Oil and Gas News Briefs Compiled by Larry Persily September 18, 2017

Chinese-led venture cancels proposed LNG project in B.C.

(The Canadian Press; Sept. 14) - The partners behind the proposed \$28 billion Aurora LNG project near Prince Rupert, B.C., pulled the plug Sept. 14 after four years of study, dealing another setback to British Columbia's hopes for a liquefied natural gas export industry. Nexen Energy, the Calgary-based subsidiary of China National Offshore Oil Corp., said it decided with Japanese partner INPEX to stop work on the feasibility study.

The company said in a statement posted on its website that the current economic environment doesn't support building a large LNG plant. "Our decision was market-based and driven by capital discipline," said spokeswoman Brittney Price. "We require every business investment to meet minimum criteria including sustainable, long-term profitability." She declined to say how much was invested in Aurora LNG. China's state-owned CNOOC acquired oil and gas producer Nexen for \$15.1 billion in 2012.

It's the second multibillion-dollar LNG project in British Columbia to give up this year. In July, a venture led by Malaysia's Petronas canceled its Pacific NorthWest LNG project, citing a market downturn. Commodity analyst Martin King of GMP FirstEnergy said he's not surprised at the cancellations. "That was the pipe dream, that everybody was going to capture these big double-digit prices, \$14, \$15, \$18 per million Btu ... and here we are at half that," he said of record-high prices a few years ago vs. current market prices. Aurora would have produced 24 million tonnes a year, though half that at initial start-up.

Like Petronas, CNOOC said the Aurora partners will continue to produce gas from their Horn River wells in northeastern B.C. for sale into the North American market.

Korea Gas looks to U.S. and Iranian imports to diversify supplies

(Korea Times; Sept. 14) - Korea Gas Corp. is considering importing natural gas from the United States and Iran to diversify its supply sources away from the Middle East and Africa. It also plans to explore opportunities to acquire gas-field stakes in the two countries. "We will actively consider bringing natural gas from the U.S. as our supply contracts with Qatar and Oman are set to expire by 2025," a KOGAS official said.

"We will carefully review prices, supply guarantees and other factors before making any decisions," the official said. "KOGAS will strengthen its partnership with U.S. energy firms for the joint exploration and commercialization of natural gas." The state-run enterprise also plans to expand its business in Iran, following the changing geopolitical

conditions. "Iran is rich in natural gas, so we would like to work closely with both public and private energy companies there," the official said.

Iran holds the world's largest gas reserves at 1,201 trillion cubic feet, followed by Russia with 1,140 tcf and Qatar at 866 tcf. Currently, KOGAS is involved in 24 gas exploration and development projects in 13 countries. It holds a 10 percent stake in Mozambique's largest offshore field, estimated to hold 85 tcf of gas. The company also has stakes in multiple gas fields in Iraq. And it holds interests in gas fields in Oman and Qatar, bringing significant amounts of liquefied natural gas to Korea.

China's smoggiest province plans more coal-to-gas switching

(Reuters; Sept. 14) - Hebei, China's smoggiest province, on Sept. 15 said it would ensure it meets its targets to replace coal with natural gas, while accelerating efforts to achieve politically crucial 2017 air-quality targets. The local government said on its official website that it would ensure as many as 1.8 million households completed the switch to gas from coal for fuel and heating by the end of next month despite concerns in the province that the transition was proving too costly and difficult.

The step is part of efforts to cut annual provincial coal consumption by more than 6 million tonnes. Hebei, which surrounds Beijing, is on the frontline of a "war on pollution" launched in 2014. It plans to wage an "iron-fisted" campaign against smog this winter, provincial Gov. Xu Qin said this week. As part of a central government push to reduce smog, Hebei plans to reduce small, breathable smog particles 15 percent from October 2017 to March 2018, but some big cities will be forced to make even deeper cuts.

Tangshan, China's top steel-producing city, is under pressure to slash its average by more than 22 percent over the six months. It has promised to shut down polluting sectors like ceramics, cement and brickmaking once China's winter heating systems are switched on in November. Hebei will also impose emergency restrictions on big polluters and curb the production and transportation of raw materials during smog build-ups, said Yin Guangping, vice-head of the Hebei Environmental Protection Bureau.

