SAF GROUP

Energy Tidbits

Vitol: China Oil Buyers Yet to Enter Jan Trading Cycle, Despite Oil +$1-2/b, “They Will Buy Because They Need To”

Produced by: Dan Tsubouchi

November 7, 2021

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LNG Market Fundamentals Support Commercial Momentum

Expected FID of Corpus Christi Stage 3 in 2022 supported by strong global LNG market and the demonstrated value of Cheniere's reliable and flexible commercial offering to meet the long-term energy needs and environmental goals of our customers

Commercial Momentum Across Platform

Signed >2.5 mtpa of long-term take-or-pay contracts in ~3 months

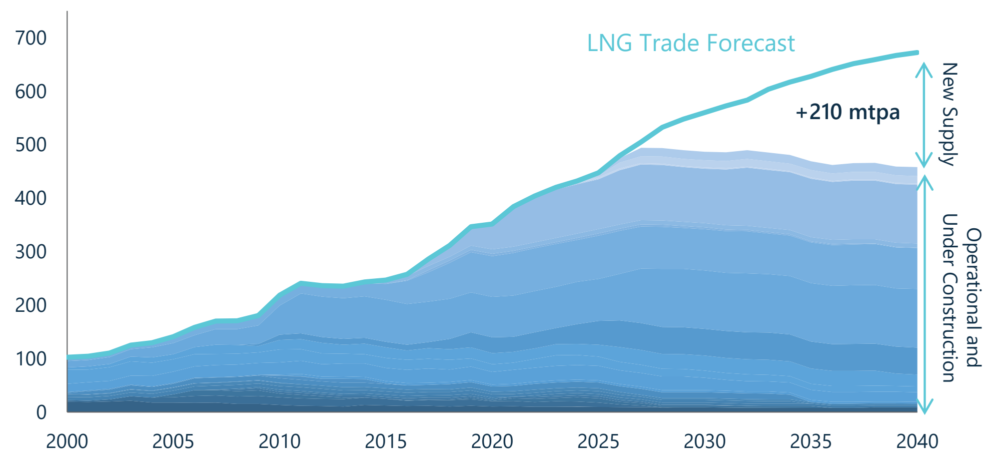
TOURMALINE	0.85 mtpa	15 years	IPM
ENN 新奥	0.9 mtpa	~13 years	FOB
GLENCORE	0.8 mtpa	~13 years	FOB

Creditworthy Counterparties

台灣中油股份有限公司 CPC Corporation, Taiwan; eog resources; TOURMALINE; PGNiG; GLENCORE; ENN 新奥; Apache

Global LNG Supply Outlook

70 mtpa of LNG supply needed by 2030 and over 210 mtpa needed by 2040



12-Month Forward Curve Averages

~$4.50 Henry Hub ~$20 JKM ~$17 TTF

Note: Forward curve averages as of November 3, 2021.
Source: Cheniere Research estimates (July 2021), Wood Mackenzie for historical figures. Area chart includes all recent FIDs through February 2021 (up to and including QG NFE)

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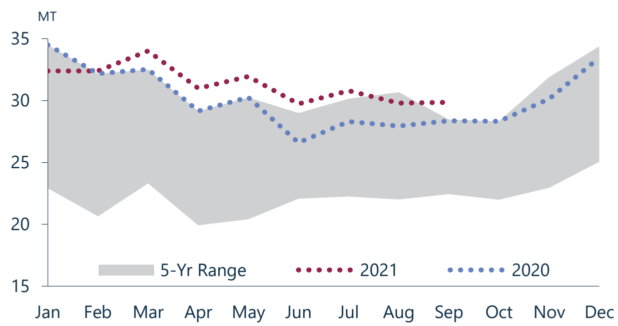
Tight and Volatile Global Gas Market Heading Into Winter

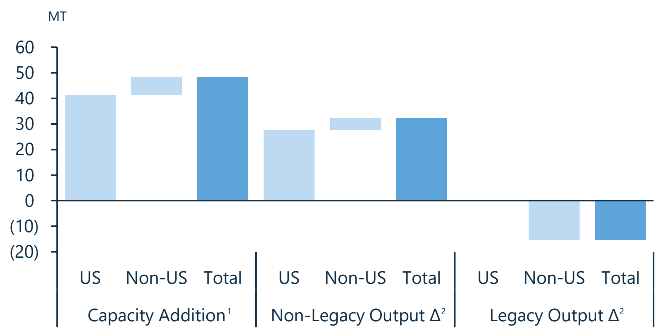
Global LNG Demand

Global consumption of LNG grew 7% in 3Q amid intense regional competition ahead of peak winter demand



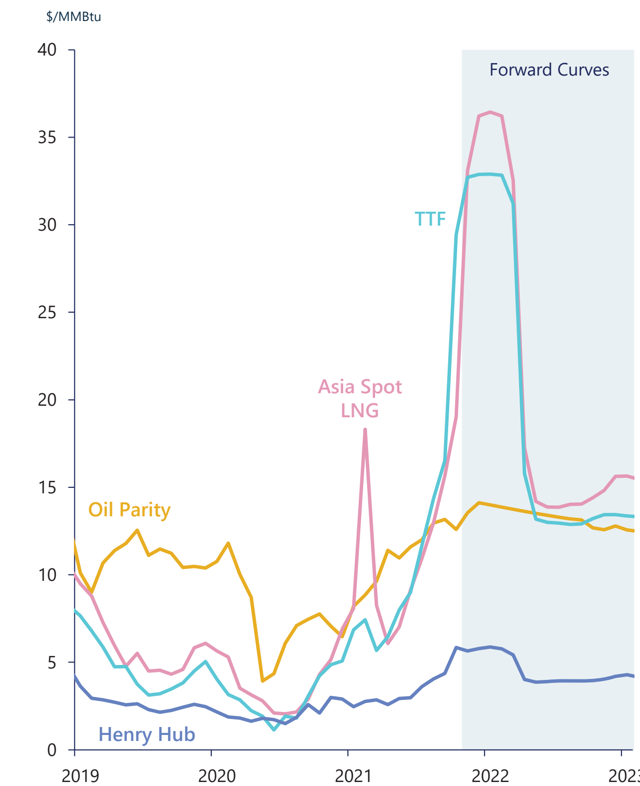
LNG Capacity and Output Variance ('21 vs. '19)

Strong US LNG supply growth continues to underpin global supply



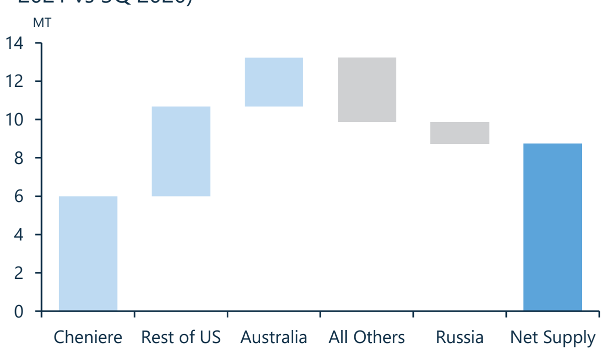
Global Energy Commodity Prices

JKM and TTF reached unprecedented levels due to tight supply and expectations of a cold winter



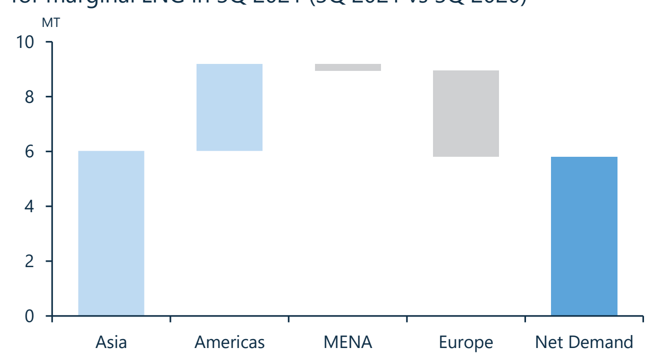
Global LNG Supply Variance in 3Q 2021

US exports were up nearly 11 MT or 150% YoY in 3Q (3Q 2021 vs 3Q 2020)



Global LNG Demand Variance in 3Q 2021

Asian and Latin American buyers outbid European buyers for marginal LNG in 3Q 2021 (3Q 2021 vs 3Q 2020)



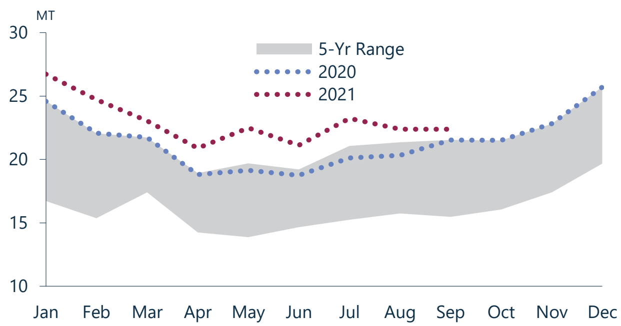
Source: Kpler, Bloomberg (forward curves as of 10/6/2021).

1. Capacity Addition September 2021 vs January 2019.
2. Non-Legacy Output and Legacy Output January-September 2021 vs 2019.

Strong Buying in Asia Keeping Inventories Low in Europe

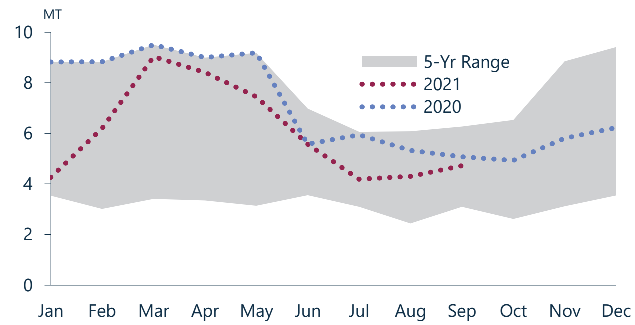
Asia LNG Imports

3Q LNG demand rose 10% YoY led by Korea and China



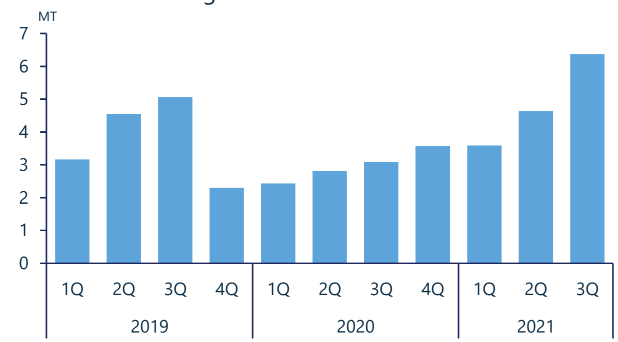
Europe LNG Imports

Imports were down 19% or 3.1 MT YoY in 3Q due to tight supply and a strong pull from Asia



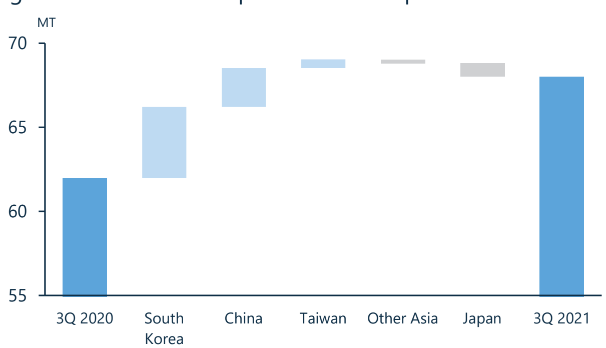
Latin America LNG Imports

LNG imports increased by 107% YoY to 6.4 MT primarily from Brazil and Argentina



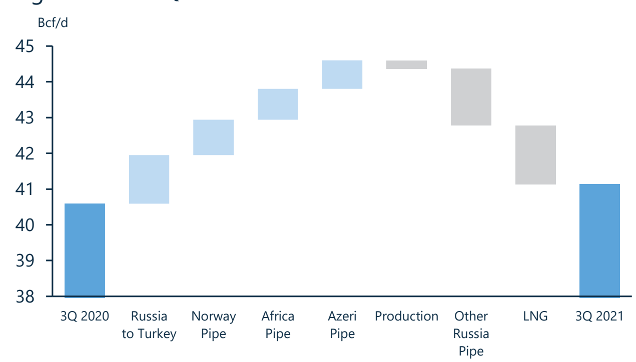
Asia LNG Imports 3Q 2021 vs. 3Q 2020

Gas burn and stock replenishment in Korea and continued growth in China underpinned Asia's imports



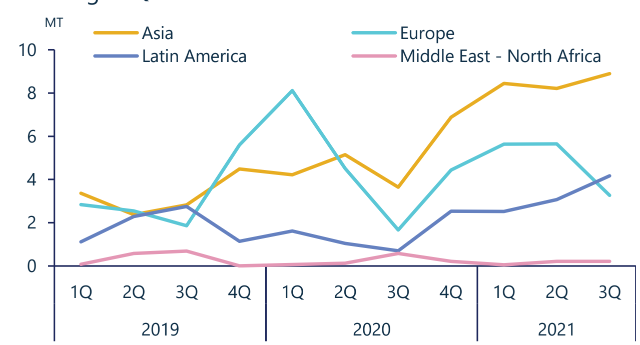
Europe Gas Supply Variance in 3Q 2021

Limited LNG flows and lower Russian flows further tightened the Q3 balance ahead of withdrawal season



United States LNG Flows by Destination

Asia and Latin America contested Europe for US supplies through 3Q 2021



Sources: Cheniere Research, Kpler, Commodity Essentials.

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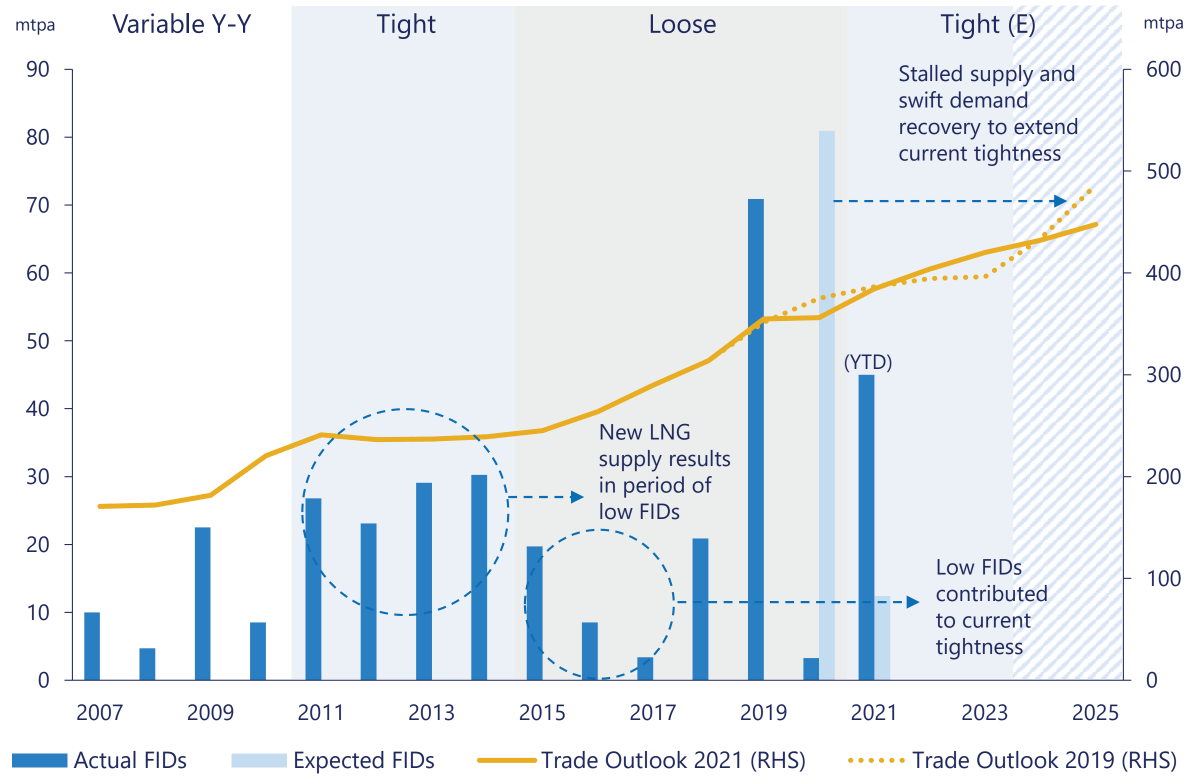
The Pandemic “Reset” the Supply Cycle

Historically low FIDs taken in 2015-2018 foretold a tighter market starting in 2021, further accelerated by the structural shift to natural gas



Market Signaling for Additional Investment in New LNG Capacity

- Pandemic put pressure on supply chains and energy systems
- 2020 was expected to be a balanced year with expectations of market tightening beginning in 2021 and continuing
- Pandemic moved expected timing of FIDs and therefore extended market supply/demand imbalances
- Current market is much tighter than expected on various short-term supply and demand issues
- Supply/demand mismatch initially cast light on demand uncertainty and now on supply uncertainty

Source: Source: Cheniere Research estimates (July 2021), Wood Mackenzie for historical figures.
Note: Shaded backgrounds represent shift vs 2019 expectations.

https://rbnenergy.com/go-west-part-4-pacific-coast-lng-export-projects-gain-traction

Go West, Part 4 - Pacific Coast LNG Export Projects Gain Traction

Tuesday, 11/02/2021
Published by: Lindsay Schneider

After a record-breaking year in which the Japan-Korea Marker topped $30/MMBtu, it looks like 2022 could finally be the year when multiple projects in the long-awaited “second wave” of North American LNG export facilities reach final investment decisions. Developers, financiers, and offtakers are all taking their time, however, to make sure projects make sense in the long term. The recent run of high prices comes after years of price declines and a COVID-related price collapse in 2020, which reduced the spreads between U.S. production and LNG destination markets, slowing the pace of LNG project development. One thing’s clear: Asia — always the focus of LNG demand growth — will become even more important going forward, and perhaps the best way to attract Asian offtakers to U.S., Canadian, and Mexican projects is to export from the Pacific Coast, assuming that feedgas can be sourced and delivered easily. In today’s RBN blog, we conclude our series on Pacific Coast LNG export development, this time focusing on projects in Western Canada.

We began this series by discussing the logistical and economic advantages of exporting North American LNG from the Pacific Coast, as opposed to the Gulf Coast (see Part 1). The shorter voyage times and lower costs for Asian offtakers have spurred interest in these projects. Then, in Part 2, we outlined four projects, two that have already reached FID and are under construction — LNG Canada in British Columbia and Sempra Energy’s Energía Costa Azul (ECA) LNG in Baja California, Mexico — as well as two projects in strong contention to take FID in the next year: Woodfibre LNG in British Columbia and Mexico Pacific Limited (MPL) in Sonora State. In Part 3, we covered feedgas plans for the two projects in Mexico and how they plan to utilize existing infrastructure to pipe in Permian gas from the U.S. We also discussed some of the challenges, namely limited pipeline capacity moving west, and more broadly, how pipeline connectivity in Mexico limits site options for future LNG development beyond ECA and MPL. Next, we turn to the status and prospects of LNG development in Western Canada, and specifically on LNG Canada and Woodfibre LNG.

LNG Canada

LNG Canada is a two-train, 14-MMtpa (1.85 Bcf/d) terminal under construction in Kitimat, BC. The terminal is being built in the traditional territory of the Haisla Nation, a particular challenge for LNG development in Canada. Projects need to not only go through an environmental permitting process with the Canadian and provincial governments, but must also win the support of the First Nations native to the area, which LNG Canada has done. The project is a joint venture involving Shell, Petronas, PetroChina, Mitsubishi, and Korea Gas Corporation (KOGAS). The specific breakdown of the JV partnership and associated LNG volumes is shown in Figure 1 below. Given the terminal’s location, it is not surprising that the project is being developed by three Asian offtakers (dark green shaded rows), an Asian trader (light green row), and a major LNG portfolio player (yellow row). The portfolio volumes will be exported to Asia nearly all the time. The partners took FID on the project in October 2018 and construction is about halfway complete.

LNG Canada Stakeholders			
Company	Percentage Held	LNG Equivalent (MMtpa)	LNG Equivalent (MMcf/d)
Shell	40	5.6	737
PETRONAS	25	3.5	461
PetroChina	15	2.1	276
Mitsubishi	15	2.1	276
KOGAS	5	0.7	92

Legend		
Asian Consumer	Asian Trader	Portfolio Player

Figure 1. LNG Canada JV Partners and Associated LNG Volumes. Source: LNG Canada.

As part of LNG Canada's development (red diamond in Figure 2 below), a new pipeline, Coastal GasLink (dashed light blue line), needs to be built to access the Montney Basin (light gray area). Coastal GasLink will have a capacity of about 2.1 Bcf/d and run 670 km (416 miles) to the terminal from the supply-rich Dawson's Creek area, where it will connect to existing pipelines. In the Montney production area, Coastal GasLink will have connections to Westcoast Energy (magenta line) via the new 1.2-Bcf/d SilverStar Connector (not visible at this scale), which is due to be completed by the end of this year. A second short connector pipeline, the Groundbirch Connector (not visible), is also under construction. It has a capacity of 2 Bcf/d and will tie Coastal GasLink back into TC Energy's Nova Gas Transmission Limited (NGTL; orange line) and NGTL's Groundbirch Mainline (bright green line), both of which have direct supply access to Montney, plus additional access via connections with NGTL's North Montney Mainline (yellow shaded area) farther to the north.

