LNG North America

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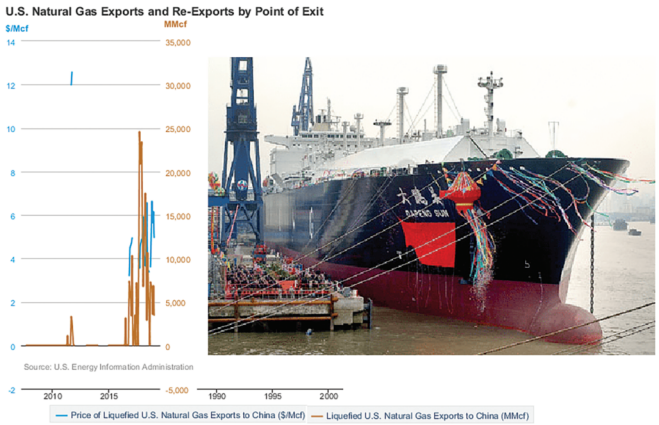
US LNG project developers hit hard by escalating Chinese tariffs

The biggest losers of tit-for-tat trade politics between the United States and China are developers of US LNG export projects. Debt-financing for such costly infrastructure projects is now hard to come by as many medium-sized projects are not underpinned by firm offtake through contractual sales and purchase agreements (SPA). Worse still, state utility buyers from China now certainly won't sign any SPA for longterm US gas supplies as long as the trade war keeps escalating.



Already when the 10% tariffs on US LNG imports were enacted in September, no more Chinese buyer was signing up to long-term US LNG supplies. That pattern now is reinforced with tariffs rising to 25% from June 1.

The cause of the trade battle is President Trump's conviction he could pressure Beijing into improving its practices around technology transfers, enhance market access for foreign companies and protect intellectual property rights. Escalating tariffs, however, are hampering global trade and Beijing's retaliation on Washington's latest round of tariffs is hitting one of President Trump's favorite industries: oil & gas.

Cheniere Energy CEO Jack A. Fusco kept his chin up and told analysts in mid-May, "there haven't been any spot cargos that haven't cleared the US and made a margin," – but Chinese utility buyers like PetroChina, CNOOC and CNPC are acting more cautious. Seeking to circumvent the steeper tariffs, some cunning traders are understood to have approached their suppliers, asking for shipments from non-tariff nations instead. If this proves to be impossible,

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Saudi oil giant signs record LNG deal with Sempra, aspires to become global gas player

State-owned Saudi Aramco, the world's largest oil and gas company, has signed a Heads of Agreement (HoA) or a definite 20-year LNG sale-and-purchase agreement (SPA) over 5 mtpa from Phase-1 of Sempra Energy's Port Arthur LNG project. Some observers say that "in time, Saudi Arabia will import LNG to be used for power generation. Wood Mackenzie, however, expects that Saudi Aramco will use this volume to establish a global gas portfolio as it seeks to transform its business.

"It is a signal of Aramco's intent to become a global gas player and develop a broad LNG portfolio," Wood Mackenzie's Research Director, Giles Farrer said, suggesting the Saudi oil major is likely to soon attempt LNG-focused acquisitions in Arctic Russia, Australia and other markets.

"We expect Saudi Aramco to build on its broad expertise in crude oil and products marketing, while also leveraging Saudi Arabia's diplomatic ties," Farrer said, explaining that "to facilitate this, Aramco recently started trading LNG, selling its first LNG cargo into India in April."

The HoA with Sempra also stipulates that Aramco will make a 25% equity investment in the Port

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AGENDA

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hard-nosed buyers may opt to pay a break-up fee to get out of such contracts, rather than having to pay the higher tariffs. In any event, the sheer volume of US gas exports to China will decrease drastically.

Shipments of US LNG grind to a halt

Shipments of US LNG to China have already fallen off a cliff. Since the 10% tariff was enacted in September, only four US LNG cargoes were delivered to China compared to 35 cargoes in the prior September through April period. According to Wood Mackenzie figures, this is despite over 30% growth in both Chinese LNG imports (32%) and US exports (38%) over the same timeframes.

"The tariff increase from 10% to 25% will reduce flows to China further," analysts cautioned, although "the absolute value of the tariff is partially offset by falling spot prices in Asia – from over $10/mmbtu when initially introduced to closer to $5.50/mmbtu today."

Before tariffs were imposed in September 2018, China was getting close to importing 141.6 billion cubic feet (Bcf) of US LNG, up from 103.4 Bcf in the previous year and 17.2 Bcf in 2016. By year-end 2018, the tariffs had reduced China's actual imports of US LNG to just 93.9 Bcf, worth approximately $426 million.

China signs no new SPAs for offtake of US LNG

Stable, long-term trading relations are unthinkable between Chinese buyers and US sellers these days. The last long term contract signed by a Chinese offtaker and US seller was in February 2018 – before the Trade War began, when PetroChina signed a 25 year sales and purchase agreement (SPA) with Cheniere Energy.

Since then, Chinese buyers have announced both SPAs and HOAs from the rest of the world, including projects in Mozambique and Canada, and portfolio sellers like Qatargas and Petronas. Wood Mackenzie warns "an ongoing trade war will continue to create hesitancy for Chinese buyers to sign up for new long term volumes."

Looking forward, strong LNG supply growth is seen to continue outpacing demand through 2020. Supply will grow by 38 million tons per annum (mtpa) in 2019 and another 30 mtpa in 2020, while demand in high-priced Asia Pacific markets will only grow by 12 mtpa and 16 mtpa, in 2019 and 2020 respectively. According to analysts, "this market length creates flexibility to redistribute and optimize trade flows, especially as the US is one of the more distant sources of LNG for China."

While President Trump has broken much political porcelain with Chinese gas buyers, destination swaps may help some LNG traders to circumnavigate the escalating tariffs - but the real winner on the energy front is Russia.

Russia's Gazprom – the laughing third

Sino/U.S. trade tensions are playing in the hands of Russia and allow it to increase exports of pipeline gas through the soon-to-be-opened Power of Siberia Pipeline to China. Russia is already seeking to increase LNG shipments from Sakhalin to China and is speeding up the development of its proposed Vladivostok LNG project.

Forging ahead with construction of the 'Power of Siberia Pipeline' and the western/eastern route, Gazprom will soon have two major interconnectors for delivering Russian pipeline gas to China. Preparations are underway to start injecting natural gas into the 'Power of Siberia' pipeline to China in Q3-2019. Works are "going according to schedule", Gazprom chairman Alexey Miller told CNPC chairman Wang Yilin recently at a working meeting in Beijing.

