

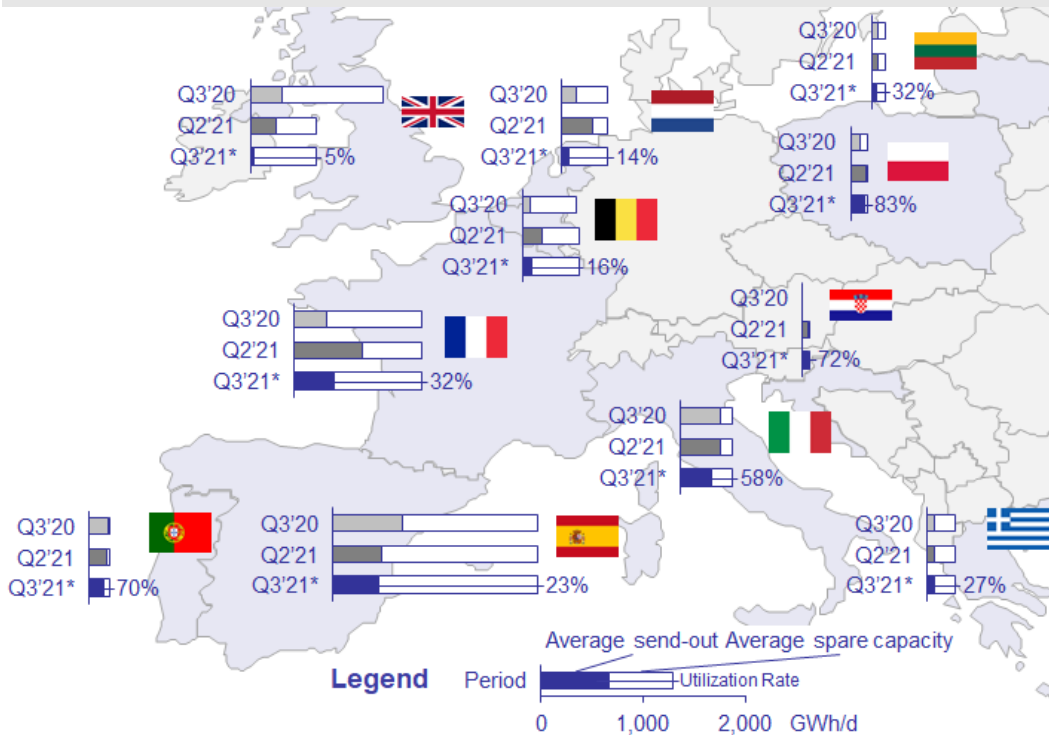
# LNG-MARKET-RADAR

20.08.2021

## KEY FACTS

- During the current third quarter, LNG import terminals in Northern Europe showing a low average utilization rate of 20 %, while the average utilization rate of the terminals in Southern Europe are significantly higher (38%).
- The LNG industry is also working on approaches to reduce greenhouse gas emissions of their product. Different approaches are being pursued. The currently most widely used approach is to offset the released GHG emissions resulting from combustion with CO<sub>2</sub> certificates.
- So far, 27 cargoes of carbon-neutral LNG have already been delivered. Most of these cargoes, like conventional loadings, were delivered to Asia.

## Average European Regasification Capacity Utilization



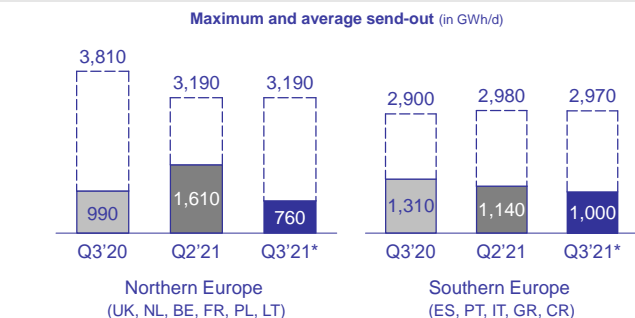
- Despite increasing gas prices in the current quarter (36 €/MWh TTF-Day Ahead in July vs. 25 €/MWh in Q2 [12,3 vs. 8,6 \$/MMBtu]), a reduction of the utilization rate at European LNG import terminals compared to the previous quarter occurred, like in the years before. The total utilization rate is now at a medium level of 29 % (Q2: 45 %)
- Except in Poland, terminals in Northern Europe show low utilization rates e.g. in UK(5 %), NL (14 %) and BE (16 %) low, while terminals in Southern Europe like in Croatia (72 %), Portugal (70 %) and Italy (58 %) are still on a high level.

Source: Gas LNG Europe (GLE), Team Consult Analysis

\*Data up to 02.08.2021

## Average send-out of European Regasification Facilities

- In Northern Europe, the utilization rate dropped by 50 % compared to Q2 and is now at a three-year low.
- In Southern Europe, the utilization rate only slightly decreased by approximately 10 % to 1,000 GWh/d, because LNG is more important in these countries and so the base load is higher, i.a. due to the proximity to Qatar.
- The average total send-out rate reached a three-year low in Q3. Important reasons are the even greater willingness to pay in Asia and the fact that LNG supply is inelastic when production capacity is fully utilized.