Construction and other delays on TC Energy's Coastal GasLink have become a major stumbling block for the LNG Canada project. COVID-19 restrictions have slowed work on the pipeline, which is now at least a year behind schedule. Additionally, ongoing public disputes between LNG Canada and TC Energy over the cost and construction timeline of the pipeline may further delay its completion. Given that LNG Canada depends on Coastal GasLink for its feedgas, it now appears likely that the export terminal — originally slated to start-up in 2023 — may not begin service until 2025.

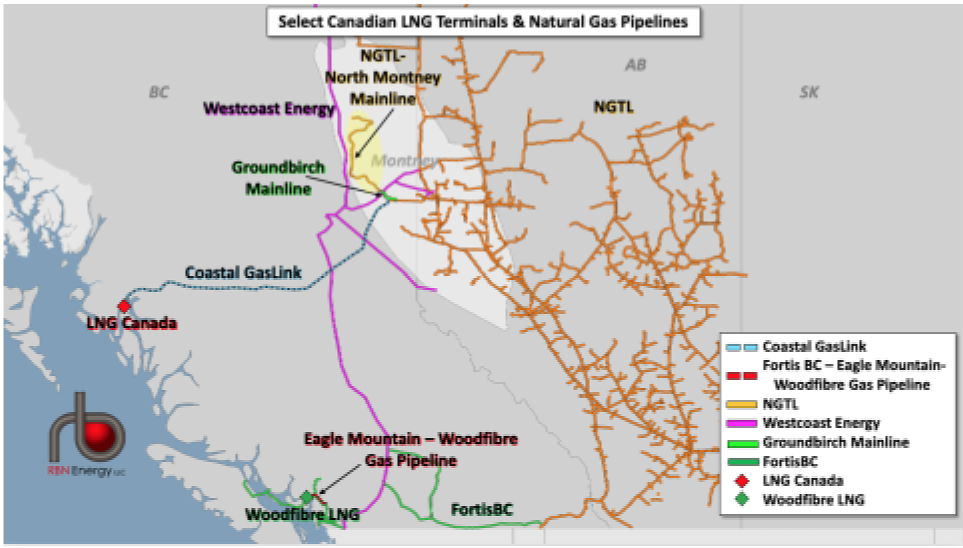


Figure 2. Map of Canadian LNG and Pipeline Infrastructure. Source: RBN.

Woodfibre LNG

There are a handful of LNG projects under consideration for FID in Western Canada, but in our view only Pacific Oil & Gas's Woodfibre LNG (green diamond in Figure 2) is likely to achieve it in the near term. The project is a single-train, 2.1-MMtpa (0.3 Bcf/d) terminal on the Squamish River near Vancouver, BC. The project is underpinned by two 15-year sales and purchase agreements (SPAs) with BP for a total of 1.5 MMtpa (0.2 Bcf/d), or 70% of the terminal's capacity, which is probably enough for the project to reach FID. The first of these deals, for 0.75 MMtpa (0.1 Bcf/d), was signed in the summer of 2019, along with a now-defunct memorandum of understanding (MOU) with China's CNOOC. It looked like Woodfibre would reach FID in late 2019, and the company even began some early site preparation and pre-construction activity, but it did not materialize and the project lost momentum in the wake of the pandemic. A second SPA with BP was announced in May 2021 for another 0.75 MMtpa, pushing the project even closer to FID. Pacific Oil & Gas said at the time that it was targeting FID in the third quarter of this year, which just ended with no further news. Nonetheless, it's one of only three North American LNG terminals under development with enough capacity firmly committed to reach FID, the others being Driftwood LNG (see You Can Make It If You Try) and, as of a few weeks ago, Plaquemines LNG, both located on the Louisiana coast.

With Canada's stringent environmental regulations, Woodfibre has focused on its development as a "green LNG" terminal. The liquefaction project would use hydropower, which would reduce the plant's greenhouse gas emissions by 90% compared to a traditional LNG terminal, according to Pacific Oil & Gas. Like LNG Canada, the terminal is also targeting the Montney Basin to source feedgas. The terminal plans to access feedgas through a new pipeline, the 250-MMcf/d Eagle Mountain Pipeline (dashed red line at bottom left in Figure 2), under development by FortisBC. The single 24-inch-diameter line will run 47 km (29 miles) along the right-of-way of existing FortisBC infrastructure (green line), which ties into the Westcoast Energy (magenta line) pipeline.

With two Pacific Coast projects already under construction (LNG Canada and ECA), North America will have 16.5 MMtpa (2.19 Bcf/d) of export capacity on the western edge of the continent available by mid-decade. Another 11.5 MMtpa (1.53 Bcf/d) of capacity could be available in the same time frame if Woodfibre and Mexico Pacific Limited are able to reach FID in the next year, as both have quicker proposed construction timelines than LNG Canada. These pre-FID projects each face individual challenges based on their specifications and locations, but from a macro perspective, the prospect for LNG development has not looked this good in years. Several new North American LNG projects will likely take FID in 2022, and with the importance of the Asia market, it seems likely that at least some of them will be out West.

For more about the evolving dynamics for LNG exports, check out RBN's upcoming School of Energy – Fall 2021, a two-day virtual event to be held November 9-10.

"Go West" was written by Jacques Morali, Henri Belolo, and Victor Willis. It appears as the second song on Village People's fourth studio album of the same name. Released as the first single from the LP in June 1979, it went to #14 on the Billboard Dance Club and #45 on the Billboard Hot 100 Singles charts. Personnel on the Village People record were Victor Willis (lead vocals), Randy Jones, Glenn Hughes, Felipe Rose, David Hodo, Alex Briley (backing vocals), and Gypsy Lane (studio band). In September 1993, Pet Shop Boys released their version of the song as a single from their fifth studio album, *Very*. It went to #1 on the Billboard Dance Club chart and #25 on the Billboard Hot 100 Singles chart. Personnel on the Pet Shop Boys record were Chris Lowe, Neal Tennant (vocals).

The Village People album, *Go West*, was produced by Jacques Morali and released in March 1979. It went to #8 on the Billboard 200 Albums chart and has been certified Platinum by the Recording Industry Association of America (RIAA). It would be the last Village People album of new material for Casablanca Records and the last album to feature Victor Willis on lead vocals. Two singles were released from the LP. The Pet Shop Boys album, *Very*, was released in September 1993 and went to #20 on the Billboard Top 200 Albums chart. It has been certified Gold by the RIAA. Five singles were released from the album.

Village People is an American disco group known for its costuming and clever lyrics. Formed in New York City in 1977 by French record producers Jacques Morali and Henri Belolo, and featuring the vocals of Victor Willis, the group released its debut album in July 1977. They have released eight studio albums, one live album, four compilation albums, and 25 singles. Twenty-four members have passed through the group since its inception. They still tour with original member Victor Willis on lead vocals, accompanied by James Kwong, Chad Freeman, Jeffrey James Lippold, and James Lee on backing vocals.

Pet Shop Boys are an English synth-pop duo formed in London in 1981, consisting of Chris Lowe and Neil Tennant. They have released 14 studio albums, five live albums, five soundtrack albums, seven compilation albums, three EPs, and 70 singles. They continue to record and tour.

https://fortune.com/2021/11/04/energy-crisis-food-shortage-security-fertilizer-prices-yara-ceo-madagascar-cop26/

'I'm afraid we're going to have a food crisis': The energy crunch has made fertilizer too expensive to produce, says Yara CEO

BY **KATHERINE DUNN**

November 4, 2021 3:02 AM MDT

The world is facing the prospect of a dramatic shortfall in food production as rising energy prices cascade through global agriculture, the CEO of Norwegian fertilizer giant Yara International says.

"I want to say this loud and clear right now, that we risk a very low crop in the next harvest," said Svein Tore Holsether, the CEO and president of the Oslo-based company. "I'm afraid we're going to have a food crisis."

Speaking to *Fortune* on the sidelines of the COP26 climate conference in Glasgow, Holsether said that the sharp rise in energy prices this summer and autumn had already resulted in fertilizer prices roughly tripling.

In Europe, the natural-gas benchmark hit an all-time high in September, with the price more than tripling from June to October alone. Yara is a major producer of ammonia, a key ingredient in synthetic fertilizer, which increases crop yields. The process of creating ammonia currently relies on hydropower or natural gas.

"To produce a ton of ammonia last summer was $110," said Holsether. "And now it's $1,000. So it's just incredible."

Food prices have also risen, meaning some farmers can afford more expensive fertilizer. But Holsether argues many smallholder farmers can't afford the higher costs, which will reduce what they can produce and diminish crop sizes. That in turn will hurt food security in vulnerable regions at a time when access to food is already under threat from the COVID-19 pandemic and climate change, including widespread drought.

The company, whose largest shareholder is the Norwegian government, has donated $25 million worth of fertilizer to vulnerable farmers, Holsether said. But Yara isn't able to eat the costs of such a dramatic rise in energy prices, he says. Since September, it has been curtailing its ammonia production by as much as 40% due to energy costs. Other major producers have done the same. Reducing ammonia production will decrease the supply of fertilizer and make it more expensive, undermining food production.

The delayed effects of the energy crisis on food security could mimic the chip shortage crisis, Holsether said.

"That's all linked to factories being shut down in March, April, and May of last year, and we're reaping the consequences of that now," he said. "But if we get the equivalent to the food system...not having food is not annoying, that's a matter of life or death."

Holsether pointed to efforts by the director of the UN World Food Program, David Beasley, the former governor of South Carolina, to raise $6 billion in aid to combat preventable famine by directly targeting outspoken billionaires, including Elon Musk, for donations to the program.

Last week, Beasley called out Musk and Jeff Bezos, who appeared at COP26 on Tuesday, arguing that they could pony up the funds if they wanted to and barely feel the difference. In response, Musk tweeted that he was willing to sell $6 billion in Tesla stock if the World Food Program could explain "exactly" how that money would end world hunger.

Food scarcity is already reaching desperate levels in many regions. On Wednesday, Frédérica Andriamanantena, the World Food Program's Madagascar program manager, appeared on a COP26 panel to describe the severity of the country's drought and resulting famine. Andriamanantena, who is from Madagascar, said drought had this year reduced the harvest to one-third of the average of the past five years. Where families had once had comfortable meals, children are now subsisting on foraged plants and cactus leaves.

"That is where the situation is now," she said.

This story has been updated to clarify Holsether's stance on a possible food crisis.

https://www.argusmedia.com/en/news/2270090-potential-bintulu-lng-cuts-lift-japans-buying-interest?backToResults=true

Potential Bintulu LNG cuts lift Japan’s buying interest

Published date: 03 November 2021

Share:

Several Japanese LNG buyers with offtake from the 30mn t/yr Bintulu LNG export facility in Malaysia are enquiring for winter deliveries from the spot market following continued requests by project owner Petronas to reduce contractual deliveries because of upstream issues.

State-owned Petronas is seeking approval from term buyers for the cancellation of more than five cargoes for delivery in January, pointing to high mercury levels at the Pegaga gas field as the reason for the cancellations, market participants said.

Petronas late last week approached at least two term buyers from Bintulu LNG seeking their approval to cancel their January cargoes, marking what was at least the third time the firm has made cancellation requests to offtakers. It is unclear how many buyers agreed to Petronas' earlier two requests.

Petronas is requesting the cancellations through the downward quantity tolerance (DQT) clause in its contracts. The DQT clause, when exercised, gives the supplier the right to decrease annual contracted quantities, usually by up to 10pc.

Petronas in mid-October contacted some term buyers from the 9.6mn t/yr Malaysia LNG Dua (MLNG 2) project requesting to cancel their January-March cargoes. It had informed buyers then that it expected to lose four cargoes/month during January-March due to the Pegaga gas field issue.

The updated number of February and March cargoes that will be impacted is unclear, market participants said. But the number of impacted January cargoes is "much more than previously expected", they added.

"Petronas hasn't shared any details [on February and March cancellations] … All buyers don't know about it," a term buyer said.

Petronas' first cancellation request was in early September, when it approached offtakers from the 7.7mn t/yr Malaysia LNG Tiga (MLNG 3) project seeking permission to delay or cancel their November-January cargoes, similarly because of the Pegaga gas field.

The first production from the Pegaga field, located in block SK 320 offshore Malaysia, was supposed to begin by this year's final quarter. The field will be tied-in to an existing offshore network to supply feedstock gas to the Bintulu complex.

MLNG 2 is a three-train facility, while MLNG 3 is a two-train facility. Petronas also owns the 8.4mn t/yr three-train Malaysia LNG Satu (MLNG 1), the 3.6mn t/yr train 9, the 1.2mn t/yr Petronas Floating LNG (PFLNG) 1 and the 1.5mn t/yr PFLNG 2 projects.

Buyers with term supply agreements with Petronas from MLNG 2 include Japan's Jera, Osaka Gas, Sendai City Gas, Shizuoka Gas, Tohoku Electric, Tokyo Gas, Eneos, as well as Taiwan's CPC. Term offtakers from MLNG 3 are China's CNOOC, Japan's Toho Gas, Tokyo Gas, Osaka Gas, Tohoku Electric, Japex, as well as South Korea's Kogas. And term offtakers from MLNG 1 are Japan's Hiroshima Gas, Saibu Gas, Shikoku Electric, Tokyo Gas, China's Jovo, South Korea's S-Oil and Thailand's PTT.

Japanese LNG buyers enquire for January spot cargoes

Most Japanese LNG buyers that received cancellation requests from Petronas have started enquiring for January cargoes from the spot market. But most of their demand remains tentative, market participants said.

"Buyers [have] just started negotiations with Petronas … [they] haven't seriously looked for specific cargoes yet," a term buyer said.

This was echoed by a seller based in Asia. "Many [of the Japanese buyers] are asking for offer levels, but their demand is not really firm yet, I guess they are still confirming things," he said.

Most Japanese offtakers are not hopeful that they will be able to reject Petronas' requests, the term buyer said.

"Some Japanese buyers have consulted their lawyers and realised they can't reject Petronas' request because of their sales and purchase agreement] terms," the buyer said, without elaborating on the details. "So even if the buyers say no to Petronas, [those requests] may just be ignored," he added.

Spot supplies for January deliveries are limited, with sellers mostly holding back volumes on expectation of further price upside closer to the peak winter demand season.

"I guess there are quite many cargoes available for January, but sellers are hiding their availability," a Japanese buyer said.

Some of the affected Japanese LNG buyers are in negotiations to buy cargoes from other buyers in Japan, as well as in China or South Korea. "Some buyers are looking for partial cargoes instead of full cargoes," a buyer said.

The increase in spot buying interest follows weather forecasts late last month predicting a warmer-than-usual November in Japan, which was expected to limit LNG consumption and pare spot demand particularly for deliveries in November and December.

Spot prices at wide premium to oil-linked term prices

Spot LNG prices have stood at a wide premium to Brent crude oil-linked term prices in recent months.

The ANEA price, the *Argus* assessment for spot LNG deliveries to northeast Asia, was assessed at $29.850/mn Btu for first-half January and $29.905/mn Btu for second-half January on 1 November.

This is some $18.770-19.540/mn Btu and $18.825-19.595/mn Btu higher than oil-linked term contract prices for January deliveries on the same day indexed at around 13.5pc and 14.5pc, respectively, to Brent crude based on a three-month crude average (301) contract, which is equivalent to around $10.31/mn Btu and $11.08/mn Btu, respectively.

Different Bintulu contracts have different slopes, but the average is around 13.5pc while the highest is around a high 14pc, according to a term offtaker.

By Joey Chua

https://www.globaldata.com/india-account-21-apac-lng-regasification-capacity-2025-forecasts-globaldata/

03 Nov 2021

India to account for 21% of APAC LNG regasification capacity by 2025, forecasts GlobalData

Posted in Oil & Gas

India is expected to register the second highest LNG regasification capacity additions in Asia between 2021 and 2025, contributing about 21% of the region's total capacity additions by 2025, says GlobalData, a leading data and analytics company.

GlobalData's report, 'Global LNG Industry Outlook to 2025 – Capacity and Capital Expenditure Outlook with Details of All Operating and Planned Terminals', reveals that India is likely to witness a total LNG regasification capacity additions of 3,428 billion cubic feet (bcf) by 2025. Of this, 3,062 bcf of capacity would be from the new-build terminals while the rest of the capacity is from the expansion of the existing regasification terminals.

Teja Pappoppula, Oil and Gas Analyst at GlobalData, comments: "Most of the capacity additions in India are through the new build projects with the announced Kakinada GBS Floating terminal being the largest with a capacity of 351 bcf. The Crown LNG India-operated terminal is expected to become operational in 2024."

Among the expansion projects, the Hazira Expansion regasification terminal accounts for most of the expansion capacity additions in India with 244 bcf of capacity expected to be added by 2025.

The third highest contributor in the country is the planned Jaigarh Port Floating terminal which is likely to add a capacity of 274 bcf in 2021. H-Energy Gateway Pvt Ltd will be the operator of this regasification terminal.

https://store.globaldata.com/report/global-lng-industry-outlook-to-2025-capacity-and-capital-expenditure-outlook-with-details-of-all-operating-and-planned-terminals/

Global LNG Industry Outlook to 2025 – Capacity and Capital Expenditure Outlook with Details of All Operating and Planned Terminals

- Pages: 219
- Published: November 03, 2021

Global LNG liquefaction capacity is expected to increase from 456.5 mtpa in 2020 to 749.9 mtpa in 2025 at an average annual growth rate (AAGR) of 9.9 percent, while regasification capacity is expected to increase from 46,458 bcf in 2020 to 68,292 bcf in 2025 at an AAGR of 7.7 percent. In 2020, Australia had the highest liquefaction capacity of 88.6 mtpa globally, while Japan had the highest regasification capacity of 10,081 bcf.

SCOPE

Updated information on all active, planned and announced LNG terminals globally with start year up to 2025

Provides capacity data by liquefaction and regasification terminals from 2015 to 2020, outlook up to 2025

Provides key details such as terminal name, operator name, terminal status for all active, planned and announced LNG terminals globally

Provides capital expenditure outlook at global as well as regional level by year and by key countries for planned and announced (new-build) LNG terminals till 2025

Latest developments and contracts related to LNG terminals, wherever available

Finally, Some Visibility That India Is Moving Towards Its Target For Natural Gas To Be 15% Of Its Energy Mix By 2030

Posted: Wednesday October 23, 2019. 3:45pm MT

It's taking longer than expected, but we are finally getting visibility that India is investing significantly towards its goal to have natural gas be 15% of its energy mix by 2030. Earlier in Oct, India Oil Minister Dharmendra Pradhan said that there are $60 billion of natural gas infrastructure and LNG import terminals that are "under execution". He said "*I am not talking about potential investment. This number relates to the project that are under execution".* Natural gas consumption in India is only now back to 2011 levels at 5.6 bcf/d and represents only 6.2% of its energy mix. If India hits its 15% target of its energy mix by 2030, it would add natural gas demand, on average, of >1.5 bcf/d per year. At the same time India's domestic natural gas production peaked in 2010 at 4.6 bcf/d, but has been flat from 2014 thru 2018 at ~2.7 bcf/d, which means the big winner will be LNG. The most important factor driving this expectation for natural gas consumption growth is likely price. Asian LNG landed prices are down about 50% YoY and, more significantly, the expectation is for future Asian LNG prices to be at lower levels than prior cycles. India, by itself, may not be a LNG global game changer, but it is another positive support for why we believe LNG markets will rebalance sooner than expected ie. in 2022/2023. We see mid term Asian LNG landed prices lower than prior cycles in a rebalanced market (ie. +/- $8), which means that low capital costs will be critical for future LNG projects. We believe that BC's LNG key potential projects (LNG Canada Phase 2 and Chevron Kitimat LNG) can compete in this price environment as they have the potential for brownfield capital costs if they move to a continuous construction cycle following in lockstep to LNG Canada Phase 1, much like Cheniere does for its LNG projects in the Gulf Coast.

India has a pollution crisis. We don't think it is unfair to say India has a pollution crisis. In every pollution ranking, India has several cities among the most polluted cities. The 2018 World Air Quality Report (AirVisual) list of the World's Most Polluted Cities 2018 has 20 of the world's 25 most polluted cities being in India. India has all of the top 25 most polluted cities other than #3 Faisalabad (Pakistan), #7 Hotan (China), #10 Lahore (Pakistan), #17 Dhaka (Bangladesh), and #19 Kashgar (China). Like us, many people have been to Beijing on business and believe Beijing's reputation as a very polluted city is deserved. But to put in perspective, Beijing's ranking isn't even close to the 15 most polluted cities in China, let alone the world. Beijing's score on their scale is 50.9 vs the other Chinese cities #7in the world, Hotan at 116.0, and #19 Kashgar at 95.7, and the world's most polluted city #1 Gurugram (India) at 135.8 .

