

Oil and Gas News Briefs

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OPEC+ expected to delay production increase

(CNBC; Nov. 29) - OPEC and its allies will likely delay an output hike at its meeting this week as it weighs positive vaccine news against new coronavirus lockdowns and resurgent shale drilling in the U.S. The OPEC+ coalition will begin a two-day meeting Monday to discuss the next phase of its oil-production policy. "The technical groundwork has been laid down for OPEC+ to postpone a tapering of its output cuts," said Harry Tchilinguirian, head of commodity markets strategy at BNP Paribas. "Now the political groundwork needs to be put in place," he was quoted in a Bloomberg news report.

OPEC+ agreed to the largest output cut in history back in April, but that reduction of 9.7 million barrels per day was subsequently scaled back to 7.7 million in August. Taking oil off the market usually boosts prices. A planned January ramp-up of production, taking the cutback down to about 5.7 million barrels per day, looks to be delayed, according to market consensus with analysts uncertain if it will be for three months or six months.

Caroline Bain, chief commodities economist at Capital Economics, believes this week's meetings won't spring any surprises, saying an extension of the production cut is largely priced in. "We now think that the oil price (Brent) will stand at \$60 per barrel by end-2021," she said in a research note Nov. 27, revising forecasts due to the encouraging vaccine trial that could help reopen economies after the coronavirus crisis.

Russia is likely to agree on a rollover of output curbs for the first quarter if needed, a source told Bloomberg, but would prefer to decide later on extending for a second three months. A potential complication is the United Arab Emirates' wish for a higher OPEC+ quota, Goldman Sachs said last week. Nigeria also wants a higher quota, and Iraq has talked about being exempt from 2021 reductions in its oil flow, Bloomberg reported.

U.S. shale production no longer at the top of OPEC's worry list

(Bloomberg; Nov. 28) - OPEC's oil ministers have a few challenges to consider at their crucial summit, but for the first time in years the U.S. shale boom won't be at the top of the list. A global pandemic and a reckoning with Wall Street appear to have broken the resolve of the shale wildcatters that turned the U.S. into the world's biggest oil producer. Years of fast growth, at the expense of oil kingpins in the Middle East and Russia, have come to an end. It's now abundantly clear who has the upper hand in the oil market.

“We don’t want to put OPEC in a situation where they feel threatened,” Bill Thomas, chief executive officer of EOG Resources, the biggest independent U.S. shale producer by market value, said earlier this month. The shale industry’s new prudence, echoed by the CEOs of Pioneer Natural Resources and Occidental Petroleum, means that production will probably flatten after a steep plunge this year. U.S. output will end 2021 close to 11 million barrels a day, about the same as it is now, according to forecasters.

That will surely come as a relief to OPEC and its allies. The breakthroughs in horizontal drilling and fracking that created the shale boom made it look as though U.S. production growth might never end. Output topped 13 million barrels a day in February for the first time. Then COVID-19 hit, people stopped driving and flying, and the oil market crashed. Before the end of summer, U.S. output had crashed by 3.4 million barrels a day. It’s as though the U.S. went from being a thorn in OPEC’s side to being an unofficial member.

Higher prices could make it harder on OPEC+ to restrain production

(Bloomberg; Nov. 25) - With OPEC+ just days from meeting, those countries that favor ratcheting up oil production may be finding some support for their arguments from surging prices. Headline futures contracts jumped 30% this month, with Brent at one point on Nov. 25 hitting \$48.75 a barrel, the highest since March. Critically though, a much more fundamental shift has taken place in the forward curve, which offers clues about traders’ perspectives on supply and demand — both now and in future.

Large parts of the curve are now trading in a structure known as backwardation, suggesting a clamor for barrels. Just a week ago, they were in contango and pointing to an oil surplus. The Organization of Petroleum Exporting Countries and its allies that will meet Nov. 30 – Dec. 1 are already grappling with a difficult market to evaluate. Oil demand has rarely been so volatile. A supply glut — built up when coronavirus first emerged — remains but is being eroded. Adding more supplies in January would put OPEC+ at risk of reversing the pricing strength that has grown in recent weeks.

