

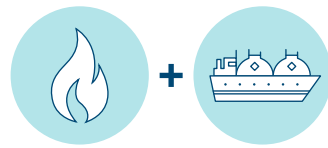
What you need to know about...

Importing Liquefied Natural Gas (LNG)

Energy Transitions Commission

What is LNG and where is the supply and demand?

What is LNG?



- LNG is natural gas, cooled to -160°C, shrinking its volume 600 times, which is easier and safer to store and ship.
- When LNG reaches its destination, it is turned back into a gas at regasification plants and used in gas-using sectors.

Where and why is LNG used?



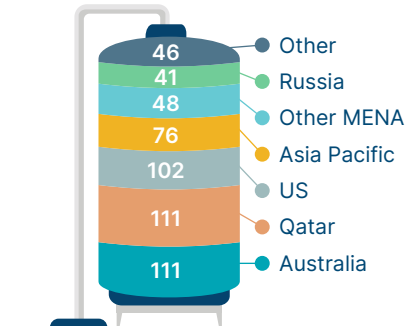
- Across Asia LNG is used as there is very limited local production combined with limited (or no) ability to use piped gas.



- Across Europe LNG has been used to diversify supply and access cheaper gas contracts.

Where is LNG produced?

Total LNG Exports, 2021 (Billion cubic metres, BCM)

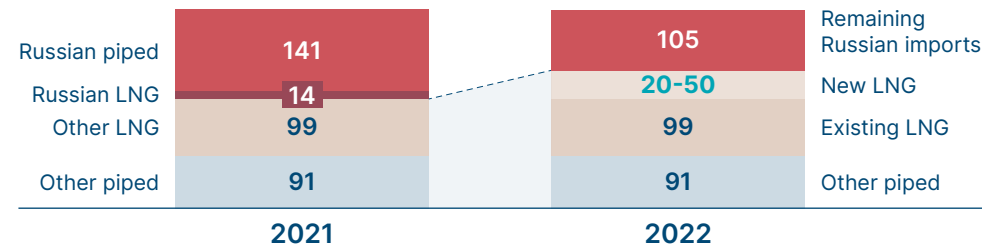


How much LNG does Europe use today and how much can LNG help this year?

Around 1/3 of EU's 2021 gas imports were LNG

LNG could displace up to 1/3 of Russian gas imports this year

EU gas imports (Billion cubic metres gas, BCM)



Estimates suggest 20-50 bcm of additional LNG could be imported this year within existing infrastructure

What limits the role of LNG in the near term?

Limits on global LNG supply

- Global exporters are running at high capacity and will need to plan for outages to deliver essential facility maintenance.
- Limited additional global LNG supply is projected to come online in 2022 - this is only likely to increase global market volumes by 8% (12 bcm).
- Limited LNG supply is likely to see increased international competition drive up prices, especially between Asia and Europe as it enters the 2022 heating season.

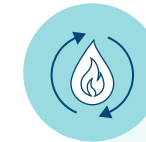
Limits on European LNG import infrastructure

- Europe is already at almost full utilisation of existing regasification facilities, limiting additional potential to ~20bcm.
- Beyond 20 bcm:
 - Spain has some spare capacity, but imports are limited by the size of the Spanish-French gas interconnector and ability to re-route European gas flows.
 - Scarce floating LNG regasification terminals could increase import levels, Germany has contracted one additional floating terminal which will import 7.5 bcm in 2022.

What would it take to import more LNG in the medium-term?



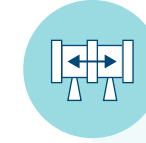
- Investment in new production, liquefaction and export facilities in regions such as the US, Qatar & Australia



- Investment in new European import infrastructure, including regasification facilities



- New long-term contracts signed, to incentivise undertaking of lengthy infrastructure projects



- Redirecting existing pipeline flows and building new pipe and storage facilities to change the European gas flow from East-to-West to West-to-East

How fast could this happen?

New supply facilities

3-7 years

- Historically new liquefaction projects start export of LNG in 3-4 years after decision to build.
- Growing complexity of LNG projects (e.g. distance to market) has increased this to 5 years on average.

New import infrastructure in Europe

2-5 years

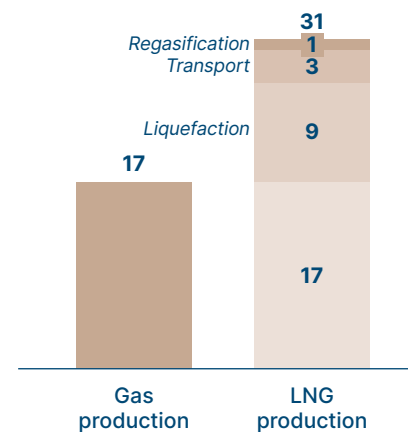
- With quick decision making, LNG regasification terminals can be built in 2-3 years.
- New floating LNG regasification vessels are usually built in 5 years.
- 6 of 33 floating vessels that exist globally could be in Europe by 2023. Port capacity and existing contracts limit further potential.

What are the risks of greater use of LNG and how to manage them?

Methane emissions

- Creating and transporting LNG is more methane intensive than piped gas.
- Methane is a potent green house gas.

Methane emissions per unit of gas produced (KtCH4/bcm)

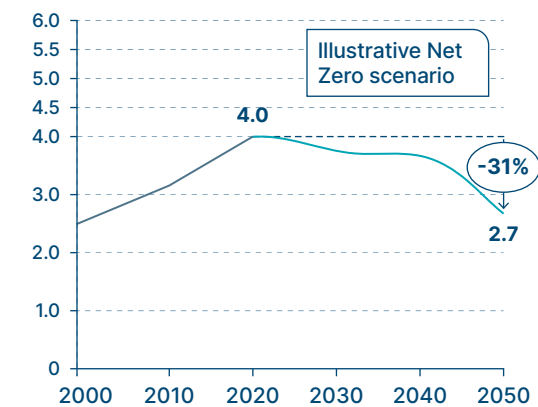


- Extra emissions must be prevented through investment into methane leakage reduction and increased certification of low emission LNG.

Lock-in to high-carbon infrastructure

- Long-term contracts required for new supply (i.e. 10-20 years).
- Risks lock-in to gas when global gas use declining in net-zero economy.

Natural gas consumption (000 bcm per year)

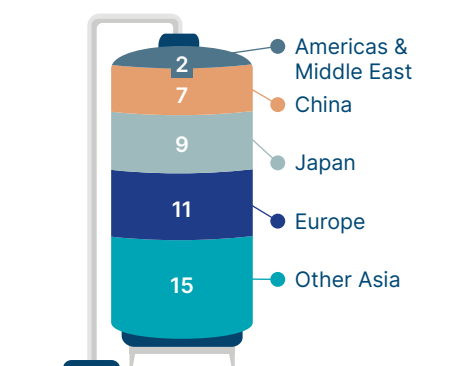


- Shorter contract amortisation and ensuring import facilities are hydrogen ready can mitigate lock-in.

Geopolitical tensions

- There is a risk that high demand from Europe could threaten access to gas in developing regions.

Global LNG imports (BCM, February 2022)



Developing regions should be supported with:

- Import diversification (e.g. local piped gas).
- Accelerating the energy transition away from fossil fuels including gas.