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The LNG industry

# GIIGNL Annual Report



# 2023

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# Profile

GIIGNL is a non-profit organisation whose objective is to promote the development of activities related to LNG: purchasing, importing, processing, transportation, handling, regasification and its various uses.

The Group constitutes a forum for exchange of information and experience among its 85 members in order to enhance the safety, reliability, efficiency and sustainability of LNG import activities and in particular, the operation of LNG import terminals.



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# The LNG industry in 2022



Jean Abiteboul  
President

## The invisible hand of the market...

The outbreak of the Russia-Ukraine conflict in February 2022 has dried up gas markets, which have already been short since mid-2021 because of the relative scarcity of LNG. Europe has transformed from a balancing market into a firm LNG demand center. Expanding production capacity in the United States has provided additional volumes to replace a significant part of the Russian pipe gas. Nevertheless, the surge in European LNG demand has squeezed the global LNG market. **The resulting prices signals, without any need of political intervention, have efficiently led to LNG flows reconfiguration from Asia to Europe and to demand adjustments in both regions.** As a result, global LNG trade grew by 4.5%, reaching 389.2 MT in 2022.

LNG's contribution to global energy security was in full display in 2022 and is now at its highest since the Fukushima accident of 2011. The volatility and record gas prices have renewed the appetite for long-term commitments, with more than 81 MTPA of new contracts signed in 2022. Most volumes have been contracted on an FOB basis, and in significant part by Asian buyers (25 MTPA). The majority of the other long-term contracts have been signed by portfolio companies which happened to be crucial for European security of supply.

On the demand side, El Salvador joined the group of LNG importers with the start-up of the floating terminal for the LNG-to-power project in Acajutla. Eight other new LNG receiving terminals started operations around the world, five of which being located in Asia.

LNG imports into Europe increased by 60% to 120 MT, notably enabling gas storage to reach the filling targets set by the European Commission in its Gas Storage Regulation. The surge of European LNG demand was also facilitated by reduced imports from other regions, mainly in Asia where they fell by 8% to 252 MT. The decline by 20% of Chinese LNG imports is due to the impact on gas demand of Covid-related restrictions as well as to the switch to coal on top of increases in

domestic gas production and pipeline imports. Other Asian countries such as Pakistan and Bangladesh faced gas shortages due to a lack of gas pipeline imports, decreasing domestic production and high LNG prices. Another consequence of the price volatility has been the delay in the start-up of imports into new markets, including the Philippines and Vietnam.

On the supply side, the United States reinforced its position as a top 3 global supplier and key provider of destination-flexible LNG, adding more than 8 MT of new volumes to the global market. It remained Europe's leading LNG supplier with a 43% market share, followed by Qatar and Russia. However, global LNG supply in 2022 had limited growth because of outages on existing facilities and the limited number of under-construction LNG plants that came online. However, Mozambique joined the ranks of LNG exporters in 2022 with the start-up of Coral South FLNG.

In 2023, the growth of the LNG market is expected to slow down due to limited new liquefaction capacity coming online. A mild winter 2022-2023 and gas demand destruction in Europe left storages levels well above the usual ones. Nevertheless, Europe is still set to compete with Asia over additional LNG imports to offset lower pipeline supplies from Russia compared to 2022. In response, some European nations have launched new LNG receiving infrastructure alongside increasing capacity at existing terminals. Germany became an LNG importer in early 2023 following the commissioning of three FSRUs and more projects are expected to come online later this and next year. The country has the highest number of LNG terminals under construction in Europe, potentially adding around 17 MTPA of import capacity. **Nevertheless, having the necessary infrastructure in place without corresponding long-term commitments does not necessarily guarantee European security of supply.** A rebound in LNG demand in China would put additional pressure on the market, although it could turn into more pipeline gas or alternative sources of energy.

## ...and the political and regulatory bodies struggling to combine energy security and sustainability.

The European energy crisis has been a stark reminder of the crucial importance of the energy trilemma fundamentals of availability and affordability, overshadowing sustainability, the fundamental given most attention before the crisis. Record high gas and LNG prices have triggered emergency policy measures, such as the EU price cap on wholesale gas markets and joint procurement mechanism (the EU Energy platform). Such emergency measures that aimed at limiting gas price spikes while ensuring security of supply should remain a short term solution in order to limit their impact on gas markets, which have proven to be efficient.

Looking ahead, by 2026, more than 100 MTPA of new liquefaction capacity is expected to come online. Before these projects ramp up, the market is expected to remain tight, taking into account the strong demand increase expected over the next decade.

Even though the role of LNG was recognized in the energy security of Europe in 2022, it has also been key for the energy transition for many years. It has facilitated the coal to gas switch in many regions, and has provided necessary flexibility to power systems with fast developing renewables. GIIGNL with the whole industry remains deeply involved in the monitoring and reduction of GHG emissions. **This pivotal role of LNG in the energy transition should be acknowledged by political decision makers and other stakeholders, in order to avoid counterproductive pressure on investors and lenders that could hurdle the financing of additional LNG projects. Such investments are necessary to ensure a sustainable but also a reliable and socially acceptable energy mix.**

# Key figures

## 2022

**389.2 MT**

imported vs. 372.3 MT in 2021

**+4.5%**

growth vs. 2021

**20**

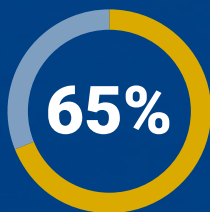
exporting  
countries

**45**

importing  
markets

**9**

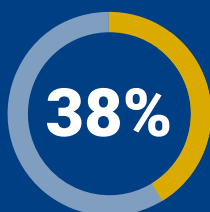
new LNG regasification  
terminals



of global LNG  
demand in Asia

**1,068 MTPA**

total regasification capacity\*



of global LNG volumes  
supplied from the  
Pacific Basin

**476 MTPA**

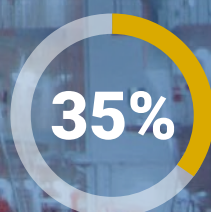
total liquefaction capacity\*

\* At the end of 2022



# 135 MT

imported on a spot  
or short-term\* basis  
or 35% of total trade



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\*Quantities delivered under contracts of a duration of 4 years or less



# Executive summary

In 2022, global LNG imports reached 389.2 MT, an increase of 16.9 MT compared with the previous year. European buyers had to turn to the LNG market to replace pipeline supplies from Russia, which shifted global LNG trade flows, while Asian countries turned to alternative energy sources at the expense of LNG. The annual growth rate reached 4.5%, with Europe absorbing most of the supply increase. Record high prices led to changes in import strategies and triggered LNG demand destruction in price sensitive countries, such as India, Pakistan and Bangladesh. The most significant decrease was seen in China due to Covid-related lockdowns, increased domestic production and pipeline imports, which resulted in a remarkable drop in spot LNG purchases. El Salvador joined the ranks of LNG importers. In total, 45 markets imported LNG volumes from 20 exporting countries.

2022 was another record year for long-term LNG contracting, with more than 81 MTPA of new contracts signed during the year, most of which with US volumes. Most volumes have been contracted on an FOB basis, and in significant part by Asian buyers. The majority of the other long-term contracts have been signed by portfolio players.

In 2022 global liquefaction capacity reached 476.5 MTPA at year-end. New capacity amounted to 14.9 MTPA. 10 MTPA Calcasieu Pass LNG export project started commissioning in the United States. The 1.5 MTPA Portovaya LNG plant started operations in Russia. The 3.4 MTPA Coral South FLNG produced its first LNG shipment offshore Mozambique. In addition, the 4.2 MTPA Snøhvit LNG resumed operations in Norway. Three FIDs were taken in 2022, for a total capacity of around 26 MTPA: 10.4 MTPA Corpus Christi Stage 3 liquefaction project and 13.3 MTPA first phase of the Plaquemines LNG in the United States and a 2 MTPA FLNG facility in Malaysia.

At the end of 2022, global regasification capacity reached 1,068 MTPA. 9 new regasification terminals started commercial operations in 2022 totaling 23.4 MTPA of capacity. El Salvador started importing LNG through the 2 MTPA FSRU-based Acajutla LNG terminal. One FSRU project started operations in Brazil. Two projects were commissioned in Europe, one floating-based in Netherlands and a small-scale onshore terminal in Finland. 5 new terminals started operations in Asia: two land-based terminals in China, one in Thailand, one in Japan and a small-scale offshore project in Indonesia. Other regasification capacity additions included the second phase at the Al-Zour terminal in Kuwait, capacity additions in Europe (in France, Poland, Italy and Croatia), and one expansion program completed in China.

The total LNG tanker fleet consisted of 734 vessels at the end of 2022. It included 49 FSRUs and 70 vessels of equal or less than 30,000 cubic meters. Total cargo capacity at the end of 2022 stood at 108.7 million cubic meters. In 2022, the average spot charter rate for a 160,000 cubic meters LNG carrier stood at around \$131,500/day, compared to an average of around \$89,200/day in 2021. A total of 35 vessels were delivered in 2022, compared with 68 vessels in 2021. The number of new orders reached to a total of 178 units, compared with 111 new orders in 2021.





# LNG trade in 2022

In 2022, global LNG imports reached **389.2 MT**, an increase of 16.9 MT compared with the previous year. European buyers had to turn to the LNG market to replace pipeline supplies from Russia, which shifted global LNG trade flows, while Asian countries turned to alternative energy sources at the expense of LNG. The annual growth rate reached 4.5%, with Europe absorbing most of the supply increase. Record high prices led to changes in import strategies and triggered LNG demand destruction in price sensitive countries, such as India, Pakistan and Bangladesh. The most significant decrease was seen in China due to Covid-related lockdowns, increased domestic production and pipeline imports, which resulted in a remarkable drop in spot LNG purchases.

El Salvador joined the ranks of LNG importers. In total, 45 markets imported LNG volumes from 20 exporting countries.

## Modest increase in LNG supply despite growing demand

In 2022, the United States continued to lead LNG supply increases, adding 8.4 MT of LNG to the market, from a total of 16.9 MT globally. LNG supplies from the United States grew by 12.6% thanks to the ramp up of Train 6 of the Sabine Pass liquefaction project and the commissioning of Calcasieu Pass. However, maintenance at some liquefaction sites and the outage at the Freeport facility led to a lower-than-expected supply increase from the United States. Start-up of the Portovaya LNG project in Russia (+0.3 MT out of a total increase of +2.5 MT in total for the country) contributed to new LNG supply. Increased production in Qatar (+2.1 MT), Malaysia (+2.7 MT) and the restart of Hammerfest LNG in Norway (+2.5 MT) provided additional LNG volumes to a tightening market. Indonesia, Papua New Guinea, Peru, Trinidad & Tobago, Egypt, Equatorial Guinea, and Oman also contributed to incremental LNG supplies in smaller quantities. In addition, Coral South FLNG in Mozambique came onstream towards the end of the year.

The greatest declines in LNG exports were recorded by Nigeria (-2.2 MT) due to security issues and extensive flooding, which led to the declaration of force majeure and cancellation of some LNG cargoes. Algeria recorded a 15% decline (-1.7 MT) due to stronger domestic gas demand and pipeline gas exports, followed by Brunei (-0.8 MT) which experienced a decline in feedstock.

The three basins, the Atlantic, Pacific and the Middle East, all experienced growth in 2022, adding 10.5 MT, 4 MT and 2.5 MT respectively. The Pacific Basin remained the largest source of LNG supplies to the global market with 148 MT or 38% market share, closely followed by the Atlantic Basin with 146 MT

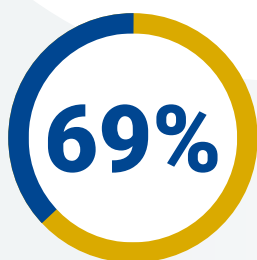
or 37% share, and the Middle East with 96 MT or 25% market share. As production and exports from the US continue to increase, the supply gap between the Pacific and the Atlantic Basins has substantially narrowed over the last two years from 29 MT in 2020, to 8.6 MT in 2021 and only 2 MT in 2022.

Qatar and Australia remain the leading exporting countries with 79 MT and 78.5 MT respectively. The United States came third, supplying 75.4 MT of LNG. It is likely to become the largest LNG exporter in 2023. Russia came fourth with 32 MT, followed by Malaysia with 27.6 MT. In a similar trend to 2021, Qatar, Australia and the United States together accounted for almost 60% of global LNG supply.

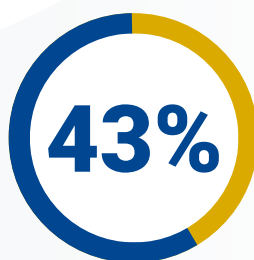
## Demand destruction in Asia triggered by high LNG prices and lockdowns in China, drove LNG to other destinations.

For the first time since 2015, Asia recorded a decrease in LNG imports with demand falling by 7.6% (-20.6 MT) compared to the previous year. LNG imports decreased in major LNG importing countries, in China and Japan. Price sensitive countries such as India, Bangladesh and Pakistan also experienced strong declines in LNG import volumes. Slower economic growth and switching to coal for power generation due to high LNG prices were the main reasons for demand destruction in the region.

China experienced the greatest decline in LNG imports, which dropped from 79.3 MT in 2021 to 63.3 MT in 2022, a 20% reduction. Demand for LNG fell as a result of high regional spot prices, which triggered more pipeline imports and domestic gas production. A Covid outbreak at the beginning of the year and ensuing restrictions also contributed to demand reduction.



of US volumes delivered to Europe, 24% to Asia, 6% to Americas.



of European LNG imports comes from the USA, 16% from Qatar.

+60%

Increase in European LNG imports versus 2021



Japan overtook China as the largest LNG importer in 2022. However, LNG imports into Japan also declined by 2.2 MT (-3%) due to increasing nuclear generation and high storage levels which helped cope with high power demand. Mild weather conditions during the winter period also constrained the need for additional LNG imports.

LNG imports into South Korea remained relatively stable, recording a slight increase of 0.3 MT (or +0.6%), as weaker demand in the power sector due to strong nuclear generation and higher coal use as a more competitive source of energy was largely offset, by robust natural gas demand, notably in the residential sector.

India also registered a significant decline in LNG imports, which were down by 4 MT (or -17%) compared to 2021 as the country relied on domestic gas production and coal-fired power generation. Gas power plant low load factor also impacted LNG consumption. In addition, the country experienced a slowdown of its economy and a depreciation of its currency which made shipments more expensive in an already tight market.

Other Asian countries also suffered important declines in their LNG consumption. In Pakistan and Bangladesh LNG imports fell by 16% (-1.3 MT) and 13.1% (-0.7 MT) respectively, due to demand destruction as expensive LNG was replaced with more polluting fuels. Notwithstanding the high LNG price environment, some Asian markets increased their LNG imports in 2022. LNG imports into Thailand increased by 1.7 MT (+26%) as recent domestic gas production issues accelerated LNG import growth. A second LNG receiving terminal was commissioned in 2022 to meet the growing demand. Taiwan also experienced an increase in LNG imports by 0.5 MT (+2.7%) triggered by policies of a nuclear free Taiwan by 2025 and of reduction of the use of coal. Malaysia experienced an increase of 0.7 MT in 2022. LNG imports into Singapore increased by 0.6 MT, offsetting a disruption in pipeline gas supplies from Indonesia. The chartering of additional LNG floating storage in application of temporary measures, introduced by the Energy Markets Authority, to secure the country's energy supply, has also contributed to LNG imports growth. Finally, LNG imports into Indonesia increased by 0.03 MT due to declines in feedstock production. Its growth in imports was supported by the start-up of a small-scale floating LNG receiving terminal.

Despite the drop in LNG imports, Asia continues to be the leading importing region with a 65% share of global LNG imports, declining from 73.2% in 2021. As we observed in 2022, LNG demand shifted westbound to ensure energy security across Europe.

In light of announcements by European countries to reduce their exposure to Russian gas, Europe was obliged to increase LNG imports, among other alternative gas

sources. LNG imports into Europe were supported by the accelerated development of LNG receiving infrastructure in Northwest Europe. Overall, in 2022, net LNG imports into Europe increased by 44.7 MT, up by 60% compared to 2021. The strong demand in Europe pushed spot LNG prices to historic levels leading to a change in trade patterns, attracting LNG cargoes away from Asia.

France (+12.4 MT, an increase of 101%), the United Kingdom (+7.8 MT, an increase of 71%), the Netherlands (+6.3 MT, an increase of 111%), Spain (+5.5 MT, an increase of 40%) and Belgium (+4.7 MT, an increase of 141%) recorded the largest growth in imports.

Imports into the American region in 2022 dropped by 39.6% (-7.1 MT) to 10.9 MT. Latin American countries experienced a surge in LNG imports in 2021 due to historic droughts but reduced them in 2022 given the better availability of hydropower. Imports into Brazil dropped by 72.6% (-5.1 MT) due to strong rainfalls which strengthened hydro reservoir levels during the year. Argentina also experienced a 34.1% decline in LNG imports (-0.9 MT) with high LNG prices triggering an increase in domestic production. The country is now seeking opportunities to export LNG. Chile was the largest LNG importer in the American region in 2022 with a total of 2.5 MT of net LNG imports, however it also experienced a decline of 21.7% (-0.7 MT) compared to 2021, as pipeline gas imports from Argentina increased. Mexican imports recorded a drop of 0.2 MT (a 35.3% reduction) as the country increased natural gas imports by pipeline from the USA, continuing its trend towards becoming less reliant on LNG imports.

Colombia, Jamaica, Panama and the United States experienced increases in LNG imports in 2022. El Salvador joined the LNG importing market in 2022 with 0.3 MT of LNG imported through the Acajutla floating LNG terminal.

In the Middle East, LNG imports decreased slightly compared to 2021 (-0.03 MT or -0.4%). The LNG imports' growth in Kuwait (+0.6 MT or +11.4%) was supported by the commissioning of the second phase of the Al Zour LNG terminal. UAE experienced a decline in its LNG imports. Jordan resumed importing LNG in June 2022 for the first time since October 2020. Israel did not import any cargoes in 2022 and is not expected to import LNG because the contract for the charter of an FSRU has ended.

### Spot and short term LNG have been attracted by Europe

In 2022, spot and short-term transactions reached 135 MT (-1.5 MT or -1.1%) compared with the previous year). This volume represented 35% of total trade, compared with 36.6% in 2021. Faced with a severe

energy crisis, Europe relied on spot and short-term LNG imports to help replace Russian pipeline gas.

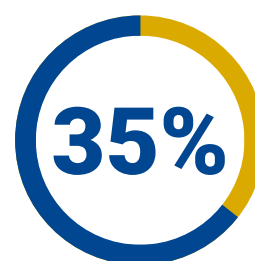
Spot and short-term LNG trade was muted in Asia in 2022, largely due to high spot prices. As such, flexible volumes were freed to meet European LNG and gas demand.

The United States remains the leading exporter of spot and short-term LNG with a 34% share in global spot and short-term volumes. Australia kept its second position for the third consecutive year with a 15% market share in 2022. Following the restart of exports from Hammerfest LNG, Norway increased spot and short-term sales from 0.2 MT to 2 MT compared to the previous year.

"True" spot volumes (i.e., volumes delivered within three months from the transaction date) reached 28% of total imports in 2022 or 108 MT, a decrease of 6% compared to 2021 (116 MT).

In 2022, re-exports of LNG increased to 4.1 MT compared with 3.5 MT in 2021. In 2022, 15 countries re-exported LNG and 26 countries received re-exported volumes. Spain remains the leader in terms of volumes reloaded (1.4 MT in 2022 vs 1 MT in 2021), followed by Indonesia (0.7 MT) and China (0.5 MT). The reloaded volumes from Spain were mostly destined for the European region.

Asia, driven by China and Japan, remains the main destination for reloaded volumes globally.



of volumes imported on a spot or short-term basis.

# 28%

of volumes imported on a spot basis.

# LNG imports in 2022 (net of re-exports)

Market	10 <sup>6</sup> T	Global Share	Var. 2022/2021 Mt	Var. 2022/2021 %
Japan	72.16	18.5%	-2.19	-2.9%
China	63.32	16.3%	-15.9	-20.1%
South Korea	47.19	12.1%	0.27	0.6%
Taiwan	19.96	5.1%	0.52	2.7%
India	19.90	5.1%	-4.13	-17.2%
Thailand	8.27	2.1%	1.72	26.2%
Pakistan	6.91	1.8%	-1.29	-15.7%
Bangladesh	4.43	1.1%	-0.67	-13.1%
Singapore	3.70	1.0%	0.58	18.6%
Indonesia	3.34	0.9%	0.03	1.0%
Malaysia	2.72	0.7%	0.70	34.8%
Myanmar	0.00	0.0%	-0.22	-100.0%
<b>ASIA</b>	<b>251.89</b>	<b>64.7%</b>	<b>-20.62</b>	<b>-7.6%</b>
France	24.75	6.4%	12.42	100.6%
Spain	19.30	5.0%	5.48	39.7%
United Kingdom	18.82	4.8%	7.78	70.5%
Netherlands	11.90	3.1%	6.27	111.3%
Turkey	10.63	2.7%	0.64	6.4%
Italy	9.95	2.6%	3.07	44.6%
Belgium	8.00	2.1%	4.69	141.4%
Poland	4.36	1.1%	1.53	54.0%
Portugal	4.15	1.1%	0.04	1.0%
Greece	2.75	0.7%	1.11	67.8%
Lithuania	2.19	0.6%	1.07	94.9%
Croatia	1.83	0.5%	0.63	52.2%
Malta	0.34	0.1%	0.06	19.4%
Finland	0.24	0.1%	0.04	20.5%

Market	10 <sup>6</sup> T	Global Share	Var. 2022/2021 Mt	Var. 2022/2021 %
Sweden	0.23	0.1%	-0.13	-36.0%
Russia	0.10	0.0%	0.10	N/A
Norway	0.13	0.0%	-0.09	-41.7%
Gibraltar	0.03	0.0%	-0.03	-50.9%
<b>EUROPE</b>	<b>119.71</b>	<b>30.8%</b>	<b>44.66</b>	<b>59.5%</b>
Chile	2.46	0.6%	-0.68	-21.7%
Brazil	1.92	0.5%	-5.08	-72.6%
Argentina	1.66	0.4%	-0.86	-34.1%
Dominican Republic	1.45	0.4%	-0.02	-1.4%
Puerto Rico	1.04	0.3%	-0.48	-31.6%
Jamaica	0.65	0.2%	0.12	23.9%
United States	0.47	0.1%	0.05	11.4%
Mexico	0.40	0.1%	-0.22	-35.3%
El Salvador	0.27	0.1%	0.27	#N/A
Panama	0.23	0.1%	0.03	12.6%
Canada	0.23	0.1%	-0.27	-53.7%
Colombia	0.07	0.0%	0.03	56.4%
<b>AMERICAS</b>	<b>10.85</b>	<b>2.8%</b>	<b>-7.12</b>	<b>-39.6%</b>
Kuwait	5.95	1.5%	0.61	11.4%
United Arab Emirates	0.68	0.2%	-0.51	-42.9%
Jordan	0.07	0.0%	0.07	N/A
Egypt	0.04	0.0%	-0.01	-25.9%
Israel	0.00	0.0%	-0.18	-100.0%
<b>MIDDLE EAST &amp; AFRICA</b>	<b>6.74</b>	<b>1.7%</b>	<b>-0.03</b>	<b>-0.4%</b>
<b>GLOBAL NET IMPORTS</b>	<b>389.19</b>	<b>100.0%</b>	<b>16.89</b>	<b>4.5%</b>

Source: GIIGNL, Kpler

## Source of LNG imports in 2022

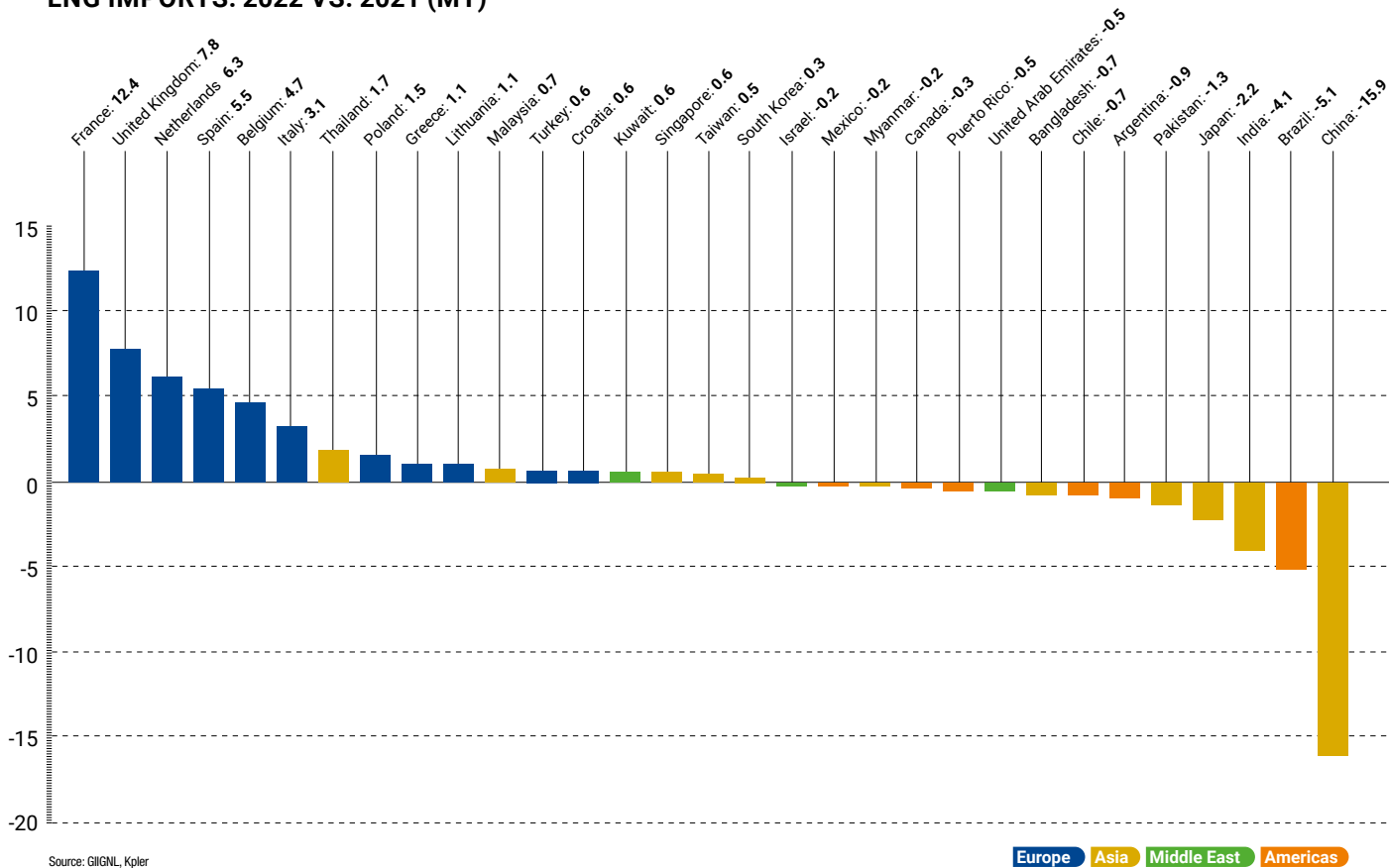
Country	10 <sup>6</sup> T	Global Share	Var. 2022/2021 Mt	Var. 2022/2021 %
Australia	78.50	20.2%	-0.02	0.0%
Malaysia	27.60	7.1%	2.66	10.7%
Indonesia	14.00	3.6%	0.18	1.3%
Russia (Asia)	11.32	2.9%	1.17	11.5%
Papua New Guinea	8.39	2.2%	0.09	1.1%
Brunei	4.76	1.2%	-0.83	-14.8%
Peru	3.30	0.8%	0.75	29.3%
<b>PACIFIC BASIN</b>	<b>147.87</b>	<b>38.0%</b>	<b>4.00</b>	<b>2.8%</b>
United States	75.44	19.4%	8.41	12.6%
Russia (Europe)	20.75	5.3%	1.29	6.6%
Nigeria	14.22	3.7%	-2.20	-13.4%
Algeria	10.04	2.6%	-1.74	-14.8%
Trinidad and Tobago	7.76	2.0%	1.57	25.4%
Egypt	6.78	1.7%	0.22	3.4%

Country	10 <sup>6</sup> T	Global Share	Var. 2022/2021 Mt	Var. 2022/2021 %
Equatorial Guinea	3.54	0.9%	0.82	30.2%
Angola	3.19	0.8%	-0.44	-12.1%
Norway	2.72	0.7%	2.49	1.053.2%
Cameroon	1.19	0.3%	-0.01	-1.1%
Mozambique	0.04	0.0%	0.04	#N/A
Argentina	0.00	0.0%	0.00	#N/A
<b>ATLANTIC BASIN</b>	<b>145.68</b>	<b>37.4%</b>	<b>10.45</b>	<b>7.7%</b>
Qatar	79.04	20.3%	2.08	2.7%
Oman	11.14	2.9%	0.92	9.0%
United Arab Emirates	5.46	1.4%	-0.56	-9.3%
<b>MIDDLE EAST</b>	<b>95.64</b>	<b>24.6%</b>	<b>2.45</b>	<b>2.6%</b>
<b>TOTAL</b>	<b>389.19</b>	<b>100.0%</b>	<b>16.89</b>	<b>4.5%</b>

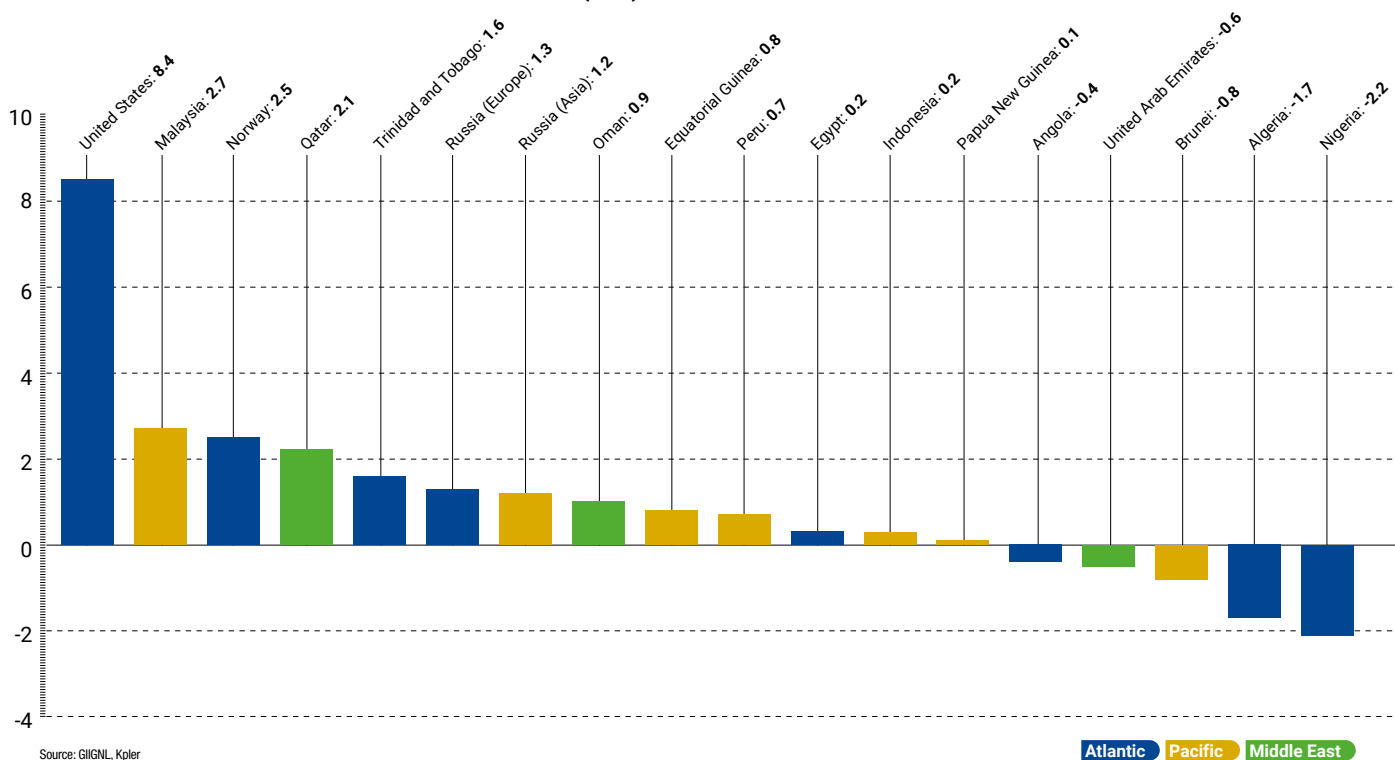
Source: GIIGNL, Kpler



### LNG IMPORTS: 2022 VS. 2021 (MT)



### SOURCE OF LNG IMPORTS: 2022 VS. 2021 (MT)



## Quantities (in MT) received in 2022

Markets	Algeria	Angola	Australia	Brunei	Cameroon	Egypt	Equatorial Guinea	Indonesia	Malaysia	Mozambique	Nigeria	Norway
Bangladesh	0.07					0.07	0.06		0.08		0.26	
China	0.07		21.61	0.33		0.34	0.36	3.38	7.64		0.47	
India	0.20	0.66	0.43		0.39	0.13	0.13	0.07	0.07		0.95	
Indonesia	0.01		0.38			0.01		3.17			0.03	
Japan	0.12		30.45	3.21		0.18	0.12	2.42	12.19		0.97	
Malaysia			2.04	0.78		0.01			0.06			
Pakistan	0.07	0.06				0.06			0.06		0.29	
Singapore		0.06	2.44			0.07	0.07	0.08				
South Korea	0.06		11.81	0.19	0.07	0.62	0.20	3.18	5.38		0.56	
Taiwan			7.46	0.06			0.17	1.10	0.52		0.27	
Thailand	0.07	0.07	1.42	0.19		0.18	0.07	0.11	1.61		0.30	
<b>ASIA</b>	<b>0.68</b>	<b>0.86</b>	<b>78.04</b>	<b>4.76</b>	<b>0.46</b>	<b>1.67</b>	<b>1.19</b>	<b>13.50</b>	<b>27.60</b>		<b>4.10</b>	
Belgium	0.06	0.07			0.14	0.07	0.06					0.09
Croatia						0.21						
Finland						0.02						0.01
France	3.07	0.80			0.14	0.49	0.13	0.07			0.88	0.76
Gibraltar												
Greece	0.36				0.00	0.35		0.04			0.22	0.14
Italy	1.04	0.07				0.48	0.24				0.12	0.06
Lithuania						0.07						0.66
Malta												
Netherlands	0.14	0.67	0.07		0.22	0.37	0.20				0.07	0.45
Norway												0.10
Poland						0.06					0.13	
Portugal							0.07				2.13	
Russia					0.02							
Spain	0.36	0.20	0.03		0.21	0.98	0.39			0.04	4.08	0.10
Sweden												0.08
Turkey	3.74	0.07				1.59	0.07	0.07			0.56	
UK	0.44	0.47	0.02			0.13					0.41	0.18
<b>EUROPE</b>	<b>9.21</b>	<b>2.34</b>	<b>0.12</b>		<b>0.73</b>	<b>4.82</b>	<b>1.16</b>	<b>0.18</b>		<b>0.04</b>	<b>8.59</b>	<b>2.62</b>
Argentina	0.07					0.08	0.15					0.07
Brazil							0.05				0.06	
Canada							0.05					
Chile			0.20				0.93					
Colombia												
Dominican Rep.												
El Salvador								0.02				
Jamaica											0.32	0.02
Mexico								0.30				
Panama												
Puerto Rico											0.06	
USA												
<b>AMERICAS</b>	<b>0.07</b>		<b>0.20</b>			<b>0.08</b>	<b>1.18</b>	<b>0.32</b>			<b>0.44</b>	<b>0.10</b>
Egypt						0.04						
Jordan						0.07						
Kuwait	0.07		0.14			0.11					1.08	
UAE												
<b>MIDDLE EAST</b>	<b>0.07</b>		<b>0.14</b>			<b>0.22</b>					<b>1.08</b>	
<b>GLOBAL NET IMPORTS</b>	<b>10.04</b>	<b>3.19</b>	<b>78.50</b>	<b>4.76</b>	<b>1.19</b>	<b>6.78</b>	<b>3.54</b>	<b>14.00</b>	<b>27.60</b>	<b>0.04</b>	<b>14.22</b>	<b>2.72</b>



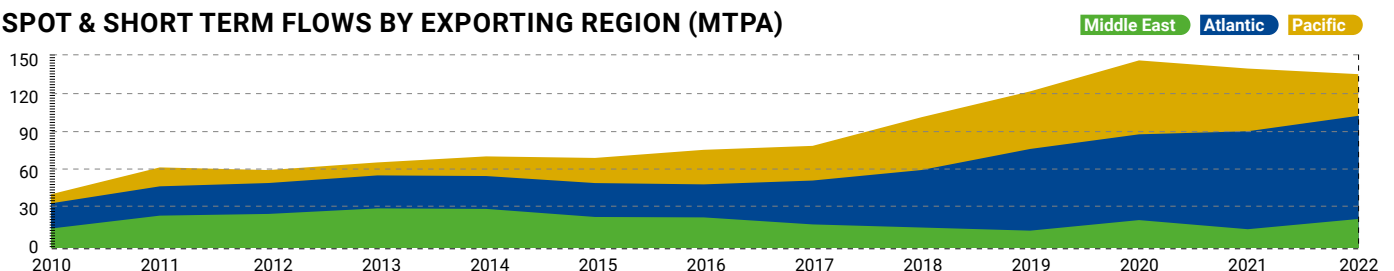
Oman	Papua New Guinea	Peru	Qatar	Russia (Asia)	Russia (Europe)	Trinidad and Tobago	UAE	USA	Re-exports Received	Re-exports Loaded	Net imports	Markets
			3.64					0.25			4.43	Bangladesh
0.89	2.55	0.20	15.98	2.03	4.71	0.41	0.12	2.11	0.64	-0.54	63.32	China
0.91			10.54		0.41	0.11	2.64	2.20	0.07		19.90	India
0.02				0.12	0.15			0.13		-0.69	3.34	Indonesia
2.53	3.86	0.20	2.88	6.79	0.06	0.11	1.33	4.14	0.58		72.16	Japan
	0.04									-0.20	2.72	Malaysia
0.01			6.10				0.19	0.06			6.91	Pakistan
			0.35		0.14	0.07		0.53	0.08	-0.19	3.70	Singapore
4.89	0.60	0.67	9.98	1.86	0.31	0.13	0.37	5.90	0.46	-0.07	47.19	South Korea
0.33	1.31	0.17	5.20	0.51	0.58		0.18	2.04	0.06		19.96	Taiwan
0.64	0.03		2.32		0.07	0.53	0.13	0.47	0.06		8.27	Thailand
10.22	8.39	1.24	57.00	11.32	6.44	1.36	4.97	17.84	1.94	-1.69	251.89	ASIA
			4.16		1.92			1.58	0.02	-0.16	8.00	Belgium
			0.07					1.54	0.01		1.83	Croatia
					0.20				0.02	-0.01	0.24	Finland
0.07		0.07	1.47		5.24	0.30	0.06	11.17	0.04	-0.01	24.75	France
									0.03		0.03	Gibraltar
0.07					0.14			1.38	0.04		2.75	Greece
0.07			4.56		0.14	0.24		2.24	0.70		9.95	Italy
					0.05			1.41	0.01		2.19	Lithuania
						0.24		0.11			0.34	Malta
			0.09		1.74	0.37		7.19	0.45	-0.12	11.90	Netherlands
					0.01				0.01		0.13	Norway
			1.65			0.07		2.44			4.36	Poland
					0.22	0.36		1.37			4.15	Portugal
					0.07						0.10	Russian Fed.
0.38		0.13	1.01		3.72	0.81		8.30	0.01	-1.44	19.30	Spain
					0.07				0.08	0.00	0.23	Sweden
0.08			0.07		0.29	0.22		3.93	0.03	-0.07	10.63	Turkey
		1.70	5.63		0.36	0.25		9.11	0.13		18.82	UK
0.66		1.90	18.72		14.17	2.85	0.06	51.74	1.59	-1.81	119.71	EUROPE
			0.04			0.04		1.21			1.66	Argentina
			0.09					1.67	0.05		1.92	Brazil
		0.16				0.03					0.23	Canada
						0.85		0.59		-0.11	2.46	Chile
						0.01		0.06			0.07	Colombia
						0.64		0.92		-0.11	1.45	Dominican Rep.
						0.25					0.27	El Salvador
			0.01			0.56		0.07	0.02	-0.36	0.65	Jamaica
								0.06	0.03		0.40	Mexico
								0.22	0.01		0.23	Panama
0.12						0.44			0.42		1.04	Puerto Rico
						0.47					0.47	USA
0.12		0.16	0.14			3.29		4.79	0.54	-0.58	10.85	AMERICAS
											0.04	Egypt
											0.07	Jordan
0.14			2.57		0.14	0.27	0.36	1.06			5.95	Kuwait
			0.61				0.07				0.68	UAE
0.14			3.18		0.14	0.27	0.43	1.06	0.00	0.00	6.74	MIDDLE EAST
11.14	8.39	3.30	79.04	11.32	20.75	7.76	5.46	75.44	4.07	-4.07	389.19	GLOBAL NET IMPORTS

Source: GIIGNL, Kpler

## Spot and short-term quantities\* (in MT) received in 2022

Markets	Algeria	Angola	Australia	Brunei	Cameroon	Egypt	Equatorial Guinea	Indonesia	Malaysia	Mozambique	Nigeria	Norway
Bangladesh	0.07					0.07	0.06		0.08		0.26	
China	0.07		4.65	0.33		0.28	0.07	1.07	2.53		0.42	
India	0.06	0.66	0.07		0.02	0.13	0.07	0.07			0.79	
Indonesia	0.01		0.14			0.01		0.58				
Japan			5.13	0.25		0.12	0.06	0.89	1.92		0.25	
Malaysia			0.06	0.06		0.01			0.06			
Pakistan	0.07					0.06			0.06			
Singapore		0.06	0.19					0.00				
South Korea			5.10	0.06	0.07	0.36		1.05	1.61		0.37	
Taiwan			3.34				0.06	0.98	0.45		0.06	
Thailand	0.07	0.07	1.10	0.19		0.06		0.11	0.25		0.12	
<b>ASIA</b>	<b>0.35</b>	<b>0.79</b>	<b>19.79</b>	<b>0.89</b>	<b>0.10</b>	<b>1.10</b>	<b>0.33</b>	<b>4.75</b>	<b>6.96</b>		<b>2.27</b>	
Belgium	0.06	0.07			0.14	0.07	0.06					0.09
Croatia						0.21						
Finland						0.02						0.01
France	1.14	0.80			0.14	0.35		0.07			0.20	0.25
Gibraltar												
Greece					0.00						0.13	0.14
Italy	1.04	0.07				0.48	0.24				0.12	0.06
Lithuania						0.07						0.66
Malta												
Netherlands	0.14	0.67			0.22	0.30	0.20				0.07	0.45
Norway												0.01
Poland						0.06					0.13	
Portugal							0.07					
Russia												
Spain	0.28	0.20			0.21	0.32	0.19			0.04	0.53	0.10
Sweden												0.05
Turkey	1.03	0.07				1.59	0.07	0.07			0.56	
UK	0.07	0.47				0.11					0.29	0.13
<b>EUROPE</b>	<b>3.75</b>	<b>2.34</b>			<b>0.71</b>	<b>3.57</b>	<b>0.83</b>	<b>0.14</b>		<b>0.04</b>	<b>2.03</b>	<b>1.94</b>
Argentina	0.07					0.08	0.15					0.07
Brazil							0.05				0.06	
Canada							0.05					
Chile			0.07				0.31					
Colombia												
Dominican Rep.												
Jamaica											0.32	0.02
Mexico												
Panama												
Puerto Rico												
USA												
<b>AMERICAS</b>	<b>0.07</b>		<b>0.07</b>			<b>0.08</b>	<b>0.55</b>				<b>0.38</b>	<b>0.10</b>
Egypt						0.04						
Jordan						0.07						
Kuwait	0.07					0.11					1.08	
UAE												
<b>MIDDLE EAST</b>	<b>0.07</b>					<b>0.22</b>					<b>1.08</b>	
<b>GLOBAL NET IMPORTS</b>	<b>4.25</b>	<b>3.13</b>	<b>19.86</b>	<b>0.89</b>	<b>0.80</b>	<b>4.97</b>	<b>1.71</b>	<b>4.89</b>	<b>6.96</b>	<b>0.04</b>	<b>5.77</b>	<b>2.04</b>