“The more relaxed ministers feel because prices are rising, the more difficult it can be to achieve consensus on further market stabilization measures,” Standard Chartered analyst Paul Hornsell wrote in a report. The bank sees a three-month extension of curbs as the market’s minimum expectation when OPEC and its allies meet.

Libya’s fast returning oil production a problem for OPEC+

(Bloomberg; Nov. 27) - Libya’s oil industry, trampled by civil war and chaos, is roaring back. Output has surged to nearly 1.25 million barrels a day from almost a dead start in September after a tentative peace between rival military forces. The OPEC member is

pumping about three-fourths as much crude as it did before the 2011 uprising that toppled Moammar Al Qaddafi and triggered the country's political and economic fall.

The speed of the recovery took oil markets by surprise. It's also causing anxiety for the Organization of Petroleum Exporting Countries and allies such as Russia as they restrict global output to prop up crude prices. Libya is exempt from the cuts and currently supplies more oil than several of its OPEC peers. The OPEC+ alliance is sure to weigh the impact of Libyan oil when it meets next week to assess its strategy.

The big unknown is whether Libya's output can be sustained or even increased to pre-conflict levels of 1.6 million barrels a day. The boost over the past two months may have been the easy part. To produce more crude, the country will need buckets of cash to fix and upgrade its energy infrastructure. That in turn will require a lasting peace.

Libyan officials have hinted that they won't discuss a potential OPEC quota for the country until it's pumping at least 1.7 million barrels daily. OPEC typically gives any member suffering from conflict several years to recover before trying to cap its output. Although Libya holds Africa's largest crude reserves, years of strife and lost production have impoverished the government and state-run National Oil Corp.

Survey of investment banks puts U.S. crude at \$43.25 in first quarter

(The Wall Street Journal; Nov. 27) - Oil prices are expected to remain subdued into the new year, with murky prospects for the global economy and supply of crude weighing on the outlook. Futures for West Texas Intermediate crude, the U.S. benchmark, will likely be about \$43.25 a barrel in the first quarter, according to a survey of 10 investment banks, suggesting the market will remain within a narrow band.

Next week's meeting of the Organization of the Petroleum Exporting Countries and its partners, at which the alliance will decide on production levels from January, will determine the direction of the market in the short term, analysts said. Over the longer haul, uncertainties remain. COVID-19 vaccines could boost global economic prospects and bolster demand for oil in 2021 if there is widespread distribution of the shots. However, elevated levels of coronavirus cases in both the U.S. and Europe could prompt fresh restrictions on travel and business, weighing on demand.

The West's latest round of lockdowns has been less rigorous than those in the spring, and less disruptive to economic activity. Combined with more purchases of physical barrels of oil in Asia, that has helped rejuvenate oil demand. The market may get another boost if low interest rates and huge stimulus packages in the U.S. weaken the dollar in coming months. WTI futures could climb to just over \$50 a barrel in the final months of 2021, according to the banks' forecast.

Rosneft announces go-ahead for massive Arctic oil project

(Agence France-Presse; Nov. 25) - Russian oil giant Rosneft on Nov. 25 announced the start of work for its giant Vostok oil project in the Arctic, part of the country's strategic energy plan which has been criticized by environmentalists. "It is with great pleasure that I inform you of the start of the practical implementation of the project," Rosneft CEO Igor Sechin told President Vladimir Putin at a meeting in Moscow.

He thanked Putin, with whom he has close relations, for a new law facilitating Russian investments in the Arctic. Sechin said design work on a 480-mile oil pipeline and a port had been completed. Environmentalists urged the government last year to stop granting licenses to exploit Arctic deposits. The Vostok project, the cornerstone of Russia's Arctic ambitions, brings together several Rosneft activities in the Far North, near the Northern Sea Route that the company intends to use to deliver energy to Europe and Asia.