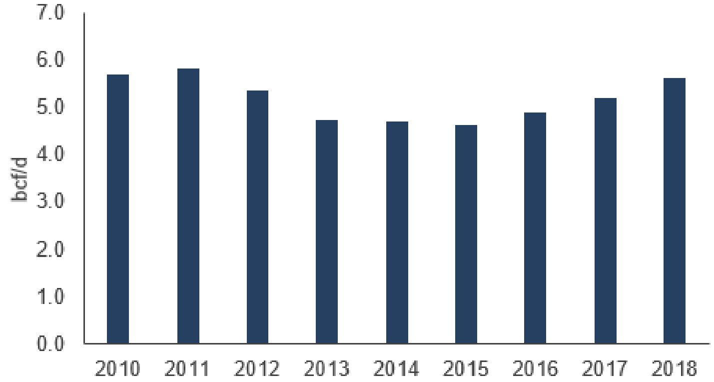
World's Most Polluted Cities 2018

Rank	City	Country	Rank	City	Country
1	Gurugram	India	14	Varanasi	India
2	Ghaziabad	India	15	Moradabad	India
3	Faisalabad	Pakistan	16	Agra	India
4	Faridabad	India	17	Dhaka	Bangladesh
5	Bhiwadi	India	18	Gaya	India
6	Noida	India	19	Kashgar	China
7	Patna	India	20	Jind	India
8	Hotan	China	21	Kanpur	India
9	Lucknow	India	22	Singrauli	India
10	Lahore	Pakistan	23	Kolkata	India
11	Delhi	India	24	Pali	India
12	Jodhpur	India	25	Rohtak	India
13	Muzaffarpur	India	26	Mandi Gobindgarh	India

Source: Airvisual

India natural gas consumption is only now back to 2011 levels. For the past couple years, we have been highlighting that the growth in India's natural gas consumption (and linked LNG imports) has been very low due to the slow buildout of domestic natural gas infrastructure and LNG import facilities. BP data shows India's natural gas consumption was 5.6 bcf/d in 2018, and this compares to its peak of 5.8 bcf/d in 2011. To put in perspective, China's natural gas consumption in 2011 was 13.1 bcf/d and reached 27.4 bcf/d in 2018.

India's Natural Gas Consumption (bcf/d)



Source: BP

<u>Perhaps the best reason why there is better visibility – LNG prices are expected lower than prior cycles</u>. A key reason for this lack of growth has been the price of LNG relative to coal. Our June 17, 2018 Energy Tidbits [LINK] highlighted comments from the Q&A from BP's Chief Economist speech "*Energy in 2017: two steps forward, one step back*" on this relative cost concept. We then wrote on the BP Chief Economist comments from an India company on why there isn't more natural gas and why coal is still going up. He said that the Indian executive said it was because the cost of natural gas was significantly more expensive than domestic coal and that the push in India is to get more power to more poorer people, but if natural gas is significantly higher, it can't be done, they have to rely on coal. What has happened since the BP Chief Economist June 2018 comment is that Asian LNG prices are down 50% and the expectation going forward is that future LNG prices are not expected to be at prior cycle highs. But the other question is what does it mean for LNG prices. There is an increasing supply of reasonable priced LNG around the world, whether it from Qatar, Papua New Guinea, the Gulf of Mexico and even Canada. And each of these areas has anchor projects to support future brownfield development. Couple that with increasing linkage of LNG prices away from oil indexed contracts, we believe this means that a balanced LNG market going forward is going is not going to see sustained high Asian LNG prices from prior cycles, but around more costs related more to lower LNG supply basins ie. LNG prices around mid to long term +/- $8 landed Asian LNG prices, and not the prior $10 - $12 range. As the BP Chief Economist highlights, price is a huge issue for India and it is likely that the expectation for lower LNG prices than prior cycles is the most important reason to push India to increased natural gas consumption.

Japan/Korea Marker (JKM) LNG Price

Source: Bloomberg

<u>India is now getting serious about increasing natural gas consumption, has $60b of projects under execution</u>. We follow the key India news as part of our weekly news scan for our Energy Tidbits memos and there is no question that the India government and its people realize they have to deal with this increasing pollution problem. And perhaps most of all, India is now taking specific, significant action to set the stage for increasing natural gas consumption and LNG imports. Earlier in Oct, Japan Times picked up a Reuters story "*India investing $60 billion on gas grid to link up nation by 2024*" [LINK]. The story notes "*India, one of the world's largest consumers of oil and coal, is investing $60 billion to build a national gas grid and import terminals by 2024 in a bid to cut its carbon emissions, the oil minister said on Sunday. India has struggled to boost its use of gas, which produces less greenhouse gas emissions than coal and oil, because many industries and towns are not linked to the gas pipeline network. Gas consumption growth was running at 11 percent in 2010 but growth slid to just 2.5 percent in the financial year 2018/19*." The most significant part of this story is that this is $60 billion of projects under execution, not planned or potential projects. The story quotes Oil Minister Dharmendra Pradhan "*I am not talking about potential investment. This number relates to the project that are under execution*". The critical natural gas infrastructure requirement is a domestic natural gas pipeline network to deliver gas throughout India. The India Ministry of Petroleum & Natural Gas Oct 3, 2019 release [LINK] said "*On the issue of moving towards the gas economy, Shri Pradhan said that over 16,000 km of gas pipeline has been built and an additional 11,000 km is under construction. With the tenth bid round for City Gas Distribution completed, it will cover over 400 districts and will extend coverage to 70 percent of our population".* Progress is being made. Plus LNG regasification projects continue to be completed. Below is our updated table of India LNG projects that are estimated to come on stream in 2019 and 2020. We haven't included the projects beyond 2020, but there are several planned projects already on the books.

India Current/Planned LNG Regasification Projects Est. In Service In 2019/2020

	State	Coast	Operator	Capacity (mtpa)	Capacity (bcf/d)	Expected Timelines
Existing Terminals						
Dahej	Gujarat	West	Petronet LNG	10.00	1.32	Operating
Dahej Phase 2	Gujarat	West	Petronet LNG	5.00	0.66	Operating
Hazira	Gujarat	West	Shell	5.00	0.66	Operating
Dabhol RGPPL	Maharashtra	West	GAIL & NTPC JV	5.00	0.66	Operating
Kochi	Kerela	West	Petronet LNG	5.00	0.66	Operating
Ennore Phase 1	Tamil Nadu	East	IOCL	5.00	0.66	Operating
Total Existing				**35.00**	**4.61**	
Upcoming Terminals						
Mundra	Gujarat	West	Adani & GSPC	5.00	0.66	2019
Jaigarh	Maharashtra	West	H-Energy Gateway Pvt. Limited	4.00	0.53	2019
Dahej Phase 3	Gujarat	West	PLL	2.50	0.33	2019
Mundra	Gujarat	West	Adani	5.00	0.66	2020
Digha FSRU	Odisha	East	H-Energy	4.00	0.53	2020
Ennore Phase 2	Tamil Nadu	East	IOCL	1.75	0.23	2020
Jafrabad	Gujarat	West	Swan Energy	5.00	0.66	2020
Total Upcoming				**27.25**	**3.59**	

Source: Bloomberg, Company Reports, Street Reports

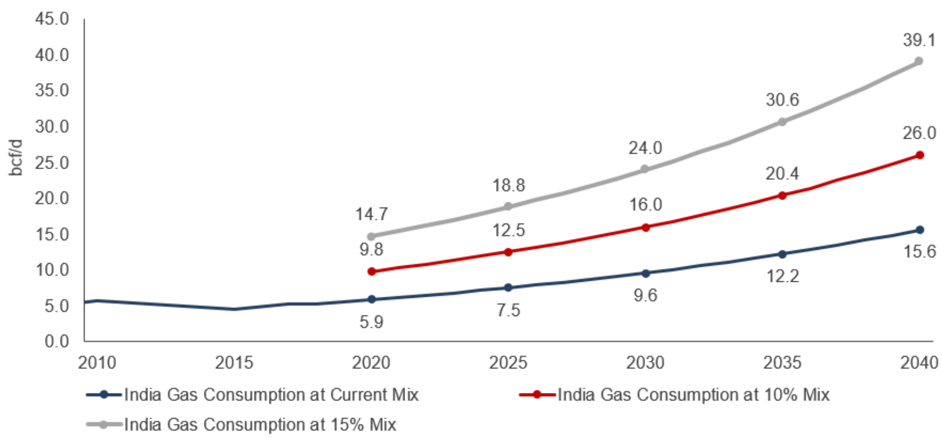
<u>It reminds us of when China got really serious about natural gas in 2018</u>. We should be clear that we do not consider India anywhere near as significant to global LNG markets as China. But conceptually, India getting serious about increasing natural gas consumption reminds us of what we were seeing in China in 2016/2017. India is probably more like China in 2016 as opposed to the summer of 2017, when it seemed clear that China was on the cusp of a major push in natural gas consumption and LNG would be the winner in 2018. India's impact should start to play out by year end 2020 as opposed to this winter. We first outlined the China LNG thesis in our Sept 20, 2017 blog "*China's Plan To Increase Natural Gas To 10% Of Its Energy Mix Is A Global Game Changer Including For BC LNG*" [LINK]. Our Sept 20, 2017 blog wrote "*The news flow from China this summer on its increasing fight and urgency to fight pollution supports China's plan to increase natural gas to 10% of its energy mix in 2020 and 15% of its energy mix in 2030. This is a game changer to global natural gas markets and, by itself, can bring LNG to undersupply 2 to 3 years earlier than expected. China's natural gas consumption increased by ~15% per year from 2005 thru 2016 and ~1.5 bcf/d per year vs China's 8.5%*

growth rate in energy in total. Yet natural gas only got to 5.9% of China's energy mix. If China is to hit 10% by 2020, it will need to increase natural gas consumption by 4 to 5 bcf/d per year. Assuming China continues to grow its domestic natural gas production by 0.6 bcf/d per year (its growth rate for last five years), China will need to import an additional ~3.5 to ~4.5 bcf/d per year. This is "per year"! And if so, we believe BC LNG will be back and there is a higher probability than ever before for a Shell FID on its BC LNG project in 2018." As it turned out, Shell did FID its LNG Canada project on Oct 1, 2018.

Natural gas is only 6.2% of India's energy mix vs its target of 15% in 2030. India, similar to China, has a target to have natural gas to be 15% of its total energy mix by 2030. This is not a new target, rather it has been in place and we first highlighted India's 15% target of its energy mix in our Nov 23, 2018 blog "*"India's Natural Gas Consumption Would Be Up ~1.3 Bcf/D Per Year If Its To Reach Its Target Of 15% Of Its Energy Mix By 2030*" [LINK] At that time, we noted some specific steps that were happening in 2019 and 2020 to put them on that long term plan. The impact to get to 15% of energy mix is significant to world LNG markets. This is a big increase from natural gas being 6.2% of India's energy mix in 2018. To put in perspective, in 2018, natural gas was 30.5% of US energy mix, 21.9% of Japan's energy mix, 16.0% of South Korea's energy mix, and 7.4% of China's energy. Note, China is up from 6.6% in 2017.

Hitting 15% of its energy mix would increase India's natural gas consumption by >1.5 bcf/d per year. We projected how much India's natural gas consumption would increase if it can hit its target of 15% of total energy mix in 2030. BP data shows India's natural gas consumption in 2018 was 5.6 bcf/d and natural gas was only 6.2% of total energy mix. BP also estimates India's total energy consumption grew at a rate of 5.2% per year for the 2007 – 2017 period, but energy consumption growth increased to +7.9% in 2018 YoY vs 2017 But if we only assume a 5% growth in total energy mix to 2030, then if natural gas is 15% of India's energy mix, it would be 18.8 bcf/d in 2025 and 24.0 bcf/d in 2030 ie. growth of +13.2 bcf/d to 2025 and +18.4 bcf/d to 2030. India's domestic natural gas production peaked in 2010 at 4.6 bcf/d, but has been flat from 2014 thru 2018 at +/- 2.7 bcf/d. We expect there to be some increased focus to at least return India to modest domestic natural gas production. But, until then, any growth in natural gas consumption will be met with LNG. Our model forecasts of >1.5 bcf/d per year, on average, in consumption is the equivalent of 2.5 Cheniere LNG trains per year.

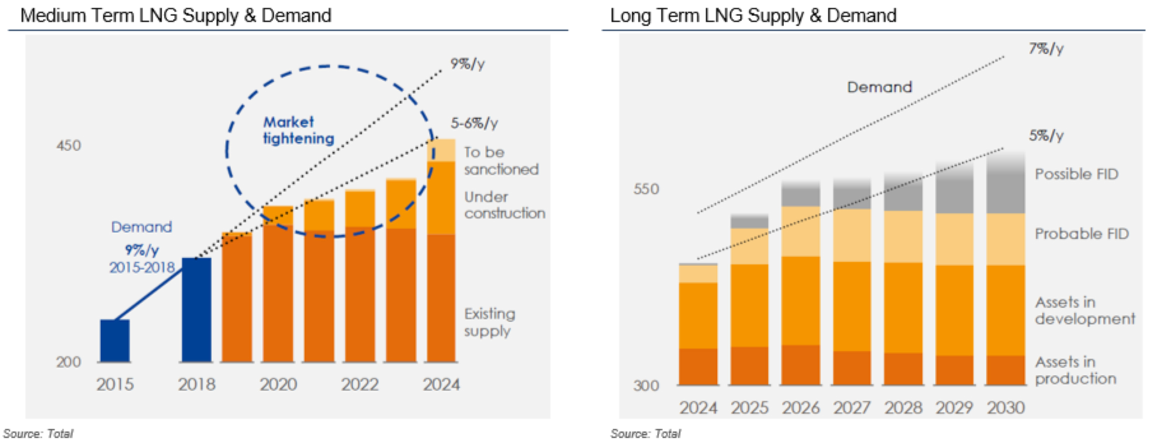
India's Projected Natural Gas Consumption @15% Of Energy Mix (bcf/d)



Source: BP, SAF

India may not be a LNG global game changer by itself like China, but does support the call that LNG markets rebalance sooner than expected. We had our SAF Group 2020 Energy Market Outlook on Monday Oct 7. A replay of the call and the supporting slide presentation are available on our website at [LINK]. Two of our key off consensus calls were on LNG including our view LNG market would balance earlier than expected ie. 2022/2023. We noted that we agree with markets that LNG will be oversupplied thru 2021, but where we disagree is that we see LNG markets balancing in 2022 or 2023. Our presentation reminded that LNG supply capacity needs to be in excess of demand to provide for turnarounds and allowance such that suppliers can deliver contract volumes. We also expect the required over capacity of supply is increasing as contract mix shifts away from historical oil indexed take or pay contracts with destination clauses to an increase share of portfolio contracts. There is no firm number, but we believe the required excess supply capacity relative to demand has increased from approx. 5% to 10% to +/-15% ie. LNG markets are effectively balanced when LNG supply capacity is >10% of demand. As a result, we believe that LNG markets rebalance in 2022/2023, a view which is similar to Total's Sept 25, 2019 Investor Day [LINK] (see below graphs). We should note that our view of balanced LNG markets doesn't mean a return to $12 or more Asian landed LNG prices, rather, we see the emergence of anchor LNG projects in areas with brownfield expansion potential means that a planning case for mid term Asian LNG price is in the $8 range. Our outlook presentation also includes our view that BC's LNG key potential projects (LNG Canada Phase 2 and Chevron Kitimat LNG) can compete in this price environment as they have the potential for brownfield capital costs if they move to a continuous construction cycle following in lockstep to LNG Canada Phase 1, much like Cheniere does for its LNG projects in the Gulf Coast. Our outlook call did not specifically work in the India Energy Minister's comment on in execution projects, but, if anything, it provides us with more confidence for the call for LNG markets to rebalance in 2022/2023.

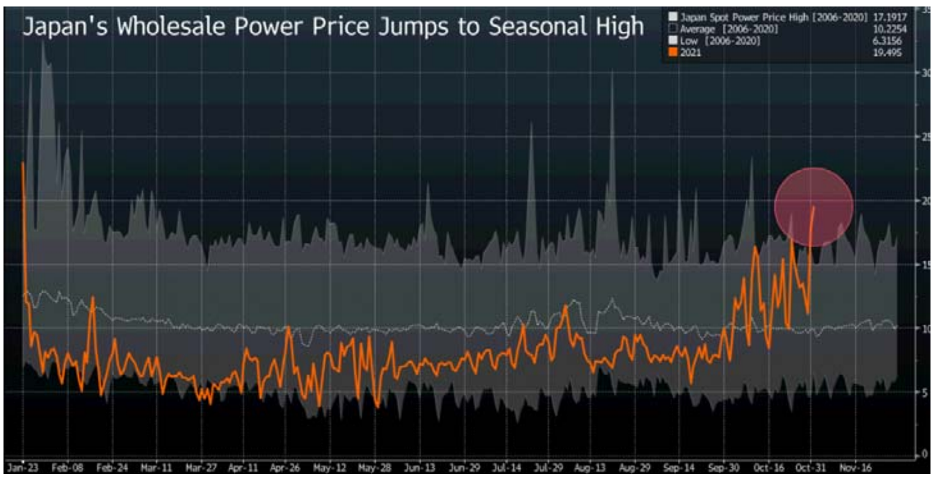
Total's Medium And Long Term LNG Supply & Demand



Source: Total Sept 25, 2019 Investor Day

Japan’s Spot Power Price Jumps to Seasonal High on Pricey Fuel
2021-11-01 04:03:51.346 GMT

By Shoko Oda
(Bloomberg) -- Japan’s wholesale power price surged to the highest level for this time of year on the back of eye-watering fuel costs.
The country’s spot electricity price for delivery on Tuesday rose to the highest since January, when frigid temperatures sent prices soaring and caught utilities without enough fuel. The Japanese government is expecting the tightest power supply in a decade this winter.
While the spot price of liquefied natural gas and coal have slumped from last month’s record high, they’re still far more expensive than normal as demand continues to outweigh supply.
That’s been putting upward pressure on electricity rates around the world, threatening to bankrupt power retailers, upend the post-pandemic economic recovery and fuel inflation.



Some Japanese utilities are purposefully producing less electricity in order to conserve fuel supplies and reduce the need to procure pricey fuel shipments from the spot market, according to traders with knowledge of the matter. And an outlook for colder winter weather means that power prices are poised to extend gains through February.
Japan’s utilities already expect the ongoing global energy crisis to hurt profits for the current fiscal year. Tokyo Electric Power Co. said it forecast its first annual loss in nine years, while Chugoku Electric Power Co. reduced its year-end dividend on an uncertain outlook.
Meanwhile, Akira Amari, the secretary general of Japan’s ruling Liberal Democratic Party, has been reported to resign from his post after losing his seat in a local election over the weekend. Amari has previously said the country will need to restart 30 of its nuclear reactors in order to achieve its 2030 carbon emission goals, drumming up support for replacing the country’s nuclear power plants with new small modular reactors.
Still, the LDP -- which supports restarting nuclear reactors -- maintained its majority in Japan’s parliament, which will provide a sense of relief for utilities more dependent on atomic energy, like Kansai Electric Power Co. and Kyushu Electric Power Co., said Syusaku Nishikawa, an analyst at Daiwa Securities Co.
Japan’s 24-hour average spot electricity price for next-day delivery settled at 19.495 yen a kilowatt-hour on Monday, up 27% from a week ago, according to data compiled from JEPX.
* Baseload Tokyo power futures for Dec. delivery on EEX settled at 25 yen/kWh on Friday, down 2.8% from the previous week
** Jan. contract -5.3% w/w to 27.95 yen/kWh

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To view this story in Bloomberg click here: https://blinks.bloomberg.com/news/stories/R1VEHXDWLU6K https://venturegloballng.com/press/venture-global-and-sinopec-announce-historic-lng-sales-and-purchase-agreements/

Venture Global and Sinopec Announce Historic LNG Sales and Purchase Agreements

For Immediate Release
November 4, 2021
Venture Global and Sinopec Announce Historic LNG Sales and Purchase Agreements
Venture Global set to become America's top LNG exporter to China
ARLINGTON, VA– Today, Venture Global LNG and China Petroleum & Chemical Corp. (Sinopec) announced the signing of two 20-year Sales and Purchase Agreements (SPA) for the supply of a total of 4 million tonnes per annum (MTPA) of LNG from Venture Global's Plaquemines LNG export facility, in Plaquemines Parish Louisiana. In addition, UNIPEC, a Sinopec subsidiary has agreed to purchase 3.5 million tonnes (MT) of LNG from Venture Global's Calcasieu Pass LNG facility for a shorter duration. This represents the largest single LNG supply deal ever signed by a US company and will double imports of US LNG to China.

"Venture Global is proud to enter into this new and exciting long-term partnership with Sinopec, and soon become the largest US LNG exporter to China," said **Mike Sabel, Chief Executive Officer of Venture Global LNG**. "Today's announcement will accelerate our combined efforts to lower carbon emissions and provide a low-cost, reliable and secure energy supply to China. From day one, Venture Global has been on a mission to drive fuel switching around the world from coal to natural gas, and we are thrilled to equip Sinopec with a large supply of US LNG to do that and assist China in its energy transition."
"Sinopec has been pursuing low-carbon, green, safe, responsible and sustainable development, seeking high quality growth of its natural gas business." **said Ma Yongsheng, President of Sinopec Corp.** "We are committed to building capacity in providing clean energy and meeting peoples aspiration for better life. The signing of this LNG SPA reflects the shared mission of Sinopec and Venture Global in promoting the global energy transition and is of significance in achieving carbon emission peak and neutrality goals."

CLICK HERE to view a video of speech and signing ceremony.

About Venture Global LNG

Venture Global is a long-term, low-cost provider of U.S. LNG to be sourced from resource rich North American natural gas basins. Venture Global is currently constructing or developing multiple export facilities in Louisiana to provide clean, affordable energy to the world.