Together, Russia's two Siberian gas interconnectors are estimated to supply almost 17% of China's total gas needs by 2020 - reducing the room left for LNG imports. In terms of pricing, the first deal between CNPC and Gazprom for a western pipeline route from Russia to China foresees 38 Bcm/year gas supplies at a price of $10/MMBtu, while Chinese LNG buyers need to pays up to $16/MMBtu for a spot cargo.

In the interest of energy market economics, the U.S. President would be well advised to return to the negotiation table. Chinese gas buyers are not in a hurry to budge because they have choices. They can opt for Qatari, Australia or Russian LNG instead in addition to importing more very cost-competitive pipeline gas from Turkmenistan, Kazakhstan and Russia, China's big northern neighbor and political ally. How close these relations are becomes apparent from the veiled warning of Chinese Foreign Minister Wang Yi against "outside interference" in the relationship between the two countries. Wang said China-Russia relations set an example "beyond compare", while the world was "in chaos and disorder". ■

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Arthur liquefaction plant on the U.S. Gulf Coast. If converted to a SPA, the deal will be one of the largest LNG deals ever signed and the largest deal signed for the past six years.

For Sempra Energy, the deal means it can proceed to financial close on the Port Arthur LNG venture by the end of 2019, or early 2020. As the main project sponsor, Sempra already sealed a 2 mtpa contract with Poland's PGNIG for supplies from Port Arthur.

Saudi deal speeds up FID on Port Arthur

The deal with Saudi Aramco will take total contract volumes from the 11 mtpa liquefaction facility to 7 mtpa, a level that should be sufficient to secure debt finance. As such, analysts expect debt raising will now be accelerated to facilitate a final investment decision (FID).

And as the Sempra LNG venture now looks likely to proceed, other buyers might sign some offtake agreements too.

Sempra may take venture to 45 mtpa

Looking ahead, Sempra Energy CEO Jeffrey W. Martin said Port Arthur LNG could become one of the largest LNG export projects in North America, with potential expansion capabilities for up to eight liquefaction Trains, or approximately 45 mtpa of capacity. He underlined the agreement with Saudi Aramco includes the negotiation and finalization of a 25% equity investment in the Port Arthur LNG Phase-1.

Sempra Energy received final FERC approval for Port Arthur in April and expects to be given final notice to proceed from the regulator over the course of 2019. The project already got a non-FTA export permit from the US Department of Energy (DOE) earlier in May.

Situated Jefferson County, Texas, the Port Arthur LNG project will initially include two Trains capable of processing approximately 11 mpta of LNG, and up to three storage tanks. Feedgas for the facility will be supplied through new gas transmission pipelines in Texas and Louisiana. In terms of construction, Bechtel is lined up to provide the EPC for the project.

Port Arthur is one of three Sempra-led liquefaction plants being developed in North America. The company's Cameron LNG plant in Louisiana is set to ship its first cargo, and the third project is located at Costa Azul on the Pacific Coast of Mexico. ■

LNG North America

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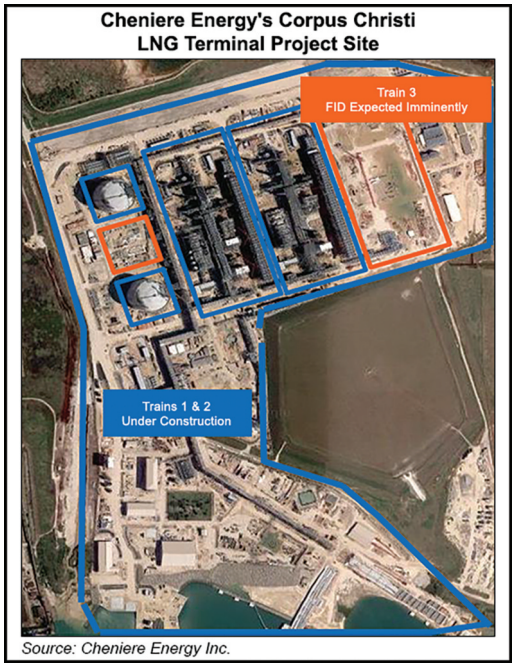
"No risk US LNG cargoes won't clear, make a margin," Cheniere says

Falling gas prices in Europe and Asia pose no risk of reducing US LNG exports, the Cheniere Energy CEO Jack Fusco said. "There haven't been any spot cargos that haven't cleared the US and made a margin," he recently said in an investors' presentation.



Site of Corpus Christi LNG terminal

Though spot prices had "been extremely volatile", Fusco stressed that none of Cheniere's customers took the option last quarter of giving 60 days' notice to pay a fine rather than receive a cargo. Nor did he see that risk emerging while the US Henry Hub price of gas was in the mid-to-high $2/MMBtu range. "We don't anticipate ever having to use that option," he stressed.

Jack Fusco

US LNG sellers like Cheniere believe they are set to benefit from a rise in oil prices because this would make their Henry Hub-linked pricing formula for LNG pricing more attractive than competitors' Brent-indexed contracts. In case of a sudden oil price rise, Asian buyers would be better off with "flat and stable" US gas prices that "can be hedged out to 10 years," Fusco argues, claiming "they appreciate now what the Henry Hub-linked contract can deliver to them."

In terms of its U.S. Gulf Coast project, Fusco said "we remain on track to place Corpus Christi Train 2 into service in the second half of 2019, and we expect to progress Sabine Pass Train 6 to a positive Final Investment Decision (FID) in the coming months."

Temporary LNG glut "could ease" this summer

Considering the rapid build-out of liquefaction and export capacity in the US and in Australia, most market observers reckon global LNG supply will rise further for the remainder of this year.

The Cheniere CEO, in contrast, insisted there were signs that a temporary glut could ease in the coming months. In his view, strong carbon emissions prices in Europe were encouraging the use of ample gas-fired power generation capacity at the expense of coal. European gas buyers imported a record 21 million tonnes of LNG in the first quarter – more than double the volume in Q1-2018.

In Japan and South Korea, the first and third largest LNG buyer, demand for natural gas is expected to recover in the second half of this year due to a combination of nuclear maintenance, clean-air-policies that trigger coal plant closures and a switch to hybrid energy sources, consisting renewables and gas-fired units for backup.

Fusco highlighted 5.6 GW of nuclear power plant capacity in Japan that was scheduled for maintenance through until September, as well 2.3 GW of coal plants scheduled to close in South Korea by summer. ■

Perry applauds US LNG projects for economic growth on Gulf Coast

Announcing non-FTA export approval for the Driftwood LNG project near Lake Charles, the US Energy Secretary Rick Perry said he "applauds the American private sector for continuing to reach new milestones and look forward to continued growth in this sector."