Changes of terminals:




07.20: „Zeebrugge“ increases send-out capacity (Northern Europe)

01.21: „Croatia“ starts operating (Southern Europe)

02.21: „South Hook“ stops reporting (Northern Europe)

Source: Gas LNG Europe (GLE), Team Consult Analysis

## Different approaches for low-carbon LNG

|           | GHG awareness rising   |   | Reduction/ avoidance of GHG-emissions  |   |   |
|-----------|--|---|--|---|---|
| Approach  | Transparency of GHG-emissions  | Offsetting of GHG-emissions ('carbon-neutral')  | Carbon Capture and Storage of process emissions (CCS)  | LNG to hydrogen (pre-combustion CCS)  | Bio-LNG or SNG based on renewables and Direct Air Capture   |
| Valuation | Allows buyers to offset their emissions independently and represents the first step of Carbon Management | (Currently) cheapest approach to offset emissions. Because emissions will still be released to the air, this approach should only be viewed as temporary solution | Reduction of emissions in production process. Direct emissions are not addressed, so buyers can not take credit (in Scope 1) of the made reduction | Conversion through steam reforming, located at regasification combined with CCS. More a long-term option, requires large-scale H <sub>2</sub> -infrastructure/ -usage | Carbon cycle, so no net emissions. Too complex and expensive for large-scale usage, likely interesting for niche applications |
| Supplier  |                         |    |   | Currently no supplier known, but infrastructure already sometimes considered (e.g. Port Rotterdam)  | Various small-scale Bio-LNG supplier worldwide  |

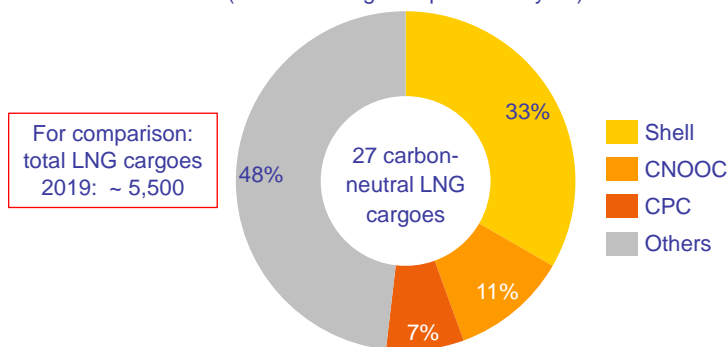
Source: BloombergNEF, Port of Rotterdam, Team Consult Analysis

\*SNG: Synthetic Natural Gas

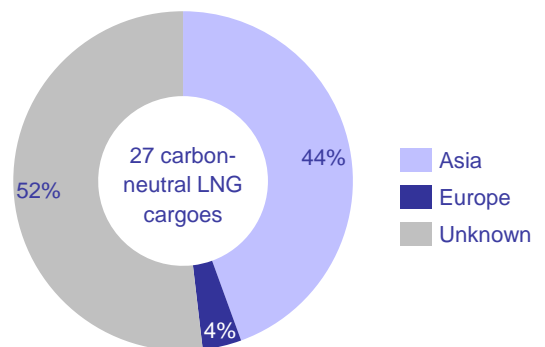
- LNG suppliers are searching for approaches to reduce their GHG footprint. Basic principle: the more climate-friendly an approach, the more expensive it is. The currently most widely used approach is offsetting GHG emissions.
- LNG to hydrogen is a long-term option for LNG suppliers, allowing the further use of existing LNG assets and the selling of a carbon-neutral product. Necessary requirements are the establishment of CCS value chains as well as the conversion of the downstream natural gas infrastructure and the application technologies to hydrogen.
- LNG from biomethane or from SNG combined with Direct Air Capture likely interesting for Small-scale-/niche applications

## Offset LNG cargoes by companies and countries of destination

Numbers of delivered LNG cargoes by supplier (total ever cargoes up to 7<sup>th</sup> May 21)



Target regions of carbon-neutral LNG cargoes



Country of destination known for 13 LNG cargoes

Source: ICIS research (Update: 07.05.21), Team Consult Analysis

- 16 LNG suppliers already delivered carbon-neutral LNG cargoes. One third of all carbon-neutral cargoes were delivered by Shell. Especially company-internal climate targets as well as an increasing global demand for carbon-neutral products come into play.
- For 13 LNG cargoes the country of destination is known. Over 90 % of these were delivered to Asia, only ca. 10 % to Europe. The rising attention of the population for air pollution, low costs for GHG offset certificates (< 10 €/ t CO<sub>2</sub>) as well as marketing aspects are the crucial reasons for this development.

### Imprint

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