About Sinopec

China Petroleum & Chemical Corporation (hereinafter referred to as “Sinopec Corp.”) is a listed company on Chinese and international stock exchanges with integrated upstream, midstream and downstream operations along the oil and gas business value chain. Its controlling shareholder, China Petrochemical Corporation (“Sinopec Group”) is the world’s largest oil refiner and second largest chemical company and has been among the top 5 the Fortune 500 Company over the past years. Through its 30,000 gas stations, Sinopec reaches to 20 million customers every day.

https://lngir.cheniere.com/news-events/press-releases/detail/234/cheniere-and-sinochem-group-sign-long-term-lng-sale-and

Cheniere and Sinochem Group Sign Long-Term LNG Sale and Purchase Agreement

Download as PDF NOVEMBER 05, 2021 8:00AM EDT

HOUSTON--(BUSINESS WIRE)-- Cheniere Energy, Inc. (“Cheniere”) (NYSE American: LNG) announced today that its subsidiary, Cheniere Marketing, LLC (“Cheniere Marketing”), has entered into a binding liquefied natural gas (“LNG”) sale and purchase agreement (“SPA”) with Sinochem Group Co., Ltd (“Sinochem Group”).

Under the SPA, Sinochem Group has agreed to purchase an initial volume of approximately 0.9 million tonnes per annum (“mtpa”) beginning in July 2022, which increases to 1.8 mtpa. The SPA has a term of approximately 17.5 years and Sinochem Group will purchase the LNG volumes on a free-on-board basis. The purchase price for LNG under the SPA is indexed to the Henry Hub price, plus a fixed liquefaction fee.

“We are pleased to announce this long-term LNG contract with Sinochem Group, one of China’s leading state-owned energy companies, and to further Cheniere’s role in providing clean, affordable and reliable energy to the Chinese market for many years to come,” said Jack Fusco, Cheniere’s President and Chief Executive Officer. “This SPA once again demonstrates Cheniere’s ability to tailor solutions in order to meet the needs of LNG consumers worldwide, which is enabled by the scale of our platform and the reliability of our operations. In addition, the SPA further reinforces our commercial momentum, and once again confirms the strength of the global LNG market and the global call for investment in additional LNG capacity, including our Corpus Christi Stage 3 project.”

The Corpus Christi Stage 3 project is being developed to include up to seven midscale liquefaction trains with a total expected nominal production capacity of over 10 mtpa. It has received all necessary regulatory approvals.

About Cheniere

Cheniere Energy, Inc. is the leading producer and exporter of liquefied natural gas (LNG) in the United States, reliably providing a clean, secure, and affordable solution to the growing global need for natural gas. Cheniere is a full-service LNG provider, with capabilities that include gas procurement and transportation, liquefaction, vessel chartering, and LNG delivery. Cheniere has one of the largest liquefaction platforms in the world, consisting of the Sabine Pass and Corpus Christi liquefaction facilities on the U.S. Gulf Coast, with expected total production capacity of approximately 45 million tonnes per annum of LNG operating or commissioning. Cheniere is also pursuing liquefaction expansion opportunities and other projects along the LNG value chain. Cheniere is headquartered in Houston, Texas, and has additional offices in London, Singapore, Beijing, Tokyo, and Washington, D.C.

For additional information, please refer to the Cheniere website at www.cheniere.com and Quarterly Report on Form 10-Q for the quarter ended September 30, 2021, filed with the Securities and Exchange Commission.

About Sinochem Group

Headquartered in Beijing, China, Sinochem Group was founded in 1950. It is a state-owned enterprise, one of China's four largest state oil companies, a leading chemical service provider, one of the largest agricultural inputs (fertiliser, seed and agrochemicals) companies and an integrated modern agricultural service operator. Sinochem Group has established five strategic business units: energy, chemicals, agriculture, real estate and finance. It operates more than 300 subsidiaries around the world. It holds a controlling stake in a number of listed companies, including Sinochem International, Sinofert and China Jinmao. Sinochem Group has over 60,000 staff around the world.

Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs

The last 7 days has shown there is a sea change as Asian LNG buyers have made an abrupt change in their LNG contracting and are moving to lock in long term LNG supply. This is the complete opposite of what they were doing pre-Covid when they were trying to renegotiate Qatar LNG long term deals lower and moving away from long term deals to spot/short term sales. Why? We think they did the same math we did in our April 28 blog "*Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?*" and saw a much bigger and sooner LNG supply gap driven by the delay of 5 bcf/d of Mozambique LNG that was built into most, if not all LNG supply forecasts. Asian LNG buyers are committing real dollars to long term LNG deals, which we believe is the best validation for the LNG supply gap. Another validation, Shell, Total and others are aggressively competing to invest long term capital to partner in Qatar Petroleum's massive 4.3 bcf/d LNG expansion despite plans to reduce fossil fuels production in the 2020s. And even more importantly to LNG suppliers, the return to long term LNG contracts provides the financing capacity to commit to brownfield LNG FIDs. The abrupt change by Asian LNG buyers to long term contracts is a game changer for LNG markets and sets the stage for brownfield LNG FIDs likely as soon as before year end 2021. It has to be brownfield LNG FIDs if the gap is coming bigger and sooner. And we return to our April 28 blog point, if brownfield LNG is needed, what about Shell looking at 1.8 bcf/d brownfield LNG Canada Phase 2? LNG Canada Phase 1 at 1.8 bcf/d capacity is already a material positive for Cdn natural gas producers. A FID on LNG Canada Phase 2 would be huge, meaning 3.6 bcf/d of Cdn natural gas will be tied to Asian LNG markets and not competing in the US against Henry Hub. And with a much shorter distance to Asian LNG markets. This is why we focus on global LNG markets for our views on the future value of Canadian natural gas.

<u>Sea change in Asian LNG buyers is also the best validation of the LNG supply gap and big to LNG supply FIDs.</u> Has the data changed or have the market participants changed in how they react to the data? We can't recall exactly who said that on CNBC on July 12, it's a question we always ask ourselves. In the LNG case, the data has changed with Mozambique LNG delays and that has directly resulted in market participants changing and entering into long term contracts. We can't stress enough how important it is to see Asian LNG buyers move to long term LNG deals. (i) Validates the sooner and bigger LNG supply gap. We believe LNG markets should look at the last two weeks of new long term deals for Asian LNG buyers as being the validation of the LNG supply gap that clearly emerged post Total declaring force majeure on its 1.7 bcf/d Mozambique LNG Phase 1 that was under construction and on track for first LNG delivery in 2024. Since then, markets have started to realize the Mozambique delays are much more than 1.7 bcf/d. They have seen major LNG suppliers change their outlook to a more bullish LNG outlook and, most importantly, are now seeing Asian LNG buyers changing from trying to renegotiate long term LNG deals lower to entering into long term LNG deals to have security of supply. Asian LNG buyers are cozying up to Qatar in a prelude to the next wave of Asian buyer long term deals. What better validation is there than companies/countries putting their money where their mouth is. (ii) Provides financial commitment to help push LNG suppliers to FID. We believe these Asian LNG buyers are doing much more than validating a LNG supply gap to markets. The big LNG suppliers can move to FID based on adding more LNG supply to their portfolio, but having more long term deals provides the financial anchor/visibility to long term capital commitment from the buyers. Long term contracts will only help LNG suppliers get to FID.

<u>It was always clear that the Mozambique LNG supply delay was 5.0 bcf/d, not just 1.7 bcf/d from Total Phase 1.</u> LNG markets didn't really react to Total's April 26 declaration of force majeure on its 1.7 bcf/d Mozambique LNG Phase 1. This was an under construction project that was on time to deliver first LNG in 2024. It was in all LNG supply forecasts. There was no timeline given but, on the Apr 29 Q1 call, Total said that it expected any restart decision would be least a year away. If so, we believe that puts any actual construction at least 18 months away. There will be work to do just to get back to where they were when they were forced to stop development work on Phase 1. Surprisingly, markets didn't look the broader implications, which is why we posted our 7-pg Apr 28 blog "*Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?*" [LINK] We highlighted that Mozambique LNG delays were actually 5 bcf/d, not 1.7 bcf/d. And this 5 bcf/d of Mozambique LNG supply was built into most, if not all, LNG supply forecasts. The delay in Total Phase 1 would lead to a commensurate delay in its Mozambique LNG Phase 2 of 1.3 bcf/d. Total Phase 2 was to add 1.3 bcf/d. There was no firm in service date, but it was expected to follow closely behind Phase 1 to maintain services. That would have put it originally in the 2026/2027 period. But if

Phase 1 is pushed back at least 2 years, so will the follow on Phase 2, so more likely, it will be at least 2028/2029. The assumption for most, if not all, LNG forecasts was that Phase 2 would follow Phase 1. Exxon Rozuma Phase 1 of 2.0 bcf/d continues to be pushed back in timeline especially following Total Phase 1. Exxon's Mozambique Rozuma Phase 1 LNG will add 2.0 bcf/d and, pre-Covid, was originally expected to be in service in 2025. The project was being delayed and Total's force majeure has added to the delays. Rozuma onshore LNG facilities are right by Total. On June 20, we tweeted [LINK] on the Reuters report "*Exclusive: Galp says it won't invest in Rovuma until Mozambique ensures security*" [LINK]. Galp is one of Exxon's partners in Rozuma. Reuters reported that Galp said they won't invest in Exxon's Rozuma LNG project until the government ensures security, that this may take a while, they won't be considering the project until after Total has reliably resumed work on its Phase 1, which likely puts any Rozuma decision until at least end of 2022 at the earliest. Galp has taken any Rozuma Phase 1 capex out of their new capex plans thru 2025 and will have to take out projects in their capex plan if Rozuma does come back to work. This puts Rozuma more likely 2028 at the earliest as opposed to before the original expectations of before 2025. Pre-pandemic, Exxon's March 6, 2019 Investor Day noted their operated Mozambique Rovuma LNG Phase 1 was to be 2 trains each with 1.0 bcf/d capacity for total initial capacity of 2.0 bf/d with FID expected in 2019 and first LNG deliveries sometime before 2025. LNG forecasts had been assuming Exxon Rozuma would be onstream around 2025. The 2019 FID expectation was later pushed to be expected just before the March 2020 investor day. But the pandemic hit, and on March 21, 2020, we tweeted [LINK] on the Reuters story "*Exclusive: Coronavirus, gas slump put brakes on Exxon's giant Mozambique LNG plan"* [LINK] that noted Exxon was expected to delay the Rovuma FID. There was no timeline, but now, any FID is not expected until late 2022 at the earliest, that would push first LNG likely to at least 2028. What this means is that the Mozambique LNG delays are not 1.7 bcf/d but 5.0 bcf/d of projects that were in all, if not most, LNG supply forecasts. There is much more in our 7-pg blog. But Mozambique is what is driving a much bigger and sooner LNG supply gap starting ~2025 and stronger outlook for LNG prices

<u>One of the reasons why it went under the radar is that major LNG suppliers played stupid on the Mozambique impact.</u> It makes it harder for markets to see a big deal when the major LNG suppliers weren't making a big deal of Mozambique or playing stupid in the case of Cheniere in their May 4 Q1 call. In our May 9, 2021 Energy Tidbits memo, we said we had to chuckle when we saw Cheniere's response in the Q&A to its Q1 call on May 4 that they only know what we know from reading the Total releases on Mozambique and its impact on LNG markets. It's why we tweeted [LINK] "*Hmm! $LNG says only know what we read on #LNG market impact from $TOT $XOM MZ LNG delays*. *Surely #TohokuElectric & other offtake buyers are reaching out to #Cheniere. MZ LNG delays is a game changer to LNG in 2020s, see SAF Group blog. Thx @olympe_mattei @TheTerminal #NatGas".* How could they not be talking to LNG buyers for Total and /or Exxon Mozambique LNG projects. In the Q1 Q&A, mgmt was asked about Mozambique and didn't know any more than what you or I have read. Surely, they were speaking to Asian LNG buyers who had planned to get LNG supply from Total Mozambique or Exxon Rozuma Mozambique or both. Mgmt is asked "*wanted to just kind of touch on the color use talking about for these supply curve. And are you able to kind of provide any thoughts on the Mozambique and a deferral with the project of that size on 13 and TPA being deferred by we see you have you noticed any impact to the market has is there any impact for stage 3 with that capacity? Thanks*." Mgmt replies "*No. Look, I only know about the Mozambique delay with what I read as well as what you read that from total and an Exxon. And it's a sad situation and I hope everybody is safe and healthy that were there to experience that unrest but no I don't think it's, again it's a different business paradigm than what we offer. So, we offer a full value product, the customer doesn't have to invest in equity, customer doesn't have to worry about the E&P side of the business because, we've been able to both the by at our peak almost 7 Dee's a day of US NAT gas from almost a 100 different producers on 26 different pipelines and deliver it to our to facilities. So we take care of a lot of what the customer needs".*

<u>There are other LNG supply delays/interruptions beyond Mozambique.</u> There have been a number of other smaller LNG delay or existing supply interruptions that add to Asian LNG buyers feeling less secure about the reliability of mid to long term LNG supply. Here are just a few examples. (i) Total Papua LNG 0.74 bcf/d. On June 8, we tweeted [LINK] *"Timing update Papua #LNG project. $OSH June 8 update "2022 FEED, 2023 FID targeting 2027 first gas". $TOT May 5 update didn't forecast 1st gas date. Papua is 2 trains w/ total capacity 0.74 bcf/d."* We followed the tweet saying [LINK] *"Bigger #LNG supply gap being created >2025. Papua #LNG originally expected FID in 2020 so 1st LNG is 2 years delayed. Common theme - new LNG supply is being delayed ie. [Total] Mozambique. Don't forget need capacity>demand due to*

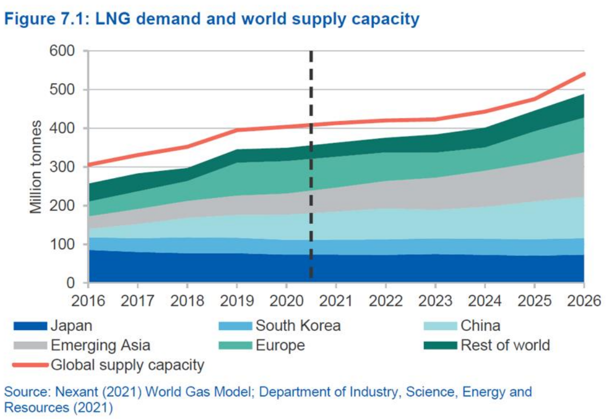
normal maintenance, etc. Positive for LNG." (ii) Chevron's Gorgon. A big LNG story in H2/20 was the emergence of weld quality issues in the propane heat exchangers at Train 2, which required additional downtime for repair. Train 2 was shut on May 23 with an original restart of July 11, but the repairs to the weld quality issues meant it didn't restart until late Nov. The same issue was found in Train 1 but repairs were completed. However extended downtime for the trains led to lower LNG volumes. Gorgon produced ~2.3 bcf/d in 2019 but was down to 2.0 bcf/d in 2020. (iii) Equinor's Melkoeya 0.63 bcf/d shut down for 18 months due to a fire. A massive fire led to the Sept 28, 2020 shutdown of the 0.63 bcf/d Melkoeya LNG facility in Norway. On April 26, Equinor released "*Revised start-up date for Hammerfest LNG*" [LINK] with regard to the 0.63 bcf/d Melkoeya LNG facility. The original restart date was Oct 1, 2021 (ie. a 12 month shut down), but Equinor said "*Due to the comprehensive scope of work and Covid-19 restrictions, the revised estimated start-up date is set to 31 March 2022"*. When we read the release, it seemed like Equinor was almost setting the stage for another potential delay in the restart date. Equinor had two qualifiers to this March 31, 2022 restart date. Equinor said "*there is still some uncertainty related to the scope of the work*" and "*Operational measures to handle the Covid-19 situation have affected the follow-up progress after the fire. The project for planning and carrying out repairs of the Hammerfest LNG plant must always comply with applicable guidelines for handling the infection situation in society. The project has already introduced several measures that allow us to have fewer workers on site at the same time than previously expected. There is still uncertainty related to how the Covid-19 development will impact the project progress."*

Cheniere stopped the game playing the game on June 30. Our July 4, 2021 Energy Tidbits memo noted that it looks like Cheniere has stopped playing stupid with respect to the strengthening LNG market in 2021. We can't believe they thought they were fooling anyone, especially their competitors. Bu that week, they came out talking about how commercial discussions have picked up in 2021 and it's boosted their hope for a Texas (Corpus Christi) LNG expansion. On Wednesday, Platts reported "*Pickup in commercial talks boosts Cheniere's hopes on mid-scale LNG project*" [LINK] Platts wrote "*Cheniere Energy expects to make a "substantial dent" by the end of 2022 in building sufficient buyer support for a proposed mid-scale expansion at the site of its Texas liquefaction facility, Chief Commercial Officer Anatol Feygin said June 30 in an interview." " As a result, he said, " The commercial engagement, I think it is very fair to say, has really picked up steam, and we are quite optimistic over the coming 12-18 months to make a substantial dent in that Stage 3 commercialization."* Platts also reported that Cheniere noted this has been a tightening market all year (ie would have been known by the May 4 Q1 call). Platts wrote "*We obviously find ourselves at the beginning of this year and throughout in a very tight market where prices today into Asia and into Europe are at levels that we frankly haven't seen in a decade-plus," Feygin said. "We've surpassed the economics that the industry saw post the Fukushima tragedy in March 2011, and that's happened in the shoulder period."* It's a public stance as to a more bullish LNG outlook

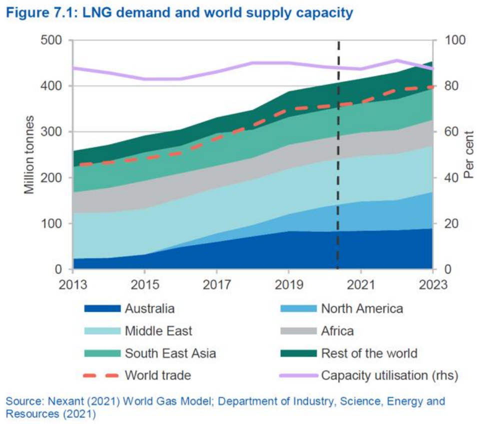
But we still see major LNG suppliers like Australia hinting but not outright saying that LNG supply gap is coming sooner. We have to believe Australia will be unveiling a sooner LNG supply gap in their September forecast. On June 28, we tweeted [LINK] on Australia's Resources and Energy Quarterly released on Monday [LINK] because there was a major change to their LNG outlook versus their March forecast. We tweeted "*#LNGSupplyGap. AU June fcast now sees #LNG mkt tighten post 2023 vs Mar fcast excess supply thru 2026. Why? $TOT Mozambique delays. See below SAF Apr 28 blog. Means brownfield LNG FID needed ie. like #LNGCanada Phase 2. #OOTT #NatGas".* Australia no longer sees supply exceeding demand thru 2026. In their March forecast, Australia said "*Nonetheless, given the large scale expansion of global LNG capacity in recent years, demand is expected to remain short of total supply throughout the projection period."* Note this is thru 2026 ie. a LNG supply surplus thru 2026. But on June 28, Australia changed that LNG outlook and now says the LNG market may tighten beyond 2023. Interestingly, the June forecast only goes to 2023 and not to 2026 as in March. Hmmm! On Monday, they said "*Given the large scale expansion of global LNG capacity in recent years, import demand is expected to remain short of export capacity throughout the outlook period. Beyond 2023, the global LNG market may tighten, due to the April 2021 decision to indefinitely suspend the Mozambique LNG project, in response to rising security issues. This project has an annual nameplate capacity of 13 million tonnes, and was previously expected to start exporting LNG in 2024*." 13 million tonnes is 1.7 bcf/d so they are only referring to Total Mozambique LNG Phase 1. So no surprise the change is Mozambique LNG driven but we have to believe the reason why they cut their forecast off this time at 2023 is that they are looking at trying to figure out what to forecast beyond 2023 in addition to Total Phase 1. And, importantly, we believe they will be changing their LNG forecast for more than Mozambique ie. India demand that we highlight later in the blog. They didn't say anything else specific on Mozambique but, surely they have to also be delaying the follow on Total Phase 2 of 1.3 bcf/d and Exxon Rozuma Phase 1 of 2.0 bcf/d.

Australia's LNG Outlook: March 2021 vs June 2021 Forecasts

March 2021 LNG Outlook



June 2021 LNG Outlook

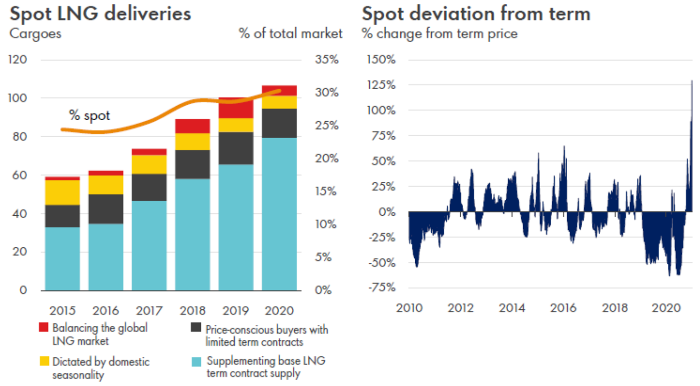


Source: Australia Resources and Energy Quarterly

<u>Clearly Asian LNG buyers did the math, saw the new LNG supply gap and were working the phones in March/April/May trying to lock up long term supply.</u> We wrote extensively on the Total Mozambique LNG situation before the April 26 force majeure as it was obvious that delays were coming to a project counted on for first LNG in 2024. Total had shut down Phase 1 development in December for 3 months due to the violence and security risks. It restarted development on Wed March 24, violence/attacks immediately resumed for 3 consecutive days, and then Total suspended development on Sat March 27. That's why no one should have been surprised by the April 26 force majeure. Asian LNG buyers were also seeing this and could easily do the same math we were doing and saw a bigger and sooner LNG supply gap. They were clearly working the phones with a new priority to lock up long term LNG supply. Major long term deals don't happen overnight, so it makes sense that we started to see these new Asian long term LNG deals start at the end of June.

