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Toshiba will pay \$800 million to get out from under U.S. LNG contract

(Reuters; June 1) – Toshiba will pay \$800 million to Total for the French oil-and-gas major to take over the Japanese company's contractual obligation to pay for 2.2 million tonnes per year of liquefaction capacity at a Texas LNG project. Toshiba was locked into the contract to pay a fixed fee for 20 years to Freeport LNG — regardless whether it could find buyers for the fuel to cover its cost of gas and the liquefaction fee. Toshiba had previously said it could lose as much as 1 trillion yen (\$9 billion) under the contract.

China's ENN Ecological Holdings last year agreed to buy Toshiba's U.S. LNG business but scrapped the pact in April, citing a failure to win approval from its shareholders and a U.S. federal panel that monitors foreign investments. Toshiba has been trying to sell the business amid its own financial turmoil, looking to pare down its assets and liabilities to focus on its core operations. It is scheduled under its contract with Freeport to start taking LNG in 2020. The terminal is expected to start operations later this year.

Toshiba signed the contract with Freeport LNG in 2013, a couple years after Japan closed down all of its nuclear power reactors following the 2011 Fukushima nuclear disaster. LNG prices spiked for a few years after the nuclear shutdown but then turned lower, adding to Toshiba's worries about investing in LNG trade. Current spot-market prices for LNG deliveries to Asia are about 75 percent below the post-Fukushima peak.

Total builds up its presence in North American LNG trade

(S&P Global Platts; June 1) - France's Total is making a play to challenge Shell's dominance in access to North American liquefied natural gas with an agreement to take over Toshiba's U.S. LNG business. The transaction will give Total control over 2.2 million tonnes per year of LNG from the Freeport export terminal in Texas. The deal allows Total to strengthen its foothold in the region as a buyer and marketer of LNG. It follows the company's April announcement of a preliminary agreement to take a stake in Tellurian's proposed Driftwood LNG project in Louisiana.

Total's moves will make it a stronger competitor to Shell, a foundation customer at Cheniere Energy's Sabine Pass export terminal in Louisiana. Shell also has long-term contracts with several other U.S. LNG plants, and is a partner in the LNG Canada project under construction in British Columbia. Total is a partner in Cameron LNG in Hackberry, Louisiana. Such diversification helps portfolio players reduce operational risk on any one project and provides different options for which cargoes go where.

"The takeover of Toshiba's LNG portfolio is in line with Total's strategy to become a major LNG portfolio player," the French company said in a statement. Shell is the world's largest LNG trader among the majors, followed by Total. In addition to its U.S. investments, Total last month agreed to take over Anadarko Petroleum's stake in an export project in Mozambique, paying \$8.8 billion for Anadarko's assets in Africa.

Saudis have good reasons for investment in U.S. LNG

(Wall Street Journal; May 30) - Saudi Arabia has finally found a deal that makes sense. After forays into companies such as Uber, state-controlled oil giant Saudi Aramco has lined up a deal to buy liquefied natural gas and invest in Sempra Energy's planned export terminal in Port Arthur, Texas. It gives the kingdom access to a business it knows and a commodity that has recently attracted its focus — and that it needs.

For its part, Sempra needed a partner. Last summer Australia's Woodside Petroleum decided not to commit equity to the project. CEO Peter Coleman said it would struggle to produce adequate returns. Small wonder why. LNG prices in key export markets have fallen almost 70 percent since late 2015. Enter the Saudis, who for the past few years have been trying to sort out a future in which oil is a less-valuable commodity. A shock to oil prices in 2014 through early 2016 sent crude plummeting 75 percent.

Crown Prince Mohammed bin Salman's ambitious plan is meant to transform Saudi Arabia from an oil-dependent country to one that focuses on logistics and tourism, as well as solving the world's problems from water to power. All or which will consume a lot of electricity. In 2015, Saudi Arabia held the world's sixth largest gas reserves, but producing that gas is tricky, and the country has large gaps in its power needs. To meet its rising need for electricity, it burns oil. Buying into an LNG project makes sense.