Render of Driftwood LNG

"I am pleased to announce the order signed today authorizing Driftwood, owned by Tellurian Inc., to export up to 3.88 billion cubic feet per day (Bcf/d) of natural gas as LNG, to any country that does not have a free trade agreement with the US," Perry said, adding, "the US is now in its third consecutive year as a net exporter of natural gas, now exporting domestic LNG to 35 countries."

US Energy Secretary Rick Perry

Tellurian President and CEO Meg Gentle thanked the DOE staff for their diligence in authorizing the order that she viewed as crucial to global LNG trade.

"The US will become a top three LNG exporter and Tellurian intends to do our part in creating US jobs while delivering a cleaner energy supply source to the world," added Gentle.

Tellurian received a Federal Energy Regulatory Commission (FERC) order in April 2019 granting authorization for the Driftwood LNG project, a proposed liquefaction and export facility to produce 27.6 million tonnes per annum and for its associated 96-mile pipeline.

The Driftwood project schedule includes a final investment decision in 2019, a start to construction activities shortly afterwards and the beginning of commercial operations by 2023. ■

Spread narrows for TTF-Henry Hub arb trading, may lock in US supply

Spreads for arbitrage trading are narrowing between the Dutch TTF and the US Henry Hub as well as the TTF and the Japan Korea Marker (JKM), so Energy Aspects warns "any further tightening could close the arb windows and lock-in US supply." The coal-to-gas switching level is seen at $3.70/mmbtu, or €11.1/MWh – below the breakeven to ship cargoes from the US to Europe at current freight rates.

At current prices, the arb to Europe remains open by a tight margin of nearly $0.50/mmbtu. Given the notice period to lift cargoes at Cheniere facilities (it is already past the 20th day of the calendar month), decisions made today are only going to impact August loadings.

Moving forward, the big issue for pricing is if storage concerns become dire enough to drive gas prices above that coal parity price trigger. In this case, the arbitrage window for US LNG coming to Europe could close late this injection season.

Average spot freight rates have gone up by some 8,000 $/day to 49,000 $/day over the past week, according to Fearnleys data, which renders the JKM-TTF arb window "very narrow" but still marginally favours sending US cargoes to Asia rather than Europe. According to Energy Aspects, the breakeven arb is now at 70 cents/mmbtu.

Prices drive coal-to-gas switching in Europe

TTF gas prices currently trade near $4.15/mmbtu (€12.65/MWh), which means it is near the level at which a very efficient coal-fired plant could be displaced by an 8 mmbtu/MWh heat rate gas unit. According to Energy Aspects, this imply nearly all coal-fired generation in Europe is uneconomic at the moment which drives coal-to-gas switching.

Storage in the EU has still an overhang of some 23 bcm, which it will need to whittle down to no more than 12 bcm by October. For winter 2019/20, things are looking more positive at the TTF as the Russian supply risk eases and cold weather props up demand. "The near-record wide contango at the TTF means the TTF-Henry Hub arb window for peak winter remains wide open," analysts commented.

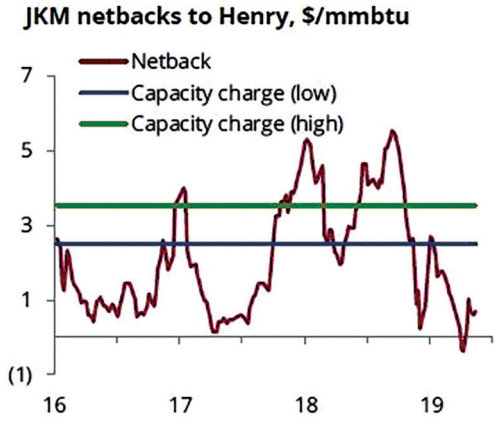
Big supply tenders in Egypt and Indonesia

Spot LNG markets last week were dominated by some big individual tenders, offering more supply than there is demand for. The biggest tender came from EGAS in Egypt, offering to sell 13 cargoes loading from the Idku plant over June and July. This schedule implied the plant will be running at pretty high utilisation, at least at one of its trains, analysts reckon.

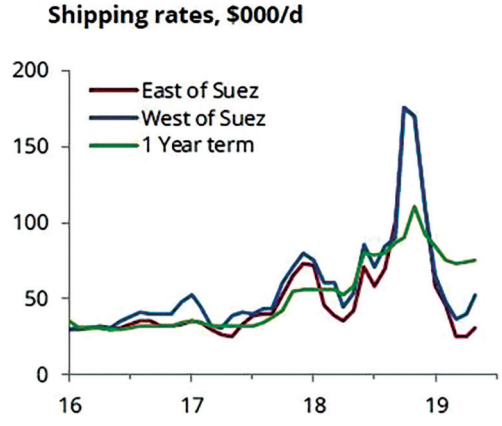
Indonesia offered five cargoes for delivery, loading from June. The Asian island nation has been exporting below Energy Aspects' forecast levels so far this year and the latest tender looks like an attempt to reverse that. The first tender is to be offered from YPF, which has a first cargo to sell from its FLNG unit in Bahia Blanca, while PetroChina was offering up another three Yamal cargoes, loading in June.

On the demand side, Mexico's CFE looking for seven cargoes for delivery — one in May, two in June and four in July — into Altamira. CFE was very bullish earlier that some of the main pipelines linking with US supplies would be up and running this year, allowing it to stop LNG imports.

The main interconnector to Altamira is the 2.6 bcf/d Sur de Texas-Tuxpan, which had a latest in-service date of June. The gas pipeline has been repeatedly delayed due to permitting and technical issues and the CFE tender for supply delivered into the east coast of Mexico suggests further delays are expected. Spot LNG cargoes will keep making up for these supplies. ■



Source: Refinitiv, Energy Aspects



Source: Fearnleys, Energy Aspects

NEWS NUDGES

Cameron LNG schedule

The US Federal Energy Regulatory Commission (FERC) has been notified by the Sempra-led Cameron LNG export project that the last two Trains of the three-Train project would enter commercial service by 19 September 2020 rather than in Q1 and Q2-2020. This is because the FERC approved the construction of three liquefaction Trains in the first phase at Cameron on June 19, 2014 and the permit required the project be completed within five years. However, work and weather-related delays have affected the original schedule.

Trains-1 is scheduled to ship its first cargo in June after production from feed-gas supplies began earlier in May. When completed the Cameron plant will export at least 12 mtpa of LNG, or about 1.7 Bcf/d of natural gas. Cameron LNG is owned by Sempra and other shareholders include Total, Mitsui & Co. and LNG Investment, a company jointly owned by Mitsubishi and Nippon Yusen Kabushiki Kaisha (NYK Line).