In February, Sechin promised Putin that the plan would create a "new oil and gas province" on Siberia's Taymyr Peninsula, the northernmost part of the Asian continent. The complete project will represent a total investment of 10,000 billion rubles (\$111 billion), including two airports and 15 "industry towns." The project has been forecast to create 130,000 jobs and allow access to estimated reserves of about 36 billion barrels of oil. Construction will require 400,000 workers, Sechin said. Rosneft announced last week the sale of 10% of the project to Singapore's Trafigura, without mentioning a price.

BP plans more investment in Mideast oil and gas

(Bloomberg; Nov. 26) - BP said it will invest more money in Middle Eastern oil and gas fields even as it transitions to renewable energy and tries to reduce emissions. The company is a major producer in countries such as Iraq, where it operates the world's third-largest oil field of Rumaila, the United Arab Emirates and Oman. It's focusing on their low-cost oil, while also boosting output of gas, said Stephen Willis, BP's senior vice president for the Middle East. Oil production at Rumaila is slightly below 1.4 million barrels a day, Willis said.

Deposits in Iraq, the UAE emirate of Abu Dhabi and Oman have "world-leading operating cost, capital cost and production-efficiency performance," Willis said without specifying how much BP plans to spend. European majors are seeking greener sources of energy to combat climate change. BP, which is selling assets and cutting its dividend in response to oil's coronavirus-triggered price crash, is targeting a 40% decline in hydrocarbon production by 2030 and will not explore for crude in any new countries.

Several Middle East countries are beginning to exploit renewable energy resources and focus more on gas, which emits less carbon than oil or coal. Iraq, the second-largest oil

producer in the Organization of Petroleum Exporting Countries, continues to flare large quantities of gas. BP is trying to help the country instead use the gas to generate power. Iraq's oil minister has also asked BP to develop renewable energy.

China's imports of U.S. energy products fall far short of target

(Reuters; Nov. 26) - China has accelerated imports of crude oil, propane and liquefied natural gas from the United States since July, but total energy product purchases through October remain far short of targets for 2020 set out in the Phase 1 trade deal with Washington. Over the first 10 months of 2020, China's purchases of U.S. crude oil, LNG, propane, butane and other energy products totaled \$6.61 billion, about 26% of the \$25.3 billion target, according to Reuters calculations based on Chinese customs data.

While China is unlikely to reach the target by year-end, U.S. and Chinese trade officials reaffirmed their commitment to the deal in August, and China's imports of U.S. energy products have increased sharply the second half of the year. Imports of propane, a key component of liquefied petroleum gas (LPG) used as fuel for cars, heating and to produce petrochemicals, grew at the fastest pace of major energy products since July.

Robust demand for chemicals from China's revitalized manufacturing sector, along with new processing units at independent refiners Zhejiang Petroleum & Chemical and Zhejiang Huahong have fueled the import drive. China's crude oil imports from the U.S. hit a record of almost 92 million barrels through October, worth \$3.88 billion, but the pace of U.S. purchases is expected to slow through the remainder of 2020 as top suppliers Saudi Arabia and Russia target increased flows to the No. 1 oil importer.

Oversupply has driven U.S. propane to decade-low prices

(The Wall Street Journal; Nov. 25) – The coronavirus pandemic has made propane a hot commodity among Americans heating outdoor spaces and hunkering down in COVID-safe cabins. Fortunately for them, the country is flooded with the fuel, and prices have rarely been lower heading into winter. Spot-market propane prices at the Mont Belvieu, Texas, trading hub have more than doubled since dropping in late March to their lowest in more than a quarter-century. But at 55 cents a gallon, they are still about one-third lower than the 10-year average for November.

Residential prices have lately averaged \$1.85 a gallon, the U.S. Energy Information Administration said Nov. 25. That is the lowest for this time of year in more than a decade. It isn't as though there is no demand for propane, which belongs with butane and ethane to a class of hydrocarbons called natural gas liquids, or NGLs. The U.S. is exporting about four times as much propane as it shipped abroad in 2013, when the country became the world's top propane exporter.

