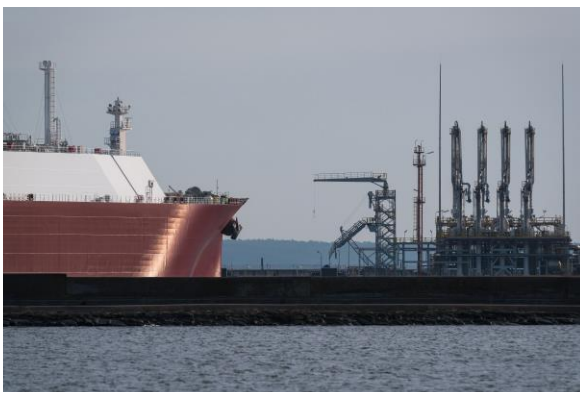
LNG - LOOKS LIKE THE USA IS BACK ON TOP

A Market Outlook on Liquid Natural Gas Production in the USA

The USA is on track to become the largest LNG exporter. Despite Australia taking the LNG crown from Qatar a couple of years ago, it looks like its reign will be short-lived. Considering the current high demand for LNG, there is only one country that can actually bring new projects and significant volumes to the market in a short enough time scale.



Finish What You Started

As part of the **Sabine Pass** expansion project, the sixth LNG train began producing its first LNG in November 2021. It was expected to reach full production of 5 million tonnes per annum (Mtpa) in the first quarter of 2022. This means that by 2022, Sabine Pass will reach a production capacity of 30 Mtpa. This will make Sabine Pass the largest LNG project in the US, and one of the largest production facilities in the world.

The newest LNG production facility, **Calcasieu Pass**, delivered its first cargo of LNG (Yiannis, 170 k cbm) to Dunkirk, France in early March. The second cargo went to South Hook, UK (Vivirt City LNG, 174 k cbm) and the third cargo went to Japan (Nohshu Maru 180 k cbm). Two more production trains are expected to come on stream this year, adding another 5 Mtpa, bringing total production to 7.5 Mtpa.

Once Calcasieu Pass is operational and producing at full capacity this year, it will bring US LNG production to 85.75 Mtpa. This is roughly the same overall nominal production volumes as Australia. However, not all LNG trains are operating at full capacity, which means that actual export volumes are lower than nameplate capacity.

What's Next?

After Calcasieu Pass, there is a hiatus in the construction and commissioning of US LNG projects. Here is what's on the horizon:

- The next new LNG production volume is scheduled to be **Golden Pass**, with a start date of mid-2024. The QatarEnergy and ExxonMobil JV has recently installed the cryogenic heat exchanger at the facility which will have a total capacity of 16 Mtpa once operational.
- The **Driftwood LNG** project has recently announced that construction of the new facility will begin, with Phase one, which will have an export capacity of 11 Mtpa. The project is scheduled for first LNG export in 2026. Additional phases of the project will mean that once fully built, the production facility will have 27.6 Mtpa capacity.
- Another project that has taken steps towards Final Investment Decision (FID) is **Magnolia LNG**, which has recently been granted an additional 0.8 Mtpa for exports. This new capacity has lifted

overall total exports to 8.8 Mtpa. The project is expected to receive FID in 2023, with first LNG exports around 4-5 years later.

— Another project on its way to FID is **Plaquemines LNG**. This will be constructed in two phases, with the first one producing 10 Mtpa of LNG from 18 modular liquefaction units. The second phase will have a similar capacity, resulting in 20 Mtpa, with four tanks and three jetties. FID should be taken soon, as the original production date was 2024, but has been postponed due to Covid.

— The **Rio Grande LNG** project has recently signed two long-term contracts with Guangdong Energy Group Natural Gas and the Chinese independent gas distributor ENN. Both contracts are for 20 years and 1.5 Mtpa. However, the owner of the project NextDecade has asked the US energy regulators for a two-year extension to construct the plant. They are seeking a start-date of 2028.