Jacksonville LNG starts

JAX LNG, situated at Dames Point in Jacksonville, Florida, has held a ribbon-cutting ceremony to mark the start-up of the newly constructed plant. JAX LNG is the first small-scale plant in the US with both marine and truck-loading capabilities and was built through a joint venture between Pivotal LNG and NorthStar Midstream. ■

Qatari Q-Flex transits Panama Canal in triangle move

In a triangle move to lift a US LNG cargo, the Qatari Q-Flex tanker "Al Safliyah" has become the largest LNG vessels to transit the expanded Panama Canal. It recently berthed at Cheniere Energy's US export plants in the Gulf of Mexico to lift a cargo.

LNG tanker passing through the Panama Canal

The 210,100 cubic metres capacity vessel transited the waterway from the Pacific to the Atlantic side on May 12 and was off Port Arthur on May 20 awaiting orders, according to shipping data. It is expected to lift a cargo from Corpus Christi plant or Sabine Pass, and can then re-enter the Panama Canal to complete its round-trip transit or head across the Atlantic with a shipment for Europe.

Chartered to Qatargas, the "Al Safliyah" LNG tanker left Ras Laffan in the Gulf with a cargo on April 5 and then unloaded the shipment at the Korea Gas Corp.-owned import terminal at Tong-Yeong in South Korea. It then headed across the Pacific to Panama.

The Panama Canal Authority had confirmed before the start of the 80-kilometres Canal passage that the Q-Flex ship would be the largest LNG carrier to make the transit. The Canal was expanded in 2016 through the completion of new Neopanamax locks to allow the larger LNG vessels to pass through. The Authority confirmed the waterway can now accommodate vessels up to 51.25 metres wide, hence Q-Flex vessel can pass through with 1.25 metres to spare.

Qatargas said that the successful transit of "Al Safliya" through the Canal creates "future triangulation opportunities for 31 Q-Flex fleet," allowing them to discharge cargoes in the Pacific Basin and then proceed to the Atlantic Basin to load their next cargo. But the Q-Max – the largest Qatari LNG tankers vessels with 266,000 cubic metres capacity – are still too large to transit the Canal. ■

Argentina offers 1st LNG cargo, strives to become shale gas exporter

YPF, Argentine's state-run oil and gas producer, is seeking to sell a partial cargo from its Tango floating liquefaction unit at Bahia Blanca in a first step to turn the country into a major shale gas exporter. Growing production from the Vaca Muerta shale gas play is meant to cover domestic demand and leave a surplus for export.

The 'Tango FLNG' vessel has been chartered by YPF under a 10-year agreement with the Belgian shipping company Exmar. The vessel had been originally built for a venture in Colombia that was called off. Moored off the port of Bahia Blanca, Tango FLNG will produce up to eight cargoes per annum.

As for the maiden cargo from Tango FLNG, executives at YPF said the aim is to sell a partial cargo from at Bahia Blanca of around 30,000 cubic metres to be lifted in the next month or so.

The Argentine government seeks to end costly LNG imports in the medium term by ramping up domestic production from the prolific Vaca Muerta shale play in northwest Argentina. Currently, Argentina still imports LNG through two FLNG facilities, particularly during the country's peak demand season over the winter.

Aiming to become self-reliant on energy, the Argentine government imposed measures that will halt LNG imports and rely on domestic resources instead. Technically recoverable shale gas reserves are estimated at 308 trillion cubic feet, and supply is targeted to start flowing in large quantities from the Vaca Muerta area by 2022.

Shale bounty partly exported to Chile

Surging shale gas production at Vaca Muerta has prompted Argentina to resume exports to neighbouring Chile. The Gasoducto del Pacífico reopened in November 2018 after being shut in 2008, and exports of Argentine gas also resumed via the GasAndes pipeline to Chile.

Chilean power producers had developed nearly 3 GW of gas-fired capacity before 2004, based on the availability of cheap gas exports from Argentina. However, these flows were halted in 2007 when Argentina entered a massive economic crisis, leaving Chilean power producers short of fuel. Now cautious optimism prevails that Argentine gas exports will remain stable.

But for now, gas delivery contracts are interruptible: The Gasoducto del Pacífico contracts run until May 1, and the Colbún contract through the end of April 2019. ■

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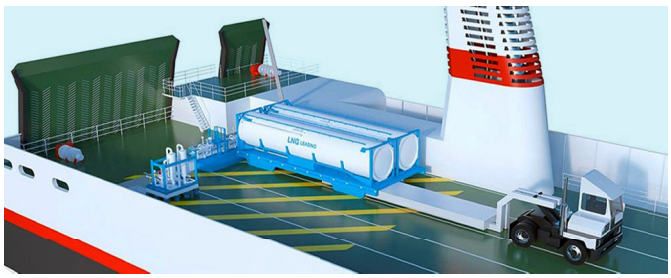

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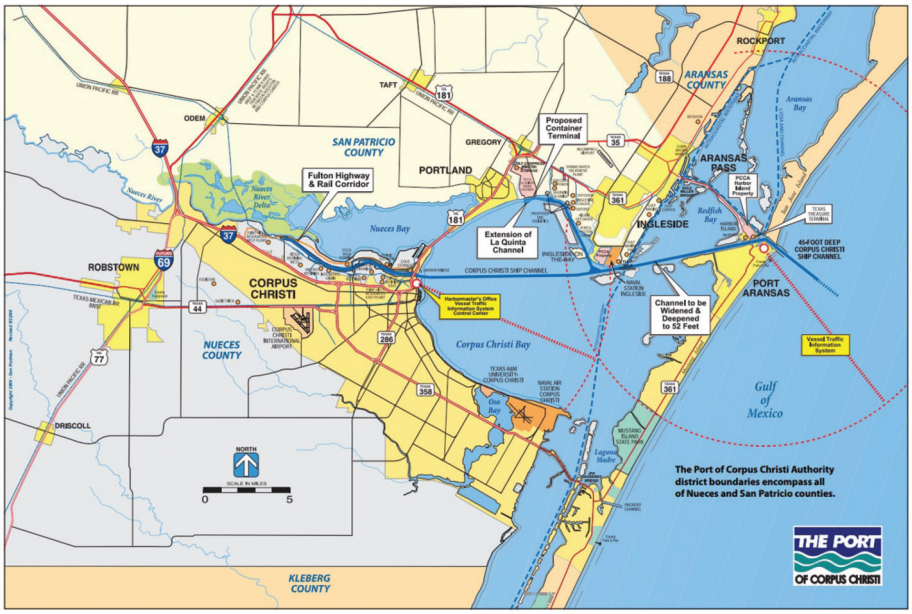
Corpus Christi Port to launch Ship Channel works

The Port of Corpus Christi in Texas, the site of an LNG export plant owned by Cheniere Energy and other oil and gas shipment facilities, said it was set to formally launch its Ship Channel Improvement project. Once completed, the project will turn Corpus Christi into one of the main US LNG and oil export hubs.

