

# THE LNG INDUSTRY

## GIIGNL ANNUAL REPORT 2016 EDITION



# THE LNG INDUSTRY IN 2015

## Editorial

Dear Colleagues,

Driven by new volumes from Australia and Indonesia, and despite production issues in several exporting countries, global LNG trade has grown by **2.5%** in 2015, with total quantities reaching an all-time high of **245.2 MT** over the year. Most of the growth was absorbed by the Middle-East and by Europe, where net imports recovered thanks in part to a 31% decrease in re-exports.

In a global context of lower energy prices and sluggish economic growth, the LNG industry is holding its breath for the impact of an export wave from the United States.

### ABUNDANT SUPPLY, WAVERING DEMAND

While the USA are on track to challenge Qatar as the world's leading supplier of flexible LNG, with the first loadings from Chenière's Sabine Pass in February 2016, two new liquefaction plants were commissioned in the past year (Donggi-Senoro in Indonesia and GLNG in Australia). Australia became the second largest exporter ahead of Malaysia. In 2015, 14.4 MTPA of new production capacity have been added to the market and 42 MTPA are expected to come on stream in 2016. On the demand side, the mature markets of North East Asia look uncertain and experienced their first decline since the 2009 recession, mainly in South Korea and Japan. In China, traditionally considered as a key driver for LNG growth, LNG imports continued to increase despite a 25 year-low in GDP growth rate. Europe consumed 16% more volumes (net of re-exports) than in the previous year, while the Americas experienced an 8% decline in imports.

Increasingly, emerging markets are driving demand growth, as three countries started importing LNG last year namely Egypt, Jordan and Pakistan, rapidly ramping-up imports and alleviating an emerging supply overhang by absorbing a combined volume of 5.5 MTPA, mostly through spot and short-term agreements.

### FROM GLOBALIZATION TO COMMODITIZATION?

Supported by the development of FSRUs (floating storage and regasification units) the capacity of which now amounts to 77 MTPA, (i.e. the equivalent of Qatar's LNG production capacity) the globalization of LNG is growing at a steady pace: 34 countries are now importers, compared with 15 in 2005.

At the same time pricing levels and structures are evolving as well. Regionalized until recently, LNG prices have declined globally in recent months because of common drivers, such as the drop in oil prices, slow demand and the ample supply situation. As a result, the (temporary?) price convergence in the Atlantic and Pacific Basins has reduced arbitrage opportunities and curbed the enthusiasm for inter-basin trade. As a consequence, re-loadings dropped from 6.4 MTPA in 2014 to 4.4 MTPA last year.

The decline in spot and short-term volumes imported by Japan and South Korea was partly offset by deliveries to Egypt, Jordan and Pakistan. As a result, the share of spot and short-term LNG transactions remained stable compared to last year, around 28% of total trade. Based on data submitted by GIIGNL members who cover about 80% of worldwide LNG flows, the share of "true" spot trades –defined as trades of LNG cargoes delivered within 90 days from the date at which the transaction is concluded– was estimated at approximately 15% of all trades last year.

### STAYING THE COURSE IN TURBULENT WATERS

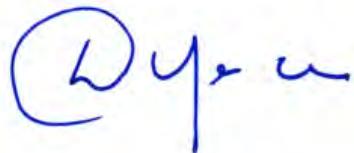
In the near to medium term, the consequences of low prices on LNG trade seem difficult to predict, which brings considerable uncertainty along the value chain for the next five or so years. As a result, greenfield investment decisions expected in Africa and Canada have been deferred and only five FIDs have been taken in 2015 –four of which in the USA and one in Cameroon– for a total capacity of 19.3 MTPA. On the demand side, buyers are striving to reshape their strategies in order to mitigate risks, to optimize procurement costs and maximize flexibility.

In the longer-term, the future of LNG imports looks positive. A number of emerging economies are considering FSRU projects and all eyes are on China and India, expected to require large volumes over the next decade. FLNG solutions will make it possible to unlock reserves in otherwise stranded areas, and Iran could soon be in the limelight as an LNG exporter. LNG continues to be recognized as a clean, flexible and competitive solution to energy needs across all demand sectors and regions, in particular in promising markets of marine and road transportation.

We hope you will find GIIGNL's Annual Report helpful and remain committed to promote safe, reliable and efficient LNG activities for the benefit of our industry and society at large.

Yours sincerely,

Domenico Dispenza



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# KEY FIGURES 2015



**245.2** million tons imported  
or a **2.5%** increase vs. 2014

**68.4** million tons traded on a spot  
or short-term basis or **28%** of total trade

**72%** of global LNG demand in Asia

**32%** of global LNG volumes  
supplied from Qatar

**41%** of global LNG volumes  
supplied from Asia-Pacific

**3 NEW IMPORTING COUNTRIES**  
**7 NEW LNG REGASIFICATION TERMINALS**

**34**  
**IMPORTING COUNTRIES**

**777 MTPA**  
**TOTAL REGASIFICATION CAPACITY**

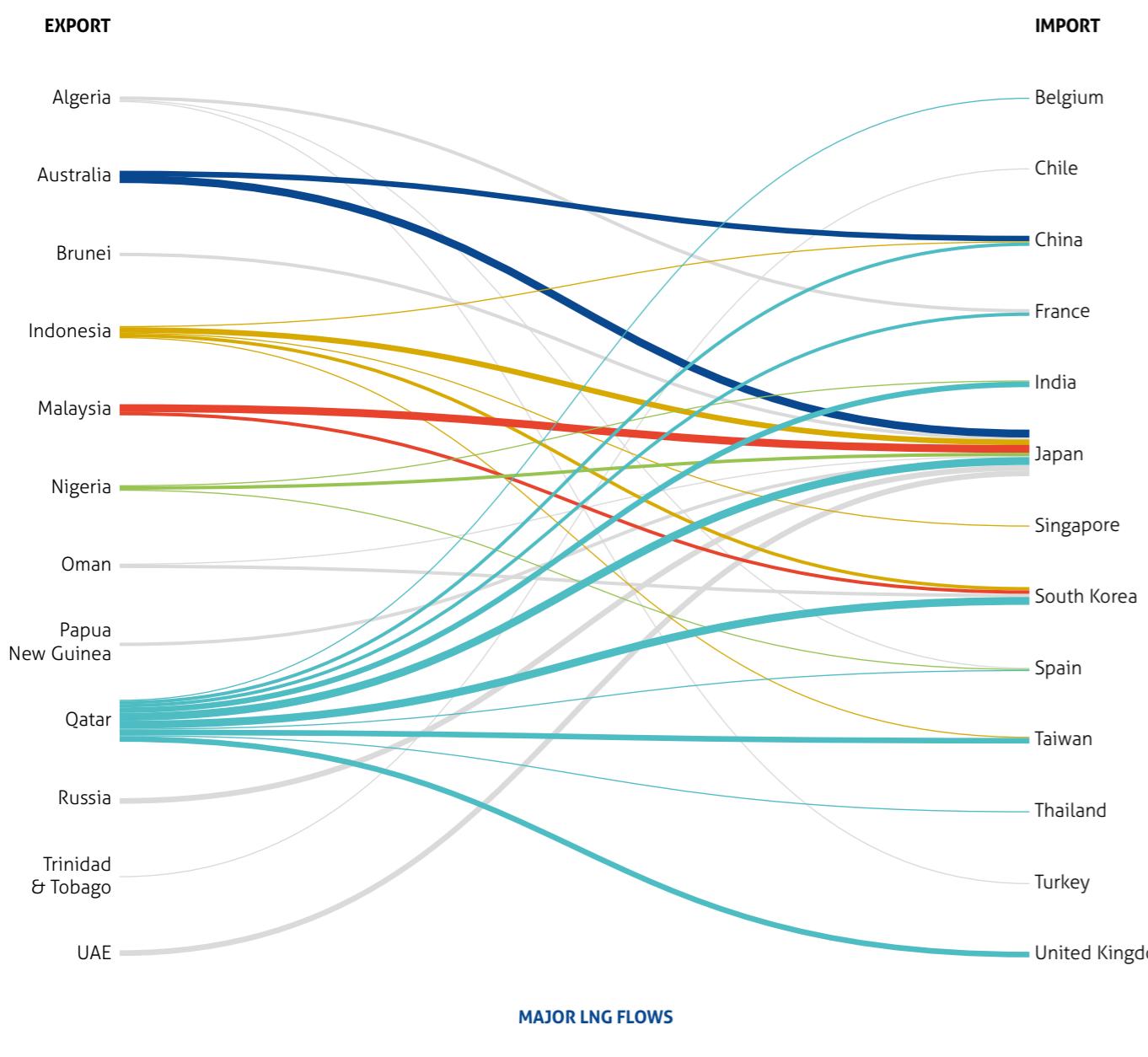
**19**  
**EXPORTING COUNTRIES**

**308 MTPA**  
**TOTAL NAMEPLATE LIQUEFACTION CAPACITY**



# LNG TRADE IN 2015

In 2015, global LNG imports increased by 2.5% (6 MT), reaching their highest level ever.



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## SUPPLY GROWTH LOWER THAN EXPECTED AND CONFINED TO THE PACIFIC BASIN

As in 2014, 19 countries produced LNG in 2015. Four new trains were commissioned (QCLNG Train 1 and 2 and GLNG Train 1 in Australia, Donggi-Senoro in Indonesia).

Boosted by additional volumes from Australia (+5.8 MT), Indonesia and Papua New Guinea which operated for the first year at full capacity (+3.8 MT), LNG supply from the Pacific Basin increased by more than 10 MT, attaining for the first time the 100 MT mark in 2015.

Contrasting with the situation in the Pacific Basin, supply from the Atlantic Basin declined by 1.1 MT, reaching 51.4 MT. Algeria's LNG output was down by 4.6% despite the recent capacity additions, supply from Trinidad decreased by 1.3 MT due to feedgas issues and Angola and Egypt did not produce any LNG during the year respectively due to technical problems and lack of feedgas.

Despite improved performance in Qatar (+2 MT), supply from the Middle East declined overall by 3.3 MT following issues in other countries, particularly in Yemen where production was stopped in April due to political uncertainty.

## ASIAN DEMAND DOWN, OFFSET BY INCREASED IMPORTS FROM THE MIDDLE EAST, NORTH AFRICA AND EUROPE

By the end of the year, overall LNG demand in Asia was down by 1.7% (-3 MT), mainly due to lower imports in Japan (-4.2 MT) and in South Korea (-4.2 MT). These decreases can be attributed to a combination of factors including slow economic growth, energy conservation, mild weather conditions and growing fuel substitution. In China, LNG imports continued to grow by more than 5% (+1 MT) and reached 20 MT, while Indian imports remained in line with their 2014 level, around 14.6 MT.

The global share of Asian imports declined from 75% in 2014 to 72% last year.

LNG demand also decreased in Latin America, by 2.5 MT. In Brazil, imports were down by 0.6 MT mostly because of higher hydropower production. Mexico also purchased less LNG (-1.6 MT) because of increased pipeline imports from the United States.

The Middle East showed an opposite trend and was the main driver behind the demand growth in 2015. LNG imports into the region more than doubled, reaching almost 10 MT at year-end thanks to new importers Egypt and Jordan.

European net imports grew by 15.8% (5.1 MT), almost half of which (2.4 MT) can be attributed to a lower number of reloads from the region (3.6 MT in 2015 vs 6 MT in 2014). Higher deliveries from Qatar into the UK (+1.8 MT) also contributed to this increase. In all, total European imports in 2015 (37.6 MT) returned to slightly above their level of 2005 (36 MT).

## SPOT AND SHORT-TERM IMPORTS STABLE DESPITE SUPPLY ADDITIONS

Despite the growth in LNG supply for the past year, the overall share of spot and short-term imports remained stable at around 28%, or 68.4 MT, as the market was affected by the interruption of Yemen production and the effects on arbitrage trade from declining location differentials. Argentina and Brazil who traditionally import from the spot and short-term market purchased less volumes than in the previous year and additional spot and short-term deliveries east of Suez into Egypt, Jordan, India and Pakistan (+7.1 MT) were not sufficient to offset the declines in Japan (-5.3 MT) and in South Korea (-2.8 MT). With a market characterized by price elasticity of demand, India recorded the sharpest increase in spot and short-term imports (+3 MT) as a result of declining prices.



Qatar remained the main supplier of spot and short-term quantities (20.3 MT), followed by Nigeria (12.7 MT) and Australia (6 MT).

It is noteworthy that the narrowing of regional price differentials translated into a 31% decrease in international re-exports, from 6.4 MT to 4.4 MT. India, Singapore and the UK joined the ranks of re-exporting countries and 10 countries re-exported cargoes in 2015, compared to 8 in 2014. On the importing side, Egypt, Jordan and Pakistan received re-exported cargoes for the first time. 21 countries received re-exports, compared to 19 in 2014.

The lower appetite for spot and short-term volumes in Asia (-4.9 MT) and Latin America (-1.7 MT) was partially offset by strong growth in spot and short-term deliveries to the Middle-East (+4.1 MT). In Europe, the increase in net spot and short-term imports into Europe (+0.9 MT) is mainly attributable to the drop in European re-exports.

# CONTRACTS CONCLUDED IN 2015

Origin	Export country/exporter	Buyer	Import country	ACQ (MTPA)	Duration (years)	Comments	Start	Delivery format
LONG & MEDIUM TERM SALES (>4 YEARS)	AUSTRALIA / Chevron / Gorgon	SK Energy	SOUTH KOREA	0.8	5		2017	
	CAMEROON / Cameroon FLNG	Gazprom Marketing & Trading Singapore	Gazprom Marketing & Trading Portfolio	1.2	8		2H 2017	FOB
	INDONESIA / ENI PSC (Qty A)	PT Pertamina (Persero)	INDONESIA	0.7	7		Q3 2017	FOB
	INDONESIA / ENI PSC (Qty B)	PT Pertamina (Persero)	INDONESIA	0.7	7		Q3 2017	FOB
	MALAYSIA / Malaysia LNG	Hiroshima Gas	JAPAN	0.1	10		2016	FOB
	MALAYSIA / Malaysia LNG	Hokuriku Electric Power Co	JAPAN	0.38	10		2018	DES
	Portfolio / BP	Huadian Corporation	CHINA	Up to 1	20		2016	N/A
	Portfolio / BP	Kansai Electric	JAPAN	Up to 0.565	23		2015	DES
	Portfolio / Cheniere	ENGIE		0.8	5		2019	DES
	Portfolio / Cheniere	Central El Campesino	CHILE	0.6	20		2020	DES
	Portfolio / Chubu	Tohoku Electric	JAPAN	0.3	20		2023	DES
	Portfolio / Gazprom Marketing & Trading	Pavilion Gas Pte Ltd	ASIA		10			DES
	Portfolio / Kansai Electric	Hokkaido Electric	JAPAN	Approximately 0.2 MT/year	10		2018	DES
	Portfolio / Kyushu Electric	Nippon Gas	JAPAN	0.05	15		2016	DES
	Portfolio / Mitsubishi	Indian Oil	INDIA	0.7	20		2019	FOB
	Portfolio / Shell		MALTA	0.3	10		8/14/2016	DES
	Portfolio / Shell	NEPCO	JORDAN	1.1	5	Option to extend for 6 months	7/10/2015	DES
SHORT TERM CONTRACTS (<=4 YEARS)	QATAR / RasGas	Petronet LNG Ltd	INDIA	1	12		January 2016	CFR
	RUSSIA / Gazprom	EGAS	EGYPT	35 cargoes during 5 years	5		2015	
	RUSSIA / Novatek	ENGIE		1	23		2018	FOB, at Montoir-de-Bretagne transhipment point
	RUSSIA / Novatek	Shell		0.9	23		January 2019	FOB, at Montoir-de-Bretagne transhipment point
	RUSSIA / Yamal LNG*	Gazprom Marketing & Trading Singapore	ASIA, primarily INDIA	2.9	For over 20 years			FOB, at Zeebrugge transhipment point
	USA / Sabine Pass / Gail	Shell		0.5	5		2016	FOB
	USA / Cameron / ENGIE	Tohoku Electric	JAPAN	0.27	20		2018	DES
	MALAYSIA LNG	Chugoku Electric	JAPAN	0.24	3	Option to extend for 3 years	2015	DES
	MALAYSIA LNG	Chugoku Electric	JAPAN	0.24	3	Option to extend for 3 years	2015	DES
	Portfolio / Petronas LNG Limited	GAIL	INDIA	0.18	1		April 2015	DES
	Portfolio / BP	EGAS	EGYPT	Total 16 cargoes	2		2015	
	Portfolio / Cheniere	EDFT	FRANCE	Up to 26 cargoes total	2	Option to extend for 3 years	2016	
	Portfolio / ENGIE	Chubu Electric	JAPAN	Total 20 cargoes	2		2015	DES
	Portfolio / Gas Natural Fenosa	GAIL	INDIA	0.74	1		January 2016	
	Portfolio / Gas Natural Fenosa	EGAS	EGYPT	0.8 total	1	Option to extend for 2 months	November 2015	
	Portfolio / Nobel Group	EGAS	EGYPT	Total 7 cargoes	2		2015	
	Portfolio / Rosneft	EGAS	EGYPT	Total 24 cargoes	2		2015	
	Portfolio / Shell	Botas	TURKEY	0.44	2	Option to extend for 6 months	October 2016	DES
	Portfolio / Shell	NEPCO	JORDAN	1.14	2		January 2016	DES
	Portfolio / Trafigura	EGAS	EGYPT	Total 33 cargoes	2		2015	
	Portfolio / Vitol	EGAS	EGYPT	Total 9 cargoes	2		2015	

Origin	Export country/exporter	Buyer	Import country	ACQ (MTPA)	Duration (years)	Comments	Start	Delivery format
HEADS OF AGREEMENT (HOAs)	Portfolio / JERA	Shizuoka Gas	JAPAN	0.07	5		2022	DES
	Portfolio / Petronas LNG	Toho Gas	JAPAN	7 - 9 cargoes per annum	10		2017	DES
	USA/Diamond Gas International	Toho Gas	JAPAN	3 cargoes per annum (Approx. 0.2 MTPA)	20	Scheduled in 2018		DES
MEMORANDUMS OF UNDERSTANDING (MOUs)	MALAYSIA / Petronas	Guanghui Energy	CHINA				2017	
	QATAR	Botas	TURKEY					
	USA / Cheniere Marketing	Litgas	LITHUANIA					
AGREEMENTS ON CAPACITY RIGHTS	RUSSIA / Novatek	Elengy						Transshipment agreement(at Montoir-de-Bretagne terminal)
	RUSSIA / Yamal Trade	Fluxys LNG		Up to 8	20			Transshipment agreement(at Zeebrugge LNG terminal)
	Portfolio / Kogas	EDF Trading	EUROPE	Up to 4	8	Capacity and optimisation agreement	2017	



# LONG-TERM AND MEDIUM-TERM CONTRACTS IN FORCE\*

Export country	Loading point	Seller	Buyer	ACQ (MTPA)	Duration	Type of contract	Comments
<b>ATLANTIC BASIN</b>							
			ENGIE	3.7	1976/2019	DES	
			ENGIE	2.5	1972/2019	DES	Extension to 2019
			ENGIE	1.3	1992/2019	FOB	
			Eni	1.33	1997/2017	FOB	
			Iberdrola	1.15	2002/2021	DES	
			Botas	3.02	1994/2024	DES	
ALGERIA	Skikda-Bethioua	Sonatrach	Enel	0	1999/2022	DES	Delivery under the "ENGIE/Enel" swap agreement. In 2015 no delivery accounted under this contract
			Cepsa	0.77	2002/2022	DES	
			Statoil	0.75	2003/2009	DES	Extension to 2014
			Endesa	0.75	2002/2017	DES	
			DEPASA.	0.35	2000/2021	CIF	
EGYPT	Idku	ELNG T1	ENGIE	3.6	2005/2025	FOB	No deliveries in 2015
		ELNG T2	BG	3.6	2006/2026	FOB	No deliveries in 2015
	Damietta	SEGAS	BP	1	2005/2025	FOB	No deliveries in 2015
		SEGAS	Union Fenosa gas	3.3	2005/2030	FOB	No deliveries in 2015
EQUATORIAL GUINEA	Punta Europa	EGLNG	BG	3.3	2006/2023	FOB	
			Enel	2.57	1999/2022	DES	
			Gas Natural Aprovisionamientos	1.17	1999/2021	DES	
		Nigeria LNG T1 & 2	Botas	0.91	1999/2021	DES	
			ENGIE	0.33	1999/2022	DES	
			Galp Energia	0.26	1999/2022	DES	
		Nigeria LNG T3	Gas Natural sdg	1.99	2002/2024	DES	
			Galp Energia	0.73	2002/2022	DES	
		Nigeria LNG T4	Eni	1.15	2006/2026	DES	
			Iberdrola	0.38	2006/2026	DES	
			BG	2.3	2006/2026	DES	
		Nigeria LNG T4 & 5	Galp Energia	1.42	2006/2026	DES	
			Shell International Trading Middle East	1.13	2006/2026	DES	Contract novated to Shell Middle East from Shell Western
			Endesa	0.75	2006/2026	DES	
			Total	0.23	2006/2026	DES	
		Nigeria LNG T6	Shell International Trading Middle East	3.1	2008/2027	DES	
			Total	0.9	2008/2027	DES	
NORWAY	Hammerfest	Statoil	Statoil	-1.75	2007/2021	DES	
		Total	Total	0.7	2007/depletion	FOB	
		ENGIE	ENGIE	0.5	2007/depletion	FOB	
		Statoil	Petronas	0.1	2012/depletion	FOB	
			ENGIE	1.98	1999/2018	FOB	
		Atlantic LNG T1	Gas Natural Aprovisionamientos	1.06	1999/2018	FOB	
			BG	1.7	2004/2023	FOB	
			BG	0.4	2004/2026	DES	
		Atlantic LNG T2 & 3	Shell	1.6	2006/2023	FOB	Former Repsol contract
			BP	0.85	2002/2021	FOB	
TRINIDAD & TOBAGO	Point Fortin	Naturgas Energia	0.7	2003/2023	FOB	GNF/Naturgas swap. GNF buys 0.74 MTPA on a FOB basis until 2023	
		Gas Natural sdg	0.65	2002/2023	FOB		
			BP	2.5	2006/2025	FOB	
		Atlantic LNG T4	BG	1.5	2007/2027	FOB	
			Shell	1	2014/2024	FOB	As part of Repsol LNG Acquisition
		BP	AES	0.75	2003/2023	DES	Related to BP/ALNG T2 & 3 contract
		ENGIE	Ecolectrica	0.6	2000/2020	DES	Related to ENGIE/ALNG T1 contract

\* Duration above four years.