At home, an increase in residential demand has helped to offset lower use by businesses and farmers, who haven't needed grain-drying equipment much this year because a lack of rain allowed them to let crops dry in the field. Meanwhile, there is plenty of propane flooding into the market from shale wells in West Texas and Appalachia, where it is produced alongside oil and gas. Production has nearly tripled over the past decade and reached record levels this year. And unusually warm weather last winter left behind big stockpiles when economies were shut down to slow the spread of the coronavirus.

Strong interest in third-party access to China's gas infrastructure

(S&P Global Platts; Nov. 25) - State-owned China Oil & Gas Piping Network Corp., also known as PipeChina, has attracted hundreds of applicants for shippers' licenses that will give the companies access to its gas supply infrastructure, as the country's gas market liberalization accelerates. The high level of interest comes after PipeChina was created earlier this year, in one of the largest energy market reforms by Beijing in recent years.

Assets from the three state-owned oil and gas companies — PetroChina, Sinopec and CNOOC, that used to control access to most of the energy infrastructure — were merged into PipeChina, along with a handful of local companies. Over 900 companies have registered for a natural gas shippers' license, which allows companies to apply for the use of PipeChina's pipelines and LNG import terminals after the company launched a customer management system for the licenses on Oct. 10, market sources said.

The full terms of third-party access are not immediately known, but new entrants into the gas market that don't have their own infrastructure to import LNG now stand a chance to utilize terminal slots without having to build their own facilities, lowering barriers to entry in China's gas market. This is expected to boost competition and introduce private and international players in the downstream gas market. PipeChina is expected to first allocate terminal slots to the three national oil companies for their contracted cargoes, and the remaining slots would then be assigned to the applicants.

U.K. energy company wants to sell its U.S. LNG commitments

(The Wall Street Journal; Nov. 26) - Centrica, a major U.K.-based energy supplier, is trying to sell its portfolio of liquefied natural gas purchase contracts and other assets, according to sources, as it seeks to simplify its operations amid volatile LNG prices. Similar recent transactions suggest that Centrica, the owner of energy and electricity service provider British Gas, may need to pay any potential buyer to take the LNG business off its hands, underscoring the uncertain outlook for gas prices internationally.

The LNG portfolio, however, could offer potential buyers a quick, cheap way to enter the LNG market as an established player. Last year Total struck a deal to acquire the U.S. LNG business of Toshiba, which included a long-term take-or-pay contract at the Freeport LNG terminal in Texas. The Japan-based conglomerate paid the French energy major \$800 million to take over its supply and transportation LNG contracts.

Centrica's LNG business comprises contracts to take LNG from U.S. exporter Cheniere Energy, Mozambique LNG and others as well as trading in cargoes. Centrica said that as of June 30, its 20-year contract with Cheniere had essentially no intrinsic value. The value of that deal — welcomed when it was signed in 2013 as a means of broadening the U.K.'s energy mix — depends on the gap between prices in the U.S. and in Britain and Asia. Booming supplies and the growing market in LNG have narrowed those spreads, cutting into or cutting out profits on U.S. LNG purchased for sale overseas.

Feed gas to U.S. LNG plants set record 10.4 bcf on Nov. 25

(Reuters; Nov. 25) - Gas flowing to U.S. liquefied natural gas export plants was on track for a record high on Nov. 25 as Cheniere Energy's Corpus Christi plant in Texas pulled in enough fuel to supply all of its liquefaction trains. The plant is preparing to put its third train into commercial service during the first quarter of 2021. Corpus Christi was set to pull in a record 2 billion cubic feet on Nov. 25, preliminary data from Refinitiv showed.