### SPOT & SHORT TERM FLOWS BY EXPORTING REGION (MTPA)

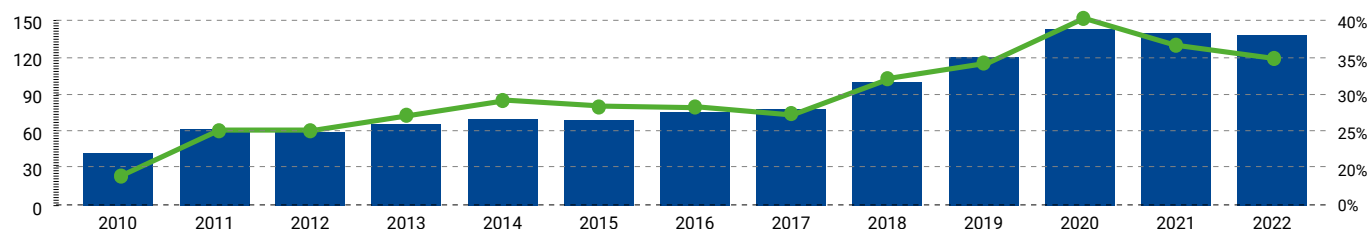




Oman	Papua New Guinea	Peru	Qatar	Russia (Asia)	Russia (Europe)	Trinidad and Tobago	UAE	USA	Re-exports Received	Re-exports Loaded	Net imports	Markets
								0.25			0.79	Bangladesh
0.59	0.74	0.06	4.49	2.03	2.68	0.06	0.12	1.70	0.64	-0.54	22.00	China
0.57			1.45		0.34		2.39	0.45	0.07		7.14	India
0.02					0.06			0.01		-0.69	0.16	Indonesia
0.88	0.29	0.07	0.68	0.32			0.90	1.13	0.58		13.48	Japan
	0.04									-0.20	0.02	Malaysia
0.01			1.06				0.12	0.06			1.45	Pakistan
					0.14			0.28	0.08	-0.19	0.56	Singapore
0.68	0.60	0.14	0.45	0.19	0.06	0.06	0.37	1.82	0.46	-0.07	13.41	South Korea
0.33	0.37	0.06	0.07	0.06			0.18	0.23	0.06		6.25	Taiwan
0.58	0.03		0.31				0.13	0.36	0.06		3.42	Thailand
3.67	2.06	0.33	8.50	2.61	3.29	0.11	4.22	6.29	1.94	-1.69	68.67	ASIA
			0.55		0.27			1.03	0.02	-0.16	2.19	Belgium
			0.07					1.41	0.01		1.70	Croatia
					0.20				0.02	-0.01	0.24	Finland
0.07					0.07		0.06	7.90	0.04	-0.01	11.08	France
									0.03		0.03	Gibraltar
0.07					0.14			0.84	0.04		1.37	Greece
0.07					0.14	0.24		2.08	0.70		5.23	Italy
					0.05			1.40	0.01		2.17	Lithuania
						0.24					0.24	Malta
					1.74	0.17		4.49	0.45	-0.12	8.78	Netherlands
					0.01				0.01		0.04	Norway
						0.07		2.22			2.49	Poland
						0.36		0.70			1.13	Portugal
					0.07						0.07	Russia
0.06			0.23		0.42	0.23		3.27	0.01	-1.44	4.66	Spain
					0.07				0.08	0.00	0.21	Sweden
0.08			0.07		0.29	0.22		3.86	0.03	-0.07	7.84	Turkey
			0.06		0.14	0.05		5.87	0.13		7.30	UK
0.34			0.98		3.63	1.57	0.06	35.06	1.59	-1.81	56.78	EUROPE
			0.04			0.04		1.21			1.66	Argentina
								1.59	0.05		1.76	Brazil
											0.05	Canada
						0.17		0.36		-0.11	0.80	Chile
						0.01		0.06			0.07	Colombia
								0.11		-0.11	0.00	Dominican Rep.
			0.01					0.04	0.02	-0.36	0.06	Jamaica
								0.06	0.03		0.10	Mexico
								0.06	0.01		0.08	Panama
0.12						0.22			0.42		0.76	Puerto Rico
						0.47					0.47	United States
0.12			0.04			0.91		3.51	0.54	-0.58	5.81	AMERICAS
											0.04	Egypt
					0.11		0.36	0.88			0.07	Jordan
					0.61		0.07				2.76	Kuwait
											0.68	UAE
			0.72		0.14		0.43	0.88	0.00	0.00	3.55	MIDDLE EAST
4.14	2.06	0.33	10.25	2.61	7.06	2.60	4.71	45.74	4.07	-4.07	134.81	GLOBAL NET IMPORTS

\* Quantities delivered under contracts of a duration of 4 years or less. Source: GIIGNL, Kpler

## SHARE OF SPOT & SHORT TERM VS. TOTAL LNG TRADE (MTPA/%)



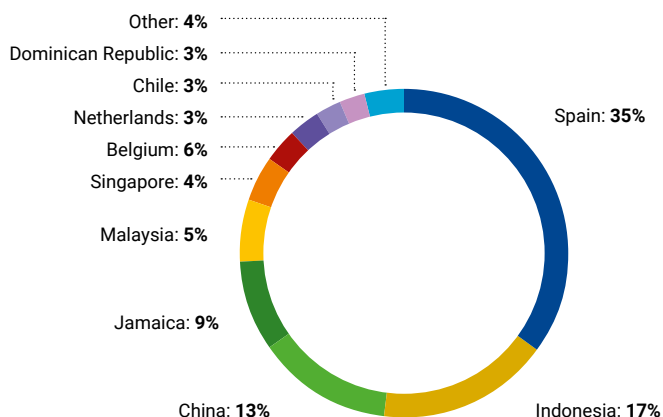
# Re-exports (in MT)

(Based on cargoes received in 2022)

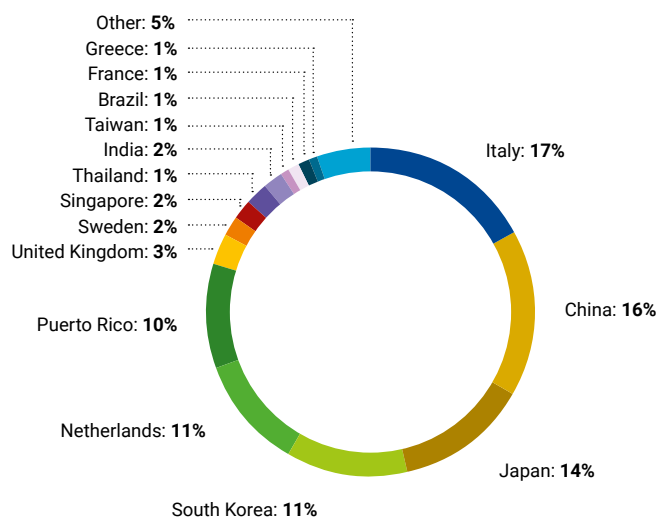
From To	Belgium	Chile	China	Dominican Republic	France	Indonesia	Jamaica	Malaysia	Netherlands	Singapore	South Korea	Spain	Sweden	Turkey	Finland	Total
China	0.07					0.33			0.06	0.05	0.06	0.07				0.64
India														0.07		0.07
Japan			0.13			0.25		0.06		0.14						0.58
Singapore								0.08								0.08
South Korea			0.29			0.11		0.06				0.01				0.46
Taiwan		0.06														0.06
Thailand			0.06													0.06
<b>ASIA</b>	0.07	0.06	0.47			0.69		0.20	0.06	0.19	0.06	0.08		0.07		1.94
Belgium												0.01			0.01	0.02
Croatia												0.01				0.01
Finland	0.01							0.00				0.01				0.02
France												0.04				0.04
Gibraltar									0.02			0.01				0.03
Greece												0.04				0.04
Italy	0.00		0.07	0.06	0.01							0.56				0.70
Lithuania	0.00											0.01				0.01
Netherlands	0.02											0.44				0.45
Norway	0.00							0.01				0.00	0.00			0.01
Spain											0.01					0.01
Sweden	0.04						0.02	0.03				0.00				0.08
Turkey				0.03												0.03
United Kingdom		0.05							0.00			0.07				0.13
<b>EUROPE</b>	0.08	0.05	0.07	0.09	0.01		0.02		0.07		0.01	1.20	0.00		0.01	1.59
Brazil	0.01											0.04				0.05
Jamaica												0.02				0.02
Mexico							0.03									0.03
Panama												0.01				0.01
Puerto Rico				0.02			0.31					0.09				0.42
<b>AMERICAS</b>	0.01			0.02			0.34					0.16				0.54
<b>WORLD</b>	0.16	0.11	0.54	0.11	0.01	0.69	0.38	0.20	0.12	0.19	0.07	1.44	0.00	0.07	0.01	4.07

Source: GIIGNL, Kpler

RE-EXPORTS LOADED IN 2022

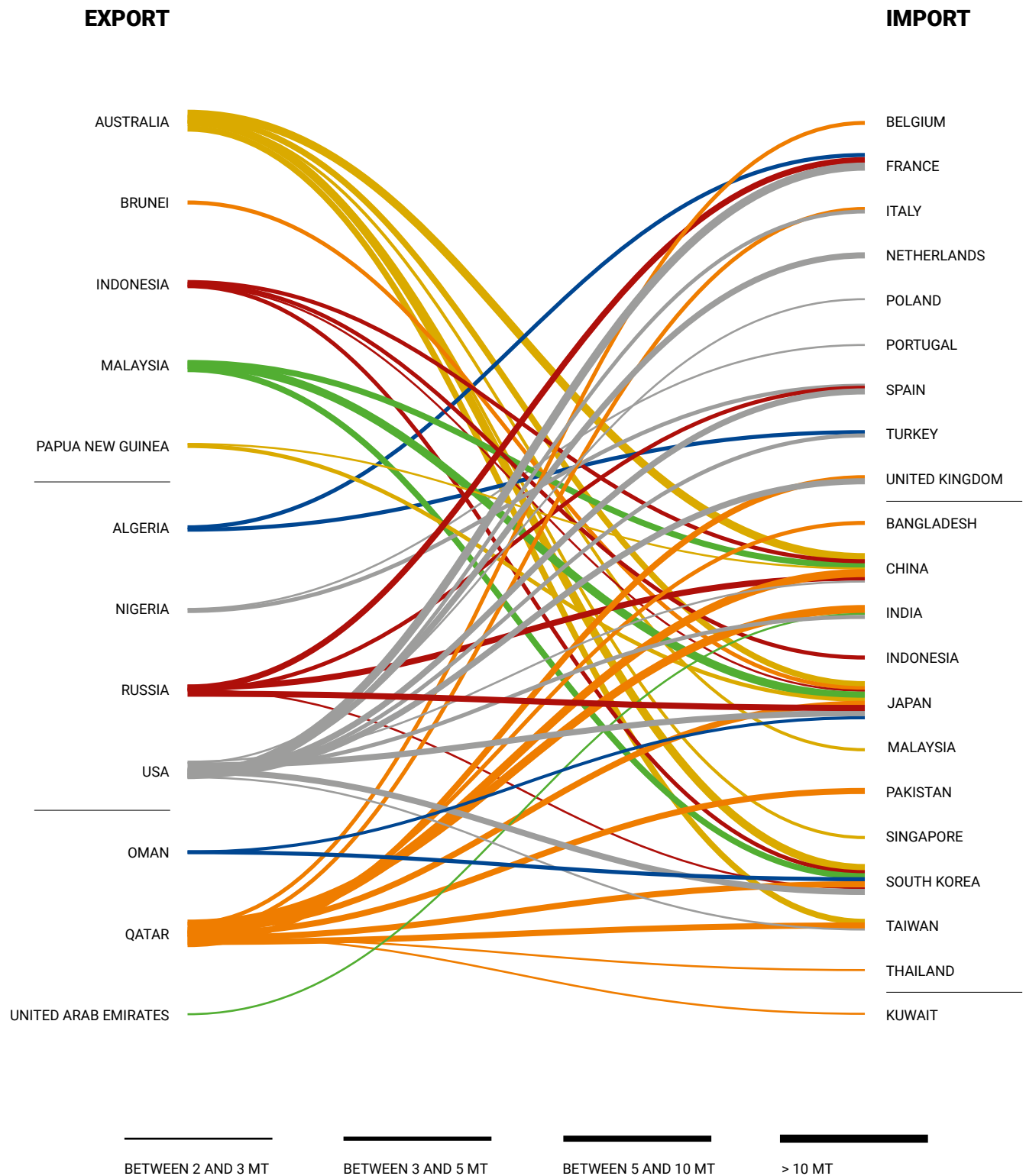


RE-EXPORTS RECEIVED IN 2022





# Major LNG flows in 2022



# Contracts signed in 2022

Export Country	Import market	Seller	Buyer	ACQ (MTPA)	Start date	Duration	Delivery Format	Comments
<b>LONG &amp; MEDIUM TERM CONTRACTS (&gt; 4 YEARS)</b>								
Australia/NWS	Portfolio	Beach Energy	BP Singapore	0.75	2023	5	FOB	Based on HoA signed in 2021. 3.75 MT over 5 years from Waitisia Stage 2 project, start with commercial operations
BP Portfolio	China	BP Singapore	Shenzhen Energy		2024		DES	For gas fired power plants which start in 2024
Mexico/Puerto Libertad/ Saguaro LNG	China	Mexico Pacific	Guangzhou Development Group	2	2027	20	DES	Start with commercial operations at Saguaro LNG
Mexico/Puerto Libertad/ Saguaro LNG	Portfolio	Mexico Pacific	Shell	2.6	2027	20	FOB	
Oman/Qalhat	Japan	Oman LNG	JERA	0.8	2025	10	FOB	Key Term Sheet. Up to 12 cargoes per year
PTTGL Portfolio	Thailand	PTTGL	PTT	1	2026	15	DES	From Jan 2026 to Dec 2040
Qatar/NFE	China	QatarEnergy	Sinopec	4	2026	27	DES	
Qatar/NFE	Germany	QatarEnergy	ConocoPhillips	1	2026	15	DES	
Qatar/NFS	Germany	QatarEnergy	ConocoPhillips	1	2027	15	DES	
Russia/Novatek Portfolio/ Arctic LNG 2	China	Novatek	ENN (Singapore)	0.6	2025	11	DES	Start with commercial operations at Arctic LNG 2. LNG delivered to Zhoushan terminal.
Russia/Novatek Portfolio/ Arctic LNG 2	China	Novatek	Zhejiang Energy	1	2024	15	DES	Delivered to Zhejiang Energy's LNG terminals
Shell Portfolio	Singapore	Shell	CMA CGM		2023		DES	Start in H2 2023
TotalEnergies Portfolio	Singapore	TotalEnergies	Sembcorp	0.25	2025	5	DES	
TotalEnergies Portfolio	South Korea	TotalEnergies	Hanwha Energy	0.6	2024	15	DES	LNG delivered to the Tongyeong LNG terminal to supply the nearby Hanwha & Hyundai Development Corporation's (HDC) 1 GW power plant
TotalEnergies Portfolio	Dominican Republic	TotalEnergies	AES	0.56	2023	10,8	DES	From 1 April 2023 to 31 Dec 2033, 308.4 Tbtu
United States/ Commonwealth LNG	Portfolio	Commonwealth LNG	Woodside	2.5	2026	20	FOB	Based on HoA signed in Jan 2022
United States/Corpus Christi	Multiple	Cheniere Marketing	Equinor	1.75	2026	15	FOB	Start in H2 2026, full annual volume from H2 2027. 0.9 MTPA subject to FID on additional capacity beyond CC Stage III
United States/Corpus Christi	Multiple	Cheniere Marketing	PetroChina	1.8	2026	24	FOB	Start in 2026, full annual volume from 2028. 0.9 MTPA subject to FID on additional capacity beyond CC Stage III
United States/Corpus Christi	Multiple	Cheniere Marketing	Posco	0.4	2026	20	FOB	
United States/Corpus Christi	Multiple	Corpus Christi Liquefaction	PTTGL	1	2026	20	FOB/DES	
United States/Corpus Christi	Portfolio	Cheniere Marketing	Chevron	1	2027	15	FOB	Subject to FID on additional capacity beyond CC Stage III
United States/CP2	Germany	Venture Global	EnBW	0.75	2026	20	FOB	
United States/CP2	Japan	Venture Global	INPEX	1	2026	20	FOB	
United States/CP2	Portfolio	Venture Global	Chevron	1	2026	20	FOB	
United States/CP2	Portfolio	Venture Global	ExxonMobil	1	2026	20	FOB	
United States/CP2	Portfolio	Venture Global	New Fortress Energy	1	2026	20	FOB	
United States/Delfin LNG	Portfolio	Delfin LNG	Vitol	0.5	2026	15	FOB	



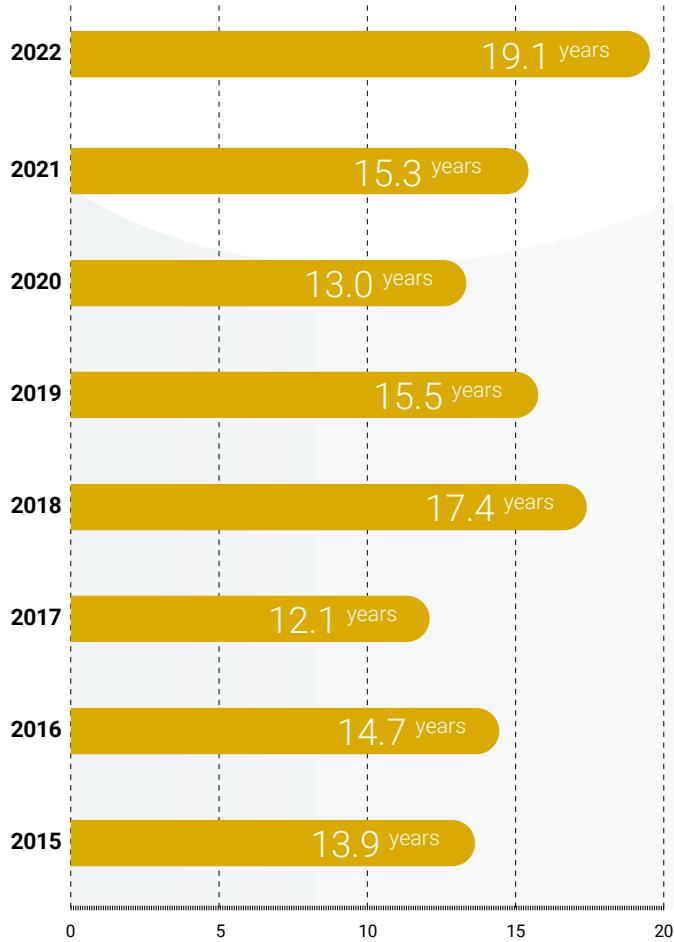
Export Country	Import market	Seller	Buyer	ACQ (MTPA)	Start date	Duration	Delivery Format	Comments
United States	South Korea	BP	KOGAS	1.58	2025	18	DES	From Jan 2025 to Dec 2042
United States/Golden Pass	Portfolio	Golden Pass LNG	ExxonMobil	4.7	2026	20		Start from the commercial operation date of Golden Pass T3. Contract with Ocean LNG cancelled.
United States/Golden Pass	Portfolio	Golden Pass LNG	QatarEnergy	10.9	2026	20		Start from the commercial operation date of Golden Pass T3. Contract with Ocean LNG cancelled.
United States/Lake Charles LNG	China	Energy Transfer	China Gas	0.7	2026	25	FOB	
United States/Lake Charles LNG	China	Energy Transfer	ENN	0.9	2026	20	FOB	Start with commercial operations at Lake Charles LNG
United States/Lake Charles LNG	China	Energy Transfer	ENN (Singapore)	1.8	2026	20	FOB	Start with commercial operations at Lake Charles LNG
United States/Lake Charles LNG	Portfolio	Energy Transfer	Gunvor	2	2026	20	FOB	
United States/Lake Charles LNG	Portfolio	Energy Transfer	Shell	2.1	2026	20	FOB	
United States/Lake Charles LNG	South Korea	Energy Transfer	SK Gas Trading	0.4	2027	18	FOB	From Jan 2027 to Dec 2045
United States/Plaquemines LNG	Germany	Venture Global	EnBW	0.75	2026	20	FOB	
United States/Plaquemines LNG	Portfolio	Venture Global	Chevron	1	2025	20	FOB	
United States/Plaquemines LNG	Portfolio	Venture Global	ExxonMobil	1	2026	20	FOB	
United States/Plaquemines LNG	Portfolio	Venture Global	New Fortress Energy	1	2025	20	FOB	
United States/Plaquemines LNG	Portfolio	Venture Global	Petronas	1	2026	20	FOB	
United States/Plaquemines LNG	Portfolio	Venture Global	Shell	2	2025	20	FOB	
United States/Plaquemines LNG and CP2	Germany	Venture Global	EnBW	0.5	2026	20	FOB	
United States/Port Arthur	Multiple	Sempra Infrastructure - PALNG	ConocoPhillips	5	2027	20	FOB	Start with commissioning
United States/Port Arthur	Multiple	Sempra Infrastructure - PALNG	ENGIE	0.88	2027	15	FOB	Start with commissioning
United States/Port Arthur	Multiple	Sempra Infrastructure - PALNG	INEOS	1.4	2027	20	FOB	Based on HoA signed in June 2022; Start with commissioning
United States/Port Arthur	Multiple	Sempra Infrastructure - PALNG	RWE	2.25	2027	15	FOB	Based on HoA signed in May 2022; Start with commissioning
United States/Rio Grande LNG	China	NextDecade	China Gas	1	2027	20	FOB	
United States/Rio Grande LNG	China	NextDecade	ENN (Singapore)	2	2027	20	FOB	Start with commercial operations at Rio Grande LNG
United States/Rio Grande LNG	China	NextDecade	Guangdong Energy	1	2027	20	DES	Based on binding HoA signed in March 2022. Option to take extra 0.5 MTPA on FOB
United States/Rio Grande LNG	Multiple	NextDecade	ENGIE	1.75	2027	15	FOB	Start with commissioning at Rio Grande LNG
United States/Rio Grande LNG	Multiple	NextDecade	Galp Trading SA	1	2027	20	FOB	
United States/Rio Grande LNG	Portfolio	NextDecade	ExxonMobil	1	2027	20	FOB	
United States/Sabine Pass	Portfolio	Sabine Pass Liquefaction	Chevron	1	2026	16.5	FOB	
Woodside Portfolio	Europe (incl Germany)	Woodside	Uniper	0.8	2023	9	DES	Flexible SPA for up to 12 cargoes per year

Export Country	Import market	Seller	Buyer	ACQ (MTPA)	Start date	Duration	Delivery Format	Comments
<b>HEADS OF AGREEMENT</b>								
United States/ Cameron LNG Phase 2	Multiple	Sempra Infrastructure	TotalEnergies, Mitsui, Mitsubishi and NYK	*			FOB	*50.2% of the projected T4 production capacity and 25% of projected T1 -T3 debottlenecking capacity under tolling agreements, with the remaining capacity allocated equally to the existing Cameron LNG Phase 1 customers
United States/ Cameron LNG Phase 2	Poland	Sempra Infrastructure	ORLEN	2	2027	20	FOB	Based on MoU signed in 2021
United States/Delfin LNG	Portfolio	Delfin Midstream	Centrica	1	2027	15	FOB	
United States/Delfin LNG	Portfolio	Delfin Midstream	Devon Energy	2			FOB	1 MTPA from first FLNG unit with an option to add 1 MTPA from first or future LNG units
United States/Port Arthur LNG and Cameron LNG Phase 2	Multiple	Sempra Infrastructure	Williams	3		20	FOB	Contemplates two 20-year SPAs for approx. 3 MTPA in aggregate.
United States/ Port Arthur LNG Phase I	Poland	Sempra Infrastructure	ORLEN	1	2027	20	FOB	Based on MoU signed in 2021. Converted to an SPA in 2023.
United States/ Port Arthur Phase II	Multiple	Sempra Infrastructure	INEOS	0.2			FOB	
<b>MEMORANDUMS OF UNDERSTANDING</b>								
Mexico/Vista Pacifico LNG	Mexico, Baja California Sur	Sempra Infrastructure - VPLNG	Comisión Federal de Electricidad (CFE)					
Mexico/Vista Pacifico LNG		Sempra Infrastructure - VPLNG	TotalEnergies	*				*1/3 of the project's LT export production
UAE/Das Island	Germany	ADNOC	RWE		2023			LNG can be delivered through either floating or land-based regasification terminals
<b>TERMINAL CAPACITY</b>								
France/Fos Cavaou	France	Elegy	ENGIE	2	2025	16	DES	From Jan 2025 to Dec 2040
Netherlands/Eemshaven	Netherlands	Gasunie	ENGIE	0.8	2023	5	DES	From Jan 2023 to Aug 2027
Netherlands/Eemshaven	Netherlands	EemsEnergyTerminal	Shell	2.9	2022	5		
Netherlands/Eemshaven	Netherlands	EemsEnergyTerminal	Cez	2.2	2022	5		

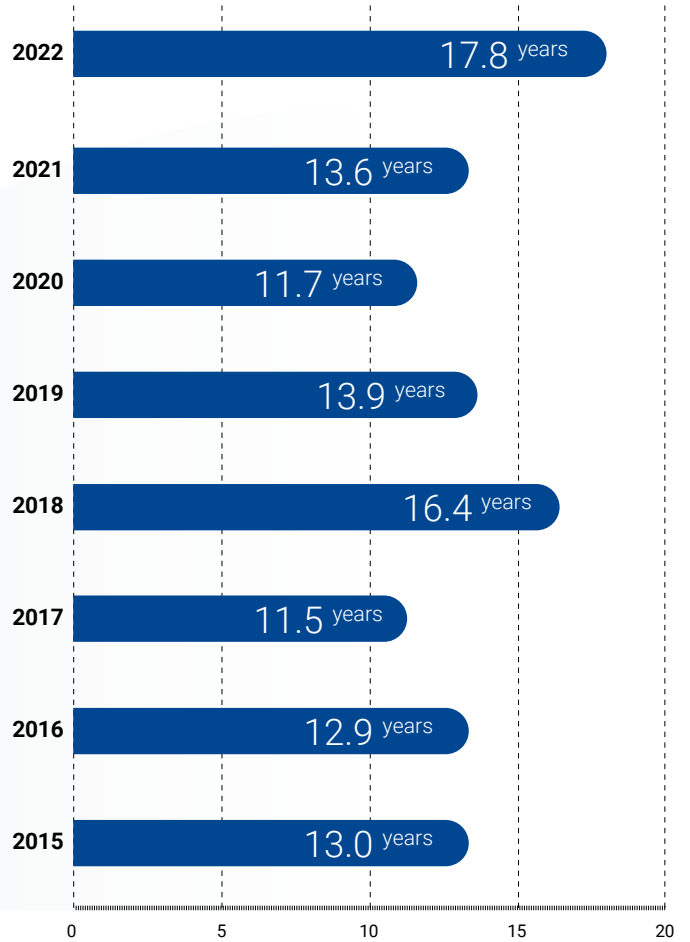




**VOLUME WEIGHTED AVERAGE DURATION OF LONG & MEDIUM TERM CONTRACTS**



**AVERAGE DURATION OF LONG & MEDIUM TERM CONTRACTS**



# Medium-term and long-term contracts in force in 2022\*

Export Country	Loading Point	Seller	Buyer	ACQ (MTPA)	Start date	End date	Delivery Format	Comments	
<b>ATLANTIC BASIN</b>									
Algeria	Skikda-Bethioua	Sonatrach	Botaş	4	1994	2024	DES	ACQ 1994 - 2014: 3.2 MTPA; 2015 - 2024: 4 MTPA	
	Skikda-Bethioua	Sonatrach	Cepsa Gas	0.77	2002	2022	DES		
	Skikda-Bethioua	Sonatrach	DEPA	0.34	2000	2022	CHF		
	Skikda-Bethioua	Sonatrach	ENGIE	1.5	1972		DES	Contract extended, duration not disclosed	
	Skikda-Bethioua	Sonatrach	TotalEnergies	2	1972	2023	DES		
Cameroon	Kribi FLNG	SNH	Gazprom	1.2	2018	2026	FOB		
Egypt	Damietta	Damietta LNG	BP	1	2005	2025	FOB		
	Damietta	Damietta LNG	ENI	2.5	2005	2029	Tolling	Former Union Fenosa Gas contract	
	Idku	ELNG T1	TotalEnergies	3.6	2005	2025	FOB		
	Idku	ELNG T2	Shell	3.6	2006	2026	FOB		
Equatorial Guinea	Punta Europa	EGLNG	Shell	3.4	2007	2024	FOB		
Nigeria	Bonny Island	Nigeria LNG T1-3	ENI	1.5	2021	2031			
	Bonny Island	Nigeria LNG T1-3	Galp Trading SA	1	2021	2031	DES		
	Bonny Island	Nigeria LNG T1-3	TotalEnergies	0.75	2021	2031	DES	From Oct 2021 to Sep 2031	
	Bonny Island	Nigeria LNG T1-3	TotalEnergies	0.75	2021	2031	FOB		
	Bonny Island	Nigeria LNG T1-3	TotalEnergies	0.375	2021	2031	DES		
	Bonny Island	Nigeria LNG T1-3	Vitol	0.5	2021	2031	DES		
	Bonny Island	Nigeria LNG T3	Galp Energia	0.73	2003	2023	DES		
	Bonny Island	Nigeria LNG T3	Naturgy Energy Group	1.99	2002	2024	DES		
	Bonny Island	Nigeria LNG T4 & 5	Endesa	0.75	2006	2026	DES		
	Bonny Island	Nigeria LNG T4 & 5	ENI	1.15	2007	2027	DES		
	Bonny Island	Nigeria LNG T4 & 5	Galp Energia	1.42	2006	2026	DES		
	Bonny Island	Nigeria LNG T4 & 5	Pavilion Energy	0.38	2007	2027	DES		
	Bonny Island	Nigeria LNG T4 & 5	Shell	2.3	2006	2026	DES		
	Bonny Island	Nigeria LNG T4 & 5	Shell	1.13	2006	2026	DES		
	Bonny Island	Nigeria LNG T4 & 5	TotalEnergies	0.23	2006	2029	DES		
	Bonny Island	Nigeria LNG T6	Shell	3.1	2008	2027	DES		
	Bonny Island	Nigeria LNG T6	TotalEnergies	0.9	2008	2029	DES		
	Norway	Hammerfest	-	RWE Supply & Trading	0.12	2010	-	FOB	0.06-0.12 MTPA; until depletion
		Hammerfest	Equinor	Pavilion Energy	1.13	2006	2026	DES	Pavilion Energy novation of Iberdrola contract
Hammerfest		Neptune Energy	TotalEnergies	0.5	2007	-	FOB	Until depletion	
Hammerfest		TotalEnergies	TotalEnergies	0.7	2007	-	FOB	Until depletion	
Russia	Sabetta	Yamal LNG	CNPC	3	2018	2038	DES		
	Sabetta	Yamal LNG	Gazprom Marketing & Trading	2.9	2018	2038	FOB	for 20+ years; at Zeebrugge transshipment point	
	Sabetta	Yamal LNG	Naturgy Energy Group	2.5	2018	2038	DES		
	Sabetta	Yamal LNG	Novatek	2.5	2018	2038	FOB		
	Sabetta	Yamal LNG	TotalEnergies	4	2018	2032	FOB		
Trinidad & Tobago	Point Fortin	Atlantic LNG T2 & 3	EDP	0.74	2003	2023	FOB	Naturgy/EDP swap: Naturgy buys 0.74 MTPA on a FOB basis in 2021	
	Point Fortin	Atlantic LNG T2 & 3	ENGIE	0.35	2002	2023	FOB		
	Point Fortin	Atlantic LNG T2 & 3	Naturgy Energy Group	0.65	2003	2023	FOB		
	Point Fortin	Atlantic LNG T2 & 3	Shell	1.7	2003	2023	FOB		
	Point Fortin	Atlantic LNG T2 & 3	Shell	2	2006	2023	FOB		
	Point Fortin	Atlantic LNG T4	BP	2.5	2006	2026	FOB		

(\*) Duration above 4 years

Export Country	Loading Point	Seller	Buyer	ACQ (MTPA)	Start date	End date	Delivery Format	Comments	
Trinidad & Tobago	Point Fortin	Atlantic LNG T4	Shell	1.5	2006	2026	FOB		
	Point Fortin	Atlantic LNG T4	Shell	1.15	2014	2026	FOB		
Cameron	Cameron LNG	Cameron LNG	Mitsubishi	4	2019	2039	Tolling		
	Cameron LNG	Cameron LNG	Mitsui	4	2019	2039	Tolling		
	Cameron LNG	Cameron LNG	TotalEnergies	4	2019	2039	Tolling		
	Diamond Gas International	Diamond Gas International	Toho Gas	0.2	2020	2038	DES	3 cargoes per year	
	Diamond Gas International	Diamond Gas International	Tohoku Electric	0.2	2022	2040	DES		
	Diamond Gas International	Diamond Gas International	Tokyo Gas	0.2	2020	2039	DES	3 cargoes per year	
	Mitsui	Mitsui	Toho Gas	0.3	2019	2039	DES		
	Mitsui	Mitsui	Tokyo Gas	0.52	2020	2040	DES	8 cargoes per year	
	Mitsui	Mitsui	TotalEnergies	0.5	2019	2029	FOB		
	TotalEnergies	TotalEnergies	CPC	0.8	2019	2038	DES		
	TotalEnergies	TotalEnergies	Marubeni	0.5	2019	2039	FOB		
	TotalEnergies	TotalEnergies	Tohoku Electric	0.27	2018	2038	DES		
	Corpus Christi	Cheniere	Cheniere Marketing	*	2019	-	FOB	*Excess from Corpus Christi	
	Corpus Christi	Cheniere	EDF	0.77	2020	2040	FOB		
	Corpus Christi	Cheniere	EDP	0.77	2020	2040	FOB		
	Corpus Christi	Cheniere	Endesa	2.25	2019	2039	FOB		
	Corpus Christi	Cheniere	ENGIE	0.9	2021	2041	FOB		
	Corpus Christi	Cheniere	Iberdrola	0.8	2019	2040	FOB	Back-to-back sale to Pavilion	
	Corpus Christi	Cheniere	Naturgy Energy Group	1.5	2020	2040	FOB		
	Corpus Christi	Cheniere	Pertamina	0.76	2020	2040	FOB		
	Corpus Christi	Cheniere	Pertamina	0.76	2019	2039	FOB		
	United States	Corpus Christi	Cheniere	Sinochem	1.8	2022	2040	FOB	Start July 2022; Initial volume 0.9 MTPA, which increases to 1.8 MTPA
		Corpus Christi	Cheniere	Woodside	0.85	2020	2040	FOB	
		Cove Point	GAIL GLOBAL (USA) LNG	GAIL	2.3	2018	2038	FOB	
		Cove Point	Pacific Summit Energy	Kansai Electric	0.8	2018	2037	FOB	
		Cove Point	ST Cove Point	Pacific Summit Energy	0.9	2018	2037	FOB	
		Cove Point	ST Cove Point	Tokyo Gas	1.4	2018	2038	FOB	
Elba Island		Elba Island	Shell	2.5	2020	2040	FOB		
Freeport		Freeport LNG	BP	4.4	2020	2040	Tolling		
Freeport		Freeport LNG	JERA	2.3	2019	2039	Tolling	Inherited from Chubu in 2016	
Freeport		Freeport LNG	Osaka Gas	2.3	2019	2039	Tolling		
Freeport		Freeport LNG	SK E&S	2.2	2020	2040	Tolling		
Freeport		Freeport LNG	TotalEnergies	2.2	2020	2040	Tolling		
Sabine Pass		Cheniere	Centrica	1.75	2019	2039	FOB		
Sabine Pass		Cheniere	Cheniere Marketing	*	2016	-	FOB	*Excess from Sabine Pass	
Sabine Pass		Cheniere	GAIL	3.5	2018	2038	FOB		
Sabine Pass		Cheniere	KOGAS	3.5	2017	2037	FOB	Kogas resells 0.7 MTPA to TotalEnergies	
Sabine Pass		Cheniere	Naturgy Energy Group	3.5	2017	2037	FOB		
Sabine Pass		Cheniere	Shell	5.5	2016	2036	FOB	Revised in 2012 (2 MTPA added to 3.5)	
Sabine Pass		Cheniere	TotalEnergies	2	2019	2039	FOB		
		Cheniere	TotalEnergies	0.8	2018	2023	DES	TotalEnergies novation of ENGIE contract. 0.72-0.8 MTPA: delivery of 12 cargoes per year to Montoir-de-Bretagne	

(\*) Duration above 4 years



## Medium-term and long-term contracts in force in 2022\*

Export Country	Loading Point	Seller	Buyer	ACQ (MTPA)	Start date	End date	Delivery Format	Comments
<b>MIDDLE EAST</b>								
<b>Oman</b>	Qalhat	Oman LNG	BP	1.13	2018	2024	FOB	
	Qalhat	Oman LNG	Itochu	0.7	2006	2025	FOB	
	Qalhat	Oman LNG	KOGAS	4.06	2000	2024	FOB	
	Qalhat	Oman LNG	Osaka Gas	0.66	2000	2024	FOB	
	Qalhat	Qalhat LNG	Naturgy Energy Group	1.65	2006	2025	DES	Former Union Fenosa Gas contract
	Qalhat	Qalhat LNG	Osaka Gas	0.8	2009	2026	FOB	
<b>Qatar</b>	Ras Laffan	Qatar Energy	CNOOC	3.5	2022	2036		
	Ras Laffan	Qatar Energy	CPC	1.25	2022	2036	DES	From January 2022 to December 2036
	Ras Laffan	Qatar Energy	Kuwait Petroleum Corporation	3	2022	2037	DES	Delivered to Al-Zour terminal.
	Ras Laffan	Qatar Energy	Pakistan State Oil	3	2022	2031	DES	
	Ras Laffan	Qatar Energy	Shell	1	2022	2031	DES	Supplied from QatarGas I; delivery to Chinese terminals
	Ras Laffan	Qatar Energy	Sinopec	2	2022	2032	DES	Start January 2022
	Ras Laffan	Qatar Energy	Suntien Green (S&T International)	1	2022	2037	DES	Delivered to Tangshan Suntien terminal
	Ras Laffan	Qatar Energy	Vitol	1.25	2021		DES	
	Ras Laffan	Qatargas I	Naturgy Energy Group	0.75	2005	2022	DES	
	Ras Laffan	Qatargas I	Naturgy Energy Group	0.75	2006	2022	FOB	
	Ras Laffan	Qatargas II T1	Pakistan State Oil	3.75	2016	2031	DES	
	Ras Laffan	Qatargas II T1/T2	PetroChina	3.4	2018	2040	DES	
	Ras Laffan	Qatargas II T2	TotalEnergies	1.85	2009	2034	DES	
	Ras Laffan	Qatargas II T2	TotalEnergies	1.5	2009	2034	DES	
	Ras Laffan	Qatargas II T2	TotalEnergies	1.85	2009	2034	DES	
	Ras Laffan	Qatargas III	CNOOC	2	2011	2035	DES	
	Ras Laffan	Qatargas III	JERA	0.7	2013	2028	DES	Inherited from Chubu in 2016
	Ras Laffan	Qatargas III	Kansai Electric	0.5	2013	2027	DES	
	Ras Laffan	Qatargas III	ORLEN	1.1	2015	2034	DES	
	Ras Laffan	Qatargas III	ORLEN	0.9	2018	2034	DES	
	Ras Laffan	Qatargas III	PTT	2	2015	2034	DES	
	Ras Laffan	Qatargas III	RWE Supply & Trading	1.1	2017	2024	DES	
	Ras Laffan	Qatargas III	Tohoku Electric	0.18	2016	2030	DES	
	Ras Laffan	Qatargas IV	Centrica	2	2014	2023	DES	Extension of the previous 4.5-year contract; Nominal quantity (ACQ) 2014/2018: 3 MTPA; 2019/2023: 2 MTPA
	Ras Laffan	Qatargas IV	OMV	1.1	2019	2024	DES	
	Ras Laffan	Qatargas IV	PetroChina	3	2011	2036	DES	
	Ras Laffan	Qatargas IV	Petronas	1.1	2014	2023	DES	Extension of the previous 5-year contract; Nominal quantity (ACQ) 2014/2018: 1.14 MTPA; 2019/2023: 1.1 MTPA
	Ras Laffan	Qatargas IV	Shell	1.1	2019	2023	DES	Jan 2019 - Dec 2023
	Ras Laffan	Qatargas IV	Shell	1	2020		DES	Destination Kuwait; duration not disclosed
	Ras Laffan	RasGas I	Endesa	0.75	2005	2025	DES	
	Ras Laffan	RasGas I	KOGAS	4.92	1999	2024	FOB	
	Ras Laffan	RasGas II	Petronet LNG	5	2004	2028	FOB	
	Ras Laffan	RasGas II	Petronet LNG	2.5	2009	2028	FOB	
	Ras Laffan	RasGas II T2	Edison	4.6	2009	2034	DES	
	Ras Laffan	RasGas II T3	CPC	3	2008	2032	FOB	
	Ras Laffan	RasGas II T3	EDF Trading	3.4	2007	2027	DES	
Ras Laffan	RasGas II T3	ENI	2.05	2007	2027	DES/FOB	Former Distrigas contract	
Ras Laffan	RasGas III	GAIL, IOCL, BPCL and GSPC	1	2016	2028	CFR	Former buyer: Petronet LNG	
Ras Laffan	RasGas III T1	KOGAS	2.1	2007	2026	DES		

(\*) Duration above 4 years

Export Country	Loading Point	Seller	Buyer	ACQ (MTPA)	Start date	End date	Delivery Format	Comments
Qatar	Ras Laffan	RasGas III T2	CPC	1.5	2013	2032	DES	
	Ras Laffan	RasGas III T2	KOGAS	2	2012	2032	DES	
	Ras Laffan	RasGas III T2	Petrobangla	2.5	2018	2033	DES	
Yemen	Balhaf	Yemen LNG T1 & 2	TotalEnergies	2	2009	2029	DES	
	Balhaf	Yemen LNG T2	TotalEnergies	2.55	2009	2029	FOB	
<b>PACIFIC BASIN</b>								
Australia	Ashburton North (Wheatstone)	Chevron	JERA	0.4	2017	2036	DES	Inherited from TEPCO in 2016
	Ashburton North (Wheatstone)	Chevron, Kufpec, Woodside	JERA	3.3	2017	2036	DES	Inherited from TEPCO in 2016; Nominal quantity (ACQ) 2017-2018: 1.7 MTPA; 2018-2027: 3.3 MTPA
	Ashburton North (Wheatstone)	Chevron, Kufpec, Woodside	JERA	0.9	2017	2036	FOB	Inherited from TEPCO in 2016
	Ashburton North (Wheatstone)	Chevron, Kufpec, Woodside	JERA	1	2017	2036	FOB	Inherited from Chubu in 2016; Nominal quantity (ACQ) 2018 0.4 MTPA; 2019: 0.7 MTPA; 2020: 0.8 MTPA; from 2021: 1 MTPA
	Ashburton North (Wheatstone)	Chevron, Kufpec, Woodside	Kyushu Electric	0.83	2017	2036	FOB	0.7 MTPA + 0.13 MTPA
	Ashburton North (Wheatstone)	Chevron, Kufpec, Woodside	Tohoku Electric	0.92	2017	2036	DES	
	Ashburton North (Wheatstone)	PE Wheatstone	JERA	0.7	2017	2036	DES	Inherited from TEPCO in 2016; Nominal quantity (ACQ) 2017-2018: 0.5 MTPA; 2018-2027: 0.7 MTPA
	Barrow Island (Gorgon LNG)	Chevron	ENEOS Corporation	0.3	2015	2030	DES	
	Barrow Island (Gorgon LNG)	Chevron	GS Caltex	0.5	2016	2036	DES	
	Barrow Island (Gorgon LNG)	Chevron	JERA	1.44	2015	2039	FOB/DES	Inherited from Chubu in 2016
	Barrow Island (Gorgon LNG)	Chevron	Kyushu Electric	0.3	2015	2029	DES	
	Barrow Island (Gorgon LNG)	Chevron	Osaka Gas	1.5625	2014	2039	FOB	
	Barrow Island (Gorgon LNG)	Chevron	Tokyo Gas	1.25	2016	2039	FOB	1.1 MTPA + 0.15 MTPA
	Barrow Island (Gorgon LNG)	ExxonMobil	PetroChina	2.25	2016	2036	DES	
	Barrow Island (Gorgon LNG)	ExxonMobil	Petronet LNG	1.425	2016	2035	DES	
	Barrow Island (Gorgon LNG)	Shell	BP	0.5	2016	2036	FOB	
	Curtis Island	GLNG	KOGAS	3.5	2016	2036	FOB	
	Curtis Island	GLNG	Petronas	3.5	2015	2035	FOB	
	Curtis Island	QCLNG	CNOOC	3.6	2014	2034	DES	
	Curtis Island	QCLNG	Shell	3.8	2014	2034	FOB	
	Curtis Island	QCLNG	Tokyo Gas	1.2	2015	2035	DES	
	Curtis Island (APLNG)	APLNG	Kansai Electric	1	2016	2035	FOB	
	Curtis Island (APLNG)	APLNG	Sinopec	7.6	2016	2036	FOB	
	Darwin	Ichthys LNG	CPC	1.75	2018	2032	DES	
	Darwin	Ichthys LNG	INPEX	0.9	2018	2032	FOB	
	Darwin	Ichthys LNG	JERA	0.49	2018	2032	FOB	Inherited from Chubu in 2016
	Darwin	Ichthys LNG	JERA	1.05	2018	2032	FOB	Inherited from TEPCO in 2016
	Darwin	Ichthys LNG	Kansai Electric	0.8	2018	2032	FOB	
	Darwin	Ichthys LNG	Kyushu Electric	0.3	2018	2032	FOB	
	Darwin	Ichthys LNG	Osaka Gas	0.8	2018	2032	FOB	
	Darwin	Ichthys LNG	Toho Gas	0.28	2018	2032	FOB	
	Darwin	Ichthys LNG	Tokyo Gas	1.05	2018	2032	FOB	
	Darwin	Ichthys LNG	TotalEnergies	0.9	2018	2033	FOB	