"The Ship Channel Improvement Project marks a significant milestone in the progress of the United States in becoming a net exporter of energy production," said the Port Authority. Strategically located on the western Gulf of Mexico with a 36-mile, 47 foot deep (Mean Lower Low Water) Channel, Corpus Christi is a growing gateway to international and domestic maritime commerce.

Cheniere Energy's Corpus Christi LNG plant is situated on the La Quinta Channel on the northeast side of Corpus Christi Bay, outwith the port itself and on a 1,000-acre site controlled by the company. The first LNG cargo left the 4.5 mtpa Corpus Christi Train-1 in December 2018, and the overall liquefaction plant will have a nameplate capacity of 13.5 mpta once two further Trains, currently under development, will start operation.

Cheniere is also developing up to seven mid-scale liquefaction Trains adjacent to the existing Corpus Christi project, each with an expected nominal production capacity of around 1.4 mtpa of LNG. This would take total LNG shipments from the Port area to 23.3 mtpa.



In terms of crude oil exports, the Port of Corpus Christi's location on the Gulf of Mexico and proximity to the West Texas oil and gas boom has created "a massive increase in demand and traffic," according to the Port Authority. It is now ranked the fourth-largest U.S. port in terms of total tonnage. ■

Delayed Freeport LNG project seeks bidder for Train-4

Developers of the delayed Freeport LNG export project in Texas are selecting a preferred bidder for the fourth processing Train, although construction of Train 1-3 still needs to be completed and commissioned.

The first of the three Trains under construction will be brought on stream by around mid-July after more than a year of delays as existing contractors missed schedules and some disruption was caused during the past two hurricane seasons. Train 1-3 are being built by McDermott International and Zhachry Construction of the US, along with Chiyoda of Japan.

The Freeport LNG project is led by US energy entrepreneur Michael Smith and is expected to soon start bringing feed-gas into the facility. Smith has said that around five to 10 commissioning cargoes will be shipped from July before Freeport LNG begins commercial deliveries this September.

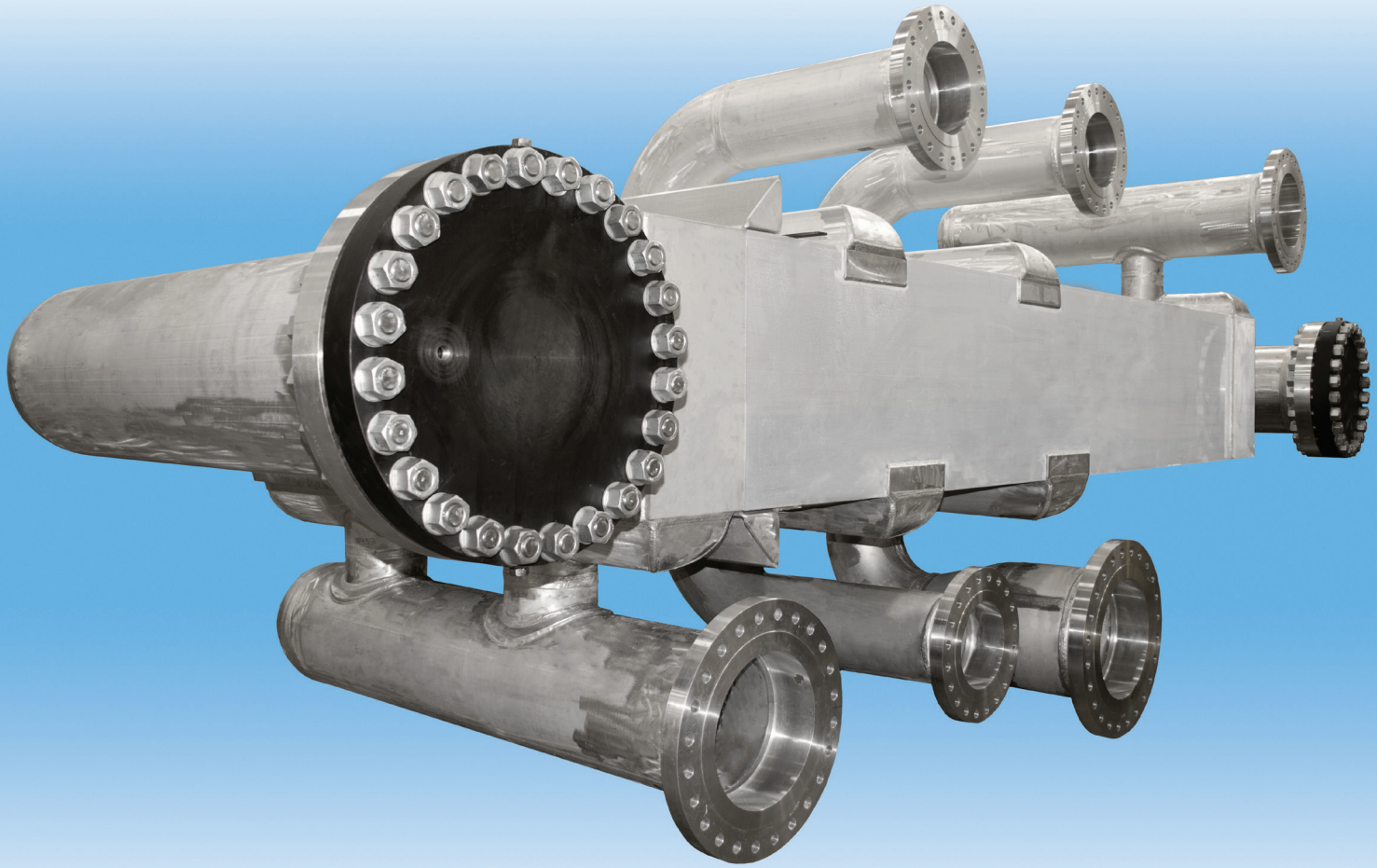
About 13.4 mpta of the production from Freeport LNG Train 1-3 has already been contracted under use-or-pay liquefaction tolling agreements with BP, Uniper and Jera and Osaka Gas.

As for construction of Train-4, KBR claimed in February it had been selected by Freeport as the preferred bidder. "Under the terms of the expected EPC contract, KBR will provide EPC, commissioning and start-up of a nominal 5 mpta LNG train and associated gas pre-treatment plant for the export of US gas to international markets," the Houston-based company said in a statement. "This selection was made following completion of a nine-month front-end engineering and design (FEED) verification, execution planning and EPC proposal process and demonstrates the trust Freeport LNG has placed in KBR to deliver," it added, noting "The fourth Train will be similar to the first three Trains at the facility."