Export country	Loading point	Seller	Buyer	ACQ (MTPA)	Duration	Type of contract	Comments	
<b>PACIFIC BASIN</b>								
	Withnell Bay	Woodside, Shell, BHP Billiton, BP, Chevron, Japan Australia LNG Pty Ltd (Mitsubishi & Mitsui)	The Chugoku Electric	1.43	2009/2021	DES		
			Tokyo Gas, Toho Gas	1.37	2004/2029	FOB		
			Kyushu Electric	1.05	2009/2023	FOB		
			Osaka Gas	1	2004/2033	FOB		
			Tohoku Electric	1	2010/2019	DES		
			Toho Gas	0.76	2009/2019	DES		
			Chubu Electric	0.6	2009/2029	DES		
			Tokyo Gas	0.5	2009/2024	DES		
			The Kansai Electric	0.5-0.93	2009/2024	DES		
			Chubu Electric	0.5	2009/2016	DES		
			The Kansai Electric	0.2-0.44	2009/2024	DES		
			Tokyo Electric	0.3	2009/2024	DES		
			Kyushu Electric	0.18	2006/2021	DES		
			Shizouka Gas	0.13	2004/2029	FOB		
			KOGAS	0.5	2003/2016	DES		
			GD LNG	3.3	2006/2030	FOB		
	Darwin	Conocophillips, ENI, Santos, Inpex, TTSR	Tokyo Electric	2	2006/2022	FOB		
			Tokyo Gas	1	2006/2022	FOB		
	Pluto	Pluto LNG	The Kansai Electric	1.75-2	2011/2025	FOB/DES		
			Tokyo Gas	1.5	2011/2025	FOB/DES		
	Curtis Island	QCLNG	up to 8.5	2014/2034	FOB			
		BG	CNOOC	3.6	2014/2034	DES		
		BG	Tokyo Gas	1.2	2015/2035	DES		
	BRUNEI	Lumut	Brunei LNG	Tokyo Gas, Osaka Gas, Tokyo Electric	3.4	2013/2023	DES	Extended to 2023
			KOGAS	1	1997/2018	DES		
			Shell	0.8	2013/2023	FOB		
	Bontang	Pertamina, Total E&P Indonesia, INPEX	The Kansai Electric, Chubu Electric, Kyushu Electric, Osaka Gas, Toho 3 Gas, Nippon Steel & Sumitomo Metal	2011/2020	FOB/DES		Nominal quantity(ACQ) 2011/2015: 3 MTPA 2016/2020: 2 MTPA	
			Hiroshima Gas, Nippon Gas, Osaka Gas	0.39	1996/2015	DES	1.7 MTPA divertible	
			KOGAS	2	1994/2014	FOB	Expired in 2014	
			KOGAS	1	1998/2017	FOB		
			CPC	1.84	1998/2017	DES		
	Tangguh	Tangguh PSC Contractor Parties	Sempra LNG	3.7	2008/2029	DES		
			CNOOC	2.6	2009/2033	FOB		
			Kansai Electric	1	2014/2035	DES		
			SK	0.6	2006/2026	DES		
			Posco	0.55	2005/2024	DES		
			Tohoku Electric	0.12	2010/2024	DES		
	Donggi-Senoro	PT Donggi-Senoro LNG	Chubu Electric	1	2015/2028	DES		
			Kyushu Electric	0.3	2015/2028	DES		
			KOGAS	0.7	2015/2028	FOB		
			Tokyo Gas, Tokyo Electric	7.4	1983/2003	1.8 MTPA FOB/ 5.6 MTPA DES	Extended to 2018	
			Saibu Gas	0.45	2014/2028	DES/FOB		
			Shikoku Electric	0.36	2010/2025	DES		
			Hiroshima Gas	0.008-0.016	2005/2012	FOB	Extended to 2015	
			The Kansai Electric, Toho Gas, Tokyo Gas, Osaka Gas	2.1	1995/2015	DES	Ended in March 2015	
			Gas Bureau, City of Sendai	0.15	1997/2018	DES		
			Chubu Electric	-0.54	2011/2031	DES		
			Tohoku Electric	0.5	1996/2016	DES		
			Shizouka Gas	0.45	1996/2016	DES		
			JX Nippon Oil & Energy Corporation	0.38	2015/2025	DES		
			KOGAS	1-2	1995/2018	FOB		
			CPC	2.25	1995/2015	DES		
			Tokyo Gas	0.9	2015/2025	DES		
			Toho Gas	0.68	2004/2024	DES		
			Tohoku Electric	0.52	2007/2027	DES		
			Tohoku Electric	0.5	2005/2025	DES		
			Japan Petroleum Exploration co.	0.48	2002/2021	DES		
			CNOOC	3	2009/2029	DES		
			KOGAS	2	2008/2028	DES		
	Port Moresby	PNG LNG	Sinopec	2	2014/2034	DES		
			Tokyo Electric	1.8	2014/2034	DES/FOB	</	

Export country	Loading point	Seller	Buyer	ACQ (MTPA)	Duration	Type of contract	Comments
<b>PACIFIC BASIN</b>							
RUSSIA	Prigorodnoye	Sakhalin Energy Investment	Shell	1.6	2009/2028	DES	Initially linked to Costa Azul / Destination flexible
			Tokyo Electric	1.5	2009/2029	FOB	
			KOGAS	1.5	2008/2028	FOB	
			Tokyo Gas	1.1	2007/2031	FOB	
			Gazprom Global LNG	1	2009/2028	DES	
			Kyushu Electric	0.5	2009/2031	DES	
			Toho Gas	0.5	2009/2033	DES	
			Chubu Electric	0.5	2011/2026	DES	
			Tohoku Electric	0.42	2010/2030	FOB	
			Hiroshima Gas	0.21	2008/2028	FOB	
			Osaka Gas	0.2	2008/2031	FOB	
			Saibu Gas	0.07	2014/2027	DES	
<b>MIDDLE EAST</b>							
ABU DHABI	Das Island	Adgas	Tokyo Electric	4.3	1994/2019	DES	
QATAR	Ras Laffan		Chubu Electric	4	1997/2021	DES	
			Qatargas I	2	1998/2021	DES	
			Tohoku Electric, Tokyo Gas, Osaka Gas, The Kansai Electric, Tokyo Electric, Toho Gas, Chugoku Electric	1	2012/2021	DES	
			Gas Natural sdg	0.75	2005/2024	DES	
			Gas Natural sdg	0.75	2006/2025	FOB	
			Qatargas II T1	7.8	2009/2034	DES	
			CNOOC	2	2009/2034	DES	
			Total	1.85	2009/2034	DES	
			Total	1.5	2009/2034	DES	
			Total	1.15	2009/2034	DES	
			Total	0.7	2009/2034	DES	
			ExxonMobil	0.6	2009/2033	DES	
OMAN	Qalhat		ConocoPhillips	7.8	2010/2035	DES	
			Centrica	3	2014/2018	DES	Extension of the previous 3 year contract ending in 2014
			Qatargas II T2	2	2011/2035	DES	
			Chubu Electric	1	2013/2028	DES	Nominal quantity (ACQ) 2013/2017: 1 MTPA 2018/2028: 0.7 MTPA
			The Kansai Electric	0.5	2013/2027	DES	
			Shell	3.6	2011/2036	DES	Quantity and total years amended
			Petrochina	3	2011/2036	DES	
			Marubeni	1	2011/2031	DES	
			RasGas I	KOGAS	4.92	1999/2024	FOB
			RasGas II T1	Petronet LNG	5	2004/2028	FOB
			RasGas II T2	Edison	4.6	2009/2034	DES
YEMEN	Balhaf		Endesa	0.74	2005/2025	DES	
			RasGas II T3	EDF Trading	3.4	2007/2012	DES
			CPC	3.08	2008/2032	FOB	Extended to 2027
			ENI	2.05	2007/2027	DES	Former Distrigas contract
			RasGas III T1	ExxonMobil	7.8	2009/2034	DES
			Petronet LNG	2.5	2009/2029	FOB	
			KOGAS	2.1	2007/2026	DES	
			KOGAS	2	2012/2032	DES	New LT contract
			RasGas III T2	ExxonMobil	7.8	2010/2035	DES
			Rasgas III	CPC	1.5	2013/2032	DES
			Oman LNG	KOGAS	4.06	2000/2024	FOB
OTHER			Osaka Gas	0.66	2000/2024	FOB	
			Union Fenosa Gas	1.65	2006/2025	DES	
			Qalhat LNG	Mitsubishi Corp.	0.8	2006/2020	FOB
			Itochu Corp.	0.8	2009/2026	FOB	
			Yemen LNG T1	KOGAS	2	2008/2028	FOB
			Yemen LNG T2	ENGIE	2.55	2009/2029	FOB
			Yemen LNG T1 & 2	TGPL	2	2009/2029	DES
			Currently under Force Majeure				



Export country	Loading point	Seller	Buyer	ACQ (MTPA)	Duration	Type of contract	Comments
<b>OTHER</b>							
BG PORTFOLIO	BG	Chubu Electric		Up to 0.4	2014/2035	DES	Total quantity of LNG during contract duration: maximum 122 cargoes
BP PORTFOLIO	BP	Chubu Electric		0.5	2012/2028	DES	
BP PORTFOLIO	BP	The Kansai Electric		Up to 13 MT through 23 years	2015/2038	DES	Total quantity of LNG during contract duration: approx 13 MT
CHUBU ELECTRIC PORTFOLIO	Chubu Electric	INPEX		*	2013/2018	DES	*Total quantity of LNG during contract duration: 17 cargoes
ENI PORTFOLIO	Eni	Tokyo Electric		1.04	2011/2015	DES	
ENI PORTFOLIO	Eni	Iberdrola		0.92	2002/2018	DES	
ENI PORTFOLIO	Eni	E.ON Global Commodities		0.65	2007/2022	DES	
ENI PORTFOLIO	Eni	Hidrocanabtrico + EDP		0.36	2005/2016	DES	
ENI PORTFOLIO	Eni	KOGAS/Chubu Electric		*	2013/2017	DES	*Total quantity of LNG during the contract duration: 28 cargoes (approx. 1.68 MTPA)
IBERDROLA PORTFOLIO	Iberdrola	DONG		0.72	2011/2021	DES	
IBERDROLA PORTFOLIO	Iberdrola	BP		0.38	2012/2021		
MITSUBISHI PORTFOLIO	Mitsubishi	Shizuoka Gas		0.3~0.7	2010/2015	DES	
OSAKA GAS PORTFOLIO	Osaka Gas	Shizuoka Gas		0.3	2015/2034	DES	
SHELL PORTFOLIO	Shell	CFE		3.08	2011/2027		
SHELL PORTFOLIO	Shell	KOGAS		1~3.64	2013/2035	DES	Related to the Shell (ex-Repsol) Atlantic LNG Train 2 & 3 contract of 2.05 MTPA
SHELL PORTFOLIO	Shell	Gas Natural Fenosa		1.16	2006/2023	DES	
SHELL PORTFOLIO	Shell	Kuwait Petroleum Corporation		1.07	2014/2019		
SHELL PORTFOLIO	Shell	Osaka Gas		0.8	2012/2038	DES	
SHELL PORTFOLIO	Shell	BBE		0.8	2003/2020		Ex-Repsol Contract
SHELL PORTFOLIO	Shell	ENGIE		0.4	2014/2034	DES	
SHELL PORTFOLIO	Shell	Portfolio player		0.3	2014/2019		
SHELL PORTFOLIO (NIGERIA, RUSSIA, AUSTRALIA)	Shell	JX Nippon Oil & Energy Corporation		0.2	2015/2032	DES	
SHELL PORTFOLIO	Shell	Chubu Electric		*	2014/2034	DES	*Maximum 12 cargoes per year
TOKYO ELECTRIC PORTFOLIO	JERA LNG Coordination	Shizuoka Gas		0.26	2014/2032	DES	
TOKYO GAS PORTFOLIO	Tokyo Gas	Hokkaido Gas		0.3~0.4	2012/2023	DES	
TOKYO GAS PORTFOLIO	Tokyo Gas	Saibu Gas		0.3	2014/2029	DES	
TOTAL PORTFOLIO	Total	KOGAS		Up to 2	2014/2031	DES	
TOTAL PORTFOLIO	Total	CNOOC		1	2010/2024	DES	

\* Duration above four years.

# LNG TANKERS

The total LNG tanker fleet consisted of 449 vessels at the start of 2016.

It included 23 FSRUs and 28 vessels of less than 50,000 cubic meters. Total shipping capacity at the end of 2015 stood at 64.6 million cubic meters. Total operational capacity (without lay-ups and vessels awaiting conversion) amounted to 63.3 million cubic meters.

**LNG CARRIERS SCRAPPED IN 2015 /** 3 ships were demolished during the year:

Built	Vessel Name	Capacity (m³)	IMO Number	CCS*	Owner	Builder	Manager Name
1975	Bilis (ex Geomitra)	77 731	7347732	GT	Brunei Shell Tankers	C.N.I.M.	STASCO (Shell)
1975	Bubuk (ex Genota)	77 670	7359785	GT	Brunei Shell Tankers	C.N.I.M.	STASCO (Shell)
1984	Koto (Kotowaka Maru)	125 454	8210209	KM	BW Gas	Kawasaki HI Sakaide	BW Fleet Mngt

\* Cargo Containment System

**LNG CARRIERS LAID-UP AT THE END OF 2015 /** 6 vessels were laid-up at the end of the year:

Built	Vessel Name	Capacity (m³)	IMO Number	CCS*	Owner Company	Builder	Manager Name
1976	Mostefa Ben Boulaïd	125 260	7359955	TZM	Hyproc Shipping Co.	Ch.De La Ciotat	Hyproc Shipping Co.
1979	Bachir Chihani	129 767	7400675	GT	Hyproc Shipping Co.	C.N.I.M.	Hyproc Shipping Co.
1981	Tenaga Tiga	130 000	7428471	GT	MISC	France-Dunkerque	MISC
1983	Baltic Energy (ex Wilpower)	125 929	8013950	KM	Sinokor Merchant	Kawasaki HI Sakaide	Sinokor Merchant
1983	Wilenergy (ex Banshu Maru)	125 542	8014409	KM	Awilco LNG	MHI Nagasaki	V.Ships (UK) Ltd
1989	Grace Energy (ex LNG Swift)	127 590	8702941	KM	Sinokor Merchant	MHI Nagasaki	Sinokor Ship Mngt

\* Cargo Containment System

In addition, 4 vessels were idle, awaiting conversion:

Built	Vessel Name	Capacity (m³)	IMO Number	CCS*	Owner Company	Builder	Manager Name
1976	Gimi	126 277	7382732	KM	Golar LNG	Moss Rosenberg	Golar Wilhelmsen
1977	Gandria (ex Hoegh Gandria)	125 820	7361934	KM	Golar LNG	Howaldtswerke Werft	Golar Wilhelmsen
1980	Gaea (ex LNG Abuja)	126 530	7619575	KM	Stolt-Nielsen USA	Gen. Dynamics	Avance Gas Holdings
1981	Lucky FSU (ex Tenaga Dua)	130 000	7428469	GT	Compass Energy Pte	France-Dunkerque	Compass Energy Pte

\* Cargo Containment System

**LNG CARRIERS DELIVERED IN 2015 /** 33 ships were delivered during the year, including 3 FSRUs and 4 ships of less than 50 000 cubic meters.

The average capacity of vessels delivered (excluding ships under 50 000 cubic meters) amounted to 164 141 cubic meters:

Vessel Name	IMO Number	Type	Built Date	Capacity (m³)	CCS*	Owner	Builder	Manager Name
Amadi	9682552	LNG Carrier	Jul-15	154 800	TZM	Brunei Gas Carriers	Hyundai HI	STASCO (Shell)
Asia Endeavour	9610779	LNG Carrier	Jun-15	160 000	TZM	Chevron Transport	Samsung HI	Chevron Transport
Asia Excellence	9610767	LNG Carrier	Jan-15	160 000	TZM	Chevron Transport	Samsung HI	Chevron Transport
Beidou Star	9613159	LNG Carrier	Nov-15	172 000	GT	Mitsui O.S.K. Lines	Hudong Zhonghua	Mitsui O.S.K. Lines
BW Pavilion Leeara	9640645	LNG Carrier	Sep-15	161 870	TZM	BW Gas	Hyundai HI	BW Gas
BW Pavilion Vanda	9640437	LNG Carrier	Jan-15	161 870	TZM	BW Gas	Hyundai HI	BW Fleet Mngt
BW Singapore	9684495	FSRU	Aug-15	170 000	TZM	BW Offshore	Samsung HI	BW Offshore
Clean Horizon	9655444	LNG Carrier	Jul-15	161 870	TZM	Dynagas Ltd.	Hyundai HI	Dynagas Ltd.
Cool Explorer	9640023	LNG Carrier	Jan-15	161 352	TZM	Thenamaris	Samsung HI	B. Schulte (Cyprus)
Energy Atlantic	9649328	LNG Carrier	Sep-15	159 924	GT	Alpha Tankers & Frt.	STX SB (Jiniae)	Alpha Tankers & Frt.
GasLog Salem	9638915	LNG Carrier	Apr-15	155 000	TZM	GasLog	Samsung HI	GasLog LNG Services
Golar Eskimo	9624940	FSRU	Jan-15	160 000	TZM	Golar LNG Partners	Samsung HI	Golar Wilhelmsen
Golar Ice	9637325	LNG Carrier	Feb-15	160 000	TZM	Golar LNG	Samsung HI	Golar Wilhelmsen
Golar Kelvin	9654701	LNG Carrier	Jan-15	162 000	TZM	Golar LNG	Hyundai Samho HI	Golar LNG
Golar Snow	9635315	LNG Carrier	Jan-15	160 000	TZM	Golar LNG	Samsung HI	Golar Wilhelmsen
Golar Tundra	9655808	FSRU	Nov-15	170 000	TZM	Golar LNG	Samsung HI	Golar LNG
Hai Yang Shi You 301	9696266	LNG Carrier	May-15	31 043	Other	CNOOC EnerTech	Jiangnan SY Group	CNOOC EnerTech
JS Ineos Ingenuity	9685437	LNG/Ethylene/LPG	Jul-15	27 566	Other	Evergas AS	Sinopacific Offshore	Evergas AS
JS Ineos Insight	9685425	LNG/Ethylene/LPG	May-15	27 566	Other	Evergas AS	Sinopacific Offshore	Evergas AS
JS Ineos Intrepid	9685449	LNG/Ethylene/LPG	Oct-15	27 566	Other	Evergas AS	Sinopacific Dayang	Evergas AS
LNG Bonny II	9692002	LNG Carrier	Dec-15	176 760	TZM	Bonny Gas Transport	Hyundai HI	Bonny Gas Transport
LNG Finima II	9690145	LNG Carrier	Dec-15	174 900	GT	Bonny Gas Transport	Samsung HI	Bonny Gas Transport
LNG Jurojin	9666998	LNG Carrier	Nov-15	155 300	KM	Mitsui O.S.K. Lines	MHI Nagasaki	Mitsui O.S.K. Lines
LNG Port Harcourt II	9690157	LNG Carrier	Dec-15	174 900	GT	Bonny Gas Transport	Samsung HI	Bonny Gas Transport
Maran Gas Alexandria	9650054	LNG Carrier	Sep-15	161 870	TZM	Maran Gas Maritime	Hyundai Samho HI	Maran Gas Maritime
Maran Gas Lindos	9627502	LNG Carrier	Jun-15	159 800	GT	Maran Gas Maritime	Daewoo (DSME)	Maran Gas Maritime
Maran Gas Mystras	9658238	LNG Carrier	Jul-15	159 800	GT	Maran Gas Maritime	Daewoo (DSME)	Maran Gas Maritime
Maran Gas Sparta	9650042	LNG Carrier	Apr-15	161 870	TZM	Maran Gas Maritime	Hyundai Samho HI	Maran Gas Maritime
Maran Gas Troy	9658240	LNG Carrier	Sep-15	159 800	GT	Maran Gas Maritime	Daewoo (DSME)	Maran Gas Maritime
Papua	9613135	LNG Carrier	Jan-15	172 000	GT	Mitsui O.S.K. Lines	Hudong Zhonghua	MOL LNG Europe
SCF Melampus	9654878	LNG Carrier	Jan-15	170 200	GT	Sovcomflot JSC	STX SB (Jiniae)	Unicom Mngt
SCF Mitre	9654880	LNG Carrier	Apr-15	170 200	GT	Sovcomflot JSC	STX SB (Jiniae)	Unicom Mngt
Southern Cross	9613147	LNG Carrier	Jun-15	172 000	GT	Mitsui O.S.K. Lines	Hudong Zhonghua	MOL LNG Europe

\* Cargo Containment System

# FSRU FLEET

The total FSRU fleet consisted of 23 units at the start of 2016.