(\*) Duration above 4 years

## Medium-term and long-term contracts in force in 2022\*

Export Country	Loading Point	Seller	Buyer	ACQ (MTPA)	Start date	End date	Delivery Format	Comments
Australia	Darwin	Santos, ENI, INPEX, JERA, Tokyo Gas	JERA, Tokyo Gas	3	2006	2022	FOB	Inherited from TEPCO in 2016
	Pluto	Pluto LNG	Kansai Electric	2	2011	2025	FOB/DES	1.75-2 MTPA
	Pluto	Pluto LNG	Tokyo Gas	1.5	2012	2025	FOB/DES	
	Prelude	INPEX	JERA	0.56	2019	2025	DES	Inherited from TEPCO in 2016, from INPEX equity volumes
	Prelude	INPEX	Shizuoka Gas	0.07	2019	2025	DES	From INPEX equity volumes
	Prelude	KOGAS	KOGAS	0.36	2019	-	FOB	
	Prelude	OPIC Australia	CPC	0.18	2019	-	FOB	
	Prelude	Shell	Shell	2.43	2019	-	FOB	
	Withnell Bay	Woodside, Shell, BP Australia, Chevron, Japan Australia LNG (Mitsubishi & Mitsu)	GDLNG	3.3	2006	2031	FOB	
	Withnell Bay		JERA	0.3	2009	2024	DES	Inherited from TEPCO in 2016
	Withnell Bay		JERA	0.6	2009	2029	DES	Inherited from Chubu in 2016
	Withnell Bay		Kansai Electric	0.925	2009	2024	DES	0.5-0.925 MTPA
	Withnell Bay		Kansai Electric	0.2	2009	2024	DES	0.2-0.7 MTPA
	Withnell Bay		Kyushu Electric	0.7	2009	2023	FOB	
	Withnell Bay		Osaka Gas	1	2004	2033	FOB	
Withnell Bay	Shizuoka Gas		0.13	2004	2029	FOB		
Withnell Bay	Toho Gas, Tokyo Gas		1.37	2004	2029	FOB		
Withnell Bay	Tokyo Gas		0.53	2017	2024	DES		
Brunei	Lumut	Brunei LNG	JERA, Osaka Gas, Tokyo Gas	3.4	2013	2023	DES	Inherited from TEPCO in 2016
	Lumut	Brunei LNG	Petronas	0.9	2013	2023	DES	
	Lumut	Brunei LNG	Shell	0.8	2013	2023	FOB	
Indonesia	Bontang	Pertamina	Nusantara Regas	0.8	2012	2022	FOB	2016-2020: 1 MTPA; 2021-2022: 0.8 MTPA
	Bontang	Pertamina	PPT ETS	0.8	2019	2025	FOB	Start Aug. 2019
	Bontang	Pertamina, ENI Muara bakau	ENI	1	2017	2027	FOB	
	Bontang	Pertamina, ENI Muara bakau	Pertamina	1.4	2017	2024	FOB	
	Donggi-Senoro	PT Donggi-Senoro LNG	JERA	1	2015	2027	DES	Inherited from Chubu in 2016
	Donggi-Senoro	PT Donggi-Senoro LNG	KOGAS	0.7	2015	2027	FOB	
	Donggi-Senoro	PT Donggi-Senoro LNG	Kyushu Electric	0.3	2015	2027	DES	
	Tangguh	Tangguh PSC Contractor Parties	CNOOC	2.6	2009	2033	FOB	
	Tangguh	Tangguh PSC Contractor Parties	Kansai Electric	1	2014	2035	DES	
	Tangguh	Tangguh PSC Contractor Parties	PLN	2.49	2015	2033	DES	44 cargoes per year
Malaysia	Tangguh	Tangguh PSC Contractor Parties	Posco	0.55	2005	2024	DES	
	Tangguh	Tangguh PSC Contractor Parties	Sempra LNG	3.7	2008	2029	DES	3.4 MTPA divertible
	Tangguh	Tangguh PSC Contractor Parties	SK E&S	0.6	2006	2026	DES	
	Tangguh	Tangguh PSC Contractor Parties	Tohoku Electric	0.12	2010	2024	DES	
	Bintulu	Malaysia LNG	Hiroshima Gas	0.1	2016	2031	FOB	
	Bintulu	Malaysia LNG	Hokkaido Electric Power	0.13	2018	2028	DES	
	Bintulu	Malaysia LNG	Hokuriku Electric	0.4	2018	2028	DES	
	Bintulu	Malaysia LNG	Osaka Gas	0.8	2009	2023	DES	
	Bintulu	Malaysia LNG	Tokyo Gas	0.5	2018	2031	FOB/DES	Nominal quantity (ACQ) 2018-2023: up to 0.5 MTPA; 2024-2031: up to 0.9 MTPA
	Bintulu	Malaysia LNG Dua	ENEOS Corporation	0.38	2015	2025	DES	
Bintulu	Malaysia LNG Dua	Gas Bureau, City of Sendai	0.16	2018	2027	DES		
Bintulu	Malaysia LNG Dua	JERA	0.4	2011	2031	DES	Inherited from Chubu in 2016	
Bintulu	Malaysia LNG Dua	Shizuoka Gas	0.33	2016	2025	DES		
Bintulu	Malaysia LNG Dua	Tohoku Electric	0.37	2016	2026	DES		

(\*) Duration above 4 years



Export Country	Loading Point	Seller	Buyer	ACQ (MTPA)	Start date	End date	Delivery Format	Comments
Malaysia	Bintulu	Malaysia LNG Dua	Tokyo Gas	0.9	2015	2025	DES	
	Bintulu	Malaysia LNG Satu	Saibu Gas	0.45	2014	2028	DES	
	Bintulu	Malaysia LNG Satu	Shikoku Electric	0.36	2010	2025	DES	
	Bintulu	Malaysia LNG Tiga	CNOOC	3	2009	2029	DES	
	Bintulu	Malaysia LNG Tiga	KOGAS	2	2008	2028	DES	
	Bintulu	Malaysia LNG Tiga	Osaka Gas, Toho Gas, Tokyo Gas	0.8	2004	2024	DES/FOB	
	Bintulu	Malaysia LNG Tiga	Toho Gas	0.4	2007	2027	DES	
	Bintulu	Malaysia LNG Tiga	Tohoku Electric	0.5	2005	2025	DES	
Mozambique	Coral South FLNG	Coral South FLNG	BP	3.4	2022	2042	FOB	
Papua New Guinea	Port Moresby	PNG LNG	CPC	1.2	2014	2033	DES	
	Port Moresby	PNG LNG	JERA	1.8	2014	2034	DES/FOB	Inherited from TEPCO in 2016
	Port Moresby	PNG LNG	Osaka Gas	1.5	2014	2034	DES/FOB	
	Port Moresby	PNG LNG	Sinopec	2	2014	2034	DES	
	Port Moresby	PNG LNG	BP Singapore	0.45	2018	2023	DES	2018-2021: 0.45 MTPA; 2022-2023: 0.9 MTPA
Peru	Pampa Melchorita	Peru LNG	Shell	4.2	2014	2028	FOB	
Russia	Prigorodnoye	Sakhalin Energy LLC	CPC	0.75	2017	2022	DES	
	Prigorodnoye	Sakhalin Energy LLC	Gazprom Global LNG	1	2009	2028	DES	
	Prigorodnoye	Sakhalin Energy LLC	Hiroshima Gas	0.21	2008	2028	FOB	
	Prigorodnoye	Sakhalin Energy LLC	JERA	1.5	2009	2029	FOB	Inherited from TEPCO in 2016
	Prigorodnoye	Sakhalin Energy LLC	JERA	0.5	2011	2026	DES	Inherited from Chubu in 2016
	Prigorodnoye	Sakhalin Energy LLC	KOGAS	1.5	2008	2028	FOB	
	Prigorodnoye	Sakhalin Energy LLC	Kyushu Electric	0.5	2009	2031	DES	
	Prigorodnoye	Sakhalin Energy LLC	Osaka Gas	0.2	2008	2031	FOB	
	Prigorodnoye	Sakhalin Energy LLC	Saibu Gas	0.065	2014	2028	DES	
	Prigorodnoye	Sakhalin Energy LLC	Toho Gas	0.5	2009	2033	DES	
	Prigorodnoye	Sakhalin Energy LLC	Tohoku Electric	0.42	2010	2030	FOB	
	Prigorodnoye	Sakhalin Energy LLC	Tokyo Gas	1.1	2009	2031	FOB	



(\*) Duration above 4 years

## Portfolio contracts

Export Country	Seller	Buyer	ACQ (MTPA)	Start date	End date	Delivery Format	Comments
<b>ADNOC LNG Portfolio</b>	ADNOC LNG	Vitol	1.8	2022	2028		Delivery to South and Southeast Asia
<b>BP Portfolio</b>	BP	Guangzhou Gas	0.65	2022	2034	DES	
	BP	AES	0.75	2003	2023	DES	Related to BP/ALNG T2 & 3 contract; Sourced from Point Fortin
	BP	CNOOC	1	2019	2039	DES	
	BP	CNOOC	0.5	2019	2034	FOB	
	BP	Glencore	0.39	2020	2025	DES	
	BP	JERA	1.2	2017	2034	DES	Inherited from TEPCO in 2016
	BP	JERA	0.5	2012	2028	DES	Inherited from Chubu in 2016
	BP	Kansai Electric	0.5	2017	2035	DES	
	BP	Kansai Electric	*	2018	2041	DES	Total maximum quantity of LNG during contract duration : approx 13 MT
	BP	Pavilion Energy	0.4	2020	2040	DES/FOB	
	BP	PTT	1	2017	2037	DES	
<b>Centrica Portfolio</b>	BP	Sempra LNG	*	2021		DES	Evergreen Ex-ship MSPA with no firm ACQ, LNG sourced from Atlantic LNG and delivered to ECALNG
	Centrica	ORLEN	0.13	2018	2023	DES	Up to 9 cargoes; Sourced from Sabine Pass
	Cheniere	ENN (Singapore)	0.9	2022	2035	FOB	From July 2022 to June 2035
<b>Cheniere Portfolio</b>	Cheniere	CPC	2	2021	2045	DES	
	Cheniere	PetroChina	0.3	2018	2043	FOB	Two SPAs with an aggregate volume of ~1.2 MTPA. A portion began in 2018, the balance will begin in 2023. Both continue through 2043. Sourced from Corpus Christi
	Cheniere	ORLEN	1.45	2019	2043	DES	In 2019-2022 the volume of supplies totals ~0.52 MT; 1.45 MTPA starting from 2023
	Cheniere	Trafigura	1	2019	2034	FOB	
	Cheniere	Vitol	0.7	2018	2033	FOB	
<b>Chevron Portfolio</b>	Chevron	CPC		2022		DES	Sourced from Australia
	Chevron	Hokkaido Gas	0.1	2022	2027	DES	Approximately 0.5 MT over 5 years from April 2022 to March 2027
	Chevron	CPC	1.12	2017	2022	DES	
	Chevron	ENN	0.64	2018	2028	DES	
	Chevron	GS Caltex		2019			Start Oct. 2019.
<b>ENI Portfolio</b>	Chevron	JOVO	0.5	2018	2023	DES	
	ENI	Pakistan LNG Limited	0.75	2017	2032	DES	
	ENI	Pavilion Energy	0.5	2012	2025	DES	Pavilion Energy novation of Iberdrola contract
<b>Equinor Portfolio</b>	Equinor	Litgas	0.256	2015	2025	DES	
<b>Exxon Portfolio</b>	ExxonMobil	Zhejiang Energy	1	2022	2042	DES	
<b>Gunvor Portfolio</b>	Gunvor	Pakistan LNG Limited	0.78	2017	2022	DES	60 cargoes in total (12 per year) - New MT contract
<b>JERA Portfolio</b>	JERA	Centrica	0.5	2019	2024	DES	Flexible sales arrangement
	JERA	INPEX	*	2013	2024	DES	*Total quantity of LNG during contract duration: 20 cargoes. Inherited from Chubu in 2016.
	JERA	Shizuoka Gas	0.26	2014	2032	DES	Inherited from TEPCO in 2016
	JERA	Shizuoka Gas	0.07	2022	2027	DES	From April 2022 to March 2027
<b>KOGAS Portfolio</b>	KOGAS	TotalEnergies	0.7	2017	2037	FOB	Sourced from Sabine Pass
<b>Kyushu Electric Portfolio</b>	Kyushu Electric	Nippon Gas	0.05	2016	2031	DES	
<b>Mitsui Portfolio</b>	Mitsui	Hokkaido Gas	0.2	2019	2028	DES	3 cargoes per year + carbon neutral LNG supply agreement signed in 2021
	Mitsui	Kuwait Petroleum Corporation	1.5	2020	2035	DES	
<b>Naturgy Portfolio</b>	Naturgy Energy Group	Endesa	0.75	2017	2037	DES	Sourced from Sabine Pass
	Naturgy Energy Group	Puerto Rico Electric Power Authority (PREPA)	1.47	2020	2032	DES	
	Naturgy Energy Group	Repsol	0.7	2016	2036	FOB	
<b>New Fortress Energy Portfolio</b>	New Fortress Energy	CFEnergia	0.28	2022		DES	Gas supply agreement: to supply regasified LNG through Pichilingue terminal
	New Fortress Energy	Unigel	0.8	2022	2027	DES	Gas supply agreement: to supply regasified LNG through Sergipe/ Suape terminals
<b>Novatek Portfolio</b>	Novatek	Gunvor	0.5	2018	2038	FOB	
	Novatek	Shell	0.9	2019	2041	FOB	At Montoir transshipment point. Sourced from Yamal LNG
	Novatek	TotalEnergies	1	2018	2041	DES	Inherited from ENGIE; for transshipment at Montoir. Sourced from Yamal LNG
<b>Oman Trading Portfolio</b>	Oman Trading International	Petrobangla	1	2019	2029	DES	
<b>Origin Energy Portfolio</b>	Origin Energy Limited	ENN	0.28	2018	2028	DES	

(\*) Duration above 4 years

Export Country	Seller	Buyer	ACQ (MTPA)	Start date	End date	Delivery Format	Comments
<b>Osaka Gas Portfolio</b>	Osaka Gas	Hiroshima Gas	0.13	2016	2031	DES	0.05-0.13 MTPA
	Osaka Gas	Nippon Gas	0.08	2006	2034	DES	
	Osaka Gas	Shizuoka Gas	0.3	2015	2034	DES	
	Osaka Gas	Uniper	1	2019	2039	FOB	Sourced from Freeport
<b>Pavilion Portfolio</b>	Pavilion Energy	Glencore	0.72	2012	2026	DES	Before 2020 Iberdrola/Ørsted contract
<b>Pertamina Portfolio</b>	Pertamina	Petronas		2020	2025	DES/FOB	MSPA; From Jan 2020 to Jan 2025
	Pertamina	Posco		2019	2024	FOB/DES	MSPA; Start Dec. 2019
<b>Petronas Portfolio</b>	Pertamina	TotalEnergies	0.4	2020	2030	FOB	Sourced from Corpus Christi
	Petronas	JOVO	0.5	2016	2023	DES	
	Petronas	KOMIPO	0.24	2020	2025	DES	Sourced from Malaysia LNG
	Petronas	PTT	1.2	2017	2032	DES	
	Petronas	Shenergy	1.5	2022	2034	DES	
	Petronas	S-Oil	0.7	2018	2033	DES	Sourced from Malaysia LNG
<b>SEFE Portfolio</b>	Petronas	Toho Gas	0.54	2017	2027	DES	7-9 cargoes per year: 0.42 to 0.54 MTPA
	SEFE	GAIL	2.5	2018	2041		Former Gazprom contract
<b>Shell Portfolio</b>	Shell	EDP (Energia del Pacifico)	0.5	2022	2034	DES	Imports to El Salvador LNG-to-Power project
	Shell	Kuwait Petroleum Corporation		2020	2034	DES	
	Shell	MFGK Croatia	0.2	2021	2027	DES	0.25 Bcma delivered to Krk terminal for export to Hungary
	Shell	PetroChina		2021	2026		LNG supplied is carbon neutral
	Shell	Tokyo Gas	0.5	2020	2030	DES	HoA; Start Apr. 2020
	Shell	BBE	0.8	2003	2023		
	Shell	CFE	3.08	2011	2027	DES	
	Shell	CNOOC	5	2015	2035	DES	Sourced from Australia and USA
	Shell	CPC	2	2017	2036	DES	
	Shell	DUSUP	1	2010	2025	DES	
	Shell	ENEOS Corporation	0.2	2015	2031	DES	Sourced from Nigeria, Russia and Australia
	Shell	GNL Chile	3	2009	2030	DES	Includes the 1 MTPA contract with Enel Generacion Chile (subsidiary of Enel Group)
	Shell	GSPC	1.3	2015	2034	DES	Up to 2.5 MTPA
	Shell	JERA	0.72	2014	2034	DES	Inherited from Chubu in 2016, maximum 12 cargoes per year
	Shell	JERA	0.35	2014	2035	DES	Inherited from Chubu in 2016 by JERA; and from BG by Shell
	Shell	KOGAS	3.64	2013	2038	DES	
	Shell	Naturgy Energy Group	1.16	2006	2023	DES	
	Shell	Osaka Gas	0.8	2012	2038	DES	
	Shell	PetroChina	2	2016	2036	DES	
	Shell	PTT	1	2017	2032	DES	
Shell	Singapore LNG	3	2013	2033	DES		
Shell	SOCAR	0.3	2016	2026	DES		
<b>Tokyo Gas Portfolio</b>	Tokyo Gas	Hokkaido Gas	0.4	2012	2023	DES	0.3-0.4 MTPA
	Tokyo Gas	Saibu Gas	0.3	2014	2029	DES	
<b>TotalEnergies Portfolio</b>	TotalEnergies	Arcelor Mittal Nippon Steel	0.5	2022	2026	DES	Delivery to Dahej or Hazira terminals from January 2022 to December 2026
	TotalEnergies	MSC Cruises	0.05	2022	2031	DES	For bunkering in Marseille from January 2022 to December 2031
	TotalEnergies	AES (Dominican Republic)	0.7	2017	2029	DES	
	TotalEnergies	AES (Panama)	0.4	2018	2028	DES	
	TotalEnergies	Chugoku Electric	0.27	2019	2036	DES	
	TotalEnergies	CMA CGM	0.27	2022	2031		
	TotalEnergies	CMA CGM	0.29	2020	2031		Start Nov 2020; Rotterdam (Gate)
	TotalEnergies	CNOOC	1.5	2010	2029	DES	Extension to 1.5 MTPA as of 2020
	TotalEnergies	Engie Energia Chile	0.27	2012	2026	DES	
	TotalEnergies	Engie Energia Chile	0.2	2018	2032	DES	
	TotalEnergies	ENN	0.5	2019	2028	DES	
	TotalEnergies	Guanghui Energy	0.7	2020	2030	DES	Start Jun. 2020
	TotalEnergies	INPEX	0.2	2018	2032	DES	
	TotalEnergies	KOGAS	2	2014	2031	DES	
	TotalEnergies	Pavilion Energy	0.14	2018	2027	FOB	
	TotalEnergies	Pertamina	0.4	2020	2035	DES	1 MTPA starting from 2024
TotalEnergies	Shell	0.53	2019	2023	DES		
TotalEnergies	Shenergy	1.4	2021	2041	DES	From July 2021 to July 2041	
<b>Vitol Portfolio</b>	Vitol	KOMIPO	0.4	2015	2024		
<b>Woodside Portfolio</b>	Woodside	RWE Supply & Trading	0.6	2017	2022	DES	0.3-0.6 MTPA
	Woodside	Uniper	0.9	2021	2034	DES	1.8 MTPA starting from April 2026
	Woodside Trading Singapore	Pertamina	0.6	2019	2039	DES	0.6-1.1 MTPA; provisions to increase up to 1.1 MTPA from 2024 to 2038
		New Fortress Energy	0.6	2021	2027	FOB	0.6-1 MTPA

(\*) Duration above 4 years



# LNG shipping

**734**  
vessels at the  
end of 2022

The total LNG tanker fleet consisted of **734 vessels** at the end of 2022. It included 49 FSRUs and 70 vessels (43 LNGBVs + 27 Small Scale LNG carriers) of equal or less than 30,000 cubic meters. Total cargo capacity at the end of 2022 stood at 108.7 million cubic meters. Total operational capacity (vessels known to be in service) amounted to 107.8 million cubic meters.

In 2022, the average spot charter rate for a 160,000 cubic meter LNG carrier stood at around \$131,500/day, compared to an average of around \$89,200/day in 2021.

A total of 35 vessels were delivered in 2022, compared with 68 vessels in 2021. The number of new orders reached a total of 178 units, compared with 111 new orders in 2021. At the end of 2022, the orderbook consisted of 332 units (53.8 million cubic meters) including 5 FSRUs and 23 LNGBVs. The orderbook represented 49% of the existing LNG carrier fleet. 63 of the units on order were scheduled for delivery in 2023. It included 4 FSRUs and 13 LNGBVs.

## LNG VESSELS SCRAPPED IN 2022

1 ship was demolished during the year:

Built	Vessel Name	IMO Number	Type	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager
1979	Dahlia (ex Ocean Quest)	7391214	LNG Carrier	126,540	Membrane	Hong Kong LNG	Newport News SB	OSM Maritime

## LNG CARRIERS LAID-UP, IDLE OR OTHERWISE OUT OF SERVICE AT THE END OF 2022

7 vessels were laid-up, idle or otherwise out of service at the end of the year :

Built	Vessel Name	IMO Number	Type	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager
1978	Bering Energy	7390155	LNG Carrier	126,400	Moss	Sinokor Merchant	General Dynamics	Sinokor Ship Mngt
1978	LNG Capricorn	7390208	LNG Carrier	126,300	Moss	Nova Shpg & Log	General Dynamics	Nova Carriers
1979	Coral Energy	7390179	LNG Carrier	126,400	Moss	Sinokor Merchant	General Dynamics	Sinokor Ship Mngt
1979	LNG Taurus	7390167	LNG Carrier	126,300	Moss	Nova Shpg & Log	General Dynamics	Nova Carriers
1983	Adriatic Energy	8110203	LNG Carrier	125,568	Moss	Sinokor Merchant	MHI	Synergy Maritime
1989	Grace Energy	8702941	LNG Carrier	127,590	Moss	Sinokor Merchant	MHI	WSM Singapore
2000	Golar Mazo	9165011	LNG Carrier	136,867	Moss	New Fortress Energy	MHI	Golar Management

## LNG CARRIERS DELIVERED IN 2022

35 ships were delivered during the year, including 1 FSRU and 7 ships (6 LNGBVs and 1 LNG Carrier) of less than 30,000 cubic meters. The average capacity of vessels delivered (excluding FSRU and ships of less than 30,000 cubic meters) amounted to 169,199 cubic meters.

Built	Vessel Name	IMO Number	Type	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager
2022	LNGT Powership Asia (ex NW Shearwater)	8608705	FSRU	127,500	Moss	KARMOL	Sembcorp	MOL LNG Transport (E)
2022	Alicante Knutsen	9904194	LNG Carrier	174,000	Membrane	Knutsen OAS Shipping	Hyundai Samho HI	Knutsen OAS Shipping
2022	BW Cassia	9896933	LNG Carrier	174,000	Membrane	BW LNG	Daewoo (DSME)	BW LNG
2022	BW ENN Snow Lotus	9896921	LNG Carrier	174,000	Membrane	BW LNG	Daewoo (DSME)	BW Fleet Mngt Norway
2022	Clean Cajun	9886732	LNG Carrier	200,000	Membrane	Dynagas Ltd	Hyundai HI (Ulsan)	Dynagas Ltd
2022	Clean Copano	9886744	LNG Carrier	200,000	Membrane	Dynagas Ltd	Hyundai HI (Ulsan)	Dynagas Ltd
2022	Coral Nordic	9919890	LNG Carrier	30,000	Other	Anthony Veder	Jiangnan SY Group	Anthony Veder
2022	Elisa Aquila	9884473	LNG Carrier	174,000	Membrane	Nippon Yusen Kaisha	Hyundai Samho HI	Gazoccean S.A.
2022	Global Sealine	9880477	LNG Carrier	174,000	Membrane	Global Shipping	Daewoo (DSME)	Nakilat Shipping
2022	Grace Freesia	9903920	LNG Carrier	174,000	Membrane	Nippon Yusen Kaisha	Hyundai Samho HI	NYK LNG Shipmngt.
2022	Huelva Knutsen	9904209	LNG Carrier	174,000	Membrane	Knutsen OAS Shipping	Hyundai Samho HI	Knutsen OAS Shipping

Built	Vessel Name	IMO Number	Type	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager
2022	John A. Angelicoussis	9901350	LNG Carrier	174,000	Membrane	Maran Gas Maritime	Daewoo (DSME)	Maran Gas Maritime
2022	Lagenda Serenity	9905980	LNG Carrier	79,960	Membrane	K-Line	Hudong Zhonghua	K Marine SM
2022	Lagenda Suria	9905978	LNG Carrier	79,958	Membrane	K-Line	Hudong Zhonghua	K Marine SM
2022	Lech Kaczynski	9922976	LNG Carrier	174,000	Membrane	Knutsen OAS Shipping	Hyundai HI (Ulsan)	Knutsen OAS Shipping
2022	Malaga Knutsen	9904182	LNG Carrier	174,000	Membrane	Knutsen OAS Shipping	Hyundai Samho HI	Knutsen OAS Shipping
2022	Minerva Amorgos	9885855	LNG Carrier	174,000	Membrane	Minerva Marine	Samsung HI	Minerva Marine
2022	Orion Bohemia (ex Orion Song)	9902926	LNG Carrier	174,000	Membrane	Oceanix Services Ltd	Hyundai HI (Ulsan)	B. Schulte (Hellas)
2022	Orion Sea	9889904	LNG Carrier	174,000	Membrane	Oceanix Services Ltd	Samsung HI	B. Schulte (Hellas)
2022	Orion Monet (ex Orion Star)	9888766	LNG Carrier	174,000	Membrane	Oceanix Services Ltd	Samsung HI	B. Schulte (Hellas)
2022	Orion Sun	9889916	LNG Carrier	174,000	Membrane	Oceanix Services Ltd	Samsung HI	Oceanix Services Ltd
2022	Prism Diversity	9904651	LNG Carrier	180,000	Membrane	SK Shipping	Hyundai Samho HI	
2022	Santander Knutsen	9904170	LNG Carrier	174,000	Membrane	Knutsen OAS Shipping	Hyundai Samho HI	Knutsen OAS Shipping
2022	Shaolin	9915894	LNG Carrier	174,199	Membrane	United Liquefied Gas	Hudong Zhonghua	COSCO Shanghai LNG
2022	SM Albatross	9902902	LNG Carrier	174,026	Membrane	Korea Line LNG	Hyundai HI (Ulsan)	KLC SM
2022	SM Bluebird	9902914	LNG Carrier	174,026	Membrane	Korea Line LNG	Hyundai HI (Ulsan)	KLC SM
2022	Tenergy	9892456	LNG Carrier	174,000	Membrane	Tsakos Energy Nav	Hyundai HI (Ulsan)	B. Schulte (Hellas)
2022	Vivit Arabia LNG	9902756	LNG Carrier	174,000	Membrane	H-Line Shipping	Hyundai Samho HI	H-Line Shipping
2022	Wu Dang	9915909	LNG Carrier	174,199	Membrane	United Liquefied Gas	Hudong Zhonghua	COSCO Shanghai LNG
2022	Avenir Achievement	9886768	LNGBV	20,000	Other	Avenir LNG	CIMC SOE	Hoegh LNG Fleet M.
2022	Avenir Ascension	9868974	LNGBV	7,500	Other	Avenir LNG	CIMC SOE	Hoegh LNG Fleet M.
2022	Haugesund Knutsen	9918767	LNGBV	5,000	Other	Knutsen OAS Shipping	Armon (Gijon)	Knutsen OAS Shipping
2022	K LNG Dream	9922811	LNGBV	500	Other	S Korea Fisheries	EK Heavy Industries	S Korea Fisheries
2022	K Lotus	9901362	LNGBV	18,137	Other	Korea Line LNG	Hyundai Mipo	KLC SM
2022	Xin Ao Pu Tuo Hao	9870628	LNGBV	8,500	Other	Xinao Energy Shpg	Dalian Shipbuilding	Tianjin SW Maritime

Clarksons Research, GIIGNL

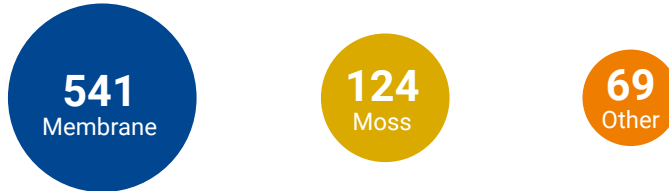
\* Cargo Containment System



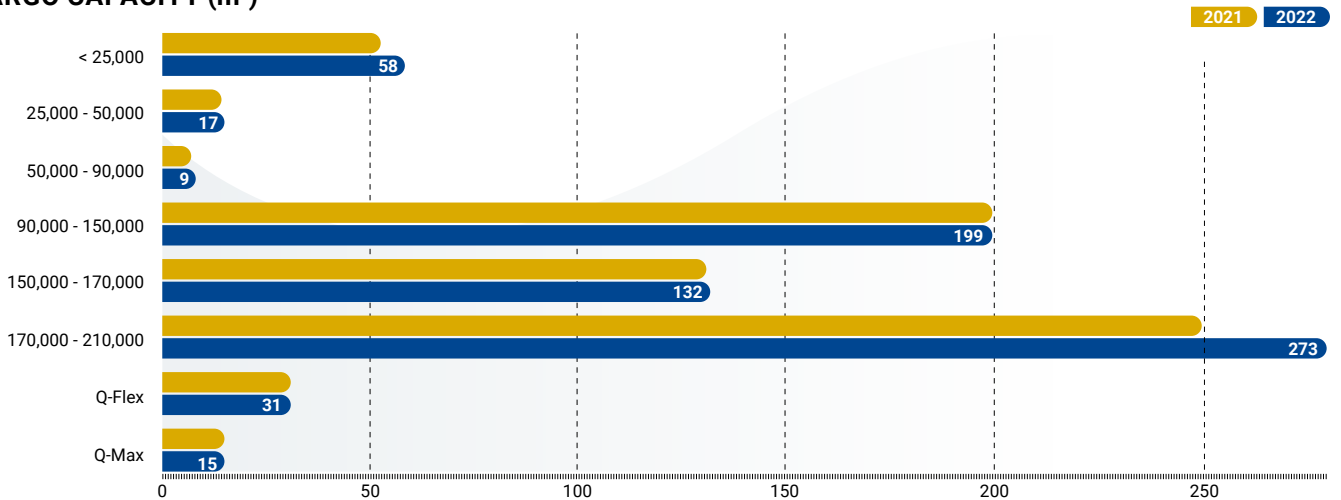
# LNG fleet statistics

At the end of 2022, the fleet could be classified as follows:

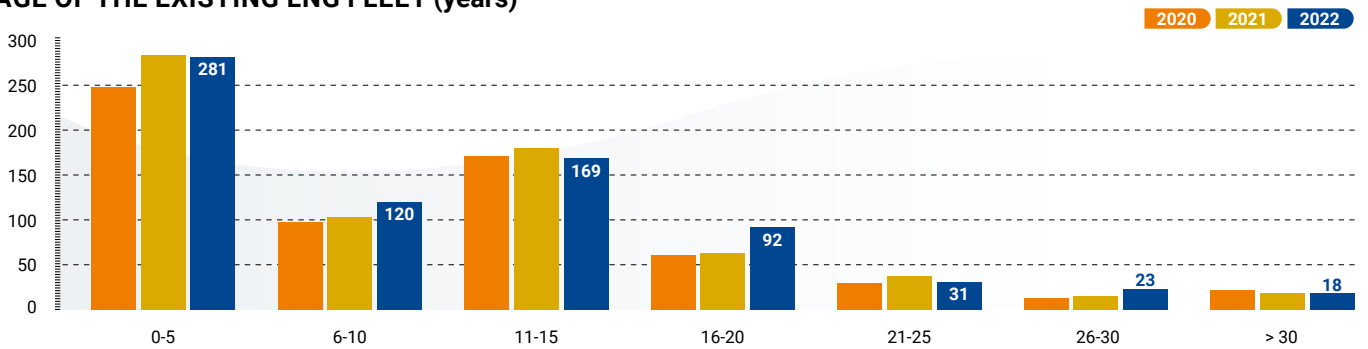
## CONTAINMENT SYSTEM



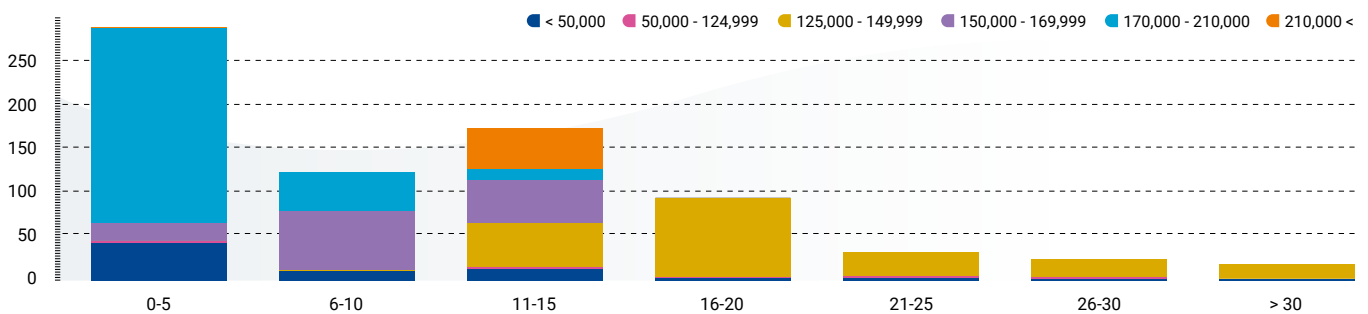
## CARGO CAPACITY (m<sup>3</sup>)



## AGE OF THE EXISTING LNG FLEET (years)



## CARGO CAPACITY (in m<sup>3</sup>) AND AGE (years)





# FSRU fleet

The total FSRU fleet consisted of **49 units** at the end of 2022. Total FSRU cargo capacity at the end of 2022 stood at around 7.3 million cubic meters.

The orderbook comprised 5 FSRUs including 4 scheduled for 2023 delivery.

## FSRU FLEET AT THE END OF 2022

Built/ Converted	Vessel Name	Storage Capacity (m <sup>3</sup> )	CCS*	Nominal Send-out Capacity (MTPA)	Owner	Builder	Location
1977/2010	Energos Freeze (ex Golar Freeze)	125,000	Moss	3.6	Energos Infrastructure	Keppel Shipyard	Laid up
1977/2012	Nusantara Regas Satu (ex Khannur)	125,000	Moss	3.0	Energos Infrastructure	Jurong Shipyard	Nusantara, Indonesia
1981/2008	Golar Spirit	129,000	Moss	1.8	New Fortress Energy	Keppel Shipyard	Laid up
2003/2013	FSRU Toscana	137,500	Moss	2.8	OLT Offshore	Drydocks World Dubai	Toscana, Italy
2004/2009	Energos Winter (ex Golar Winter)	138,000	Membrane	3.8	Energos Infrastructure	Keppel Shipyard	Pecem, Brazil
2005	Excellence	138,000	Membrane	3.8	Excelerate Energy	DSME	Moheshkhali, Bangladesh
2005	Excelsior	138,000	Membrane	3.5	Excelerate Energy	DSME	LNGC (Bahia Blanca, Argentina)
2006	Summit LNG (ex Excelerate)	138,000	Membrane	3.8	Excelerate Energy	DSME	Summit LNG, Bangladesh
2008	Explorer	150,900	Membrane	6.0	Excelerate Energy	DSME	Jebel Ali, Dubai, UAE
2009	Express	151,000	Membrane	3.8	Excelerate Energy	DSME	Ruwais, Abu Dhabi, UAE
2009	Exquisite	150,900	Membrane	4.8	Nakilat-Excelerate Energy	DSME	Port Qasim Karachi, Pakistan
2009	Neptune (ex GDF Suez Neptune)	145,130	Membrane	3.8	Höegh LNG	SHI	Lubmin, Germany
2010	Cape Ann (ex GDF Suez Cape Ann)	145,130	Membrane	3.7	Höegh LNG	SHI	Laid up
2010	Exemplar	150,900	Membrane	4.8	Excelerate Energy	DSME	Inkoo, Finland
2010	Expedient	150,900	Membrane	5.2	Excelerate Energy	DSME	Port Escobar, Argentina
2014	Experience	173,400	Membrane	6.0	Excelerate Energy	DSME	Guanabara Bay, Brazil
2014	Energos Eskimo (ex Golar Eskimo)	160,000	Membrane	3.8	Energos Infrastructure	SHI	Aqaba, Jordan
2014	Energos Igloo (ex Golar Igloo)	170,000	Membrane	5.8	Energos Infrastructure	SHI	Eemshaven, Netherlands
2014	Höegh Gallant	170,000	Membrane	2.8	Höegh LNG	HHI	Old Harbour, Jamaica
2014	Independence	170,000	Membrane	2.9	Höegh LNG	HHI	Klaipeda, Lithuania
2014	PGN FSRU Lampung	170,000	Membrane	2.7	Höegh LNG	HHI	Lampung LNG, Indonesia
2015	BW Singapore	170,000	Membrane	5.7	SNAM SpA	SHI	Sumed, Egypt
2015	Golar Tundra	170,000	Membrane	5.5	SNAM SpA	SHI	Piombino, Italy
2016	Höegh Grace	170,000	Membrane	2.8	Höegh LNG	HHI	Cartagena, Colombia
2017	BW Integrity	170,000	Membrane	5.0	BW Gas	SHI	Port Qasim GasPort, Pakistan
2017	Höegh Giant	170,000	Membrane	3.7	Höegh LNG	HHI	LNGC
2017	Bauhinia Spirit (ex MOL FSRU Challenger)	263,000	Membrane	4.1	MOL	DSME	Hong Kong
2017	Eemshaven LNG (ex S188)	25,000	Other	4.6	Exmar Offshore	Wison Zhoushan	Eemshaven, Netherlands
2018	Energos Nanook (ex Golar Nanook)	170,000	Membrane	5.5	Energos Infrastructure	SHI	Sergipe, Brazil
2018	Höegh Esperanza	170,000	Membrane	3.8	Höegh LNG	HHI	Wilhelmshaven, Germany
2018	Höegh Gannet	170,000	Membrane	5.7	Höegh LNG	HHI	Brunsbüttel, Germany
2018	Karunia Dewata	26,000	Other	0.4	JSK Group	PaxOcean Zhoushan	Benoa, Indonesia
2018	Marshal Vasilevskiy	174,100	Membrane	2.0	Gazprom	HHI	Kaliningrad, Russia
2009/2019	BW Batangas (ex BW Paris)	162,500	Membrane	4.2	BW Gas	Keppel Shipyard	LNGC (Philippines)
2019	BW Magna	173,400	Membrane	5.7	BW Gas	DSME	Port Açu, Brazil
2019	Höegh Galleon	170,000	Membrane	3.7	Höegh LNG	SHI	LNGC
2019	Turquoise P	170,000	Membrane	5.7	Kolin	HHI	Etki, Türkiye
2020	Excelerate Sequoia	173,400	Membrane	5.6	Excelerate Energy	DSME	Bahia, Brazil
2016/2020	Hua Xiang (ex. Hua Xiang 8)	14,000	Other	0.1	Zhejiang Huaxiang	Fengshun Ship Hvy	Maleo, Indonesia
2020	Jawa Satu	170,000	Membrane	2.4	PT Jawa Satu Regas	SHI	Java, Indonesia
2005/2020	LNG Croatia (ex Golar Viking)	140,208	Membrane	2.1	LNG Hrvatska	Huarun Dadong	Kirk, Croatia
2020	Torman	28,000	Other	2.0	Access LNG	Jiangnan SY Group	Tema LNG, Ghana
2020	Vasant 1	180,000	Membrane	5.0	Swan Energy	HHI	Saros, Türkiye
2003/2021	BW Tatiana (ex Gallina)	137,001	Moss	2	BW Gas Invenergy JV	Keppel Shipyard	El Salvador
2021	Ertugrul Gazi	170,000	Membrane	4.1	BOTAS	HHI	Dörtöyol, Türkiye
1994/2021	LNGT Powership Africa (ex Dwiputra)	127,386	Moss	1	KARMOL	Sembcorp	Senegal
2021	Transgas Force	174,000	Membrane		Dynagas	HZ	LNGC
2021	Transgas Power	174,000	Membrane		Dynagas	HZ	LNGC
1991/2022	LNGT Powership Asia (ex NW Shearwater)	127,500	Moss	2.7	KARMOL	Sembcorp	Sepetiba, Brazil

## FSRU ORDERBOOK AT THE END OF 2022

Built	Vessel Name	Storage Capacity (m <sup>3</sup> )	CCS*	Nominal Send-out Capacity (MTPA)	Owner	Builder	Location
2002/2023	Etyfa Prometheus (ex Galea)	136,967	Moss		DEFA	COSCO HI (Shanghai)	Cyprus
2010/2023	Alexandroupoli (ex Gaslog Chelsea)	153,500	Membrane	4.0	Gaslog	Keppel Shipyard	Greece
1994/2023	LNGT Powership Europe (ex LNG Vesta)	127,547	Moss		KARMOL	Keppel Shipyard	Mozambique
2023	Shanghai Electric Wison FSRP	170,000	Membrane		Wison Offshore	Wison (Nantong)	
2026	TBN	170,000	Membrane		Excelerate Energy	HHI (Ulsan)	

# LNG carrier fleet

## more than 30,000 cubic meters

The total LNG Carrier fleet (more than 30,000 cubic meters) consisted of **615 vessels** at the end of 2022.

The orderbook comprised 303 vessels, 44 of which were scheduled for delivery in 2023.

