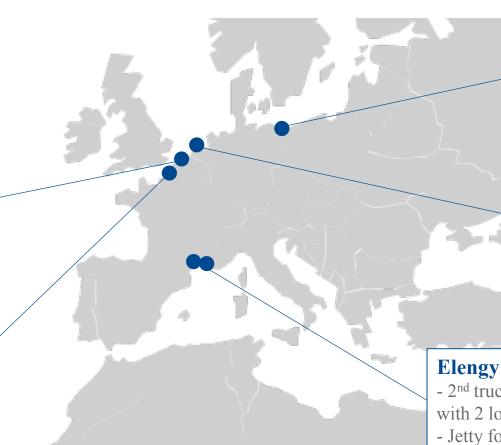
Operators continue upgrading their terminal for services such as truck loading, bunkering and transshipment

Fluxys

- Additional compressor and a 5th storage tank for transhipment
- Two truck loading stations in parallel in Zeebrugge
- Constructing an LNG bunkering pontoon for the Antwerp port

Dunkerque LNG

- Truck loading bay completed (3,000 trucks per year)
- Works to adapt the jetty for small vessels from 5,000 m³



Polskie LNG

- Expansion program inc. LNGto-rail transhipment installation and additional jetty for SS-LNG

Gate

- Truck-loading facility incorporating 3 loading bays
- Third Jetty for small vessels with a capacity from 1,000 m³
- ship loading flow rate increased from 2300 m3/hour to 4000 m³/hour
- 2nd truck loading bay in Fos Tonkin & new station with 2 loading bays at Fos Cavaou
- Jetty for small vessels from 5,000 m³ at Fos Cavaou



CONCLUSIONS

- Additional LNG import infrastructure still needed in many parts of the world
- LNG terminals will be a focal point for future energy systems by re-distributing LNG via small-scale vessels or LNG tanker trucks
- Terminal operators are expanding their businesses beyond their traditional role to LNG related services
- Decarbonizing strategies will be key for the sustainability of operations