Eni signs oil and gas cooperation agreement with China

(Reuters; Sept. 13) – Eni signed a cooperation agreement with China National Petroleum Corp. on Sept. 13 in a move that could give the Italian oil major greater access to the Chinese market. Eni said in a statement it had agreed to work with state-owned CNPC in the fields of exploration and production, liquefied natural gas, trading, and refining petrochemicals. The deal will cover operations in China and abroad, Eni said without giving further details.

"It could allow Eni to tap Chinese resources while allowing CNPC to use Eni skills to develop its assets round the world," one London-based oil analyst said. China, which is ramping up its exploration efforts as crude oil production from aging wells declines, also is on a mission to lift the country's natural gas consumption to help combat smog. The world's top consumer of oil and coal has embarked on a huge investment program to expand its LNG import and pipeline infrastructure.

Eni has plans to boost its LNG business early next decade and is looking to Asia to help market its growing gas portfolio. The Italian state-controlled major, which has offices in Beijing, already works alongside CNPC on certain projects. In 2013, CNPC bought a 20 percent stake in Eni's giant gas field off Mozambique, and both companies are shareholders in the Kashagan oil field in Kazakhstan.

Report recommends at least 20% nuclear power for Japan by 2030

(The Associated Press; Sept.14) - Japan's Atomic Energy Commission called Sept. 14 for nuclear power to remain a key component of the country's energy supply despite broad public support for a less nuclear-reliant society. The commission recommended in its report that nuclear power account for at least 20 percent of Japan's energy supply in 2030, citing a previous government energy plan. It said rising utility costs caused by expensive fossil fuel imports and slow reactor restarts have affected Japan's economy.

The 322-page "nuclear white paper" is the commission's first since a serious accident at a nuclear plant in Fukushima in 2011. Much of the report explains the government's efforts to clean up the damaged plant and tighten safety standards. The restatement of the nuclear policy is a sign of Japan's accelerating efforts to restart more reactors. "The government should make clear the long-term benefit of nuclear power generation and consider measures that need to be taken," the report said.

Japan shut down all its reactors after the 2011 accident but has restarted five of them. With up to four operating last year, they accounted for less than 2 percent of Japan's power. This week's report comes as regulators are making final preparations to certify the safety of two reactors at the Kashiwazaki-Kariwa plant in northern Japan, operated by Tokyo Electric. The utility says restarting the Kashiwazaki plant is vital to finance the massive cost of the Fukushima cleanup and compensation for disaster-hit residents.

India's gas-fired power plants boost output to cover demand

(Bloomberg; Sept. 15) - NTPC, India's biggest electricity producer, has boosted its gasfired generation as a drop in hydropower, nuclear and wind energy increases demand for gas power, said company officials. Plant utilization at NTPC's gas-fired stations has almost tripled to 60 percent in the past three to four days, said the officials, who asked not to be identified. That compares to an average utilization of about 24 percent for the gas-fired stations in the three months ended June when summer demand peaks.

To meet the sudden increase in demand, NTPC is buying about 350 million cubic feet of regasified liquefied natural gas daily from the state-run gas distributor, GAIL India, on a spot basis, officials said. GAIL imports LNG from multiple suppliers. A recent drop in output from hydro, wind, and nuclear power plants has opened up an opportunity for gas-fired plants in India, which on average run at only about a fifth of their capacity because they are rarely able to compete in the market with cheaper fuels.

GAIL Chairman B.C. Tripathi said the company is witnessing a surge in demand for gas from power producers including NTPC and Indraprastha Power Generation Co., which serves the nation's capital New Delhi. A rainfall deficit in some parts of the country has cut hydropower output, while a nuclear reactor at the Kudankulam plant has been under a maintenance shutdown for over a month. Still, some gas-plant operators say the rise in demand may be temporary and are holding back from restarting their turbines.

Bangladesh adds Indonesia to its list of LNG suppliers

(Platts; Sept. 15) - Bangladesh inked a memorandum of understanding on Sept. 15 to import liquefied natural gas from Indonesia, an official at Bangladesh's Ministry of Power, Energy and Mineral Resources said, as the country continues to seek out supplies to meet growing domestic demand. The official said state-run Petrobangla will initiate negotiations with its Indonesian counterpart Pertamina in the near future on volumes, prices and specifications for the imports.