<u>A big pivot from trying to renegotiate down long term LNG deals or being happy to let long term contracts expire and replace with spot/short term LNG deals</u>. This is a major pivot or abrupt turn on the Asian LNG buyers contracting strategy for the 2020s. There is the natural reduction of long term contracts as contracts reach their term. But with the weakness in LNG prices in 2019 and 2020, Asian LNG buyers weren't trying to extend long term contracts, rather, the push was to try to renegotiate down its long term LNG deals. The reason was clear, as spot prices for LNG were way less than long term contract prices. And this led to their LNG contracting strategy – move to increase the proportion of spot LNG deliveries out of total LNG deliveries. Shell's LNG Outlook 2021 was on Feb 25, 2021 and included the below graphs. The spot LNG price derivation from long term prices in 2019 and 2020 made sense for Asian LNG buyers to try to change their contract mix. Yesterday, Maeil Business News Korea reported on the new Qatar/Kogas long term LNG deal with its report "*Korea may face LNG supply cliff or pay hefty price after long-term supplies run out*" [LINK], which highlighted this very concept – Korea wasn't worried about trying to extend expiring long term LNG contracts. Maeil wrote "*Seoul in 2019 secured a long-term LNG supply contract with the U.S. for annual 15.8 million tons over a 15-year period. But even with the latest two LNG supply contracts, the Korean government needs extra 6 million tons or more of LNG supplies to keep up the current power pipeline. By 2024, Korea's long-term supply contracts for 9 million tons of LNG will expire - 4.92 million tons on contract with Qatar and 4.06 million tons from Oman, according to a government official who asked to be unnamed."*

Spot LNG deliveries and Spot deviation from term price



Source: Shell LNG Outlook 2021 on Feb 25, 2021

Asian LNG buyers moving to long term LNG deals provide financing capacity for brownfield LNG FIDs. We believe this abrupt change and return to long term LNG deals is even more important to LNG suppliers who want to FID new projects. The big LNG players like Shell can FID new LNG supply without new long term contracts as they can build into their supply options to fill their portfolio of LNG contracts. But that doesn't mean the big players don't want long term LNG supply deals, as having long term LNG contracts provide better financing capacity for any LNG supplier. It takes big capex for LNG supply and long term deals make the financing easier.

Four Asian buyer long term LNG deals in the last week. It was pretty hard to miss a busy week for reports of new Asian LNG buyer long term LNG deals. There were two deals from Qatar Petroleum, one from Petronas and one from BP. The timing fits, it's about 3 months after Total Mozambique LNG problems became crystal clear. And as noted later, there are indicators that more Asian buyer LNG deals are coming.

Petronas/CNOOC is 10 yr supply deal for 0.3 bcf/d. On July 7, we tweeted [LINK] on the confirmation of a big positive to Cdn natural gas with the Petronas announcement [LINK] of a new 10 year LNG supply deal for 0.3 bcf/d with China's CNOOC. The deal also has special significance to Canada. (i) Petronas said "*This long-term supply agreement also includes supply from LNG Canada when the facility commences its operations by middle of the decade*". This is a reminder of the big positive to Cdn natural gas in the next 3 to 4 years – the start up of LNG Canada Phase 1 is ~1.8 bcf/d capacity. This is natural gas that will no longer be moving south to the US or east to eastern Canada, instead it will be going to Asia. This will provide a benefit for all Western Canada natural gas. (ii) First ever AECO linked LNG deal. It's a pretty significant event for a long term Asia LNG deal to now have an AECO link. Petronas wrote "*The deal is for 2.2 million tonnes per annum (MTPA) for a 10-year period, indexed to a combination of the Brent and Alberta Energy Company (AECO) indices. The term deal between PETRONAS and CNOOC is valued at approximately USD 7 billion over ten years.*" 2.2 MTPA is 0.3 bcf/d. (iii) Reminds of LNG Canada's competitive advantage for low greenhouse gas emissions. Petronas said "*Once ready for operations, the LNG Canada project paves the way for PETRONAS to supply low greenhouse gas (GHG) emission LNG to the key demand markets in Asia.*"

Qatar Petroleum/CPC (Taiwan) is 15 yr supply deal for 0.16 bcf/d. Pre Covid, Qatar was getting pressured to renegotiate lower its long term LNG contract prices. Now, it's signing a 15 year deal. On July 9, they entered in a new small long term LNG sales deal [LINK], a 15-yr LNG Sale and Purchase Agreement with CPC Corporation in Taiwan to supply it ~0.60 bcf/d of LNG. LNG deliveries are set to begin in January 2022. H.E. Minister for Energy Affairs & CEO of Qatar Petroleum Al-Kaabi said *"We are pleased to enter into this long term LNG SPA, which is another milestone in our relationship with CPC, which dates back to almost three decades. We look forward to commencing deliveries under this SPA and to continuing our supplies as a trusted and reliable global LNG provider."* The pricing was reported to be vs a basket of crudes.

BP/Guangzhou Gas, a 12-yr supply deal for 0.13 bcf/d. On July 9, there was a small long term LNG supply deal with BP and Guangzhou Gas (China). Argus reported [LINK] BP had signed a 12 year LNG supply deal with Guangzhou Gas (GG), a Chinese city's gas distributor, which starts in 2022. The contract prices are to be linked to an index of international crude prices. Although GG typically gets its LNG from the spot market, it used a tender in late April for ~0.13 bcf/d starting in 2022. BP's announcement looks to be for most of the tender, so it's a small deal. But it fit into the trend this week of seeing long term LNG supply deals to Asia. This was intended to secure deliveries to the firm's Xiaohudao import terminal which will become operational in August 2022.

Qatar/Korea Gas is a 20-yr deal to supply 0.25 bcf/d. On Monday, Reuters reported [LINK] "*South Korea's energy ministry said on Monday it had signed a 20-year liquefied natural gas (LNG) supply agreement with Qatar for the next 20 years starting in 2025. South Korea's state-run Korea Gas Corp (036460.KS) will buy 2 million tonnes of LNG annually from Qatar Petroleum".* There was no disclosure of pricing.

More Asian buyer long term LNG deals (ie. India) will be coming. There are going to be more Asian buyer long term LNG deals coming soon. Our July 11, 2021 Energy Tidbits highlighted how India's new petroleum minister Hardeep Singh Puri (appointed July 8) hit the ground running with what looks to be a priority to set the stage for more India long term LNG deals with Qatar. On July 10, we retweeted [LINK] "*New India Petroleum Minister hits ground running. What else w/ Qatar but #LNG. Must be #Puri setting stage for long term LNG supply deal(s). Fits sea change of buyers seeing #LNGSupplyGap (see SAF Apr 28 blog http://safgroup.ca) & wanting to tie up LNG supply. #OOTT".* It's hard to see any other conclusion after seeing what we call a sea change in LNG buyer mentality with a number of long term LNG deals this week. Puri tweeted [LINK] "*Discussed ways of further strengthening mutual cooperation between our two countries in the hydrocarbon sector during a warm courtesy call with Qatar's Minister of State for Energy Affairs who is also the President & CEO of @qatarpetroleum HE Saad Sherida Al-Kaabi".* As noted above, we believe there is a sea change in LNG markets that was driven by the delay in 5 bcf/d of LNG supply from Mozambique (Total Phase 1 & Phase 2, and Exxon Rozuma Phase 1) that was counted on all LNG supply projections for the 2020s. Puri's tweet seems to be him setting the stage for India long term LNG supply deals with Qatar.

Supermajors are aggressively competing to commit 30+ year capital to Qatar's LNG expansion despite stated goal to reduce fossil fuels production. It's not just Asian LNG buyers who are now once again committing long term capital to securing LNG supply, it's also supermajors all bidding to be able to commit big capex to part of Qatar Petroleum's 4.3 bcf/d LNG expansion. Qatar Petroleum received a lot of headlines following the their June 23 announcement on its LNG expansion [LINK] on how they received bids for double the equity being offered. And there were multiple reports that these are on much tougher terms for Qatar's partners. Qatar Petroleum CEO Saad Sherida Al-Kaabi specifically noted that, among the bidders, were Shell, Total and Exxon. Shell and Total have two of the most ambitious plans to reduce fossil fuels production in the 2020's, yet are competing to allocate long term capital to increase fossil fuels production. And Shell and Total are also two of the global LNG supply leaders. It has to be because they are seeing a bigger and sooner LNG supply gap.

Remember Qatar's has a massive expansion but India alone needs 3x the Qatar expansion LNG capacity. In addition to the competition to be Qatar Petroleum's partners, we remind that, while this is a massive 4.3 bcf/d LNG expansion, India alone sees its LNG import growing by ~13 bcf/d to 2030. The Qatar announcement reminded they see a LNG supply gap and continued high LNG prices. We had a 3 part tweet. (i) First, we highlighted [LINK] "*1/3. #LNGSupplyGap coming. big support for @qatarpetroleum expansion to add 4.3 bcf/d LNG. but also say "there is a lack of investments that could cause a significant shortage in gas between 2025-2030" #NatGas #LNG".* This is after QPC accounts for their big LNG expansion. The QPC release said "*However, His Excellency Al-Kaabi voiced concern that during the global discussion on energy transition, there is a lack of investment in oil and gas projects, which could drive energy prices higher by stating that "while gas and LNG are important for the energy transition, there is a lack of investments that could cause a significant shortage in gas between 2025-2030, which in turn could cause a spike in the gas market."* (ii) Second, this is a big 4.3 bcf/d expansion, but India alone has 3x the increase in LNG import demand. We tweeted [LINK] "*2/3. Adding 4.3 bcf/d is big, but dwarfed by items like India. #Petronet gave 1st specific forecast for what it means if #NatGas is to be 15% of energy mix by 2030 - India will need to increase #LNG imports by ~13 bcf/d. See SAF Group June 20 Energy Tidbits* *memo."* (iii) Third, Qatar's supply gap warning is driven by the lack of investments in LNG supply. We agree, but note that the lack of investment is in great part due to the delays in both projects under construction and in FIDs that were supposed to be done in 2019. We tweeted [LINK] "*3/3. #LNGSupplyGap is delay driven. $TOT Mozambique Phase 1 delay has chain effect, backs up 5 bcf/d. See SAF Group Apr 28 blog Multiple Brownfield LNG FIDs Now Needed To Fill New #LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2? #NatGas*."

Seems like many missed India's first specific LNG forecast to 2030. Our June 20, 2021 Energy Tidbits memo highlighted the first India forecast that we have seen to estimate the required growth in natural gas consumption and LNG imports if India is to meet its target for natural gas to be 15% of its energy mix by 2030. India will need to increase LNG imports by ~13 bcf/d or 3 times the size of the Qatar LNG expansion. Our June 6, 2021 Energy Tidbits noted the June 4 tweet from India's Energy Minister Dharmendra Pradhan [LINK] reinforcing the 15% goal "*We are rapidly deploying natural gas in our energy mix with the aim to increase the share of natural gas from the current 6% to 15% by 2030."* But last week, Petronet CEO AK Singh gave a specific forecast. Reuters report "*LNG's share of Indian gas demand to rise to 70% by 2030: Petronet CEO"* [LINK] included Petronet's forecast if India is to hit its target for natural gas to be 15% of energy mix by 2030. Singh forecasts India's natural gas consumption would increase from current 5.5 bcf/d to 22.6 bcf/d in 2030. And LNG shares would increase from 50% to 70% of natural gas consumption ie. an increase in LNG imports of ~13 bcf/d from just under 3 bcf/d to 15.8 bcf/d in 2030. Singh did not specifically note his assumption for India's natural gas production, but we can back into the assumption that India natural gas production grows from just under 3 bcf/d to 6.8 bcf/d. It was good to finally see India come out with a specific forecast for 2030 natural gas consumption and LNG imports if India is to get natural gas to 15% of its energy mix in 2030. Petronet's Singh forecasts India natural gas consumption to increase from 5.5 bcf/d to 22.6 bcf/d in 2030. This forecast is pretty close to our forecast in our Oct 23, 2019 blog "*Finally, Some Visibility That India Is Moving Towards Its Target For Natural Gas To Be 15% Of Its Energy Mix By 2030*". Here part of what we wrote in Oct 2019. "*It's taken a year longer than we expected, but we are finally getting visibility that India is taking significant steps towards India's goal to have natural gas be 15% of its energy mix by 2030. On Wednesday, we posted a SAF blog [LINK] "Finally, Some Visibility That India Is Moving Towards Its Target For Natural Gas To Be 15% Of Its Energy Mix By 2030".* Our 2019 blog estimate was for India natural gas demand to be 24.0 bcf/d in 2030 (vs Singh's 22.6 bcf/d) and for LNG import growth of +18.4 bcf/d to 2030 (vs Singh's +13 bcf/d). The difference in LNG would be due to our Oct 2019 forecast higher natural gas consumption by 1.4 bcf/d plus Singh forecasting India natural gas production +4 bcf/d to 2030. Note India production peaked at 4.6 bcf/d in 2010.

Bigger, nearer LNG supply gap + Asian buyers moving to long term LNG deals = LNG players forced to at least look at what brownfield LNG projects they could advance and move to FID. All we have seen since our April 28 blog is more validation of the bigger, nearer LNG supply gap. And now market participants (Asian LNG buyers) are reacting to the new data by locking up long term supply. Cheniere noted how the pickup in commercial engagement means they "*are quite optimistic over the coming 12-18 months to make a substantial dent in that Stage 3 commercialization."* Cheniere can't be the only LNG supplier having new commercial discussions. It's why we believe the Mozambique delays + Asian LNG buyers moving to long term deals will effectively force major LNG players to look to see if there are brownfield LNG projects they should look to advance. Prior to March/April, no one would think Shell or other major LNG players would be considering any new LNG FIDs in 2021. Covid forced all the big companies into capital reduction mode and debt reduction mode. But Brent oil is now solidly over $70, and LNG prices are over $13 this summer and the world's economic and oil and gas demand outlook are increasing with vaccinations. And we are starting to see companies move to increasing capex with the higher cash flows. The theme in Q3 reporting is going to be record or near record oil and gas cash flows, reduced debt levels and increasing returns to shareholders. And unless new mutations prevent vaccinations from returning the world to normal, we suspect that major LNG players, like other oil and gas companies, will be looking to increase capex as they approve 2022 budgets. The outlook for the future has changed dramatically in the last 8 months. The question facing major LNG players like Shell is should they look to FID new LNG brownfield projects in the face of an increasing LNG supply gap that is going to hit faster and harder and Asian LNG buyers prepared to do long term deals. We expect these decisions to be looked at before the end of 2021 for 2022 capex budget/releases. One wildcard that could force these decisions sooner is the already stressed out global supply chain. We have to believe that discussion there will be pressure for more Asian LNG buyer long term deals sooner than later.

<u>For Canada, does the increasing LNG supply gap provide the opportunity to at least consider a LNG Canada Phase 2 FID over the next 6 months?</u> Our view on Shell and other LNG players is unchanged since our April 28 blog. Shell is no different than any other major LNG supplier in always knowing the market and that the oil and gas outlook is much stronger than 9 months ago. Even 3 months post our April 28 blog, we haven't heard any significant talks on how major LNG players will be looking at FID for new brownfield LNG projects. We don't have any inside contacts at Shell or LNG Canada, but that is no different than when we looked at the LNG markets in September 2017 and saw the potential for Shell to FID LNG Canada in 2018. We posted a September 20, 2017 blog *"China's Plan To Increase Natural Gas To 10% Of Its Energy Mix Is A Global Game Changer Including For BC LNG*" [LINK]. Last time, it was a demand driven supply gap, this time, it's a supply driven supply gap. We have to believe any major LNG player, including Shell, will be at least looking at their brownfield LNG project list and seeing if they should look to advance FID later in 2021. Shell has LNG Canada Phase 2, which would add 2 additional trains or approx. 1.8 bcf/d. And an advantage to an FID would be that Shell would be able to commit to its existing contractors and fabricators for a continuous construction cycle following on LNG Canada Phase 1 ie. to help keep a lid on capital costs. We believe maintaining a continuous construction cycle is even more important given the stressed global supply chain. No one is talking about the need for these new brownfield LNG projects, but, unless some major change in views happen, we believe its inevitable that these brownfield LNG FID internal discussions will be happening in H2/21. Especially since the oil and gas price outlook is much stronger than it was in the fall and companies will be looking to increase capex in 2022 budgets.

<u>A LNG Canada Phase 2 would be a big plus to Cdn natural gas.</u> LNG Canada Phase 1 is a material natural gas development as its 1.8 bcf/d capacity represents approx. 20 to 25% of Cdn gas export volumes to the US. The EIA data shows US pipeline imports of Cdn natural gas as 6.83 bcf/d in 2020, 7.36 bcf/d in 2019, 7.70 bcf/d in 2018, 8.89 bcf/d in 2017, 7.97 bcf/d in 2016, 7.19 bcf/d in 2015 and 7.22 bcf/d in 2014. A LNG Canada Phase 2 FID would be a huge plus for Cdn natural gas. It would allow another ~1.8 bcf/d of Cdn natural gas to be priced against pricing points other than Henry Hub. And it would provide demand offset versus Trudeau if he moves to make electricity "emissions free" and not his prior "net zero emissions". Mozambique has been a game changer to LNG outlook creating a bigger and sooner LNG supply gap. And with a stronger tone to oil and natural gas prices in 2021, the LNG supply gap will at least provide the opportunity for Shell to consider FID for its brownfield LNG Canada Phase 2 and provide big support to Cdn natural gas for the back half of the 2020s. And perhaps if LNG Canada is exporting 3.6 bcf/d from two phases, it could help flip Cdn natural gas to a premium vs US natural gas especially if Biden is successful in reducing US domestic natural gas consumption for electricity. The next six months will be very interesting to watch for LNG markets and Cdn natural gas valuations. Imagine the future value of Cdn natural gas is there was visibility for 3.6 bcf/d of Western Canada natural gas to be exported to Asia.

Google Translate of https://utg.ua/utg/media/news/2021/11/na-pochatku-listopada-v-ukranskix-psg-18-mlrd-kub.-m-gazu-na-13-blshe-nzh-u-2011-2019-rr.html

In early November, Ukrainian underground storage facilities - 18 billion cubic meters. m of gas - 13% more than in 2011-2019.03.11. 2021

As of November 1, 2021, the volume of gas in Ukraine's underground storage facilities reached 18 billion cubic meters. m *. This level of underground storage is 13% higher than the average for the period from 2011 to 2019 and confirms the readiness of the network of Ukrainian gas storage facilities for the winter, given the stable situation in the overall energy balance of Ukraine.

Gas selection

During October of this year, 0.7 billion cubic meters were physically extracted from Ukrainian underground storage facilities. m of gas. This figure is 3.5 times higher than last year. This difference is due to two factors. First, this year's selection season began two weeks earlier than last year. Second, in the autumn, non-resident companies re-exported part of their reserves for further sale on the EU gas market during peak gas prices.

Natural gas supply in underground storage

As of November 1, 2021, natural gas reserves in underground storage facilities amounted to 18 billion cubic meters. m * of gas. This is 36% less than in 2020, which broke a ten-year record for the level of inventories. However, this figure is 13% higher than the average level of filling of gas storage facilities in 2011-2019.

Use of Customs Warehouse ** and Short Haul *** services

As of November 1, 2021, foreign traders keep 2 billion cubic meters in the Customs Warehouse mode. m of gas. This is 5 times less than in the same period last year. Of these, 1.6 billion cubic meters were accumulated in the "short haul" mode. m. Resident companies keep in the mode of "customs warehouse" 0.7 billion cubic meters. m of gas, which is 1.5 times less than in 2020. Of these, the volume transferred to the underground storage facility in the "short haul" mode is equal to 0.6 billion cubic meters. m.