Built	Vessel Name	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager
1977	LNG Aquarius	126,300	Moss	Hanochem Shpg	General Dynamics	PT. Humolco LNG Indonesia
1978	Bering Energy	126,400	Moss	Sinokor Merchant	General Dynamics	Sinokor Ship Mngt
1978	Gulf Energy	126,300	Moss	Sinokor Merchant	General Dynamics	Sinokor Ship Mngt
1978	LNG Capricorn	126,300	Moss	Nova Shpg & Log	General Dynamics	Nova Carriers
1979	Coral Energy	126,400	Moss	Sinokor Merchant	General Dynamics	Sinokor Ship Mngt
1979	LNG Taurus	126,300	Moss	Nova Shpg & Log	General Dynamics	Nova Carriers
1983	Adriatic Energy	125,568	Moss	Sinokor Merchant	MHI	Synergy Maritime
1989	Grace Energy	127,590	Moss	Sinokor Merchant	MHI	WSM Singapore
1989	LNG Maleo	127,708	Moss	MOL	Mitsui SB (Chiba)	MOL LNG Transport
1989	Northwest Sanderling	127,525	Moss	Aust LNG Ship Op	MHI	STASCO (Shell)
1990	Ekaputra 1	137,012	Moss	Humpuss Intermoda	MHI	PT. Humolco LNG Indonesia
1990	Northwest Snipe	127,747	Moss	Aust LNG Ship Op	Mitsui SB (Chiba)	STASCO (Shell)
1993	Arlica (ex Seapeak Arctic, Arctic Spirit)	89,880	Other	Seapeak	I.H.I.	Teekay Shipping
1993	Northwest Sandpiper	127,500	Moss	Aust LNG Ship Op	Mitsui SB (Chiba)	STASCO (Shell)
1993	Seapeak Polar (ex Polar Spirit)	89,880	Other	Seapeak	I.H.I.	Seapeak Maritime
1994	Al Khaznah	135,496	Moss	National Gas Shpg.	Mitsui SB (Chiba)	ADNOC Logistics
1994	Hyundai Utopia	125,182	Moss	Hyundai LNG Shipping	HHI	Hyundai LNG Shipping
1994	Northwest Stormpetrel	127,606	Moss	Aust LNG Ship Op	MHI	STASCO (Shell)
1994	Puteri Intan	130,405	Membrane	MISC	Ch. de l'Atlantique	EagleStar Shipmgmt
1994	Shahamah	135,496	Moss	National Gas Shpg.	KHI	ADNOC Logistics
1994	YK Sovereign	127,125	Moss	SK Shipping	HHI	SK Shipping
1995	Ghasha	137,514	Moss	National Gas Shpg.	Mitsui SB (Chiba)	ADNOC Logistics
1995	HL Pyeong Taek	130,600	Membrane	H-Line Shipping	HHIC	H-Line Shipping
1995	Ish	137,540	Moss	National Gas Shpg.	MHI	ADNOC Logistics
1995	Puteri Delima	130,405	Membrane	MISC	Ch. de l'Atlantique	EagleStar Shipmgmt
1995	Puteri Nilam	130,405	Membrane	MISC	Ch. de l'Atlantique	EagleStar Shipmgmt
1996	Al Khor	137,354	Moss	Qatar Gas (Nakilat)	MHI	NYK LNG Shipmgmt.
1996	Al Zubarah	137,573	Moss	Qatar Gas (Nakilat)	Mitsui SB (Chiba)	MOL LNG Transport
1996	Hyundai Greenpia	125,000	Moss	Hyundai LNG Shipping	HHI	Hyundai LNG Shipping
1996	Mraweh	137,000	Moss	National Gas Shpg.	Kvaerner Masa	ADNOC
1996	Mubaraz	137,000	Moss	National Gas Shpg.	Kvaerner Masa	ADNOC
1996	Puteri Zamrud	130,405	Membrane	MISC	Ch. de l'Atlantique	EagleStar Shipmgmt
1997	Al Hamra	137,000	Moss	National Gas Shpg.	Kvaerner Masa	ADNOC
1997	Al Rayyan	135,358	Moss	Qatar Gas (Nakilat)	KHI	K-Line Energ Mgmt
1997	Al Wajbah	137,354	Moss	Qatar Gas (Nakilat)	MHI	MOL LNG Transport
1997	Portovenere	65,000	Membrane	MISC	Fincantieri Sestri	EagleStar Shipmgmt
1997	Umm Al Ashtan	137,000	Moss	National Gas Shpg.	Kvaerner Masa	ADNOC
1998	Al Wakrah	135,358	Moss	Qatar Gas (Nakilat)	KHI	MOL LNG Transport
1998	Broog	135,466	Moss	Qatar Gas (Nakilat)	Mitsui SB (Chiba)	NYK LNG Shipmgmt.
1998	Lerici	65,000	Membrane	MISC	Fincantieri Sestri	EagleStar Shipmgmt
1998	Zekreet	135,420	Moss	Qatar Gas (Nakilat)	Mitsui SB (Chiba)	K-Line Energ Mgmt
1999	Al Bidda	135,279	Moss	Qatar Gas (Nakilat)	KHI	MOL LNG Transport
1999	Doha	137,354	Moss	Qatar Gas (Nakilat)	MHI	NYK LNG Shipmgmt.
1999	HL Muscat (ex Hanjin Muscat)	138,200	Membrane	H-Line Shipping	HHIC	H-Line Shipping
1999	Hyundai Technopia	135,000	Moss	Hyundai LNG Shipping	HHI	Hyundai LNG Shipping
1999	SK Summit	138,000	Membrane	SK Shipping	DSME	SK Shipping
2000	Al Jasra	137,100	Moss	Qatar Gas (Nakilat)	MHI	NYK LNG Shipmgmt.
2000	Golar Mazo	136,867	Moss	New Fortress Energy	MHI	Golar Management
2000	HL Ras Laffan	138,214	Membrane	H-Line Shipping	HHIC	H-Line Shipping
2000	HL Sur (ex Hanjin Sur)	138,333	Membrane	H-Line Shipping	HHIC	H-Line Shipping
2000	Hyundai Aquapia	135,000	Moss	Hyundai LNG Shipping	HHI	Hyundai LNG Shipping
2000	Hyundai Cosmopia	135,000	Moss	Hyundai LNG Shipping	HHI	Hyundai LNG Shipping
2000	Hyundai Oceanpia	135,000	Moss	Hyundai LNG Shipping	HHI	Hyundai LNG Shipping
2000	K. Acacia	138,017	Membrane	Korea Line LNG	DSME	KLC SM
2000	K. Freesia	135,256	Membrane	Korea Line LNG	DSME	KLC SM
2000	LNG Jamal	135,333	Moss	Osaka Gas International Transport Inc	MHI	NYK LNG Shipmgmt.
2000	SK Splendor	138,375	Membrane	SK Shipping	SHI	SK Shipping
2000	SK Stellar	138,375	Membrane	SK Shipping	SHI	SK Shipping
2000	SK Supreme	138,200	Membrane	SK Shipping	SHI	SK Shipping
2001	Sohar LNG	137,248	Moss	MOL Oman Shipping Co JV	MHI	Oman Ship Mngt
2002	Excalibur	138,034	Membrane	Exmar	DSME	Exmar Shipmgmt
2002	LNG Rivers	137,231	Moss	Bonny Gas Transport	HHI	Nigeria LNG Ltd.
2002	LNG Sokoto	137,231	Moss	Bonny Gas Transport	HHI	Nigeria LNG Ltd.
2002	Puteri Delima Satu	137,100	Membrane	MISC	Mitsui SB (Chiba)	EagleStar Shipmgmt
2002	Seapeak Hispania (ex Hispania Spirit)	140,500	Membrane	Seapeak	DSME	Seapeak Maritime
2002	Trader II (ex Trader)	138,000	Membrane	Capital Gas	SHI	Capital Gas
2002	Trader III (ex Puteri Intan Satu)	137,489	Membrane	MISC	MHI	EagleStar Shipmgmt
2002	Xinhang Energy	136,912	Moss	Xinhang Shipping	MHI	B. Schulte (Sing.)
2003	BW Boston	138,059	Membrane	BW LNG	DSME	BW Fleet Mngt

Built	Vessel Name	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager
2003	<b>BW Everett</b>	<b>138,028</b>	Membrane	BW LNG	DSME	BW Fleet Mngt
2003	<b>Castillo de Villalba</b>	<b>138,183</b>	Membrane	Elcano	IZAR (Puerto Real)	Elcano
2003	<b>Energy Frontier</b>	<b>147,599</b>	Moss	Tokyo LNG Tanker Co.	KHI	MOL LNG Transport
2003	<b>Golar Arctic</b>	<b>140,648</b>	Membrane	Golar LNG	DSME	Golar Management
2003	<b>LNG Bayelsa</b>	<b>137,500</b>	Moss	Bonny Gas Transport	HHI	Nigeria LNG Ltd.
2003	<b>Merchant</b> (ex British Merchant)	<b>138,283</b>	Membrane	Sinokor Merchant	SHI	WSM Singapore
2003	<b>Methane Princess</b>	<b>138,000</b>	Membrane	Energos Infrastructure	DSME	New Fortress
2003	<b>Pacific Notus</b>	<b>137,006</b>	Moss	TEPCO	MHI	NYK LNG Shipmngt.
2003	<b>Puteri Nilam Satu</b>	<b>137,585</b>	Membrane	MISC	MHI	EagleStar Shipmngmt
2003	<b>Seapeak Catalunya</b> (ex Catalunya Spirit)	<b>138,000</b>	Membrane	Seapeak	IZAR (Sestao)	Seapeak Maritime
2003	<b>Singapore Energy</b>	<b>138,287</b>	Membrane	Sinokor Merchant	SHI	WSM Malaysia
2003	<b>SK Sunrise</b>	<b>138,306</b>	Membrane	I.S. Carriers SA	SHI	Iino Marine Service
2004	<b>Berge Arzew</b>	<b>138,088</b>	Membrane	BW LNG	DSME	BW Fleet Mngt
2004	<b>Bilbao Knutsen</b>	<b>138,000</b>	Membrane	Knutsen OAS Shipping	IZAR (Sestao)	Knutsen OAS Shipping
2004	<b>Cadiz Knutsen</b>	<b>138,826</b>	Membrane	Knutsen OAS Shipping	IZAR (Puerto Real)	Knutsen OAS Shipping
2004	<b>Disha</b>	<b>136,026</b>	Membrane	India LNG Transport	DSME	Shpg Corp of India
2004	<b>Dukhan</b>	<b>137,661</b>	Moss	MOL	Mitsui SB (Chiba)	MOL LNG Transport (E)
2004	<b>Fuji LNG</b>	<b>149,172</b>	Moss	TMS Cardiff Gas	KHI	TMS Cardiff Gas
2004	<b>Fuwairit</b>	<b>138,000</b>	Membrane	MOL	SHI	MOL LNG Transport (E)
2004	<b>Hongkong Energy</b> (ex Northwest Swan)	<b>138,000</b>	Membrane	Sinokor Merchant	DSME	WSM Singapore
2004	<b>Lalla Fatma N'Soumer</b>	<b>147,845</b>	Moss	Algeria Nippon Gas	KHI	Hyroc Shipping Co.
2004	<b>LNG Akwa Ibom</b>	<b>141,038</b>	Moss	Bonny Gas Transport	HHI	Nigeria LNG Ltd.
2004	<b>LNG River Orashi</b>	<b>145,914</b>	Membrane	BW LNG	DSME	BW Fleet Mngt
2004	<b>Milaha Ras Laffan</b>	<b>138,270</b>	Membrane	Qatar Shipping	SHI	Pronav Ship Mngt
2004	<b>Prima Concord</b> (ex. Methane Kari Elin)	<b>138,209</b>	Membrane	Vektor Maritim	SHI	Vektor Maritim
2004	<b>Puteri Firus Satu</b>	<b>137,617</b>	Membrane	MISC	MHI	EagleStar Shipmngmt
2004	<b>Puteri Zamrud Satu</b>	<b>137,100</b>	Membrane	MISC	Mitsui SB (Chiba)	EagleStar Shipmngmt
2004	<b>Raahi</b>	<b>136,026</b>	Membrane	India LNG Transport	DSME	Shpg Corp of India
2004	<b>Seapeak Galicia</b> (ex Galicia Spirit)	<b>140,624</b>	Membrane	Seapeak	DSME	Seapeak Maritime
2004	<b>Seapeak Madrid</b> (ex. Madrid Spirit)	<b>138,000</b>	Membrane	Seapeak	IZAR (Puerto Real)	Seapeak Maritime
2004	<b>Shandong Juniper</b> (ex Gemmata)	<b>136,985</b>	Moss	Shandong Mar. Energy	MHI	Shandong Mar. Energy
2005	<b>Al Deebeel</b>	<b>145,130</b>	Membrane	MOL	SHI	MOL LNG Transport (E)
2005	<b>Al Thakhira</b>	<b>145,130</b>	Membrane	K-Line	SHI	K Line LNG Shpg.
2005	<b>Energy Advance</b>	<b>147,624</b>	Moss	Tokyo LNG Tanker Co.	KHI	MOL LNG Transport
2005	<b>LNG Adamawa</b>	<b>142,656</b>	Moss	Bonny Gas Transport	HHI	Nigeria LNG Ltd.
2005	<b>LNG Cross River</b>	<b>141,000</b>	Moss	Bonny Gas Transport	HHI	Nigeria LNG Ltd.
2005	<b>LNG Enugu</b>	<b>145,914</b>	Membrane	BW LNG	DSME	BW Fleet Mngt
2005	<b>LNG Oyo</b>	<b>145,842</b>	Membrane	BW LNG	DSME	BW Fleet Mngt
2005	<b>Lusail</b>	<b>145,000</b>	Membrane	NYK	SHI	NYK LNG Shipmngt.
2005	<b>Maran Gas Asclepius</b> (ex Rasgas Asclepius)	<b>145,822</b>	Membrane	Maran Nakilat	DSME	Maran Gas Maritime
2005	<b>Nizwa LNG</b>	<b>147,684</b>	Moss	Asyad Shipping	KHI	Oman Ship Mngt
2005	<b>Pioneer Spirit</b> (ex LNG Pioneer)	<b>138,000</b>	Membrane	Jovo Group	DSME	Fleet Management
2005	<b>Puteri Mutiara Satu</b>	<b>137,100</b>	Membrane	MISC	Mitsui SB (Chiba)	EagleStar Shipmngmt
2005	<b>Salalah LNG</b>	<b>145,951</b>	Membrane	Asyad Shipping	SHI	Oman Ship Mngt
2005	<b>Seri Alam</b>	<b>145,572</b>	Membrane	MISC	SHI	EagleStar Shipmngmt
2005	<b>Umm Bab</b>	<b>145,000</b>	Membrane	Maran Nakilat	DSME	Maran Gas Maritime
2006	<b>Al Marrouna</b>	<b>149,539</b>	Membrane	Seapeak	DSME	Seapeak Maritime
2006	<b>Arctic Discoverer</b>	<b>142,612</b>	Moss	K-Line	Mitsui SB (Chiba)	K Line LNG Shpg.
2006	<b>Arctic Lady</b>	<b>147,208</b>	Moss	Hoegh LNG	MHI	Hoegh LNG Fleet M.
2006	<b>Arctic Princess</b>	<b>147,835</b>	Moss	Hoegh LNG	MHI	Hoegh LNG Fleet M.
2006	<b>Arctic Voyager</b>	<b>142,929</b>	Moss	K-Line	KHI	K Line LNG Shpg.
2006	<b>Energos Grand</b> (ex NFE Grand, Golar Grand)	<b>145,880</b>	Membrane	Energos Infrastructure	DSME	New Fortress
2006	<b>Energos Maria</b> (ex Golar Maria, Granosa)	<b>145,958</b>	Membrane	Energos Infrastructure	DSME	New Fortress
2006	<b>Energy Progress</b>	<b>147,558</b>	Moss	MOL	KHI	MOL LNG Transport
2006	<b>GasLog Athens</b> (ex Methane Lydon Volney)	<b>145,000</b>	Membrane	GasLog	SHI	GasLog LNG Services
2006	<b>Global Energy</b>	<b>74,130</b>	Membrane	Jovo Energy	Aker Yards	Gazocean (NYK)
2006	<b>Iberica Knutsen</b>	<b>138,120</b>	Membrane	Knutsen OAS Shipping	DSME	Knutsen OAS Shipping
2006	<b>Ibra LNG</b>	<b>147,100</b>	Membrane	Asyad Shipping	SHI	Oman Ship Mngt
2006	<b>Ibri LNG</b>	<b>147,384</b>	Moss	Asyad Shipping	MHI	Oman Ship Mngt
2006	<b>Karadeniz LNGT Powership Anatolia</b> (ex LNG Unity)	<b>154,472</b>	Membrane	Karpowership	Aker Yards	Synergy Maritime
2006	<b>LNG Benue</b>	<b>145,842</b>	Membrane	BW LNG	DSME	BW Fleet Mngt
2006	<b>LNG Dream</b>	<b>145,000</b>	Moss	Daigas Group	KHI	NYK LNG Shipmngt.
2006	<b>LNG Lokoja</b>	<b>149,600</b>	Membrane	BW LNG	DSME	BW Fleet Mngt
2006	<b>LNG River Niger</b>	<b>141,000</b>	Moss	Bonny Gas Transport	HHI	Nigeria LNG Ltd.
2006	<b>Methane Jane Elizabeth</b>	<b>145,000</b>	Membrane	GasLog Partners	SHI	GasLog LNG Services
2006	<b>Methane Rita Andrea</b>	<b>145,000</b>	Membrane	GasLog Partners	SHI	GasLog LNG Services
2006	<b>Milaha Qatar</b>	<b>145,130</b>	Membrane	Qatar Shipping	SHI	Pronav Ship Mngt
2006	<b>Prima Carrier</b> (ex Pacific Eurus)	<b>136,942</b>	Moss	PT Prima Ocean Nusantara	MHI	B. Schulte (UK)
2006	<b>Seri Amanah</b>	<b>145,000</b>	Membrane	MISC	SHI	EagleStar Shipmngmt
2006	<b>Seri Anggun</b>	<b>145,731</b>	Membrane	MISC	SHI	EagleStar Shipmngmt
2006	<b>Seri Angkasa</b>	<b>145,000</b>	Membrane	MISC	SHI	EagleStar Shipmngmt
2006	<b>Simaisma</b>	<b>145,700</b>	Membrane	Maran Nakilat	DSME	Maran Gas Maritime
2006	<b>Stena Blue Sky</b>	<b>145,819</b>	Membrane	Stena Bulk	DSME	Northern Marine Mngt
2007	<b>Al Areesah</b>	<b>148,786</b>	Membrane	Seapeak	DSME	Seapeak Maritime
2007	<b>Al Daayen</b>	<b>148,853</b>	Membrane	Seapeak	DSME	Seapeak Maritime

## LNG carrier fleet

Built	Vessel Name	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager
2007	<b>Al Gattara</b>	216,224	Membrane	Qatar Gas (Nakilat)	HHI	Nakilat Shipping
2007	<b>Al Jassasiya</b>	145,700	Membrane	Maran Nakilat	DSME	Maran Gas Maritime
2007	<b>Al Ruwais</b>	210,100	Membrane	Schulte Group	DSME	Pronav Ship Mngt
2007	<b>Al Safliya</b>	210,134	Membrane	Schulte Group	DSME	Pronav Ship Mngt
2007	<b>Cheikh El Mokrani</b>	74,365	Membrane	Hyproc Shipping Co.	Universal SB (Tsu)	Hyproc Shipping Co.
2007	<b>Clean Energy</b>	149,700	Membrane	Dynagas LNG Partners	HHI	Dynagas
2007	<b>Cool Rider</b> (ex Kmarin Emerald, British Emerald)	154,983	Membrane	Thenamaris	HHI	Thenamaris LNG
2007	<b>Ejnan</b>	145,000	Membrane	NYK	SHI	NYK LNG Shipmngt.
2007	<b>Golden Isaia</b> (ex Methane Shirley Elisabeth)	145,127	Membrane	Sillo Maritime	SHI	WSM Malaysia
2007	<b>Grace Acacia</b>	149,786	Membrane	NYK	HHI	NYK LNG Shipmngt.
2007	<b>Grace Barleria</b>	149,700	Membrane	NYK	HHI	NYK LNG Shipmngt.
2007	<b>Grand Elena</b>	145,580	Moss	NYK	MHI	NYK LNG Shipmngt.
2007	<b>LNG Alliance</b> (ex Gaselys)	154,472	Membrane	TotalEnergies	Aker Yards	Gazocoean (NYK)
2007	<b>LNG Borno</b>	149,600	Membrane	NYK	SHI	NYK LNG Shipmngt.
2007	<b>LNG Kano</b>	149,600	Membrane	BW LNG	DSME	BW Fleet Mngt
2007	<b>LNG Ogun</b>	149,600	Membrane	NYK	SHI	NYK LNG Shipmngt.
2007	<b>LNG Ondo</b>	148,300	Membrane	BW LNG	DSME	BW Fleet Mngt
2007	<b>Maran Gas Coronis</b>	145,700	Membrane	Maran Nakilat	DSME	Maran Gas Maritime
2007	<b>Methane Alison Victoria</b>	145,127	Membrane	GasLog Partners	SHI	GasLog LNG Services
2007	<b>Methane Heather Sally</b>	145,127	Membrane	Huaxia FL	SHI	GasLog LNG Services
2007	<b>Methane Nile Eagle</b>	145,144	Membrane	STASCO (Shell)	SHI	GasLog LNG Services
2007	<b>Neo Energy</b>	149,700	Membrane	Tsakos Energy Nav	HHI	HMM Ocean Service
2007	<b>Ob River</b>	149,700	Membrane	Dynagas LNG Partners	HHI	Dynagas
2007	<b>Seri Ayu</b>	145,894	Membrane	MISC	SHI	EagleStar Shipmngt
2007	<b>Seri Bakti</b>	152,300	Membrane	MISC	MHI	EagleStar Shipmngt
2007	<b>Seri Begawan</b>	152,300	Membrane	MISC	MHI	EagleStar Shipmngt
2007	<b>Sestao Knutsen</b>	138,114	Membrane	Knutsen OAS Shipping	CNN - La Naval	Knutsen OAS Shipping
2007	<b>Symphonic Breeze</b>	147,608	Moss	K-Line	KHI	K Line LNG Shpg.
2007	<b>Tembek</b>	216,000	Membrane	Qatar Gas (Nakilat)	SHI	Nakilat Shipping
2008	<b>Al Aamriya</b>	210,168	Membrane	Nakilat, JC	DSME	MOL LNG Transport (E)
2008	<b>Al Ghariya</b>	210,100	Membrane	Schulte Group	DSME	Pronav Ship Mngt
2008	<b>Al Gharrafa</b>	216,224	Membrane	Qatar Gas (Nakilat)	HHI	Nakilat Shipping
2008	<b>Al Ghuwairiya</b>	263,249	Membrane	Qatar Gas (Nakilat)	DSME	Nakilat Shipping
2008	<b>Al Hamla</b>	216,000	Membrane	Qatar Gas (Nakilat)	SHI	Nakilat Shipping
2008	<b>Al Huwaila</b>	217,000	Membrane	Seapeak	SHI	Seapeak Maritime
2008	<b>Al Kharsaah</b>	217,000	Membrane	Seapeak	SHI	Seapeak Maritime
2008	<b>Al Khuwair</b>	217,000	Membrane	Seapeak	SHI	Seapeak Maritime
2008	<b>Al Oraiq</b>	210,100	Membrane	Nakilat, JC	DSME	K Line LNG Shpg.
2008	<b>Al Sahla</b>	216,200	Membrane	Nakilat, JC	HHI	NYK LNG Shipmngt.
2008	<b>Al Shamal</b>	217,000	Membrane	Seapeak	SHI	Seapeak Maritime
2008	<b>Al Thumama</b>	216,200	Membrane	Nakilat, JC	HHI	NYK LNG Shipmngt.
2008	<b>Al Utouriya</b>	215,000	Membrane	Nakilat, JC	HHI	NYK LNG Shipmngt.
2008	<b>Aito Acrux</b>	147,798	Moss	TEPCO	MHI	NYK LNG Shipmngt.
2008	<b>Amur River</b>	149,743	Membrane	Dynagas LNG Partners	HHI	Dynagas Ltd
2008	<b>Bu Samra</b>	267,335	Membrane	Qatar Gas (Nakilat)	SHI	Nakilat Shipping
2008	<b>Cheikh Bouamama</b>	75,558	Membrane	Hyproc Shipping Co.	Universal SB (Tsu)	Hyproc Shipping Co.
2008	<b>Cool Rover</b> (ex British Sapphire)	155,000	Membrane	Thenamaris	HHI	Thenamaris LNG
2008	<b>Dapeng Moon</b>	147,210	Membrane	CLNG	HZ	CLNG
2008	<b>Dapeng Sun</b>	147,236	Membrane	CLNG	HZ	CLNG
2008	<b>Duhail</b>	210,100	Membrane	Schulte Group	DSME	Pronav Ship Mngt
2008	<b>Energy Navigator</b>	147,558	Moss	Tokyo LNG Tanker Co.	KHI	MOL LNG Transport
2008	<b>Fraiha</b>	210,100	Membrane	Nakilat, JC	DSME	MOL LNG Transport (E)
2008	<b>Grace Cosmos</b>	149,700	Membrane	NYK	HHI	Gazocoean (NYK)
2008	<b>Grand Aniva</b>	145,580	Moss	Sovcomflot	MHI	SCF Mngt Dubai
2008	<b>Grand Mereya</b>	145,964	Moss	MOL	Mitsui SB (Chiba)	MOL LNG Transport
2008	<b>Hyundai Ecopia</b>	149,700	Membrane	HMM Co., Ltd	HHI	HMM Ocean Service
2008	<b>K. Jasmine</b>	145,877	Membrane	Korea Line LNG	DSME	KLC SM
2008	<b>K. Mugungwha</b>	151,812	Membrane	Korea Line LNG	DSME	KLC SM
2008	<b>Kmarin Diamond</b> (ex British Diamond)	155,046	Membrane	BP Shipping	HSHI	BP Shipping
2008	<b>LNG Barka</b>	155,982	Moss	Asyad Shipping	KHI	NYK LNG Shipmngt.
2008	<b>LNG Ebisu</b>	147,546	Moss	MOL	KHI	MOL LNG Transport
2008	<b>LNG Imo</b>	148,300	Membrane	BW LNG	DSME	BW Fleet Mngt
2008	<b>LNG Kolt</b>	153,595	Membrane	Pan Ocean	HHIC	POS SM Co Ltd
2008	<b>Mozah</b>	267,335	Membrane	Qatar Gas (Nakilat)	SHI	Nakilat Shipping
2008	<b>Murwab</b>	210,100	Membrane	Nakilat, JC	DSME	MOL LNG Transport (E)
2008	<b>Seapeak Arwa</b> (ex Arwa Spirit)	165,500	Membrane	Seapeak	SHI	Teekay Shpg. (Gla)
2008	<b>Seapeak Marib</b> (ex Marib Spirit)	165,500	Membrane	Seapeak	SHI	Teekay Shpg. (Gla)
2008	<b>Seapeak Methane</b> (ex Methane Spirit)	165,500	Membrane	Seapeak	SHI	Teekay Shpg. (Gla)
2008	<b>Seri Balhaf</b>	157,721	Membrane	MISC	MHI	EagleStar Shipmngt
2008	<b>Seri Bijaksana</b>	152,888	Membrane	MISC	MHI	EagleStar Shipmngt
2008	<b>Tanggung Batur</b>	145,700	Membrane	Sovcomflot	DSME	NYK Shipmngt. Pte.
2008	<b>Tanggung Foja</b>	155,641	Membrane	K-Line	SHI	K-Line Energy Mgmt
2008	<b>Tanggung Hiri</b>	154,971	Membrane	Seapeak	HHI	Seapeak Maritime
2008	<b>Tanggung Jaya</b>	155,641	Membrane	K-Line	SHI	K-Line Energy Mgmt
2008	<b>Tanggung Towuti</b>	145,700	Membrane	Sovcomflot	DSME	NYK Shipmngt. Pte.
2008	<b>Trinity Arrow</b>	154,982	Membrane	K-Line	Koyo Dock	K Line LNG Shpg.
2008	<b>Tristar Ruby</b>	155,000	Membrane	Tristar Energy	HHI	WSM Malaysia
2008	<b>Umm Al Amad</b>	210,100	Membrane	Nakilat, JC	DSME	K Line LNG Shpg.
2008	<b>Umm Stal</b>	267,335	Membrane	Qatar Gas (Nakilat)	SHI	Nakilat Shipping
2009	<b>Al Dafna</b>	267,335	Membrane	Qatar Gas (Nakilat)	SHI	Nakilat Shipping



Built	Vessel Name	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager
2009	Al Ghashamiya	217,000	Membrane	Qatar Gas (Nakilat)	SHI	Nakilat Shipping
2009	Al Karaana	210,191	Membrane	Qatar Gas (Nakilat)	DSME	STASCO (Shell)
2009	Al Kharaitiyat	216,200	Membrane	Qatar Gas (Nakilat)	HHI	Nakilat Shipping
2009	Al Khattiya	210,196	Membrane	Qatar Gas (Nakilat)	DSME	STASCO (Shell)
2009	Al Mafyar	267,335	Membrane	Qatar Gas (Nakilat)	SHI	Nakilat Shipping
2009	Al Mayeda	267,335	Membrane	Qatar Gas (Nakilat)	SHI	Nakilat Shipping
2009	Al Nuaman	210,184	Membrane	Qatar Gas (Nakilat)	DSME	STASCO (Shell)
2009	Al Rekeyyat	216,200	Membrane	Qatar Gas (Nakilat)	HHI	Nakilat Shipping
2009	Al Sadd	210,100	Membrane	Qatar Gas (Nakilat)	DSME	Nakilat Shipping
2009	Al Samriya	261,700	Membrane	Qatar Gas (Nakilat)	DSME	Nakilat Shipping
2009	Al Sheehaniya	210,166	Membrane	Qatar Gas (Nakilat)	DSME	Nakilat Shipping
2009	Aseem	155,000	Membrane	India LNG Transport	SHI	Shpg Corp of India
2009	BW Brussels	162,400	Membrane	BW LNG	DSME	BW Fleet Mngt
2009	Cygnus Passage	147,200	Moss	Cygnus LNG Shipping	MHI	NYK LNG Shipmngt.
2009	Dapeng Star	147,210	Membrane	CLNG	HZ	CLNG
2009	Energy Confidence	153,000	Moss	Tokyo LNG Tanker Co.	KHI	NYK LNG Shipmngt.
2009	Ljmiliya	261,700	Membrane	Qatar Gas (Nakilat)	DSME	Nakilat Shipping
2009	LNG Jupiter	155,999	Moss	NYK	KHI	NYK LNG Shipmngt.
2009	Mekaines	267,335	Membrane	Qatar Gas (Nakilat)	SHI	Nakilat Shipping
2009	Mesaimeer	216,200	Membrane	Qatar Gas (Nakilat)	HHI	Nakilat Shipping
2009	Min Lu	147,210	Membrane	CLNG	HZ	CLNG
2009	Min Rong	147,000	Membrane	CLNG	HZ	CLNG
2009	Onaiza	210,100	Membrane	Qatar Gas (Nakilat)	DSME	Nakilat Shipping
2009	Pacific Enlighten	147,200	Moss	TEPCO	MHI	NYK LNG Shipmngt.
2009	Seapeak Magellan (ex Magellan Spirit)	165,500	Membrane	Seapeak	SHI	Teekay Shpg. (Gla)
2009	Seri Balqis	157,611	Membrane	MISC	MHI	EagleStar Shipmngt
2009	Shagra	267,335	Membrane	Qatar Gas (Nakilat)	SHI	STASCO (Shell)
2009	Spirit of Hela	173,010	Membrane	MOL	HSHI	MOL LNG Transport (E)
2009	Taitar No. 1	147,362	Moss	Nimic Ship Mgmt	MHI	Nimic Ship Mgmt
2009	Taitar No. 2	147,500	Moss	Nimic Ship Mgmt	KHI	Nimic Ship Mgmt
2009	Tanggung Palung	155,642	Membrane	K-Line	SHI	K-Line Energ Mgmt
2009	Tanggung Sago	154,971	Membrane	Seapeak	HSHI	Seapeak Maritime
2009	Trinity Glory	154,999	Membrane	K-Line	Koyo Dock	Pronav Ship Mngt
2009	Woodside Donaldson	166,936	Membrane	Seapeak	SHI	Teekay Shpg. (Gla)
2010	Aamira	267,335	Membrane	Qatar Gas (Nakilat)	SHI	STASCO (Shell)
2010	Al Bahiya	210,185	Membrane	Qatar Gas (Nakilat)	DSME	STASCO (Shell)
2010	Barcelona Knutsen	173,400	Membrane	Knutsen OAS Shipping	DSME	Knutsen OAS Shipping
2010	Castillo de Santisteban	173,673	Membrane	Elcano	STX SB (Jinhae)	Elcano
2010	GasLog Chelsea	153,000	Membrane	GasLog	HHIC	GasLog LNG Services
2010	GasLog Savannah	155,000	Membrane	GasLog	SHI	GasLog LNG Services
2010	GasLog Singapore	155,000	Membrane	GasLog	SHI	GasLog LNG Services
2010	Gigira Laitebo	155,000	Membrane	MOL	HHI	MOL LNG Transport (E)
2010	Methane Becki Anne	170,678	Membrane	GasLog Partners	SHI	GasLog LNG Services
2010	Methane Julia Louise	170,000	Membrane	Lepta Shipping	SHI	GasLog LNG Services
2010	Methane Mickie Harper	170,000	Membrane	Meiji Shipping	SHI	MMS Co Ltd
2010	Methane Patricia Camila	170,000	Membrane	Meiji Shipping	SHI	MMS Co Ltd
2010	Point Fortin	154,914	Membrane	Trinity LNG Carrier	Koyo Dock	MOL LNG Transport (E)
2010	Rasheeda	267,335	Membrane	Qatar Gas (Nakilat)	SHI	STASCO (Shell)
2010	Ribera Del Duero Knutsen	173,400	Membrane	Knutsen OAS Shipping	DSME	Knutsen OAS Shipping
2010	Seapeak Meridian (ex Meridian Spirit)	165,772	Membrane	Seapeak	SHI	Teekay Shpg. (Gla)
2010	Sevilla Knutsen	173,400	Membrane	Knutsen OAS Shipping	DSME	Knutsen OAS Shipping
2010	Taitar No. 3	147,366	Moss	Nimic Ship Mgmt	MHI	Nimic Ship Mgmt
2010	Taitar No. 4	147,546	Moss	Nimic Ship Mgmt	KHI	Nimic Ship Mgmt
2010	Valencia Knutsen	173,400	Membrane	Knutsen OAS Shipping	DSME	Knutsen OAS Shipping
2010	Zarga	267,335	Membrane	Qatar Gas (Nakilat)	SHI	STASCO (Shell)
2011	Amali	148,000	Membrane	Brunei Shell Tankers	DSME	Brunei Gas Carriers
2011	Arkat	147,228	Membrane	Brunei Gas Carriers	DSME	Brunei Gas Carriers
2011	Energy Horizon	177,441	Moss	Tokyo LNG Tanker Co.	KHI	NYK LNG Shipmngt.
2011	Lobito	160,276	Membrane	MINT LNG	SHI	Teekay Shipping Ltd.
2011	Malanje	160,276	Membrane	MINT LNG	SHI	NYK LNG Shipmngt.
2011	Sonangol Benguela	160,500	Membrane	Sonangol	DSME	Chevron Shpg Co
2011	Sonangol Etoша	160,786	Membrane	Sonangol	DSME	Chevron Shpg Co
2011	Sonangol Sambizanga	160,785	Membrane	Sonangol	DSME	Chevron Shpg Co
2011	Soyo	160,276	Membrane	MINT LNG	SHI	Teekay Shipping
2011	Stena Clear Sky	173,593	Membrane	Stena Bulk	DSME	Northern Marine Mngt
2011	Stena Crystal Sky	173,611	Membrane	Stena Bulk	DSME	Northern Marine Mngt
2012	Cubal	160,276	Membrane	MINT LNG	SHI	NYK LNG Shipmngt.
2012	Shen Hai	147,210	Membrane	CLNG	HZ	CLNG
2013	Arctic Aurora	154,899	Membrane	Dynagas LNG Partners	HHI	Dynagas
2013	Cool Voyager	160,372	Membrane	Thenamaris	SHI	Thenamaris LNG
2013	Energos Celsius (ex Golar Celsius)	160,000	Membrane	Energos Infrastructure	SHI	New Fortress
2013	GasLog Santiago	155,000	Membrane	GasLog Partners	SHI	GasLog LNG Services
2013	GasLog Seattle	155,000	Membrane	GasLog Partners	SHI	GasLog LNG Services
2013	GasLog Shanghai	155,000	Membrane	GasLog Partners	SHI	GasLog LNG Services
2013	GasLog Skagen	155,000	Membrane	GasLog	SHI	GasLog LNG Services
2013	GasLog Sydney	155,000	Membrane	GasLog Partners	SHI	GasLog LNG Services
2013	Grace Dahlia	177,630	Moss	NYK	KHI	NYK LNG Shipmngt.
2013	Hoegh Gandria (ex Golar Seal)	160,000	Membrane	CoolCo	SHI	CoolCo
2013	Lena River	155,165	Membrane	Dynagas LNG Partners	HHI	Dynagas
2013	Wilforce	156,007	Membrane	Awilco LNG	DSME	Awilco LNG Technical
2013	Wilpride	156,007	Membrane	Awilco LNG	DSME	Awilco LNG Technical
2013	Woodside Goode	159,662	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2013	Woodside Rogers	160,668	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2013	Yenisei River	155,000	Membrane	Dynagas LNG Partners	HHI	Dynagas
2014	Adam LNG	161,870	Membrane	Oman Shipping Co	HHI	Oman Ship Mngt

## LNG carrier fleet

Built	Vessel Name	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager
2014	Amani	154,800	Membrane	Brunei Gas Carriers	HHI	Brunei Gas Carriers
2014	Asia Energy	160,000	Membrane	Chevron Transport	SHI	Chevron Transport
2014	Asia Vision	160,000	Membrane	Chevron Transport	SHI	Chevron Transport
2014	Clean Ocean	161,881	Membrane	Dynagas	HHI	Dynagas
2014	Clean Planet	161,814	Membrane	Dynagas	HHI	Dynagas
2014	Cool Runner	160,000	Membrane	Thenamaris	SHI	Thenamaris LNG
2014	Corcovado LNG	160,106	Membrane	TMS Cardiff Gas	DSME	TMS Cardiff Gas
2014	Energos Penguin (ex Golar Penguin)	160,000	Membrane	Energos Infrastructure	SHI	CoolCo
2014	Esshu Maru	155,300	Moss	Trans Pacific Shipping 2 Ltd.	MHI	MOL LNG Transport
2014	GasLog Saratoga	155,000	Membrane	GasLog	SHI	GasLog LNG Services
2014	Golar Bear	160,000	Membrane	CoolCo	SHI	Golar Management
2014	Golar Crystal	160,000	Membrane	CoolCo	SHI	Golar Management
2014	Golar Glacier	162,000	Membrane	CoolCo	HSHI	Golar Management
2014	Kita LNG	160,118	Membrane	TMS Cardiff Gas	DSME	TMS Cardiff Gas
2014	Kool Frost (ex Golar Frost)	160,000	Membrane	CoolCo	SHI	Golar Management
2014	LNG Venus	155,873	Moss	Osaka Gas International Transport Inc	MHI	MOL LNG Transport
2014	Maran Gas Apollonia	161,870	Membrane	Maran Nakilat	HSHI	Maran Gas Maritime
2014	Maran Gas Delphi	159,800	Membrane	Maran Nakilat	DSME	Maran Gas Maritime
2014	Maran Gas Eessos	159,800	Membrane	Maran Nakilat	DSME	Maran Gas Maritime
2014	Maran Gas Posidonia	161,870	Membrane	Maran Nakilat	HSHI	Maran Gas Maritime
2014	Pacific Arcadia	147,200	Moss	NYK	MHI	NYK LNG Shipmngt.
2014	Palu LNG	160,000	Membrane	TMS Cardiff Gas	DSME	TMS Cardiff Gas
2014	Pskov	170,200	Membrane	Sovcomflot	STX SB (Jinhae)	Sun Ship Management
2014	Seishu Maru	155,300	Moss	Trans Pacific Shipping 1 Ltd.	MHI	NYK LNG Shipmngt.
2014	Solaris	155,000	Membrane	GasLog Partners	SHI	GasLog LNG Services
2014	Velikiy Novgorod	170,567	Membrane	Sovcomflot	STX SB (Jinhae)	Sun Ship Management
2014	Yari LNG	160,000	Membrane	TMS Cardiff Gas	DSME	TMS Cardiff Gas
2015	Amadi	154,800	Membrane	Brunei Gas Carriers	HHI	Brunei Gas Carriers
2015	Asia Endeavour	160,000	Membrane	Chevron Transport	SHI	Chevron Transport
2015	Asia Excellence	160,000	Membrane	Chevron Transport	SHI	Chevron Transport
2015	Beidou Star	172,000	Membrane	MOL	HZ	MOL LNG Transport (E)
2015	BW Pavilion Leeara	161,870	Membrane	BW LNG	HHI	BW Fleet Mngt
2015	BW Pavilion Vanda	161,870	Membrane	BW LNG	HHI	BW Fleet Mngt
2015	Clean Horizon	161,870	Membrane	Dynagas	HHI	Dynagas
2015	Cool Explorer	161,352	Membrane	Thenamaris	SHI	Thenamaris LNG
2015	Energy Atlantic	159,924	Membrane	Alpha Gas	STX SB (Jinhae)	Alpha Gas
2015	GasLog Salem	155,000	Membrane	GasLog	SHI	GasLog LNG Services
2015	Golar Kelvin	162,000	Membrane	CoolCo	HSHI	CoolCo
2015	Kool Baltic (ex SCF Melampus)	170,200	Membrane	Eastern Pacific Shpg	STX SB (Jinhae)	CoolCo
2015	Kool Blizzard (ex Golar Snow)	160,000	Membrane	CoolCo	SHI	CoolCo
2015	Kool Boreas (ex SCF Mitre)	170,200	Membrane	Eastern Pacific Shpg	STX SB (Jinhae)	CoolCo
2015	Kool Ice (ex Golar Ice)	160,000	Membrane	CoolCo	SHI	CoolCo
2015	LNG Bonny II	176,809	Membrane	Bonny Gas Transport	HHI	Nigeria LNG Ltd.
2015	LNG Finima II	174,900	Membrane	Bonny Gas Transport	SHI	NLNG Ship Mngt
2015	LNG Jurojin	155,300	Moss	KEPCO	MHI	MOL LNG Transport
2015	LNG Port Harcourt II	174,900	Membrane	Bonny Gas Transport	SHI	NLNG Ship Mngt
2015	Maran Gas Alexandria	161,870	Membrane	Maran Gas Maritime	HSHI	Maran Gas Maritime
2015	Maran Gas Lindos	159,800	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2015	Maran Gas Mystras	159,800	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2015	Maran Gas Sparta	161,870	Membrane	Maran Gas Maritime	HSHI	Maran Gas Maritime
2015	Maran Gas Troy	159,800	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2015	Papua	172,000	Membrane	MOL	HZ	MOL LNG Transport (E)
2015	Southern Cross	172,000	Membrane	MOL	HZ	MOL LNG Transport (E)
2016	CESI Gladstone	174,323	Membrane	China Energy Shpg	HZ	China Energy Mngt
2016	Christophe de Margerie	172,845	Membrane	Sovcomflot	DSME	Sunship Mgmt
2016	Clean Vision	162,000	Membrane	Dynagas	HHI	Dynagas
2016	GasLog Geneva	174,000	Membrane	GasLog Partners	SHI	GasLog LNG Services
2016	GasLog Gibraltar	174,000	Membrane	GasLog Partners	SHI	GasLog LNG Services
2016	GasLog Glasgow	174,000	Membrane	GasLog Partners	SHI	GasLog LNG Services
2016	GasLog Greece	174,000	Membrane	GasLog Partners	SHI	GasLog LNG Services
2016	Kumul	172,000	Membrane	MOL	HZ	MOL LNG Transport (E)
2016	La Mancha Knutsen	176,300	Membrane	Knutsen OAS Shipping	HHI	Knutsen OAS Shipping
2016	LNG Abalamabie	174,900	Membrane	Bonny Gas Transport	SHI	Northern Marine Mngt
2016	LNG Abuja II	174,900	Membrane	Bonny Gas Transport	SHI	Northern Marine Mngt
2016	LNG Fukurokuju	165,134	Moss	KEPCO	KHI	MOL LNG Transport
2016	LNG Lagos II	176,809	Membrane	Bonny Gas Transport	HHI	Nigeria LNG Ltd.
2016	LNG Mars	155,693	Moss	Osaka Gas International Transport Inc	MHI	MOL LNG Transport
2016	LNG Saturn	155,300	Moss	MOL	MHI	MOL LNG Transport
2016	Maran Gas Achilles	174,000	Membrane	Maran Gas Maritime	HSHI	Maran Gas Maritime
2016	Maran Gas Agamemnon	174,000	Membrane	Maran Gas Maritime	HSHI	Maran Gas Maritime
2016	Maran Gas Amphipolis	173,479	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2016	Maran Gas Hector	174,000	Membrane	Maran Gas Maritime	HSHI	Maran Gas Maritime
2016	Maran Gas Leto	174,000	Membrane	Maran Gas Maritime	HSHI	Maran Gas Maritime
2016	Maran Gas Pericles	175,069	Membrane	Maran Gas Maritime	HSHI	Maran Gas Maritime
2016	Maran Gas Vergina	174,364	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime

