

LNG North America

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Analysis: Does US LNG accelerate the trend of inter-Basin trade?

Destination-free LNG cargoes from the United States have stirred up short-term trade worldwide and voyages from the US Gulf Coast to Asia are now easier thanks to the Panama Canal expansion. Shippers, however, made little use of this waterway so far, mainly because price parity between the Atlantic and Pacific has been limiting arbitrage opportunities – apart from the cold winter 2016/17 when some profits were made on spot cargoes from the USGC to northeast China, South Korea and Japan.

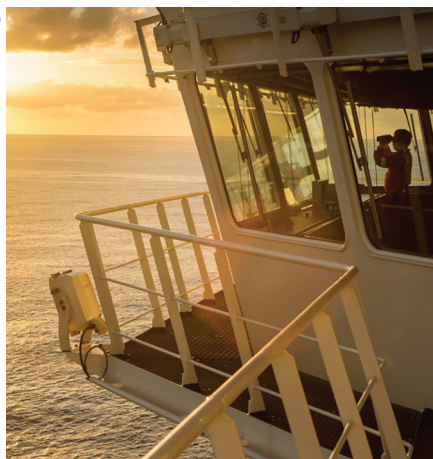
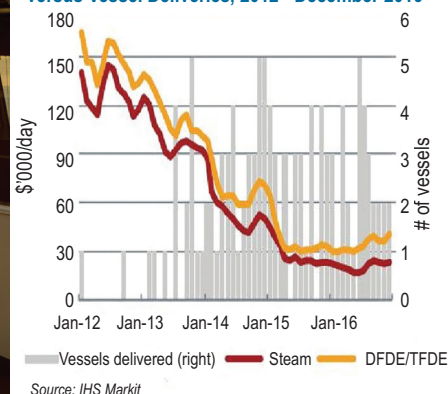


Figure 5.6: Average LNG Spot Charter Rates versus Vessel Deliveries, 2012 - December 2016



Looking at the overall annual trade between the Atlantic and Pacific Basin, volumes nosedived 47% in 2016 yoy as near inter-basin price parity limited traders' arbitrage opportunities. The longest voyage - from Trinidad to China around the Cape of Good Hope - was taken last year by only one ship, according to the 2017 World LNG Report issued by the International Gas Union (IGU). Another two Atlantic LNG cargoes were sent to the Far East on a similar route around South Africa.

Incremental demand growth in Asia Pacific is largely being covered by new Australian LNG supply and the Qatari LNG incumbents. Newly ramped-up US LNG supply, meanwhile, stayed largely in the Atlantic Basin where cargoes found a home in South America, the Iberian Peninsula and in the UK.

Rising regionalization of trade throughout 2016 meant that the average nautical miles travelled per voyage has fallen. The Panama expansion cut the distance from the US Gulf Coast to Japan to

9,500 nautical miles (nm), compared to the 14,400 nm for a voyage via the Suez Canal but cost for shipping, including bunker fuel, are considered as marginal compared to forgone arbitrage opportunities if price spreads narrow.

Spot fixtures at all-time high, but rates remain subdued

The build-up in liquefaction capacity is overcompensated by the high influx of new-built tankers to the market; and the imbuing

fierce competition between ship owners has seen some tankers offered for charter at rates below market price. / Some of these speculative spot LNG traders have played a critical role in helping soaking up excess tonnage.

Even though the number of spot fixtures is at an all-time high, the current saturated shipping market has kept a lid on any substantial increase in rates over the past year. Spot charter rates for much of 2016 remained low and relatively flat throughout the year (see graph).

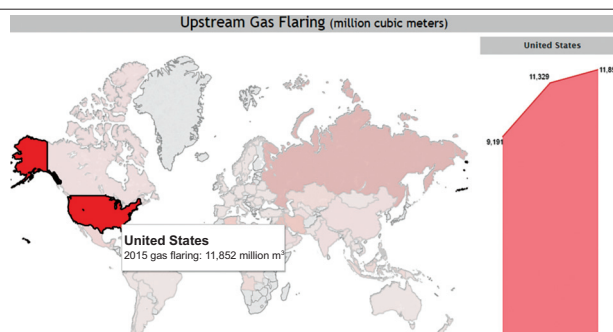
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Gas flaring – the dark side of the US shale gale?

Wasteful flaring of natural gas is meant to be a thing of the past, yet the wasteful burning of gas at wellhead increased over the past few years – notably in the United States during the rush to tap hydrocarbon-rich shale rock formations. 'Zero Routine Flaring by 2030' is the explicit aim of the World Bank-led Global Gas Flaring Reduction (GGFR) initiative – but there is a risk that funding for gas-gathering initiatives runs dry as the goal has lost political traction under Trump's US presidency.

"Gas flaring is not just about climate change and environmental impacts. It is also about massive quantities of a resource being wasted; a resource that should either be conserved or put to productive use," stressed Bjorn Hamso, who led the GGFR initiative since 2013.

Over the past five years, flaring worldwide increased by about 6.5 billion cubic metres - mostly due to technical, regulatory, or economic constraints. There are more than 16,000 gas



flares at oil production sites worldwide, causing about 350 million tons of CO2 emissions.