Freeport LNG will be the third LNG export plant to come on stream in 2019 when it starts shipping cargoes, following the expected starts at two other facilities, Cameron LNG in Louisiana and Elba Island LNG in Georgia. ■

Construction works forge ahead on Freeport LNG Train 1-3

At the Core of LNG



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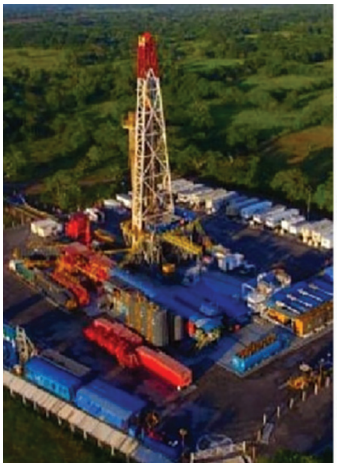
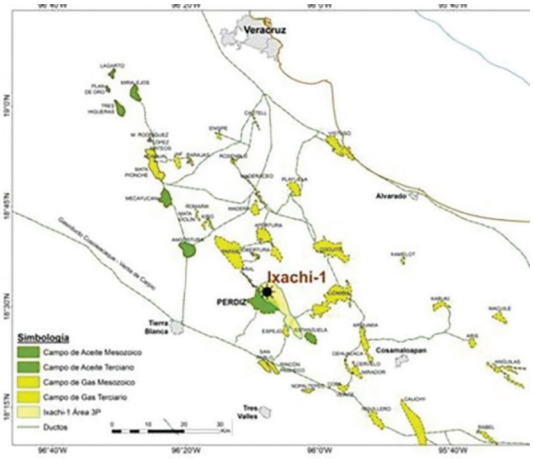
Pemex reverses drop in gas production to curb reliance on U.S. imports

Petroleos Mexicanos (Pemex), the Mexican oil and gas company, says its 2% month-on-month rise in its natural gas production is aimed at reducing the country's dependency on pipeline gas and LNG imports from the United States. It consequently strives to intensify fracking at its new Ixachi find in the state of Veracruz.

Pemex CEO Octavio Romero Oropeza said the Government of Mexico has requested a reversal of the company's negative trend in exploration and production in an effort to rescue country's "oil and gas sovereignty". He said Pemex is now striving to accelerate the development of 20 new fields in its portfolio, notably the new natural gas-rich Ixachi onshore field in the southeast state of Veracruz and three others.

Output from the Ixachi field is expected to eventually reach up to 0.7 Bcf/d and 80,000 barrels per day of condensate. Plans are for the Ixachi field to start supplying gas to the Sistrangas national pipeline grid by the end of 2019, which would help to partially offset declines at Pemex' more mature and depleting fields.





Map of Pemex's Ixachi-1 well in Veracruz

Pemex said its overall gas output in February averaged 3.763 billion cubic feet per day (Bcf/d), a slight rise from the January average of 3.696 Bcf/d. Nearly three quarters of the gas output is associated gas, extracted from oil wells, with Pemex reporting a slight rise in its crude oil output rose to 1.707 million barrels per day.

However, Pemex gas production in February was down 42% from the peak level of 6.516 Bcf per day reached in 2009. Since that time, demand has been steadily rising among power companies and industrial customers, making Mexico increasingly dependent on the U.S. imports.

Mexico imported 5.129 Bcf/d of natural gas from its northern neighbour in 2018, more than four times the 1.258 Bcf/ averaged in 2009. On average, Mexico also receives three shipments of liquefied natural gas from the United States per month which makes it the largest recipient of US LNG cargoes volumes after South Korea. ■

Mexico's imports of U.S. gas, petroleum products surge

Energy trade between Mexico and the United States has undergone massive change. The value of U.S. exports of petroleum products nearly tripled from $10.4 billion in 2008 to a record high of $30.5 billion in 2018, while U.S. energy imports from Mexico stayed a near record low of $15.8 billion for a second year in a row.

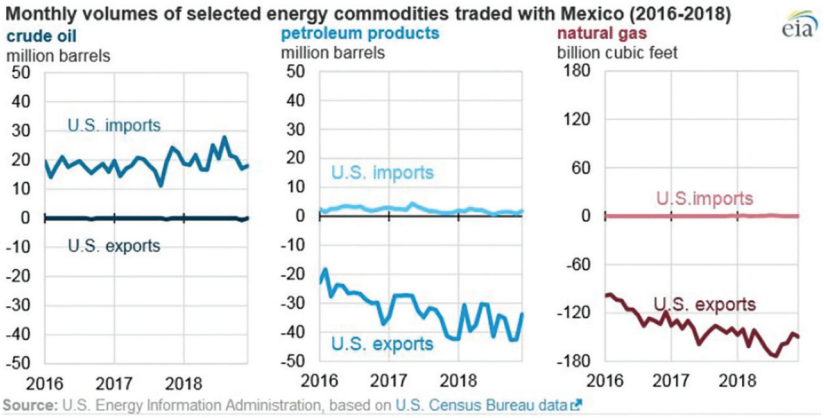
This change is being caused by the U.S. shale gas revolution which has turned the country into a net gas exporter and significantly altered its energy trade balance. U.S. gas exports to Mexico totaled 1,862 billion cubic feet per day (Bcf) in 2018, and some 90% of these volumes were sent through pipelines.

In addition, Mexico has also become the second-largest destination for U.S. LNG exports last year, behind only South Korea. Shipments of U.S. LNG exports to Mexico by vessel between August 2016 and December 2018 totaled 350 Bcf, according to EIA figures, which equals 18% of all U.S. LNG exports.

Historically, Mexico has sold crude oil to the United States and by U.S. net exports of refined petroleum products to Mexico. But starting from 2015, there have been rapidly growing volumes of both petroleum products and natural gas exported from the U.S. to its southern neigbour, while imports of Mexican crude oil declined.

Today, crude oil still accounts for most U.S. energy imports from Mexico, averaging 665,000 barrels per day (b/d) in 2018 and worth some $14 billion, according to EIA estimates. That year, Mexico was the source of 9% of U.S. imported crude oil, behind only Canada and Saudi Arabia.

On the flip side, most energy exports from the United States to Mexico are petroleum products which last year reached over 1.2 million b/d, valued at more than $30 billion. U.S. exports of petroleum products to Mexico made up 22% of all petroleum products exported from the United States in 2018. Most of these exports were finished motor gasoline and distillate fuel oil. ■

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Woodside CEO advocates global action to promote LNG & clean energy

Global energy majors should take action to help governments promote the use of LNG and clean energy sources to meet national carbon emission targets, says Woodside Petroleum CEO Peter Coleman. Implementing carbon pricing internationally, in his view, would be "the most effective mechanism" to reduce emissions.