Built	Vessel Name	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager
2016	<b>Maria Energy</b>	174,000	Membrane	Tsakos Energy Nav	HHI	Tsakos Hyundai Mgmt
2016	<b>Prachi</b>	173,323	Membrane	India LNG Transport	HHI	Shpg Corp of India
2016	<b>Rioja Knutsen</b>	176,300	Membrane	Knutsen OAS Shipping	HHI	Knutsen OAS Shipping
2016	<b>Seapeak Creole</b> (ex-Creole Spirit)	173,545	Membrane	Seapeak	DSME	Seapeak
2016	<b>Seapeak Oak</b> (ex-Oak Spirit)	173,545	Membrane	Seapeak	DSME	Seapeak
2016	<b>Seri Camellia</b>	150,200	Moss	MISC	HHI	EagleStar Shipmngt
2016	<b>Tessala</b>	171,800	Membrane	ITOCHU Corp	HHI	Hyroc Shipping Co.
2017	<b>Asia Integrity</b>	160,000	Membrane	Chevron Transport	SHI	Chevron Transport
2017	<b>Asia Venture</b>	160,000	Membrane	Chevron Transport	SHI	Chevron Transport
2017	<b>Bishu Maru</b>	165,287	Moss	K-Line	KHI	K-Line Energy Mgmt
2017	<b>Boris Vilkitsky</b>	172,636	Membrane	Dynagas	DSME	Dynagas
2017	<b>CESI Beihai</b>	174,323	Membrane	China Energy Shpg	HZ	China Energy Mngt
2017	<b>CESI Qingdao</b>	174,323	Membrane	China Energy Shpg	HZ	China Energy Mngt
2017	<b>CESI Tianjin</b>	174,323	Membrane	China Energy Shpg	HZ	China Energy Mngt
2017	<b>Eduard Toll</b>	172,652	Membrane	Seapeak CLSICO JV	DSME	Teekay Shpg. (Gla)
2017	<b>Fedor Litke</b>	172,636	Membrane	Dynagas	DSME	Dynagas
2017	<b>Hyundai Peacepia</b>	174,000	Membrane	Hyundai LNG Shipping	DSME	Hyundai LNG Shipping
2017	<b>Hyundai Princepia</b>	174,000	Membrane	Hyundai LNG Shipping	DSME	Hyundai LNG Shipping
2017	<b>Macoma</b>	173,545	Membrane	Seapeak	DSME	STASCO (Shell)
2017	<b>Maran Gas Olympias</b>	173,638	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2017	<b>Maran Gas Roxana</b>	173,615	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2017	<b>Maran Gas Ullyses</b>	175,069	Membrane	Maran Gas Maritime	HSHI	Maran Gas Maritime
2017	<b>Murex</b>	173,545	Membrane	Seapeak	DSME	STASCO (Shell)
2017	<b>Ougarta</b>	171,800	Membrane	ITOCHU Corp	HHI	Hyroc Shipping Co.
2017	<b>Pan Asia</b>	174,000	Membrane	Seapeak	HZ	Seapeak Maritime
2017	<b>Seapeak Vancouver</b> (ex-Torben Spirit)	173,545	Membrane	Seapeak	DSME	Seapeak
2017	<b>Seri Cempaka</b>	150,200	Moss	MISC	HHI	EagleStar Shipmngt
2017	<b>Seri Cenderawasih</b>	150,200	Moss	MISC	HHI	EagleStar Shipmngt
2017	<b>SK Audace</b>	180,000	Membrane	SK & Marubeni JV	SHI	SK Shipping
2017	<b>SM Eagle</b>	174,263	Membrane	Korea Line LNG	DSME	KLC SM
2017	<b>SM Seahawk</b>	174,263	Membrane	Korea Line LNG	DSME	KLC SM
2018	<b>Boris Davydov</b>	172,636	Membrane	Dynagas	DSME	Dynagas
2018	<b>British Achiever</b>	173,644	Membrane	BP Shipping	DSME	BP Shipping
2018	<b>British Contributor</b>	173,644	Membrane	BP Shipping	DSME	BP Shipping
2018	<b>British Partner</b>	173,644	Membrane	BP Shipping	DSME	BP Shipping
2018	<b>BW Lilac</b>	174,284	Membrane	BW LNG	DSME	BW Fleet Mngt
2018	<b>BW Tulip</b>	174,284	Membrane	BW LNG	DSME	BW Fleet Mngt
2018	<b>Castillo de Caldelas</b>	178,817	Membrane	Elcano	Imabari SB Saijo	Elcano
2018	<b>Castillo de Merida</b>	178,817	Membrane	Elcano	Imabari SB Saijo	Elcano
2018	<b>CESI Lianyungang</b>	174,323	Membrane	China Energy Shpg	HZ	China Energy Mngt
2018	<b>CESI Wenzhou</b>	174,323	Membrane	China Energy Shpg	HZ	China Energy Mngt
2018	<b>Diamond Gas Orchid</b>	165,000	Moss	NYK	MHI	NYK LNG Shipmngt.
2018	<b>Diamond Gas Rose</b>	165,000	Moss	NYK	MHI	NYK LNG Shipmngt.
2018	<b>Energy Liberty</b>	166,571	Other	MOL	JMU Tsu Shipyard	MOL LNG Transport
2018	<b>Enshu Maru</b>	165,257	Moss	K-Line	KHI	K-Line Energy Mgmt
2018	<b>Flex Endeavour</b>	173,400	Membrane	Hyundai Glovis	DSME	FLEX Fleet Mngt.
2018	<b>Flex Enterprise</b>	173,400	Membrane	Hyundai Glovis	DSME	FLEX Fleet Mngt.
2018	<b>Flex Rainbow</b>	174,000	Membrane	FLEX LNG	SHI	FLEX Fleet Mngt.
2018	<b>Flex Ranger</b>	174,101	Membrane	FLEX LNG	SHI	FLEX Fleet Mngt.
2018	<b>GasLog Genoa</b>	174,000	Membrane	GasLog	SHI	GasLog LNG Services
2018	<b>GasLog Hong Kong</b>	174,000	Membrane	GasLog	HHI	GasLog LNG Services
2018	<b>GasLog Houston</b>	174,000	Membrane	GasLog	HHI	GasLog LNG Services
2018	<b>Georgiy Brusilov</b>	172,636	Membrane	Dynagas	DSME	Dynagas
2018	<b>Kinisis</b>	174,000	Membrane	Chandris (Hellas)	DSME	K Line LNG Shpg.
2018	<b>LNG Juno</b>	180,000	Moss	MOL	MHI	MOL LNG Transport
2018	<b>LNG Sakura</b>	177,582	Moss	KEPCO	KHI	NYK LNG Shipmngt.
2018	<b>LNG Schneeweissen</b>	180,125	Membrane	MOL	DSME	MOL LNG Transport (E)
2018	<b>Magdala</b>	173,545	Membrane	Seapeak	DSME	STASCO (Shell)
2018	<b>Maran Gas Spetses</b>	173,554	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2018	<b>Marvel Eagle</b>	156,265	Moss	MOL	KHI	MOL LNG Transport
2018	<b>Marvel Falcon</b>	174,000	Membrane	NYK	SHI	NYK Shipmngt. Pte.
2018	<b>Marvel Hawk</b>	174,000	Membrane	Schulte Group	SHI	B. Schulte (UK)
2018	<b>Megara</b>	173,545	Membrane	Seapeak	DSME	STASCO (Shell)
2018	<b>Myrina</b>	173,545	Membrane	Seapeak	DSME	STASCO (Shell)
2018	<b>Oceanic Breeze</b>	155,671	Moss	K-Line	MHI	K-Line Energy Mgmt
2018	<b>Pacific Breeze</b>	183,352	Moss	K-Line	KHI	K Marine SM
2018	<b>Pacific Mimosa</b>	155,727	Moss	NYK	MHI	NYK LNG Shipmngt.
2018	<b>Pan Americas</b>	174,000	Membrane	Seapeak	HZ	Seapeak Maritime
2018	<b>Pan Europe</b>	174,000	Membrane	Seapeak	HZ	Seapeak Maritime
2018	<b>Patris</b>	174,000	Membrane	Chandris (Hellas)	DSME	K Line LNG Shpg.
2018	<b>Rudolf Samoylovich</b>	172,567	Membrane	Seapeak CLSICO JV	DSME	Teekay Shpg. (Gla)
2018	<b>Seapeak Bahrain</b> (ex-Bahrain Spirit)	180,000	Membrane	Seapeak	DSME	Teekay Shpg. (Gla)
2018	<b>Seapeak Glasgow</b> (ex-Sean Spirit)	174,162	Membrane	Seapeak	HSHI	Seapeak
2018	<b>Seri Camar</b>	150,200	Moss	MISC	HHI	EagleStar Shipmngt
2018	<b>Seri Cegara</b>	150,200	Moss	MISC	HHI	EagleStar Shipmngt
2018	<b>SK Resolute</b>	180,082	Membrane	SK & Marubeni JV	SHI	SK Shipping
2018	<b>SK Serenity</b>	174,117	Membrane	SK Shipping	SHI	SK Shipping
2018	<b>SK Spica</b>	174,117	Membrane	SK Shipping	SHI	SK Shipping
2018	<b>Vladimir Rusanov</b>	172,658	Membrane	Arctic LNG	DSME	MOL LNG Transport (E)
2018	<b>Vladimir Vize</b>	172,658	Membrane	Arctic LNG	DSME	MOL LNG Transport (E)
2019	<b>Adriano Knutsen</b>	179,981	Membrane	Knutsen OAS Shipping	HHI	Knutsen OAS Shipping
2019	<b>British Listener</b>	173,644	Membrane	BP Shipping	DSME	BP Shipping
2019	<b>British Mentor</b>	173,644	Membrane	BP Shipping	DSME	BP Shipping

## LNG carrier fleet

Built	Vessel Name	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager
2019	British Sponsor	173,644	Membrane	BP Shipping	DSME	BP Shipping
2019	Bushu Maru	180,000	Moss	NYK	MHI	NYK LNG Shipmngt.
2019	BW Pavilion Aranda	173,400	Membrane	BW LNG	DSME	BW Fleet Mngt
2019	Diamond Gas Sakura	165,000	Moss	NYK	MHI	NYK LNG Shipmngt.
2019	Energy Glory	166,686	Other	NYK	JMU Tsu Shipyard	NYK LNG Shipmngt.
2019	Energy Innovator	166,571	Other	MOL	JMU Tsu Shipyard	MOL LNG Transport
2019	Energy Universe	166,637	Other	MOL	JMU Tsu Shipyard	MOL LNG Transport
2019	Flex Constellation	173,400	Membrane	FLEX LNG	DSME	FLEX Fleet Mngt.
2019	Flex Courageous	173,400	Membrane	FLEX LNG	DSME	FLEX Fleet Mngt.
2019	GasLog Gladstone	174,000	Membrane	GasLog	SHI	GasLog LNG Services
2019	GasLog Warsaw	180,000	Membrane	GasLog	SHI	GasLog LNG Services
2019	Georgiy Ushakov	172,652	Membrane	Seapeak CLSICO JV	DSME	Teekay Shpg. (Gla)
2019	LNG Dubhe	174,000	Membrane	MOL	HZ	MOL LNG Transport (E)
2019	LNG Jia Xing (ex Saga Dawn)	45,000	Membrane	CMC Leasing	CMHI (Jiangsu)	Integrated Mrtm
2019	Maran Gas Andros	173,400	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2019	Maran Gas Chios	173,548	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2019	Maran Gas Hydra	173,617	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2019	Marvel Crane	177,627	Moss	NYK	MHI	NYK Shipmngt. Pte.
2019	Marvel Heron	177,000	Moss	MOL	MHI	MOL LNG Transport
2019	Marvel Kite	174,000	Membrane	Tohmei Shpg	SHI	MMS Co Ltd
2019	Marvel Pelican	156,265	Moss	MOL	KHI	MOL LNG Transport
2019	Nikolay Urvantsev	172,597	Membrane	Arctic Purple LNG	DSME	MOL LNG Transport (E)
2019	Nikolay Yevgenov	172,625	Membrane	Seapeak CLSICO JV	DSME	Teekay Shpg. (Gla)
2019	Nikolay Zubov	172,636	Membrane	Dynagas	DSME	Dynagas
2019	Nohshu Maru	180,000	Moss	MOL	MHI	MOL LNG Transport
2019	Pan Africa	174,000	Membrane	Seapeak	HZ	Seapeak Maritime
2019	Prism Agility	180,024	Membrane	SK Shipping	HHI	SK Shipping
2019	Prism Brilliance	180,016	Membrane	SK Shipping	HHI	SK Shipping
2019	Rias Baixas Knutsen	180,041	Membrane	Knutsen OAS Shipping	HHI	Knutsen OAS Shipping
2019	Seapeak Yamal (ex Yamal Spirit)	174,174	Membrane	Seapeak	HSHI	Seapeak
2019	Shinshu Maru	177,481	Moss	NYK	KHI	NYK LNG Shipmngt.
2019	Sohshu Maru	177,474	Moss	MOL	KHI	MOL LNG Transport
2019	Vladimir Voronin	172,608	Membrane	Seapeak CLSICO JV	DSME	Teekay Shpg. (Gla)
2019	Woodside Chaney	173,579	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2019	Woodside Rees Withers	173,400	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2019	Yakov Gakkel	172,658	Membrane	Seapeak CLSICO JV	DSME	Teekay Shpg. (Gla)
2020	Amberjack LNG	174,000	Membrane	TMS Cardiff Gas	HHI	TMS Cardiff Gas
2020	Aristos I	174,000	Membrane	Capital Product Partners	HHI	B. Schulte (Hellas)
2020	Bonito LNG	174,000	Membrane	TMS Cardiff Gas	HHI	TMS Cardiff Gas
2020	BW Magnolia	173,400	Membrane	BW LNG	DSME	BW Fleet Mngt
2020	BW Pavilion Arantha	173,400	Membrane	BW LNG	DSME	BW Fleet Mngt
2020	Celsius Copenhagen	180,000	Membrane	Celsius	SHI	Celsius Tech
2020	Cool Discoverer	174,000	Membrane	Thenamaris	HHI	Thenamaris LNG
2020	Diamond Gas Metropolis	174,000	Membrane	NYK Mitsubishi JV	HSHI	NYK LNG Shipmngt.
2020	Dorado LNG	174,000	Membrane	TMS Cardiff Gas	SHI	TMS Cardiff Gas
2020	Elisa Larus	174,000	Membrane	NYK	HSHI	Gazocean (NYK)
2020	Energy Pacific	173,400	Membrane	Alpha Gas	DSME	Alpha Gas
2020	Flex Amber	173,400	Membrane	FLEX LNG	HSHI	FLEX Fleet Mngt.
2020	Flex Artemis	173,400	Membrane	FLEX LNG	DSME	FLEX Fleet Mngt.
2020	Flex Aurora	173,400	Membrane	FLEX LNG	HSHI	FLEX Fleet Mngt.
2020	Flex Resolute	173,400	Membrane	FLEX LNG	DSME	FLEX Fleet Mngt.
2020	GasLog Georgetown	174,000	Membrane	GasLog	SHI	GasLog LNG Services
2020	GasLog Wales	180,000	Membrane	GasLog	SHI	GasLog LNG Services
2020	GasLog Westminster	180,000	Membrane	GasLog	SHI	GasLog LNG Services
2020	GasLog Windsor	180,000	Membrane	GasLog	SHI	GasLog LNG Services
2020	Global Energy	173,514	Membrane	Nakilat Maran JV	DSME	Nakilat Shipping
2020	Kool Firm (ex SCF Barents)	174,000	Membrane	Eastern Pacific Shpg	HSHI	CoolCo
2020	La Seine	174,000	Membrane	TMS Cardiff Gas	HHI	TMS Cardiff Gas
2020	LNG Megrez	174,000	Membrane	MOL China COSCO JV	HZ	MOL LNG Transport (E)
2020	LNG Merak	174,000	Membrane	MOL China COSCO JV	HZ	MOL LNG Transport (E)
2020	LNG Phecda	174,000	Membrane	MOL China COSCO JV	HZ	MOL LNG Transport (E)
2020	Maran Gas Psara	173,595	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2020	Pearl LNG	174,000	Membrane	TMS Cardiff Gas	SHI	TMS Cardiff Gas
2020	Qogir	174,000	Membrane	TMS Cardiff Gas	SHI	TMS Cardiff Gas
2020	SCF La Perouse	174,000	Membrane	Sovcomflot	HSHI	Sun Ship Management
2020	Traiano Knutsen	180,000	Membrane	Knutsen OAS Shipping	HHI	Knutsen OAS Shipping
2020	Vivit Americas LNG	174,000	Membrane	TMS Cardiff Gas	HHI	TMS Cardiff Gas
2020	Woodside Charles Allen	173,583	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2021	Adamastos	174,000	Membrane	Capital Product Partners	HHI	Capital Ship Management
2021	Aristarchos	174,000	Membrane	Capital Product Partners	HHI	B. Schulte (UK)
2021	Aristidis I	174,000	Membrane	Capital Product Partners	HHI	Capital Gas SM
2021	Asklipios	174,000	Membrane	Capital Product Partners	HHI	Capital Ship Management
2021	Attalos	174,000	Membrane	Capital Product Partners	HHI	B. Schulte (UK)
2021	BW Helios	174,000	Membrane	BW LNG	DSME	BW Fleet Mngt
2021	BW Lesmes	174,000	Membrane	BW LNG	DSME	BW Fleet Mngt
2021	Celsius Canberra	180,000	Membrane	Celsius	SHI	Celsius Tech
2021	Celsius Carolina	180,000	Membrane	Celsius	SHI	Celsius Tech
2021	Celsius Charlotte	180,000	Membrane	Celsius	SHI	Celsius Tech
2021	Cobia LNG	174,000	Membrane	TMS Cardiff Gas	HHI	TMS Cardiff Gas
2021	Cool Racer	174,000	Membrane	Thenamaris	HHI	Thenamaris LNG
2021	Diamond Gas Crystal	174,000	Membrane	MISC NYK Mitsubishi JV	HSHI	NYK LNG Shipmngt.
2021	Diamond Gas Victoria	174,000	Membrane	MISC NYK Mitsubishi JV	HSHI	NYK LNG Shipmngt.
2021	Energy Endeavour	173,400	Membrane	Alpha Gas	DSME	Alpha Gas



Built	Vessel Name	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager
2021	<b>Energy Integrity</b>	173,400	Membrane	Alpha Gas	DSME	Alpha Gas
2021	<b>Energy Intelligence</b>	173,400	Membrane	Alpha Gas	DSME	Alpha Gas
2021	<b>Flex Freedom</b>	173,400	Membrane	FLEX LNG	DSME	FLEX Fleet Mngt.
2021	<b>Flex Vigilant</b>	174,000	Membrane	FLEX LNG	HSHI	FLEX Fleet Mngt.
2021	<b>Flex Volunteer</b>	174,000	Membrane	FLEX LNG	HSHI	FLEX Fleet Mngt.
2021	<b>GAIL Bhuwan</b>	180,000	Membrane	MOL	DSME	MOL LNG Transport (A)
2021	<b>GasLog Galveston</b>	174,000	Membrane	GasLog	SHI	GasLog LNG Services
2021	<b>GasLog Wellington</b>	180,000	Membrane	GasLog	SHI	GasLog LNG Services
2021	<b>GasLog Winchester</b>	180,000	Membrane	GasLog	SHI	GasLog LNG Services
2021	<b>Global Sea Spirit</b>	174,000	Membrane	Nakilat Maran JV	DSME	Nakilat Shipping
2021	<b>Global Star</b>	173,400	Membrane	Nakilat Maran JV	DSME	Nakilat Shipping
2021	<b>Grace Emilia</b>	174,000	Membrane	NYK	HSHI	NYK LNG Shipmngt.
2021	<b>Gui Ying</b>	174,000	Membrane	CSSC Shpg Leasing	HZ	B. Schulte (Hellas)
2021	<b>Hellas Athina</b>	173,400	Membrane	Latsco Shipping	HSHI	Latsco Marine Mngt
2021	<b>Hellas Diana</b>	173,400	Membrane	Latsco Shipping	HSHI	Latsco Marine Mngt
2021	<b>Isabella</b>	174,129	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2021	<b>Kool Orca</b> (ex SCF Timmerman)	174,095	Membrane	Eastern Pacific Shpg	HSHI	CoolCo
2021	<b>LNG Adventure</b>	174,000	Membrane	NYK	SHI	Gazocean (NYK)
2021	<b>LNG Endeavour</b>	174,000	Membrane	NYK	SHI	Gazocean (NYK)
2021	<b>LNG Endurance</b>	174,000	Membrane	NYK	SHI	Gazocean (NYK)
2021	<b>LNG Enterprise</b>	174,000	Membrane	NYK	SHI	Gazocean (NYK)
2021	<b>LNG Rosenrot</b>	180,000	Membrane	MOL	DSME	MOL LNG Transport (E)
2021	<b>LNGShips Athena</b>	174,000	Membrane	TMS Cardiff Gas	HHI	TMS Cardiff Gas
2021	<b>LNGShips Empress</b>	174,000	Membrane	TMS Cardiff Gas	SHI	TMS Cardiff Gas
2021	<b>LNGShips Manhattan</b>	174,000	Membrane	TMS Cardiff Gas	HHI	TMS Cardiff Gas
2021	<b>Maran Gas Amorgos</b>	174,000	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2021	<b>Maran Gas Ithaca</b>	174,000	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2021	<b>Maran Gas Kalymnos</b>	173,400	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2021	<b>Marvel Swan</b>	174,000	Membrane	Navigare Capital	SHI	Pronav Ship Mngt
2021	<b>Minerva Chios</b>	174,000	Membrane	Minerva Gas	SHI	WSM Malaysia
2021	<b>Minerva Kalymnos</b>	174,000	Membrane	Minerva Gas	SHI	B. Schulte (Hellas)
2021	<b>Minerva Limnos</b>	173,400	Membrane	Minerva Gas	DSME	B. Schulte (Hellas)
2021	<b>Minerva Psara</b>	173,400	Membrane	Minerva Gas	DSME	WSM Malaysia
2021	<b>MOL Hestia</b>	180,000	Membrane	MOL	DSME	Northern Marine Mngt
2021	<b>Mu Lan</b>	174,000	Membrane	CSSC Shpg Leasing	HZ	B. Schulte (Hellas)
2021	<b>Prism Courage</b>	180,000	Membrane	SK Shipping	HHI	SK Shipping
2021	<b>Vivirt City LNG</b>	174,000	Membrane	H-Line Shipping	HSHI	H-Line Shipping
2021	<b>Yiannis</b>	174,000	Membrane	Maran Gas Maritime	DSME	Maran Gas Maritime
2022	<b>Alicante Knutsen</b>	174,000	Membrane	Knutsen OAS Shipping	Hyundai Samho HI	Knutsen OAS Shipping
2022	<b>BW Cassia</b>	174,000	Membrane	BW LNG	Daewoo (DSME)	BW LNG
2022	<b>BW ENN Snow Lotus</b>	174,000	Membrane	BW LNG	Daewoo (DSME)	BW Fleet Mngt Norway
2022	<b>Clean Cajun</b>	200,000	Membrane	Dynagas Ltd	Hyundai HI (Ulsan)	Dynagas Ltd
2022	<b>Clean Copano</b>	200,000	Membrane	Dynagas Ltd	Hyundai HI (Ulsan)	Dynagas Ltd
2022	<b>Elisa Aquila</b>	174,000	Membrane	Nippon Yusen Kaisha	Hyundai Samho HI	Gazocean S.A.
2022	<b>Global Sealine</b>	174,000	Membrane	Global Shipping	Daewoo (DSME)	Nakilat Shipping
2022	<b>Grace Freesia</b>	174,000	Membrane	Nippon Yusen Kaisha	Hyundai Samho HI	NYK LNG Shipmngt.
2022	<b>Huelva Knutsen</b>	174,000	Membrane	Knutsen OAS Shipping	Hyundai Samho HI	Knutsen OAS Shipping
2022	<b>John A. Angelicoussis</b>	174,000	Membrane	Maran Gas Maritime	Daewoo (DSME)	Maran Gas Maritime
2022	<b>Lagenda Serenity</b>	79,960	Membrane	K-Line	Hudong Zhonghua	K Marine SM
2022	<b>Lagenda Suria</b>	79,958	Membrane	K-Line	Hudong Zhonghua	K Marine SM
2022	<b>Lech Kaczynski</b>	174,000	Membrane	Knutsen OAS Shipping	Hyundai HI (Ulsan)	Knutsen OAS Shipping
2022	<b>Malaga Knutsen</b>	174,000	Membrane	Knutsen OAS Shipping	Hyundai Samho HI	Knutsen OAS Shipping
2022	<b>Minerva Amorgos</b>	174,000	Membrane	Minerva Marine	Samsung HI	Minerva Marine
2022	<b>Orion Bohemia</b> (ex Orion Song)	174,000	Membrane	Oceonix Services Ltd	Hyundai HI (Ulsan)	B. Schulte (Hellas)
2022	<b>Orion Monet</b> (ex Orion Star)	174,000	Membrane	Oceonix Services Ltd	Samsung HI	B. Schulte (Hellas)
2022	<b>Orion Sea</b>	174,000	Membrane	Oceonix Services Ltd	Samsung HI	B. Schulte (Hellas)
2022	<b>Orion Sun</b>	174,000	Membrane	Oceonix Services Ltd	Samsung HI	Oceonix Services Ltd
2022	<b>Prism Diversity</b>	180,000	Membrane	SK Shipping	Hyundai Samho HI	
2022	<b>Santander Knutsen</b>	174,000	Membrane	Knutsen OAS Shipping	Hyundai Samho HI	Knutsen OAS Shipping
2022	<b>Shaolin</b>	174,199	Membrane	United Liquefied Gas	Hudong Zhonghua	COSCO Shanghai LNG
2022	<b>SM Albatross</b>	174,026	Membrane	Korea Line LNG	Hyundai HI (Ulsan)	KLC SM
2022	<b>SM Bluebird</b>	174,026	Membrane	Korea Line LNG	Hyundai HI (Ulsan)	KLC SM
2022	<b>Tenergy</b>	174,000	Membrane	Tsakos Energy Nav	Hyundai HI (Ulsan)	B. Schulte (Hellas)
2022	<b>Vivit Arabia LNG</b>	174,000	Membrane	H-Line Shipping	Hyundai Samho HI	H-Line Shipping
2022	<b>Wu Dang</b>	174,199	Membrane	United Liquefied Gas	Hudong Zhonghua	COSCO Shanghai LNG

**DSME:** Daewoo Shipbuilding & Marine Engineering

**HHI:** Hyundai Heavy Industries (Ulsan)

**HHIC:** Hanjin Heavy Industries & Construction

**HSHI:** Hyundai Samho Heavy Industries

**HZ:** Hudong Zhonghua

**IHI:** Ishikawajima-Harima Heavy Industries

**KHI:** Kawasaki Heavy Industries

**MHI:** Mitsubishi Heavy Industries

**SHI:** Samsung Heavy Industries

# LNG carrier fleet

## less than 30,000 cubic meters

The total LNG carrier fleet (less than 30,000 cubic meters) consisted of **27 vessels** at the end of 2022.

The orderbook comprised 1 vessel scheduled for delivery in 2023.

### LNG CARRIER FLEET AT THE END OF 2022

Built	Vessel Name	Storage Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Location
2016	JS Ineos Innovation	27,566	Other	Evergas AS	Sinopacific Dayang	Evergas AS
2016	JS Ineos Inspiration	27,566	Other	Evergas AS	Sinopacific Offshore	Thome Ship Mngt
2017	JS Ineos Independence	27,566	Other	Evergas AS	Sinopacific Offshore	Evergas AS
2017	JS Ineos Intuition	27,500	Other	Evergas AS	Jiangsu New YZJ	Evergas AS
2017	JS Ineos Invention	27,500	Other	Evergas AS	Jiangsu New YZJ	Evergas AS
2020	CNTIC VPower Global	28,000	Other	CNTIC Vpower	COSCO HI (Dalian)	Synergy Maritime
2020	Coral Encanto	30,000	Other	Anthony Veder	Ningbo Xinle SB	Anthony Veder
2021	Hong Li	9,500	Other	Tianjin SW Maritime	Huangpu Wenchong	Tianjin SW Maritime
2021	Ravenna Knutsen	30,000	Other	Knutsen OAS Shipping	Hyundai Mipo	Knutsen OAS Shipping

### LNG CARRIER ORDERBOOK AT THE END OF 2022

Built	Vessel Name	Storage Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Location
2023	TBN	30 000	Other	Anthony Veder	Hyundai Mipo	Anthony Veder

# LNG bunkering vessel (LNGBV) fleet

The total LNGBV fleet consisted of **43 vessels** at the end of 2022.

The orderbook comprised 23 LNGBVs, 13 of which were scheduled for delivery in 2023.

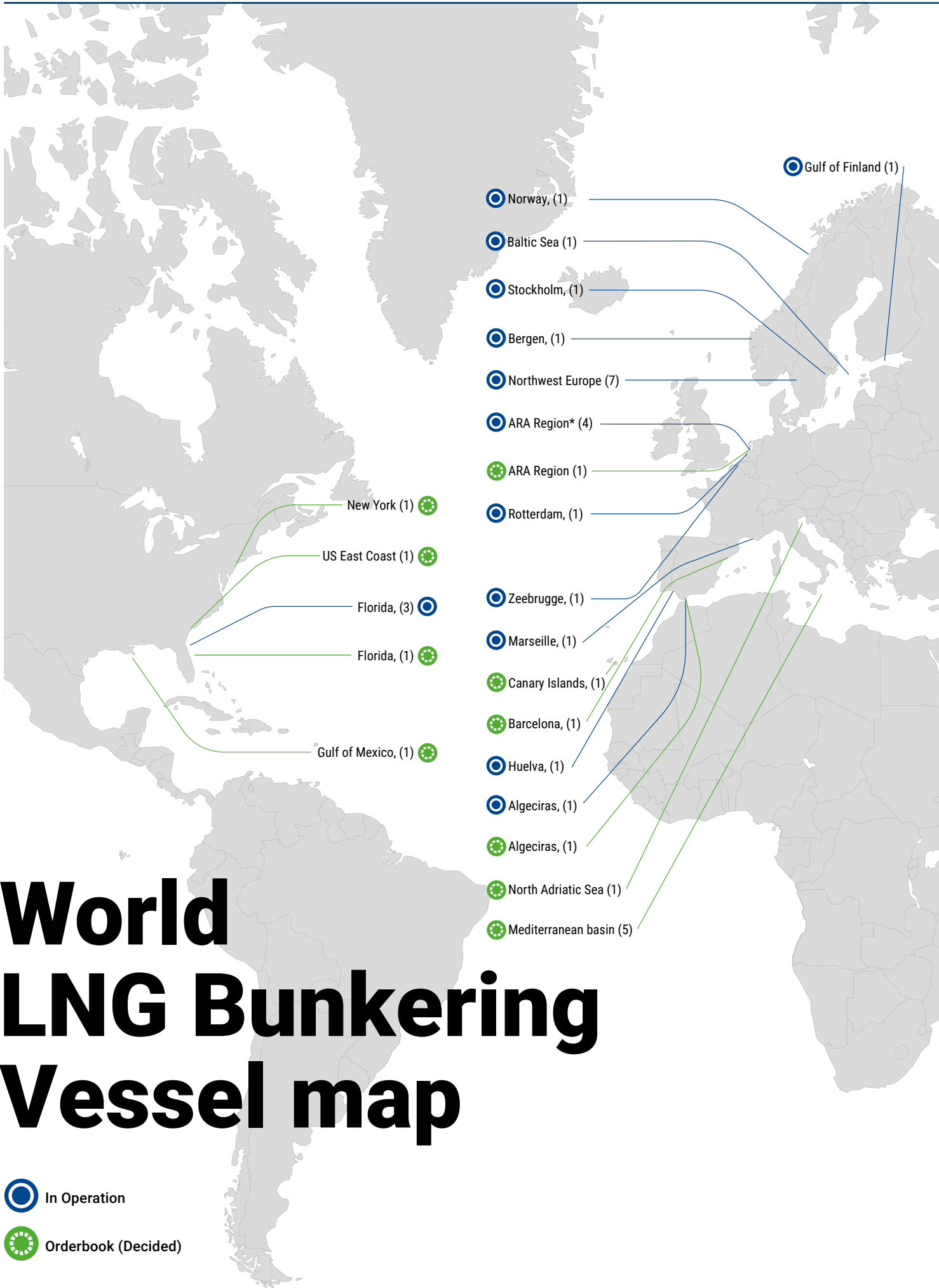
### LNGBV FLEET AT THE END OF 2022

Built	Vessel Name	Storage Capacity (m <sup>3</sup> )	CCS*	Type	Owner	Builder	Manager	Location
1974	Seagas	167	Other	LNGBV	Linde Europe North	Fiskerstrand Verft	Sirius Shipping	Stockholm, Sweden
2004	Pioneer Knutsen	1,100	Other	LNGBV/LNGC	Knutsen OAS Shipping	Veka SY Lemmer	Knutsen OAS Shipping	Norway
2009	Coral Methane	7,500	Other	LNGBV/LNGC	Anthony Veder	Remontowa Repair	Anthony Veder	Northwest Europe
2009	Oizmendi	600	Other	LNGBV	ITSAS Gas Bunker	Astilleros Murueta	Naviera Ulises ltd	Huelva, Spain
2010	Bergen LNG	850	Other	LNGBV	Bergen Tankers	Westcon Shipyards	Bergen Tankers	Bergen, Norway
2010	Coral Favia	10,030	Other	LNGBV/LNGC	Anthony Veder	Taizhou Skaugen	Anthony Veder	LNGC
2010	Coral Fraseri	10,030	Other	LNGBV/LNGC	Anthony Veder	Taizhou Skaugen	Anthony Veder	LNGC
2011	Coral Fungia	10,030	Other	LNGBV/LNGC	Anthony Veder	Taizhou Skaugen	Anthony Veder	LNGC
2011	Coral Furcata	10,030	Other	LNGBV/LNGC	Anthony Veder	Taizhou Skaugen	Anthony Veder	LNGC
2013	Coral Anthelia	6,500	Other	LNGBV/LNGC	Anthony Veder	AVIC Dingheng SB	Anthony Veder	LNGC
2013	Coral Energy	15,600	Other	LNGBV/LNGC	Anthony Veder	Neptun Werft	Anthony Veder	Northwest Europe
2015	Hai Yang Shi You 301	30,000	Other	LNGBV/LNGC	CenerTech	Jiangnan SY Group	CenerTech	LNGC
2017	Coralius	5,800	Other	LNGBV	Anthony Veder	Royal Bodewes SY	Sirius Shipping	Northwest Europe
2017	Green Zeebrugge	5,100	Other	LNGBV	NYK	HHIC	NYK LNG Ship Mgt	Zeebrugge, Belgium
2017	New Frontier 1 (ex Cardissa)	6,469	Other	LNGBV	Pan Ocean	STX SB (Jinhae)	WSM Malaysia	Northwest Europe
2018	Bunker Breeze	1,200	Other	LNGBV	Grupo Suardiaz	Ast. Zamakona	Flota Suardiaz SL	Algeciras, Spain
2018	Clean Jacksonville	2,200	Membrane	Bunker barge (pushed by tug)	Seaside LNG	Conrad Shipyard	Harvey Gulf	New York, USA
2018	Coral Energice	18,000	Other	LNGBV/LNGC	Anthony Veder	Neptun Werft	Anthony Veder	Northwest Europe
2018	Kairos	7,500	Other	LNGBV	Schulte Group	Hyundai Mipo	B. Schulte (Deutsch)	Northwest Europe
2019	FlexFueler 001	1,480	Other	Bunker barge (pushed by tug)	Titan LNG	Kooiman Marine Group	Titan LNG	ARA region

Built	Vessel Name	Storage Capacity (m <sup>3</sup> )	CCS*	Type	Owner	Builder	Manager	Location
2019	LNG London	3,000	Other	LNGBV	LNG Shipping		LNG Shipping	ARA region
2019	SM Jeju LNG1	7,654	Membrane	LNGBV/LNGC	Korea Line LNG	SHI	KLC SM	LNGC
2020	Avenir Advantage	7,500	Other	LNGBV/LNGC	Future Horizon	Keppel Nantong	EagleStar Shipmanagement	Malaysia
2020	FlexFueler 002	1,480	Other	Bunker barge (pushed by tug)	Titan LNG	Kooiman Marine Group	Titan LNG	ARA region
2020	FueLNG Bellina	7,500	Other	LNGBV	FueLNG	Keppel Nantong	K Marine SM	Singapore
2020	Gas Agility	18,600	Membrane	LNGBV	MOL	HZ	MOL LNG Transport (E)	Rotterdam, Netherlands
2020	Kaguya	3,500	Other	LNGBV	Central LNG Shipping	KHI	Central LNG Shipping	Chubu region, Japan
2020	Q Ocean Service	4,000	Other	LNGBV	Q-LNG	VT Halter Marine	Harvey Gulf	Florida, USA
2020	SM Jeju LNG2	7,500	Membrane	LNGBV/LNGC	Korea Line LNG	SHI	KLC SM	LNGC
2021	Avenir Accolade	7,500	Other	LNGBV/LNGC	Avenir LNG	Keppel Nantong	Avenir LNG	LNGC
2021	Avenir Aspiration	7,500	Other	LNGBV/LNGC	Avenir LNG	CIMC SOE	Hoegh LNG Fleet M.	LNGC
2021	Clean Canaveral (Polaris)	5,500	Other	Bunker barge (pushed by tug)	Polaris New Energy	Fincantieri Bay	Polaris New Energy	Florida, USA
2021	Dmitry Mendeleev	5 800	Other	LNGBV	Gazpromneft Shipping	Keppel Nantong	Gazpromneft Shipping	Gulf of Finland
2021	Gas Vitality	18 600	Membrane	LNGBV	MOL	HZ	MOL LNG Transport (E)	Marseille, France
2021	Hai Gang Wei Lai (ex Avenir Allegiance)	20 000	Other	LNGBV/LNGC	SIPG Energy SSES	CIMC SOE	Wah Kwong Shipmgt	Shanghai, China
2021	Optimus	6 000	Other	LNGBV	Infotar	Damen Yichang	LNG Shipmngt OU	Northwest Europe
2022	Avenir Achievement	20 000	Other	LNGBV/LNGC	Avenir LNG	CIMC SOE	Hoegh LNG Fleet M.	Florida, USA
2022	Avenir Ascension	7 500	Other	LNGBV/LNGC	Avenir LNG	CIMC SOE	Hoegh LNG Fleet M.	Baltic Sea
2022	Coral Nordic	30 000	Other	LNGBV/LNGC	Anthony Veder	Jiangnan SY Group	Anthony Veder	LNGC
2022	Haugesund Knutsen	5 000	Other	LNGBV	Knutsen OAS Shipping	Armon (Gijon)	Knutsen OAS Shipping	Barcelona, Spain
2022	K LNG Dream	500	Other	LNGBV	S Korea Fisheries	EK Heavy Industries	S Korea Fisheries	
2022	K. Lotus	18 000	Other	LNGBV	Korea Line LNG	Hyundai Mipo	KLC SM	ARA region
2022	Xin Ao Pu Tuo Hao	8 500	Other	LNGBV	Shenzhen Xin Ao Maritime	Dalian Shipbuilding	Shenzhen Xin Ao Maritime	Yantian, China


## LNGBV ORDERBOOK AT THE END OF 2022

Built	Vessel Name	Storage Capacity (m <sup>3</sup> )	CCS*	Type	Owner	Builder	Manager	Location
2023	Ecobunker Tokyo Bay	2,500	Other	LNGBV	Ecobunker Shipping	Fukuoka shipbuilding/JMU Isogo	Ueno Transtech	Tokyo Bay, Japan
2023	Hong Peng	9,500		LNGBV	Tianjin SW Maritime	Huangpu Wenchong	Tianjin SW Maritime	Nansha, China
2023	TBN	4,000	Other	Bunker barge (pulled by tug)	Rimorchiatore Riuniti Panfido	Rosetti Marino shipyard	Rimorchiatore Riuniti Panfido	North Adriatic Sea
2023	Titan Krios	4,500	Other	LNGBV	Titan LNG		Titan LNG	Mediterranean basin
2023	Titan Hyperion	8,000	Other	LNGBV	Titan LNG		Titan LNG	ARA region
2023	Brassavola	12,000	Membrane	LNGBV	MOL	Sembcorp	V-Bunkers	Singapore
2023	TBN (Kanfer 1)	6,000	Other	LNGBV	Kanfer Shipping	Taizhou	Kanfer Shipping	Mediterranean basin
2023	TBN (Kanfer 2)	6,000	Other	LNGBV	Kanfer Shipping	Taizhou	Kanfer Shipping	Mediterranean basin
2023	TBN	7,500	Other	LNGBV	KOGAS	HHI	Korea LNG Bunkering	Korea
2023	TBN (Fratelli Cosulich )	8,200	Other	LNGBV	Fratelli Cosulich	CIMC SOE	Fratelli Cosulich	Mediterranean basin
2023	Levante LNG	12,500	Other	LNGBV	Peninsula/Scale Gas	Hyundai Mipo	Peninsula/Scale Gas	Algeciras, Spain
2023	TBN	18,000	Other	LNGBV	Pan Ocean	Hyundai Mipo	Pan Ocean	Gulf of Mexico
2023	TBN	18,000	Other	LNGBV	Korea Line LNG	Hyundai Mipo	Korea Line LNG	Singapore
2024	TBN	14,000	Other	LNGBV	Wuhu LNG	Hudong Zhonghua	Wuhu LNG	China
2024	TBN	5,500	Other	Bunker barge (pushed by tug)	Polaris New Energy	Fincantieri Bay	Polaris New Energy	Florida, USA
2024	TBN (Fratelli Cosulich )	8,200	Other	LNGBV	Fratelli Cosulich	CIMC SOE	Fratelli Cosulich	Mediterranean basin
2024	TBN	12,000	Other	Bunker barge (pushed by tug)	Crowley Maritime	Fincantieri Bay	Crowley Maritime	US East Coast, USA
2024	Hai Yang Shi You 302	12,000	Other	LNGBV	CenerTech	CIMC SOE	CenerTech	Anhui, China
2024	TBN	3,500	Other	LNGBV	KEYS Bunkering Japan	MHI Shimonoseki	KEYS Bunkering Japan	Kyushu & Setouchi, Japan
2024	TBN	7,600	Other	LNGBV	Seaspan Marine	CIMC SOE	Seaspan Marine	
2024	TBN	7,600	Other	LNGBV	Seaspan Marine	CIMC SOE	Seaspan Marine	
2025	TBN	7,600	Other	LNGBV	Seaspan Marine	CIMC SOE	Seaspan Marine	
2025	Net Zero hive Canarias	12,500	Other	LNGBV	Scale Gas		Scale Gas	Canary Islands

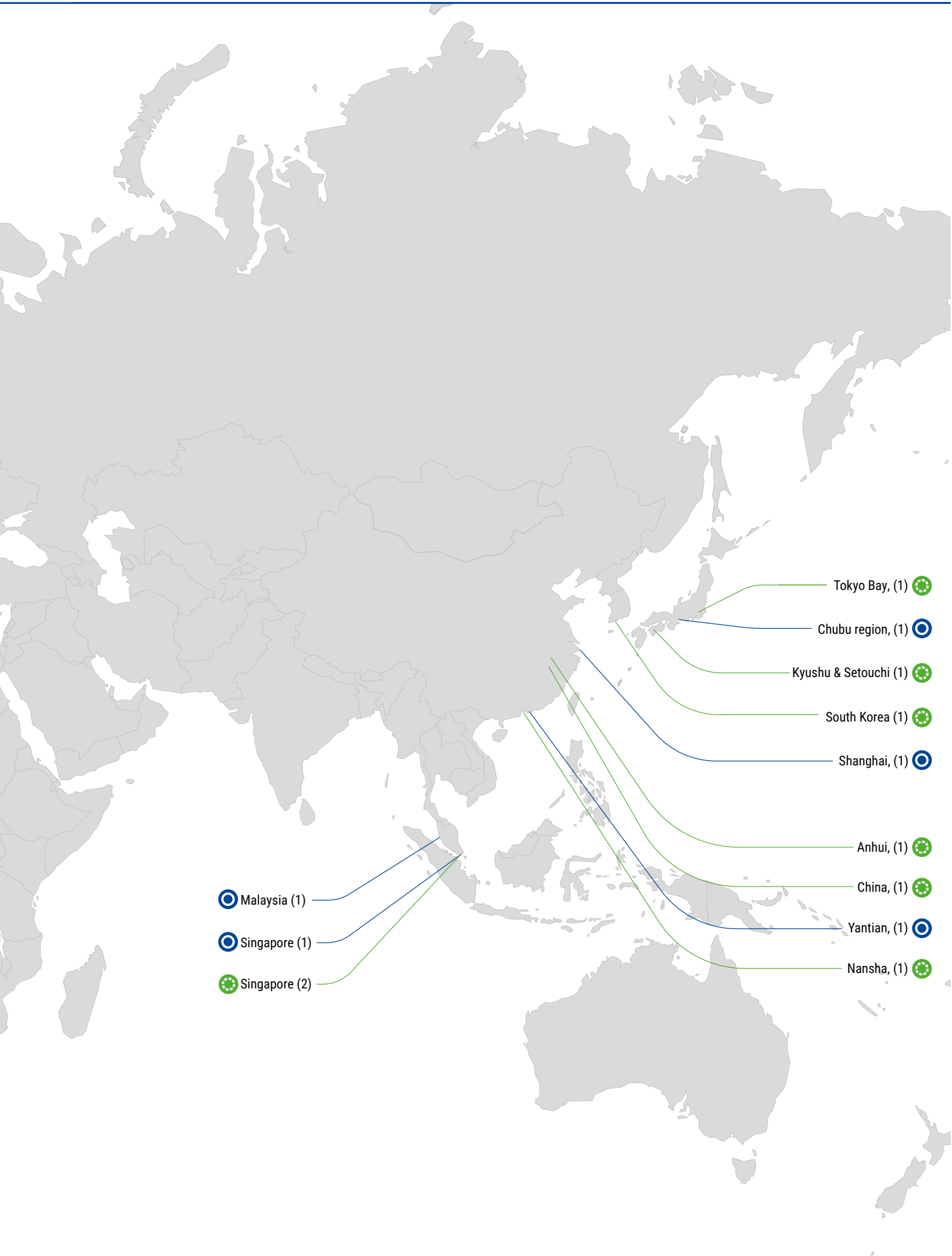


# World LNG Bunkering Vessel map

 In Operation

 Orderbook (Decided)





\*ARA: Amsterdam, Rotterdam and Antwerp  
The figures in parentheses refer to the number of LNGBV(s)

# Liquefaction plants

In 2022 global liquefaction capacity reached **476.5 MTPA** at year-end. New capacity amounted to **14.9 MTPA**.