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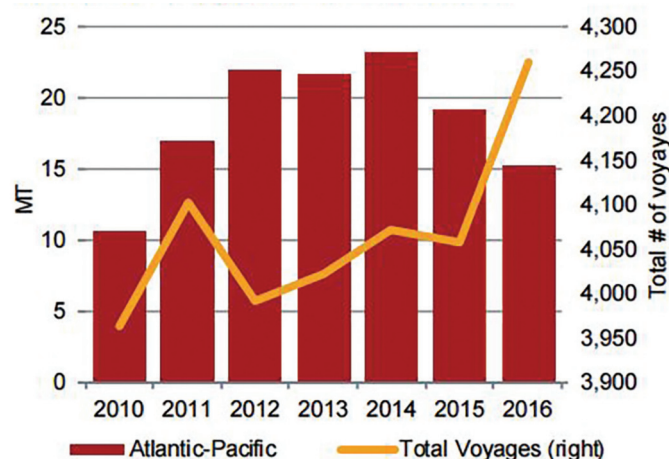
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Figure 5.8: Atlantic-Pacific Trade versus Total Number of Voyages per year, 2010 – 2016



Source: IHS Markit

For producers and sellers of natural gas, LNG shipping is easy to come by given that the build-out of tonnage continues to outpace new liquefaction capacity. Lately, the actual rate of tonnage growth adopted a more modest pace, compared with the period post-Fukushima in 2011 which saw a spike in incremental shipment volumes from the Atlantic Basin to Japan.

Ship-owners undercut rates in a fiercely competitive market

Charter rates skyrocketed at the time and many new LNG tankers got ordered on a purely speculative basis. The subsequent oversupply in tonnage is still being felt today: the IGU report points out that a portion of the available tankers in 2016 had higher utilization rates than the rest - simply because "their owners offered this tanker at below market price

early to maintain cold tanks, and build up and operational history for the tanker at multiple ports."

The global LNG fleet, at the end of 2016, comprised 439 tankers but only 23 are currently chartered as floating storage and regas units (FSRUs), while three are chartered as floating storage units (FSUs). Only three - out of a total of 31 tanker new-builds last year - were delivered from shipyard without a charterer lined up. Unsurprisingly, some may say, con-

sidering that six new six liquefaction project trains were brought online during 2016 with a total liquefaction capacity of 26.5 mtpa.

"This [trend] lines up with the industry rule-of-thumb that one tanker is needed for each 1 mtpa of liquefaction capacity," the IGU comments, "however, many of the project tankers were delivered well ahead of time during 2015 alongside speculatively ordered tankers, adding length to the market."

Rates for a newer, larger, and more fuel efficient Tri-Fuel, or Dual-Fuel Diesel Electric (TFDE/DFDE) tankers averaged ~\$34,000/day during 2016, compared to ~\$36,000/day during 2015 - a 6% YOY decrease. This compares to more dramatic 25% yoy decrease for conventional steam tanker, for which rates averaged ~\$20,000/day during 2016, compared to the previous year average of ~\$27,000/day.

Looking at the order-book as of start-2017, some 121 tankers are expected to be delivered through 2022, of which 6 were ordered

during 2016; a significant decrease from the 28 tankers ordered in the prior year.

Newbuild orders slow in parallel to FID delays on liquefaction

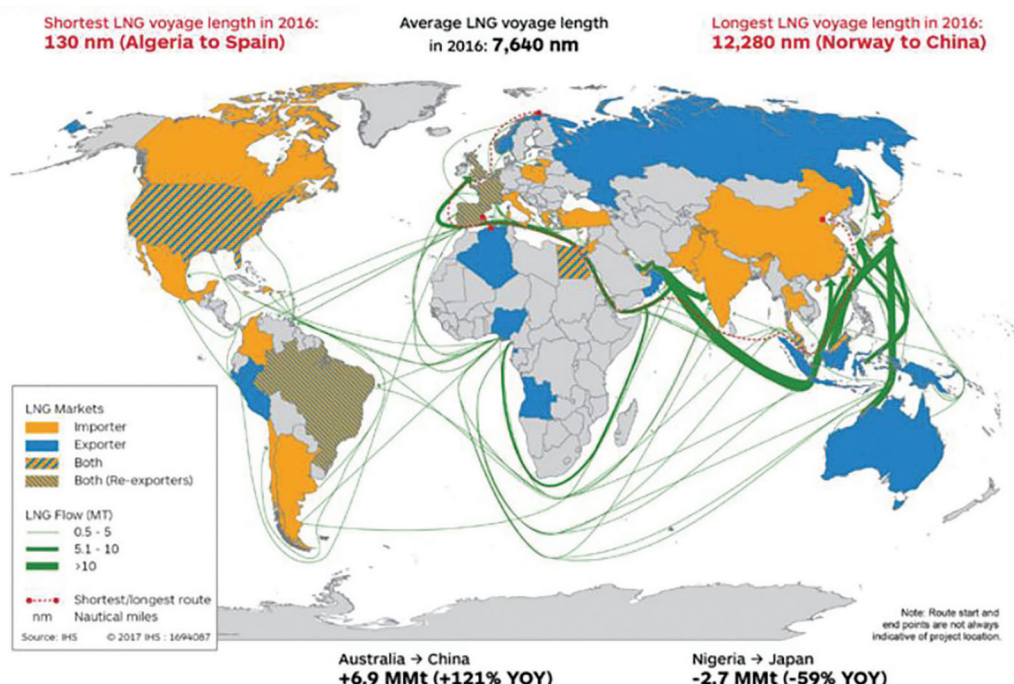
"The slowdown in newbuild orders coincides with the slowdown in liquefaction project FIDs being reached. Only 66% of the tankers currently on the order book are tied to a specific charterer, leaving many options for potential project offtakers (see Figure 5.2)," analysts comment.