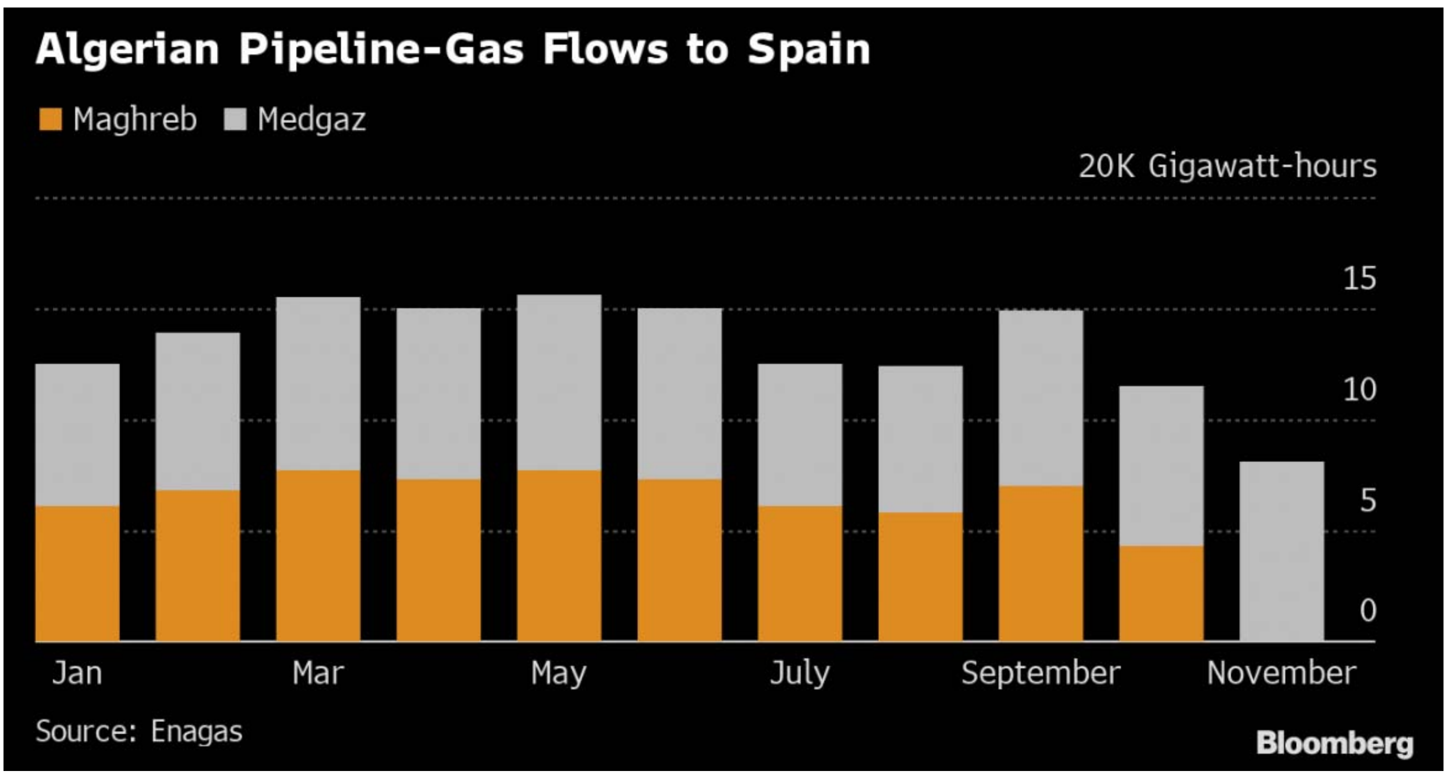
* excluding stocks of Vergun underground storage facility located in the temporarily uncontrolled territory of Donetsk region;

** "customs warehouse" - a customs regime that allows the customer to store natural gas in gas storage facilities of Ukraine for up to 1095 days without paying taxes and customs duties;

*** "short haul" - a service that allows you to get a discount on transportation between certain points of entry or exit on interstate connections (capacity with restrictions), including for further storage of natural gas in the underground storage of Ukraine.

Spain’s Algerian Gas Imports Via Morocco Stop as Deal Expires
2021-11-01 09:04:52.966 GMT

By Anna Shiryaevskaya
(Bloomberg) -- Spain’s natural gas imports via a key pipeline from Algeria stopped after a 25-year transit deal expired without renewal.
Algerian President Abdelmadjid Tebboune ordered a halt to gas flowing to Spain via Morocco amid a diplomatic spat between the two North African nations. He also told state-run energy company Sonatrach to stop doing business with Morocco and to not renew its transit accord with the neighboring country.
No gas is currently flowing via the Maghreb-Europe link connecting Algeria and Spain via Morocco, according to data from Spanish network operator Enagas SA. Algeria accounts for about half of Spain’s total gas supplies.



Spain is still getting Algerian gas via the direct Medgaz pipeline across the Mediterranean Sea, although overall flows from Algeria are set to fall this month. That leaves Spain highly dependent on imports of additional liquefied natural gas, where it may have to compete with higher-priced bidders in Asia.
Still, Spain is taking measures to bolster gas supplies for the heating season, including opening more delivery slots at its LNG terminals than it used last winter.
By the start of November, there is 65% more LNG at Spain’s

import terminals than a year earlier. Underground storage facilities are about 82% full, higher than in other European nations, Enagas said in a statement on Sunday. All the LNG capacity offered at receiving terminals has been contracted for this month.

“With this situation today and with reservations of slots and capacity already made by traders, there are no objective indications of a situation where there is a lack of gas supplies in the coming months,” Enagas said.

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https://blinks.bloomberg.com/news/stories/R1UQ5CDWX2PS

SAF created transcript of Bloomberg Tom Keene, Jonathan Ferro and Lisa Abramowicz Nov 5 interview with Energy Secretary Jennifer Granholm.

Items in "*italics*" are SAF Group created transcript. https://www.youtube.com/watch?v=0IharildvyM Note our transcript corrects the rolling transcript on the video.

Keene. "*Let me cut to it if I may. In Sturgis, Michigan, it is two dollars eighty nine cents a gallon. I guess that's better than in California. What is the Granholm plan to increase oil production in America?"*

Granholm. "*[Laughing] That is hilarious. Would that I had the magic wand on this. As you know, of course, oil is a global market. It is controlled by a cartel. That cartel is called OPEC. And they made a decision yesterday that they were not going to increase beyond what they were already planning. So, you know the interesting thing is, you know the Department of Energy has an Energy Information Agency and that agency does the forecasting of what oil and gas prices are going to be. As of right now, their forecast for the beginning of December is that, on average, gas prices, gasoline prices will be about three dollars and five cents at the beginning of December. They will do an adjustment to that forecast in the next week or so. So we'll see if that holds. But, clearly the Biden administration is very concerned about the price at the pump. And certainly the price in people's wallets for natural gas as well for this winter including I would say propane and heating oil particularly in the Northeast."*

Keene. "*What is the American solution if they're the bad guys, Russia and OPEC, at the global price in the market. We all understand economics. What is the Biden plan to jumpstart energy production across America?"*

Granholm. "*Here's the Biden plan. I'm here in Glasgow. The Biden plan is to diversify and to make sure that we move in the direction of clean energy where we're not reliant upon cartels and we're not reliant upon geopolitical adversaries who may be creating choke points for our ability and our people to be able to access energy. So that's obviously a longer term strategy. And we will continue. This why this is called a transition. But if 80 plus dollars a barrel doesn't incentivize oil companies to get off the sidelines, I'm not sure what will."*

Keene. "*Well, for those of you on radio today and Jon Ferro, I must note that the former governor of Michigan is wearing East Lansing green today. That's what the color [Granholm laughing]".*

Ferro. "*How reliant are we on OPEC+? I do wonder and I don't think its funny. Senator Manchin had this to say early this week. Let's take a listen".* Clip of Senator Manchin saying "*I say that we can basically do more for ourselves. We've been energy independent for the first time in 67 years. Why can't we do more? Why can't we produce more? We've got plenty of natural gas. My state, beautiful state of West Virginia has an ocean of natural gas under it. If they just let us build a pipeline, we can get the product to market. And why don't we do more drilling and why don't we do more basically production in the United States? I'm not depending on OPEC. I'm not depending on other countries for my energy anymore. WE know how to do it, We have the technology. We should be relying on ourselves."* Ferro "*the words of the senator, Mr. Manchin there. These are the words of Pioneer CEO. Madam Secretary, let's pick up with the words of the Pioneer CEO – the President's efforts to restrict drilling on federal land and offshore have been stunning to back for some, his quote. He's got to back off his rhetoric on federal leases going forward. Do you think its true that we are reliant on OPEC+ in the United States of America?"*

Granholm. "*We are reliant on the global gas market. I mean, the global gas. We can't just produce oil for the United States. It is on a global market. And let me just say the President has not banned oil and gas leases. There are 23 million acres of public lands. That includes offshore and onshore where there are leases that are not being used right now by oil and gas companies. Over 7,000 leases have been issued and the oil and gas companies are not using them. They're sitting on them. They're stockpiling these leases. Why is that? so we need to know if. The production issue is not at the foot of the President. There is not a ban on oil and gas leases on federal lands."*

Ferro. "*Madam Secretary, you know I am careful with my words. I didn't say ban, I said restrict. And in addition to that, you're talking about why they won't invest. We know why they won't invest. They won't invest because this administration is speaking so highly of this big energy transition that you're actively supporting. So I think its misleading to say that we are in the United States of America are increasingly dependent on OPEC+ when we've seen oil production in this country increase over the last several decades. Now there are some options out there for you as you know with the SPR. With the options on the table to address the situation we're in at the moment, the United States of America is in control of its own destiny here, I do wonder if the SPR is an option for you to address what's happening in the commodity market?"*

Granholm. "*The SPR is certainly on the table as an option and the President will have more to say about that. But let us be clear, I mean just to go back to your other point. I mean these, the oil and gas companies have leases, there is no slowdown. There is no whatever the words were that you use. There is no restriction. None, ever on their ability to use those leases. Over 7,000 of them on public lands right now. So I just don't want to let that stand. It is not the President's doing that is causing the oil and gas companies to decide to slow down. Actually, they were slowed down because of Covid. And we're seeing some movement of oil rigs getting back online. But is curious about why they are not incentivized more at eighty dollars a barrel. Let me just say and you are right about us moving to clean energy. That is the future and that is the long term strategy. And we must do that so that we're not reliant upon fuels that pollute the air that we see are accelerating climate change."*

Abramowicz. "*To that point Secretary Granholm, some people say that the best cure to get to a greener future is to allow gas prices to go higher. They are much higher in the places like the United Kingdom. Why isn't there a school of thought saying, this is just fine. Perhaps people reduce their reliance on fossil fuels and diversify more quickly?*

Granholm. "*Because real people use fossil fuels and real people's wallets, livelihoods are at stake. The President does not want to see the price of fuel hurt and pinch real people. Poor communities have about, up to 30% of their monthly income is based upon fuels. It's not right to raise the price of fuels that would actually hurt real people. That is not in the President's plan and he doesn't want to see that."*

Ferro. "*Madam Secretary, when can we expect a decision with the SPR. Is that something you're thinking about imminently?"*

Granholm. "*I know that the President is looking at it. He'll have more to say about it"*

Prepared by SAF Group https://safgroup.ca/news-insights/

Q Mr. President — you just alluded to it there, Mr. President. Two questions. You are arguably the most legislatively experienced President we have ever seen. But to get this first agenda item over the finish line, you needed Republican votes.

THE PRESIDENT: Sure.

Q You are not going to have Republican votes, though, for your Build Back Better Agenda. Isn't it doomed?

And then my second question, Mr. President. OPEC Plus has snubbed your call to pump more oil. When will you respond with an SPR release?

THE PRESIDENT: Well, first of all, I'm not anticipating that OPEC would respond, that Russia and/or Saudi Arabia would respond. They're going to pump some more oil, whether they pump enough oil is a different thing.

There are other — are — there other tools in the arsenal that we have to deal — and I'm dealing with other countries; at an appropriate time, I will talk about it — that we can get more energy in the — in the pipeline, figuratively and literally speaking.

And I don't start off with any assumption that I can't get anybody to vote for anything. And so, I don't — I mean that sincerely.

I think what's going to happen is, we're going to see what happens in the Senate, and whether or not I need only Democratic votes, which is likely — which is the likely outcome. And the question is: Can I get all of those votes? This is a process.

And all along, you told me I can't do any of it anyway. From the very beginning. No, no, come on, be honest. Okay? You didn't believe we could do any of it. And I don't blame you. Because you look at the facts, you wonder, "How is this going to get done?"

But I think — I think there's a — I think there's a dawning on the part of a lot of people — a whole elective office that if you get some of this done, things are better for them as well as everybody else.

And I'm sure there's some calculations saying, "Well, if Biden gets this other bill, then he's going to be moving too fast and it's going to hurt — you know, the Democrats are going to be doing too well." That's why I think we have to try to figure out how to make the case across the board, as to — there's a lot of things we have to tackle yet. So.

Q Have you gotten assurances from moderate Democrats in the House and Senate that they are going to vote for your Build Back Better plan now that what they really wanted — the infrastructure bill — has passed?

THE PRESIDENT: You know I'm not going to answer that question for you, because I'm not going to get into who — what made what commitments to me. I don't negotiate in public.

But I feel confident — I feel confident that we will have enough votes to pass the Build Back Better plan.

Q What gives you that confidence?

THE PRESIDENT: Me. (Laughter.)

Q Mr. President, you were forced to scrub paid family leave from your framework a couple of weeks ago —

THE PRESIDENT: I'm sorry?

Excerpt from NBF Energy Nov 1 Commentary

From: NBC Energy <Energy@nbc.ca>
Sent: November 1, 2021 7:34 AM
Subject: Morning Energy and FX Commentary from National Bank

Energy and FX Commentary

NATIONAL BANK OF CANADA
FINANCIAL MARKETS

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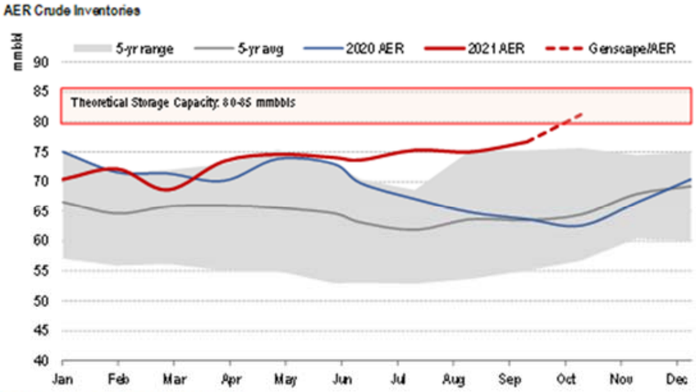
Hannah Smerek 403-476-5777
Luke Puxley 403-294-4944
Jon Waldie 403-440-1611
Vincent Daigle 403-695-3985

FX/Rates:
George Androulidakis 403-440-1126
Marc Miron 403-440-1126
Roy Fu 403-440-1126

Strategy:
Dave Nielsen 403-827-0371

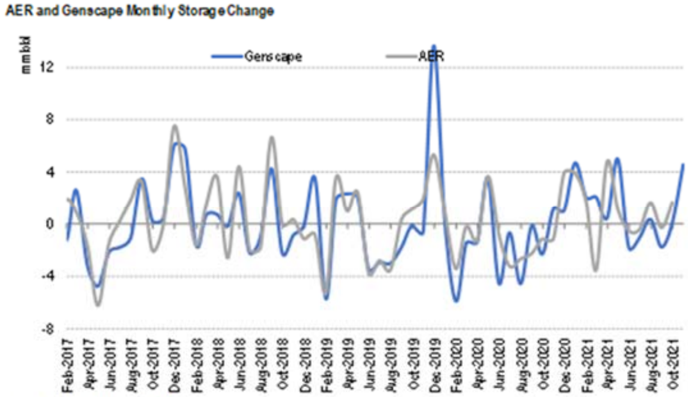
- But, for now Alberta remains on its own island in terms of storage as AER data for September was released late-last week, posting a **record high Alberta storage number of 76.65 MMb total.** From what we can tell, this could be followed by another build so far in October – according to Genscape's weekly data – implying that crude stocks in Alberta continue to build closer to the brim. There are a few factors that could make a difference in the coming weeks: 1) Genscape's ~4 MMb increase in October could be reflecting some operational/field level storage getting shifted to commercial/working storage ahead of L3R increasing. This means that October's Genscape increase – the dotted red line – might end up being smaller than what Genscape shows (maybe). 2) We've heard that downstream refining demand has been hit by some under-the-radar maintenance, which could be backing some volumes up to Alberta that eventually will show up in PADD 2 or even Cushing as that maintenance abates.

AER Crude Inventories



Source: Bloomberg, AER, Genscape, NBC

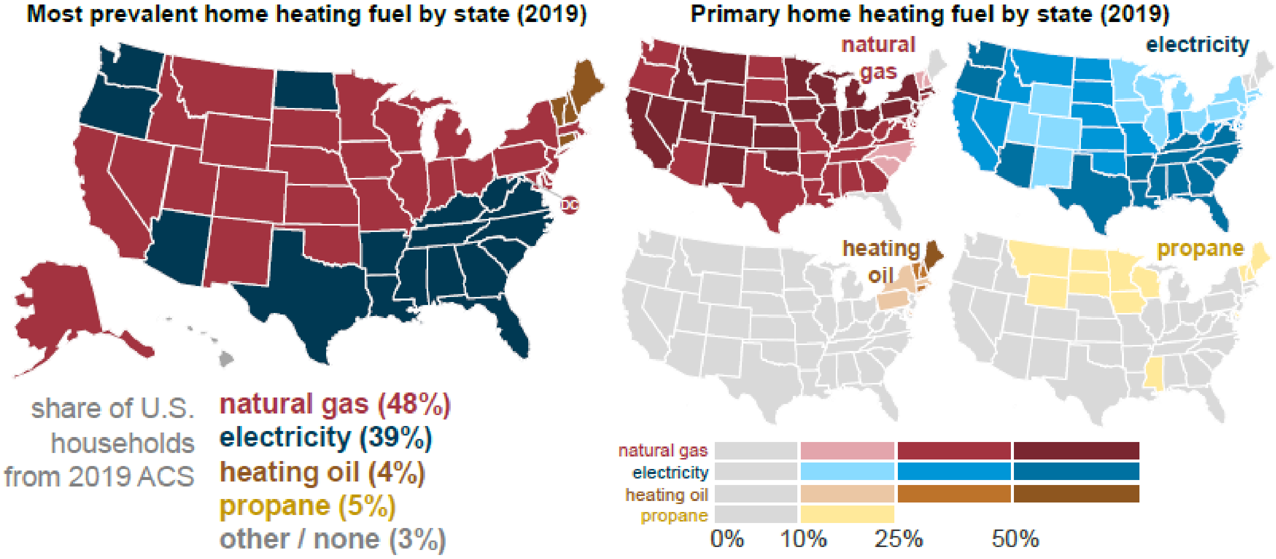
AER and Genscape Monthly Storage Change



Source: AER, Genscape, NBC

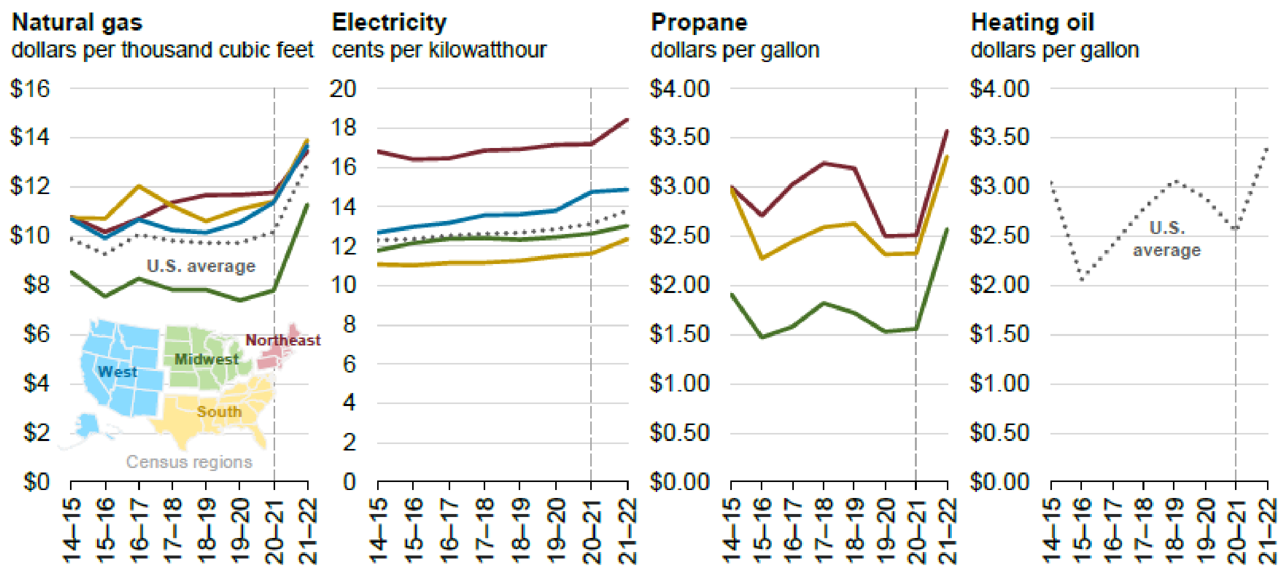
Excerpt EIA Winter Fuels Outlook https://www.eia.gov/outlooks/steo/special/winter/2021_Winter_Fuels.pdf

Almost 90% of U.S. homes are primarily heated by natural gas or electricity; heating oil and propane are regionally concentrated



Source: U.S. Energy Information Administration based on data from the U.S. Census Bureau, American Community Survey 2019