Imports of at least 1 million tonnes per year could start next year under a term deal, said a senior Petrobangla official. After inking its first-ever LNG import agreement with Qatar in 2011, Bangladesh has signed two more — one with a Swiss-based trader and one with LNG supplier Oman. Petrobangla is expected to seal final terms with Qatar this month at 2.5 million tonnes per year for 15 years. The price has been set at about 12.65 percent of the three-month average Brent crude prices plus \$0.50, said a senior official at the energy ministry. At \$50 oil, that would be about \$6.50 per million Btu.

The Qatari supply will take up a third of Bangladesh's LNG import capacity of 7.5 million tonnes per year, which will be ready following the 2018 commissioning of the country's first floating storage and regasification units. Bangladesh also is seeking to buy spotmarket LNG cargoes, taking advantage of the global downtrend in LNG pricing.

Coal continues to lose ground to gas in Ohio power generation

(EnergyWire; Sept. 14) - Where most traveling south from the small southeast Ohio village of Byesville see grassy fields and rolling hills alongside Interstate 77, Michael King sees the future of Eastern power markets. King, managing partner of Apex Power Group, is particularly fixed on 118 acres across from a highway rest stop. The empty field happens to be next to the Rockies Express pipeline that moves Appalachian shale gas to points east and also a high-voltage line moving electricity across the Mid-Atlantic.

He figures the spot is perfect for a \$1.45 billion power plant that will run on gas from the Marcellus and Utica shale formations. The proposed 1,650-megawatt Guernsey Power Station, with start-up planned for 2020, is the largest of almost a dozen new gas-fueled plants being developed across Ohio. Together the plants represent about \$10 billion of investment in new generating capacity that will power millions of Ohio homes and, not coincidentally, ratchet up the pressure on aging coal and nuclear plants in the region.

The development is occurring against the backdrop of relentless lobbying by utilities seeking millions of dollars in subsidies to prop up those same plants that are struggling to compete in a new world of cheap shale gas and eroding electricity demand. As much as any state, the upheaval in Ohio illustrates the trend. Twenty years ago coal fueled more than 80 percent of Ohio's generating capacity, according to data from the U.S. Energy Information Administration. The most recent EIA data for May show coal's share was 57 percent and certain to lose ground to gas in subsequent reports.

U.S. competition, pipeline outages cut deeply into Canadian gas price

(Bloomberg; Sept. 14) - Canadian natural gas, locked in a fierce battle for market share with U.S. shale output, may stage a modest recovery as some production wanes and pipeline maintenance ends. While Canadian gas will almost always trade for less than U.S. gas — due mostly to the pipeline cost to markets in Texas and the Midwest — the discount recently widened to the most since 2005. The culprits are prolific new wells that are hard to shut off, along with outages on pipelines that move gas around Alberta.

But with the repairs that caused those disruptions mostly completed and producers dialing back on output in British Columbia, the glut of Canadian gas may ease. Higher prices would be a boon for Canadian producers that have been forced to cut costs and seek new outlets in the face of escalating competition from the U.S. shale gas boom.

Canadian gas traded at \$2.70 per million Btu less than the U.S. benchmark Henry Hub gas price on Sept. 12, the steepest discount since December 2005. It improved to a \$1.33 discount on Sept. 13. For some, the cost of shutting down and reactivating fields would have been more burdensome than taking a short-term hit. For other wells, a complex ownership structure and varying types of contracts with pipeline companies kept them producing even if one partner would have preferred to stop.

Haynesville gas production at highest level since mid-2013

(Platts; Sept. 15) - Natural gas producers in the U.S. Southeast are beginning to yield dividends from a bid to reverse declining production in one of the region's seemingly forgotten shale plays. Recent data from the Haynesville of Arkansas, Louisiana and Texas show production there at its highest since mid-2013. As output continues to rebound from a record low in August 2016, production from the Haynesville is already up by nearly 15 percent, Platts Analytics data shows.

That spectacular turnaround comes amid a rapid expansion in drilling activity which has rivaled that of even the Utica or the Marcellus. In just 12 months the Haynesville rig count has more than tripled. Leaseholders' renewed devotion to the play comes in spite of relatively weak internal rates of return, averaging 11 percent over the past year.