Over the course of this year, an additional 55 tankers (including 4 FSRUs, 1 FLNG unit, and 1 converted FLNG unit) will be delivered from shipyards, while an additional 36.8 mtpa of new liquefaction capacity is expected to come online.

"Despite the increase in liquefaction capacity start-ups," analysts believe that "the concurrent rise in vessel deliveries will maintain the ongoing mismatch in tonnage availability to liquefaction capacity, keeping charter rates at their historic lows."

IGU World LNG Report – 2017 Edition

Figure 5.7: Major LNG Shipping Routes, 2016



LNG North America

Publisher
Stuart Fryer

Editor
Anja Karl
Tel: +44 7733 684682
anja@lngjournal.com

Layout
Vivian Chee
Tel: +44 (0) 20 8995 5540
chee@btconnect.com

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South Korea: Removal of LNG import tariffs would end coal's dominance

Ambitious plans, set out by South Korea's newly instated Government, herald a U-turn away from coal and nuclear towards cleaner-burning natural gas and renewables. If instated, the removal of LNG tariffs would propel up gas-burn for power generation which would cause additional demand for up to 50 mtpa of LNG imports.

Times of energy favouritism seem to be counted in South Korea since President Moon Jae-in took office in early May. Energy economics are shifting in favour of wind and solar power installations as costs for renewable deployment keep falling. LNG prices, meanwhile, have nosedived 70% from their 2014 peaks due to a surge in new supplies from Australia and the United States.

Responding to public concern over air pollution, the new President's administrative arm is even considering a construction stop for several coal and nuclear projects - a move that risks causing electricity prices spikes and medium-term capacity shortages.

WoodMackenzie analyst for Asia LNG, Chong Zhi Xin, commented that if Korea was to shut down its entire coal and nuclear power fleet, the potential LNG imports could be 46-49 mtpa, depending on the success of the renewable targets.

Pledge to ditch LNG import tariffs

To accelerate the shift toward clean energy, the operating hours and dispatch of gas-fired power plants can be increased by making the underlying fuel cheaper through the removal of tariffs on LNG imports. Coal and nuclear were already exempt from such tariffs - as previous Governments were staunch supporters of

Korea's coal and nuclear industry. "Currently taxes are imposed on gas for power generation, and we plan to correct the skewed tax system by seeking to levy environmental taxes on coal and nuclear," said Paik Ungyu, an energy engineering professor at Hanyang University who advises Moon on energy policy.

Incentives, and new subsidy schemes for clean energy, are hoped to increase the current 18% share of natural gas in South Korea's energy mix to 27% by 2030.

Renewables, now mostly hydro



Coal gets shipped to South Korea from mines in Australia, Siberia and South Africa

power, are meant to increase from around 5% to 20% over the same timeframe, Professor Paik told Reuters reporters in Seoul. The contribution of coal, meanwhile, would fall from about 40% at present to 21.8%, and nuclear from 30% to 21.6% of South Korea's fuel mix, based on an estimated 2.2% growth in electricity demand.

Review of new coal, nuclear projects

Earlier this month, President Moon ordered a temporary halt of operations for 10 old coal-fired power plants and specified plans to bring

forward their permanent closure. During his election campaign he also pledged to review plans to build nine coal power stations and eight nuclear reactors, including the part-completed Shin Kori No.5 and No.6, citing safety concerns.

Halting these projects could spark compensation claims. An estimated \$2.7 billion has already been committed on Shin Kori No.5 and No.6 by state-run Korea Hydro & Nuclear Power Corp. Ground works and parts of the construction has also started on the coal power plant projects, although all are less than 10% complete. ■

continued from page 1

More than 147.3 bcm of natural gas associated with oil extraction is currently being wasted through flaring at wellhead each year - this volume would be sufficient gas to generate 750 billion kilowatt-hours of electricity, more than Africa's current entire annual electricity consumption.

In Pennsylvania, shale gas is being produced at vast scale - almost entirely without flaring. Temporary equipment at several production sites (horizontal drilling rigs) has been erected to prevent flaring. Examples like this make Mr Hamso cautiously optimistic that the Trump administration will recognise the environmental importance and economic advantages of gathering associated gas at wellhead.