Total FSRU cargo capacity at the end of 2015 stood at 3.47 million cubic meters. In 2015, 33 new orders were placed, including 3 FSRUs and 1 bunkering vessel, compared with 77 new orders placed in 2014.

At the end of 2015, the orderbook comprised of 158 vessels, 144 of which were above 50,000 cubic meters.

52 vessels were scheduled for delivery in 2016.

The orderbook comprised of 8 FSRUs. Three of these vessels were scheduled for 2016 delivery, with the remainder in 2017.



## FSRU FLEET AT THE START OF 2016

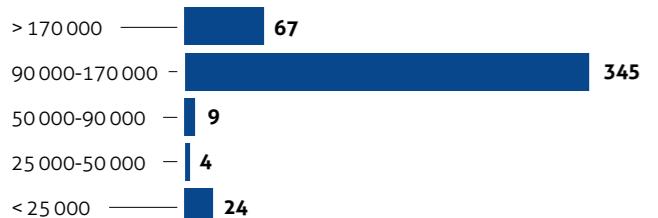
Built	Vessel Name	Capacity (m³)	IMO Number	CCS*	Owner	Builder	Manager Name
1977	Golar Freeze	125 000	7361922	KM	Golar LNG Partners	Keppel Shipyard	Golar Wilhelmsen
1977	Nusantara Regas Satu (FSRU Jawa Barat, ex Khannur)	125 000	7382744	KM	Golar LNG Partners	Jurong Shipyard	Golar Wilhelmsen
1981	Golar Spirit	129 000	7373327	KM	Golar LNG Partners	Keppel Shipyard	Golar Wilhelmsen
2003	FSRU Toscana (ex Golar Frost, FSRU Livorno)	137 000	9253284	KM	OLT Offshore	Drydocks World Dubai	ECOS
2004	Golar Winter	138 000	9256614	GT	Golar LNG Partners	Keppel Shipyard	Golar Wilhelmsen
2005	Excellence	138 120	9252539	GT	Excelerate Energy	Daewoo (DSME)	Exmar Shipmgnt
2005	Excelsior	138 087	9239616	GT	Exmar	Daewoo (DSME)	Exmar Shipmgnt
2006	Excelerate	138 074	9322255	GT	Exmar	Daewoo (DSME)	Exmar
2008	Explorer	151 008	9361079	GT	Exmar	Daewoo (DSME)	Exmar
2009	Express	150 900	9361445	GT	Exmar	Daewoo (DSME)	Exmar
2009	Exquisite	151 000	9381134	GT	Excelerate Energy	Daewoo (DSME)	Exmar Shipmgnt
2009	GDF Suez Neptune	145 130	9385673	TZM	Höegh LNG Partners	Samsung HI	Höegh LNG Fleet M.
2010	Exemplar	151 000	9444649	GT	Excelerate Energy	Daewoo	

## At the end of 2015, the fleet could be classified as follows:

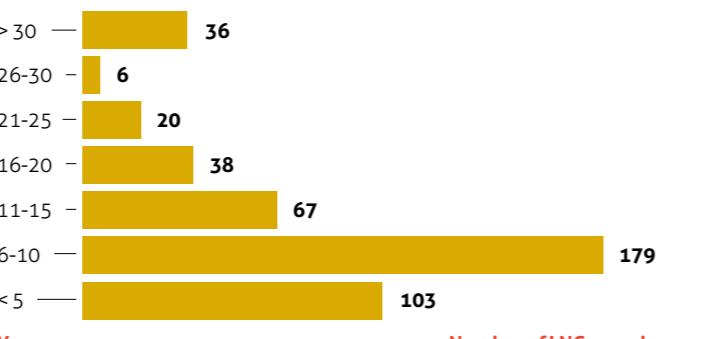
### ACCORDING TO CONTAINMENT SYSTEM:



### ACCORDING TO CARGO CAPACITY:

Volume(m<sup>3</sup>)

### AGE OF THE EXISTING LNG FLEET:



Years

Number of LNG vessels

# LNG FLEET AT THE START OF 2016

Built	Vessel Name	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager Name
1972	Bebatik (ex Gadinia)	75 060	TZM	Brunei Shell Tankers	Ch. de l'Atlantique	STASCO (Shell)
1974	Seagas (ex Fjalar)	167	Other	Aga Gas AB	Fiskerstrand	Sirius Rederi
1975	Belanak (ex Gouldia)	75 000	TZM	Brunei Shell Tankers	Ch. De La Ciota	STASCO (Shell)
1976	Gimi	126 277	KM	Golar LNG	Moss Rosenberg	Wilhelmsen
1976	Mostefa Ben Boulaïd	125 260	TZM	Hyproc Shipping Co.	Ch. De La Ciota	Hyproc Shipping Co.
1976	West Energy (ex LNG Lagos)	122 000	GT	Sinokor Merchant	Ch. de l'Atlantique	Sinokor Merchant
1977	East Energy (ex LNG Port Harcourt)	122 000	GT	Sinokor Merchant	Ch. de l'Atlantique	Sinokor Merchant
1977	Gandria (ex Hoegh Gandria)	125 820	KM	Golar LNG	Howaldtswerke Werft	Golar Wilhelmsen
1977	Larbi Ben M'Hidi	129 767	GT	Hyproc Shipping Co.	C.N.I.M.	Hyproc Shipping Co.
1977	LNG Aquarius	126 300	KM	Hanchem Shpg.	Gen. Dynamics	MOL LNG Europe
1978	LNG Capricorn	126 300	KM	Nova Shpg & Logist.	Gen. Dynamics	Nova Shpg & Logist.
1978	LNG Gemini	126 300	KM	General Dynamics	Gen. Dynamics	Pronav Ship Mngt.
1978	LNG Leo	126 400	KM	General Dynamics	Gen. Dynamics	Pronav Ship Mngt.
1978	Methania	131 235	GT	Distrigas S.A. Boelwerf	Exmar Shipmngt	
1979	Bachir Chihani	129 767	GT	Hyproc Shipping Co.	C.N.I.M.	Hyproc Shipping Co.
1979	LNG Libra	126 400	KM	Höegh LNG	Gen. Dynamics	Höegh LNG Fleet M.
1979	LNG Taurus	126 300	KM	Nova Shpg & Logist.	Gen. Dynamics	Nova Shpg & Logist.
1979	LNG Virgo	126 400	KM	General Dynamics	Gen. Dynamics	Pronav Ship Mngt.
1979	Matthew (ex Suez Matthew)	126 540	TZM	Suez LNG NA.	Newport News SB	Höegh LNG Fleet M.
1980	Gaea (ex LNG Abuja)	126 530	KM	Stolt-Nielsen USA	Gen. Dynamics	Avance Gas Holdings

\* Cargo Containment System

Built	Vessel Name	Capacity (m <sup>3</sup> )	CCS*	Owner	Builder	Manager Name
1992	Northwest Seaeagle	127 452	KM	Aust. LNG Ship Optg.	Mitsui Shipbuilding	STASCO (Shell)
1993	Aman Bintulu	18 928	TZM	MISC	NKK Corp.	MISC
1993	Arctic Spirit (ex Arctic Sun)	89 880	IHI	Teekay LNG Partners	I.H.I.	Teekay Shpg. (Gla)
1993	LNG Flora	127 705	KM	Nippon Yusen Kaisha Sakaide		NYK LNG Shipmngt.
1993	Northwest Sandpiper	127 500	KM	Aust. LNG Ship Optg.	Mitsui Shipbuilding	STASCO (Shell)
1993	Polar Spirit (ex Polar Eagle)	89 880	IHI	Teekay LNG Partners	I.H.I.	Teekay Shpg. (Gla)
1994	Al Khaznah	135 496	KM	National Gas Shpg.	Mitsui Shipbuilding	National Gas Shpg.
1994	Dwiputra	127 386	KM	Mitsui O.S.K. Lines	MHI Nagasaki	Humolco Trans Inc.
1994	Hyundai Utopia	125 182	KM	Hyundai LNG Shipping	Hyundai HI	Hyundai Ocean
1994	LNG Vesta	127 547	KM	Mitsui O.S.K. Lines	MHI Nagasaki	MOL LNG Transport
1994	Northwest Stortpetrel	127 606	KM	Aust. LNG Ship Optg.	MHI Nagasaki	STASCO (Shell)
1994	Puteri Intan	130 405	GT	MISC	Ch. de l'Atlantique	MISC
1994	Shahamah	135 496	KM	National Gas Shpg.	Kawasaki HI Sakaide	National Gas Shpg.
1994	YK Sovereign	127 125	KM	SK Shipping	Hyundai HI	SKShipmngt.
1995	Ghasha	137 514	KM	National Gas Shpg.	Mitsui Shipbuilding	National Gas Shpg.
1995	Hanjin Pyeong Taek	130 600	GT	H-Line Shipping	Hanjin HI (Yeongdo)	Eusu ShipManagement
1995	Ish	137 540	KM	National Gas Shpg.	MHI Nagasaki	National Gas Shpg.
1995	Puteri Delima	130 405	GT	MISC	Ch. de l'Atlantique	MISC
1995	Puteri Nilam	130 405	GT	MISC	Ch. de l'Atlantique	MISC
1996	Al Khor	137 354	KM	Nippon Yusen Kaisha	MHI Nagasaki	NYK LNG Shipmngt.
1996	Al Zubarah	137 573	KM	Mitsui O.S.K. Lines	Mitsui Shipbuilding	MOL LNG Transport
1996	Hyundai Greenpia	125 000	KM	Hyundai LNG Shipping	Hyundai HI	Hyundai Ocean
1996	Mrerah	137 000	KM	National Gas Shpg.	Kvaerner Masa	National Gas Shpg.
1996	Mubaraz	137 000	KM	National Gas Shpg.	Kvaerner Masa	National Gas Shpg.
1996	Puteri Zamrud	130 405	GT	MISC	Ch. de l'Atlantique	MISC
1996	Surya Aki	19 474	KM	P.T. Humpuss	Kawasaki HI Sakaide	Mitsui O.S.K. Lines
1997	Al Hamra	137 000	KM	National Gas Shpg.	Kvaerner Masa	National Gas Shpg.
1997	Al Rayyan	135 358	KM	K-Line	Kawasaki HI Sakaide	K-Line Ship Mngt.
1997	Al Wajbah	137 354	KM	Mitsui O.S.K. Lines	MHI Nagasaki	MOL LNG Transport
1997	Aman Sendai	18 928	TZM	MISC	NKK Corp.	MISC
1997	LNG Portovenere	65 000	GT	SNAM S.P.A.	Fincantieri Sestri	Exmar Shipmngt
1997	Puteri Firus	130 405	GT	MISC	Ch. de l'Atlantique	MISC
1997	Umm Al Ashtan	137 000	KM	National Gas Shpg.	Kvaerner Masa	National Gas Shpg.
1998	Al Wakrah	135 358	KM	Mitsui O.S.K. Lines	Kawasaki HI Sakaide	MOL LNG Transport
1998	Aman Hakata	18 800	TZM	MISC	NKK Corp.	MISC
1998	Broog	135 466	KM	Nippon Yusen Kaisha	Shipbuilding	NYK LNG Shipmngt.
1998	LNG Lerici	65 000	GT	SNAM S.P.A.	Fincantieri Sestri	Exmar Shipmngt
1998	Zekreet	135 420	KM	K-Line	Mitsui Shipbuilding	K-Line Ship Mngt.
1999	Al Bidda	135 279	KM	Mitsui O.S.K. Lines	Kawasaki HI Sakaide	MOL LNG Transport
1999	Doha	137 354	KM	Nippon Yusen Kaisha	MHI Nagasaki	NYK LNG Shipmngt.
1999	Hanjin Muscat	138 200	GT	H-Line Shipping	Hanjin HI (Yeongdo)	Eusu ShipManagement
1999	Hyundai Technopia	135 000	KM	Hyundai LNG Shipping	Hyundai HI	Hyundai Ocean
1999	SK Summit	138 000	GT	SK Shipping	Daewoo (DSME)	SKShipmngt.
2000	Al Jasra	137 100	KM	Nippon Yusen Kaisha	MHI Nagasaki	NYK LNG Shipmngt.
2000	Golar Mazo	136 867	KM	Golar LNG Partners	MHI Nagasaki	Golar Wilhelmsen
2000	Hanjin Ras Laffan	138 214	GT	H-Line Shipping	Hanjin HI (Yeongdo)	Eusu ShipManagement
2000	Hanjin Sur	138 333	GT	H-Line Shipping	Hanjin HI (Yeongdo)	Eusu ShipManagement
2000	Hyundai Aquapia	135 000	KM	Hyundai LNG Shipping	Hyundai HI	Hyundai Ocean
2000	Hyundai Cosmopia	135 000	KM	Hyundai LNG Shipping	Hyundai HI	Hyundai Ocean
2000	Hyundai Oceanpia	135 000	KM	Hyundai LNG Shipping	Hyundai HI	Hyundai Ocean
2000	K.Acacia	138 017	GT	Korea Line	Daewoo (DSME)	KLCM

\* Cargo Containment System

Built	Vessel Name	Capacity (m³)	CCS*	Owner	Builder	Manager Name
2004	Puteri Zamrud Satu	137 100	GT	MISC	Mitsui Shipbuilding	MISC
2004	Raahi	136 026	GT	India LNG Transport	Daewoo (DSME)	Shpg Corp of India
2005	Al Deebel	145 130	TZM	Mitsui O.S.K. Lines	Samsung HI	MOL LNG Europe
2005	Al Thakhira	145 130	TZM	K-Line	Samsung HI	KLine LNG Shpg.
2005	Energy Advance	147 624	KM	Tokyo LNG Tanker Co.	Kawasaki HI Sakaide	Mitsui O.S.K. Lines
2005	Golar Viking (ex Salju)	140 208	TZM	Golar LNG	Hyundai HI	Golar Wilhelmsen
2005	LNG Adamawa	142 656	KM	Bonny Gas Transport	Hyundai HI	Anglo-Eastern UK
2005	LNG Cross River	141 000	KM	Bonny Gas Transport	Hyundai HI	Nigeria LNG Ltd.
2005	LNG Enugu	145 914	GT	BW Gas	Daewoo (DSME)	BW Fleet Mngt
2005	LNG Oyo	145 842	GT	BW Gas	Daewoo (DSME)	BW Fleet Mngt
2005	LNG Pioneer	138 000	GT	Mitsui O.S.K. Lines	Daewoo (DSME)	MOL LNG Europe
2005	Lusail	145 000	TZM	Nippon Yusen Kaisha	Samsung HI	NYK LNG Shipmgt.
2005	Maran Gas Asclepius (ex Rasgas Asclepius)	145 822	GT	Maran Nakilat	Daewoo (DSME)	Maran Gas Maritime
2005	Nizwa LNG	147 684	KM	Oman Shipping Co.	Kawasaki HI Sakaide	Mitsui O.S.K. Lines
2005	North Pioneer	2 512	Other	Japan Liquid Gas	Kawasaki HI Sakaide	Iino Kaiun Kaisha
2005	Puteri Mutiara Satu	137 100	GT	MISC	Mitsui Shipbuilding	MISC
2005	Salalah LNG	145 951	TZM	Oman Shipping Co.	Samsung HI	Mitsui O.S.K. Lines
2005	Seri Alam	145 572	TZM	MISC	Samsung HI	MISC
2005	Umm Bab	145 000	GT	Maran Nakilat	Daewoo (DSME)	Maran Gas Maritime
2006	Al Marrouna	149 539	GT	Teekay LNG Partners	Daewoo (DSME)	Teekay Shpg (Gla)
2006	Arctic Discoverer	142 612	KM	K-Line	Mitsui Shipbuilding	K Line LNG Shpg
2006	Arctic Lady	147 208	KM	Höegh LNG	MHI Nagasaki	Höegh LNG Fleet M.
2006	Arctic Princess	147 835	KM	Höegh LNG	MHI Nagasaki	Höegh LNG Fleet M.
2006	Arctic Voyager	142 929	KM	K-Line	Kawasaki HI Sakaide	K Line LNG Shpg
2006	Energy Progress	147 558	KM	Mitsui O.S.K. Lines	Kawasaki HI Sakaide	MOL LNG Transport
2006	GDF Suez Global Energy (ex Gaz de France Energy)	74 130	CS1	ENGIE	Aker Yards S.A.	Gozocean S.A.
2006	Golar Grand (ex Grandis)	145 879	GT	Golar LNG Partners	Daewoo (DSME)	Golar Wilhelmsen
2006	Golar Maria (ex Granosa)	145 700	GT	Golar LNG Partners	Daewoo (DSME)	Golar Wilhelmsen
2006	Iberica Knutsen	138 120	GT	Knutsen OAS Shipping	Daewoo (DSME)	Knutsen OAS Shipping
2006	Ibra LNG	147 100	TZM	Oman Shipping Co.	Samsung HI	Mitsui O.S.K. Lines
2006	Ibri LNG	147 569	KM	Oman Shipping Co.	MHI Nagasaki	Mitsui O.S.K. Lines
2006	LNG Benue	145 842	GT	BW Gas	Daewoo (DSME)	BW Fleet Mngt
2006	LNG Dream	145 000	KM	Osaka Gas	Kawasaki HI Sakaide	NYK LNG Shipmgt.
2006	LNG Lokoja	149 600	GT	BW Gas	Daewoo (DSME)	BW Fleet Mngt
2006	LNG River Niger	141 000	KM	Bonny Gas Transport	Hyundai HI	Nigeria LNG Ltd.
2006	Methane Jane Elizabeth	145 000	TZM	GasLog Partners	Samsung HI	GasLog LNG Services
2006	Methane Lydon Volney	145 000	TZM	GasLog	Samsung HI	GasLog LNG Services
2006	Methane Rita Andrea	145 000	TZM	GasLog Partners	Samsung HI	GasLog LNG Services
2006	Milaha Qatar (ex Maersk Qatar)	145 130	TZM	Qatar Shipping	Samsung HI	Pronav Ship Mngt.
2006	Pacific Eurus	136 942	KM	TEPCO	MHI Nagasaki	NYK LNG Shipmgt.
2006	Provalyx	154 472	CS1	ENGIE	Aker Yards S.A.	Gozocean S.A.
2006	Seri Amanah	145 000	TZM	MISC	Samsung HI	MISC
2006	Seri Anggun	145 731	TZM	MISC	Samsung HI	MISC
2006	Seri Angkasa	145 000	TZM	MISC	Samsung HI	MISC
2006	Simaisma	145 700	GT	Maran Nakilat	Daewoo (DSME)	Maran Gas Maritime
2006	Stena Blue Sky (ex Bluesky)	145 819	GT	Stena Bulk	Daewoo (DSME)	Northern Marine Mngt
2007	Al Areesh	148 786	GT	Teekay LNG Partners	Daewoo (DSME)	Teekay Shpg (Gla)
2007	Al Daayen	148 853	GT	Teekay LNG Partners	Daewoo (DSME)	Teekay Shpg (Gla)
2007	Al Gattara	216 224	TZM	Qatar Gas (Nakilat)	Hyundai HI	OSG Shipmngt. UK