But with export demand from the Gulf Coast and Texas expected to grow by nearly 7.5 billion cubic feet of gas per day through 2020, a bid to grow output in the Haynesville could be longer-term play by producers. In September sample production from the Haynesville has surpassed 3.5 bcf per day. That estimate is up nearly 35 percent from the same two-week period in 2016 when output was sampled at just 2.6 bcf a day.

Gas drilling bans, not exports, to blame for Australia's high prices

(Reuters columnist; Sept. 14) - In theory it should be great days for Australia's economy and resource companies, and even Australian politicians keen to take the credit for booming exports and the jobs. But the world's largest exporter of coal, and second-biggest supplier of liquefied natural gas, is discovering that export success can quickly become a politically charged hot potato when linked to rising costs for local consumers.

First, the new LNG plants in the eastern state of Queensland were accused of sucking up gas supplies, driving up local prices and potentially causing supply shortages. This was a bit of a stretch, as only one of the LNG projects was capable of using gas that may have otherwise been made available to the domestic market. Still, the perception that exports were driving domestic prices higher stuck, leading Prime Minister Malcolm Turnbull to introduce a law to limit exports and divert gas to the domestic market.

It's not clear this will work in practice, as the main problem appears not to be domestic availability of gas but rather that the local price is effectively linked to what supplies can be sold for as LNG exports. As one analyst put it: If gas is available in Queensland at the same price as LNG, and nobody wants it, is there still a shortage?

The situation has been complicated by governments in the populous states of New South Wales and Victoria restricting or blocking the production of onshore gas. The gas industry has long argued that all available sources should be tapped, as bringing more

gas to market will help rein in prices. But states have found it impossible to stand up to a coalition of environmentalists and farmers opposed to any onshore gas production.

Texas sand mines look to profit from Permian drillers

(Wall Street Journal; Sept. 14) - There is a new land grab going on in the oil fields of West Texas. This time it is over sand. Big sand suppliers, Wall Street firms and other investors have been buying up swaths of the West Texas desert. These investors aim to mine and sell the sand to drillers in the region's booming Permian Basin that use large quantities to extract oil and gas from shale formations. In shale drilling, sand is mixed with water and chemicals and blasted underground to crack open energy-bearing rock.

Texas energy producers have typically bought the millions of pounds of sand that each well requires from mines located far from their drilling fields. After oil prices collapsed in late 2014, though, cost-conscious drillers reconsidered their well designs and recipes for the slurries they blast underground to unleash fuel from shale formations. Many West Texas drillers discovered that they could replace sand they had been shipping from mines 1,300 miles away in Wisconsin with finer grades found in dunes nearby.

Doing so eliminates rail costs that sometimes are equal to or more than the sand itself. Investors are lining up to supply local sand to West Texas drillers. There are at least 18 mines underway or proposed for the desert outside Midland, Texas, said Jefferies analyst Brad Handler. The prospect of tens of millions of tons of Permian sand coming to market could drive down prices that have been rising nationally, he said. Prices rose to as much as \$45 a ton earlier in the year, from as little as \$15 a ton last year.

<u>Italian company plans to introduce LNG-fueled trucks in Japan</u>

(Nikkei Asian Review; Sept. 9) - The shift from diesel as an automotive fuel is gaining traction not only in passenger vehicles but also commercial trucks. While a majority of such trucks are now diesels, a number of countries are moving to wean themselves off the fuel. Natural gas, a cleaner and more economical alternative that can offer an equivalent driving range, may become a mainstay in the sector.

Italian commercial-vehicle giant Iveco plans to offer large trucks in Japan that run on liquefied natural gas as early as 2018. The range of about 900 miles on a full tank of natural gas will equal that of diesel. The price will be about 19 million yen (\$176,000). Iveco aims to sell 9,000 a year, a tenth of the Japanese market for commercial trucks.

Globally, natural gas vehicles number about 24 million. China accounts for the most, at 5 million units. Japan has only 40,000 natural gas vehicles on the road including

passenger cars. While more than 30,000 gasoline stations are equipped to refuel diesel trucks, the country has only 270 natural gas filling stations, highlighting the need to build more refueling stations for compressed natural gas and liquefied natural gas.