10 MTPA Calcasieu Pass LNG export project started commissioning in the United States. The 1.5 MTPA Portovaya LNG plant started operations in Russia. The 3.4 MTPA Coral South FLNG produced its first LNG shipment offshore Mozambique. In addition, the 4.2 MTPA Snøhvit LNG resumed operations in Norway.

Three FIDs were taken in 2022, for a total capacity of around 26 MTPA: 10.4 MTPA Corpus Christi Stage 3 liquefaction project and 13.3 MTPA first phase of the Plaquemines LNG in the United States and a 2 MTPA FLNG facility in Malaysia.

## Algeria

Two projects are ongoing related to LNG export capacities: the construction of a storage tank and a new loading jetty at the port of Skikda to accommodate large vessels. As of August 2022, the expansion of Skikda's loading capacity was reported to be about 80% complete. In March 2023 Sonatrach announced that around \$1Bn will be invested to its energy transition projects including flare gas recovery projects at its LNG plants at **Skikda** and **Arzew**.

## Angola

In July 2022, Angola's first non-associated gas project, New Gas Consortium (NGC), reached FID for the development of the Quiluma and Maboqueiro (Q&M) fields. The project will provide new supply of gas to the **Angola LNG** plant. The project includes two offshore wellhead platforms, an onshore gas processing plant and a connection to Angola LNG facility. Gas and LNG production is scheduled to start in 2026. The project is expected produce around 4 BCMA at plateau.

## Australia

In April 2022, **Prelude FLNG** resumed operations after a four-month shutdown due to a fire incident and a power outage. The FLNG facility was shut down again in July because of strikes by the workforce following a salary dispute but resumed operations in September 2022 after reaching an in-principle enterprise agreement. In May 2022, Shell Australia and SGH Energy took FID for the development of the Crux natural gas field in Western Australia. The project is expected to supply up to 550 mmscfd of natural gas to Prelude FLNG. First gas is expected to be produced in 2027. In August 2022, construction of the 5 MTPA second train started at the **Pluto LNG** export facility. Bechtel is the EPC contractor and Woodside will be the operator of the project. The facility will process gas from the Scarborough field. The Pluto Train 2 joint venture is held by Woodside (51%) and Global Infrastructure Partners (49%).

The same month, the Bonaparte CCS (carbon capture and storage) Assessment joint venture (between TotalEnergies, INPEX and Woodside), aimed at avoiding and reducing GHG emissions from **Ichthys LNG** facility, was awarded a GHG Storage Assessment Permit, to carry out evaluation and appraisal work on block G-7-AP off the Northwest coast of Australia, with start of work scheduled for 2023.

## Canada

In March 2023, a vessel carrying the final two modules for the **LNG Canada** export project was on its way from Qingdao port in Shandong province to the project site at Kitimat in British Columbia.

The same month, the 3 MTPA planned **Cedar LNG** project on the Douglas Channel, under development by Pembina Pipeline Corporation and Haisla Nation, received environmental approval and signed an MoU with ARC Resources for a 20-year 1.5 MTPA liquefaction services agreement. FID is expected in Q3 2023. In April 2022, **Woodfibre LNG** issued a notice to proceed to McDermott International for pre-construction works at the 2.1 MTPA Woodfibre LNG project. Major works are expected to start in 2023. In July 2022, Pacific Energy and Enbridge agreed to invest jointly in the construction and operation of the project, with Enbridge acquiring a 30% ownership stake and Pacific Energy retaining the remaining 70%. The project is expected to start operations in 2027.

## Congo

In August 2022, Eni acquired Export LNG Ltd, which owns the **Tango FLNG** barge from Exmar. The facility, with 0.6 MTPA LNG production capacity, will be used for a fast-track project in the offshore Marine XII block, where Eni is a 65% operator. Start-up is scheduled for December 2023.

In December 2022, Eni signed a contract with Wison Heavy Industry for the construction and installation of a 2.4 MTPA **FLNG**, to be deployed also at the Marine XII block. The construction started the same month with long lead items ordered and steel cut for cryogenic tanks of the FLNG. The vessel will be anchored at a water-depth of around 40 meters and will be able to store over 180,000 m<sup>3</sup> of LNG and 45,000 m<sup>3</sup> of LPGs. With these two FLNG plants, the total LNG production capacity from the Marine XII block will reach 3 MTPA in 2025.

## Indonesia

As of March 2023, the 3.8 MTPA third train at **Tangguh LNG** project was in the commissioning process. Commercial operations are expected to start in Q4 2023. In December 2022, the Government of Indonesia granted a 20-year extension of the Tangguh production sharing contract until 2055 to BP, operator of the PSC, and its Tangguh PSC partners (MI Berau, CNOOC Muturi, Nippon Oil Exploration (Berau), KG Berau Petroleum, KG Wiriagar Petroleum and Indonesia Natural Gas Resources Muturi).



### Malaysia

In December 2022, Petronas took FID for a nearshore 2 MTPA FLNG facility in **Sabah**, Bernama.

In October 2022, Petronas declared force majeure on gas supply to **MLNG Dua**, located in Bintulu, Sarawak, due to a pipeline leak caused by soil movement close to Sabah-Sarawak Gas Pipeline (SSGP) that occurred in September 2022. The other LNG production facilities at Petronas LNG Complex were not impacted. The investigation is expected to be completed by mid-2023.

### Mauritania/Senegal

In January 2023, the FPSO vessel for the 2.3 MTPA **Greater Tortue Ahmeyim (GTA)** LNG project, operated by BP, departed from Qidong shipyard in China towards the project site off the coasts of Mauritania and Senegal. Before departure, the vessel completed a series of sea trials. The vessel was completed by Cosco Shipping Heavy Industry in September 2022, after 3.5 years of construction. With 8 processing and production modules, the FPSO will process around 500 mscf of gas per day. In addition to the FPSO, the **Gimi** FLNG vessel is being completed at Singapore's Keppel Shipyard. The project is expected to start production in 2024.

The development concept for the second phase of

the GTA project was confirmed in February 2023. The partners (BP, Kosmos Energy, PETROSEN and SMH) will evaluate a gravity-based structure (GBS) as the basis for the **GTA Phase 2** expansion project (GTA2) with total capacity of between 2.5-3.0 MTPA and they will consider powering LNG liquefaction using electricity.

### Mexico

**Energía Costa Azul (ECA) LNG Phase 1** is currently under construction with commercial operations expected to start in 2025. The proposed **ECA LNG Phase 2** is expected to comprise two trains and one additional LNG storage tank and to produce approximately 12 MTPA. The US DOE has authorized the re-export of up to 636 Bcf/y of US-sourced LNG from ECA LNG Phase 2 to non-FTA countries. Re-export permits are applicable for the period beginning on the date of first commercial re-export through to December 2050.

As of March 2023, Mexico Pacific signed SPAs with Shell, ExxonMobil and Guangzhou Development Group for the supply of 7.7 MTPA in total from its 14.1 MTPA planned LNG export facility, **Saguaro Energía**, located at Puerto Libertad in Sonora State. The first phase of the project will have three trains, two storage tanks, and one berth. The project targets the start of commercial operations in 2026.

In December 2022, Sempra Infrastructure received authorization from the US DOE to re-export to non-FTA countries 200 Bcf/y of US-sourced LNG from its 3.5 MTPA **Vista Pacifico** LNG project, under development in collaboration with Mexico's Federal Electricity Commission (CFE) in Topolobampo, Sinaloa State. In November 2022, New Fortress Energy (NFE) and Petróleos Mexicanos (Pemex) agreed to develop and operate an integrated upstream and natural gas liquefaction project off the coast of Veracruz in Eastern Mexico. NFE will deploy to the Lakach deepwater natural gas field its two Sevan cylindrical drill ships, which are under conversion in Sembcorp Marine yard in Singapore, to 1.4 MTPA FLNG units. The project is expected to come online in 2023-2024.

### Mozambique

In November 2022, the first shipment of LNG produced from the Coral gas field departed from the 3.4 MTPA **Coral Sul FLNG** facility located in the ultra-deep waters of the Rovuma Basin in Mozambique. The project, operated by Eni, and developed with partners (Exxon-Mobil, CNPC, GALP, KOGAS and ENH) came online after 5 years of construction and in line with the initial budget and schedule. BP has a 20-year agreement to purchase 100% of LNG output from the facility.



In February 2023, **Mozambique LNG** was assessing whether the conditions are met for resuming project activities after the withdrawal of all project personnel from the Afungi site and the declaration of force majeure in 2021.

### Norway

In January 2022, PX Group, headquartered in the UK, was appointed by North Sea Midstream Partners (NSMP) to operate its 0.33 MTPA Risavika LNG liquefaction plant, located south-west of **Stavanger**, which it acquired last year.

In June 2022, 4.2 MTPA **Hammerfest LNG** resumed operations after a fire in September 2020, following extensive repairs and improvement work.

### Oman

As of March 2023, **Oman LNG** signed 8 LNG agreements in the context of the company's plans to extend the operation of the liquefaction complex at Qalhat for another 10 years from 2024. The counterparties are Itochu, JERA, Mitsui, Shell, BOTAS, TotalEnergies, PTT, Unipet. The work on the Power and Debottlenecking project at the Qalhat LNG plant, which will increase its production capacity to 11.6 MTPA, is in progress.

### PNG

In August 2022, TotalEnergies, operator of the **Papua LNG**, launched the first phase of FEED studies with Technip Energies and Clough for the project's upstream production facilities. In March 2023, TotalEnergies launched the fully integrated FEED for the project. The project will include four electrical LNG trains with a total capacity of 4 MTPA, which will be built within the existing liquefaction plant of **PNG LNG**. Papua LNG will also benefit from 2 MTPA of additional liquefaction capacity in the existing trains of PNG LNG. The construction and operation of the electrical liquefaction trains is being delegated to ExxonMobil. Papua LNG joint venture partners are TotalEnergies (40.1%), ExxonMobil (37.1%) and Santos (22.8%). The project is targeting FID by end 2023-early 2024 and start-up four years later.

In the context of integration between Papua LNG and PNG LNG, TotalEnergies and JX Nippon, an affiliate of ENEOS, signed an HoA with the view to sell a 2% interest in Papua LNG to JX Nippon, which currently holds a 4.7% interest in PNG LNG.

### Qatar

Since June 2022, TotalEnergies, ENI, ConocoPhillips, ExxonMobil and Shell joined QatarEnergy as partners in the **North Field East (NFE)** expansion project. The project will include 4 mega liquefaction trains with a combined nameplate capacity of 33 MTPA and will

consist of 5 respective joint ventures. QatarEnergy will hold a 75% interest in each JV. TotalEnergies, ExxonMobil and Shell will each have a 25% share of one train while ENI and ConocoPhillips will each have 12.5% of the fourth train.

Since September 2022, TotalEnergies, Shell and ConocoPhillips joined QatarEnergy as partners in the two-train 16 MTPA **North Field South (NFS)** expansion project. In the project effective net participating interests are distributed as follows: TotalEnergies and Shell will have 9.375% each, ConocoPhillips will have 6.25%, QatarEnergy will hold the remaining 75%.

Together, NFE and NFS form the wider North Field Expansion project to increase LNG production from the North Field, bringing Qatar's export capacity to 126 MTPA by 2028. In January 2022, QatarEnergy awarded a major engineering, procurement, construction, and installation (EPCI) contract for the offshore part of its North Field Expansion project to McDermott. In March 2022, two ultra-heavy acid gas removal absorbers, manufactured by Hitachi Zosen in Japan, were delivered at the North Field site.

### Russia

In September 2022, Gazprom started LNG production at its 1.5 MTPA **Portovaya LNG** plant. The plant comprises two liquefaction trains, a loading bay for LNG carriers, including small scale vessels, bunkering and truck loading facilities, as well as a 42,000 m<sup>3</sup> onshore storage tank and 138,000 m<sup>3</sup> FSU Portovyy (formerly the LNG carrier, Excel).

In August 2022, a new operator Sakhalin Energy LLC, based in Yuzhno-Sakhalinsk, was assigned to the **Sakhalin 2 LNG** project. Following the transfer of operatorship, the shareholding structure of the project will be changed, as Shell exited the project and sold its 27.5% stake to Novatek. The other foreign shareholders (Mitsui 12.5% and Mitsubishi 10%) confirmed their participation in the new entity. All rights and obligations held by Sakhalin Energy have been transferred to the new company including the LNG SPAs.

In January 2022, Novatek signed a power purchase agreement (PPA) for renewable electricity produced by Fortum's wind farms in Russia for use at its **Vysotsk LNG** plant.

In March 2022, TotalEnergies decided no longer to book proved reserves for the **Arctic LNG 2** project and will not provide any more capital for the project. In October 2022, a service provider Technip Energies decided to exit the project.

In June 2022, Linde, one of the suppliers of the LNG and gas-processing technology and services to the **Ust-Luga Gas Condensate Fractionation and Transshipment Complex**, suspended operations in Russia causing delays in the project development. In October 2022, Novatek and Rosatom signed an MoU

according to which the Ust-Luga Complex will purchase electricity generated at Rosatom's wind farms.

### Tanzania

In May 2023, Equinor, Shell and ExxonMobil agreed on the framework of the Host Government Agreement with the government of Tanzania for the development of the 10 MTPA **Tanzania LNG** project in Lindi region. The agreement includes a regulatory framework, a production sharing agreement, and elements regarding land use and security. The agreement is subject to legal reviews and quality assurance. Equinor and Shell are joint operators and ExxonMobil, Medco Energi, Pavilion Energy and the state-run Tanzania Petroleum Development Corporation are partners of the project. FID is expected in 2025 and start-up in 2031.

### USA

In June 2022, an incident occurred at the **Freeport LNG** liquefaction plant, due to the overpressure and rupture of a segment of an LNG transfer line connecting the facility's LNG storage tanks to its dock facilities. None of the liquefaction trains, LNG storage tanks, dock facilities, or LNG process areas were impacted.

In January 2023, Freeport LNG received regulatory approval to commence the initial cool down of its LNG facilities, followed in February 2023 by the approval to start commercial operations of one liquefaction train and fully return to service its second train. Finally, in March 2023, the approval to restart the third train was received. Operations are initially utilizing two of Freeport LNG's three LNG storage tanks and one of its two LNG berths. The second LNG berth and third LNG storage tank returned to service in May 2023.

In July 2022, Freeport LNG received authorization from the US DOE to increase export volumes to 1,022.0 Bcf/y to FTA countries and 1,044.8 Bcf/y of natural gas to non-FTA countries.

**Calcasieu Pass** LNG export project started commissioning in March 2022. As of April 2023, Venture Global was still working to launch commercial operations at the facility. The start-up of commercial operations is delayed due to the time needed to finish repairs at a power generation unit at the facility.

In February 2022, Train 6 at the **Sabine Pass** liquefaction project achieved substantial completion, ahead of its guaranteed completion date and within the project budget. In October 2022, substantial completion was achieved for the project's third berth, which can accommodate vessels with a capacity of up to 200,000 m<sup>3</sup>.

In June 2022, Cheniere took FID on the 10+ MTPA **Corpus Christi Stage 3** liquefaction project and issued full notice to proceed to Bechtel to continue construction, which began earlier in 2022 under limited notice to proceed. The start-up of the project is



expected by the end of 2025. As part of the Stage 3 project, Cheniere purchased a 30% equity interest in a JV with Whitewater Midstream to construct the Agua Dulce Corpus Christi Pipeline (ADCC Pipeline), connecting the Whistler Pipeline from the Permian Basin to the LNG plant. In August 2022, Cheniere initiated the pre-filing review process with the US FERC for an expansion adjacent to the Corpus Christi liquefaction project consisting of two additional midscale trains (Trains 8 & 9), which would increase production capacity by ~3 MTPA of LNG.

In March 2022, the DOE authorized the export of an additional 152.64 Bcf/y and 108.16 Bcf/y of LNG from the Sabine Pass LNG Terminal and the Corpus Christi LNG Terminal, respectively, through December 31, 2050 to non-FTA countries.

In April 2022, **Golden Pass LNG** received authorization from the US DOE to export up to 18.1 MTPA of LNG to non-FTA countries. In October 2022, QatarEnergy and ExxonMobil agreed independently to offtake and market their respective equity shares of LNG produced by the Golden Pass LNG export project. QatarEnergy Trading will offtake, transport, and trade 70% of the volumes produced by Golden Pass LNG. Ocean LNG Limited, a QatarEnergy/ExxonMobil JV established in 2016 for the purpose of offtaking and marketing the entire production of Golden Pass LNG, has ceased operations.

In May 2022, Venture Global LNG took FID on the initial phase of the 20 MTPA **Plaquemines LNG** facility and the associated Gator Express pipeline. In February 2023, Venture Global LNG announced the successful air raising of the roof of the first of four 200 000m<sup>3</sup> LNG storage tanks which are being built at the plant. In March 2023, Venture Global LNG took FID on the second phase of the Plaquemines LNG project and

issued a full notice to proceed to KZJV to continue construction on phase two of the project. Plaquemines LNG has received all necessary permits, including the US FERC authorization and non-FTA export authorization from the US DOE. Customers of the Plaquemines LNG project are CNOOC, Chevron, China Gas, EDF, EnBW, Excelerate Energy, ExxonMobil, New Fortress Energy, Orlen, Petronas, Shell and Sinopec.

In March 2023, Sempra Infrastructure took FID on the development, construction, and operation of the 13 MTPA **Port Arthur LNG Phase 1** project, located in Jefferson County, Texas, USA. The project is fully permitted and will include two liquefaction trains, two LNG storage tanks, and a single berth. The company issued a final notice to proceed under the project's EPC agreement with Bechtel Energy. The commercial start-up is expected in 2027 for Train 1 and in 2028 for Train 2. 10.5 MTPA of the Phase 1 output is contracted on a long-term basis with ConocoPhillips, RWE Supply and Trading, PKN ORLEN, INEOS and ENGIE.

The proposed **Cameron LNG Phase 2 (T4)** project will include a single LNG train with a production capacity of 6.75 MTPA of LNG, as well as a 5% debottlenecking of the existing three LNG trains. Cameron LNG started a competitive FEED process with Bechtel Energy and a joint venture between JGC America and Zachry Industrial. At the conclusion of this process, one EPC contractor will be selected for the project. FID is expected in 2023.

In December 2022, the FERC published an environmental assessment for the amended expansion project, including several design modifications and enhancements to Train 4 to increase production capacity and convert T4 refrigerant compressors from gas turbine drives to electric drives.

In April 2022, Cameron LNG partners (Sempra, TotalEnergies, Mitsui, and Japan LNG Investment) agreed to allocate the projected T4 production capacity in their respective equity proportions together with 25% of projected debottlenecking capacity for each company.

In May 2022, Sempra, TotalEnergies, Mitsui & Co and Mitsubishi agreed to develop the proposed Hackberry Carbon Sequestration (HCS) project in Southwest Louisiana, which is designed for the capture, transportation, and storage of CO<sub>2</sub> from Cameron LNG. The CO<sub>2</sub> will be permanently stored in a saline aquifer using an injection well with a capacity of up to 2 MT of CO<sub>2</sub> per year.

In March 2023, the EPC contract with Bechtel for the first 3 liquefaction trains at Next Decade's **Rio Grande** LNG project was extended. FID on the project is expected by the end of Q2 2023. Next Decade has plans and permits to produce up to 27 MTPA of LNG from five liquefaction trains at the Rio Grande facility. The first train is expected to start commercial operations in 2026, the second train – in 2027.

**Delfin LNG**, a 13.5 MTPA modular offshore project developed by Delfin Midstream, which requires up to four FLNG vessels, is fully approved and is expected to take FID on the first FLNG vessel by the end of 2023. The project is expected to start operations in 2026.



# Liquefaction plants

Country	Name	Liquefaction		Storage		Owner(s)	Operator	MT - LT Buyer(s)	Start-up date
		Number of trains	Nominal capacity (MTPA)	Number of tanks	Total capacity (liq m <sup>3</sup> )				
<b>ATLANTIC BASIN</b>									
Algeria	Arzew GL1Z T1 - T6	6	7.9	3	300,000	Sonatrach	Sonatrach	Botaş, Cepsa Gas, DEPA, TotalEnergies	1978
	Arzew GL2Z T1 - T6	6	8.2	3	300,000				1981
	Arzew GL3Z	1	4.7	2	320,000				2014
	Skikda GL1K	1	4.5	1	150,000				2013
Angola	Angola LNG	1	5.2	1	360,000	Angola LNG (Chevron 36.4%, Sonangol 22.8%, BP 13.6%, ENI 13.6%, TotalEnergies 13.6%)	Angola LNG		2013
Argentina	Tango (stopped; no vessel chartered) (FLNG)								2019, Stopped in 2020
Cameroon	Kribi (FLNG)	4	2.4	1	125,000	Golar LNG 89%, Keppel Corporation Ltd 10%, Black & Veatch 1%	Golar LNG	Gazprom	2018
Egypt	Damietta	1	5	2	300,000	SEGAS (ENI 50%, EGAS 40%, EGPC 10%)	Damietta LNG	EGAS, ENI	2005
	Idku T1	1	3.6	2	280,000	Egyptian LNG (Shell 35.5%, Petronas 35.5%, EGPC 12%, EGAS 12%, TotalEnergies 5%)	Egyptian LNG	TotalEnergies	2005
	Idku T2	1	3.6					Shell	
Equatorial Guinea	EG LNG	1	3.7	2	272,000	EG LNG (Marathon 60%, Sonagas 25%, Mitsui 8.5%, Marubeni 6.5%)	EG LNG	Shell	2007
Nigeria	NLNG T1 - T2	2	6.6	4	336,800	Nigeria LNG (NNPC 49%, Shell 25.6%, TotalEnergies 15%, ENI 10.4%)	NLNG	ENI, Galp Energía, Naturgy, TotalEnergies, Vitol	T1: 1999 T2: 2000
	NLNG T3	1	3.3					Galp Energía, Naturgy	2002
	NLNG T4 - T5	2	8.2					Endesa, ENI, Galp Energía, Pavilion Energy, Shell, TotalEnergies	2006
	NLNG T6	1	4.1					Shell, TotalEnergies	2008
Norway	Snohvit	1	4.2	2	250,000	Equinor 36.8%, Petoro 30%, TotalEnergies 18.4%, Neptune Energy 12%, DEA 2.8%	Equinor	Equinor, Pavilion Energy, RWE Supply & Trading, TotalEnergies	2007
	Stavanger	1	0.33	1	30,000	North Sea Midstream Partners	PX Group	Gasum	2010
Russia	Vysotsk LNG	1	0.66	1	42,000	Novatek 51%, Gazprombank 49%	CryoGAS Vysotsk		2019
	Portovaya LNG (+ Portovyy FSU)	2	1.5	2	180,000	Gazprom	Gazprom		2022
	Yamal T1 - T4	4	17.4	4	640,000	Yamal LNG (Novatek 50.1%, CNPC 20%, TotalEnergies 20%, Silk Road Fund 9.9%)	Yamal LNG	CNPC, Gazprom Marketing & Trading, Naturgy, Novatek, TotalEnergies	T1: 2017 T2: 2018 T3: 2018 T4: 2021
Trinidad & Tobago	Atlantic LNG T1 (Mothballed)	1	3.3	1	102,000	Shell 46%, BP 34%, CIC 10%, NGC Trinidad 10%	Atlantic LNG		1999
	Atlantic LNG T2 - T3	2	6.8	2	262,000	Shell 57.5%, BP 42.5%		BP, ENGIE, Naturgas Energía, Naturgy, Shell	T2: 2002 T3: 2003
	Atlantic LNG T4	1	5.2	1	160,000	Shell 51.1%, BP 37.8%, NGC Trinidad 11.1%		BP, Shell	2006
USA	Calcasieu Pass	18	10	2	400,000	Venture Global Calcasieu Pass	Venture Global Calcasieu Pass	BP, Edison, Galp, Orlen, Repsol, Shell	2022
	Cameron LNG T1	1	4.5	3	480,000	Sempra 50.2%, TotalEnergies 16.6%, Mitsui 16.6%, Japan LNG Investment (a joint venture between Mitsubishi and NYK) 16.6%	Cameron LNG	Mitsubishi, Mitsui & Co, TotalEnergies	2019
	Cameron LNG T2	1	4.5						2020
	Cameron LNG T3	1	4.5						2020
	Corpus Christi T1	1	5.0	3	480,000	Corpus Christi Liquefaction (Cheniere 100%)	Cheniere	Cheniere Marketing, CNPC, EDF, EDP, Endesa, ENGIE, Iberdrola, Naturgy, Pertamina, Woodside	2018
	Corpus Christi T2	1	5.0						2019
Corpus Christi T3	1	5.0	2020						

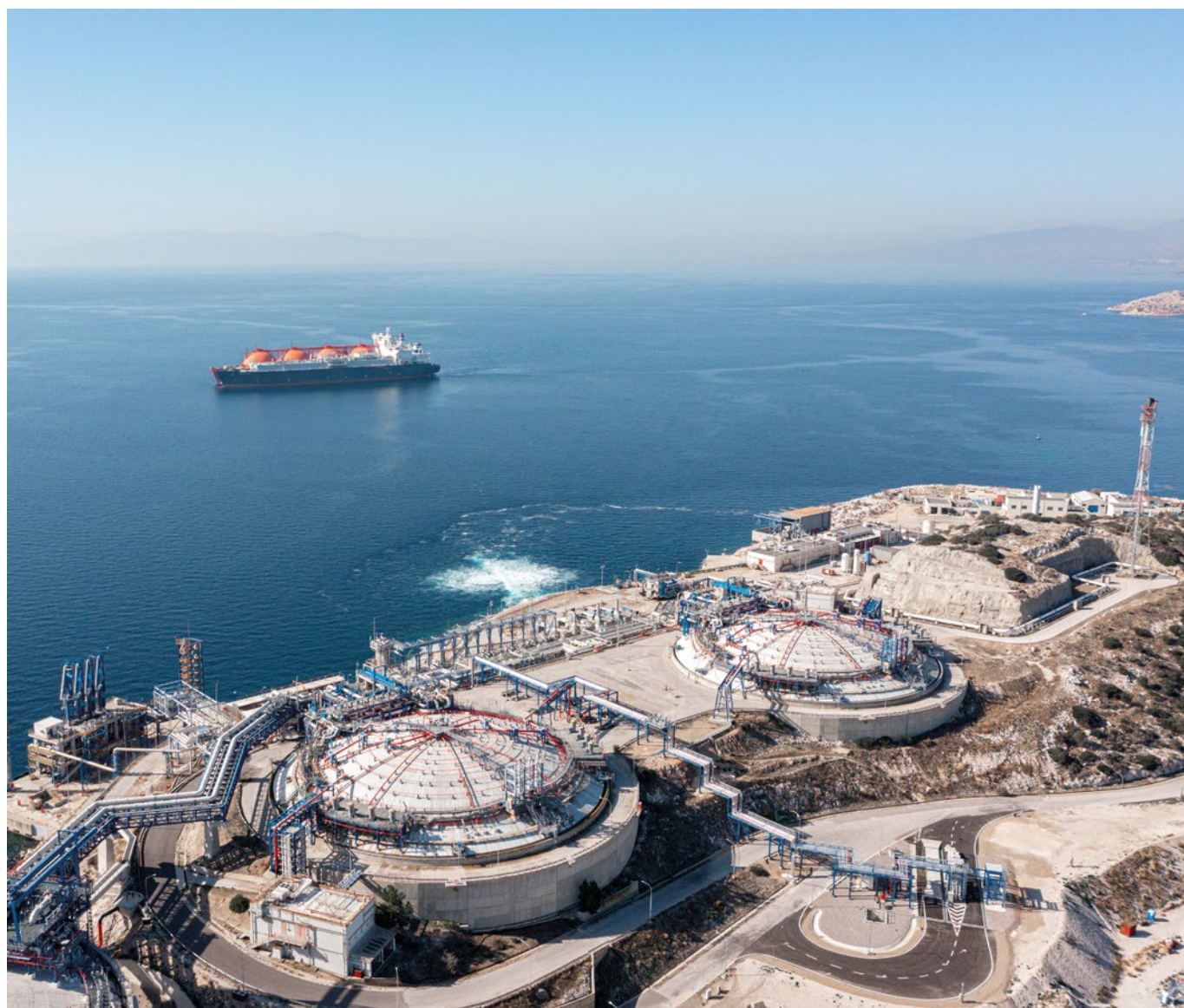
Country	Name	Liquefaction		Storage		Owner(s)	Operator	MT - LT Buyer(s)	Start-up date
		Number of trains	Nominal capacity (MTPA)	Number of tanks	Total capacity (liq m <sup>3</sup> )				
USA	Cove Point	1	5.25	7	700,000	Cove Point LNG, LP (Dominion Energy 75%, Berkshire 25%)	Cove Point LNG, LP	Gail, Kansai Electric, Sumitomo Corp., Tokyo Gas	2018
	Elba Island	10	2.5	5	550,000	Kinder Morgan	Southern LNG	Shell	2019
	Freeport LNG T1	1	5.0	3	480,000	Freeport LNG Liquefaction, LLC	Freeport LNG	JERA, Osaka Gas	2019
	Freeport LNG T2	1	5.0			Freeport LNG Liquefaction 2, LLC		BP	2020
	Freeport LNG T3	1	5.0			Freeport LNG Liquefaction 3, LLC		SK E&S, TotalEnergies	2020
	Sabine Pass T1	1	5.0	5	800,000	Sabine Pass Liquefaction (Cheniere 100%)	Cheniere	Centrica, Cheniere Marketing, GAIL, KOGAS, Naturgy, Shell, TotalEnergies	2016
	Sabine Pass T2	1	5.0						2016
	Sabine Pass T3	1	5.0						2017
	Sabine Pass T4	1	5.0						2017
	Sabine Pass T5	1	5.0						2018
	Sabine Pass T6	1	5.0						2021
<b>ATLANTIC BASIN TOTAL</b>			<b>201.64</b>		<b>8 299 800</b>				
<b>MIDDLE EAST</b>									
Oman	Oman T1 - T2	2	7.1	2	240,000	Government of Oman 51%, Shell 30%, TotalEnergies 5.5%, Korea LNG 5%, Mitsubishi 2.8%, Mitsui 2.8%, PTTEP 2%, Itochu 0.9%	Oman LNG	BP, Itochu, KOGAS, Osaka Gas	2000
	Qalhat	1	3.3			Government of Oman 65.6%, Shell 11%, Mitsubishi 4%, ENI 3.7%, Naturgy 3.7%, Itochu 3.3%, Osaka Gas 3%, TotalEnergies 2.1%, Korea LNG 1.9%, Mitsui 1%, PTTEP 0.7%		Osaka Gas, Naturgy	2005
Qatar	Qatargas I T1 - T3	3	9.5	4	340,000	Qatar Energy (100%)	Qatargas Operating Company	Naturgy	T1:1996 T2: 1997 T3: 1998
	Qatargas II T1	1	7.8	8	1,160,000	Qatar Energy 70%, ExxonMobil 30%	Qatargas Operating Company	ExxonMobil, Pakistan State Oil, Petrochina	2009
	Qatargas II T2	1	7.8			Qatar Energy 65%,ExxonMobil 18.3%, TotalEnergies 16.7%	Qatargas Operating Company	ExxonMobil, Petrochina, TotalEnergies	2009
	Qatargas III	1	7.8			Qatar Energy 68.5%, ConocoPhillips 30%, Mitsui 1.5%	Qatargas Operating Company	CNOOC, JERA, Kansai Electric, Orlen, PTT, RWE Supply & Trading, Tohoku Electric	2010
	Qatargas IV	1	7.8	Qatar Energy 70%, Shell 30%	Qatargas Operating Company	Centrica, CNPC, KPC, OMV, Petronas, Shell	2011		
	Rasgas I T1 - T2	2	6.6	6	840,000	Qatar Energy 63%, ExxonMobil 25%, KOGAS 5%, Itochu 4%, LNG Japan 3%	Qatargas Operating Company	KOGAS	T1: 1999 T2: 2000
	Rasgas II T1	1	4.7			Qatar Energy 70%, ExxonMobil 30%	Qatargas Operating Company	Petronet	2004
	Rasgas II T2	1	4.7			Qatar Energy 70%, ExxonMobil 30%	Qatargas Operating Company	Edison	2005
	Rasgas II T3	1	4.7			Qatar Energy 70%, ExxonMobil 30%	Qatargas Operating Company	CPC, EDF Trading, ENI	2007
	Rasgas III T1	1	7.8			Qatar Energy 70%, ExxonMobil 30%	Qatargas Operating Company	EDF Trading, ExxonMobil, KOGAS, Petronet	2009
Rasgas III T2	1	7.8	Qatar Energy 70%, ExxonMobil 30%			Qatargas Operating Company	CPC, KOGAS, Petrobangla, Petronet	2010	
UAE	Das Island T1 - T3	3	5.8	3	240,000	ADNOC LNG (ADNOC 70%, Mitsui 15%, BP 10%, TotalEnergies 5%)	ADNOC LNG	BP, Vitol, TotalEnergies	T1: 1977 T2: 1977 T3: 1994
Yemen	Balhaf T1 - T2 (stopped)	2	7.2	2	280,000	Yemen LNG (TotalEnergies 39.6%, Hunt Oil Co. 17.2%, SK Innovation 9.6%, KOGAS 6%, Yemen Gas 16.7%, Hyundai 5.9%, GASSP 5%)	Yemen LNG	TotalEnergies	T1: 2009 T2: 2010
<b>MIDDLE EAST TOTAL</b>			<b>100.4</b>		<b>3,100,000</b>				

## Liquefaction plants

Country	Name	Liquefaction		Storage		Owner(s)	Operator	MT - LT Buyer(s)	Start-up date
		Number of trains	Nominal capacity (MTPA)	Number of tanks	Total capacity (liq m <sup>3</sup> )				
<b>PACIFIC BASIN</b>									
	<b>NWS T1 - T5</b>	5	<b>16.3</b>	4	<b>260,000</b>	BHP, BP, Chevron, Woodside (16.7% each), Shell 16.7%, Mitsubishi, Mitsui (8.3% each)	<b>Woodside</b>	GDLNG, JERA, Kansai Electric, Kyushu Electric, Osaka Gas, Shizuoka Gas, Toho Gas, Tokyo Gas	<b>T1: 1989 T2: 1989 T3: 1992 T4: 2004 T5: 2008</b>
	<b>Darwin</b>	1	<b>3.7</b>	1	<b>188,000</b>	Santos 43.4%, SK E&S 25%, INPEX 11.4%, Eni 11%, JERA 6.1%, Tokyo Gas 3.1%	<b>Santos</b>	JERA, Tokyo Gas	<b>2006</b>
	<b>Pluto T1</b>	1	<b>4.9</b>	2	<b>240,000</b>	Woodside 90%, Kansai Electric 5%, Tokyo Gas 5%	<b>Woodside</b>	Kansai Electric, Tokyo Gas	<b>2012</b>
	<b>QCLNG T1</b>	1	<b>4.25</b>	2	<b>280,000</b>	Shell 50%, CNOOC 50%	<b>Shell</b>	CNOOC, Shell	<b>2015</b>
	<b>QCLNG T2</b>	1	<b>4.25</b>			Shell 97.5%, Tokyo Gas 2.5%		Shell, Tokyo Gas	<b>2015</b>
	<b>GLNG T1 - T2</b>	2	<b>7.8</b>	2	<b>280,000</b>	Santos 30%, Petronas 27.5%, TotalEnergies 27.5%, KOGAS 15%	<b>Santos</b>	KOGAS, Petronas	<b>T1: 2015 T2: 2016</b>
<b>Australia</b>	<b>APLNG T1</b>	1	<b>4.5</b>	2	<b>320,000</b>	ConocoPhillips 47.5%, Origin Energy 27.5%, Sinopec Group 25%	<b>Australia Pacific LNG</b>	Sinopec	<b>2016</b>
	<b>APLNG T2</b>	1	<b>4.5</b>	1				Kansai Electric, Sinopec	<b>2016</b>
	<b>Gorgon T1 - T3</b>	3	<b>15.6</b>	2	<b>360,000</b>	Chevron 47.3%, ExxonMobil 25%, Shell 25%, Osaka Gas 1.3%, Tokyo Gas 1%, JERA 0.4%	<b>Chevron</b>	BP, Chevron, ENEOS Corp., ExxonMobil, GS Caltex, JERA, Kyushu Electric, Osaka Gas, PetroChina, Petronet, Shell, SK E&S, Tokyo Gas	<b>T1: 2016 T2: 2016 T3: 2017</b>
	<b>Wheatstone T1 - T2</b>	2	<b>8.9</b>	2	<b>300,000</b>	Chevron 64.1%, KUFPEC 13.4%, Woodside 13%, JOGMEC 3.4%, Mitsubishi 3.2%, Kyushu Electric 1.5%, NYK 0.8%, JERA 0.6%	<b>Chevron</b>	Chevron, JERA, KUFPEC, Kyushu Electric, Tohoku Electric, Woodside	<b>T1: 2017 T2: 2018</b>
	<b>Ichthys T1 - T2</b>	2	<b>8.9</b>	2	<b>330,000</b>	INPEX 66.3%, TotalEnergies 26%, CPC 2.6%, Tokyo Gas 1.6%, Kansai Electric 1.2%, Osaka Gas 1.2%, JERA 0.7%, Toho Gas 0.4%	<b>INPEX</b>	CPC, INPEX, JERA, Kansai Electric, Kyushu Electric, Osaka Gas, Toho Gas, Tokyo Gas, TotalEnergies	<b>2018</b>
	<b>Prelude (FLNG)</b>	1	<b>3.6</b>	1	<b>220,000</b>	Shell 67.5%, INPEX Corporation 17.5%, KOGAS 10%, CPC 5%	<b>Shell</b>	CPC, INPEX, KOGAS, Shell	<b>2019</b>
<b>Brunei</b>	<b>Brunei T1 - T5</b>	5	<b>7.2</b>	3	<b>195,000</b>	Brunei Government 50%, Shell 25%, Mitsubishi 25%	<b>Brunei LNG</b>	JERA, Osaka Gas, Petronas, Shell, Tokyo Gas	<b>1973</b>
	<b>Bontang</b>	4	<b>11.5</b>	6	<b>630,000</b>	Government of Indonesia	<b>PT Badak NGL (Pertamina 55%, PHSS 20%, PNA 15%, TotalEnergies 10%)</b>	ENI, Nusantara Regas, PPT ETS, Pertamina	<b>Train E: 1990 Train F: 1994 Train G: 1998 Train H: 1998</b>
<b>Indonesia</b>	<b>Tangguh T1 - T2</b>	2	<b>7.6</b>	2	<b>340,000</b>	Tangguh LNG (BP 40.2%; CNOOC 13.9%; JX Nippon Oil & Gas Exploration 7.5%; Mitsubishi 9.9%; INPEX 7.8%; LNG Japan 7.4%; Mitsui 3.2%, Others 10.2%)	<b>Tangguh LNG</b>	CNOOC, Kansai Electric, PLN, Posco, Sempra LNG, SK E&S, Tohoku Electric	<b>2009</b>
	<b>Donggi-Senoro</b>	1	<b>2.0</b>	1	<b>170,000</b>	PT Donggi-Senoro LNG (Mitsubishi 45%, Pertamina 29%, KOGAS 15%, Medco 11%)	<b>PT Donggi-Senoro LNG</b>	JERA, KOGAS, Kyushu Electric	<b>2015</b>
	<b>MLNG 1 Satu</b>	3	<b>8.4</b>	6	<b>390,000</b>	Petronas 90%, Mitsubishi 5% Sarawak state government 5%	<b>Petronas</b>	JOVO, Hiroshima Gas, PTT, Saibu Gas, Shikoku Electric, S-Oil, Tokyo Gas	<b>1983</b>
	<b>MLNG 2 Dua</b>	3	<b>9.6</b>			Petronas 80%, Mitsubishi 10% Sarawak state government 10%		ENEOS Corp., JERA, Osaka Gas, Sendai City Gas, Shizuoka Gas, Tohoku Electric, Tokyo Gas	<b>1995</b>
<b>Malaysia</b>	<b>MLNG 3 Tiga</b>	2	<b>7.7</b>			Petronas 60%, Sarawak state government 25%, ENEOS Corporation 10%, Diamond Gas 5%		CNOOC, JAPEX, KOGAS, Osaka Gas, Toho Gas, Tohoku Electric, Tokyo Gas	<b>2003</b>
	<b>MLNG T9</b>	1	<b>3.6</b>			Petronas 70%, ENEOS Corporation 10%, PTT 10%, Sarawak state government 10%		Hokkaido Electric, Hokuriku Electric	<b>2016</b>
	<b>PFLNG Dua (FLNG)</b>	1	<b>1.5</b>		<b>177,000</b>	Petronas	<b>Petronas</b>	KEPCO, Petronas, PTT	<b>2021</b>
	<b>PFLNG Satu (FLNG)</b>	1	<b>1.2</b>	1	<b>180,000</b>	Petronas	<b>Petronas</b>	KEPCO, PTT	<b>2017</b>



Country	Name	Liquefaction		Storage		Owner(s)	Operator	MT - LT Buyer(s)	Start-up date
		Number of trains	Nominal capacity (MTPA)	Number of tanks	Total capacity (liq m <sup>3</sup> )				
Mozambique	Coral South (FLNG)	1	3.4		230,000	Coral South LNG (CNPC 20%, Eni 25%, ExxonMobil 25%, ENH 10%, Galp 10%, KOGAS 10%)	Eni	BP	2022
Papua New Guinea	PNG LNG T1 - T2	2	8.3	2	320,000	PNG LNG (Santos 42.5%, Exxon Mobil 33.2%, Kumul Petroleum 16.8%, Nippon Papua New Guinea LNG LLC 4.7%, MRDC 2.8%)	PNG LNG	BP, CPC, JERA, Osaka Gas, Sinopec	2014
Peru	Peru	1	4.45	2	260,000	Hunt Oil 50%, Shell 20%, SK Innovation 20%, Marubeni 10%	Hunt Oil	Shell	2010
Russia	Sakhalin-2 T1 - T2	2	10.8	2	200,000	Sakhalin Energy LLC (Gazprom 50%, Novatek 27.5%, Mitsui 12.5%, Mitsubishi 10%)	Sakhalin Energy LLC	Gazprom, Hiroshima Gas, JERA, KOGAS, Kyushu Electric, Osaka Gas, Saibu Gas, Toho Gas, Tohoku Electric, Tokyo Gas	2009
<b>PACIFIC BASIN TOTAL</b>			<b>174.43</b>		<b>5,870,000</b>				
<b>TOTAL</b>			<b>476.47</b>		<b>17,269,800</b>				



# Regasification terminals

At the end of 2022, global regasification capacity reached **1,068 MTPA**.