Regulators investigating 2018 cracks in LNG tanks at Sabine Pass

(Energywire; May 30) - Last year, gashes up to 6 feet long opened up in a massive steel storage tank at Cheniere Energy's LNG terminal in Sabine Pass, Louisiana, releasing super-chilled liquefied natural gas that quickly vaporized into a cloud of flammable gas. Federal regulators worried the tank might give way, spilling the remainder of the fuel and setting off an uncontrollable fire. It wasn't an isolated event: Another tank was leaking gas in 14 different places. Both tanks remain out of service over a year later.

Investigators discovered that Cheniere grappled with problems affecting four of the five tanks at the terminal over the past decade. The Pipeline and Hazardous Materials Safety Administration found the company to be less than forthcoming in the ongoing investigation, noting Cheniere's "reticence to share [its] sense of what might have gone

wrong." The leaks are a red flag at a time of unprecedented expansion in the U.S. LNG industry, which promotes the fuel as not only safe but also a cleaner alternative to coal.

More than a decade ago, Cheniere built the tanks to receive and store LNG imports. But after that business failed, due to the glut of U.S. shale gas production, the company spent billions to turn the terminal into an LNG export facility to send U.S. gas worldwide. The first cargoes were in 2016. Using the original LNG storage tanks saved a lot of money for the export venture. Since then some Gulf Coast LNG export terminals have opted to use more expensive tank designs that offer greater protection against leaks.

Sabine "cannot identify the circumstances that allowed the LNG to escape containment in the first place," federal regulators wrote. The tanks use a single layer of steel that can withstand LNG's ultra-cold temperatures. That inner wall is surrounded by a second steel layer that holds insulation in place but isn't meant to come into contact with LNG. Several export projects that started out as import terminals use that tank design. But all new projects will use a more expensive design with two layers of cold-tolerant material instead of one, allowing the tank's outer wall to serve as a second layer of containment.

China may be wary of getting too much LNG from the U.S.

(South China Morning Post; May 30) - LNG imports have become particularly important to the Chinese government as it continues its war on pollution. Demand has more than tripled in the past decade as Beijing looks to reduce the nation's smoggy skies through an aggressive program of heating homes and powering factories using natural gas rather than coal. So while it may seem to be in China's interests to strike a trade deal with Washington on energy, there are certain red lines that may deter it from doing so.

Key to China's push for energy security is to avoid becoming too dependent on any single source. If China were to become a large-scale buyer of U.S. LNG and Washington later decided to turn off the spigot, China's energy security would be threatened, goes a line of reasoning thought to be pervasive in Beijing. On the other hand, flexible access to U.S. gas would allow China to diversify its supplies. Plus, having ready access to multiple sellers would enable it to get better prices.

"China places a lot of value on security and diversity of supply. New supply from the U.S. would create more competition for China's market," said Neil Beveridge, an analyst at investment management firm Sanford Bernstein. "The strategic question is, to what extent does China want to become tied to the U.S. as one of its large suppliers?" China has plenty of alternative sources for LNG, including Qatar and Australia, plus emerging suppliers in Russia, Mozambique, Canada, and Papua New Guinea. Wang Yongzhong, a senior fellow with the Chinese Academy of Social Sciences, a government think tank, said Beijing should not allow its imports of U.S. oil and gas to "exceed 10 or 15 percent."

Trade war prompts China to think about energy self-sufficiency

(Bloomberg; May 30) - China is mobilizing its state-run energy industry to prepare for an economic tussle with the U.S. that could escalate further and might last for years. Oil executives were busy this week touting the need for energy security, even discussing the previously far-fetched notion that the nation could be cut off from overseas oil supplies. The public comments show China is beginning to prepare for the worst-case scenario in the trade war, said Laban Yu, an analyst at Jefferies Group in Hong Kong.

In a meeting in Beijing on May 29, the chairman of top producer China National Petroleum Corp., Wang Yilin, urged employees to develop contingency plans for a "protracted and complex" trade dispute with Washington, according to a company statement. At another event in Shanghai the same day, Sinopec's former chairman, Fu Chengyu, said China should prepare for an extreme case whereby its overseas oil supplies are blocked entirely in the short term.

"China is now looking at its oil supply situation from the worst-case scenario, like what the U.S. has done to Iran," Yu said. "Obviously, China believes now more than ever that similar U.S. sanctions against a whole country could happen to China." The need for China to achieve energy self-sufficiency has become an "urgent reality," according Sinopec's Fu reported remarks. He called for the country to fiercely pursue shale gas development. Though unlocking the country's large shale reserves could be crucial to the effort, challenges are plentiful as reserves are deep, broken up, and hard to reach.