The World Bank-led Global Gas

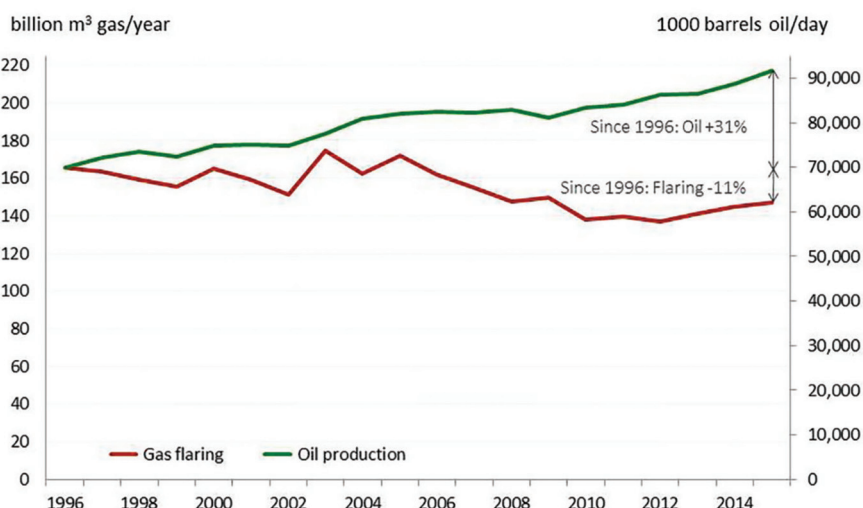
Flaring Reduction (GGFR) initiative that seeks to end routine gas flaring at oil production sites no later than 2030, has now been endorsed by 62 oil companies, governments and development institutions.

"The Initiative has galvanized industry and brought global attention to a 150 year-old practice that needs to end," Riccardo Puliti, World Bank Senior Director for Energy and Extractive Industries commented. "While the recent increase in flaring is disappoint-

ing," we are encouraged by the longer term trend and industry's desire to identify and implement

solutions, as witnessed by the number of Initiative endorsers in just over a year." ■

Global gas flaring and oil production 1996-2015



Source: BP/NOAA/GGFR Note: Flaring data based on new satellite image system and calibration from 2013 (VIIRS satellite - Visible Infrared Imaging Radiometer Suite)

At the Core of LNG

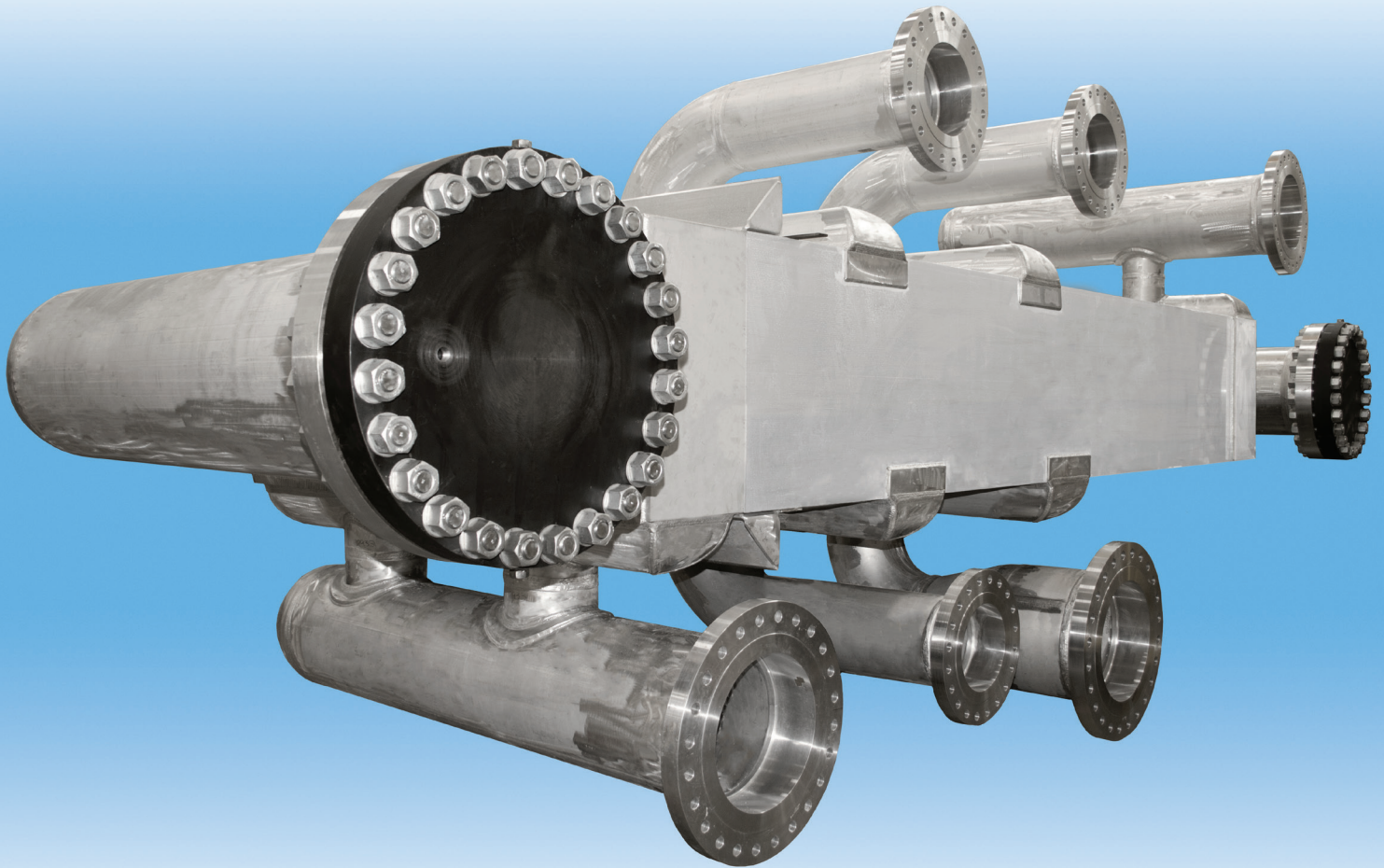


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Mexico's power sector awaits start of 3 new U.S. gas interconnectors