"I know, I'm not alone in thinking carbon pricing implemented internationally would be the most effective mechanism for achieving the emissions reductions that are needed. This includes through coal-to-gas switching, which has the potential to be even more significant as new LNG markets open up in Asia," Coleman recently told an industry conference in Shanghai.

Woodside Rees Withers LNG tanker (IMO 9732369)

These issues are "front-of-mind" for Woodside, the company's CEO stressed, as it pursues growth plans in northwest Australia that would significantly increase its LNG production. "This is not just about ensuring we secure markets. It's about ensuring we are seen as being a significant contributor to reducing greenhouse-gas emissions," Coleman told the LNG19 conference in Shanghai.

In his view, the contribution of LNG to reducing global greenhouse gas emissions is "nowhere more evident than in China, where the commitment to switch to cleaner energy has created opportunities for gas and renewables. "This includes displacing coal but also new uses for our product in the transport sector, where LNG can displace heavy fuel oil in ships, and oil or diesel in trucks and trains," Coleman explained.

Considering costs along the entire gas-value-chain in comparison to competing fuels, Coleman said "we have done the math. And I am not just referring to the global LNG supply gap we see emerging from the early 2020s," Coleman said, adding "I'm also referring to the prospects for our product in an increasingly carbon-constrained world. LNG is part of that world." ■

HySynGas project to mix LNG with green hydrogen

Considering a future German LNG terminal in Brunsbüttel, northern Germany, local grid operators are seeking to realize the first industrial-scale Power-to-Gas project nearby. Called HySynGas, the project will turn renewable energy from nearby wind parks into hydrogen and syngas, usable as a vehicle fuel or for power generation. Some of the green syngas will be mixed with imported LNG to help adjust the overall gas quality.

ARGE Netz, a German green energy provider, is realizing the project in cooperation with MAN and the Swedish utility Vattenfall.

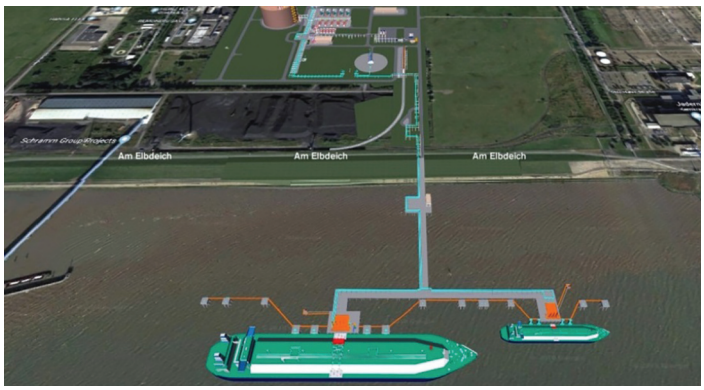
"While most of the hydrogen will be used in the region of Schleswig-Holstein, we want to feed the syngas into the German national gas grid. Considering a future Brunsbüttel LNG terminal, it will be possible to refine the regasified natural gas that has been landed at the LNG import terminal by mixing it with green synthetic gas produced in Schleswig-Holstein and thus contributing to a decabonisation of the overall German gas system," said Dr. Uwe Lauber, CEO of MAN Energy Solution.

Axpo deal moves FID on German LNG terminal closer

Swiss-based energy trading company Axpo and German LNG Terminal GmbH, the joint venture formed to build Germany's first LNG terminal, in mid-May signed a Heads of Agreement (HoA) for a long-term capacity contract for LNG offtake from the terminal to be located at Brunsbüttel on the River Elbe in northern Germany.

The HoA is claimed to be another important step towards taking a final investment decision (FID) on the terminal. "With the shutdown of numerous coal-fired power plants expected in the medium term, LNG is expected to gain further importance as an energy source and will be able to increase its market share in Europe. Our goal is to further optimise the delivery of LNG to our customers together with German LNG Terminal," said Domenico De Luca, Axpo Group's, Head Business Area Trading & Sales.

Rolf Brouwer, Managing Director of German LNG Terminal GmbH said the company was moving forward with the project's permitting process. On the commercial side, "an increasing number of market players are convinced of the future relevance of LNG for the German energy market and rely on our concept of a multi-service terminal with an independent terminal operator," he commented.



Render of German LNG Terminal site in Brunsbüttel.

In spring 2019, the company will apply for the required permit for the terminal, while he investment decision is scheduled for the end of 2019. After receiving the necessary permits, construction work could start in 2020 with the terminal being operational by the end of 2022.

German LNG Terminal GmbH is a joint venture of the Dutch companies, Gasunie LNG Holding BV and Vopak LNG Holding BV, as well as Oiltanking GmbH, a subsidiary of the Marquard & Bahls AG, Hamburg. ■

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Chevron pulls out of Anadarko bid battle

Chevron Corp. has pulled out of the bidding battle for Anadarko Petroleum and its Mozambique liquefied natural gas stake and US assets, leaving the way clear for Occidental Petroleum to acquire Anadarko and for French major Total to own the African and LNG assets. Chevron stated it would not back a counter-proposal on its initial $33 billion offer, including a merger agreement, leaving Occidental to acquire Anadarko for $38 billion.

Occidental's bid will be valued at $55Bln when Anadarko's debts are included, though it has already offset $8.8Bln of the acquisition by agreeing to sell Total the Mozambique LNG and African oil and gas assets.

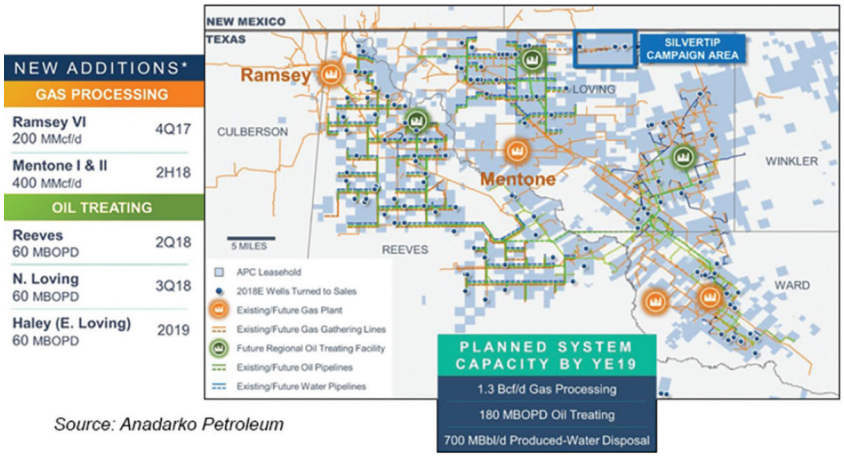
"Winning in any environment doesn't mean winning at any cost," said Chevron Chairman and CEO Michael Wirth. "Cost and capital discipline always matter, and we will not dilute our returns or erode value for our shareholders for the sake of doing a deal," added the Chevron CEO.