Chinese tariff on U.S. LNG could hurt project financing

(South China Morning Post; May 31) - China's sharp retaliatory tariff on U.S. liquefied natural gas will make it challenging for U.S. exporters to secure purchase commitments and project financing, analysts say. The 25 percent tariff starting June 1 will make it uneconomical, forcing U.S. sellers to seek long-term purchase commitments elsewhere.

According to energy consultancy Wood Mackenzie, some two-thirds of the 310 million tonnes of proposed U.S. LNG annual capacity, spread over 25 projects and requiring more than US\$200 billion of investment, have not yet secured financing. "They would very likely want to have Chinese investment or buyers," said Nicholas Browne, Asia gas and LNG director at Wood Mackenzie, who is based in Singapore.

Losing access to China, the world's fastest-growing and second-largest LNG market, may also mean that U.S. LNG starts trading at a discount and pares project profitability, said analysts at energy and commodities information provider S&P Global Platts. "If the 25 percent tariff persists, it will start to have a longer-term impact on the final investment decisions of the U.S. LNG projects that are looking for Chinese financial support," said Sanford Bernstein senior analyst Neil Beveridge.

First commissioning cargo leaves Cameron LNG in Louisiana

(S&P Global Platts; May 31) - Sempra has shipped the first commissioning cargo from its Cameron LNG project in Hackberry, Louisiana, the company said May 31. Commercial operations from the facility will begin after Cameron LNG receives authorization from the Federal Energy Regulatory Commission, which is expected in mid-2019, Sempra said. The plant's initial phase includes three liquefaction trains, producing for export approximately 12 million tonnes a year of LNG.

Start-up of the first train at Cameron marks the fourth such U.S. export project to begin operations since 2016, as the industry looks to give shale gas producers more outlets from key basins along the Gulf Coast, in the midcontinent, and Northeast. The \$10 billion Cameron LNG project — a joint venture of affiliates of San Diego-based Sempra (50.2 percent), along with France's Total, Japan's Mitsui, and a company jointly owned by Japan's Mitsubishi and NYK — faced delays in late 2017 and early 2018. The first cargo left the terminal board a Mitsui-chartered LNG carrier, its destination undisclosed.

As many as 11,000 workers were on site last summer as contractors McDermott International and Chiyoda pushed to get the project back on track. McDermott recently said that start-up the second and third liquefaction trains will be delayed until 2020. Project officials said in February that the number of commissioning cargoes sold on the spot market before commercial service begins under long-term contracts could range up to six or seven, depending on customer needs.

<u>Critic of past resource deals chosen to lead Papua New Guinea</u>

(Bloomberg; May 30) - A critic of Papua New Guinea's resource deals has been chosen as the country's new prime minister, a potential speed bump for multibillion-dollar liquefied natural gas export projects led by ExxonMobil and Total. James Marape, who resigned as finance minister in April and took over the top job this week, has been critical of the gas deal his predecessor signed with a Total-led group of companies. He said his calls to change the nation's resource laws had been ignored.

In his first comments as prime minister, Marape struck a balance between reassuring international firms that the nation will honor its commitments while also seeking greater benefits from its energy, mineral and forestry assets. "Our resource laws are outdated," he said. "We do not intend to chase our investors. They're here to stay, we encourage them. But we will look into maximizing gains from what God has given this country."

Total and Exxon reached a deal with the government in April that moved forward their plans to double LNG exports. The recent political turmoil will likely delay, not threaten, the \$13 billion plan, analysts said this week. "It's almost certain that Marape will look to reopen discussions on the memorandum of understanding" between the government

and oil companies, said Jonathan Pryke, director of the Pacific Islands Program at the Australia-based Lowy Institute. "I don't ... expect there to be major shifts in policy."

PNG politicians understand that contractual sanctity is important, and renegotiating a deal would cause substantial damage to its reputation, said Rachel Calvert, associate director of exploration and production terms and above-ground risk at IHS Markit.