9 new regasification terminals started commercial operations in 2022 totaling 23.4 MTPA of capacity. El Salvador joined the ranks of LNG importing countries in 2022 with the start-up of the 2 MTPA FSRU-based Acajutla LNG terminal. One FSRU project started operations in Brazil. Two projects were commissioned in Europe, one floating-based in Netherlands and a small-scale onshore terminal in Finland. 5 new terminals started operations in Asia: two land-based terminals in China, one in Thailand, one in Japan and a small-scale offshore project in Indonesia.

Other regasification capacity additions included the second phase at the Al-Zour terminal in Kuwait, capacity additions in Europe (in France, Poland, Italy and Croatia), and one expansion program completed in China.

## Argentina

Between May and August 2022, the 150,900 m<sup>3</sup> *Exemplar* FSRU, owned and operated by Excelerate Energy, provided regasification services in **Bahia Blanca** under a short-term seasonal contract.

## Belgium

In 2022, Fluxys LNG, owner and operator of the **Zeebrugge** import terminal continued the construction of the three additional open rack vaporizers which will increase the send-out capacity at the terminal. The additional regasification capacity is envisaged in two steps: it is expected to reach a total of 4.7 MTPA from early 2024 and a total of 6 MTPA from early 2026. Four new truck loading bays are under construction to support the freight transport sector in its switch to LNG and BioLNG, scheduled to become available in early 2024. In summer 2022, Fluxys LNG held a call for market interest in truck loading slots which showed strong interest. In December 2022, Fluxys LNG organized a subscription window for booking long-term BioLNG liquefaction services to allow terminal users to convert biomethane into BioLNG and to load trucks and bunker ships.

## Brazil

In October 2022, the FSRU LNGT Powership Asia deployed in **Sepetiba Bay** received a partial LNG cargo and started testing operations. The FSRU is controlled by KARMOL, a joint venture between Karpowership and Mitsui O.S.K. Lines. The temporary deployment of the FSRU and a floating thermoelectric plant will supply power to the state of Rio de Janeiro through December 2025.

In August 2022, an FSRU-based LNG import terminal in **Barcarena**, developed by New Fortress Energy (NFE), was reported to be almost complete with the start-up expected in 2023. In Q2 2022, NFE started construction of the 605 MW Barcarena power plant, which is planned to be supplied from the terminal under a 25-year PPA. The same month, a 3.8 MTPA FSRU-based LNG receiving terminal in **Santa Catarina**, also developed by NFE, was reported to be 90% complete. Start-up is expected in 2023.

An FSRU-based import terminal in the Port of **Santos**, Sao Paulo state, is expected to start operations in the second quarter of 2023. Höegh LNG has 10-year charter contract with Terminal de Regaseificação de São Paulo (TRSP), a unit of Compass Gas & Energia, which is part of the Cosan group, for the 3.7 MTPA capacity *Höegh Giant* FSRU.

In October 2022 OnCorp was selected to build an LNG regasification terminal in the port of **Suape** in Pernambuco, subject to the authorization from Antaq, National Waterway Transportation Agency. OnCorp has a 48-month leasing contract for an FSRU to be located at an existing mixed-use pier. It is also planned to connect the terminal to the gas distribution network of Copergas. Start-up of the terminal has been delayed and is now scheduled for 2024. The terminal also has the potential to be connected to the Transportadora Associada de Gas' (TAG) gas transport grid.

## Chile

A fifth truck loading bay has been built at **GNL Quintero** terminal and started operations in February 2023. Two LNG truck fueling service stations started operations at the terminal in 2022. The first LNG ship reloading operation was performed at GNL Quintero terminal in Q3 2022. In the first quarter of 2022 the Government of Chile awarded GNL Quintero US\$5.7 MM to support the development of a 10 MW green hydrogen plant to be built at the regasification terminal. In July 2022, the transaction for the purchase of a 80% stake in GNL Quintero by a consortium of EIG Partners and Fluxys from Enagas and Omers was completed. The Chilean national oil company, ENAP, holds the remaining 20%.

## China

In January 2023, China Huanqiu Contracting & Engineering Co. Ltd completed the construction of two LNG onshore storage tanks at **Tianjin Nangang LNG** terminal, which is under development by Beijing Gas Group. Each tank has a capacity of 220,000 m<sup>3</sup>. The two onshore tanks, the first of an eventual 10, have entered the commissioning phase.

In July 2022, the new 1 MTPA **Jiaxing LNG** terminal, located in Zhejiang province in China, received its first LNG cargo. The terminal is jointly owned by Jiaxing Gas and Hangzhou Gas. The facility started construction in 2018 and is equipped with small-scale loading/unloading berths.

In October 2022, the 3 MTPA **Jiangsu-Binhai LNG** terminal, located on the east coast of China and owned and operated by CNOOC, started operations. The terminal has four storage tanks with an overall capacity of 880,000 m<sup>3</sup> with further expansions planned, and can receive vessels with a capacity between 80,000 m<sup>3</sup> and 266,000 m<sup>3</sup>.

In March 2022, the Zhejiang Provincial Development

and Reform Commission approved the Phase III Expansion Project at ENN's **Zhoushan LNG** terminal, which will include the addition of four storage tanks, each with a capacity of 220,000 m<sup>3</sup>. Commercial operations are expected to start by the end of 2025. A third berth, to be built as part of the Phase III expansion, will accommodate LNG ships between 40,000 m<sup>3</sup> and 180,000 m<sup>3</sup> and will be capable of both loading and unloading operations. Ancillary processing equipment will also be added including 1 BOG compressor, 3 high-pressure pumps, 2 vaporizers, and 2 seawater pumps. Once the Phase III Project is put into operation, the processing capacity of the terminal is expected to reach 8.5 MTPA.

### Croatia

In April 2022, **LNG Croatia** increased the initial annual capacity of the FSRU, located on the island of Krk, to 2.9 BCMA. In August 2022 it announced plans to increase the capacity to 6.1 BCMA to serve other countries in the region.

### Cyprus

As of March 2023, the conversion of the LNG carrier *Galea* to an FSRU at Cosco Shipping Heavy Industry in Shanghai was reported to be 90% completed. Renamed the *Etyfa Prometheus* FSRU, it will serve Cyprus's first LNG import terminal in **Vasilikos** port. The project is owned by Natural Gas Infrastructure Company of Cyprus (ETYFA), a subsidiary of the Public Natural Gas Company (DEFA). Start-up is expected in October 2023.

### Dominican Republic

In April 2022, two new truck loading bays, that were built as part of the expansion project of the AES **Andrés** LNG facility, started commercial operations. The construction of the second 120,000 m<sup>3</sup> storage tank is expected to be completed in 2023.

### El Salvador

In October 2022, Invenergy started commercial operations at the Energía del Pacífico (EDP) LNG-to-power project, located at the Port of **Acajutla** in El Salvador. In April 2022, the 137,000 m<sup>3</sup> FSRU *BW Tatiana* completed its first ship-to-ship LNG operation receiving its first LNG cargo. The 2 MTPA FSRU is owned and operated jointly by BW LNG and Invenergy Investment.

### Estonia

In June 2022, Estonia's TSO, Elering started construction work on the 1.2 km pipeline connecting a planned FSRU-based LNG import terminal in **Paldiski** to the grid. In September 2022, the first phase of the construction of the terminal, developed by Alexela and Infortar, which included the construction of

the connection with Balticconnector pipeline, which connects the Finnish and Estonian pipeline grids, and the rental of an FSRU, was reported to be completed. The work on the mooring point was completed in October 2022. Estonia and Finland agreed to jointly charter an FSRU to import LNG and moor it in the Finnish port of **Inkoo**.

In March 2023, state-owned Estonian Stockpiling Agency (ESPA) purchased the LNG quay, port infrastructure and property at Paldiski from Alexela and Infortar.

### Finland

In January 2023, Exceleerate Energy's FSRU *Exemplar* located in **Inkoo** received its first LNG cargo and started operations. The FSRU arrived on site in December 2022. The construction works on the LNG terminal started in August 2022 and included the pier and mooring structures and systems for the FSRU as well as the construction of a 2.2-kilometre gas pipeline. The FSRU *Exemplar* will serve Finland, Estonia and the Baltic Sea region under the 10-year charter agreement signed by Exceleerate Energy and Gasgrid Finland in May 2022.

### France

In May 2022, a technical debottlenecking increased the long-term capacity at the **Fos Cavaou** LNG terminal from 6.8 MTPA to 8 MTPA. In addition, commercial optimization of the facilities enabled Elengy to market some additional capacity for 2022-2024. In June 2022, French Energy Regulation Commission (CRE) modified allocation rules for additional short-term capacities, which allowed Elengy to organize an experimental auction process. Following an open season in June-November 2022, all 2.5 MTPA of the capacity offered have been sold from 2025 until 2040.

In 2022, Elengy undertook technical and scheduling optimization in its three terminals (Montoir-de-Bretagne, Fos Cavaou, and Fos Tonkin). Work on possible capacity increases at Montoir and Fos Cavaou LNG terminals is ongoing.

The construction of an additional truck loading bay in **Montoir** is ongoing with the commissioning expected in summer 2023. Two additional truck loading bays will be commissioned in Fos Cavaou in the fourth quarter of 2023.

In January 2022, Elengy signed commercial agreements for the satellite storage of LNG at Reichstett in Bas-Rhin, in the Alsace region of France, developed in partnership with Rubis Terminal. The facility will be supplied with LNG by rail from Fos-sur-Mer LNG terminals, with a transfer capacity of 0.13 MTPA. The project is expected to be commissioned in 2023.

A new offshore LNG receiving terminal in **Le Havre** with a 5 BCMA regasification capacity, developed by

TotalEnergies with the support of the French Minister of Ecological Transition, will enter service by mid-September 2023. The terminal is expected to operate for 5 years. TotalEnergies has run a non-binding call of interest for LNG import and regasification capacity. The test resulted in a significant excess of demand (12 BCMA) over the offered capacity (2.5 BCMA). A binding open season is expected to be launched in March 2023.

### Germany

In January 2023, Germany joined the ranks of LNG importing countries. The new FSRU-based LNG receiving terminal in **Wilhelmshaven**, operated by Uniper, received its first LNG cargo and started commercial operations. The terminal uses the FSRU *Höegh Esperanza*, chartered from Höegh LNG by Uniper on behalf of the German Federal Government. The FSRU arrived on site in December 2022. The FSRU *Höegh Esperanza* has a 3.8 MTPA nominal regasification capacity and a 5.7 MTPA peak regasification capacity.

Another floating-based import project is being developed at the port of Wilhelmshaven, the **German North Sea LNG**. The project is led by Tree Energy Solutions. In April 2022 Tree Energy Solutions announced an open season inviting parties to submit expression of interest to reserve capacity and services for the import of LNG volumes at the terminal. The initial capacity of the terminal will be of 16-20 BCMA from 2025 onwards. In October 2022, Exceleerate Energy signed a 5-year charter agreement with the German Government for the FSRU *Excelsior*. The project is expected to start up in the third or fourth quarter of 2023.

In February 2023, FSRU-based LNG import terminal **Elbehafen LNG**, located in Brunsbüttel Elbehafen port and operated by RWE, received its first LNG cargo and started commissioning. In January 2023, Höegh LNG signed a binding 10-year time charter contract with RWE on behalf of the German Federal Ministry for Economic Affairs and Climate Action for the deployment of the FSRU *Höegh Gannet* for the Brunsbüttel LNG project. Commercial operations started in May 2023.

The FSRU based Elbehafen terminal is providing a source of early LNG supply in advance of the construction of the onshore terminal in **Brunsbüttel**, which is under development by German LNG Terminal (KfW 50%, Gasunie 40%, RWE 10%). In March 2022, Kreditanstalt für Wiederaufbau (KfW) on behalf of the German government, Gasunie and RWE signed a MoU to construct and operate an onshore multifunctional LNG import and distribution terminal. The terminal will have two LNG storage tanks of 165,000 m<sup>3</sup> each, a jetty with two berths for LNG carriers up to QMax size, as well as truck loading and bunkering facilities. It will have an an-



nual throughput capacity of 8 BCMA which can be expanded to at least 10 BCMA. In October 2022, German LNG Terminal executed the EPC contract with CS Gas North, a subsidiary of VINCI group in a consortium with Sener, for the construction of the terminal. The facility is expected to be operational in 2026. The onshore terminal will be operated by Gasunie. ConocoPhillips, INEOS and RWE have booked long-term regasification capacity at the terminal.

**Deutsche Ostsee** LNG import terminal, located in Lubmin and operated by Deutsche ReGas, was inaugurated in January 2023. The terminal uses the *Neptune FSRU* on a long-term charter with TotalEnergies, which is subchartering the unit to Deutsche Regas. *Neptune* has a 3.8 MTPA nominal regasification capacity and a 5.7 MTPA peak regasification capacity. TotalEnergies holds 2 MTPA of regasification capacity at the terminal. The FSRU arrived on site at Mukran Port, in December 2022, and started operations in January. LNG carriers bringing in the LNG moor offshore Lubmin and the LNG is transhipped to the FSRU using two small LNG carriers, *Coral Furcata* and *Coral Favia*. In October 2022, Deutsche ReGas started a binding open season for Phase I of the Deutsche Ostsee offshore LNG terminal, and a non-binding open season for Phase II of the project. For phase I, the *Neptune FSRU* is moored in the port of Lubmin. In Phase II it will be relocated to a location offshore Lubmin. The start-up of the second phase is planned in December 2023. The terminal is the first and, so far, the only privately financed LNG terminal in Germany. It is exempted from tariff and network access regulation for 20 years.

Another LNG project is under development offshore the port of **Lubmin** by RWE. A charter agreement for an FSRU was signed in May 2022 between Dynagas and RWE on behalf of the German Government.

In **Stade**, the shareholders of Hanseatic Energy Hub (Fluxys, Buss Group, Partners Group and Dow) have started preparatory works for the construction of a 13.3 BCMA onshore regasification terminal with two storage tanks of 240,000 m<sup>3</sup> each. The onshore terminal is scheduled to be operational by 2027. In January 2023, the Stade LNG terminal started construction of the new jetty. By the end of 2023, the jetty will allow a Dynagas FSRU chartered by the German government to start importing LNG. The terminal will use residual heat from an adjacent Dow plant to regasify the LNG, which is expected to reduce the CO<sub>2</sub> footprint of the operations. EnBW and SEFE have contracted long-term capacity at the terminal, for respectively 3 BCMA over 25 years and 4 BCMA over 20 years. The contracts include an option to move to ammonia as a hydrogen-based energy source at a later date.

The European Commission has confirmed that the terminal will benefit from a regulatory exemption.

### Ghana

In October 2022, the Ghana National Petroleum Corp (GNPC) said that the **Tema LNG** Terminal is likely to be completed in 2023.

### Greece

In November 2022, the 145,000 m<sup>3</sup> FSU Gaslog Athens, leased from Gaslog and moored by DESFA offshore the **Revithoussa** LNG terminal, started operations. The addition of the FSU has increased the storage capacity of the LNG Terminal of Revithoussa to approximately 370,000 m<sup>3</sup> LNG. The volume stored in the FSU is intended to cover part of the strategic reserve that must be kept by power generation units that are not able to operate with an alternative fuel. This obligation was for the period from 1 November 2022 to 31 March 2023, according to the provisions of the Preventive Action Plan approved by the Greek Regulatory Authority for Energy (RAE). According to DESFA's National Development Plan, small-scale LNG truck loading infrastructure is expected to be ready in Revithoussa in 2023 and a small-scale LNG bunkering facility is expected in 2024.

In May 2022, Gastrade started work at the 5.5 BCMA **Alexandroupolis FSRU** project. The FSRU, will have four LNG storage tanks with a total capacity of 153,500 m<sup>3</sup> of LNG, three regasification units, with a capacity of 315,000 m<sup>3</sup>/h (267 mmscf) each and systems for side to side (STS) mooring for LNG offloading. The terminal will be linked to the Greece-Bulgaria gas interconnector, commissioned in October 2022. In March 2023, Keppel Shipyard (Singapore) started work on the DNV classed LNG carrier *GasLog Chelsea* to convert the vessel to be renamed FSRU *Alexandroupoli*. It is expected to start operations by the end of 2023, with 60% of its technical regasification capacity, already booked.

In February 2023, Dioriga Gas completed the second phase of the market test for the reservation of capacity at its proposed FSRU-based LNG terminal, located in the regional district of Corinth. The 2 MTPA offered has been subscribed for a period of up to 25 years. The first phase of the market test was carried out between January and October 2022. The **Dioriga Gas FSRU** project is being developed by Dioriga Gas, a 100% subsidiary of Motor Oil Group. It consists of an FSRU to be connected to the National Natural Gas Transmission System (NNGTS). In addition to storage and regasification services, LNG truck loading and bulk breaking services will be available at the terminal. According to Dioriga Gas, the FSRU is designed to be H<sub>2</sub> ready.

In December 2022, Mediterranean Gas completed the first phase of the market test for the expression of interest and capacity allocation for a period of up to 25 years for the 5.2 BCMA Argo FSRU terminal proposed in **Volos** with demand exceeding the total capacity of the terminal. Mediterranean Gas reported a high demand for additional storage space in the terminal. The FSRU will have a 170,000 m<sup>3</sup> storage capacity and 3 regasifiers, with a maximum capacity of 250 mmscf each. The average and maximum regasification capacity of the terminal will be 3.7 MTPA and 5.6 MTPA respectively.

### Hong Kong

In March 2023, **Hong Kong LNG** Terminal joint venture issued a tender to purchase an LNG cargo for the commissioning of the terminal. The terminal includes the 263,000 m<sup>3</sup> *Bauhinia Spirit FSRU* (ex. Challenger), a double berth jetty and subsea pipelines. In April 2023, the FSRU arrived in Hong Kong. The terminal received its first LNG cargo in May 2023.

### Israel

The contract between Excelerate Energy and Israel Electric Corporation (IEC) for the provision of an FSRU ended in December 2022. Israel is not expected to import any LNG in the foreseeable future.

### India

The regasification capacity of **Dahej** LNG Terminal is being expanded from 17.5 MTPA to 22.5 MTPA. Two additional LNG storage tanks and a 3<sup>rd</sup> jetty are under construction at the terminal. The terminal is also being adapted to handle ethane and propane in addition to LNG.

In April 2023, the 5 MTPA **Dhamra** LNG terminal, developed by Adani Total Private Limited (ATPL), a 50/50 joint venture between Adani and TotalEnergies, received its first LNG cargo from Qatar and started commissioning. The facility is the country's 7<sup>th</sup> LNG import. It can accommodate LNG vessels of a 40,000 - 265,000 m<sup>3</sup> capacity. It has reloading and truck loading facilities and benefits from a natural breakwater in Dhamra Port, which assures year-round operations. The terminal will deliver regasied LNG to refineries, fertilizer plants, industries, and city gas distribution. Indian Oil Corp has booked 3 MTPA of regasification capacity at the terminal for 20 years.

In 2022, H-Energy completed the construction of a jetty at **Jaigarh** port along with other buildings including control room, jetty monitoring room, administration building and associated facilities. The installation and testing of all equipment, including topside piping, metering skid and fire water system, has also been completed. Construction and testing of the Jaigarh-Dabhol pipeline has been completed including its connection to GAIL's DUPL pipeline linking the ter-



minal with Western, Northern and Southern parts of India. The 10-year charter agreement between H-Energy and Höegh LNG for the 170,000 m<sup>3</sup> *Hoëgh Giant* FSRU has been terminated.

The first phase of the India's first newbuild FSRU project in Jafrabad, developed by Swan Energy, which includes the 5 MTPA *FSRU Vasant 1* and an FSU, was supposed to be commissioned in 2022. The FSRU was completed by Hyundai Heavy Industries in South Korea at the end of 2020. However, due to delays in the start-up of the project, the FSRU has been chartered for one year by Botas to provide regasification services at Saros in Türkiye.

As of December 2022, the 5 MTPA **Chhara** LNG project, which is under development by Hindustan Petroleum Corp Ltd (HPCL) in Gujarat state, was reported to be expected to start-up by the end of 2023.

The **Karaikal** LNG import terminal, which is being built by Atlantic, Gulf and Pacific (AG&P) in the Karaikal Port in Southeast India, is expected to start operations by the end of 2024. The terminal will include an FSU, leased through a long-term charter agreement with ADNOC L&S. The facility will provide natural gas to power plants, industrial and commercial customers and city gas networks of AG&P.

An FSU based LNG regasification project in **Kakinda**, under development by H-Energy, is expected to be commissioned by mid-2024.

Petronet is working to develop an LNG Terminal at **Gopalpur**, Odisha, which will initially use an FSRU with a capacity of 4 MTPA, with a future provision to convert it into a land-based LNG terminal of 5 MTPA capacity. Bengal Concessions Private Limited (BCPL), a subsidiary of HE Terminals Private Limited (HETPL) is planning to construct an onshore 3 MTPA LNG terminal at **Kukrahati**, East Medinipur District, West Bengal. The terminal will have storage tanks with a total capacity of 180,000 m<sup>3</sup>, two jetties and truck loading facilities. The project has received EC Approval, as well as approvals from National Waterways and Kolkata Port Trust.

## Italy

In March 2022, the offshore **Rovigo LNG** terminal increased its regasification capacity from 8 to 9 BCMA thanks to the optimization of its operating regime, without undertaking any structural changes or systems with respect to the current configuration.

In March 2023, the 170,000 m<sup>3</sup> FSRU *Golar Tundra*, purchased by Snam, arrived in **Piombino** for a new 5 BCMA LNG offshore regasification project. The terminal's regasification capacity is booked at 86% for a 20-year period up to 2044. Snam recently selected Klaipėdos Nafta (KN) to collaborate in the installation, commissioning and testing of the terminal and launched a tender for a commissioning cargo. The project received state approval in October 2022. The

FSRU received its first LNG cargo in May 2023.

In July 2022, Snam purchased the 170,000 m<sup>3</sup> FSRU *BW Singapore* from BW LNG. The 5 BCMA FSRU, currently located in Egypt and bound by a charter agreement with EGAS until November 2023, is expected to be installed in the upper Adriatic Sea, close to the coast of **Ravenna**. Operations are scheduled to start in the third quarter of 2024, following the completion of the authorization and regulatory process as well as finalizing the works required for mooring the FSRU and connecting it to the gas transport network.

## Jamaica

In March 2022, the 170,000 m<sup>3</sup> *Höegh Gallant* FSRU replaced *Golar Freeze* at the New Fortress Energy's **Old Harbor** LNG terminal following the 10-year charter contract signed between Höegh LNG and a subsidiary of New Fortress Energy in 2021.

## Japan

The 1 MTPA **Niihama** LNG terminal started operations in January 2022.

In 2022, Eneos announced plans to add LNG ship-to-ship transfer (STS) services and break-bulking cargoes into smaller vessels at the **Hachinohe** terminal jetty. Five truck loading lanes were added at the **Ishikari** LNG terminal, operated by Hokkaido Gas.

In December 2022, the Sunflower Kurenai, Japan's first LNG-fueled ferry ordered by MOL and operated by Ferry Sunflower Limited, received its first LNG fuel supply at the Port of Beppu in Oita Prefecture from Oita LNG Company, Inc., a subsidiary of Kyushu Electric Power. For the first time in Japan, LNG was supplied via truck to the ferry with a skid that connected simultaneously four tank trucks to the ferry, speeding up the process.

## Latvia

In April 2023, the Latvian government abandoned plans for the **Skulte LNG** terminal after receiving unfavorable reports on its commercial viability. Latvia's Ministry of Climate and Energy (KEM) is working on arranging access for the joint use of the **Paldinski LNG** terminal in Estonia.

## Lithuania

In October 2022, AB Klaipėdos Nafta exercised its option to acquire the FSRU *Independence* from Höegh LNG. The ownership transfer will take place in December 2024. The operation of the terminal is guaranteed until 2044.

AB Klaipėdos Nafta, operator of **Klaipėda** LNG terminal, is exploring the possibility to expand the regasification capacity of the terminal to 2.5 BCMA starting from 2<sup>nd</sup> half of 2026. The gas transmission capacity at relevant entry and exit points would also be in-

creased accordingly. A joint open season procedure is proposed by Klaipėda LNG Terminal and Lithuanian gas transmission system.

## Netherlands

**Gate** Terminal increased the send-out during the summer 2022 to 16 BCMA by means of some small investments and changes. The operator launched an open season in September 2022 for an additional 4 BCMA of send-out capacity, including a 4<sup>th</sup> tank. The terminal has decided to expand the truck loading facilities by two more bays to a total of 5.

In September 2022, a new offshore 8 BCMA LNG terminal EemsEnergyTerminal started operations in **Eemshaven**. The project is a 100% subsidiary of NV Nederlandse Gasunie. The terminal includes two FSRUs, the *Eemshaven LNG* barge from Exmar and the *Golar Igloo* from Energos Infrastructure, which have been leased for a period of 5 years. The terminal is connected to the Dutch high-pressure gas grid by a 4-kilometer connection pipeline. The annual capacity is fully booked by ČEZ (Czech Republic), Shell Western LNG B.V. and ENGIE SA.

## Poland

GAZ-SYSTEM completed Stage 1 of the expansion project at the **Świnoujście** LNG Terminal. Installation of two additional Submerged Combustion Vaporisers (SCV) allowed an increase in regasification capacity to 6.2 BCMA. Stage 2 of the expansion project is ongoing. It includes a third LNG storage tank, auxiliary installations and equipment and connection to the existing infrastructure. A new jetty for LNG unloading, loading and bunkering along with a dedicated transmission pipe rack will also be constructed. Stage 2 is expected to be completed in December 2023. As of July 2022, the annual truck loading capacity was increased to 185,000 tons of LNG.

In 2022 GAZ-SYSTEM completed the first phase of the binding open season for its new FSRU-based LNG terminal in the Gulf of **Gdańsk** area. The open season has confirmed the interest of market participants. In November 2022 GAZ-SYSTEM signed an agreement with Rambøll Danmark A/S for the preparation of the Construction Permit Design for the offshore infrastructure for the FSRU Terminal. In December 2022 the European Commission, under the Connecting Europe Facility (CEF), granted funding to the LNG Gdańsk Project for the development of technical specifications and performance of engineering works. In March 2023, GAZ-SYSTEM launched a non-binding open season for regasification capacity, which will deliver approximately 4.5 BCMA of natural gas. The decision on the final regasification capacity of the new terminal will depend on the results of the market screening.

## Senegal

In January 2023, KARMOL, a joint venture between Turkish Karpowership and Japanese MOL, signed a loan agreement with Japan Bank for International Cooperation (JBIC) and MUFG Bank for US\$71M to finance its first FSRU in Senegal located offshore **Dakar**. The terminal will use FSRU *Karmol LNGt Powership Africa*, which will supply regasified LNG to a Karpowership floating power plant, which was already in operation burning fuel oil. In May 2022, Gas Entec, a subsidiary of AG&P, completed the conversion of the LNG carrier *Dwiputra* to the FSRU while the vessel was already onsite since June 2021. The facility has the capacity to be scaled from 15 MMcfd to 300 MMcfd of gas.

## Singapore

Studies related to additional storage and jetty capacity, which will be used for storage, reloading, small-scale LNG and LNG bunkering activities are being carried out at the **SLNG terminal**.

The Energy Markets Authority has put in place a set of temporary measures to secure Singapore's energy supply and ensure the functioning of the energy sector, including the establishment of a Standby LNG facility (SLF). Power generation companies can draw from SLF to generate electricity when their natural gas supplies are disrupted. These measures were first extended until 31 March 2023, and the SLF will be maintained beyond that date to address risks of gas supply disruptions. Singapore has chartered vessels, including *Gaslog Singapore* and *Bauhinia Spirit*, as a temporary measure to be used as LNG floating storage in response to the risk of a shortage of LNG supply.

## Spain

In 2023 **El Musel** (Gijón) LNG receiving terminal is scheduled to start operating as a logistics terminal and will be able to supply up to 8 bcma of LNG to Europe. The terminal has received ministerial authorization and approval from the National Markets and Competition Commission (CNMC) for its special economic regime as a logistics facility in February 2023. El Musel LNG terminal has two tanks of a 150,000 m<sup>3</sup> LNG storage capacity each, two loading bays which will allow the berthing of vessels of between 50,000 and 266,000 m<sup>3</sup>. The terminal had been idled since its construction was completed in 2013. In March 2023, Enagás launched an open season for logistic services which will include a first non-binding phase expression for interest for LNG unloading, storage and loading operations, on an unregulated access basis. Under the regulated access regime, El Musel terminal will only offer the essential regasification service for the proper management of the terminal, as well as the tank loading service. After the first phase, a binding phase will take place in which marketers bid for the capacity. The process will end with

the allocation of long-term logistics services.

In February 2023, Enagás and Reganosa signed an agreement under which Reganosa purchased a 25% stake in the 8 BCMA El Musel LNG receiving terminal for €95M and Enagás acquired the entire transmission network of 130 km of 80-bar natural gas pipelines, previously owned by Reganosa, for €54M.

The jetty of the LNG terminal in **Mugardos** has been extended and a small-scale transfer facility is now available, allowing gassing up, cooling down, loading and unloading operations for all capacities of LNG vessels and barges up to 266,000 m<sup>3</sup> (QMAX).

## South Korea

NH Company, a joint venture between Korean steel-making company Posco and subsidiary Posco Energy, is building two more LNG storage tanks at the **Gwangyang LNG** terminal in South Korea. Construction is expected to be completed by 2025, taking the number of tanks at the terminal to eight.

Development of **Ulsan LNG** terminal, jointly owned by Korea National Oil Company, SK Gas and MOL Chemical Tankers, is underway. The terminal will have six 215,000 m<sup>3</sup> storage tanks. As of November 2022, tanks one and two had been completed. The terminal is expected to be fully completed by the third quarter of 2024 and commissioned in the fourth quarter of 2024. The terminal will be operated by KET (Korea Energy Terminal). KET holds a 4.8 MTPA and Clean Energy Complex (CEC) a 2.4 MTPA of regasification capacity at the terminal. LNG imports are expected to start in 2024 and 2026 respectively. The terminal will supply two power plants (Ulsan Gas & Power Solution and SK Multi Utility).

## Philippines

In April 2023, Philippines joined the ranks of LNG importers, as AG&P's **Philippines LNG** terminal, located in Batangas Bay near Manila, received its commissioning LNG cargo. The FSU *Ish*, used at the project, is part of the combined offshore/onshore terminal that will have an initial capacity of 5 MTPA.

162,400 m<sup>3</sup> FSRU *BW Batangas* (ex. BW Paris), owned by BW LNG, is undergoing modifications at MMHE Shipyard in Johor (Malaysia) to be ready to serve First Gen's **Batangas** LNG terminal under a 10-year charter. BW Batangas arrived in the Philippines in June 2023. The 3.9 MTPA FSRU will provide LNG storage and regasification services to First Gen's existing and planned gas-fired power plants and to other third-party terminal users. First Gen, through its subsidiary FGEN LNG, in partnership with Tokyo Gas, is developing the **Interim Offshore LNG Terminal** as the first phase of the Batangas LNG terminal at the First Gen Clean Energy Complex in Batangas City.

## Puerto Rico

In May 2022, Crowley inaugurated a small-scale LNG loading terminal in the southern town of Peñuelas. The facility will deliver more than 94 million gallons (356,000 m<sup>3</sup>) of LNG annually from the Eco Electrica LNG terminal. The LNG facility will support industrial and commercial operators in Puerto Rico, Central America and the Caribbean.

## Taiwan

In 2022, CPC started construction of phase III expansion project in CPC **Taichung LNG** receiving terminal. The project includes two additional LNG storage tanks of a capacity 180,000 m<sup>3</sup> each and extra regasification facilities. Completion is targeted for the end of 2026.

## Thailand

In June 2022, the second LNG receiving terminal in Thailand, LNG **Map Ta Phut Terminal 2**, also known as Nong Fab LNG, owned and operated by PTT LNG and located adjacent to the existing Map Ta Phut Terminal 1, received its commissioning LNG cargo. The construction of the 7.5 MTPA terminal was carried out by a joint venture between Saipem and CTCI Corporation and took 4 years.

## Turkey

The upgrade of the LNG terminal jetty to receive Q-max size and small-scale vessels in EgeGaz's **Aliaga** LNG facility was completed in 2022.

Botas has completed construction of a new jetty in Saros Bay for the **Saros FSRU** project. In February 2023, the 180,000 m<sup>3</sup> FSRU *Vasant 1* arrived at **Saros LNG** terminal with a commissioning cargo onboard. The FSRU is chartered by Botas from Swan Energy and is set to operate at the terminal for 12 months.

## UAE

In March 2023, Excelerate Energy extended the time charter agreement with Dubai Supply Authority (DUSUP) for the *FSRU Explorer*, employed at **Jebel Ali** LNG import terminal in Dubai, by an additional 5-years from the end of the existing contract in the fourth quarter of 2025.

## UK

The expansion of **Grain LNG** terminal is underway. From mid-July 2025, its storage capacity is expected to increase to 1.2 million m<sup>3</sup>, and the regasification capacity to 800 GWh/d (23 MTPA). In addition, a second cryogenic unloading line will be commissioned. In July 2022, Grain LNG issued a statement inviting market participants to express an interest in low-cost capacity at the facility as of 2029. Grain LNG has a series of existing capacity contracts ending by 2029. Grain LNG expects to be able to offer at least 360,000 m<sup>3</sup> of storage and 300 GWh/d of regasification capacity for 2029.

# Regasification terminals

Market	Site	Storage		Send-out		Owner	Operator	Third Party Access	Additional Services offered	Start-up date
		Number of tanks	Total capacity (liq. m <sup>3</sup> )	Number of vaporizers	Nominal capacity (MTPA)					
<b>AMERICAS</b>										
Argentina	Bahia Blanca No vessel chartered	4	151,000	6	3,7	Owner: Excelerate Energy Charterer: YPF	FSRU: Excelerate Energy Terminal: YPF	No		2008
	Escobar Excelerate Expedient (FSRU)	4	151,000	6	6,1	Owner: Excelerate Energy Charterer: UTE Escobar (50% Enarsa, 50% YPF)	FSRU: Excelerate Energy Terminal: YPF	No		2011
Brazil	Bahia Excelerate Sequoia (FSRU)	4	173,400		5,6	Owner: Maran Gas Maritime Charterer: Excelerate Energy	FSRU: Excelerate Energy Terminal: Excelerate Energy	Yes		2013
	Guanabara Bay Excelerate Experience (FSRU)	4	173,400	6	6,0	Owner: Excelerate Energy Charterer: Petrobras	FSRU: Excelerate Energy Terminal: Petrobras	No	Reloading	2009
	Pecem Energos Winter (FSRU)	4	138,000		3,8	Owner: Energos Infrastructure Charterer: Petrobras	FSRU: Energos Infrastructure Terminal: Petrobras	No		2009
	Port of Açú BW Magna (FSRU)	4	173,400		5,6	Owner: BW Charterer: Gas Natural Açú (Prumo Logística, BP, Siemens)	FSRU: BW Terminal: Klaipedos Nafta			2021
	Sepetiba LNG LNGT Powership Asia (FSRU)	4	127,500		2,7	KARMOL	Karpowership			2022
	Sergipe Energos Nanook (FSRU)	4	170,000		5,6	Owner: Energos Infrastructure Charterer: CELSE	Energos Infrastructure		Reloading	2020
Canada	Saint John, New Brunswick	3	480,000	8	7,4	Repsol	Canaport LNG	Yes		2009
Chile	Mejillones	1	187,000	3	1,5	ENGIE (63%), Ameris Capital (37%)	GNL Mejillones	Yes	Transshipment, Truck loading	2010
	Quintero	3	334,000	4	3,8	GNLQ: Consortium led by EIG and Fluxys (80%), ENAP (20%)	GNL Quintero	Yes	Reloading, Truck loading	2009
Colombia	Cartagena SPEC LNG Höegh Grace (FSRU)	4	170,000	4	3,7	Owner: Höegh LNG Charterer: Sociedad Portuaria El Cayao (SPEC LNG)	FSRU: Höegh LNG Terminal: SPEC LNG	No	Reloading, Transshipment	2016
Dominican Republic	Andrés	1	160,000	3	1,7	AES	AES	No	Reloading, Truck loading	2003
El Salvador	Acajutla BW Tatiana (FSRU)	5	137,000		2,0	Energía del Pacífico (Invenergy, Quantum Energy, Grupo Calleja, VC Energy de Centroamerica)	Invenergy, BW LNG			2022
Jamaica	Montego Bay	7	7,000		0,5	New Fortress Energy	New Fortress Energy		Truck loading	2016
	Old Harbour Höegh Gallant (FSRU)	4	170,000	4	1,7	Owner: Höegh LNG Charterer: New Fortress Energy	New Fortress Energy			2019
Mexico	Altamira	2	300,000	5	5,7	Terminal de LNG de Altamira (Vopak 60%, Enagas 40%)	Terminal de LNG de Altamira	Yes		2006
	Energía Costa Azul	2	320,000	6	7,6	INova (Sempra)	INova (Sempra)	Yes	Reloading	2008
	Manzanillo	2	300,000		3,8	Mitsui (37.5%), Samsung (37.5%), KOGAS (25%)	Terminal KMS			2012
	Pichilingue, La Paz	3			0,8	New Fortress Energy	New Fortress Energy		Truck loading	2021
Panama	Costa Norte	1	180,000		1,5	AES	AES		Bunkering, Truck loading	2018
Puerto Rico	San Juan				1,1	New Fortress Energy	New Fortress Energy		Truck loading	2020
	Peñuelas	1	160,000	4	2,0	Naturgy (47.5%), ENGIE (35%), Mitsui (15%), OCO Partners (2.5%)	Eco Eléctrica		Truck loading	2000
USA	Cameron	3	480,000	10	11,4	Sempra (50.2%), TotalEnergies (16.6%), Mitsubishi (16.6%), Mitsui (16.6%)	Cameron LNG	Yes	Reloading	2009
	Cove Point	7	700,000	25	13,7	Cove Point LNG, LP (Dominion Energy 75%, Brookfield 25%)	Cove Point LNG, LP			1978
	Elba Island	5	535,000	11	12,0	Kinder Morgan	Southern LNG	Yes		1978

## Regasification terminals

Market	Site	Storage		Send-out		Owner	Operator	Third Party Access	Additional Services offered	Start-up date
		Number of tanks	Total capacity (liq m <sup>3</sup> )	Number of vaporizers	Nominal capacity (MTPA)					
USA	Everett	2	155,000	4	5.1	Constellation LNG	Constellation LNG	Yes	Truck loading	1971
	Freeport	3	480,000	7	13.2	Freeport LNG Development, L.P.	Freeport LNG Development	Yes		2008
	Golden Pass	5	775,000	8	15.7	QP (70%), ExxonMobil (30%)	Golden Pass LNG	No		2010
	Gulf LNG	2	320,000		8.8	Kinder Morgan (50%), GE (40%), AES (10%)	Gulf LNG Energy	No		2011
	Lake Charles	4	425,000	14	17.9	Lake Charles LNG	Lake Charles LNG	Yes		1982
	Northeast Gateway No vessel chartered	4	151,000	6	3.8	Excelerate Energy	Excelerate Energy			2008
	Sabine Pass	5	800,000	24	30.4	Sabine Pass LNG	Cheniere	Yes	Reloading	2008
<b>AMERICAS TOTAL</b>			<b>8,983,700</b>		<b>215.99</b>					
<b>ASIA</b>										
Bangladesh	Moheshkhali <i>Excelerate Excellence (FSRU)</i>	4	138,000		3.8	Owner: Excelerate Energy Charterer: Petrobangla	Excelerate Energy			2018
	Summit LNG <i>Summit LNG (FSRU)</i>	4	138,000		3.8	Owner: Excelerate Energy Charterer: Summit Power International	FSRU: Excelerate Energy Terminal: Summit			2019
China	Beihai, Guangxi	4	640,000		6.0	PipeChina (80%), Guangxi Beibu Gulf International (20%)	PipeChina	Yes	Truck loading	2016
	Binhai, Jiangsu	4	880,000	6	3.0	CNOOC (76%), Huainan Ming Group (24%)	CNOOC			2022
	Caofeidian (Tangshan), Hebei	8	1,280,000		10.0	Petrochina (51%), Beijing Gas Blue Sky Holdings Ltd. (29%), Hebei Natural Gas (20%)	Petrochina	Yes	Truck loading	2013
	Dalian, Liaoning	3	480,000	3	6.0	PipeChina (75%), Dalian Port Company Limited (20%), Dalian Construction Investment (5%)	PipeChina	Yes	Reloading, Truck loading	2011
	Dapeng, Shenzhen	4	640,000	7	6.8	CNOOC (33%), Guangdong Province Consortium (31%), BP (30%), HK & China Gas (3%), Hong Kong Electric (3%)	GDLNG	Limited	Truck loading	2006
	Dongguan, Guangdong	2	160,000	4	1.5	Jovo Group	Jovo	No	Truck loading	2012
	Diefu, Shenzhen	4	640,000		4.0	PipeChina (70%), Shenzhen Energy Group (30%)	PipeChina	Yes	Truck loading	2018
	Fangchenggang, Guangxi	2	60,000		0.6	PipeChina (51%), Fangchenggang Port Group Co. LTD (49%)	PipeChina	Yes	Truck loading	2019
	Hua'an, Guangdong	1	80,000		0.8	Shenzhen Gas	Shenzhen Gas		Truck loading	2019
	Jiaxing, Zhejiang	2	200,000		1.0	Hangzhou Gas (49%), Jiaxing Gas (51%)	GCL			2022
	Ningbo, Zhejiang	6	960,000		6.0	CNOOC (51%), Zhejiang Energy Group Co Ltd (29%), Ningbo Development & Investment Group (20%)	CNOOC	No	Truck loading	2013
	Putian, Fujian	6	960,000		6.3	Fujian LNG (CNOOC 60%, Fujian Inv. & Dev.Co. 40%)	CNOOC	No	Truck loading	2008
	Qidong, Jiangsu	5	620,000		4.0	Guanghai Energy	Guanghai Energy		Truck loading	2017
	Qingdao, Shandong	6	960,000		7.0	Sinopec (99%), Qingdao Port Group (1%)	Sinopec	No	Truck loading	2014
Rudong, Jiangsu	5	1,080,000	3	10.0	Petrochina (55%), Pacific Oil & Gas (35%), Jiangsu Guoxin Investment Group (10%)	Petrochina	Yes	Truck loading	2011	