And There's More

In addition to the above projects, which are more advanced, there are other projects that may or may not reach FID. Projects such as:

— Lake Charles (16.5 Mtpa)

— Delfin (3.5 Mtpa)

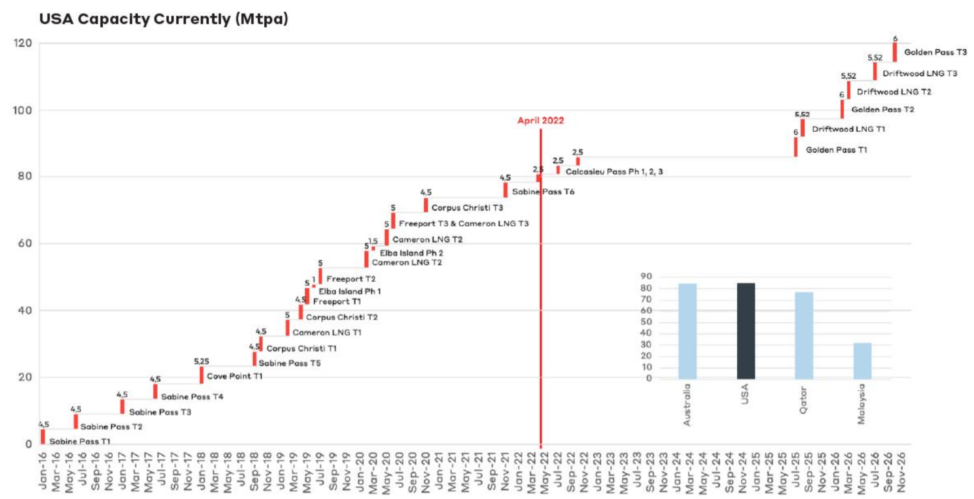
— Gulf LNG (10 Mtpa)

— Texas LNG (4 Mtpa

— Port Arthur (13.5 Mtpa)

THE USA LNG CAPACITY CURRENTLY 85 MTPA

The next LNG projects are expected to start in 2025



Future USA LNG Projects

— Port Arthur – 2025+ = 13.5 mtapa
— Plaquemines LNG – 2025+ = 20 mtpa
— Rio Grande LNG – 2025+ = 11 mtpa
— Driftwood LNG – 2025+ = 6 mtpa
— Commonwealth LNG – 2026+ = 8.4 mtpa
Total **48.9 mtpa**

By 2030 we have around 227 mtpa of US LNG production

— **Calcasieu Pass** has just delivered it's first cargo of LNG (*Yiannis*, 170 k cbm) to Dunkirk – 17th March, second cargo to South Hook (*Vivirt City LNG*, 174 k cbm) and third cargo went to Japan (*Nohshu Maru* 180 k cbm).

— Long gap to start-up of Golden Pass in 2024/5 – QatarEnergy and ExxonMobil – construction has started with installation of cryogenic heat exchanger.

— **QatarEnergy** has started talks to investigate whether to increase production levels over and above the expected expansion from 77 – 110 mtpa.

Now the maths

With a near-term production capacity of 85.75 Mtpa and an additional 48.9 Mtpa to be added by 2026, the US is poised to far outstrip Qatar's latest expansion plans. If all the US projects come to fruition, WSP estimates that production would be around 227 Mtpa by the early 2030s.

Who's leading the LNG race?

Australia has currently reached its maximum LNG production volumes, while Qatar is in discussions to assess whether it could expand its production capacity beyond its recent expansion plans. Even if several projects do not make it past FID, this will still give the US the advantage of being the largest LNG producer by a significant margin. For the foreseeable future, the US is uniquely positioned to take advantage of the global reconnecting of the energy markets, something that WSP is working closely with various stakeholders during this time of global energy change.

Author

David Bull
Associate Director, Maritime Advisory
United Kingdom

David.Bull@wsp.com

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