Three new gas pipelines between the US and Mexico are due to come in service by early July, with a combined capacity of about 3.3 Bcf/d: their routes are Encino-to-Laguna, Guaymas-to-El Oro and Ojinaga-to-El Encin. Timely operational start of these lines, and how they work in conjunction with existing gas infrastructure, is critical for boosting supply of cheap U.S. shale gas to Mexico's electric power utilities and industry.

From the start of 2017 through the end of 2019, there are over 10 Bcf/d of capacity in projects that have been approved and for which contracts have been awarded. However, even once all these pipelines are in service, full usage is not going to happen overnight.

"We think it will take more than a decade for pipeline exports to double again, perhaps two," said PointLogic Energy analyst Warren Waite.

Construction delays on the Mexican side

"The supply that will feed much of the gas flowing into Ojinaga-El Encino and its downstream interconnects will come from the Permian via the TransPecos intra-state pipeline," he said. "TransPecos was officially put into service back

in March, though construction delays within Mexico are one of the main reasons why the downstream connecting entities have lagged behind."

In terms of actual supply, PointLogic projects that in summer 2017, natural gas exports from the United States to Mexico will average 4.2 Bcf/d, peaking in July and August at 4.5 Bcf/d. For winter 2017/18, exports to Mexico are forecast to remain steady at an average of 4.2 Bcf/d, before increasing again to average 4.8 Bcf/d during summer 2018.

West Texas seen benefit the most

The lines Encino-to-Laguna and Ojinaga-to-El Encin, when working together, will increase delivery capacity from the Texas

border into the heart of Mexico's northern territories by more than 1.3 Bcf/d. However, looking at these pipelines, it is not as simple as adding the gas transmission capacity if one wants to gauge their impact on increasing U.S. gas exports to Mexico, said PointLogic Energy analyst Warren Waite.

US gas transforms Mexico's power sector

"The biggest U.S. beneficiaries of the growing gas demand in Mexico are deliveries through West Texas, where the Roadrunner, Comanche Trail and TransPecos pipeline projects have come into service, and the Agua Dulce Hub on the Texas Gulf," Waite forecast.

West Texas export capacity could surpass 4 Bcf/d, and South Texas around Agua Dulce could reach nearly 7 Bcf/d by

the end of 2018.

Mexico's eagerness to step up natural gas imports is driven by several factors, including rapidly increasing power demand and a need to decarbonize its power generation mix from a heavy reliance on fuel oil.

To achieve this goal, the government of Mexico has issued a plan in 2016, known as 'The New Policies Scenario,' in which it would more than double electricity generation capacity from 70 gigawatts (GW) in 2015 to almost 160GW in 2040.

Gas-fired power generation would account for half of the net increase, while fuel oil-fired electricity generating capacity would decrease from 17GW in 2015 to 3GW in the same time period and coal-based power would be flat (see graph).

New U.S.-Mexico natural gas pipelines



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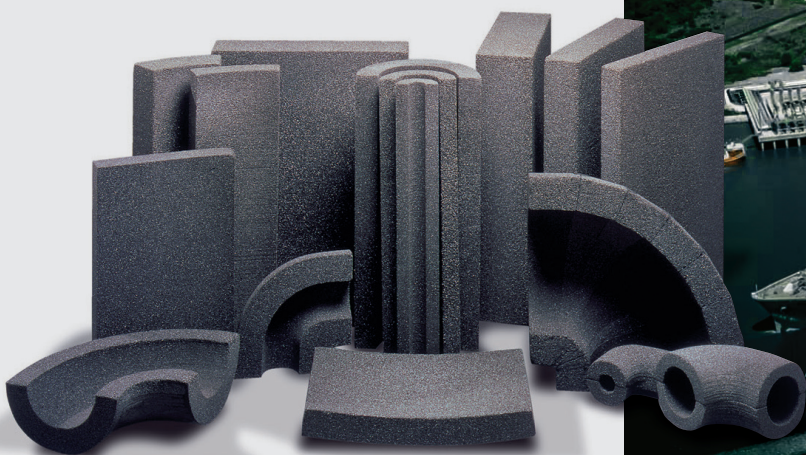
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Is the U.S. no longer a role model on clean energy?

As the world's second largest emitter, the U.S. stance on climate matters greatly as a role model for rapidly developing countries like China and India. Analysts are concerned that Mr Trump's election will adversely affect the US-China co-operation, an important pillar of the climate policy agenda.