\* Cargo Containment System

Built	Vessel Name	Capacity (m³)	CCS*	Owner	Builder	Manager Name
2007	Al Jassasiya	145 700	GT	Maran Nakilat	Daewoo (DSME)	Maran Gas Maritime
2007	Al Ruwais	210 100	GT	Pronav GmbH	Daewoo (DSME)	Pronav Ship Mngt.
2007	Al Saifiya	210 134	GT	Pronav GmbH	Daewoo (DSME)	Pronav Ship Mngt.
2007	British Emerald	154 983	TZM	BP Shipping	Hyundai HI	BP Shipping
2007	Celestine River (ex Neva River)	147 608	KM	K-Line	Kawasaki HI Sakaide	K Line LNG Shpg.
2007	Cheikh El Mokrani	74 365	TZM	Hyproc Shipping Co.	Universal S.B.	Hyproc Shipping Co.
2007	Clean Energy	149 700	TZM	Dynagas LNG	Hyundai HI	Dynagas LNG
2007	Ejnan	145 000	TZM	Nippon Yusen Kaisha	Samsung HI	NYK LNG Shipmngt.
2007	Gaselys	154 472	CS1	ENGIE	Aker Yards S.A.	Gozocean S.A.
2007	Grace Acacia	149 786	TZM	Gozocean S.A.	Hyundai HI	Gozocean S.A.
2007	Grace Barleria	149 700	TZM	Nippon Yusen Kaisha	Hyundai HI	NYK LNG Shipmngt.
2007	Grand Elena	147 200	KM	Sovcomflot JSC	MHI Nagasaki	NYK LNG Shipmngt.
2007	LNG Borno	149 600	TZM	Nippon Yusen Kaisha	Samsung HI	NYK LNG Shipmngt.
2007	LNG Kano	149 600	GT	BW Gas	Daewoo (DSME)	BW Fleet Mngt
2007	LNG Ogun	149 600	TZM	Nippon Yusen Kaisha	Samsung HI	NYK LNG Shipmngt.
2007	LNG Ondo	148 300	GT	BW Gas	Daewoo (DSME)	BW Fleet Mngt
2007	Maran Gas Coronis	145 700	GT	Maran Nakilat	Daewoo (DSME)	Maran Gas Maritime
2007	Methane Alison Victoria	145 127	TZM	GasLog Partners	Samsung HI	GasLog LNG Services
2007	Methane Heather Sally	145 127	TZM	GasLog Partners	Samsung HI	GasLog LNG Services
2007	Methane Nile Eagle	145 144	GT	BG Group	Samsung HI	GasLog LNG Services
2007	Methane Shirley Elisabeth	145 127	TZM	GasLog Partners	Samsung HI	GasLog LNG Services
2007	Neo Energy	149 700	TZM	Tsakos Energy Nav	Hyundai HI	Hyundai Ocean
2007	Ob River (ex Clean Power)	149 700	TZM	Dynagas LNG	Hyundai HI	Dynagas LNG
2007	Seri Ayu	145 894	TZM	MISC	Samsung HI	MISC
2007	Seri Bakti	152 300	GT	MISC	MHI Nagasaki	MISC
2007	Seri Begawan	152 300	GT	MISC	MHI Nagasaki	MISC
2007	Sestao Knutsen	138 114	GT	Knutsen OAS Shipping	CNN - La Naval	Knutsen OAS Shipping
2007	Sun Arrows	19 100	KM	Maple LNG Transport	Kawasaki HI Sakaide	Mitsui O.S.K. Lines
2007	Tembek	216 000	TZM	Qatar Gas (Nakilat)	Samsung HI	OSG Shipmngt. UK
2008	Al Aamriya	210 168	GT	Nakilat, JC	Daewoo (DSME)	MOLLNG Europe
2008	Al Ghariya	210 100	GT	Pronav GmbH	Daewoo (DSME)	Pronav Ship Mngt.
2008	Al Gharrafa	216 224	TZM	Qatar Gas (Nakilat)	Hyundai HI	OSG Shipmngt. UK
2008	Al Hamla	216 000	TZM	Qatar Gas (Nakilat)	Samsung HI	OSG Shipmngt. UK
2008	Al Ghuwairiya	263 249	GT	Qatar Gas (Nakilat)	Daewoo (DSME)	STASCO (Shell)
2008	Al Hamla	216 000	TZM	Qatar Gas (Nakilat)	Samsung HI	OSG Shipmngt. UK
2008	Al Huwaila	217 000	TZM	Teekay LNG Partners	Samsung HI	Teekay Shpg (Gla)
2008	Al Ibhariyah	217 000	TZM	Teekay LNG Partners	Samsung HI	Teekay Shpg (Gla)
2008	Al Kharasah	217 000	TZM	Teekay LNG Partners	Samsung HI	Teekay Shpg (Gla)
2008	Al Khuwair	217 000	TZM	Teekay LNG Partners	Samsung HI	Teekay Shpg (Gla)
2008	Al Oraiq	210 100	GT	Nakilat, JC	Daewoo (DSME)	K Line LNG Shpg.
2008	Al Sahla	216 200	TZM	Nakilat, JC	Hyundai HI	NYK LNG Shipmngt.
2008	Al Shamal	217 000	TZM	Teekay LNG Partners	Samsung HI	Teekay Shpg (Gla)
2008	Al Thumama	216 200	TZM	Nakilat, JC	Hyundai HI	NYK LNG Shipmngt.
2008	Al Utouriya	215 000	TZM	Nakilat, JC	Hyundai HI	NYK LNG Shipmngt.
2008	Alto Acrux	147 798	KM	TEPCO	MHI Nagasaki	NYK LNG Shipmngt.
2008	Amur River (ex Clean Force)	149 743	TZM	Dynagas LNG	Hyundai HI	Dynagas LNG
2008	Arwa Spirit (ex Maersk Arwa)	165 500	TZM	Malt LNG	Samsung HI	Teekay Shpg (Gla)
2008	British Diamond	155 046	TZM	BP Shipping	Hyundai Samho	BP Shipping
2008	British Ruby	155 000	TZM	BP Shipping	Hyundai HI	BP Shipping
2008	Coral Methane	7 500	Other	Anthony Veder	Remontowa Repair	Anthony Veder
2008	Cygnus Passage	147 200	KM	Cygnus LNG Shipping	MHI Nagasaki	NYK LNG Shipmngt.
2008	Cheikh Bouamama	75 558	TZM	Hyproc Shipping Co.	Universal S.B.	Hyproc Shipping Co.

Built	Vessel Name	Capacity (m³)	CCS\*	Owner	Builder	Manager Name


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Built	Vessel Name	Capacity (m³)	CCS*	Owner	Builder	Manager Name
2011	Energy Horizon	177 441	KM	Tokyo LNG Tanker Co.	Kawasaki HI Sakaide	NYK LNG Shipmgnt.
2011	Lobito	161 337	TZM	MiNT LNG	Samsung HI	Teekay Shpg. (Gla)
2011	Malanje	160 400	TZM	MiNT LNG	Samsung HI	Mitsui & Co
2011	Norgas Conception	10 030	Other	Norgas Carriers	Taizhou Skaugen	Norgas Carriers
2011	Norgas Invention	10 030	Other	Norgas Carriers	Taizhou Skaugen	Norgas Carriers
2011	Norgas Unikum	12 000	Other	Teekay LNG Partners	AVIC Dingheng SB	Norgas Carriers
2011	Sonangol Benguela	160 500	GT	Sonangol	Daewoo (DSME)	Chevron Shpg. Co.
2011	Sonangol Etosha	160 786	GT	Sonangol	Daewoo (DSME)	Chevron Shpg. Co.
2011	Sonangol Sambizanga	160 785	GT	Sonangol	Daewoo (DSME)	Chevron Shpg. Co.
2011	Soyo	161 337	TZM	MiNT LNG	Samsung HI	Teekay Shpg. (Gla)
2011	Stena Clear Sky	173 593	GT	Stena Bulk	Daewoo (DSME)	Northern Marine Mngt
2011	Stena Crystal Sky	173 611	GT	Stena Bulk	Daewoo (DSME)	Northern Marine Mngt
2012	Coral Energy	15 600	Other	Anthony Veder	Neptun Werft	Anthony Veder
2012	Cubal	160 534	TZM	MiNT LNG	Samsung HI	NYK LNG Shipmgnt.
2012	Shen Hai	147 210	GT	CLNG	Hudong Zhonghua	CLNG
2013	Arctic Aurora	154 899	TZM	Dynagas LNG	Hyundai HI	Dynagas LNG
2013	Cool Voyager	160 372	TZM	Thenamaris	Samsung HI	B. Schulte (Hellas)
2013	Coral Anthelia	6 500	Other	Anthony Veder	AVIC Dingheng SB	Anthony Veder
2013	GasLog Santiago	155 000	TZM	GasLog	Samsung HI	GasLog LNG Services
2013	GasLog Seattle	155 000	TZM	GasLog	Samsung HI	GasLog LNG Services
2013	GasLog Shanghai	155 000	TZM	GasLog	Samsung HI	GasLog LNG Services
2013	GasLog Skagen	155 000	TZM	GasLog	Samsung HI	GasLog LNG Services
2013	GasLog Sydney	155 000	TZM	GasLog	Samsung HI	GasLog LNG Services
2013	Golar Celsius	160 000	TZM	Golar LNG	Samsung HI	Golar LNG
2013	Golar Seal	160 000	TZM	Golar LNG	Samsung HI	Golar LNG
2013	Grace Dahlia	177 630	KM	Nippon Yusen Kaisha Sakaide	Kawasaki HI Sakaide	NYK LNG Shipmgnt.
2013	Kakuyu Maru	2 538	Other	Tsurumi Sunmarine	Kawasaki HI Sakaide	Tsurumi Sunmarine
2013	Lena River	155 165	TZM	Dynagas Ltd.	Hyundai HI	Dynagas Ltd.
2013	Wilforce	156 007	GT	Awilco LNG	Daewoo (DSME)	Awilco LNG Technical
2013	Wilpride	156 007	GT	Awilco LNG	Daewoo (DSME)	Awilco LNG Technical
2013	Woodside Goode	159 662	GT	Maran Gas Maritime	Daewoo (DSME)	Maran Gas Maritime
2013	Woodside Rogers	160 668	GT	Maran Gas Maritime	Daewoo (DSME)	Maran Gas Maritime
2013	Yenisei River	155 000	TZM	Dynagas LNG	Hyundai HI	Dynagas LNG
2014	Adam LNG	161 870	TZM	Oman Shipping Co.	Hyundai HI	Oman Shipping Co.
2014	Amani	154 800	TZM	Brunei Gas Carriers	Hyundai HI	STASCO (Shell)
2014	Asia Energy	160 000	TZM	Chevron Transport	Samsung HI	Chevron Transport
2014	Asia Vision	160 000	TZM	Chevron Transport	Samsung HI	Chevron Transport
2014	Clean Ocean	161 881	TZM	Dynagas Ltd.	Hyundai HI	Dynagas Ltd.
2014	Clean Planet	161 814	TZM	Dynagas Ltd.	Hyundai HI	Dynagas Ltd.
2014	Cool Runner	160 000	TZM	Thenamaris	Samsung HI	B. Schulte (Hellas)
2014	Corcovado LNG	160 106	GT	Cardiff Marine Inc.	Daewoo (DSME)	TMS Cardiff Gas
2014	Esshu Maru	155 300	KM	Mitsubishi Corp	MHI Nagasaki	Mitsui O.S.K. Lines
2014	Gaslog Saratoga	155 000	TZM	GasLog	Samsung HI	GasLog LNG Services
2014	Golar Bear	160 000	TZM	Golar LNG	Samsung HI	Golar LNG
2014	Golar Crystal	160 000	TZM	Golar LNG	Samsung HI	Golar LNG
2014	Golar Frost	160 000	TZM	Golar LNG	Samsung HI	Golar LNG

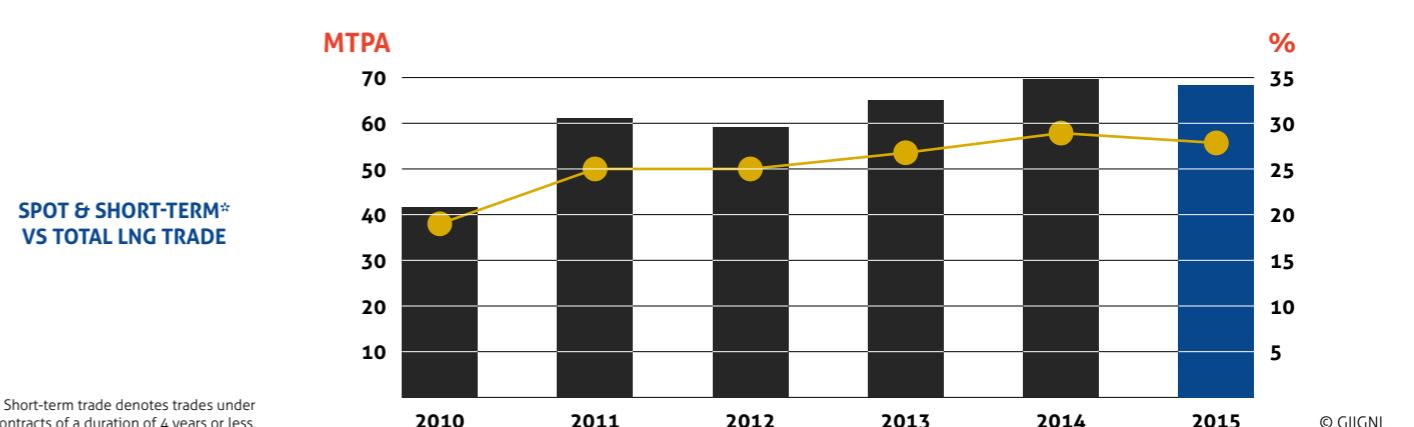
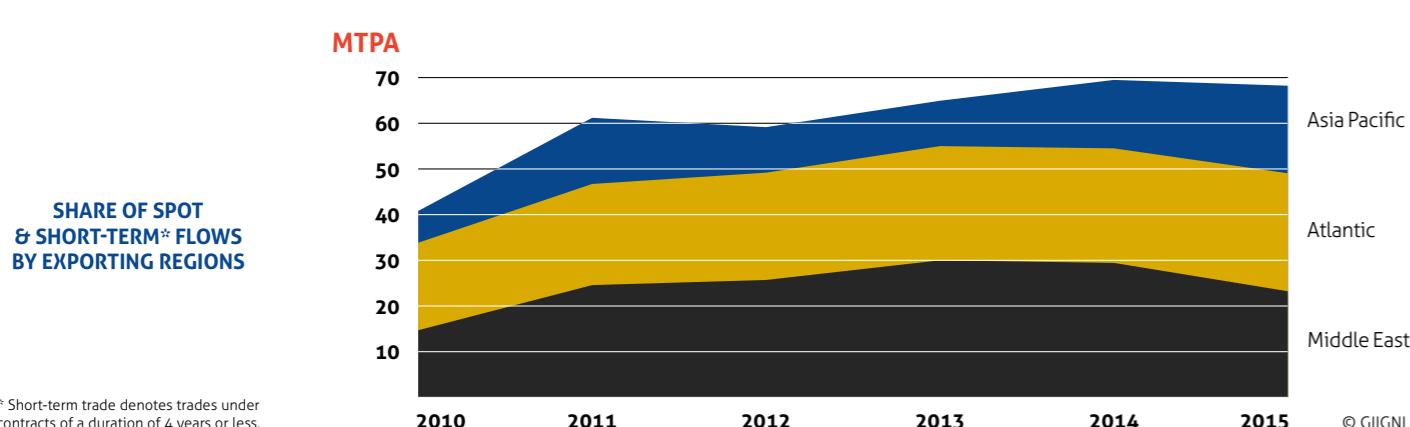
Built	Vessel Name	Capacity (m³)	CCS*	Owner	Builder	Manager Name
2014	Golar Glacier	162 000	TZM	Golar LNG	Hyundai Samho HI	Golar LNG
2014	Golar Penguin	160 000	TZM	Golar LNG	Samsung HI	Golar LNG
2014	Kita LNG	160 118	GT	Cardiff Marine Inc.	Daewoo (DSME)	TMS Cardiff Gas
2014	LNG Venus	155 873	KM	Osaka Gas	MHI Nagasaki	Osaka Gas
2014	Maran Gas Apollonia	161 870	TZM	Maran Nakilat	Hyundai Samho HI	Maran Nakilat
2014	Maran Gas Delphi	159 800	GT	Maran Nakilat	Daewoo (DSME)	Maran Nakilat
2014	Maran Gas Efessos	159 800	GT	Maran Nakilat	Daewoo (DSME)	Maran Nakilat
2014	Maran Gas Posidonia	161 870	TZM	Maran Nakilat	Hyundai Samho HI	Maran Nakilat
2014	Pacific Arcadia	147 200	KM	Nippon Yusen Kaisha	MHI Nagasaki	Nippon Yusen Kaisha
2014	Palu LNG	160 000	GT	Cardiff Marine Inc.	Daewoo (DSME)	TMS Cardiff Gas
2014	Pskov	170 200	GT	Sovcomflot JSC	STX SB (Jinhae)	Unicom Mngt
2014	Seishu Maru	155 300	KM	Mitsubishi Corp	MHI Nagasaki	Nippon Yusen Kaisha
2014	Solaris	155 000	TZM	GasLog	Samsung HI	GasLog LNG Services
2014	Velikiy Novgorod	170 567	GT	Sovcomflot JSC	STX SB (Jinhae)	Unicom Mngt
2014	Yari LNG	160 000	GT	Cardiff Marine Inc.	Daewoo (DSME)	TMS Cardiff Gas
2015	Amadi	154 800	TZM	Brunei Gas Carriers	Hyundai HI	STASCO (Shell)
2015	Asia Endeavour	160 000	TZM	Chevron Transport	Samsung HI	Chevron Transport
2015	Asia Excellence	160 000	TZM	Chevron Transport	Samsung HI	Chevron Transport
2015	Beidou Star	172 000	GT	Mitsui O.S.K. Lines	Hudong Zhonghua	Mitsui O.S.K. Lines
2015	BW Pavilion Leara	161 870	TZM	BW Gas	Hyundai HI	BW Gas
2015	BW Pavilion Vanda	161 870	TZM	BW Gas	Hyundai HI	BW Fleet Mngt
2015	Clean Horizon	161 870	TZM	Dynagas Ltd.	Hyundai HI	Dynagas Ltd.
2015	Cool Explorer	161 352	TZM	Thenamaris	Samsung HI	B. Schulte (Cyprus)
2015	Energy Atlantic	159 924	GT	Alpha Tankers & Frt.	STX SB (Jinhae)	Alpha Tankers & Frt.
2015	GasLog Salem	155 000	TZM	GasLog	Samsung HI	GasLog LNG Services
2015	Golar Ice	160 000	TZM	Golar LNG	Samsung HI	Golar Wilhelmsen
2015	Golar Kelvin	162 000	TZM	Golar LNG	Hyundai Samho HI	Golar LNG
2015	Golar Snow	160 000	TZM	Golar LNG	Samsung HI	Golar Wilhelmsen
2015	Hai Yang Shi You 301	31 043	Other	CNOOC EnerTech	Jiangnan SY Group	CNOOC EnerTech
2015	JS Ineos Ingenuity	27 566	Other	Evergas AS	Sinopacific Offshore	Evergas AS
2015	JS Ineos Insight	27 566	Other	Evergas AS	Sinopacific Offshore	Evergas AS
2015	JS Ineos Intrepid	27 566	Other	Evergas AS	Sinopacific Dayang	Evergas AS
2015	LNG Bonny II	176 760	TZM	Bonny Gas Transport	Hyundai HI	Bonny Gas Transport
2015	LNG Finimal II	174 900	GT	Bonny Gas Transport	Samsung HI	Bonny Gas Transport
2015	LNG Jurojin	155 300	KM	Mitsui O.S.K. Lines	MHI Nagasaki	Mitsui O.S.K. Lines
2015	LNG Port Harcourt II	174 900	GT	Bonny Gas Transport	Samsung HI	Bonny Gas Transport
2015	Maran Gas Alexandria	161 870	TZM	Maran Gas Maritime	Hyundai Samho HI	Maran Gas Maritime
2015	Maran Gas Lindos	159 800	GT	Maran Gas Maritime	Daewoo (DSME)	Maran Gas Maritime
2015	Maran Gas Mystras	159 800	GT	Maran Gas Maritime	Daewoo (DSME)	Maran Gas Maritime
2015	Maran Gas Sparta	161 870	TZM	Maran Gas Maritime	Hyundai Samho HI	Maran Gas Maritime
2015	Maran Gas Troy	159 800	GT	Maran Gas Maritime	Daewoo (DSME)	Maran Gas Maritime
2015	Papua	172 000	GT	Mitsui O.S.K. Lines	Hudong Zhonghua	MOL LNG Europe
2015	SCF Melampus	170 200	GT	Sovcomflot JSC	STX SB (Jinhae)	Unicom Mngt
2015	SCF Mitre	170 200	GT	Sovcomflot JSC	STX SB (Jinhae)	Unicom Mngt
2015	Southern Cross	172 000	GT	Mitsui O.S.K. Lines	Hudong Zhonghua	MOL LNG Europe