Total expects Papua New Guinea to honor LNG project terms

(Reuters; May 31) - French energy company Total said May 31 that it expected Papua New Guinea's incoming government to honor a contract signed by the previous administration for a liquefied natural gas project in the South Pacific archipelago. "We note that the new prime minister has indicated that he will honor the contracts that were already signed," Total said in a statement. "According to our information, this touches on the gas agreement signed by PNG's government to develop the Papua LNG project."

Papua New Guinea's new prime minister James Marape pledged May 30 to "tweak and turn" laws governing how natural resources are extracted to help lift the country out of poverty. Total and partners Oil Search and ExxonMobil signed a deal with Papua New Guinea in April aimed at allowing initial work to start on a \$13 billion plan to double the country's liquefied natural gas exports.

Pakistan negotiates lower price for Qatari LNG

(The News International; Pakistan; May 30) – Pakistan's Economic Coordination Committee is likely to recommend government approval of a new 15-year liquefied natural gas supply contract with Qatar at 20 percent below the price negotiated on an earlier deal by the previous government. The 2016 contract pegged 1 million Btu of gas to 13.37 percent of the three-month average price of a barrel of Brent crude. At \$65 oil, the old contract worked out to about \$8.70 per million Btu of LNG. The new deal brings the price — at \$65 oil — to just under \$7.

The new contract will cover an average 200 million cubic feet of gas per day. The 2016 contract was Pakistan's first long-term LNG supply deal, covering 3.75 million tonnes per year, more than twice the volume of the new contract. In another change from the earlier deal, which included a rate renegotiation after 10 years, the new deal allows for renegotiation after five years. Qatar agreed to lower its price to underbid other offers received by Pakistan, according to a government official.

Indian LNG importer plans to take 20% more cargoes this year

(S&P Global Platts; May 28) - India's state-owned gas utility GAIL plans to import 75 LNG cargoes — about 5 million tonnes — in the fiscal year ending March 2020, up from 62 cargoes a year earlier, about 20 percent more, a top company official said May 27. The additional gas is to help meet increasing demand from fertilizer manufacturers. Much of it is to serve the expansion of two fertilizer plants, chairman B.C. Tripathi said.

The company plans to source 90 percent of its liquefied natural gas during the fiscal year through existing long-term contracts with supplies from the United States, Russia, and Qatar, with the remaining 10 percent from the spot market. GAIL estimates an average price of \$8 to \$9 per million Btu under its long-term, oil-linked contracts and \$5 to \$6 for cargoes bought on the spot market, which has fallen steeply in recent months.

Australia's need for LNG imports now 'highly realistic'

(Reuters; May 30) - Liquefied natural gas imports to Australia — the world's top LNG exporter — now appear "highly realistic" as the country struggles to fill a looming gas shortage, ExxonMobil said May 29. That will add to the sense of urgency in the industry, which experts say needs at least A\$10 billion (US\$6.9 billion) in new developments to meet longer-term gas demand and bring down prices that are crippling manufacturers. Prices are more than triple the level that Australia manufacturers paid five years ago.

As recently as a year ago, many thought importing LNG to Australia would be irrational, but gas shortages are expected as soon as 2022. There are now five import proposals under consideration, including one from ExxonMobil. "Just given the nature of growth in demand and where the outlook for supply is, at least for a period LNG import terminals look highly realistic," Exxon chairman for Australia Nathan Fay told an industry conference.

The start-up of three LNG export plants in northeastern Australia has sapped gas from the local market and also led to higher prices, as most of the new supply is from higher-cost coal-seam gas wells. At the same time, drilling bans in the southeastern states of Victoria and New South Wales have curbed new supply as the offshore fields that meet about 40 percent of the southern states' needs are drying up. If supply doesn't improve and prices fail to come down, manufacturers dependent on gas will shut, Australia's competition regulator warned May 30 in its latest report on the East Coast gas market.

Australia's LNG industry needs to fight back against activists

(Reuters columnist; May 28) - It's taken awhile but Australia's liquefied natural gas industry is putting on the gloves and stepping into the ring against the activists who want to condemn it and all fossil fuels to history's dustbin. The central theme of virtually every speech on the opening day of the annual Australian Petroleum Production and Exploration Association conference was that the industry must fight and not allow environmentalists all the space in the battle for the hearts and minds of the populace.