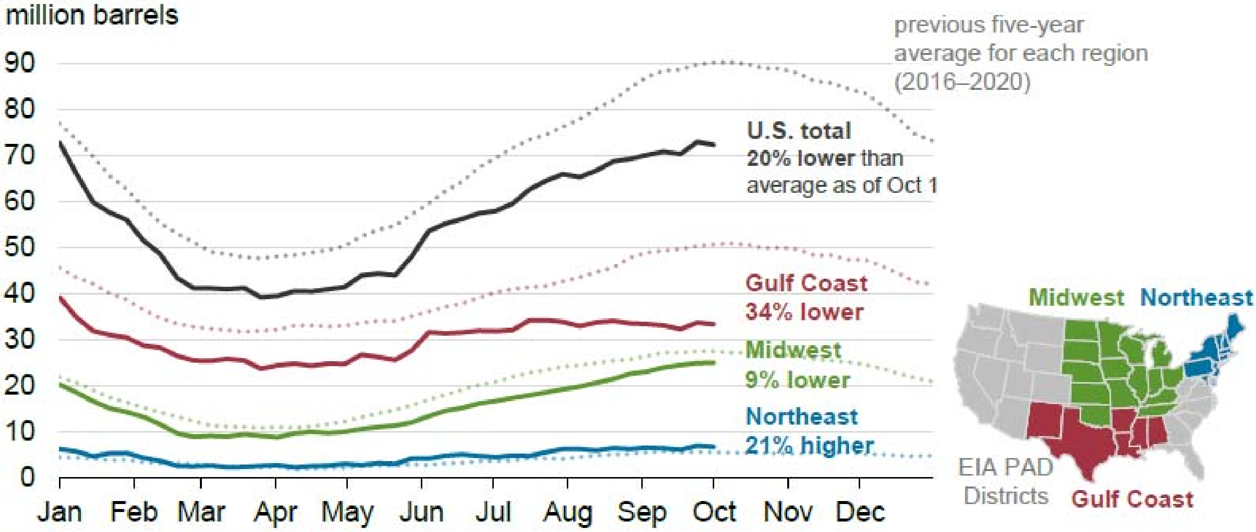
Prices across all fuels and all regions in the forecast are higher compared with recent winters



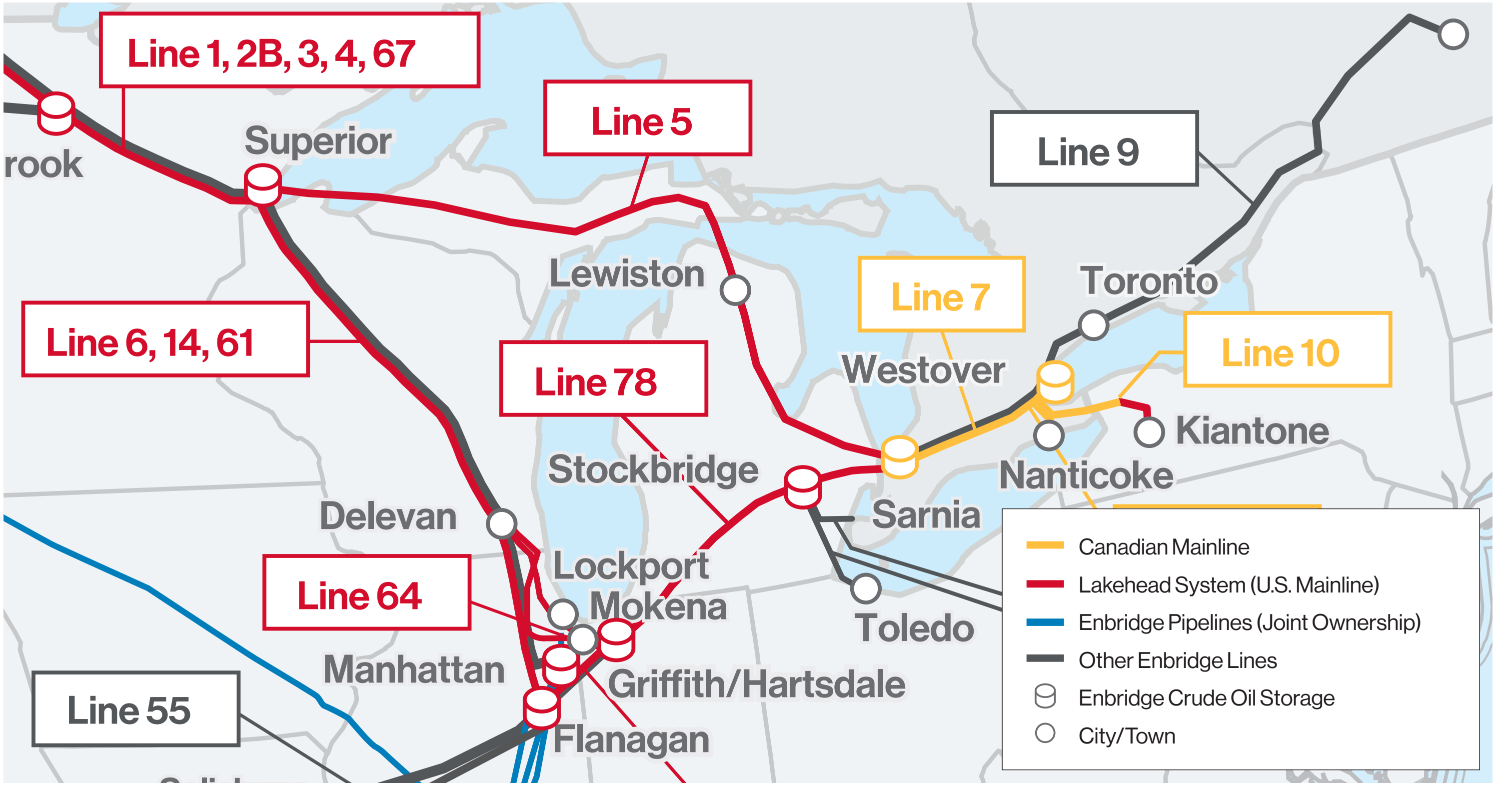
Source: U.S. Energy Information Administration

Propane inventories are particularly low in the Gulf Coast and Midwest

Weekly propane inventories by region (Jan 1–Oct 1, 2021)
million barrels



Source: U.S. Energy Information Administration



The impact of a Line 5 shutdown

Enbridge's Line 5 has been a vital piece of energy infrastructure since 1953—not just for Michigan, but for the entire U.S. Midwest and points beyond.

For more than 65 years, Line 5 has delivered the light oil and natural gas liquids (NGL) that heat homes and businesses, fuel vehicles and power industry.

Shutting down Line 5, even temporarily, would have immediate and severe consequences on the economies of Michigan, Ohio, Ontario, and elsewhere.

Enbridge's Line 5 is a 645-mile, 30-inch-diameter pipeline that travels through Michigan's Upper and Lower Peninsulas—originating in Superior, Wisconsin, and terminating in Sarnia, Ontario, Canada.

Line 5 transports up to 540,000 barrels per day (bpd), or 22.68 million US gallons per day, of light crude oil, light synthetic crude and natural gas liquids (NGLs), which are refined into propane.

Line 5 supplies 65% of propane demand in Michigan's Upper Peninsula, and 55% of Michigan's statewide propane needs. The light crude transported by Line 5 feeds refineries in the Upper Midwest and Eastern Canada.

If Line 5 were shut down*:

- Refineries served by Enbridge in Michigan, Ohio, Pennsylvania, Ontario and Quebec **would receive approximately 45% less crude from Enbridge** than their current demand.
- Michigan would face a **756,000-US-gallons-a-day propane supply shortage**, since there are no short-term alternatives for transporting NGL to market.
- The region (Michigan, Ohio, Pennsylvania, Ontario and Quebec) would see a **14.7-million-US-gallons-a-day supply shortage of gas, diesel and jet fuel** (about 45% of current supply).
- Michigan would need to f**ind an alternative supply for anywhere from 4.2 million to 7.77 million US gallons of refined products** (gas, diesel, jet fuel and propane).

Alternatives for the above shortages are limited—and that would mean massive investment in pipeline infrastructure, or significantly increasing rail or trucking capacity, to make up for the shortfall caused by a Line 5 shutdown.

*Estimates are based on current market conditions, and contingent on similar energy demands in the future (crude oil demand is not expected to see an appreciable change)

ENBRIDGE
Life Takes Energy

Toll-free: **1-855-869-8209**
E-mail: **line5info@enbridge.com**

The effects of a Line 5 shutdown

Shutting down Line 5, even temporarily, would have a major and immediate impact on crude oil supply for refineries—and, as a result, refined product supply for consumers, motorists and industry.

Crude oil impacts

Regional **crude oil and NGL demand** on Enbridge's Line 5 and Line 78 totals about **40.74 million US gallons a day.**

Demand for crude is not expected to change any time soon—and with Enbridge's pipeline system already essentially full, a Line 5 shutdown would cause federally regulated apportionment, or reduction in deliveries, on our Line 78 by approximately 45%.

In other words, refineries in Michigan, Ohio, Pennsylvania, Ontario and Quebec **will receive approximately 45% less crude from Enbridge** than their current demand.

Refined products impacts

Michigan uses about **15.75 million US gallons of transportation fuel (gas, diesel and jet fuel) every day**—and with Detroit's refining capacity meeting only about 25% of that demand, Michigan relies heavily on surrounding states like Ohio, Illinois and Indiana for its refined products.

A Line 5 shutdown would cause a **shortfall of 14.7 million US gallons of transportation fuel a day** (that's 45% of the current Enbridge supply in Michigan, Ohio, Pennsylvania, Ontario and Quebec) and a **Michigan propane shortage of 756,000 US gallons a day** (or 55% of the current supply).

That means Michigan would **need to find more than 4.2 million US gallons a day of gas, diesel, jet fuel and propane** to make up for the shortfall—assuming Ohio and other regional refineries are receiving crude oil from Line 78 at an apportioned rate of approximately 55%. If those refineries are unable to meet local needs, and stop supplying Michigan, then **that number would rise to 7.77 million US gallons a day.**

The effect on regional refineries

According to PBF Energy, which operates one of two refineries in Toledo:

- A Line 5 shutdown would put Ohio refineries at risk. The closure of one of those refineries could result in the loss **of $5.4 billion in annual economic output** to Ohio and southeast Michigan, and the **loss of thousands of direct and contracted skilled trades jobs.**
- A Line 5 shutdown would compromise crude supply to 10 refineries in the region to varying degrees, **directly affecting fuel prices.**
- Closing Line 5 would **hurt Ohio and Michigan economies**, and **threaten union jobs.**
- There are **no viable options for replacing** the volume of light crude delivered by Line 5, with **rail able to provide less than 10%** of that volume.
- A Line 5 shutdown puts **at least 15% of northwest Ohio's fuel supply at risk**, as well as more than **half of the jet fuel supplies** for the Detroit Metro Airport.

Demand on Enbridge pipelines (approximate)

Line	Kbpd	US gallons per day
Line 5 (including NGL)	500	21,000,000
Line 78	470	19,740,000
Total	**970**	**40,740,000**

Capacity of Enbridge pipelines

Line	Kbpd	US gallons per day
Line 5	540	22,680,000
Line 78	570	23,940,000
Line 78 (ex-Stockbridge)	502	21,084,000

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https://www.canada.ca/en/global-affairs/news/2021/11/minister-joly-speaks-with-united-states-secretary-of-state-antony-blinken.html

Minister Joly speaks with United States Secretary of State Antony Blinken

From: Global Affairs Canada
Readout
November 3, 2021 - Ottawa, Ontario - Global Affairs Canada

The Honourable Mélanie Joly, Minister of Foreign Affairs, today had her first bilateral call as Foreign Minister with United States Secretary of State Antony Blinken.

Minister Joly thanked Secretary Blinken for his congratulatory words on her appointment and said that she looks forward to continuing to build on Canada's strong partnership with the United States. She also welcomed the confirmation by the U.S. Senate of the new U.S. Ambassador to Canada David Cohen.

Minister Joly affirmed her commitment to furthering the implementation of the Road Map for a Renewed United States-Canada Partnership, which was announced by Prime Minister Justin Trudeau and President Joe Biden in February 2021. She noted that the forthcoming Summit for Democracy and co-operation on protecting and strengthening democracy, notably online hate, are among her immediate priorities.

Minister Joly conveyed Canada's gratitude to the United States for its support in the cases of Michael Kovrig and Michael Spavor. She stressed that the two countries need to continue co-operating on issues related to China and the Indo-Pacific.

Minister Joly and Secretary Blinken discussed the situation in Afghanistan and their countries' continued coordinated efforts to secure safe passage for Canadians, foreign nationals and Afghans.

Minister Joly welcomed the United States' reopening of its land and ferry border ports of entry to fully vaccinated Canadians on November 8, as well as U.S. recognition of mixed vaccinations. She also reiterated that it is critically important to reinforce Canada-U.S. supply chain security and strengthen our deeply interconnected and mutually beneficial economic relationship.

Minister Joly reiterated Canada's commitment to working constructively with the United States on the Line 5 issue under the auspices of the 1977 Treaty and stressed the importance of this infrastructure for Canada. She also raised concerns about the United States' current consideration of tax credits for electric vehicles. She affirmed that, as close partners with deeply integrated supply chains, particularly in the automotive sector, Canada and the United States must work together to find a mutually beneficial solution.

Minister Joly and Secretary Blinken concluded the meeting by stating that they look forward to further opportunities to advance the historic alliance and steadfast friendship enjoyed by their two countries and realize the full potential of the relationship.

https://www.state.gov/secretary-blinkens-call-with-canadian-foreign-minister-joly/

Secretary Blinken's Call with Canadian Foreign Minister Joly

READOUT **OFFICE OF THE SPOKESPERSON** NOVEMBER 3, 2021

The following is attributable to Spokesperson Ned Price:
Secretary of State Antony J. Blinken congratulated Canadian Foreign Minister Mélanie Joly today on her new appointment. The Secretary and the Foreign Minister discussed the close partnership between Canada and the United States on various bilateral and multilateral issues. Secretary Blinken noted that he looks forward to working with Foreign Minister Joly to achieve our shared goals, as outlined by President Biden and Prime Minister Trudeau in the Roadmap for a Renewed U.S.-Canada Partnership.

https://www.transmountain.com/news/2021/update-november-2021-capacity-announcement-for-the-trans-mountain-pipeline-system

Update: November 2021 Capacity Announcement for the Trans Mountain Pipeline System

Nov 1, 2021

Total system nominations for the Trans Mountain Pipeline system are apportioned by 13 per cent for November 2021. The pipeline will be running full at its maximum capacity.

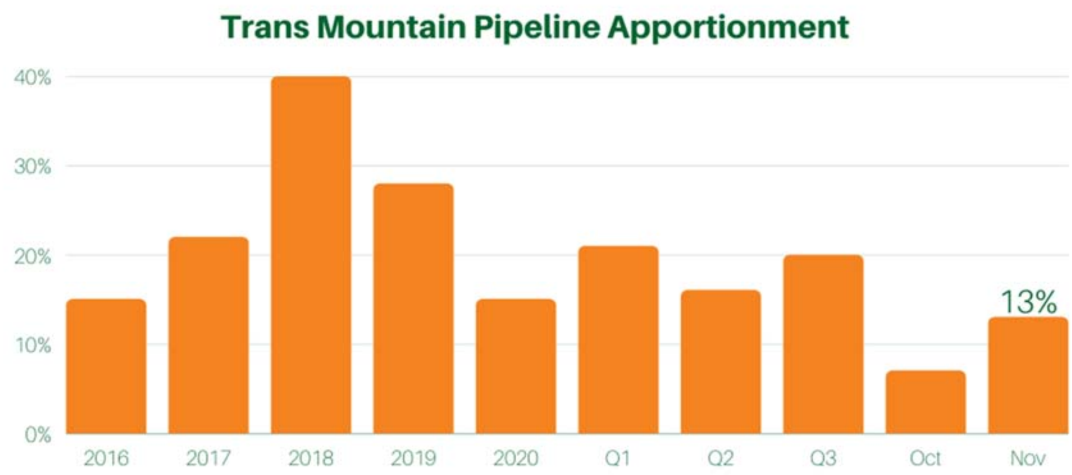
What is pipeline 'apportionment' and why is it important?

The energy sector around the world works on a monthly cycle. The Trans Mountain Pipeline is part of that cycle. Apportionment describes the amount of demand shippers place on the pipeline in excess of its available capacity. Here's a step-by-step guide to the apportionment determination that's carried out every month for the existing Trans Mountain Pipeline system.

- Each month our shippers submit requests for how much petroleum (crude oil and refined products) they want to ship through the pipeline to service their customers. These requests are called 'nominations'.
- Based on shippers' nominations, we then determine the 'capacity' available on the pipeline for the month. Determining pipeline capacity is complex. Capacity is affected by, among other things, the types of products that have been nominated, any pipeline system maintenance activities that will reduce flows that month and carry-over volumes that haven't completed their transit of the pipeline by month's end.
- Based on available pipeline capacity and the volume of shipper nominations we received, we calculate apportionment using a method accepted by the Canada Energy Regulator and forming part of our tariff. A tariff includes the terms and conditions under which the service of a pipeline is offered or provided, including the tolls, the rules and regulations, and the practices relating to specific services.
- If shipper nominations are less than pipeline capacity, the apportionment percentage to that destination is "zero" and all the product volumes nominated by shippers are accepted to be transported that month.
- If shipper nominations exceed pipeline capacity, the apportionment is a percentage greater than zero.

Trans Mountain Pipeline apportionment by the numbers

Apportionment of the Trans Mountain Pipeline system has been a regular monthly occurrence for the past decade. The chart below shows the apportionment for 2016, 2017, 2018, 2019, 2020 and apportionment to date for 2021.



When a pipeline experiences significant and prolonged apportionment like in the case of the existing Trans Mountain Pipeline, it's one signal that more capacity is needed. Apportionment can bring with it a discounting of prices as producers compete to sell what they can through the pipeline before having to use another pipeline or other modes of transport to another, less profitable market. It can also mean the buyers at the end of the pipeline are forced to source their shortfall of supply from alternate, less desirable sources.

Business case for expansion is strong

There is a strong and clear business case supporting the Trans Mountain Expansion Project. Our shippers have made long-term contract commitments ranging from 15 to 20 years that will underpin the cost of construction and the operating costs. The additional capacity offered by the expansion will be used to supply more crude oil and refined products markets in British Columbia and Washington State and to offshore markets in the Asia Pacific. Pipeline design and operations, including emergency response and preparedness for tanker movements are world-class, providing a safe and reliable supply of petroleum products to the markets served by the Trans Mountain Pipeline.

https://www.reuters.com/article/refinery-operations-shell-norco/fire-to-delay-shell-norco-louisiana-refinery-restart-sources-idUSKBN2HN2LH

ENERGY & ENVIRONMENT

NOVEMBER 2, 20215:08 PMUPDATED 10 HOURS AGO

Fire to delay Shell Norco Louisiana refinery restart -sources

By Reuters Staff
2 MIN READ

HOUSTON (Reuters) -A fire at the crude distillation unit (CDU) of Royal Dutch Shell Plc’s 230,611 barrel-per-day (bpd) Norco, Louisiana, refinery will delay the plant’s restart, sources familiar with its operations said on Tuesday.

Shell was in the process of restarting the 240,000-bpd CDU on Tuesday when the fire broke out, the sources said.

A Shell spokesperson did not reply to a request for comment about operations at the refinery.

The CDU has been shut since Aug. 28, one day before Hurricane Ida passed over the refinery, causing damage requiring a month of repairs.

In addition to the CDU, the 112,000-bpd gasoline-producing residual catalytic cracking unit (RCCU) and 40,000-bpd diesel-producing hydrocracker were also scheduled to restart this week, the sources told Reuters last week.

In addition, the 25,000-bpd coker and 40,000-bpd reformer were scheduled to restart this week, according to the sources.

The refinery completed restarting the 55,000-bpd diesel hydrotreater and two sulfur recovery units last week.

CDUs do the initial breakdown of crude oil into feedstocks for all other units at the refinery. The coker converts residual crude oil from distillation units into feedstocks to make motor fuels or petroleum coke, which can be used as a coal substitute.

Reformers convert refining by-products into octane-boosting components added to gasoline.

Reporting by Erwin Seba; editing by Chris Reese and Richard Pullin https://www.reuters.com/article/venezuela-oil-exports/venezuelas-oil-exports-bounce-to-over-700000-bpd-in-oct-data-idUSL1N2RS1LB

COMMODITIES NEWS

NOVEMBER 2, 20214:14 AMUPDATED 5 MINUTES AGO

Venezuela's oil exports bounce to over 700,000 bpd in Oct - data

By Marianna Parraga, Mircely Guanipa

2 MIN READ

(Reuters) - Venezuela's oil exports last month surpassed 700,000 barrels per day (bpd) as supplies of imported diluents boosted production and shipments, according to documents from state-run firm PDVSA and Refinitiv Eikon tracking data.

The OPEC-member country's largest oil producing region has regained its output and blending capacity in recent weeks after Iran, one of the nation's most important allies, began regularly supplying condensate for diluting the Orinoco Belt's extra heavy oil. Iranian supplies are lessening the impact of U.S. sanctions on the nation's output.

In October, PDVSA and its joint ventures shipped 30 cargos of crude and refined products, mostly to Asia, including a 2-million-barrel cargo of Merey heavy crude to pay back Iran for the condensate received.

The second cargo of Iranian condensate from the swap agreement is expected to finish discharging from the tanker Dorena at PDVSA's Jose port this month, according to the documents.

Venezuela's exports averaged 711,193 bpd in October, the third highest average so far this year and a 76% increase from September, when an acute lack of diluents forced PDVSA to cut back output and blending.

Larger shipments of residual fuel oil, methanol and petroleum coke also contributed to the exports increase last month, according to the documents and data.

The state-run oil company did not reply to a request for comment.