\* Cargo Containment System

Source: Clarkson Research 2016

# SPOT AND SHORT-TERM VOLUMES ( $10^3$ T) RECEIVED IN 2015 BY THE IMPORTING COUNTRIES FROM THE EXPORTING COUNTRIES

	Algeria	Equ. Guin.	Nigeria	Norway	Trinidad& Tobago	Abu Dhabi	Oman	Qatar	Yemen	Australia	Brunei	USA	Indonesia	Malaysia	Papua New Guinea	Peru	Russia	Re-exports received	Re-exports loaded	Net imports
Japan	757	319	4443	61	60	678	126	5 562	219	2 028	573	157	1 397	877	1 093	-	1 766	391	-	20507
India	-	579	2 002	34	227	51	566	4 277	299	874	-	-	302	123	70	59	-	435	-198	9698
South Korea	315	-	1 011	-	55	-	245	476	-	1 229	-	-	1 653	-	76	-	700	477	-193	6045
China	443	63	308	-	58	-	65	-	64	353	-	-	202	1 886	-	-	192	62	-	3697
Taiwan	-	65	59	67	-	-	-	1 853	-	264	-	168	401	-	134	-	252	62	-	3326
Malaysia	389	63	170	122	-	-	127	126	-	332	-	-	-	-	-	-	-	-	14	1342
Pakistan	-	176	180	-	-	-	-	368	-	196	-	-	-	-	-	-	-	126	-	1046
Thailand	-	-	132	-	-	-	-	96	-	206	-	-	66	127	-	-	-	-	-	627
Indonesia	-	-	-	-	-	-	-	-	-	-	-	-	391	-	-	-	-	-	-	391
Singapore	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	68	-195	90
<b>Asia</b>	<b>1 904</b>	<b>1 265</b>	<b>8 305</b>	<b>284</b>	<b>399</b>	<b>729</b>	<b>1 129</b>	<b>12 758</b>	<b>582</b>	<b>5 630</b>	<b>573</b>	<b>325</b>	<b>4 483</b>	<b>3 012</b>	<b>1 372</b>	<b>59</b>	<b>2 912</b>	<b>1 634</b>	<b>-586</b>	<b>46 770</b>
U.K.	155	-	-	-	174	-	-	2 114	-	-	-	-	-	-	-	-	-	-	-198	2245
Turkey	-	-	193	132	116	-	-	1 236	-	-	-	-	-	-	-	-	61	-	-	1739
Spain	763	-	746	174	114	-	62	472	-	-	-	-	-	-	-	-	-	-	-1 160	1172
Portugal	159	58	-	62	60	-	-	170	-	-	-	-	-	-	-	-	-	-	-258	249
Greece	-	-	59	111	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	170
Sweden	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	145	-	145	
Italy	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	43	-	66	
France	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-359	-359
Netherlands	160	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-836	-676
Belgium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-826	-826
<b>Europe</b>	<b>1 260</b>	<b>58</b>	<b>999</b>	<b>479</b>	<b>464</b>	<b>-</b>	<b>62</b>	<b>3 992</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>250</b>	<b>-3 637</b>	<b>3 926</b>	
Brazil	-	189	1 645	562	911	49	-	1 030	-	-	-	-	-	-	-	-	393	-	-	4 777
Argentina	-	117	803	491	1 832	-	-	356	-	-	-	-	-	-	-	-	479	-	-	4 078
Puerto Rico	-	-	181	-	356	-	-	-	-	-	-	-	-	-	-	-	66	-	-	602
Mexico	-	-	174	-	218	-	-	-	-	-	-	-	-	-	-	123	-	45	561	
USA	-	-	-	126	400	-	-	154	-	-	-	-	-	-	-	-	-	-	-163	517
Chile	-	-	-	-	283	-	-	-	-	-	-	-	-	-	-	-	-	-	-	283
Canada	-	-	-	-	205	-	-	-	-	-	-	-	-	-	-	59	-	-	264	
Domin Rep	-	-	-	-	227	-	-	-	-	-	-	-	-	-	-	-	-	-	-	227
<b>Americas</b>	<b>-</b>	<b>306</b>	<b>2 803</b>	<b>1 178</b>	<b>4 432</b>	<b>49</b>	<b>-</b>	<b>1 386</b>	<b>154</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>123</b>	<b>-</b>	<b>1 042</b>	<b>-163</b>	<b>11 309</b>
Egypt	341	134	64	60	54	-	-	1 356	-	70	-	-	-	-	-	-	521	-	-	2 600
Kuwait	-	65	266	-	124	-	447	365	-	130	64	-	-	70	-	-	377	-	-	1 909
Dubai	71	-	-	65	106	-	433	-	208	-	-	-	65	-	-	-	288	-	-	1 237
Jordan	-	-	256	-	-	-	-	-	-	-	-	-	-	-	-	-	261	-	-	517
Israel	-	-	-	-	109	-	-	-	-	-	-	-	-	-	-	-	12	-	-	121
<b>Middle East</b>	<b>412</b>	<b>199</b>	<b>586</b>	<b>60</b>	<b>352</b>	<b>106</b>	<b>447</b>	<b>2 154</b>	<b>-</b>	<b>409</b>	<b>64</b>	<b>-</b>	<b>65</b>	<b>70</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1 460</b>	<b>-</b>	<b>6 385</b>
<b>Total</b>	<b>3 577</b>	<b>1 827</b>	<b>12 693</b>	<b>2 001</b>	<b>5 648</b>	<b>884</b>	<b>1 638</b>	<b>20 290</b>	<b>736</b>	<b>6 039</b>	<b>638</b>	<b>325</b>	<b>4 548</b>	<b>3 082</b>	<b>1 372</b>	<b>182</b>	<b>2 912</b>	<b>4 386</b>	<b>-4 386</b>	<b>68 390</b>



# QUANTITIES (IN 10<sup>6</sup> T) RECEIVED IN 2015 BY THE IMPORTING COUNTRIES FROM THE EXPORTING COUNTRIES

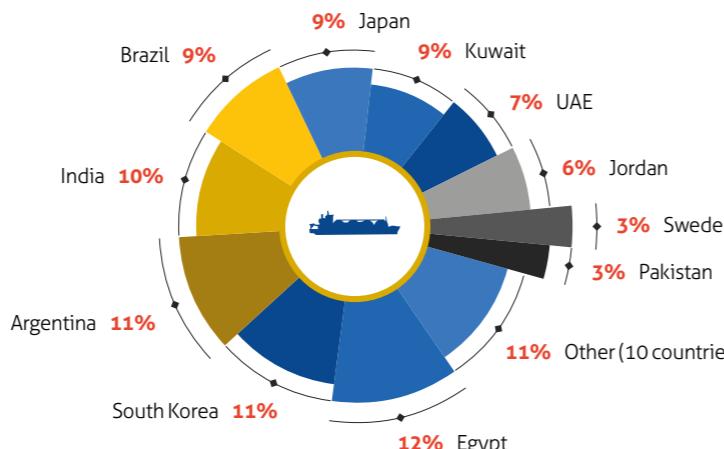
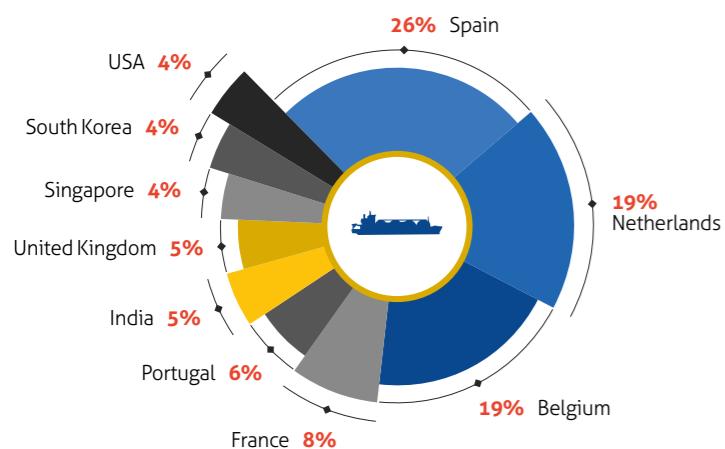
	Algeria	Equ. Guin.	Nigeria	Norway	Trinidad& Tobago	Abu Dhabi	Oman	Qatar	Yemen	Australia	Brunei	USA	Indonesia	Malaysia	Papua New Guinea	Peru	Russia	Re-exports received	Re-exports loaded	Net imports
Japan	0.76	0.39	4.62	0.06	0.06	5.44	2.26	14.64	0.22	18.62	4.23	0.16	5.85	15.57	4.06	0.15	7.57	0.39	-	85.05
South Korea	0.38	0.71	1.26	-	0.05	-	4.03	12.62	0.58	1.82	1.24	-	3.87	3.80	0.22	-	2.55	0.48	-0.19	33.42
China	0.44	0.20	0.43	0.06	0.06	-	0.06	5.07	0.27	5.76	-	-	2.91	2.98	1.52	-	0.19	0.06	-	20.02
India	-	0.77	2.00	0.03	0.23	0.11	0.57	8.92	0.30	0.87	-	-	0.30	0.12	0.07	0.06	-	0.44	-0.20	14.60
Taiwan	-	0.06	0.06	0.07	-	-	-	6.93	-	0.26	0.69	0.17	2.27	2.31	1.31	-	0.25	0.06	-	14.45
Thailand	-	-	0.13	-	-	-	-	2.17	-	0.21	-	-	0.07	0.13	-	-	-	-	-	2.70
Indonesia	-	-	-	-	-	-	-	-	-	-	-	-	2.18	-	-	-	-	-	-	2.18
Singapore	-	0.59	-	-	0.11	-	-	0.47	-	0.76	-	-	0.27	-	-	-	-	0.07	-0.20	2.08
Malaysia	0.39	0.06	0.17	0.12	-	-	0.13	0.13	-	0.33	0.19	-	-	-	-	-	0.01	-	-	1.53
Pakistan	-	0.18	0.18	-	-	-	-	0.37	-	0.20	-	-	-	-	-	-	0.13	-	-	1.05
<b>Asia</b>	<b>1.97</b>	<b>2.96</b>	<b>8.86</b>	<b>0.35</b>	<b>0.51</b>	<b>5.55</b>	<b>7.05</b>	<b>51.31</b>	<b>1.37</b>	<b>28.84</b>	<b>6.36</b>	<b>0.32</b>	<b>17.71</b>	<b>24.92</b>	<b>7.18</b>	<b>0.21</b>	<b>10.57</b>	<b>1.64</b>	<b>-0.59</b>	<b>177.07</b>
U.K.	0.29	-	-	0.13	0.17	-	-	9.69	-	-	-	-	-	-	-	-	-	-0.2	-	10.08
Spain	2.74	-	2.86	0.53	0.84	-	0.06	2.25	-	-	-	-	-	-	-	0.71	-	-	-1.16	8.82
Turkey	2.81	-	0.99	0.13	0.12	-	-	1.24	-	-	-	-	-	-	-	-	0.06	-	-	5.35
France	3.29	-	0.71	0.33	-	-	-	0.19	-	-	-	-	-	-	-	0.20	-	-0.36	4.35	
Italy	0.02	-	-	-	-	-	-	4.25	-	-	-	-	-	-	-	-	0.04	-	-	4.32
Belgium	0.00	-	-	-	-	-	-	2.69	-	-	-	-	-	-	-	-	-	-0.83	-	1.87
Portugal	0.16	0.06	0.84	0.06	0.06	-	-	0.17	-	-	-	-	-	-	-	-	-	-0.26	-	1.09
Netherlands	0.16	-	-	0.7	-	-	-	0.61	-	-	-	-	-	-	-	-	-	-	-0.84	0.63
Greece	0.28	-	0.06	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.45
Lithuania	-	-	-	0.32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.32
Sweden	-	-	-	0.15	-	-	-	-	-	-	-	-	-	-	-	0.15	-	-	0.29	
<b>Europe</b>	<b>9.75</b>	<b>0.06</b>	<b>5.45</b>	<b>2.45</b>	<b>1.19</b>	<b>-</b>	<b>0.06</b>	<b>21.09</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.91</b>	<b>-</b>	<b>0.25</b>	<b>-3.64</b>	<b>37.57</b>
Mexico	-	-	1.37	0.06	0.26	-	-	0.56	-	-	-	-	0.19	-	-	2.45	-	0.05	-	4.94
Brazil	-	0.19	1.64	0.56	0.91	0.05	-	1.03	-	-	-	-	-	-	-	-	0.39	-	-	4.78
Argentina	-	0.12	0.80	0.49	1.83	-	-	0.36	-	-	-	-	-	-	-	-	0.48	-	-	4.08
Chile	-	0.13	-	0.11	2.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.74
USA	-	-	-	0.25	1.46	-	-	0.15	-	-	-	-	-	-	-	-	-	-0.16	-	1.70
Puerto Rico	-	-	-	0.18	-	0.90	-	-	-	-	-	-	-	-	-	-	0.07	-	-	1.15
Dominican Rep.	-	-	-	-	0.87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.87
Canada	-	-	-	-	0.43	-	-	-	-	-	-	-	-	-	-	-	0.06	-	-	0.49
<b>Americas</b>	-	<b>0.43</b>	<b>4.00</b>	<b>1.48</b>	<b>9.16</b>	<b>0.05</b>	<b>-</b>	<b>1.95</b>	<b>0.15</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.19</b>	<b>-</b>	<b>-</b>	<b>2.45</b>	<b>-</b>	<b>1.04</b>	<b>-0.16</b>	<b>20.73</b>
Kuwait	-	0.07	0.40	-	0.42	-	0.45	0.81	-	0.26	0.13	-	0.06	0.07	-	-	-	0.38	-	3.04
Egypt	0.34	0.13	0.06	0.06	0.05	-	-	1.36	-	0.07	-	-	-	-	-	-	0.52	-	-	2.60
Dubai	0.07	-	-	-	0.18	0.11	-	1.29	-	0.21	-	-	0.06	-	-	-	0.29	-	-	2.21
Jordan	-	-	0.74	-	0.19	-	-	0.59	-	0.07	-	-	-	-	-	-	0.26	-	-	1.85
Israel	-	-	-	-	0.11	-	-	-	-	-	-	-	-	-	-	-	0.01	-	-	0.12
<b>Middle East</b>	<b>0.41</b>	<b>0.20</b>	<b>1.20</b>	<b>0.06</b>	<b>0.95</b>	<b>0.11</b>	<b>0.45</b>	<b>4.05</b>	<b>-</b>	<b>0.61</b>	<b>0.13</b>	<b>-</b>	<b>0.13</b>	<b>0.07</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1.46</b>	<b>-</b>	<b>9.82</b>
<b>Total</b>	<b>12.13</b>	<b>3.65</b>	<b>19.50</b>	<b>4.33</b>	<b>11.81</b>	<b>5.70</b>	<b>7.56</b>	<b>78.4</b>	<b>1.52</b>	<b>29.45</b>	<b>6.48</b>	<b>0.32</b>	<b>18.03</b>	<b>24.99</b>	<b>7.18</b>	<b>3.57</b>	<b>10.57</b>	<b>4.39</b>	<b>-4.39</b>	<b>245.19</b>

# INTERNATIONAL RE-EXPORTS

Export country	Import country	Re-exported volumes(MT)	Total(MT)
Belgium	Argentina	0.04	0.83
	Egypt	0.07	
	India	0.21	
	Jordan	0.07	
	Puerto Rico	0.07	
	Singapore	0.07	
	South Korea	0.07	
	Sweden	0.11	
	Taiwan	0.06	
	Turkey	0.06	
France	Argentina	0.04	0.36
	Egypt	0.13	
	Japan	0.06	
	Kuwait	0.12	
	Malaysia	0.01	
Netherlands	Argentina	0.15	0.84
	Brazil	0.02	
	Egypt	0.06	
	India	0.10	
	Jordan	0.13	
	Mexico	0.05	
	Sweden	0.03	
	South Korea	0.08	
	UAE	0.22	
	Portugal	0.10	0.26
Spain	Brazil	0.16	1.16
	Argentina	0.13	
	Brazil	0.07	
	Canada	0.06	
	Egypt	0.13	
	India	0.12	
	Israel	0.01	
	Italy	0.04	
	Japan	0.20	
	Jordan	0.06	
United Kingdom	Kuwait	0.13	0.20
	Pakistan	0.07	
	South Korea	0.13	
	Brazil	0.07	
	Pakistan	0.06	
Europe	UAE	0.07	0.07
	3.64		



Export country	Import country	Re-exported volumes(MT)	Total (MT)	
USA	Argentina	0.03	0.16	
	Brazil	0.07		
	Egypt	0.06		
<b>Americas</b>				
<b>0.16</b>				
Asia	Egypt	0.07	0.19	
	Kuwait	0.07		
	South Korea	0.07		
	Singapore	0.07		
	South Korea	0.13		
	China	0.06		
	South Korea	0.07		
	Kuwait	0.06		
	Japan	0.07		
	China	0.06		
World	<b>0.59</b>			
	<b>4.39</b>			



# LNG IMPORTS 2015 (NET OF RE-EXPORTS)

	10 <sup>6</sup> m <sup>3</sup> liquid	10 <sup>6</sup> T	10 <sup>9</sup> m <sup>3</sup> (n) gaseous	Share (%)	Var. 2015/2014 (%)
Belgium	4.13	1.87	2.35	0.8%	93.9%
France	9.62	4.35	5.51	1.8%	-5.0%
Greece	0.99	0.45	0.57	0.2%	18.6%
Italy	9.53	4.32	5.44	1.8%	31.9%
Lithuania	0.71	0.32	0.41	0.1%	193.4%
Netherlands	1.40	0.63	0.80	0.3%	50.5%
Portugal	2.41	1.09	1.38	0.4%	12.5%
Spain	19.61	8.82	11.23	3.6%	11.7%
Sweden	0.65	0.29	0.37	0.1%	N/A
Turkey	11.83	5.35	6.77	2.2%	-1.9%
U.K.	22.26	10.08	12.71	4.1%	20.1%
<b>Europe</b>	<b>83.15</b>	<b>37.57</b>	<b>47.54</b>	<b>15.3%</b>	<b>15.8%</b>

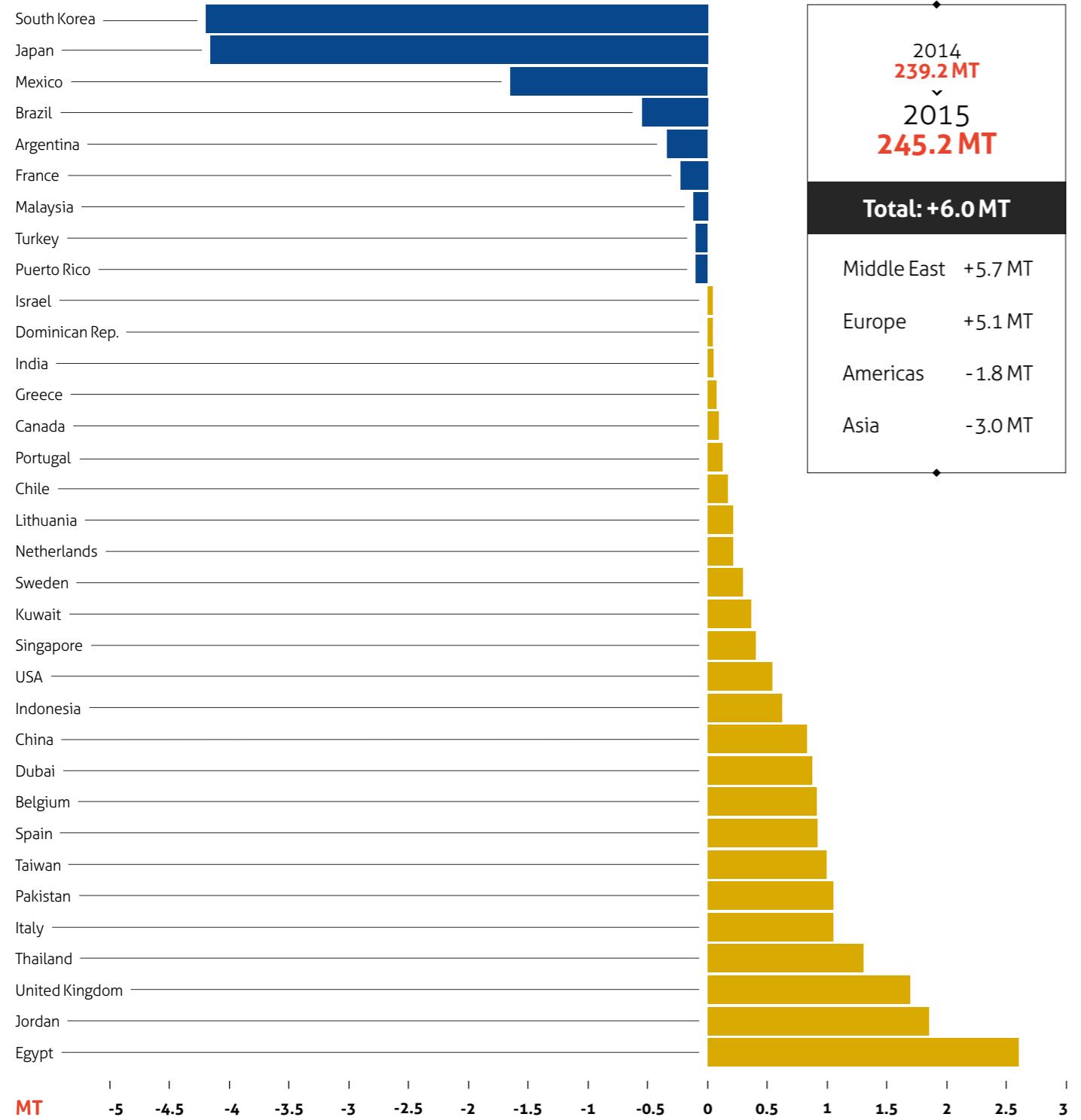
	10 <sup>6</sup> m <sup>3</sup> liquid	10 <sup>6</sup> T	10 <sup>9</sup> m <sup>3</sup> (n) gaseous	Share (%)	Var. 2015/2014 (%)
Argentina	9.23	4.08	5.32	1.7%	-7.7%
Brazil	10.68	4.78	6.13	1.9%	-10.4%
Chile	6.34	2.74	3.69	1.1%	6.7%
Dominican Rep	2.02	0.87	1.18	0.4%	5.3%
Mexico	10.96	4.94	6.28	2.0%	-25.0%
Puerto Rico	2.64	1.15	1.53	0.5%	-8.2%
Canada	1.12	0.49	0.65	0.2%	21.6%
USA	3.93	1.70	2.28	0.7%	46.8%
<b>Americas</b>	<b>46.92</b>	<b>20.73</b>	<b>27.06</b>	<b>8.5%</b>	<b>-8.0%</b>

	10 <sup>6</sup> m <sup>3</sup> liquid	10 <sup>6</sup> T	10 <sup>9</sup> m <sup>3</sup> (n) gaseous	Share (%)	Var. 2015/2014 (%)
China	43.90	20.02	25.00	8.2%	5.5%
India	32.25	14.60	18.42	6.0%	0.4%
Indonesia	4.87	2.18	2.79	0.9%	39.9%
Japan	187.85	85.05	106.87	34.7%	-4.7%
Malaysia	3.37	1.53	1.92	0.6%	-7.2%
Pakistan	2.31	1.05	1.32	0.4%	N/A
Singapore	4.61	2.08	2.63	0.8%	23.6%
South Korea	73.60	33.42	41.98	13.6%	-11.2%
Taiwan	31.86	14.45	18.18	5.9%	7.4%
Thailand	5.94	2.70	3.39	1.1%	92.9%
<b>Asia</b>	<b>390.56</b>	<b>177.07</b>	<b>222.49</b>	<b>72.2%</b>	<b>-1.7%</b>
<b>Total</b>	<b>542.36</b>	<b>245.19</b>	<b>309.52</b>	<b>100%</b>	<b>2.5%</b>

	10 <sup>6</sup> m <sup>3</sup> liquid	10 <sup>6</sup> T	10 <sup>9</sup> m <sup>3</sup> (n) gaseous	Share (%)	Var. 2015/2014 (%)
Algeria	26.80	12.13	15.35	4.9%	-4.6%
Equatorial Guinea	8.28	3.65	4.79	1.5%	8.0%
Nigeria	43.15	19.50	24.64	8.0%	1.9%
Norway	9.66	4.33	5.54	1.8%	22.0%
Trinidad & Tobago	27.39	11.81	15.94	4.8%	-9.8%
<b>Atlantic Basin</b>	<b>115.28</b>	<b>51.43</b>	<b>66.26</b>	<b>21.0%</b>	<b>-2.1%</b>
<b>Total</b>	<b>542.36</b>	<b>245.19</b>	<b>309.52</b>	<b>100%</b>	<b>2.5%</b>

	10<sup>6</sup> m<sup>3</sup> liquid	10<sup>6</sup> T	10<sup>9</sup> m<sup>3</sup>

# LNG IMPORTS: 2015 VS 2014



2014  
239.2 MT

2015  
245.2 MT

Total: +6.0 MT

Middle East +5.7 MT

Europe +5.1 MT

Americas -1.8 MT

Asia -3.0 MT



# LIQUEFACTION PLANTS

In 2015, global liquefaction capacity increased by around 14.4 MTPA to reach a total nameplate capacity of 308 MTPA at year-end.