Australia's LNG industry is now the largest in the world by capacity, having overtaken Qatar as the last of eight new projects prepares to start up, taking the country's annual export capacity to more than 80 million tonnes of the fuel. But the LNG industry, for all its success in building plants and discovering gas reserves to feed them, has been largely silent when it comes to tackling the increasing focus of green activists, who view gas as the next enemy to fight after coal.

LNG exports also have suffered a public relations setback by being blamed for the sharp rise in domestic gas prices in Australia's populated East Coast, which coincided with the start-up of three LNG plants in Queensland. The main event at the conference May 28 showed a sharp turn in thinking, with the video proclaiming: "It's time to tell our story on our terms." APPEA chairman Zoe Yujnovich, who leads Shell in Australia, said the industry must be more proactive. "We need to keep advocating for the role of gas and not become complacent about its critical role in supplying cleaner energy."

BP expects buyers will want LNG from less carbon-intensive projects

(The West Australian; May 28) – Liquefied natural gas with a lower carbon footprint will be favored by some buyers in the future says BP, which has a stake in Woodside's proposed carbon-intensive Browse project offshore Australia. Gardiner Hill, BP's vice president for carbon management, said just like companies such as Amazon and Microsoft are committing to run entirely on renewable energy, LNG customers of the future would be sensitive to the carbon-emissions intensity of the gas they purchase.

"We are looking at how we can have a lower carbon gas supply chain than the industry standard," Hill told an oil and gas industry conference in Australia on May 28. BP owns about 17 percent of the US\$20.5 billion Browse gas project. Woodside plans to start front-end engineering later this year and aims to sanction it by the end of 2020. Hill said Browse is a very carbon-intensive project with a high but not unusual level of carbon dioxide in its gas reservoir — 10 percent — which would be vented to the atmosphere.

Hill said oil and gas companies throughout the world are having to manage the risk of making investment decisions without knowing what carbon policy a government might apply in the future. "Unfortunately, today there is no carbon price. We think a carbon price is an important way to tackle climate change," he said. "It (Browse) is free to emit

carbon dioxide to the atmosphere. It doesn't feel right, it shouldn't be like that, it really needs to be a cost to change people's behavior."

Residents object to small LNG plant in central Massachusetts

(The Telegram; Worcester, MA; May 30) - The plan to develop a \$100 million liquefied natural gas production, storage, and truck-loading facility in central Massachusetts met resistance from residents at a state public hearing May 29. The company, Northeast Energy Center, wants to build on 12 acres in Charlton, about 50 miles southwest of Boston. The plant needs exemptions from zoning bylaws. About 100 people attended the second public hearing in town May 29.

The company proposes a 2-million-gallon LNG storage tank at the site. A project official said the facility would send out about 12 to 14 LNG tanker truckloads a day, all during daytime hours. The plant would pull gas from a nearby pipeline, liquefy it, and store it for truck transport to customers not served by pipeline or to help meet peak demand needs for gas. Such plants are common around the country. Opponent Joe Lawendowski said the tank is an "explosive device," calling it "absurd."

Texas money will build 50,000-barrel-a-day oil sands pipeline

(Bloomberg; May 28) - Texas money is flowing into a small corner of Canada's oil sands at a time when big international companies are pulling out. Rangeland Energy, based in the Houston suburb of Sugar Land, is building a 50,000-barrel-a-day, 53-mile pipeline in the Marten Hills area of the Athabasca oil sands in northern Alberta to transport heavy crude from one of Canada's newest oil plays. The conduit will link the remote location north of Fawcett Lake to the Plains Midstream Canada Rainbow Pipeline.

The investment is a rare reversal of fortune for Canadian oil producers, beset by pipeline bottlenecks and low prices. In the past two years, companies including Shell and ConocoPhillips have sold oil sands assets, often reallocating funds to booming U.S. shale plays. While Marten Hills is in an oil sands region, producers are employing multilateral drilling techniques used in shale to tap the rock more than 1,600 feet underground, well below the traditional depth for oil sands production.

Backed by San Antonio, Texas-based private-equity firm EnCap Flatrock Midstream, a unit of Houston-based EnCap Investments, Rangeland entered the Canadian market about three years ago. "Our financial backer in Texas has always been interested in establishing a footprint in Canada," said John Millar, Rangeland's chief commercial officer. The pipeline is scheduled to enter service next year.