But despite U.S. President Trump's withdrawal from the Paris Climate Accord, and his open support for fossil fuels, Energy Aspects forecasts his move is "unlikely to halt the transition towards cleaner energy globally, although it is likely to slow it." The EU, but also largest emitters like India and China are expected to follow through on their clean

energy policies.

"Trump's withdrawal from Paris Agreement unlikely to hit EU climate policy but will slow US renewables growth," analysts at Energy Aspects commented in note for investors in carbon emissions markets.

It will be difficult for a Trump administration to disentangle the United States from the Paris

Agreement, which has already come into force. But analysts at the Economist Intelligence Unit (EIU) warn that his "complete indifference to addressing climate change at the top policy level,

will be a setback."

Fast-growing economies like India have taken first steps to diversify away from coal: the power ministry is committed for renewable energy sources to make up 40% of generating capacity by 2030. China is also rolling out wind and solar power installation, while placing caps on coal-fired power generation particularly in urbanised areas.

Trump takes steps towards ditching CPP

At home, the Trump administration is expected to ultimately abandon his predecessor's emissions-cutting agenda, casting a shadow of uncertainty over the future direction of U.S. energy policy.

Implementation of the Clean Power Plan (CPP), carved out by the former U.S. President Barack Obama, has already stalled because of litigation. Now, this process is seen by many as being "in severe doubt".

Meanwhile, The European Union as a whole has already reached its 2020 target to reduce carbon emissions by 20% from 1990 levels, partly owing to slower economic growth, so analysts see it on track to curbing emissions by 40% by 2030. Germany, meanwhile, is reducing the speed of renewable deployment by cutting back on subsidies. Under a new phase of the Renewable Energy Act, the existing system of feed-in tariffs will be axed in favour of competitive auctions. ■



US President Donald J. Trump

California and German state actors fight Trump on climate change

The US state of California has teamed up with several German states in the 'Under2Coalition' to tackle climate change. Edmund G. Brown, Governor of California said US President Trump's withdrawal from the Paris Agreement underscored the "significance of subnational actors."

California, the sixth-largest economy in the world, is adamant to pursue its clean energy targets and, together, with several German federal states, aims to provide strong leadership in the COP23 climate talks in Bonn this November.

Governor Hendricks was speaking after a meeting with Germany's environment minister Barbara Hendricks in San Francisco over the weekend.

California, the sixth-largest economy in the world, has advanced its nation-leading climate goals while also growing the economy. Over the past seven years, California has created 2.3 million new jobs, eliminated a \$27 billion budget deficit which gave a boost to the state's credit rating.

In March, Governor Brown reaffirmed California's commit-

ment to exceed the targets of the Clean Power Plan and the state's efforts to curb carbon pollution, which include establishing the most ambitious greenhouse gas emission reduction targets in North America and the nation's toughest restrictions on destructive super pollutants. He also signed legislation that directs cap-and-trade funds to greenhouse gas reducing programs.

The Governor's latest clean energy action builds on legislation signed in October 2015 to generate half of the state's electricity from renewable sources by 2030 and double the rate of energy efficiency savings in California buildings.

The 'Under2Coalition' was founded in 2015 by California and the German state of Baden-Wuerttemberg, as an international



Governor of California Edmund G. Brown

pact among cities, states and countries to limit the increase in global average temperature to below 2 degrees Celsius. Eighteen US jurisdictions have since joined the coalition, representing 89 million people and 28% of the American population.

Globally, the coalition comprises 175 jurisdictions that collectively represent more than 35 countries, 1.2 billion people and \$28.8 trillion GDP - equivalent to over 16% of the global population and over 39% of the global economy. ■

Forecasters take different view on Asia Pacific's hunger for LNG

Top forecasters anticipate energy demand growth through 2035, but projections on rates and market size vary significantly between Wood Mackenzie's 'Energy View to 2035' and similar outlooks by BP, ExxonMobil (XOM) or the IEA's New Policies Scenario. Natural gas displaces coal as the second largest fuel across all forecasts, except in the IEA New Policies Scenario (IEA NP), with demand growth for LNG and pipeline gas seen strongest during 2015-2025.

The competing forecasters broadly agree on which fuels will win or lose across Asia Pacific: Coal is seen static across all forecasts, backed out by gas, nuclear and renewables, although WoodMac's projection is highest on gas growth.

All outlooks expect gas growth at around low to mid 3% from 2015-2025; post 2025, growth moderates materially — between 1 and 1.5% over 10 years due to slower economic growth and more efficient energy production, especially in the power sector.

Views differ regarding China: BP has a higher view on China's total energy demand by 2035,

which equals around a 28% share of total energy demand globally. The other outlooks agree that China's demand profile is moderating long term.