Three projects started up in 2015: GLNG (3.9 MTPA) and QCLNG (8.5 MTPA) in Australia, Donggi-Senoro in Indonesia (2 MTPA).

Production gains were partially offset by plant shut-downs in Angola and Egypt and force majeure events in Yemen.

Five FIDs were taken during the year, 4 of which in the United States (Sabine Pass Train 5, Corpus Christi Trains 1 & 2, Freeport Train 3) and 1 in Cameroon (GoFLNG.)

At the end of the year, approximately 140 MTPA of new liquefaction capacity were under construction, 62 MTPA of which were located in the United States and 50 MTPA in Australia.

In 2016, around 42 MTPA of new liquefaction capacity are expected to come online, 28 MTPA of which will be located in Australia.



**Angola**

In Angola, the liquefaction facility has remained shut down for repair works since April 2014. The plant has started recommissioning and should resume exports in the first half of 2016.

**Australia**

In Australia, 2 projects—Queensland Curtis (QCLNG) Train 2 and GLNG Train 1—started operations in 2015. Around 50 MTPA of liquefaction capacity were under construction in the country at the end of the year, 28 MTPA of which were scheduled to come on stream in 2016.

After BG Group's **QCLNG** started production from Train 1 in 2014, Train 2 loaded its first LNG cargo in July 2015. BG Group has formally taken operatorship of the QCLNG facility from contractor Bechtel after commercial operations were announced for Train 1 in May 2015, followed later by a similar announcement for Train 2 in November 2015. Full production capacity of 8.5 MTPA should be reached by 2016.

The 7.8 MTPA **GLNG** project (a joint venture of Santos, Petronas Total, and Kogas, previously "Gladstone" project) exported its first cargoes from Train 1 in the last quarter of 2015.

In addition to the ramp-up of QCLNG and GLNG in 2016, two projects should start commercial deliveries during the year: **Australia Pacific LNG** (2 trains, 9 MTPA) and **Gorgon LNG** (3 trains, 15.6 MTPA). Led by ConocoPhilips, **Australia Pacific LNG** announced first exports from Train 1 in January 2016.

At the end of 2015, the first cargoes from Train 1 of Chevron's **Gorgon** project were expected in the first quarter of 2016, while construction is in progress for the two other trains.

In **Wheatstone**, Chevron's other Australian project, first LNG volumes of the 4.5 MTPA Train 1 are expected around mid-2017.

In the **Ichthys** project (Inpex, Total, and other Japanese partners), construction is still underway and production from Train 1 (now 4.5 MTPA) has been further delayed to 2017. Shell's giant FLNG Prelude (3.6 MTPA) remains under construction, with expected start-up in 2017.

**Cameroon**

In September, Golar and Perenco took FID on their near-shore **GoFLNG** project. The project will convert the LNG tanker "Golar Hilli". The total production (1.2 MTPA) will be off-taken by Gazprom under an 8-year agreement.

**Canada**

In Canada, over 340 MTPA of liquefaction projects have been proposed, a large majority of which are located in British Columbia, on the West Coast.

In Prince Rupert, Petronas took a conditional FID on its 12 MTPA **Pacific Northwest LNG** project, subject to approval by the Legislative Assembly of British Columbia, and to a positive regulatory decision on the environmental assessment by the Government of Canada.

In Kitimat, two projects have completed FEED:

- The **LNG Canada** project led by Shell, PetroChina, Kogas and Mitsubishi. The 12 MTPA project has received a construction permit from the government of British Columbia and a 40 year export license from the NEB. However, partners have decided to put the project's FID on hold due to the weak pricing conditions.
- The **Douglas Channel LNG** project, led by a consortium which includes AltaGas, EDFT, Exmar and Idemitsu. The 0.5 MTPA barge mounted FLNG project is targeting to start commercial operations in 2018.

Among the numerous other Canadian projects, Kitimat LNG (developed by Chevron and Woodside on the West coast) and Goldboro LNG (developed by Pieridae Energy on the East coast) were reported to be in FEED stage at the end of 2015.

**Colombia**

In Colombia, the start-up of the 0.5 MTPA **Carribean FLNG** (Pacific Rubiales), initially planned for 2015, has been formally deferred due to low prices. The 0.5 MTPA HOA signed by Pacific Rubiales with Gazprom Marketing & Trading in 2014 was reported to be cancelled at the end of 2015.

**Egypt**

In Egypt, the Idku and Damietta plants did not export any cargoes during the year due to feedgas shortage as priority has been given to domestic demand. Eni discovered a new field offshore of 30 Tcf (Zohr). This new discovery could free up gas for LNG exports from 2020 onwards.

**Equatorial Guinea**

In Equatorial Guinea, Ophir Energy and Schlumberger are planning to take FID on the 2.2 MTPA **FortunaFLNG** project in 2016. The project will consist in converting the 126 000 m<sup>3</sup> Golar Gandria LNG carrier. Developers are targeting 2019 as the start-up for commercial operations.

**Indonesia**

In Indonesia, the Arun export plant has been converted into a 3 MTPA import terminal.

The 2 MTPA **Donggi-Senoro** project started producing in October 2015. On the island of Sulawesi Hong-Kong-based Energy World Corporation (EWC) is finalizing construction of a 0.5 MTPA liquefaction project (**Sengkang**). Start-up could take place in June 2016.

**Malaysia**

At the existing Bintulu plant, a 9th liquefaction train of 3.6 MTPA is currently under construction.

In addition, two projects led by Petronas are being built: a 1.2 MTPA FLNG expected to start producing in 2016 and a second 1.5 MTPA FLNG (Rotan FLNG) scheduled to start production in 2018.

**Papua New Guinea**

In 2015, the 6.9 MTPA plant in Papua New Guinea reached full production capacity.

**Russia**

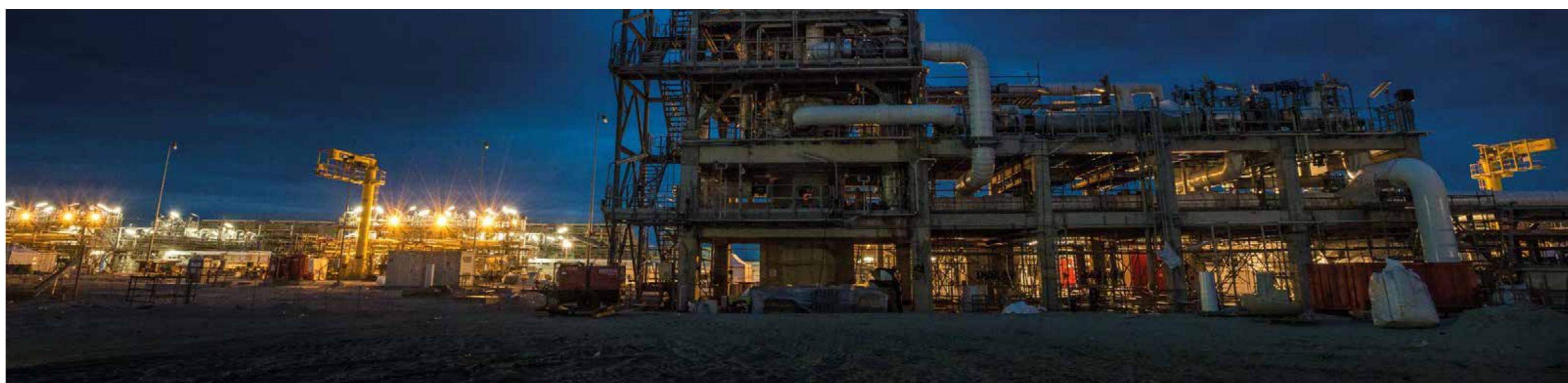
The **Yamal LNG** project is under construction and the first volumes from Train 1 are expected around 2018/2019. In June, Engie and Novatek signed a 1 MTPA FOB SPA of a 23 year duration. This represents 14 cargoes per year which will be delivered by the icebreaker LNG carriers before transshipment at the Montoir-de-Bretagne LNG terminal in France.



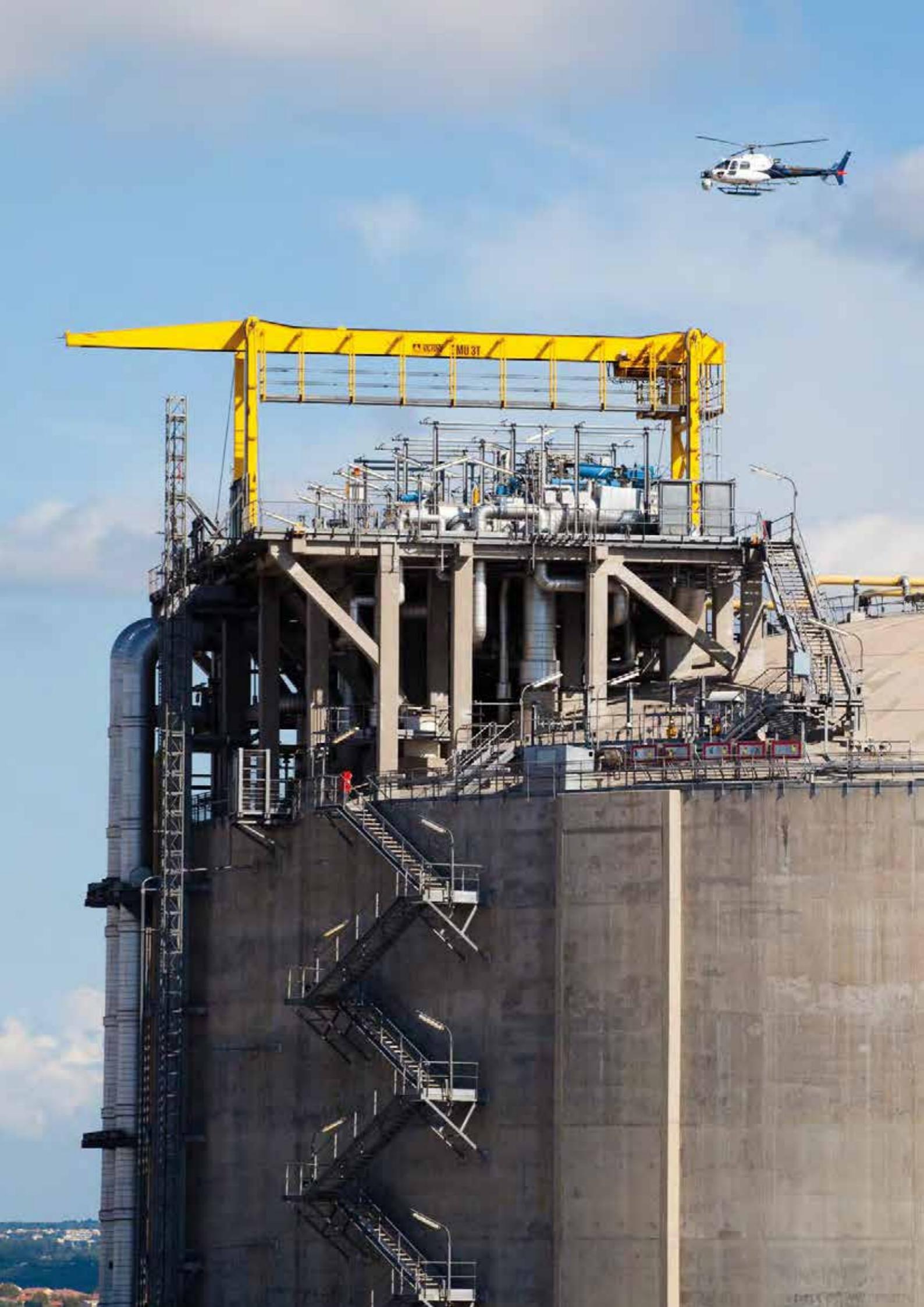
## LIQUEFACTION PLANTS AT THE START OF 2016

Country	Site	Liquefaction Number of trains	Nominal capacity in 10 <sup>6</sup> t/y	Storage Number of tanks	Storage Total capacity in MTPA	Owner(s)	Operator	LT Buyer(s)	Start-up date
<b>ATLANTIC BASIN</b>									
ALGERIA	Arzew-Bethioua GL 1Z	6	7.9	3	300 000	Sonatrach	Sonatrach	ENGIE, Botas, ENI, Iberdrola, Depa, Cepsa Gas, Endesa	1978
	Arzew-Bethioua GL 2Z	6	8.2	3	300 000	Sonatrach	Sonatrach	ENGIE, Botas, ENI, Iberdrola, Depa, Cepsa Gas, Endesa	1981
	Arzew-Bethioua GL 3Z	1	4.7	2	320 000	Sonatrach	Sonatrach	ENGIE, Botas, ENI, Iberdrola, Depa, Cepsa Gas, Endesa	2014
	Skikda - GL1K/GL2K	3	3.2	4	280 000	Sonatrach	Sonatrach	ENGIE, Botas, ENI, Iberdrola, Depa, Cepsa Gas, Endesa	1972-1981
	Skikda GL1K megatrain	1	4.5	1	150 000	Sonatrach	Sonatrach	ENGIE, Botas, ENI, Iberdrola, Depa, Cepsa Gas, Endesa	2013
ANGOLA (STOPPED)	Soyo	1	5.2	2	320 000	Angola LNG (Chevron 36.4%, Sonangol 22.8%, BP 13.6%, ENI 13.6%, Total 13.6%)	Chevron	Angola LNG	2013
	Damietta	1	5	2	300 000	Union Fenosa Gas (80%), EGPC (10%), EGAS (10%)	SEGAS SERVICES	BP, Union Fenosa Gas	2005
EGYPT (STOPPED)	Idku	2	7.2	2	280 000	T1: BG (35.5%), Petronas (35.5%), ENGIE (5%), Egyptian LNG (EGPC 12%, EGAS 12%) T2: BG (38%), Petronas (38%), EGAS (12%), EGPC (12%)	Egyptian LNG (EGPC, EGAS, BG, ENGIE, Petronas)	ENGIE (T1), BG (T2)	2005
	Bioiko Island	1	3.7	2	272 000	Marathon (60%), Sonagas (25%), Mitsui (8.5%), Marubeni (6.5%)	EG LNG	BG	2007
LIBYA (STOPPED)	Marsa-el-Brega	4	3.2	2	96 000	LNOC	LNOC	Gas Natural Fenosa	1970
	Bonny Island (NLNG T1-3)	3	9.6	3	336 800	Nigeria LNG (NNPC 49%, Shell (25.6%), Total (15%), ENI (10.40%))	Shell	Enel, Gas Natural Fenosa, Botas, ENGIE, GALP	1999-2002
NIGERIA	Bonny Island (NLNG T4 & 5)	2	8.1			Nigeria LNG (NNPC 49%, Shell (25.6%), Total (15%), ENI 10.40%)	Shell	BG, Shell, Iberdrola, Endesa, GALP, Total, ENI	2006
	Bonny Island (NLNG T6)	1	4.1	1	84 200	Nigeria LNG (NNPC 49%, Shell (25.6%), Total (15%), ENI 10.4%)	Shell	Total, Shell	2008
NORWAY	Hammerfest	1	4.3	2	250 000	Statoil (36.79%), Petoro (30%), Total (18.4%), ENGIE (12%), RWE (2.81%)	Statoil	ENGIE, Iberdrola, Statoil, Total	2007
	Atlantic LNG T1	1	3.3	2	204 000	BP (34%), BG (26%), Shell (20%), CIC (10%), NGC Trinidad (10%)	Atlantic LNG	ENGIE, Gas Natural Fenosa	1999
TRINIDAD & TOBAGO	Atlantic LNG T2 & 3	2	7	1	160 000	BP (42.5%), BG (32.5%), Shell (25%)	Atlantic LNG	BG, BP, Gas Natural Fenosa, Naturgas, Shell	2002-2003
	Atlantic LNG T4	1	5.2	1	160 000	BP (37.8%), BG (28.9%), Shell (22.2%), NGC Trinidad (11.1%)	Atlantic LNG	BP, BG, Shell	2006

Country	Site	Liquefaction Number of trains	Nominal capacity in MTPA	Storage Number of tanks	Storage Total capacity in MTPA	Owner(s)	Operator	LT Buyer(s)	Start-up date
<b>MIDDLE EAST</b>									
ABU DHABI	Das Island	3	5.8	3	240 000	ADNOC (70%), Mitsui (15%), BP (10%), Total (5%)	Adgas	Tokyo Electric	1977
OMAN	Qalhat	2	7.1	2	240 000	Oman gvt (51%), Shell (30%), Total (5.5%), Korea LNG (5%), Mitsubishi (2.8%), Mitsui (2.8%), Partex (2%), Itochu (0.9%)	Oman LNG	KOGAS, Shell, Osaka Gas, BP, Itochu	2000
		1	3.6			Omani gvt (46.8%), Oman LNG (36.8%), Union Fenosa Gas (7.4%), Osaka Gas (3%), Mitsubishi (3%), Itochu (3%)	Qalhat LNG	Mitsubishi, Osaka Gas, Union Fenosa Gas, Itochu	2006
	Ras Laffan (Qatargas 1-T1 & 2)	2	6.4	2	240 000	Qatar Petroleum (65%), ExxonMobil (10%), Total (10%), Marubeni (7.5%), Mitsui (7.5%)	Qatargas I	Chubu Electric, The Chugoku Electric, The Kansai Electric, Osaka Gas, Toho Gas, Tohoku Electric, Tokyo Gas, Tokyo Electric, Gas Natural Fenosa, PTT	1999
	Ras Laffan (Qatargas 1-T3)	1	3.1			Qatar Petroleum (65%), ExxonMobil (10%), Total (10%), Marubeni (7.5%), Mitsui (7.5%)	Qatargas I	Tokyo Gas	1999
	Ras Laffan (Qatargas 2-T1)	1	7.8			Qatar Petroleum (70%), ExxonMobil (30%)	Qatargas II	ExxonMobil, Chubu	2009
	Ras Laffan (Qatargas 2-T2)	1	7.8	8	1 160 000	Qatar Petroleum (65%), ExxonMobil (18.3%), Total (16.7%)	Qatargas II	ExxonMobil, Total, CNOOC	2009
	Ras Laffan (Qatargas 3-T1)	1	7.8			Qatar Petroleum (68.5%), ConocoPhillips (30%), Mitsui (1.5%)	Qatargas III	ConocoPhillips, Shell, Centrica	2010
	Ras Laffan (Qatargas 4-T1)	1	7.8			Qatar Petroleum (70%), ExxonMobil (30%)	Qatargas IV	Shell, Petrochina, Marubeni	2011
	Ras Laffan (Rasgas 1-T1 & 2)	2	6.6			Qatar Petroleum (63%), ExxonMobil (25%), KOGAS (5%), Itochu (4%), LNG Japan (3%)	RasGas I	KOGAS, ENI	1999-2000
	Ras Laffan (Rasgas 2-T1)	1	4.7			Qatar Petroleum (70%), ExxonMobil (30%)	RasGas II	Petronet LNG	2004
	Ras Laffan (Rasgas 2-T2)	1	4.7	6	840 000	Qatar Petroleum (70%), ExxonMobil (30%)	RasGas II	Endesa, Edison	2005
	Ras Laffan (Rasgas 2-T3)	1	4.7			Qatar Petroleum (70%), ExxonMobil (30%)	RasGas II	Petronet, EDF, ENI, CPC	March 2007
	Ras Laffan (Rasgas 3-T1)	1	7.8			Qatar Petroleum (70%), ExxonMobil (30%)	RasGas III	Petronet, KOGAS	August 2009
	Ras Laffan (Rasgas 3-T2)	1	7.8			Qatar Petroleum (70%), ExxonMobil (30%)	RasGas III	ExxonMobil	April 2010
YEMEN (STOPPED)	Balhaf-T1 & 2	2	6.7	2	280 000	Yemen LNG (Total 39.6%, Hunt Oil Co. 17.2%, SK Corp. 9.6%, KOGAS 6%, Yemen Gas Co. 16.7%, Hyundai 5.9%, GASSP 5%)	Yemen LNG	KOGAS, ENGIE, Total	October 2009