The higher delivery volume into the plant boosted total feed gas to all six big U.S. LNG export plants to a preliminary 10.4 bcf on Nov. 25 — about 10% of the nation's total gas production — topping the record of 10.3 bcf set on Nov. 13. Before hitting several fresh highs since late October, the previous LNG feed gas record was 9.5 bcf a day on March 31. But that was before buyers started canceling cargoes as coronavirus demand destruction caused prices in Europe and Asia to sink to record lows. U.S. exports fell each month from March to July as LNG buyers canceled about 175 U.S. cargoes.

As global gas prices started rising over the summer, LNG buyers began buying U.S. gas again. The U.S. LNG plants are operated by units of Cheniere (Sabine Pass in Louisiana and Corpus), Freeport LNG in Texas, Cameron LNG in Louisiana, Kinder Morgan (Elba Island in Georgia), and Berkshire Hathaway (Cove Point in Maryland).

Louisiana LNG developer stays with KBR to construct the plant

(Natural Gas Intelligence; Nov. 25) - Venture Global LNG has selected KBR to lead the first phase of construction for its Plaquemines liquefied natural gas export project in a surprise announcement just months after KBR said it would exit the energy business. Venture Global said as the engineering, procurement and construction contractor, KBR

would “integrate highly modularized, owner-furnished equipment” for the LNG terminal planned for Plaquemines Parish, Louisiana, at 10 million tonnes annual output capacity.

The developer has pushed back the timeline for a final investment decision on Plaquemines from 2020 until mid-2021, but early site work is expected to start soon. Venture Global is currently constructing the Calcasieu Pass LNG terminal in Cameron Parish, Louisiana, also at 10 million tonnes annual capacity. The first two factory-fabricated liquefaction trains arrived at that site in early November. Kiewit is the contractor for that project.

KBR said this summer it would exit the energy business to focus on its technology and government solutions work. Management said it was in the process of exiting all work on LNG projects, given how volatile the space had become and its low margins. Going forward, KBR said 80% of its work would be government and 20% technology. CEO Stuart Bradie said energy-sector upheaval prompted the company to review its portfolio.

[Exxon, Total in negotiations over shared Mozambique gas reserves](#)

(Reuters; Nov. 26) - ExxonMobil and Total are in negotiations over their massive liquefied natural gas projects in Mozambique with each seeking to extract more gas from a shared field that straddles the two developments to cut costs, three sources told Reuters. Talks between the companies also involve the Mozambican government, according to the sources, as it has the final decision on any new agreement.

The field that straddles the projects contain gas that is cheaper to extract than other reserves planned for development. The volume each project could extract from the shared area was set in a 2015 unitization — resource-sharing — agreement. However, Exxon and France's Total are renegotiating that contract with each other, sources said. The companies are looking to cut costs where they can, bruised by a COVID-induced fall in global oil and gas prices and facing a worsening security situation in Mozambique.

Success in the talks could be particularly important for Exxon, which still has to woo investors ahead of a delayed final investment decision on its US\$30 billion Rovuma LNG project, which the sources don't expect until early 2022. The FID on Total's US\$20 billion Mozambique project was made in 2019. The current sharing contract was signed by Eni and Anadarko. Eni sold a stake in the Rovuma venture in 2017 to Exxon, which is now the project operator, while Anadarko sold Mozambique LNG to Total last year.

The agreement allows the projects to extract a combined 24 trillion cubic feet of gas from the "straddling" reserves with a 50/50 share in phase one of development. Exxon and Total are trying to rework the agreement to increase extraction from the straddling reserves as a way to boost efficiency, according to the sources. "They want to use the cheapest gas first--which is the straddling resources," said one of the sources.

Gazprom sees slowdown in LNG developments as an opportunity

(S&P Global Platts; Nov. 25) - The board of Russian gas giant Gazprom sees an opportunity for the company to benefit in the longer term from the slowdown in new liquefied natural gas export project developments, the company said Nov. 25. In a statement, Gazprom said its board in a meeting also noted that Russia's significant gas resources would enable it to penetrate new LNG markets.