Upon termination of the Chevron merger agreement, Anadarko will be required to pay Chevron a termination fee of $1 billion.

At the same time, Anadarko has just held talks in Maputo with Mozambique President Felipe Nyusi and outlined plans for a June 18 final investment decision for Mozambique LNG, even as the US bidding process was continuing.

Anadarko Chairman and Chief Executive Al Walker held a reassurance meeting in the Mozambican capital with President Nyusi and said a "celebratory" event would take place. "It was also noted that all issues under negotiation between the Government of Mozambique and Anadarko have been satisfactorily resolved," said Walker. "With commitments for financing in place, off-take secured, and all other issues under negotiation successfully addressed, we are excited to take the next step with the FID on June 18," said Walker.

Anadarko Petroleum Delaware Basin Planned Infrastructure Additions



Source: Anadarko Petroleum

The Anadarko CEO said he was grateful for the continued support of the people and government of Mozambique, his joint venture partners the thousands working in the Cabo Delgado province in the northeast to develop the project. "We expect June 18 will become a historic day in Mozambique as we announce that one of the most important and transformational projects in our country's history is ready to advance to the next stage," said Nyusi. "We recognize Anadarko's continued commitment to moving this project forward to becoming a reality," added the President.

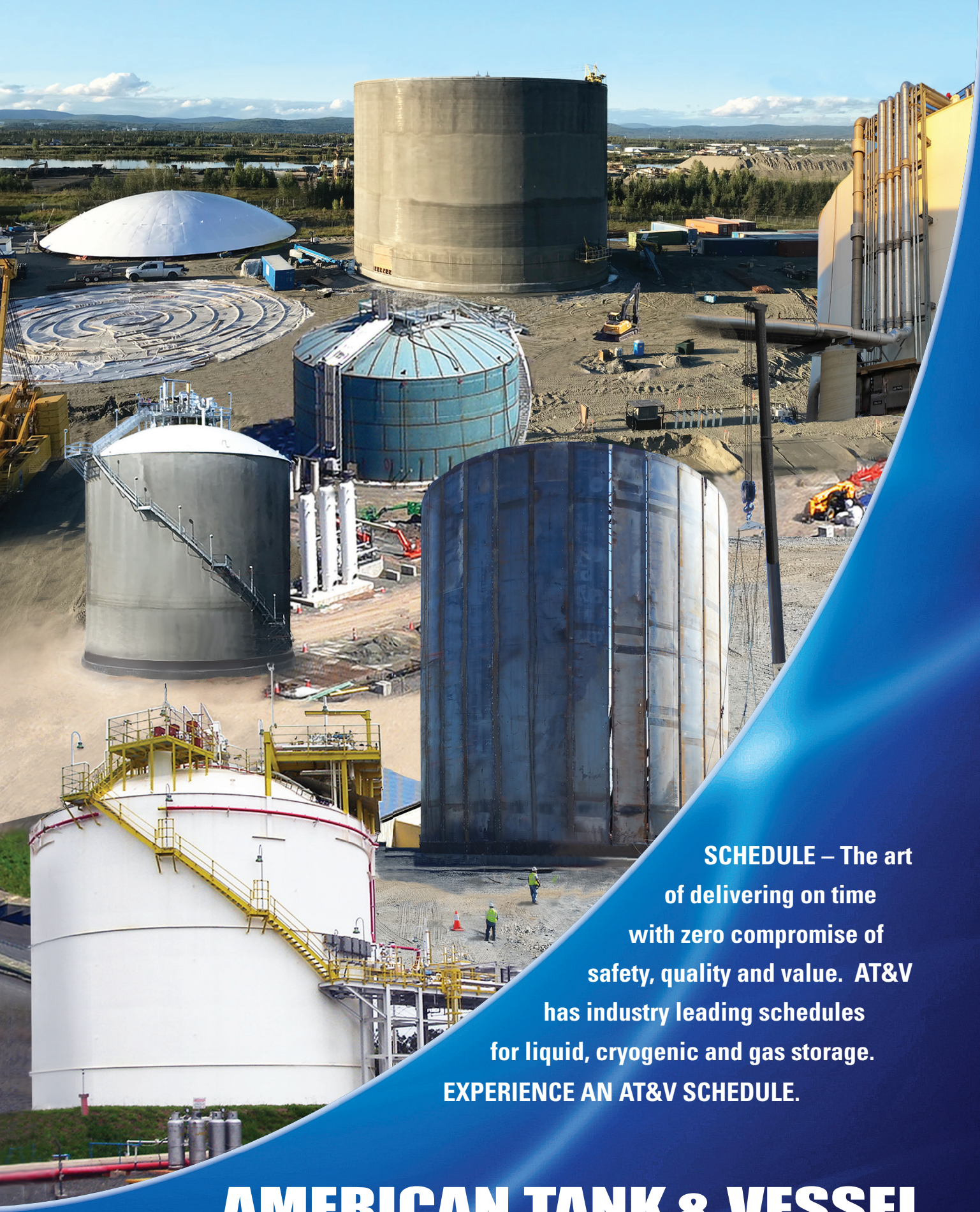
The onshore Mozambique project will have phase one output of almost 12.9 million tonnes per annum (mtpa) of LNG.

Anadarko and its partners have signed up sales agreements for 9.5 MTPA of cargoes from the Mozambique project with Royal Dutch Shell, China National Offshore Oil Corp., Tokyo Gas, the UK's Centrica, France's EDF and Indonesian energy company Pertamina.

Anadarko is operator of the Mozambique project as part of its 26.5 percent take and operatorship of the Area 1 Rovuma Basin reserves that underpin the LNG venture. Other shareholders include the Japanese trading house Mitsui and Co. and three Indian companies, Bharat Petro Resources, ONGC Videsh and Oil India Ltd., as well as Thailand's national energy company PTTEP and the Mozambique state-owned oil and gas firm ENH.

Two other projects are planned in Mozambique from the Area 4 licence resources held by Italian energy company Eni and partners. These include the Coral floating LNG joint venture with capacity of around 3.4 MTPA already under construction and scheduled to come on stream in 2022.

The Area 4 onshore Mamba LNG project is also expected to be sanctioned in 2019 and production is scheduled to start in 2024. ■



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