Country	Site	Liquefaction		Storage	Owner(s)	Operator	LT Buyer(s)	Start-up date	
		Number of trains	Nominal capacity in 10 <sup>4</sup> t/y	Number of tanks	Total capacity in MTPA				
<b>PACIFIC BASIN</b>									
Withnell Bay - Trains 1-4	4	12.1	4	260 000	Woodside, Shell, BHP BP Australia, Chevron (17% each), Mitsubishi, Mitsui (8% each)	Woodside	Tokyo Electric, Chubu Electric, Kansai Electric, The Chugoku Electric, Kyushu Electric, Tokyo Gas, Osaka Gas, Shizuoka Gas, Tohoku Electric, Nippon Gas, KOGAS, Shell, CNOOC	Trains 1 & 2: 1989 Train 3: 1992 Train 4: 2004	
Withnell Bay - Train 5	1	4.3	1	65 000	Woodside, Shell, BHP BP Australia, Chevron (17% each), Mitsubishi, Mitsui (8% each)	Woodside	Tokyo Electric, Chubu Electric, Kansai Electric, The Chugoku Electric, Kyushu Electric, Tokyo Gas, Osaka Gas, Shizuoka Gas, Tohoku Electric, Nippon Gas, KOGAS, Shell, Hazira Gas, CNOOC	2008	
<b>AUSTRALIA</b>									
Darwin	1	3.4	1	188 000	ConocoPhillips (57%), ENI, Santos, Inpex (11% each), The Tokyo Electric Power Co. (6%), Tokyo Gas (3%)	ConocoPhillips	Tokyo Electric, Tokyo Gas	2006	
Pluto	1	4.3	2	240 000	Woodside (90%), The Kansai Electric (5%), Tokyo Gas (5%)	Woodside	The Kansai Electric, Tokyo Gas, Petronas	2012	
Curtis Island - Train 1	1	4.3	2	280 000	BG (50%), CNOOC (50%)	BG	BG, CNOOC	2014	
Curtis Island - Train 2	1	4.3	2	280 000	BG (97.5%), Tokyo Gas (2.5%)	BG	BG, Tokyo Gas	2015	
GLNG - Train 1	1	3.9	2	280 000	KOGAS (15%), Petronas (27.5%), Santos (30%), Total (27.5%)	Santos	KOGAS, Petronas	2015	
BRUNEI	Lumut	5	7.1	3	195 000	Brunei gvt (50%), Shell (25%), Brunei LNG Sdn Bhd	Tokyo Gas, Tokyo Electric, Osaka Gas, KOGAS	1973	
<b>USA</b>									
Kenai	1	0.4	3	108 000	ConocoPhillips	ConocoPhillips	Tokyo Gas, Tokyo Electric	1969	
Bontang - Badak (total capacity)	8	22.3							
Badak A & B	2						Kansai Electric, Chubu Electric, Kyushu Electric, Osaka Gas, Tohoku Gas, Nippon Steel Co.	1977	
Badak C & D	2		6	630 000	Pertamina	Pertamina (55%), VICO (BP, ENI, 20%), JILCO (15%), Total (10%)	Kansai Electric, Chubu Electric, Osaka Gas, Tohoku Gas	1983	
Badak E	1						CPC	1990	
Badak F	1						Tokyo Gas, Osaka Gas, Tohoku Gas, Hiroshima Gas, Nippon Gas	1994	
Badak G	1						KOGAS	1998	
Badak H	1						CPC	1998	
INDONESIA	Donggi-Senoro	1	2	1	170 000	Mitsubishi (45%), Pertamina (29%), KOGAS (15%), Medco (11%)	Chubu, Kogas, Kyushu Electric	2015	
Tangguh	2	7.6	2	340 000	Tangguh LNG	Tangguh LNG (BP 37.16%, CNOOC 13.9%, JX Nippon 13.5%, Mitsubishi 9.9%, INPEX 7.8%, LNG Japan 7.4%, KG Berau 5%, Talisman 3.1%, Mitsui 2.3%)	KOGAS, Posco, SK Energy Co., CNOOC, Chubu Electric, Kansai Electric, Tohoku Electric, Sempra LNG	2009	
Bintulu MLNG 1 (Satu)	3	8.1			Petronas	Petronas (90%), Mitsubishi (5%), Sarawak state gvt (5%)	Tokyo Gas, Tokyo Electric, Saibu Gas, Shikoku Electric, Hiroshima Gas	1983	
Bintulu MLNG 2 (Dua)	3	7.8			Malaysia LNG Dua	Petronas (60%), Shell (15%), Mitsubishi (15%), Sarawak state gvt (10%)	Chubu Electric, Tokyo Gas, Osaka Gas, Tohoku Gas, The Kansai Electric, Shizuoka Gas, Tohoku Electric, Sendai City Gas, KOGAS, CPC	1995	
MALAYSIA	Bintulu MLNG 2 (Dua) - debottleneck	1	1.5	6	390 000	Malaysia LNG Dua	Petronas (60%), Shell (15%), Mitsubishi (15%), Sarawak state gvt (10%)	Chubu Electric, Tokyo Gas, Osaka Gas, Tohoku Gas, The Kansai Electric, Shizuoka Gas, Tohoku Electric, Sendai City Gas, KOGAS, CPC	2010
	Bintulu MLNG 3 (Tiga)	2	6.8		Malaysia LNG Tiga	Petronas (60%), Shell (15%), JX Nippon Oil (10%), Sarawak state gvt (10%), Mitsubishi (5%)	Tokyo Gas, Osaka Gas, Tohoku Gas, Tohoku Electric, Japex, KOGAS, CNOOC	2003	
PAPUA NEW GUINEA	PNG LNG	2	6.9	2	320 000	PNG LNG	CPC, Sinopec, Tokyo Electric, Osaka Gas	2014	
PERU	Peru LNG	1	4.5	2	260 000	Hunt Oil	Hunt Oil, Shell	2010	
RUSSIA	Sakhalin 2	2	9.6	2	200 000	Sakhalin Energy Invest Co. (Gazprom 50%, Shell 27.5%, Mitsui 12.5%, Mitsubishi 10%)	Gazprom, Shell, KOGAS, Chubu Electric, Hiroshima Gas, Kyushu Electric, Osaka Gas, Saibu Gas, Tohoku Gas, Tohoku Electric, Tokyo Electric, Tokyu Gas	2009	
<b>TOTAL</b>		<b>96</b>	<b>308</b>		<b>1 102 300</b>				



# REGASIFICATION PLANTS

In 2015, global regasification capacity continued to grow, reaching **777 MTPA** at year-end.

Three onshore terminals (1 in Indonesia and 2 in Japan) and 4 offshore terminals (2 in Egypt, 1 in Jordan, 1 in Pakistan) started operating in 2015, representing a combined **23.5 MTPA** additional capacity.

Three new markets imported LNG, all of which through offshore terminals: Egypt (**Ain-Sokhna BW** and **Ain-Sokhna Höegh**), Jordan (**Aqaba**) and Pakistan (**Port Qasim**). In addition, in December, Poland brought a commissioning cargo to its onshore terminal in Swinoujscie. The terminal is expected to start commercial operations in 2016.

One expansion project was completed during the year (**GNL Quintero**, in Chile).

At the end of the year, 15 new onshore terminals were reported to be under construction, 8 of which in China.

Five expansion projects were also underway (2 in China, 1 in India, 1 in Thailand and 1 in Greece).

Total regasification capacity under construction at year-end reached **71.9 MTPA**, of which 71% or **51.7 MTPA** located in Asia.

In addition, 5 FSRU-based projects were under consideration in Chile, Colombia, Ghana, Puerto Rico and Uruguay.



## Belgium

In Zeebrugge, a second jetty enabling LNG ships with a capacity as small as 2,000 m<sup>3</sup> is under construction and commissioning is foreseen in 2016. The small scale LNG-infrastructure investment at the second jetty –LNG to berth– is co-financed by the European Union via the Trans-European Transport Network (TEN-T). Sweden-based Skangas has selected the **Zeebrugge** terminal as an LNG supply point for its Lysekil small-scale terminal and has signed a contract with the Zeebrugge LNG terminal user Eni for the regular supply of small scale cargoes in 2015 and 2016. Besides, Fluxys is developing transshipment services. In March 2015, Fluxys has signed a 20 year capacity contract with Yamal Trade for transshipment services at the Zeebrugge LNG terminal. Fluxys has also awarded an EPC contract for the construction of a 5<sup>th</sup> 180,000 m<sup>3</sup> LNG storage tank and additional process installations.

## Chile

In **Quintero**, Phase 1 of the terminal expansion project has been completed in February, increasing the regasification capacity by 50% to a total of 5.8 Bcm/y. An Environmental Impact Assessment (EIA) for the potential Phase II Expansion Project has been submitted. Phase II includes increasing the terminal's processing capacity by an additional 33% and increasing the truck loading facility's capacity by an additional 50% (from 2,500 m<sup>3</sup> to 3,750 m<sup>3</sup> of LNG per day). In May 2015, Höegh LNG signed an FSRU contract with Octopus LNG SpA for the **Penco-Lirquén** LNG import terminal to be located in Concepción Bay, Chile, but construction has not commenced yet.

## China

In **Guangdong Dapeng**, a fourth LNG tank has been completed, taking the storage capacity to 640,000 cubic meters. At the end of 2015, there were 13 LNG terminals in operation in China, with a total capacity of 41.3 MTPA and an average annual utilization rate of around 50%. Eight terminals were under construction for a combined capacity of around 24 MTPA, including the **Yuedong** LNG terminal, scheduled to start-up in Q1 2016 at the time of this writing. Two expansions are expected to be completed in 2016, in **Rudong** and **Dalian**.

## Colombia

In Cartagena, on the Caribbean coast, a consortium of power generators signed an EPC contract in order to develop a 3 MTPA FSRU-based terminal. The terminal could start-up in 2017.

## Dubai

In Dubai, the total regasification capacity has been doubled, as FSRU Golar Freeze was dry-docked in April and replaced by Excelerate's Explorer, with a regasification capacity of 6 MTPA.

## Egypt

Two FRSUs started importing LNG in 2015. In April 2015, Höegh Gallant (FSRU) commenced commercial operations under a five year FSRU contract between Höegh LNG and Egyptian company EGAS. In October, a second unit owned by Singapore-based BW (BW Singapore) started operating also under a five year charter with EGAS.

## France

France's fourth LNG import terminal **Dunkerque LNG** was still under construction in 2015. At the time of this writing, the start-up of the 9.6 MTPA terminal was expected in June 2016.

In **Montoir**, following a first commercial transshipment operation in August 2013 (direct transfer of LNG between two vessels via the two existing berths), Elengy has taken FID in September 2015 in order to develop upgraded LNG transshipment services after securing a long-term transshipment contract with Novatek Gas & Power in June 2015.

In **Fos Cavaou**, transshipment services have been in effect from December 2015, allowing to transfer LNG between two vessels with the use of cryogenic hoses, by mooring two vessels in double banking alongside the terminal jetty.

In **Fos Tonkin**, the regasification capacity of the terminal has been reduced to 3 Bcm/y since April 2015.

## Greece

Construction of a third tank of 95,000 m<sup>3</sup> storage capacity and associated installations has continued at the **Revithoussa** LNG regasification terminal. After completion expected in 2017, the total storage capacity of the terminal will reach 225,000 m<sup>3</sup> and the port will be able to handle up to fully laden Q-flex vessels. Facilities for loading LNG vessels will also become available.



## India

In **Dahej**, the expansion of the existing LNG terminal from 10 to 15 MTPA is underway. The new facility includes two LNG storage tanks, five high pressure send-out pumps and four shell and tube vaporizers.

In **Mundra**, GSPC LNG Ltd. is building a green field LNG regasification terminal of 5 MTPA capacity in Mundra, Gujarat, India. The terminal will include two full containment LNG storage tanks of net capacity 160,000 m<sup>3</sup> each. The terminal is scheduled to be commissioned in the first quarter of 2017. On the East coast, two terminals are in advanced development stages:

- ENIGE, Shell and Indian companies Andhra Pradesh Gas Distribution Corporation (APGDC) and GAIL have signed twin agreements for a floating LNG terminal in the port of **Kakinada**, with a nominal capacity of up to 5 MTPA. Environmental permits have already been obtained.
- In **Ennore**, Indian Oil was reported to have started construction of a 5 MTPA onshore terminal expected to be operational around 2020.

## Indonesia

In Indonesia, the former **Arun** export plant was converted into an import terminal which started receiving domestic LNG in 2015.

## Italy

The **Panigaglia** LNG terminal has been operating in low send-out mode. In December 2015, GNL Italia started revamping one of the two tanks. The project will be completed by September 2017. The company also commissioned a feasibility study in order to offer bulk breaking services, such as loading of bunker ships and truck loading.

## Japan

Two new terminals were commissioned in 2015: **Hachinohe LNG** (1.4 Bcm/y, developed by JX Nippon Oil), and **Shin-sendai** (1.1 Bcm/y, developed by Tohoku Electric). Two terminals were under construction at the time of this writing: **Hitachi LNG** terminal (1.5 MTPA).

developed by Tokyo Gas and expected to start-up commercial operations in 2016) and Soma LNG (1 MTPA, developed by Japex, targeted to start importing in 2018.)

Expansion works were also underway on several existing terminals:

- Toho Gas is building a third LNG storage tank of 220,000 m<sup>3</sup> in Chita Midorihama Works, with completion expected in 2016.
- Hiroshima Gas is expanding **Hatsukaichi LNG**'s jetty from 247m to 427m.
- In **Ishikari**, Hokkaido Gas has started the operation of an additional LNG vaporizer since November 2015 and two more LNG storage tanks are under construction.

In Senboku, Osaka Gas has added a fifth LNG storage tank of a 230,000 m<sup>3</sup> capacity to its **Senboku 1** LNG terminal.

In **Fukuoka**, Saibu Gas decommissioned its small-scale LNG Terminal in June 2015 due to the start-up of commercial operations at the **Hibiki LNG** Terminal.

## Jordan

In Jordan, who previously resorted to fuel oil for power following the drop in Egyptian gas supplies, the 3.8 MTPA **Aqaba LNG** terminal developed by NEPCO started commercial operations in July. The terminal is using Golar's FSRU Eskimo, which has a peak send-out capacity of 710 mscf/d. It has a five year SPA with Shell.

## Malta

In Malta, a 0.4 MTPA terminal intended to supply two local gas-fired power plants is currently under construction. The terminal will use a floating storage unit and onshore regasification facilities.

## Netherlands

In Rotterdam, **Gate Terminal** is constructing a third jetty which will be dedicated to small scale LNG. Start-up is planned during summer 2016. Gate has been offering transshipment services since the second half of 2015 and the company took FID to construct a second truckloading bay.



**Pakistan**  
In May, the 3.8 MTPA Port Qasim terminal developed by Excelerate and Engro Corp. started commercial operations. The terminal is using Excelerate's Exquisite FSRU.

**Panama**  
In Panama, Costa Norte LNG Terminal and Gas Natural Atlántico (subsidiaries of AES) are currently developing an integrated LNG to power project at the entrance of the Panama Canal, to come on-line in 2018.  
The project includes an LNG import terminal with 180,000 m<sup>3</sup> storage capacity, which will provide natural gas to a 350 MW CCGT.

**Philippines**  
In Pagbilao, Energy Word Corporation is building an onshore terminal linked to a local combined cycle power plant. In its first phase, the terminal will include one storage tank of 130,000 cubic meters capacity.

**Poland**  
The commissioning of the terminal has started in the end of 2015 and a first cargo was received in December 2015. However, the start-up date of the terminal in Swinoujscie was delayed. Start of commercial operations is scheduled for 1<sup>st</sup> June 2016.

**Singapore**  
Through 2015, construction activities of a fourth tank of 260,000 m<sup>3</sup> capacity continued to progress. SLNG also further expanded storage and reload services in support of LNG trading out of Singapore.

**South Korea**  
In Boryeong, GS Energy and SK E&S are constructing a 3 MTPA terminal, now expected to be completed in 2017.



**Taiwan**  
In Taiwan, CPC is planning to build a third receiving terminal in northern Taiwan, with expected start-up in 2022. Taiwan plans to increase the country's receiving capacity from the current 13.5 to 20 MTPA in 2030.

**Thailand**  
PTT LNG has started to expand the Map-Ta-Phut terminal by building two additional LNG tanks (160,000 m<sup>3</sup> each), one jetty (125,000 - 270,000 m<sup>3</sup>) as well as a new regasification unit of 5 MTPA. The regasification unit will be completed by mid-2016 and commercial operation is expected by mid-2017.

**United Kingdom**  
In November 2015, National Grid commissioned a road tanker loading facility at the Grain LNG import terminal. Loading of bunkering ships should be available from 2017 onwards.

**Uruguay**  
In Uruguay, the FSU-based GNL del Plata project has been delayed. Engie and Marubeni exited the project in 2015 following issues with the EPC contractor.

## REGASIFICATION TERMINALS AT THE START OF 2016

Country	Site	Storage	Send-out	Owner	Operator	Third Party Access	Services offered	Start-up date of the terminal
		Number of tanks	Total capacity in lqm <sup>3</sup>	Number of vaporizers	Nominal capacity in Bcm/y			
ARGENTINA	Bahía Blanca GasPort (OFFSHORE) - FSRU Excelerate Express	151 000	6	5.1	YPF	YPF	No	2008
	GNL Escobar (OFFSHORE) - FSRU Excelerate Exemplar	151 000	6	5.1	UTE Escobar (50% Enarsa, 50% YPF)	YPF	No	2011
	Bahía (OFFSHORE) - FSRU Golar Winter	137 000		5.2	Owner: Golar / Charterer: Petrobras	Petrobras	No	2013
BRAZIL	Guanabara Bay (OFFSHORE) - FSRU Excelerate Experience	173 400		8.1	Owner: Excelerate Energy / Charterer: Petrobras	Excelerate Energy	No	2009
	Pecem (OFFSHORE) - FSRU Golar Spirit	129 000	2	2.5	Owner: Golar / Charterer: Petrobras	Petrobras	No	Reloading
CANADA	Canaport LNG	3	160 000	8	10	Repsol (75%), Irving Oil (25%)	Repsol Canada Ltd	Yes (but no RTPA) Reloading
	Mejillones	1	175 000	3	2	CodeLco (37%), ENGIE (63%)	GNLM	Yes
CHILE	Quintero	3	334 000	3	3.7	Terminal de Valparaíso S.A./Enagás (51%)/Oman Oil Company (49%)(40%), ENAP (20%), Endesa Chile (20%), Metrogas (20%)	GNL Quintero S.A.	Yes
							Truck loading	2009
DOMINICAN REP.	Punta Caucedo	1	160 000	3	2.3	AES	AES	No
MEXICO	Altamira	2	300 000	5	7.8	Terminal de LNG de Altamira (Vopak 60%, Enagás 40%)	Terminal de LNG de Altamira (Vopak 60%, Enagás 40%)	Yes
	Energía Costa Azul	2	320 000	6	10.3	Sempra	Sempra	Yes
	Manzanillo	2	300 000		5.2	Samsung (37.5%), Kogas (25%), Mitsui (37.5%)	Kogas	2012
PUERTO RICO	Penuelas	1	160 000	2	3.8	Gas Natural Fenosa (47.5%), ENGIE (35%), Mitsui (15%), GE (2.50%)	Eco Electrica	2000
	Cameron LNG	3	480 000	10	15.5	Sempra	Sempra	Yes
	Cove Point	5	380 000	10	10.7	Dominion Cove Point LNG	Dominion Cove Point LNG	Shell, BP, Statoil, Peakers 1/4 each
	Cove Point Expansion	2	320 000	15	8	Dominion Cove Point LNG	Dominion Cove Point LNG	Statoil
	Elba Island	5	535 000	11	16.3	Southern LNG (Kinder Morgan)	Southern LNG	Yes
USA	Everett	2	155 000	4	6.9	ENGIE	ENGIE	Yes
	Freeport LNG	2	320 000	7	18	Freeport LNG Development, L.P.	Freeport LNG Development, L.P.	Yes
	Golden Pass	5	775 000	8	21.4	QP (70%) Exxon (17.60%), Conoco Philips (12.40%)	Golden Pass LNG	No
	Gulf LNG Energy	2	320 000		12	Kinder Morgan (50%), GE (40%), AES (10%)	Gulf LNG Energy	No
	Lake Charles	4	425 000	14	24.3	Trunkline LNG	Trunkline LNG	Yes
AMERICAS TOTAL	Northeast Gateway (OFFSHORE)	151 000	6	4.1	Excelerate Energy	Excelerate Energy		1978, restarted 2001, expanded 2006, expanded 2010
	Sabine Pass	5	800 000	16	41.4	Cheniere Energy	Cheniere Energy	Reloading
<b>AMERICAS TOTAL</b>		<b>7311 400</b>		<b>249.6</b>				Infrastructure enhancement project completed March 2010
CHINA	Dalian	3	480 000	3	4.1	Petrochina (75%), other companies	Petrochina	No
	Guangdong Dapeng Shenzhen	4	640 000	7	9.2	CNOOC (33%), BP (30%), other companies	GDLNG	No
	Dongguan, Guangdong province	2	160 000		1.4	Jovo Group		2013
	Fujian	4	640 000		6.9	Fujian LNG (CNOOC 60%, Fujian Inv. & Dev. Co. 40%)	CNOOC	No
	Hainan	3	480 000		4.1	CNOOC (65%), other companies	CNOOC	No
	Qingdao	3	480 000		4.2	Sinopec	Sinopec	No
	Rudong, Jiangsu	2	320 000	3	4.8	Petrochina (55%), other companies	Petrochina	No
	Shanghai, Mengtougou	3	120 000		0.2	Shanghai Gas Group	Shanghai Gas Group	No
	Shanghai LNG	3	495 000		4.1	Shanghai LNG (CNOOC 45%, Shenergy Group Ltd 55%)	CNOOC	No
	Tangshan (Caofeidian)	3	480 000		4.8	Petrochina	Petrochina, Beijing Enterprises	2013