Market	Site	Storage		Send-out		Owner	Operator	Third Party Access	Additional Services offered	Start-up date
		Number of tanks	Total capacity (liq m <sup>3</sup> )	Number of vaporizers	Nominal capacity (MTPA)					
China	Tianjin <i>Cape Ann (FSRU) &amp; Onshore facilities</i>	7	397,000	3	6.0	FSRU owner: Høegh LNG Charterer: CNOOC Gas & Power Trading and Marketing Onshore facilities owner: PipeChina (46%), Tianjin Govt (40%), Tianjin Gas (9%), Tianjin Hengrongda Investment (5%)	FSRU: Høegh LNG Terminal: PipeChina	No	Truck loading	2013
	Tianjin LNG	4	640,000		6.0	Sinopec (98%), Tianjin Nangang Industrial Zone Developemnt Co., Ltd. (2%)	Sinopec		Truck loading	2018
	Shennan, Hainan	2	40,000		0.6	Petrochina (90%), Beijing Gas Bluesky (10%)	Petrochina	No		2014
	Wuhaogou, Shanghai	5	320,000		1.5	Shanghai Gas (Shenergy 100%)	Shenergy Group	No		2008
	Yangshan, Shanghai	5	895,000		3.0	Shanghai LNG (CNOOC 45%, Shenergy Group Ltd 55%)	Shenergy Group	No	Truck loading	2009
	Yangpu, Hainan	2	320,000		3.0	PipeChina (65%), Guodian Haikong New Energy (35%)	PipeChina	Yes	Truck loading	2014
	Yuedong, Guangdong	3	480,000		4.2	PipeChina	PipeChina	Yes	Truck loading	2017
	Zhoushan, Zhejiang	4	640,000	5	5.0	ENN Group (90%), SK E&S (10%)	ENN	Yes	Truck loading	2018
	Zhuhai, Guangdong	3	480,000		3.5	CNOOC (30%), Guangdong Energy (25%), Guangzhou Gas Group (25%), Guangdong Yuegang (8%), Zhuhai Electric Development (3%), Zhongshan Zhonghui Investment Group (3%), Jiangmen City (3%), Foshan Gas (3%)	CNOOC		Reloading, Truck loading	2013
	India	Dabhol	3	480,000	6	5.0	Konkan LNG Ltd.	Gail	Yes	
Dahej		6	932,000	21	17.5	Petronet LNG	Petronet LNG	Yes	Truck loading	2004
Dhamra		2	360,000		5.0	Adani Total Private Limited	ATPL			2023
Ennore		2	360,000		5.0	Indian Oil Corporation (90%), Tamil Nadu Industrial Development Corporation (10%)	Indian Oil Corporation			2019
Hazira		2	320,000	5	5.2	Shell Energy India Private Ltd. (Shell 100%)	Shell Energy India Private Ltd.	Negotiated	Truck loading	2005
Kochi		2	368,000	5	5.0	Petronet LNG	Petronet LNG	Yes	Bunkering, Cool-down, Gassing-up, Reloading, Truck loading	2013
Mundra		2	320,000	5	5.0	GSPC LNG Limited - Government of Gujarat and its entities including GSPC holding (95%), Adani Group (5%)	GSPC LNG Limited		Truck loading	2020
Indonesia	Amurang <i>No vessel chartered</i>									2020
	Arun Regas	4	508,000		3.0	PT Perta Arun Gas (Pertamina 70%, Government of Aceh 30%)	PT Perta Arun Gas	Yes (2 tanks)	Bunkering, Cool-down, Reloading, Truck loading	2015
	Tanjung Benoa, Bali <i>FSRU Karunia Dewata</i>		26,000		0.4	Owner: JSK Group (50%), PT Pelindo III (50%) Charterer: PLN	PT Pelindo Energi Logistik (PEL)			2016
	Cilamaya, West Java <i>Jawa Satu (FSRU)</i>	4	170,000	4	2.4	Jawa Satu Regas (Pertamina, Sojitz, Marubeni)	Jawa Satu Regas			2021
	Lampung, Sumatra <i>PGN FSRU Lampung</i>	4	170,000	3	2.7	Owner: Høegh LNG Charterer: PGN (subsidiary of Pertamina)	FSRU: Høegh LNG Terminal: PGN	No		2014
	Nusantara, West Java <i>Nusantara Regas Satu (FSRU)</i>	6	125,000	6	3.0	Owner: New Fortress Energy Charterer: PT Nusantara Regas	PT Nusantara Regas (Pertamina 60%, PGN 40%)	No		2012
Maleo, Gorontalo <i>Hua Xiang (FSRU)</i>				0.2	Owner: Zhejiang Huaxiang Charterer: PT Sulawesi Satu (PLN GG, Humpuss)	PT GTS Internasional Tbk			2022	

## Regasification terminals

Market	Site	Storage		Send-out		Owner	Operator	Third Party Access	Additional Services offered	Start-up date
		Number of tanks	Total capacity (liq m <sup>3</sup> )	Number of vaporizers	Nominal capacity (MTPA)					
	Chita	7	640,000	11	10.9	Chita LNG	Chita LNG	Yes	Truck loading	1983
	Chita Kyodo	4	300,000	14	7.5	Toho Gas / JERA	Toho Gas	Yes		1978
	Chita-Midorihama Works	3	620,000	8	7.7	Toho Gas	Toho Gas	Yes	Truck loading	2001
	Futtsu	12	1,360,000	13	22.9	JERA	JERA	Yes	Truck loading	1985
	Hachinohe	2	280,000	5	1.0	ENEOS Corporatoin	ENEOS LNG Service Corporatoin	Yes	Reloading, Truck loading	2015
	Hatsukaichi	2	170,000	4	0.8	Hiroshima Gas	Hiroshima Gas	No	Truck loading	1996
	Hibiki	2	360,000	5	2.4	Hibiki LNG (Saibu Gas 90%, Kyushu Electric 10%)	Hibiki LNG	Yes	Cool-down, Gas test services, Truck loading	2014
	Higashi-Ohgishima	9	540,000	9	13.2	JERA	JERA	Yes		1984
	Himeji	8	740,000	5	5.5	Osaka Gas	Osaka Gas	Yes	Reloading, Truck loading	1979
	Himeji LNG	7	520,000	7	8.1	Kansai Electric	Kansai Electric	Yes	Truck loading	1979
	Hitachi	2	460,000	5	5.3	Tokyo Gas	Tokyo Gas	Yes	Reloading, Truck loading	2016
	Ishikari	4	840,000	7	4.6	Hokkaido Gas / Hokkaido Electric	Hokkaido Gas	Yes (No.1,2 tank) No (No.3,4 tank)	Reloading, Truck loading	2012
Japan	Joetsu	3	540,000	8	3.2	JERA	JERA	No	Truck loading	2011
	Kagoshima	2	86,000	4	0.2	Nippon Gas	Nippon Gas	No	Truck loading	1996
	Kawagoe	6	840,000	7	8.7	JERA	JERA	Yes	Bunkering, Truck loading	1997
	Minato	1	80,000	3	0.3	Gas Bureau, City of Sendai	Gas Bureau, City of Sendai	No	Truck loading	1997
	Mizushima	2	320,000	6	4.3	Mizushima LNG	Mizushima LNG	Yes	Truck loading	2006
	Naoetsu	2	360,000	4	2.1	INPEX Corporation	INPEX Corporation	Yes		2013
	Negishi	11	905,000	13	10.8	Tokyo Gas / JERA	Tokyo Gas	Yes	Truck loading	1969
	Niigata	8	720,000	12	8.5	Nihonkai LNG	Nihonkai LNG	Yes	Truck loading	1984
	Niihama	1	230,000	3	1.0	Niihama LNG (Tokyo Gas 50.1%, Shikoku Electric 30%, Shikoku Gas 5%, Sumitomo 14.9%)	Niihama LNG	No		2022
	Ohgishima	4	850,000	12	10.2	Tokyo Gas	Tokyo Gas	Yes		1998
	Oita	5	460,000	7	5.4	Oita LNG	Oita LNG	Yes	Truck loading	1990
	Sakai	4	560,000	6	6.4	Kansai Electric	Kansai Electric	Yes	Truck loading	2006
	Sakaide	1	180,000	3	1.2	Sakaide LNG	Sakaide LNG	No	Truck loading	2010
	Senboku I	1	230,000	5	1.9	Osaka Gas	Osaka Gas	Yes	Truck loading	1972

Market	Site	Storage		Send-out		Owner	Operator	Third Party Access	Additional Services offered	Start-up date
		Number of tanks	Total capacity (liq m <sup>3</sup> )	Number of vaporizers	Nominal capacity (MTPA)					
Japan	Senboku II	16	1,435,000	12	10.0	Osaka Gas	Osaka Gas	Yes	Truck loading	1977
	Shin-Sendai	2	320,000	3	1.7	Tohoku Electric	Tohoku Electric	No	Truck loading	2015
	Sodegaura	32	2,480,000	36	32.7	Tokyo Gas / JERA	Tokyo Gas	Yes	Reloading, Truck loading	1973
	Sodeshi	3	337,200	8	2.9	Shimizu LNG (Shizuoka Gas 65%, ENEOS Corporation 35%)	Shimizu LNG	Yes	Reloading, Truck loading	1996
	Soma	2	460,000		1.5	Japex/Fukushima Gas Power (JAPEX 33%, Mitsui 29%, Osaka Gas 20%, Mitsubishi Gas Chemical 9%, Hokkaido Electric Power 9%)	Japex		Truck loading	2018
	Tobata	8	480,000	9	7.6	Kita Kyushu LNG	Kita Kyushu LNG	Yes	Reloading, Truck loading	1977
	Toyama Shinko	1	180,000	4	1.8	Hokuriku Electric	Hokuriku Electric	No	Truck loading	2018
	Yanai	6	480,000	5	2.3	Chugoku Electric	Chugoku Electric	No	Truck loading	1990
	Yokkaichi LNG Center	4	320,000	8	6.4	JERA	JERA	Yes		1987
	Yokkaichi Works	2	160,000	6	2.1	Toho Gas	Toho Gas	Yes	Truck loading	1991
Yoshinoura	2	280,000	3	0.8	Okinawa Electric	Okinawa Electric	Yes	Truck loading	2012	
Malaysia	Melaka <i>Tenaga Empat (FSU) and Tenaga Satu (FSU)</i>	8	260,000	3	3.8	Owner: MISC Charterer: Petronas Gas	Petronas Gas	Yes	Reloading	2013
	Pengerang	2	400,000		3.5	Petronas Gas (65%), Dialog Group (25%) and Johor State (10%)	Petronas Gas		Bunkering, Cool-down, Gassing-up, Reloading, Truck loading	2017
Myanmar	Thanlyin, Yangoon <i>CNTIC VPower Energy (FSU)</i>	4	127,500		0.5	CNTIC Vpower (China National Technical Import Corporation, Vpower Global)	CNTIC Vpower			2020
Pakistan	Port Qasim Karachi <i>Excelerate Exquisite (FSRU)</i>	4	150,900	6	4.8	Owner: Excelerate Energy Charterer: ETPL (Engro (51%), Vopak (49%))	FSRU: Excelerate Energy Terminal: Engro	No		2015
	Port Qasim GasPort <i>BW Integrity (FSRU)</i>	4	170,000		5.0	Owner: BW Charterer: Pakistan GasPort	FSRU: BW Terminal: Pakistan GasPort Consortium			2017
Singapore	Jurong	4	800,000	5	9.0	SLNG	SLNG	Yes	Cool-down, Gassing-up, Reloading, Storage, Transshipment, Truck loading, Wobbe Index Correction	2013
South Korea	Boryeong	6	1,200,000	7	10.8	GS Energy (50%), SK E&S (50%)	Boryeong LNG		Reloading	2016
	Gwangyang	5	730,000	5	7.1	POSCO	POSCO	No	Reloading	2005
	Incheon	23	3,480,000	52	54.4	KOGAS	KOGAS	No		1996
	Jeju	2	90,000	5	1.1	KOGAS	KOGAS	No		2019
	Pyeong-Taek	23	3,360,000	38	41.0	KOGAS	KOGAS	No	Truck loading	1986
	Samcheok	12	2,610,000	8	11.6	KOGAS	KOGAS	No		2014
	Tong-Yeong	17	2,620,000	20	26.5	KOGAS	KOGAS	No	Reloading Truck loading	2002

## Regasification terminals

Market	Site	Storage		Send-out		Owner	Operator	Third Party Access	Additional Services offered	Start-up date
		Number of tanks	Total capacity (liq m <sup>3</sup> )	Number of vaporizers	Nominal capacity (MTPA)					
Taiwan	Taichung	6	960,000	10	6.0	CPC	CPC	No		2009
	Yung-An	6	690,000	18	10.5	CPC	CPC	No		1990
Thailand	LNG Map Ta Phut Terminal 1	4	640,000	9	11.5	PTT LNG	PTT LNG	Yes	Reloading, Truck loading	2011
	LNG Map Ta Phut Terminal 2	2	500,000	5	7.5	PTT LNG	PTT LNG	Yes		2022
<b>ASIA TOTAL</b>		<b>57,192,600</b>		<b>611.1</b>						
<b>EUROPE</b>										
Belgium	Zeebrugge	5	566,000	12	6.6	Fluxys LNG	Fluxys LNG	Yes	Cool-down, Reloading, Transshipment, Truck loading	1987
Croatia	Krk LNG Croatia (FSRU)	4	140,206		2.1	LNG Hrvatska (HEP, Plinacro)	FSRU: Golar LNG Terminal: LNG Croatia		Bunkering, Truck loading	2021
	Hamina		30,000		0.2	Hamina Energy, Wartsila, Alexela	Hamina Energy		Bunkering, Truck loading	2022
Finland	Inkoo Exemplar (FSRU)		150,900		4.8	Gasum Oy (Gasgrid Finland/Elering) FSRU: Exceleerate Energy	Gasgrid Finland/Elering			2023
	Pori	1	28,500		0.1	Gasum	Gasum	Yes	Bunkering, Truck loading	2016
	Tornio Manga	1	50,000		0.4	Manga LNG (Gasum, Outokumpu, SSAB and EPV Energy)	Manga LNG		Bunkering, Truck loading	2018
	Dunkerque LNG	3	600,000	10	9.6	Dunkerque LNG - Consortium led by Fluxys with AXA Investment Managers & Crédit Agricole Assurances (60.76%) - Korean investors consortium led by IPM Group in cooperation with Samsung Asset Management (39.24%)	Gaz-Opale (Dunkerque LNG, Fluxys)	Yes	Bunkering, Cool-down, Reloading, Truck loading	2016
France	Fos Cavaou	3	330,000	4	8.0	Fosmax LNG (Elengy 100%)	Elengy	Yes	Bunkering, Cool-down, Reloading, Transshipment, Truck loading	2009
	Fos Tonkin	1	80,000	6	1.2	Elengy	Elengy	Yes	Bunkering, Cool-down, Reloading, Truck loading	1972
	Montoir-de-Bretagne	3	360,000	11	8.0	Elengy	Elengy	Yes	Bunkering, Cool-down, Reloading, Transshipment, Truck loading	1980
Germany	Brunsbüttel Höegh Gannet (FSRU)	4	170,000	4	5.7	Owner: Höegh LNG Charterer: RWE on behalf of German Federal Government	FSRU: Höegh LNG Terminal: RWE			2023
	Lubmin (Deutsche Ostsee) Neptune (FSRU)	4	145,000	3	3.8	Owner: Höegh LNG (50%), MOL (48.5%), Tokyo LNG Tanker Co. Ltd (1.5%) Charterer: TotalEnergies Sub-charterer: Deutsche ReGas	FSRU: Höegh LNG Terminal: Deutsche ReGas			2023
	Wilhelmshaven Höegh Esperanza (FSRU)	4	170,000	3	3.8	Owner: Höegh LNG Charterer: Uniper on behalf of German Federal Government	FSRU: Höegh LNG Terminal: Uniper			2023
Gibraltar	Gibraltar	5	5,000	3	0.1	Shell (51%), Government of Gibraltar (49%)	Gasnor			2019
Greece	Revithoussa	3	225,000	6	5.1	DESFA S.A (Snam, Enagas, Fluxys, Govnt)	DESFA S.A.	Yes		2000
	Revithoussa GasLog Athens (FSU)	1	147,800			Gaslog	DESFA S.A.	Yes		2022
Italy	Oristano, Sardinia	6	10,800		0.2	HIGAS: Avenir LNG (80%), CPL Concordia (10%), Gas and Heat (10%)	HIGAS	Yes	Truck loading	2021



Market	Site	Storage		Send-out		Owner	Operator	Third Party Access	Additional Services offered	Start-up date
		Number of tanks	Total capacity (liq m <sup>3</sup> )	Number of vaporizers	Nominal capacity (MTPA)					
Italy	Toscana <i>FSRU Toscana</i>	4	137,500	3	2.8	OLT (First State Investments 48.24%, SNAM 49.07%, Golar 2.69%)	OLT Offshore LNG Toscana	Yes		2013
	Panigaglia	2	100,000	4	2.5	GNL Italia S.p.A.	GNL Italia S.p.A.	Yes		1969
	Piombino <i>Golar Tundra (FSRU)</i>	4	170,000		3.7	Snam	Snam	Yes		2023
	Ravenna	2	20,000		0.7	Depositi Italiani GNL	Depositi Italiani GNL			2021
	Rovigo (Gravity-Based Structure)	2	250,000	5	6.6	Adriatic LNG (ExxonMobil (70.7%), Qatar Petroleum (22%), SNAM (7.3%))	Adriatic LNG	Yes		2009
Lithuania	Klaipeda <i>Höegh Independence (FSRU)</i>	4	170,000	4	2.9	Owner: Höegh LNG Charterer: Klaipedos Nafta	Höegh LNG	Yes	Reloading	2014
	KN LNG Reloading Station	5	5,000			Klaipedos Nafta	Klaipedos Nafta		Bunkering, Reloading, Truck cool-down, Truck loading	2017
Malta	Delimara <i>Armada LNG Mediterrana (FSU)</i>	4	125,000		0.5	Owner: BumiArmada Charterer: Electrogas Malta (GEM Holdings Limited (33.34%), Siemens (33.33%), SOCAR (33.33%))	Reganosa			2017
Netherlands	Eemshaven <i>Eemshaven LNG (ex. S188) (FSRU)</i>	2	25,000	6	5.9	Owner: Exmar Charterer: Gasunie	EemsEnergyTerminal (100% Gasunie)	Yes		2022
	Energos Iglou (FSRU)	4	170,000	8		Owner: Energos Infrastructure Charterer: Gasunie				
	Gate	3	540,000	8	8.8	Gasunie (50%), Vopak (50%)	Gate Terminal	Yes	Bunkering, Cool-down, Reloading, Transshipment, Truck loading	2011
Norway	Fredrikstad	9	5,900		0.1	Gasum	Gasum	Yes	Bunkering, Truck loading	2011
	Mosjøen	8	6,500	4	0.4	Gasnor	Gasnor	Partly	Truck loading	2007
Poland	Świnoujście	2	320,000	7	4.6	GAZ-SYSTEM S.A.	GAZ-SYSTEM S.A.	Yes	Truck loading	2016
Portugal	Sines	3	390,000	7	5.6	Ren Atlântico	Ren Atlântico	Yes	Cool-down, Reloading, Truck loading	2004
Russia	Kaliningrad <i>Marshal Vasilevskiy (FSRU)</i>		174,100		2.0	Gazprom	Gazprom			2019
Spain	Barcelona	6	760,000	13	12.6	Enagás	Enagás	Yes	Bunkering, Cool-down, Reloading, Transshipment, Truck loading	1969
	Bilbao	3	450,000	4	5.1	Enagás (50%), EVE (50%)	Bahía de Bizkaia Gas, SL (BBG)	Yes	Bunkering, Cool-down, Reloading, Truck loading	2003
	Cartagena	5	587,000	9	8.7	Enagás	Enagás	Yes	Bunkering, Cool-down, Reloading, Transshipment, Truck loading	1989
	El Musel	2	300,000	5	5.1	Enagás (75%); Reganosa (25%)	Enagás	Yes	Reloading, Truck loading, Cool-down	2023
	Huelva	5	619,500	9	8.7	Enagás	Enagás	Yes	Bunkering, Cool-down, Reloading, Truck loading	1988
	Mugardos	2	300,000	3	2.6	Tojeiro Group (51%), Xunta Galicia (24%), Sojitz (15%), Sonatrach (10%)	Reganosa	Yes	Bunkering, Cool-down, Gassing up, Reloading, Truck loading	2007
	Sagunto	4	600,000	5	6.4	Infraestructuras de Gas [Enagas and Oman Oil Company S.A.O.C.] (50%), Iniciativas de Gas [Enagás and Osaka Gas] (50%)	Saggas	Yes	Cool-down, Reloading, Truck loading	2006

## Regasification terminals

Market	Site	Storage		Send-out		Owner	Operator	Third Party Access	Additional Services offered	Start-up date
		Number of tanks	Total capacity (liq m <sup>3</sup> )	Number of vaporizers	Nominal capacity (MTPA)					
Sweden	Lysekil	1	30,000		0.2	Gasum	Gasum		Bunkering, Truck loading	2014
	Nynashamn	1	20,000		0.4	AGA Gas	AGA Gas		Bunkering, Truck loading	2011
Turkey	Dörtyol <i>FSRU Ertuğrul Gazi</i>		170,000		4.1	Owner: Botas Charterer: Botas	<b>FSRU: Botas Terminal: Botas</b>			2018
	Etki <i>FSRU Turquoise</i>		170,000		5.7	Owner: Pardus Energy Charterer: Etki Terminal	<b>Pardus Energy</b>		Bunkering, Reloading	2016
	Izmir Aliaga	2	280,000	11	10.7	EgeGaz	<b>EgeGaz</b>	Yes	Bunkering, Reloading, Truck loading	2006
	Marmara Ereglisi	3	255,000	7	4.6	Botas	<b>Botas</b>	No	Truck loading	1994
	Saros LNG <i>Vasant 1 (FSRU)</i>		180,000		5.0	Owner: Swan Energy Charterer: Botas	<b>Botas</b>			2023
UK	Dragon	2	320,000	6	5.6	Shell (50%), Ancala (50%)	<b>Dragon LNG</b>	Yes		2009
	Grain	8	1,000,000	14	14.3	National Grid	<b>Grain LNG</b>	Yes	Cool-down, Reloading, Transshipment, Truck loading	2005
	South Hook LNG	5	775,000	15	15.4	QatarEnergy (67.5%), Exxon Mobil (24.15%), TotalEnergies (8.35%)	<b>South Hook LNG Terminal Company Ltd</b>	Yes		2009
	Teesside GasPort Awaiting recommissioning					Trafigura				2007
<b>EUROPE TOTAL</b>			<b>12,634,706</b>		<b>221.9</b>					
<b>MIDDLE EAST</b>										
Bahrain	Hidd <i>No vessel chartered</i>					Bahrain LNG: Nogaholding (30%), Seapeak (30%), Gulf Inv. Corp. (24%), Samsung C&T (16%)	<b>Bahrain LNG</b>			2020
Egypt	Sumed BW Singapore	4	170,000	4	5.7	Owner: BW Charterer: Egas	<b>BW</b>	No		2015
Israel	Hadera <i>Excelerate Excelsior (FSRU)</i>	4	138,000	6	3.8	Owner: Excelerate Energy Charterer: INGL	<b>FSRU: Excelerate Energy Terminal: IEC</b>	No		2013
Jordan	Aqaba <i>Energos Eskimo (FSRU)</i>		160,000		3.8	Owner: New Fortress Energy Charterer: MEMR (Jordan Ministry of Energy and Mineral Resources)	<b>Golar</b>	No		2015
Kuwait	Al Zour	8	1,800,000		22.0	Kuwait Petroleum	<b>KIPIC</b>	No		2021
	Mina Al Ahmadi <i>No vessel chartered</i>		170,000		5.8	Owner: New Fortress Energy Charterer: KPC (Kuwait National Petroleum Company)	<b>Golar</b>	No		2014
UAE	Jebel Ali <i>Excelerate Explorer (FSRU)</i>		150,900	6	6.0	Owner: Excelerate Energy Charterer: DUSUP (Dubai Supply Authority)	<b>FSRU: Excelerate Energy Terminal: DUSUP</b>	No		2010
	Ruwais, Abu Dhabi <i>Excelerate Express (FSRU)</i>		151,000		3.8	Owner: Excelerate Energy Charterer: ADNOC	<b>Excelerate Energy</b>	No		2016
<b>MIDDLE EAST TOTAL</b>			<b>2,739,900</b>		<b>50.9</b>					
<b>WORLD TOTAL</b>			<b>81,550,906</b>		<b>1,099.85</b>					

# Retail LNG in 2022

## SMALL-SCALE\* LNG CARGOES LOADED FROM RECEIVING TERMINALS IN 2022

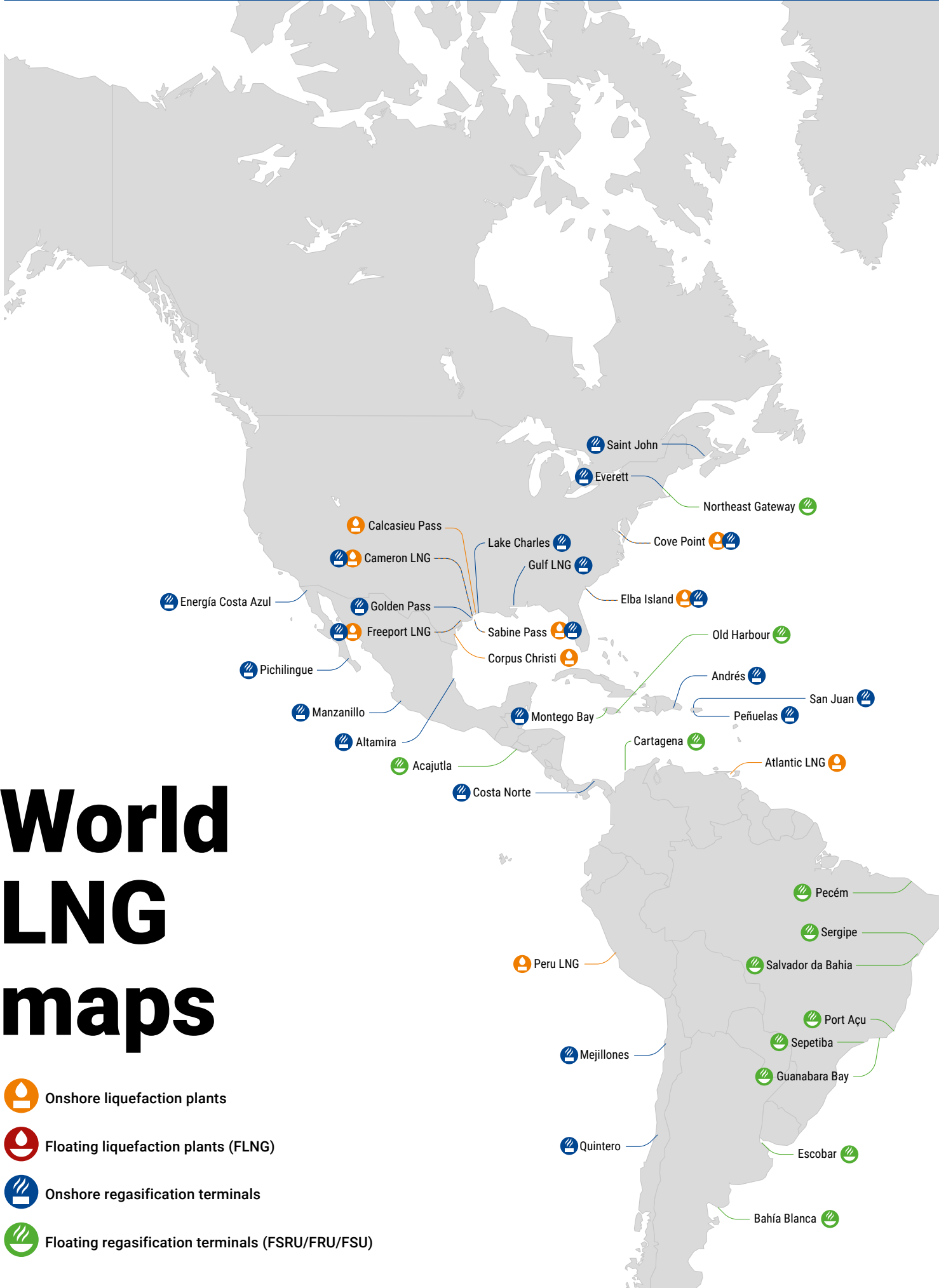
Country	2022 M <sup>3</sup> LNG	2021 M <sup>3</sup> LNG	Var. 2022/2021
BELGIUM	355,210	173,842	104%
FRANCE	249,489	66,948	273%
INDONESIA		418,568	-100%
JAPAN	731,505	730,382	0%
THE NETHERLANDS	446,807	632,026	-29%
SINGAPORE	17,943	51,955	-65%
SPAIN	433,281	182,736	137%
UNITED STATES	31		N/A

\* Less than 30,000 liq m<sup>3</sup>





## TRUCK-LOADING OF LNG FROM RECEIVING TERMINALS IN 2022

Country	2022 M <sup>3</sup> LNG	2021 M <sup>3</sup> LNG	Var. 2022/2021
<b>AMERICAS</b>	<b>1,184,512</b>	<b>1,157,865</b>	<b>2%</b>
CHILE	579,767	617,438	-6%
DOMINICAN REPUBLIC	461,546	419,811	10%
PANAMA	22,749	12,820	77%
PUERTO RICO	70,195		
USA	50,255	107,796	-53%
<b>ASIA</b>	<b>24,495,974</b>	<b>52,617,836</b>	<b>-53%</b>
CHINA	19,547,085	48,295,964	-60%
INDIA	487,938	154,903	215%
INDONESIA	73,740	126,481	-42%
JAPAN	3,731,430	3,446,099	8%
SINGAPORE	22,907	14,945	53%
SOUTH KOREA	446,350	434,758	3%
THAILAND	186,523	144,686	29%
<b>EUROPE</b>	<b>4,156,727</b>	<b>5,025,445</b>	<b>-17%</b>
BELGIUM	274,354	272,356	1%
FRANCE	598,377	664,943	-10%
ITALY	11,000		N/A
LITHUANIA	27,780	21,890	27%
NETHERLANDS	366,551	367,019	0%
POLAND	219,949	200,559	10%
PORTUGAL	290,267	323,487	-10%
SPAIN	1,567,558	2,256,886	-31%
TURKEY	655,085	787,701	-17%
UNITED KINGDOM	145,807	130,605	12%



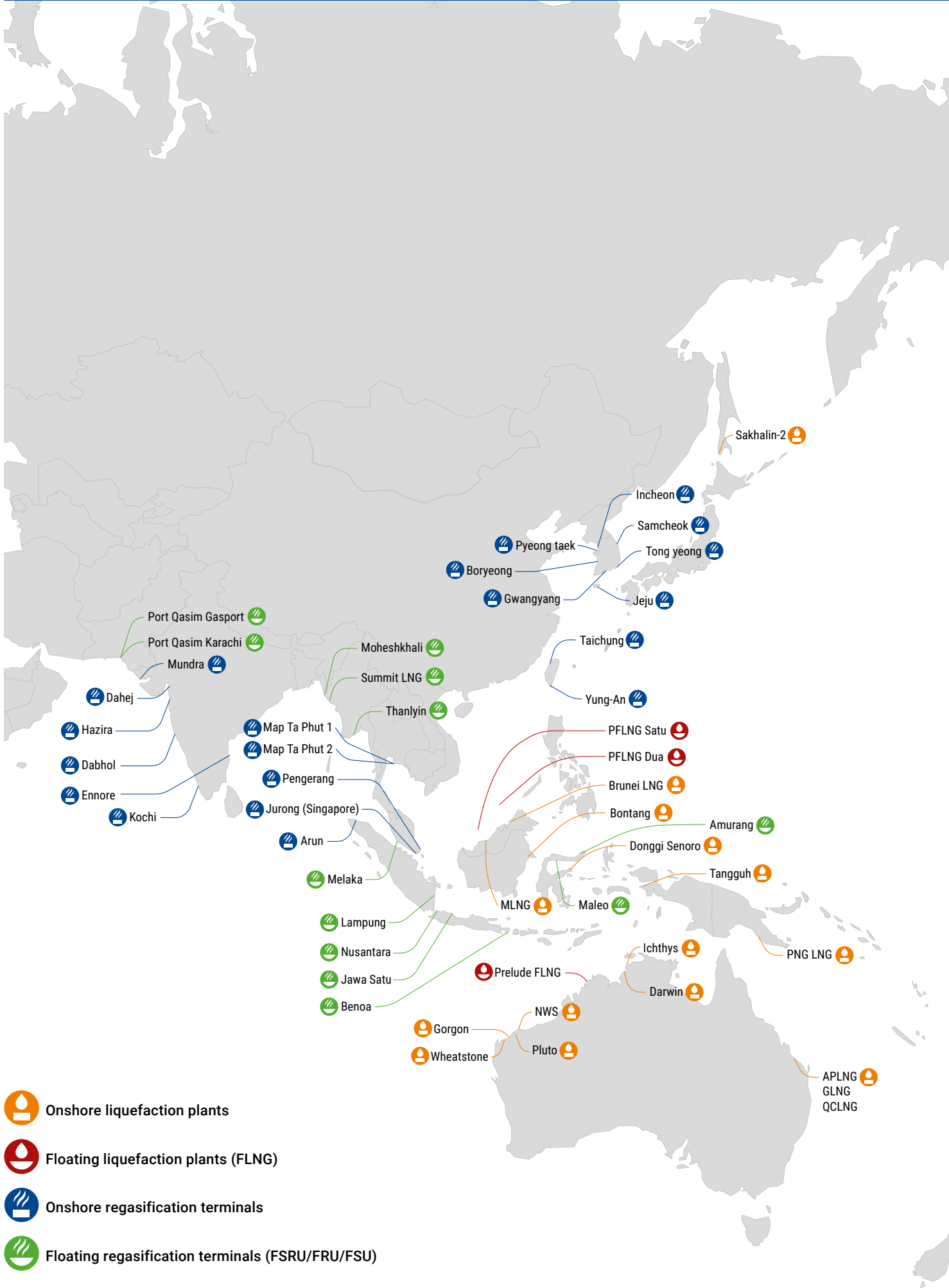


# World LNG maps

-  Onshore liquefaction plants
-  Floating liquefaction plants (FLNG)
-  Onshore regasification terminals
-  Floating regasification terminals (FSRU/FRU/FSU)

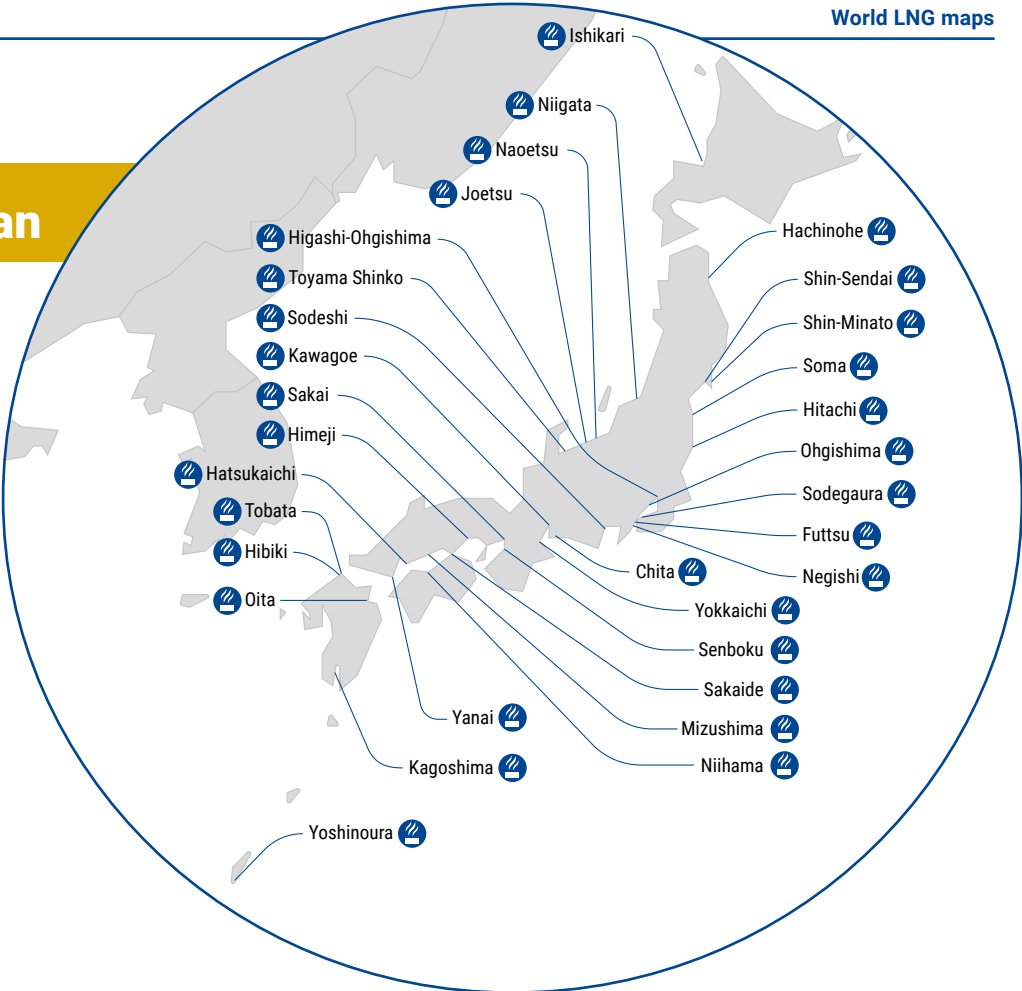






ZOOM

# Japan



ZOOM

# China



# About GIIGNL

**GIIGNL is the international association of LNG importers.**

It constitutes a forum for exchange of information and experience among its members with a view to enhance safety, reliability, efficiency and sustainability of LNG import activities.

GIIGNL is a non-profit organization registered under the French law of 1901 and its resources only come from the membership fees.

## Governance

The Association is composed of two main governing bodies: the General Assembly and the Executive Committee.

**The General Assembly** is composed of the whole membership and holds its annual meeting in the Fall.

**The Executive Committee** is composed of **15 member companies**, who are elected by the General Assembly for 2-year terms and meet at least once a year. The Executive Committee elects a Bureau composed of the President and of 3 regional Vice-Presidents to assist him.

The Executive Committee steers two **Standing Study Groups** within which leaders from the LNG industry offer their commercial and technical expertise to improve efficiency and safety across the midstream of the LNG value chain.

GIIGNL's day-to-day activities are coordinated by the **General Delegate**, in charge of the Central Office located in Paris.



### GIIGNL Staff



General Delegate  
**L. David**



LNG Analyst  
**E. Dukhanina**



LNG Analyst & Communications Officer  
**L. Mora**



# GIIGNL officers

## Bureau



President  
**J. Abiteboul**



VP for Americas  
**A. Feygin**  
Cheniere



VP for Asia  
**T. Uchida**  
Tokyo Gas



VP for Europe  
**T. Maurisse**  
TotalEnergies

## Executive Committee

### AMERICAS



**A. Walker**  
Cheniere



**A. Bacigalupo**  
GNL Quintero



**D. Brouillette**  
Sempra Infrastructure



**A. Acuna**  
Shell

### ASIA



**Y. Zhu**  
CNOOC



**S.C. Lee**  
CPC



**H. Nishizawa**  
Jera



**C. Lee**  
Kogas



**M. Fujiwara**  
Osaka Gas



**A.K. Singh**  
Petronet LNG



**A. Takeuchi**  
Tokyo Gas

### EUROPE



**E. Neviaski**  
Engie



**C. Signoretto**  
Eni



**A. Basolas**  
Naturgy



**J.I. Sanz-Saiz**  
TotalEnergies

## Study Groups

Commercial Study  
Group Chair



**L. Chaveron**  
TotalEnergies



**P.E. Decroës**  
Engie

Technical Study  
Group Chair

# 85 member companies

Founded in 1971, GIIGNL gathers 85 companies from **27 markets** headquartered in three regions: Americas, 11 members, Asia, 42 and Europe, 32.

GIIGNL comprises nearly all companies active in LNG imports or in the operation of LNG terminals.

**11**  
members  
in Americas

**32**  
members  
in Europe

**42**  
members  
in Asia

## FULL MEMBERS

BP Global LNG  
Centrica LNG Company Ltd.  
Cheniere Energy, Inc.  
CNOOC Gas & Power Trading & Marketing Ltd.  
Constellation LNG  
Cove Point LNG, LP  
CPC Corporation, Taiwan  
Dunkerque LNG SAS  
Edison S.p.A.  
EDP – Energias de Portugal, S.A.  
Elengy S.A.  
Enagás S.A.  
Enel Trade S.p.A.  
ENEOS Corporation  
ENGIE  
Eni S.p.A.  
Equinor ASA  
Excelerate Energy L.P.  
Fluxys LNG SA  
Freeport LNG Development, L.P.  
Gail (India), Ltd.  
Gate Terminal B.V.  
GNL Italia S.p.A.  
GNL Quintero S.A.  
Guangdong Dapeng LNG Company, Ltd.  
Hiroshima Gas Co., Ltd.  
Höegh LNG AS  
Hokkaido Gas Co., Ltd.  
Hokuriku Electric Power Company  
Iberdrola Generación España, S.A.U.  
Itochu Corporation  
JERA Co., Inc.  
Korea Gas Corporation  
Kyushu Electric Power Co., Inc.  
LNG Japan Corporation  
Marubeni Corporation

MET International AG  
Mitsubishi Corporation  
Mitsui & Co., Ltd.  
Mitsui O.S.K. Lines, Ltd.  
National Grid Grain LNG, Ltd.  
Naturgy Energy Group S.A.  
Nippon Gas Co., Ltd.  
N.V. Nederlandse Gasunie  
Osaka Gas Co., Ltd.  
Pavilion Energy  
PetroChina International Co., Ltd.  
Petronet LNG Ltd.  
PTT Public Company Ltd.  
Ren Atlântico – Terminal de GNL, S.A.  
Saibu Gas Co., Ltd.  
Sempra Infrastructure  
Shell Energy North America, L.P.  
Shell Energy India Private, Ltd.  
Shikoku Electric Power Co., Inc.  
Shizuoka Gas Co., Inc.  
Singapore LNG Corporation  
Southern LNG Company, L.L.C.  
South Hook LNG Terminal Company, Ltd.  
Sumitomo Corporation  
The Chugoku Electric Power Co., Inc.  
The Kansai Electric Power Co., Inc.  
Toho Gas Co., Ltd.  
Tohoku Electric Power Co., Inc.  
Tokyo Gas Co., Ltd.  
TotalEnergies  
Trafigura  
Uniper Global Commodities SE  
Vopak LNG Holding B.V.

## ASSOCIATE MEMBERS

Ege Gaz AS  
ENN LNG Trading Company Ltd.  
GAZ-SYSTEM S.A.  
GSPC LNG Ltd.  
HE Terminals Pvt. Ltd.  
INPEX Corporation  
Mytilineos S.A.  
Novatek Gas & Power Asia Pte Ltd.  
Japan Petroleum Exploration Co., Ltd.  
PT Pertamina (Persero)  
RWE Supply & Trading GmbH  
SEFE Marketing & Trading Limited  
SK Gas Co., Ltd.  
Sonatrach Gas Marketing UK Ltd.  
SPEC LNG  
YPF S.A.



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INTERNATIONAL GROUP  
OF LIQUEFIED NATURAL  
GAS IMPORTERS



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GAZ NATUREL LIQUÉFIÉ



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