The slowdown in project sanctions has hindered "the long-term development prospects of the LNG industry," Gazprom said, adding that so far in 2020 only one final investment decision had been made for a new LNG production project. Gazprom said in addition to the lack of FIDs, the launch dates for several projects have been postponed. It said the decline in activity in 2020 could have a long-term impact on LNG supply, which would lead to an additional opportunity for Gazprom to win more market share.

It had been expected that 2020 would see numerous LNG project FIDs after 2019 saw a record number of FIDs for projects in the U.S., Russia, Nigeria, and Mozambique for a capacity increase of more than 66 million tonnes per year of LNG. The board also said Gazprom would increase its pipeline gas sales to China along with more LNG capacity. Gazprom is developing an LNG export facility at Ust-Luga in Northwest Russia, along with adding capacity at its Sakhalin Island LNG terminal in Russia's Far East.

Novatek expects big transport savings from at-sea LNG transfers

(High North News; Nov. 26) - Russian gas producer Novatek's transport network to deliver liquefied natural gas from the Yamal Peninsula in the Arctic to Europe is taking further shape. This week the company set in place the latest piece of its logistics puzzle: Reloading of LNG from ice-breaking vessels to conventional carriers off the waters of Murmansk. Such transfers will ensure year-round export of Yamal LNG to Europe. The gas is transferred from Arc7 ice-breaking LNG carriers to conventional carriers, allowing Novatek to limit the distance its fleet of expensive ice-breaking tankers have to travel.

Novatek, in cooperation with the Norwegian company Tschudi, utilized the Sarnes Fjord near Honningsvåg to transfer more than 10 million tonnes of LNG during 2018-2020. At the time the U.S. voiced its displeasure at this cooperation with Russia in the hydrocarbon sector. U.S. opposition in part prompted Novatek to relocate transfer operations to the Russian side of the Barents Sea, even though the area near Honningsvåg sees calmer waters and is more favorable for transfer operations.

For now, the transfers are ship-to-ship, where both vessels are connected via hoses. Transfers can take up to 48 hours. Starting in 2022, the company will make use of a floating LNG storage barge to receive and reload the gas at sea. Novatek estimates it can save \$180 million a year by transferring LNG to conventional carriers for much of

the distance to customers. The savings would come in the delivery of Yamal gas and also cargoes from its next export terminal, Arctic LNG-2, which is under construction.

Enbridge sues to block Michigan order to shut down pipeline

(The Associated Press; Nov. 25) - Enbridge filed a legal challenge Nov. 24 to Michigan Gov. Gretchen Whitmer's recent demand that the company shut down its oil and gas liquids pipeline that crosses under the waterway connecting Lake Huron and Lake Michigan. The Canadian company accused the state of overstepping its bounds, arguing that Enbridge's Line 5 was under the sole regulatory jurisdiction of the U.S. Pipeline and Hazardous Materials Safety Administration.

"This is the latest attempt by the state of Michigan to interfere with the operation of this critical infrastructure by assuming authority it does not possess," the company said. In her Nov. 13 order to halt the flow within 180 days, Whitmer said Enbridge had violated an easement granted 67 years ago to run a section of the pipeline along state-owned land below the Straits of Mackinac. Line 5 moves about 550,000 barrels of oil and gas liquids daily from Superior, Wisconsin, to Sarnia, Ontario, through northern Michigan.

Enbridge filed its case in U.S. District Court in Grand Rapids, Michigan, underscoring its contention that the pipeline is a federal matter. It submitted a notice seeking to transfer the state's suit to the federal court. Vern Yu, the company's president for liquids pipelines, said the state should "stop playing politics with the energy needs and anxieties of U.S. and Canadian consumers and businesses that depend on Line 5." Whitmer spokeswoman Tiffany Brown said Enbridge's suit "brazenly defies the people of Michigan and their right to protect the Great Lakes from a catastrophic oil spill."