Country	Site	Storage Number of tanks	Total capacity in lqm³	Send-out Number of vaporizers	Nominal capacity in Bcm/y	Owner	Operator	Third Party Access	Services offered	Start-up date of the terminal
CHINA	Tianjin (OFFSHORE) - GDF SUEZ Cape Ann	2	60 000	3		Owner: Höegh LNG (50%), MOL (48.50%), Tokyo Gas (1.50%) / Charterer: ENGIE - relet to CNOOC for 5 years	Höegh LNG			2013
	Zhejiang Ningbo	3	480 000	4.1		CNOOC (51%), other companies	CNOOC	No		2012
	Zhuhai (Gaolan)	3	480 000	4.8		CNOOC (30%), other companies	CNOOC			2013
INDIA	Dabhol	2	320 000	6	2.4	Ratnagiri Gas & Power Ltd (GAIL, NTPC)	Gail	No		2013
	Dahej	4	592 000	19	12.5	Petronet LNG	Petronet LNG	Yes (on a cargo by cargo basis)		2004, expansion in July 2009
	Hazira	2	320 000	5	6.9	Hazira LNG Private Ltd (Shell 74%, Total 26%)	Hazira LNG Private Ltd	No		2005
	Kochi	2	368 000	6	6.3	Petronet LNG	Petronet LNG	Yes (on a cargo by cargo basis)	Reloading	2013
INDONESIA	Arun Regas	2	220 000	1		PT Perta Arun Gas	PT Perta Arun Gas	Yes		2015
	Lampung LNG (OFFSHORE) - PGN FSRU Lampung	4	173 000	3	2.4	Owner: Höegh LNG / Charterer: PGN LNG	Höegh LNG			2014
	Nusantara Regas Satu (OFFSHORE) FSRU Jawa Barat	6	125 016	6	4.1	Owner: Golar LNG Charterer: Nusantara Regas	PT Nusantara Regas (JV Pertamina & PGN)	No		2012
JAPAN	Chita	7	640 000	11	14.8	Chita LNG	Chita LNG	Yes		1983
	Chita Kyodo	4	300 000	14	9.9	Toho Gas / Chubu Elec	Toho Gas	Negotiated TPA		1978
	Chita-Midorihama Works	2	400 000	8	10.5	Toho Gas	Toho Gas	Negotiated TPA		2001
	Futtsu	10	1 110 000	13	26	Tokyo Electric	Tokyo Electric	Yes		1985
	Hachinohe	2	280 000	5	1.4	JX Nippon Oil & Energy	JX Nippon LNG Service	Yes	Truck loading	2015
	Hatsukaichi	2	170 000	4	1.2	Hiroshima Gas	Hiroshima Gas	No		1996
	Hibiki	2	360 000	5	2.9	Hibiki LNG (Saibu Gas 90%, Kyushu Electric 10%)	Hibiki LNG	Negotiated TPA	Truck loading	2014
	Higashi-Ogishima	9	540 000	9	18	Tokyo Electric	Tokyo Electric	Yes	Truck loading	1984
	Himeji	8	740 000	6	6.4	Osaka Gas	Osaka Gas	Yes		1984
	Himeji LNG	7	520 000	8	11	Kansai Electric	Kansai Electric	Yes	Truck loading	1979
	Ishikari LNG	1	180 000	4	3.7	Hokkaido Gas	Hokkaido Gas	Negotiated TPA	Truck loading	2012
	Joetsu	3	540 000	8	3.2	Chubu Electric	Chubu Electric			2011
	Kagoshima	2	86 000	3	0.3	Nippon Gas	Nippon Gas	No		1996
	Kawagoe	6	840 000	7	6.7	Chubu Electric	Chubu Electric	Yes		1997
	Mizushima	2	320 000	6	5.8	Mizushima LNG	Mizushima LNG	Yes		2006
	Nagasaki	1	35 000	3	0.2	Saibu Gas	Saibu Gas	Yes	Truck loading	2003
	Naoetsu	2	360 000	4	2	INPEX Corporation	INPEX Corporation	No		2013
	Negishi	14	1 180 000	14	15.1	Tokyo Gas /Tokyo Electric	Tokyo Gas /Tokyo Electric	Negotiated TPA	Truck loading	1969
	Niigata	8	720 000	14	11.6	Nihonkai LNG	Nihonkai LNG	Yes		1984
	Ogishima	4	850 000	12	15.4	Tokyo Gas	Tokyo Gas	Negotiated TPA		1998
	Oita	5	460 000	7	7.3	Oita LNG	Oita LNG	Yes		1990
	Sakai	3	420 000	6	8.7	Kansai Electric	Kansai Electric	Yes	Truck loading	2006
	Sakaike	1	180 000	3	1.6	Sakaike LNG	Sakaike LNG	Yes	Truck loading	2010
	Senboku I	3	320 000	5	2.9	Osaka Gas	Osaka Gas	Yes		1972
	Senboku II	18	1 585 000	15	15.7	Osaka Gas	Osaka Gas	Yes		1977
	Shin-Minato	1	80 000	3	0.4	Gas Bureau, City of Sendai	Gas Bureau, City of Sendai	No		1997
	Shin-Sendai	1	160 000	3	1.1	Tohoku Electric	Tohoku Electric	TBD	2015 (2 tanks operation 2016)	
	Sodegaura	35	2 660 000	36	40.4	Tokyo Gas / Tokyo Electric	Tokyo Gas / Tokyo Electric	Negotiated TPA	Truck loading	1973
	Sodeshi	3	337 200	8	3.9	Shimizu LNG (Shizuoka Gas 65%, TonenGeneral 35%)	Shimizu LNG	No	Truck loading	1996
	Tobata	8	480 000	9	10.3	Kita Kyushu LNG	Kita Kyushu LNG	Yes		1977
	Yanai	6	480 000	5	3.1	The Chugoku Electric	The Chugoku Electric	Yes		1990
	Yokkaichi LNG Centre	4	320 000	8	8.7	Chubu Electric	Chubu Electric	Yes		1987
	Yokkaichi Works	2	160 000	6	2.9	Toho Gas	Toho Gas	Negotiated TPA		1991
MALAYSIA	Melaka (OFFSHORE) - FSRUs Tenaga Empat and Tenaga Satu	260 000	3	5.2	Petronas	Petronas Gas	No			2013
	Port Qasim (OFFSHORE) - FSRU Excelerate Exquisite	150 900		5.2	Owner: Excelerate Energy / Charterer: Engro Corp.	Excelerate Energy	No			2015
SINGAPORE	Jurong	3	540 000	5	7.8	SLNG	SLNG	Yes but sale of regasified LNG limited to licensed LNG importers	Cool-down Services, Reloading, Storage	2013
SOUTH KOREA	Gwangyang	4	530 000	2	2.3	Posco	Posco	No	Reloading	2005
	Incheon	20	2 880 000	43	56.4	KOGAS	KOGAS	No		1996
	Pyeong-Taek	23	3 360 000	39	51.5	KOGAS	KOGAS	No		1986
	Sancheok	7	1 400 000	8	9	KOGAS	KOGAS	No		2014
TAIWAN	Tong-Yeong	17	2 620 000	20	33.7	KOGAS	KOGAS	No		2002
	Taichung	3	480 000	8	3.9	CPC	CPC	No		2009
	Yung-An	6	690 000	18	9.8	CPC	CPC	No		1990
THAILAND	Map Ta Phut	2	320 000	4	7.3	PTT	PTT LNG	No		2011
<b>ASIA TOTAL</b>		<b>38 477 116</b>		<b>553.4</b>						

Country	Site	Storage Number of tanks	Total capacity in lqm³	Send-out Number of vaporizers	Nominal capacity in Bcm/y	Owner	Operator	Third Party Access	Services offered	Start-up date of the terminal
DUBAI	Jebel Ali (OFFSHORE) - Excelerate Explorer	150 900		8.2		Owner: Excelerate Energy / Charterer: Dubai Supply Authority	Golar	No		2010
	Ain-Sokhna (OFFSHORE) - BW Singapore	170 000	4	7.8		Owner: BW / Charterer: Egas	BW	No		2015
Egypt	Ain-Sokhna (OFFSHORE) - Höegh Gallant	170 000	4	5.2		Owner: Höegh LNG / Charterer: Egas	Höegh LNG	No		2015
ISRAEL	Hadera Gateway (OFFSHORE)	138 000	6	4.8		INGL	Excelerate Energy	No		2013
JORDAN	Aqaba LNG (OFFSHORE) - Golar Eskimo	160 000		5.2		Owner: Golar / Charterer: Jordan Ministry of Energy and Mineral Resources (MEMR)	Golar	No		2015
KUWAIT	Mina Al Ahmadi (OFFSHORE) - Golar Igloo	170 000		7.9		Owner: Golar / Charterer: KPC	Golar	No		2014
<b>MIDDLE EAST TOTAL</b>		<b>958 900</b>		<b>39.1</b>						
BELGIUM	Zeebrugge	4	380 000	12	9	Fluxys LNG	Fluxys LNG	Yes	Bunkering, Reloading, Truck loading	1987
	Fos-Cavaou	3	330 000	4	8.3	Fosmax LNG (Eleny 72.5%, Total 27.5%)	Eleny	Yes	Bunkering, Cool-down services, Reloading, Truck loading through Fos Tonkin	2009 (commercial operation from April 2010)
FRANCE	Fos Tonkin	3	150 000	6	3	Eleny	Eleny	Yes	Bunkering, Cool-down services, Reloading, Truck loading	1972
	Montoir-de-Bretagne	3	360 000	11	10	Eleny	Eleny	Yes	Bunkering, Cool-down services, Reloading, Trans-shipment, Truck loading	1980
GREECE	Revithoussa	2	130 000	6	5	DESFA S.A.	DESFA S.A.	Yes		2000
ITALY	OLT LNG Toscana (OFFSHORE) - FSRU Toscana	4	137 500	3	3.8	OLT (Uniper 48.24%, IREN Group 49.07%, Golar 2.69%)	OLT Offshore LNG Toscana	Regulated TPA		2013
	Panigaglia	2	100 000	4	3.3	GNL Italia S.p.A.	GNL Italia S.p.A.	Yes		1971
LITHUANIA	Rovigo (OFFSHORE)	2	250 000	5	8	Qatar Petroleum (22%), Edison (7.3%), ExxonMobil (70.7%)	Adriatic LNG (Qatar Petroleum, Edison, Exxon)			

# LNG CHARACTERISTICS

Origin	Nitrogen N2 %	Methane C1 %	Ethane C2 %	Propane C3 %	C4+ %	TOTAL	LNG Density <sup>(1)</sup> kg/m <sup>3</sup>	Gas Density <sup>(2)</sup> kg/m <sup>3</sup> (n)	Expansion ratio m <sup>3</sup> (n)/ m <sup>3</sup> liq	Gas GCV <sup>(2)</sup> MJ/m <sup>3</sup> (n)	Wobbe Index <sup>(2)</sup> MJ/ m <sup>3</sup> (n)
Australia NWS	0.04	87.33	8.33	3.33	0.97	100	467.35	0.83	562.46	45.32	56.53
Australia Darwin	0.10	87.64	9.97	1.96	0.33	100	461.05	0.81	567.73	44.39	56.01
Algeria Skikda	0.63	91.40	7.35	0.57	0.05	100	446.65	0.78	575.95	42.30	54.62
Algeria Bethioua	0.64	89.55	8.20	1.30	0.31	100	454.50	0.80	571.70	43.22	55.12
Algeria Arzew	0.71	88.93	8.42	1.59	0.37	100	457.10	0.80	570.37	43.48	55.23
Brunei	0.04	90.12	5.34	3.02	1.48	100	461.63	0.82	564.48	44.68	56.18
Egypt Idku	0.02	95.31	3.58	0.74	0.34	100	437.38	0.76	578.47	41.76	54.61
Egypt Damietta	0.02	97.25	2.49	0.12	0.12	100	429.35	0.74	582.24	40.87	54.12
Equatorial Guinea	0.00	93.41	6.52	0.07	0	100	439.64	0.76	578.85	41.95	54.73
Indonesia Arun	0.08	91.86	5.66	1.60	0.79	100	450.96	0.79	571.49	43.29	55.42
Indonesia Badak	0.01	90.14	5.46	2.98	1.40	100	461.07	0.82	564.89	44.63	56.17
Indonesia Tangguh	0.13	96.91	2.37	0.44	0.15	100	431.22	0.74	581.47	41.00	54.14
Libya	0.59	82.57	12.62	3.56	0.65	100	478.72	0.86	558.08	46.24	56.77
Malaysia	0.14	91.69	4.64	2.60	0.93	100	454.19	0.80	569.15	43.67	55.59
Nigeria	0.03	91.70	5.52	2.17	0.58	100	451.66	0.79	571.14	43.41	55.50
Norway	0.46	92.03	5.75	1.31	0.45	100	448.39	0.78	573.75	42.69	54.91
Orman	0.20	90.68	5.75	2.12	1.24	100	457.27	0.81	567.76	43.99	55.73
Peru	0.57	89.07	10.26	0.10	0.01	100	451.80	0.79	574.30	42.90	55.00
Qatar	0.27	90.91	6.43	1.66	0.74	100	453.46	0.79	570.68	43.43	55.40
Russia Sakhalin	0.07	92.53	4.47	1.97	0.95	100	450.67	0.79	571.05	43.30	55.43
Trinidad	0.01	96.78	2.78	0.37	0.06	100	431.03	0.74	581.77	41.05	54.23
USA Alaska	0.17	99.71	0.09	0.03	0.01	100	421.39	0.72	585.75	39.91	53.51
Yemen	0.02	93.17	5.93	0.77	0.12	100	442.42	0.77	576.90	42.29	54.91

(1) Calculated according to ISO 6578 [T = -160°C]

(2) Calculated according to ISO 6976 [0°C / 0°C, 1.01325 bar]

Conversion table	Tonnes LNG	m <sup>3</sup> LNG (liquid) <sup>(1)</sup>	m <sup>3</sup> gas (n) <sup>(2)</sup>	ft <sup>3</sup> gas (n) <sup>(2)</sup>	ft <sup>3</sup> gas standard (scf) <sup>(3)</sup>	MMBtu
Tonnes LNG	2.21	$1.27 \times 10^{-3}$	44.96	47.53	51.02	
m <sup>3</sup> LNG (liquid) <sup>(1)</sup>	0.45	571.0	20.17	21.31	23.12	
m <sup>3</sup> gas (n) <sup>(2)</sup>	$7.85 \times 10^{-4}$	$1.75 \times 10^{-3}$	$3.53 \times 10^{-2}$	$3.73 \times 10^{-2}$	37.33	
ft <sup>3</sup> gas (n) <sup>(2)</sup>	$2.22 \times 10^{-8}$	$4.96 \times 10^{-5}$	$2.83 \times 10^{-2}$	1.05	$1.15 \times 10^{-3}$	
ft <sup>3</sup> gas standard (scf) <sup>(3)</sup>	$2.10 \times 10^{-8}$	$4.69 \times 10^{-5}$	$2.68 \times 10^{-2}$	$9.48 \times 10^{-1}$	$1.09 \times 10^{-3}$	
MMBtu	$1.96 \times 10^{-2}$	$4.33 \times 10^{-2}$	24.69	872.2	920.1	

(1) Calculated according to ISO 6578 [T = -160°C]

(2) Calculated according to ISO 6976 [0°C / 0°C, 1.01325 bar]

(3) Standard conditions [15°C / 15°C, 1.01325 bar]

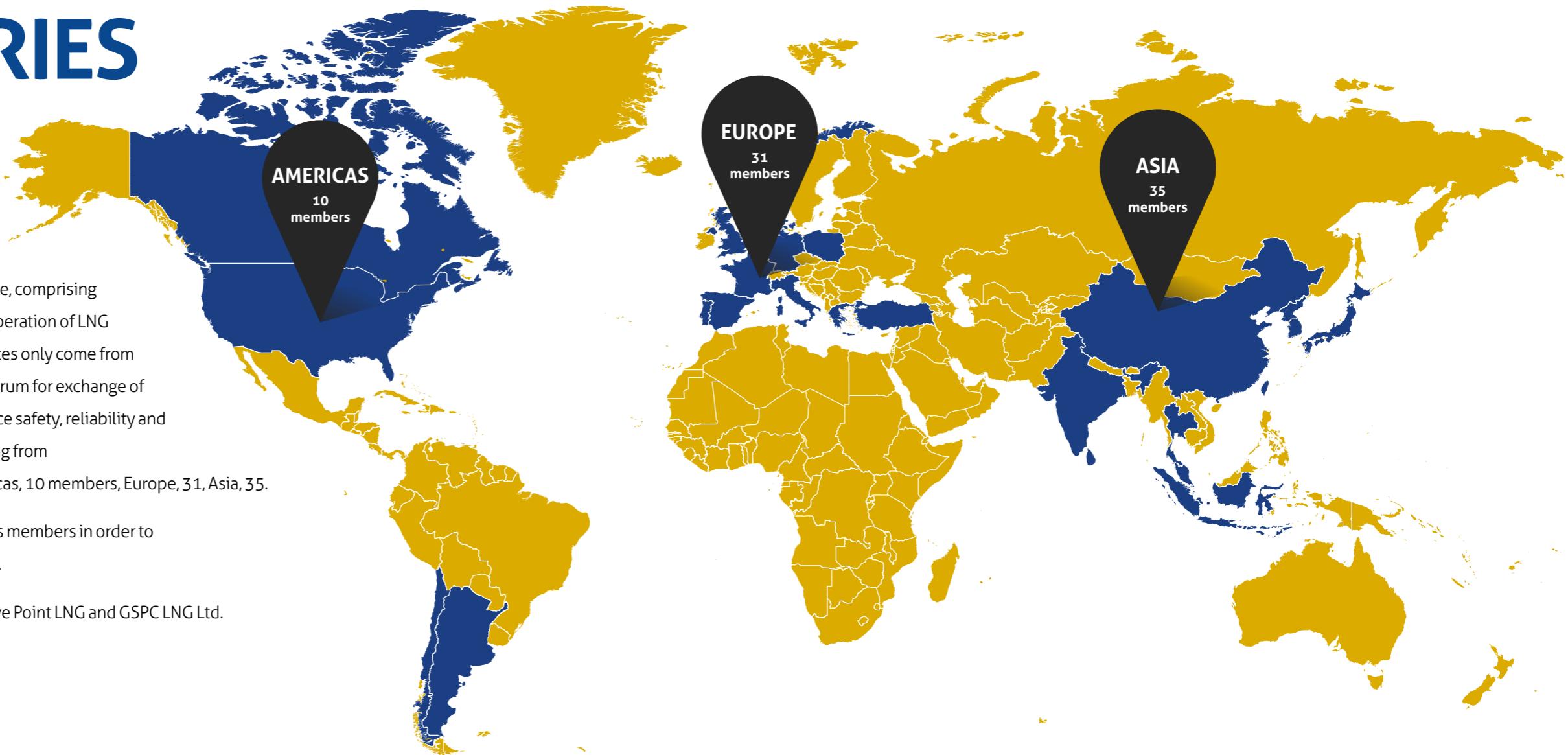
# 76 MEMBER COMPANIES IN 25 COUNTRIES

GIIGNL (International Group of LNG Importers) is the worldwide association of LNG importers.

Founded in 1971, at the outset of the LNG industry, its membership has grown to 76 companies worldwide, comprising nearly all companies active in LNG imports or in the operation of LNG terminals. It is a non profit organization and its resources only come from the membership fees. The association constitutes a forum for exchange of experience among its members, with a view to enhance safety, reliability and efficiency of LNG imports. GIIGNL members are coming from 25 countries located in the main three regions: Americas, 10 members, Europe, 31, Asia, 35.

Every year, GIIGNL conducts a wide survey amongst its members in order to publish this global statistical report, The LNG Industry.

2 companies joined the group in 2015: Dominion Cove Point LNG and GSPC LNG Ltd.



## AMERICAS

BG Group Plc.  
Cheniere Energy, Inc.  
Dominion Cove Point LNG  
Engie Gas and LNG, LLC  
GNL Quintero S.A.  
LNG Development, L.P.  
Repsol Energy Canada  
Sempra LNG and Midstream  
Southern LNG Company, LLC  
YPF S.A.



## EUROPE

BP Global LNG  
Botas  
Centrica LNG Company  
DEPA  
Dong Energy  
Dunkerque LNG  
Edison S.p.A.  
Elengy S.A.  
EDF Trading Limited  
EDP Energias de Portugal, S.A.  
Enagas  
Enel Trade  
Engie  
Eni S.p.A.  
Fluxys LNG S.A.

Gas Natural Fenosa  
Gate Terminal B.V.  
GNL Italia  
Höegh LNG  
Iberdrola Generacion S.A.U.  
National Grid Grain LNG, Ltd.  
N.V. Nederlandse Gasunie  
Polskie LNG S.A.  
Ren Atlântico, S.A.  
Shell Western LNG B.V.  
Sonatrach Gas Marketing UK Limited  
South Hook LNG Terminal Company, Ltd.  
Statoil ASA  
Total S.A.  
Uniper Global Commodities SE  
Vopak LNG Holding B.V.



## ASIA

Marubeni Corporation  
Mitsubishi Corporation  
Mitsui & Company, Ltd.  
Nippon Gas Company, Ltd.  
Osaka Gas Company, Ltd.  
Petronet LNG Limited  
PT Pertamina (Persero)  
PTT Public Company, Ltd.  
Saibu Gas Company, Ltd.  
Shikoku Electric Power Company  
Shizuoka Gas Company, Ltd.  
Singapore LNG Corporation  
SK E&S Company, Ltd.  
Sumitomo Corporation  
The Chugoku Electric Power Company, Inc.  
The Kansai Electric Power Company, Inc.

The Tokyo Electric Power Company, Inc.  
Toho Gas Company, Ltd.  
Tohoku Electric Power Company, Inc.  
Tokyo Gas Company, Ltd.

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