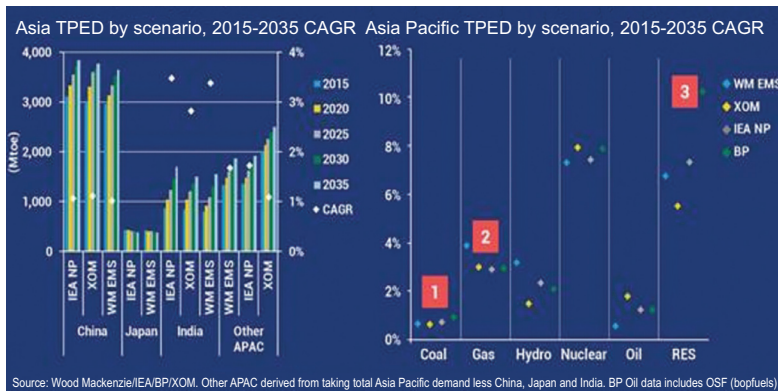
No consensus exists amongst forecasters on which markets compensate for a slowdown in China. For example, BP is more conservative on the growth of markets ex-China, while Exxon's XOM is the highest on Other Asia Pacific growth across all four outlooks.

Wood Mackenzie estimates growth rates between 1 and 1.5%, focused on emerging markets in

Asia Pacific. Looking at India, the consultancy expects total primary energy demand to double over the next 20 years.

Outlooks broadly agree on which fuels will win or lose across Asia Pacific. Coal is static across all

forecasts, backed out by gas, nuclear and renewables (see points 1-3, second graph). Wood Mackenzie is highest on gas' growth compared to other outlooks, and is close to BP and the IEA NP on the outlook for renewables.



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LNG – fuel of choice for shipping, transport and heavy machinery

Demand for LNG keeps rising globally, as the super-chilled gas becomes a fuel of choice in new markets such as shipping, transport and heavy-horsepower machinery. In its annual World LNG Report, the International Gas Union (IGU) pointed out the fast rise of LNG-powered tankers, with 31 newbuilds delivered in 2016 from shipyards to the LNG shipping fleet.

Switching to LNG fuel in maritime transport has a monumental impact” on emissions, commented David Carroll, the US President of the IGU. “The increased use of natural gas is hugely beneficial to the environment, and subsequently human health, across the globe. Our recent reports on urban air quality, as well as the use of LNG in marine shipping, are testament to this,” he said when presenting their annual World LNG Report.

Several studies illustrate future LNG-fuelled ship fleet development: The DNV study “Shipping 2020” includes a

scenario that assumes high economic growth and limited environmental protection - hereby the global LNG-fuelled fleet is seen growing to over 1,000 ships by 2020.

Trade on record high amid supply-side growth

Global LNG trade last year rose by 5% to reach a record 258 million tonnes, amid “dynamic growth on the supply side”, notably the start of new exports from the US Gulf of Mexico as well as from production ventures in Australia. Global liquefaction capacity reached 339.7 mtpa, according to

IGU figures building on the 2015 measurement of 301.5 mtpa and showing consistent rate.

Demand also keeps growing; “The most pronounced increase in demand comes from Asian markets, with China’s LNG consumption increasing dramatically by roughly 35 percent to 27 mtpa.” the report reads.

“This year’s World LNG report is extremely promising and LNG maintains an essential role in expanding access to gas across the globe, acting as a key pillar in the future energy mix,” Carroll concluded. Looking ahead, the IGU expects LNG production to grow significantly over the next few years, with 114.6 MTPA of capacity under construction as of January 2017.

The IGU was established in 1931 and brings together natural gas associations and corporations from 91 countries.

Chiyoda gets nod for power barge concept

The American Bureau of Shipping (ABS) has given the green light to Chiyoda of Japan for its concept of converting a disused LNG carrier into a floating power plant, with electricity sent to land via heavy duty electrical cable. Chiyoda said it had received approval in principle from ABS some three weeks ago for what it calls a ‘floating LNG power plant, storage and regasification unit design.

Macquarie to buy Cargill’s North America power, gas business

Australia’s Macquarie Group has agreed to acquire Cargill’s North America power and gas business, for an undisclosed amount, just months after the bank bought the petroleum business of Cargill.

Over the past year Cargill streamlined its business over the past year, reacting to a nearly 3-years slump in global oil prices. Following the divestment, the trading house said it would stay focused on the energy sector, mostly in terms of financial risk management, biofuels and tanker shipping. Cargill currently offers services in power and natural gas trading as well as gas storage, and transportation.

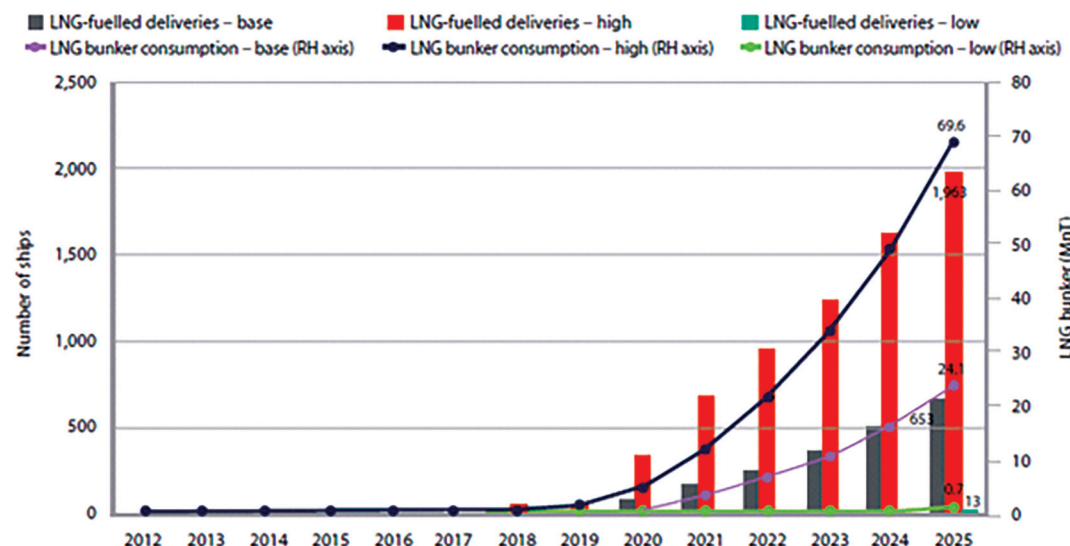
Cargill initially planned to see its American and Canadian power and gas business to TrailStone Group, a private equity investor funded by Riverstone Holdings; however that bid fell through.