Opponents file against future pipeline corridor in Wyoming

(Oil City News; Casper, Wyoming; Nov. 25) - Five conservation groups have filed a protest against the proposed Wyoming Pipeline Corridor plan. The proposed initiative would designate about 1,150 miles of U.S. Bureau of Land Management land in Wyoming as a dedicated pipeline corridor system "for future development of pipelines associated with carbon capture, utilization, and storage, as well as pipelines and facilities associated with enhanced oil recovery," according to the BLM.

While the governor's office says the plan would support carbon capture and utilization efforts in the state, the conservation groups are concerned the new pipeline system would damage wildlife habitat and worsen climate change "by increasing oil production." The corridor would cut through the Seedskaadee National Wildlife Refuge in Sweetwater County "and other important wildlife habitat," according to a Nov. 25 press release by the opposition group, the Western Watersheds Project Energy and Mining Campaign.

The BLM has published its final environmental impact statement for the pipeline corridor plan. However, the conservation groups said the BLM have not provided support for claims that the proposed project would reduce future carbon emissions. And the opponents are concerned that the pipeline would impact “numerous big game migration routes, displacing mule deer, pronghorn, moose, and bighorn sheep from essential seasonal habitats between summer and winter ranges.”

Canadian report says more work needed to reach net-zero emissions

(The Canadian Press; Nov. 24) - The Canada Energy Regulator says reaching net-zero emissions over the next 30 years will require a much more aggressive transition away from oil and gas. The annual Energy Futures report released Nov. 24 projects that even with many more policies to curb emissions than are currently in place, oil and gas would still comprise nearly two-thirds of energy sources three decades from now.

“Achieving net-zero (greenhouse gas) emissions by 2050 will require an accelerated pace of transition away from fossil fuels,” the report says. Net-zero means either that no emissions are produced or that any which are produced are absorbed by nature or technology so no more are added to the atmosphere where they contribute to global warming. Regulator CEO Gitane De Silva said the goal of the report is not to comment on existing policy, but rather to paint a picture of where things could go using a variety of assumptions.

The report looks at two scenarios for Canada’s energy use. One involves only the climate policies already in place. The “evolving scenario” adds in an expansion of those policies, including a higher carbon tax, lower prices for oil and gas, and lower costs to transitioning to renewables like wind and solar. In the evolving scenario, oil and gas demand peaked in 2019. It will fall 35% by 2050 but still account for 64% of energy use.

The evolving scenario projects that oil and gas production will grow between 17% and 18% by 2039, but will then start to fall, dropping 7% or 8% by 2050. De Silva notes that if the three oil and gas pipelines under construction get finished — Keystone XL, Trans Mountain, and Enbridge Line 3 — they will be the final pipelines Canada needs to build to handle the projected growth and fossil fuel production before it begins to decline.

Renewable energy producers plan strong growth in capacity

(The Wall Street Journal; Nov. 25) - The decline of oil-and-gas supermajors over the past two years has been matched by the rise of previously obscure utility companies. In Europe, Enel and Iberdrola have emerged as green-energy giants, in part by taking leaves out of the big-oil playbook. The companies have built global portfolios to meet

growing energy demand — only with wind and sun rather than fossil fuels. The strategy has made them the world's two largest renewable energy producers by capacity.

Enel said Nov. 24 it will nearly triple its capacity to 120 gigawatts by 2030. Earlier this month, Iberdrola laid plans to double its capacity to 60 gigawatts by 2025. The two are similar to U.S. peer NextEra, but with an international rather than domestic footprint. All three are gearing up for dramatic growth in clean-power demand as emerging markets get richer and developed economies decarbonize. Renewables can be cost-competitive with fossil fuels and governments are accelerating plans to cut carbon emissions.

The two European companies share traits with the oil supermajors. They are vertically integrated; they secure government rights to multiple wind and solar sites and develop those projects; and they manage power plants and distribution networks. Their big, international operations provide the scale for cost efficiencies. There are some important differences, too. Oil projects are typically high-risk, high-return investments, while new power plants are a surer thing and generate correspondingly lower profits.