“This year’s World LNG report is extremely promising and LNG maintains an essential role in expanding access to gas across the globe,”

LNG-fuelled new builds worldwide together with bunker consumption estimates

Scenario	Number of ships	Share of global deliveries from 2012 to 2025 (%)
Low	13	0.1%
Base	653	4.2%
High	1960	12.6%

(Source: Lloyd’s Register)



Latin America – favoured destination for US LNG cargoes

Most of the ships laden with US LNG set sail for South America in May – in contrast to April when some shipments from Sabine Pass were also delivered to US allies in Asia and the Middle East, the latest data from the US Department of Energy shows. China and India were not on the list.

Cheniere Energy's Sabine Pass LNG export plant sent out 15 cargoes and narrowed its monthly delivery count to seven different nations, compared with nine in the previous months. Four cargoes were sent to Mexico, three to Argentina, two each to Chile, Kuwait and Japan, and one each to South Korea and the United Arab Emirates.

There were no deliveries during the month to previous recipients such as China and India, while no shipment was sent in April to Europe.

Prices were also higher during April versus the previous month and ranged from \$3.65 per million British thermal units to \$6.65 per MMBtu. March prices were at between 3.02 per MMBtu and \$6.02 per MMBtu.

Since Sabine Pass began its shipments in February 2016, the largest recipient of US LNG has been Mexico with 25 cargoes received followed by Chile with 14, China with 10 and Argentina with nine.

The Sabine Pass plant now has three liquefaction Trains on stream, each with nameplate capacity of 4.5 million tonnes per annum and a fourth being ramped up for commercial operations.

The DoE figures also showed that four cargoes were exported in ISO container tanks from the Hialeah facility near Medley in Florida, via the port of Fort Lauderdale, to the Caribbean island of Barbados, which received 50 ISO containers of LNG during that 14-month period from February 2016.

Each of the ISO container shipments to Barbados were priced at \$10/MMBtu. The exporter was American LNG Marketing.

Details of Sabine Pass April 2017 shipments in chronological order, including country of destination, cargo type, vessel, volume (given as thousand cubic feet [mcf] of natural gas) and cost at the export point:

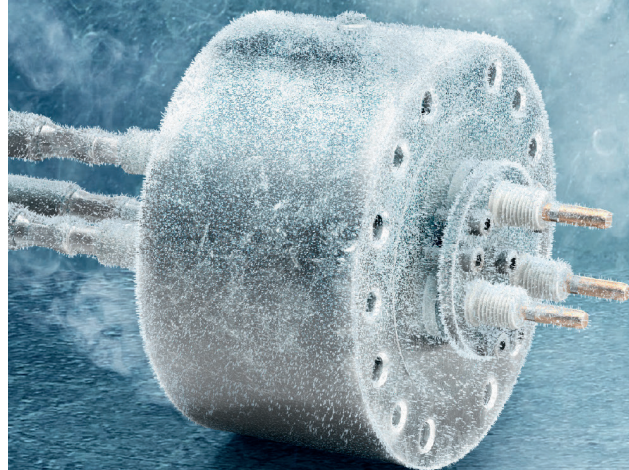
- Argentina spot "Maran Gas Alexandria" 3,458,399 \$4.59 per MMBtu
- Kuwait spot "Golar Seal" 3,429,143 \$4.41 per MMBtu
- UAE long-term "Methane Julia Louise" 3,346,529 \$3.65
- Mexico spot "Magellan Spirit" 3,536,643 \$4.40
- Mexico spot "Stena Crystal Sky" 3,688,816 \$4.78
- Chile long-term "Ribera del Duero Knutsen" 2,951,959 \$6.14
- Mexico long-term "Methane Nile Eagle" 3,051,293 \$3.65
- Japan long-term "Creole Spirit" 3,681,272 \$6.65;
- Argentina spot "Cool Voyager" 3,405,702 \$5.07
- Japan long-term "Maria Energy" 3,717,192 \$6.65
- Kuwait long-term "Maran Gas Lindos" 3,354,958 \$3.65
- South Korea long-term "La Mancha Knutsen" 3,295,098 \$6.14
- Argentina spot "Oak Spirit" 3,270,929 \$4.22
- Mexico long-term "SCF Melampus" 3,453,613 \$3.65
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