(For a graphic on Venezuela's monthly exports, click on: here)

Venezuela's oil exports, which along with Iran's are under U.S. sanctions designed to limit sales, have stabilized this year at around 633,000 bpd, a slight increase from the 626,000 bpd of 2020 but still a large decline from previous years when PDVSA had not been blacklisted by the U.S. Treasury Department.

Venezuela also shipped 66,000 bpd of crude and refined products to Cuba, the data showed.

Reporting by Marianna Parraga in Houston and Mircely Guanipa in Punto Fijo; Editing by Marguerita Choy

Google Translate of https://www.minenergia.gov.co/en/web/10180/historico-de-noticias?idNoticia=24316869

Gas production in Colombia registered an increase of 2% during September 2021

Minenergy. Bogotá, DC, November 4, 2021. Commercialized gas production in Colombia was 1,082 million cubic feet per day (mcfd) in September 2021, which represents an increase of 2% compared to last August (1,061 mpcpd). Compared to September 2020 (1,070 mpcpd), production recovered 1.1%.

This increase was due to a greater commercialization of gas in the Cupiagua Liria (Aguazul, Casanare), Pandereta (Caimito, Sucre), Aguas Vivas (Sahagún, Córdoba), Nelson (Pueblo Nuevo, Córdoba), Chuchupa (Manaure, La Guajira fields) and Chichimene (Acacías, Meta) due to the increase in gas demand during the month of September and the restoration of production after the scheduled maintenance of the Cupiagua gas plant.

During the first nine months of 2021, the average production of commercialized gas in Colombia registered an increase of 5.3%, reaching 1,076 million cubic feet per day (mpcpd) compared to the 1,022 mpcpd reported in the same period of 2020 .

Regarding oil production, in September 2021 it was relatively stable with a slight decrease of 0.48%, registering a production of 744,173 barrels compared to those reported last August (747,772 bpd). Regarding the production of September 2020 (749,254 bpd), there was a decrease of 0.68%.

This behavior was mainly due to scheduled maintenance and electrical failures in the Chichimene (Acacías, Arauca), Akacías, Chichimene SW (Guamal / Acacías, Meta), Jacana (Villa Nueva, Casanare), La Cira (Barrancabermeja, Santander) fields. and Caricare (Arauquita, Arauca).

In the first nine months of 2021, the average oil production reached 733,657 barrels per day, which shows a reduction of 7.05% compared to the same period in 2020, when there was a production of 789,321 barrels per day.

Finally, during September 2021, the drilling of 2 exploratory wells and 27 development wells began in Colombia, for a total of 24 exploratory wells and 287 development wells so far this year. In addition, 223.5 kilometers of equivalent 2D seismic were acquired during this month, for a total of 1,153 kilometers in the year.

https://www.opec.org/opec_web/en/press_room/6690.htm

22nd OPEC and non-OPEC Ministerial Meeting concludes

No 33/2021 Vienna, Austria 04 Nov 2021

The 22nd OPEC and non-OPEC Ministerial Meeting, held via videoconference, concluded on Thursday November 4 2021.

The meeting reaffirmed the continued commitment of the Participating Countries in the Declaration of Cooperation (DoC) to ensure a stable and a balanced oil market, the efficient and secure supply to consumers and to provide clarity to the market at times when other parts of the energy complex outside the boundaries of oil markets are experiencing extreme volatility and instability, and to continue to adopt a proactive and transparent approach which has provided stability to oil markets. In view of current oil market fundamentals and the consensus on its outlook, the Meeting resolved to:

1. Reaffirm the decision of the 10th OPEC and non-OPEC Ministerial Meeting on 12 April 2020 and further endorsed in subsequent meetings including the 19th OPEC and non-OPEC Ministerial Meeting on the 18 July 2021.

2. Reconfirm the production adjustment plan and the monthly production adjustment mechanism approved at the 19th OPEC and non-OPEC Ministerial Meeting and the decision to adjust upward the monthly overall production by 0.4 mb/d for the month of December 2021, as per the attached schedule.

3. Reiterate the critical importance of adhering to full conformity and to the compensation mechanism, taking advantage of the extension of the compensation period until the end of December 2021. Compensation plans should be submitted in accordance with the statement of the 15th OPEC and non-OPEC Ministerial Meeting.

4. Hold the 23rd OPEC and non-OPEC Ministerial Meeting on 2 December 2021.

	Dec 2021 Required Production
Algeria	962
Angola	1392
Congo	296
Eq.Guinea	116
Gabon	170
Iraq	4237
Kuwait	2558
Nigeria	1666
Saudi Arabia	10018
UAE	2885
Azerbaijan	654
Bahrain	187
Brunei	93
Kazakhstan	1556
Malaysia	542
Mexico	1753
Oman	804
Russia	10018
Sudan	69
South Sudan	118
OPEC 10	24300
Non-OPEC	15794
OPEC+	40094

https://www.opec.org/opec_web/en/press_room/6512.htm

19th OPEC and non-OPEC Ministerial Meeting concludes

No 21/2021 Vienna, Austria 18 Jul 2021

The 19th OPEC and non-OPEC Ministerial Meeting (ONOMM), held via videoconference, concluded on Sunday 18 July 2021.

The Meeting noted the ongoing strengthening of market fundamentals, with oil demand showing clear signs of improvement and OECD stocks falling, as the economic recovery continued in most parts of the world with the help of accelerating vaccination programmes.

The Meeting welcomed the positive performance of Participating Countries in the Declaration of Cooperation (DoC). Overall conformity to the production adjustments was 113% in June (including Mexico), reinforcing the trend of high conformity by Participating Countries.

In view of current oil market fundamentals and the consensus on its outlook, the Meeting resolved to:

Reaffirm the Framework of the Declaration of Cooperation, signed on 10 December 2016 and further endorsed in subsequent meetings, including on 12 April 2020.

Extend the decision of the 10th OPEC and non-OPEC Ministerial Meeting (April 2020) until the 31st of December 2022.

Adjust upward their overall production by 0.4 mb/d on a monthly basis starting August 2021 until phasing out the 5.8 mb/d production adjustment, and in December 2021 assess market developments and Participating Countries' performance.

Continue to adhere to the mechanism to hold monthly OPEC and non-OPEC Ministerial Meetings for the entire duration of the Declaration of Cooperation, to assess market conditions and decide on production level adjustments for the following month, endeavoring to end production adjustments by the end of September 2022, subject to market conditions.

Adjust, effective 1st of May 2022, the baseline for the calculations of the production adjustments according to the attached table (table 1).

Reiterate the critical importance of adhering to full conformity and taking advantage of the extension of the compensation period until the end of September 2021. Compensation plans should be submitted in accordance with the statement of the 15th OPEC and non-OPEC Ministerial Meeting.

The meeting decided to hold the 20th OPEC and non-OPEC Ministerial Meeting on 1 September 2021.

https://www.opec.org/opec_web/static_files_project/media/downloads/Table%20-%20Reference%20production.pdf

	Reference Production up to end of April 2022	Reference Production effective May 2022
Algeria	1057	1057
Angola	1528	1528
Congo	325	325
Eq.Guinea	127	127
Gabon	187	187
Iraq	4653	4803
Kuwait	2809	2959
Nigeria	1829	1829
Saudi Arabia	11000	11500
UAE	3168	3500
Azerbaijan	718	718
Bahrain	205	205
Brunei	102	102
Kazakhstan	1709	1709
Malaysia	595	595
Mexico*	1753	1753
Oman	883	883
Russia	11000	11500
Sudan	75	75
South Sudan	130	130
OPEC 10	26683	27815
Non-OPEC	17170	17670
OPEC+	43853	45485

Saudi Aramco OSP

Crude (FOB) Differentials (in US$) - DECEMBER 2021 Liftings

UNITED STATES (versus ASCI)

	NOVEMBER	DECEMBER	Change	VS. Light
Extra Light	+2.40	+2.90	+0.50	+1.15
Light	+1.25	+1.75	+0.50	0.00
Medium	+0.55	+1.05	+0.50	-0.70
Heavy	+0.10	+0.60	+0.50	-1.15

North West Europe (versus ICE Brent)

	NOVEMBER	DECEMBER	Change	VS. Light
Extra Light	-1.80	+1.50	+3.30	+1.80
Light	-2.40	-0.30	+2.10	0.00
Medium	-2.80	-1.10	+1.70	-0.80
Heavy	-3.70	-2.70	+1.00	-2.40

FAR EAST (versus Oman/Dubai)

	NOVEMBER	DECEMBER	Change	VS. Light
Super Light	+3.05	+5.85	+2.80	+3.15
Extra Light	+1.80	+4.00	+2.20	+1.30
Light	+1.30	+2.70	+1.40	0.00
Medium	+1.05	+2.35	+1.30	-0.35
Heavy	-0.10	+1.00	+1.10	-1.70

Mediterranean (versus ICE Brent)

	NOVEMBER	DECEMBER	Change	VS. Light
Extra Light	-1.10	+1.90	+3.00	+2.20
Light	-2.30	-0.30	+2.00	0.00
Medium	-3.10	-1.40	+1.70	-1.10
Heavy	-3.80	-2.70	+1.10	-2.40

SAF Group created transcript of excerpt from Gulf Intelligence PODCAST: Daily Energy Markets Forum – New Silk Road Nov 7th https://soundcloud.com/user-846530307/podcast-daily-energy-markets-3

Items in "*italics*" are SAF Group created transcript

Sean Evers, Managing Partner Gulf Intelligence

Mike Muller, Head, Vitol Asia

At 20:00 min mark, Evers. "*Just sticking with China for a second on that point of view, a shortage. Clearly they still have a huge, still have a significant amount of oil in storage from stockpiling last year, is there an ability to bring that to for crossing over to power generation? Is there enough coal? What sort of winter does China face from a shortage point of view do you think?*

Muller: *There's a few things there, Sean. Number one, China is a major part of the switching from gas to oil where that is possible. So there's a fleet of LNG trucks that don't make sense to run at spot marginal prices and therefore should be seeing themselves replaced by diesel fleets and so forth. There is coal to gas liquids manufacturing processes, which have been halted as well. China is pretty well the only place in the world that does it. China has gone through a cycle in the last few weeks where there have been shortages and embarrassments in terms of brownouts, traffic lights not working in some of the northern cities to edicts from the central government not to run out. to a depletion of the Australian coal that is still not open for trade but there were stockpiles in China and ships sitting off of China, which have all been sucked in to the tune of one million tons. And a clear build up in LNG stocks. And then there is the oil you refer to. China was going to release about 27 million barrels of oil in three phases. In three chunks of 7 million barrels each, in the months of October, November and December. And we saw the first cycle where only four and bit million barrels of the seven million barrels were awarded. only domestic companies can partake in this of course. And there is no sign of the second release, at present. And there always tends to be a bit of an overtone on price on this, but, if China had a conviction of sticking to what they were going to do , we would have seen the second tender by now. And we have not yet seen it. so my personal view is that China is very much in an inventory building mode because they don't want to be caught short in a colder winter. And they have had extremely high domestic prices. I mean for a couple of weeks in October, China had the world's highest LNG, coal, diesel and gasoline prices. And they very successfully talked this down by policy and by edict a couple weeks back such that the steam got taken out of the whole thing. But you cannot move markets by words, in the end its all about inventories and about behaviour at the spot end of the market. But yes. watch this space. China is very much in a state of flux on NDRC rhetoric and directives versus real demand. And as I said a few minutes ago, there is a bit of a standoff in crude markets where the Chinese buyers for the January trading cycle haven't come to the table yet and are now faced with offers that are $1 or $2 a barrel higher at differentials vs Brent and Dubai than they were a month ago. And the view on the street is they will buy it because they need to."*

Evers: "*They will buy it because they need to. That's not a good position to be in if you are a buyer*".

Prepared by SAF Group https://safgroup.ca/news-insights/

Nov 03, 2021 06:42:35

OIL DEMAND MONITOR: Indian Diesel Sales Show Fossil Fuel Allure

- PetroChina sees refined-products demand at pre-Covid levels
- China, U.S. airline seat capacity both about 11-12% below

By Stephen Voss

(Bloomberg) -- India's demand for diesel rose back above pre-pandemic levels in an awkward affirmation of the attraction to fossil fuels at a time when world leaders are focused on curbing greenhouse gas emissions. Elsewhere, Chinese air travel took another step backward amid new coronavirus restrictions.

Sales of diesel in October by India's three biggest fuel retailers were 1.3% higher than the same month in 2019, strengthened by rising economic activity and a seasonal festival, according to officials with direct knowledge of the data. Gasoline and LPG sales in the country also exceeded two years ago.

As world leaders gather at the COP26 climate-change conference in Glasgow, Norway's climate and environment minister said western Europe's largest petroleum exporter wants to play a role in the transition from oil and gas, but people are still buying the products.

"We actually want this process to go faster," Norway's Espen Barth Eide said in an interview on Bloomberg TV. "The problem is on the demand side -- that we have to change our demand for oil, gas, and coal."

The amount of crude oil fed into refineries in the U.S. and China -- the world's two biggest consumers -- shows consumption not far off pre-pandemic levels. Indeed, executives at state-run PetroChina said in an earnings call on Oct. 29 that China's demand for refined products has rebounded to pre-Covid levels.

U.S. refineries used 85.1% of available capacity in the week ended Oct. 22, just 2.6 percentage points shy of the same week in 2019, government data showed. In China, the Oct. 29 utilization rate of independent refiners in the Shandong region was 6.4% above 2019 while state-run refiners in eastern and southern China were 4.6 points below and 3.4 points above, respectively, according to Chinese researcher SCI99.

Other ways of estimating demand show the U.S. appetite for oil-based fuels is still not quite back to normal. Total oil product supplied -- a rough estimation of U.S. demand -- was 19.83 million barrels a day in the week ended Oct. 22, some 8.4% less than the same week of 2019, according to the Energy Information Administration. The EIA will report new weekly data later Wednesday.

Among 11 world cities regularly tracked in this monitor at 8 a.m. local time on Monday mornings, London, Berlin and New York are emerging as the locations with the busiest traffic conditions when compared against 2019 readings for the same time of the week. Congestion in the two European capitals was 2%-3% higher than the pre-pandemic year while New York was just 2% below, according to data collected by TomTom NV.

The All Saints Day and All Souls Day holidays, which follow after Halloween, meant that many cities in Europe and South America had zero or negligible congestion early this week.

Air Travel

Jet fuel remains the laggard among petroleum fuels since it is heavily reliant on the free movement of people between regions and nations.

European air traffic narrowed the deficit to 2019 levels to 20%, compared with 28% at the start of October, though this was largely due to a drop in flight numbers around this time of year in 2019 rather than any notable recent increase in travel, data from Eurocontrol show.

Globally, the number of seats offered by airlines dropped a little in the latest week of data from OAG Aviation. The schedule has 77.8 million seats this week, which is 0.8% less than last week and about 27% lower than where it was for the same week in 2019.

New travel restrictions caused another significant drop in China and its seat capacity is now 11.3% below where it was two years ago, which is a similar statistic to the U.S., which is 11.7% below this week in 2019. Some U.S. airlines continue to struggle with staff shortages, though there are also positive signs with Thailand ending quarantine for vaccinated visitors from more than 60 countries.

READ MORE: Thailand's Big Reopening Set to Test Pandemic-Era Tourism

The OAG data carves up the world into 17 areas. The region with the smallest seat capacity decline versus 2019 is Central America at 9.4% below and all the rest have a deficit smaller than 40% except for Southwest Pacific at 67% and Southeast Asia at 72%.

The Bloomberg weekly oil-demand monitor uses a range of high-frequency data to help identify trends that may become clearer later in more comprehensive monthly figures.
Following are the latest indicators. The first two tables show fuel demand and mobility, the next shows air travel globally and the fourth is refinery activity:

Demand Measure	Location	% y/y	% vs 2019	% m/m	Freq	Latest Date	Latest Value	Source
Gasoline	U.S.	+9.1	-4.7	-0.8	w	Oct. 22	9.32m b/d	EIA
Distillates	U.S.	-8.8	-9.2	-2.6	w	Oct. 22	3.87m b/d	EIA
Jet fuel	U.S.	+43	-21	+1.8	w	Oct. 22	1.45m b/d	EIA
Total oil products	U.S.	+1	-8.4	-2.7	w	Oct. 22	19.8m b/d	EIA
All vehicles miles traveled	U.S.		+1		w	Oct. 18-24	16.4b miles	DoT
Passenger car VMT	U.S.		-3		w	Oct. 18-24	n/a	DoT
Truck VMT	U.S.		+14		w	Oct. 18-24	n/a	DoT
All motor vehicle use index	U.K.	+10	-4	+1.1	d	Oct. 25	96	DfT
Car use	U.K.	+11	-8	+1.1	d	Oct. 25	92	DfT
Heavy goods vehicle use	U.K.	+1	+6	-0.9	d	Oct. 25	106	DfT
Gasoline (petrol) avg sales per filling station	U.K.	+3.9	-14	-25	m	Oct. 18-24	6,252 liters/d	BEIS
Diesel avg sales per station	U.K.	-1.1	-13	-19	m	Oct. 18-24	9,097 liters/d	BEIS
Total road fuels sales per station	U.K.	+0.9	-14	-22	m	Oct. 18-24	15,348 liters/d	BEIS
Gasoline	India		+8.2	+5.8	2/m	Oct. 1-31	2.49m tons	Bberg
Diesel	India		+1.3	+20	2/m	Oct. 1-31	5.86m tons	Bberg
LPG	India		+6.6	+6	2/m	Oct. 1-31	2.51m tons	Bberg
Jet fuel	India		-34	+16	2/m	Oct. 1-31	435k tons	Bberg
Total Products	India	+5.2	-1.7	+0.1	m	September	15.9m tons	PPAC
Toll roads volume	Italy	+18	-2.8		w	Oct. 18-24	n/a	Atlantia
Toll roads volume	Spain	+40	-1.2		w	Oct. 18-24	n/a	Atlantia
Toll roads volume	France	+10	-3.7		w	Oct. 18-24	n/a	Atlantia
Toll roads volume	Brazil	unch	+0.6		w	Oct. 18-24	n/a	Atlantia
Toll roads volume	Chile	+32	+95		w	Oct. 18-24	n/a	Atlantia
Toll roads volume	Mexico	+9.5	+6.3		w	Oct. 18-24	n/a	Atlantia

Passenger car traffic	Poland	+3	+4	-10	m	September	24,062	GDDKiA
Heavy goods traffic	Poland	+5	+9	+6	m	September	4,786	GDDKiA
All vehicles traffic	Italy	+5.7		-7.1	m	September	n/a	Anas
Heavy vehicle traffic	Italy	+5.7		+25	m	September	n/a	Anas
Gasoline	Portugal	+5.8	+9.4	-12	m	September	91k tons	ENSE
Diesel	Portugal	+1.8	+4	-2.5	m	September	411k tons	ENSE
Jet fuel	Portugal	+67	-41	-5	m	September	95k tons	ENSE
Gasoline	Spain	+17	+5.2		m	September	498k m3	Exolum
Diesel	Spain	+12	-0.4		m	September	2272k m3	Exolum
Jet fuel	Spain	+128	-41		m	September	421k m3	Exolum

Note: Click here for a PDF with more information on sources, methods. The frequency column shows d for data updated daily, w for weekly, 2/m for twice a month and m for monthly.
* In Dff U.K. data, the column showing versus 2019 is actually showing the change versus the first week of February 2020, to represent the pre-Covid era.
** In BEIS U.K. data, which is only released once per month, the column showing versus 2019 is actually showing the change versus the average of Jan. 27-March 22, 2020, to represent the pre-Covid era.

City congestion:

Measure	Location	% chg vs 2019	% chg m/m	Nov. 1	Oct. 25	Oct. 18	Oct. 11	Oct. 4	Sep. 27	Sep. 20	Sep. 13	Sep. 6
		(Nov. 1)				Congestion minutes added to 1 hr trip at 8am local time						
Congestion	Tokyo	-11	-2	33	34	35	12	34	35	0	32	28
Congestion	Mumbai	-85	-25	5	7	6	1	7	11	12	11	10
Congestion	New York	-2	-14	31	38	33	8	35	31	35	39	0
Congestion	Los Angeles	-29	-7	25	25	29	23	27	30	28	31	2
Congestion	London	+3	-10	39	19	34	44	43	53	44	44	37
Congestion	Rome	-100	-100	0	41	40	64	44	53	55	41	31
Congestion	Madrid	-100	-100	0	32	37	3	41	35	35	33	20
Congestion	Paris	-93	-94	3	42	47	49	52	52	53	52	49
Congestion	Berlin	+2	-11	34	35	19	20	38	31	29	32	38
Congestion	Mexico City	-72	-52	14	29	28	28	29	26	29	28	27
Congestion	Sao Paulo	-69	-54	13	27	35	10	29	26	26	27	10

Source: TomTom. Click here for a PDF with more information on sources, methods.
NOTE: m/m comparisons are Nov. 1 vs Oct. 4. All Souls Day probably reduced Monday traffic in Rome, Madrid, Paris, Mexico City and Sao Paulo because it was a holiday in those cities on either Nov. 1 or Nov. 2. TomTom has been unable to provide Chinese data since late April.

Air Travel:

Measure	Location	% chg y/y	% chg vs 2019	% chg m/m	Freq.	Latest as of Date	Latest Value	Source
Airline passenger throughput	U.S.	+135	-7.2	+8.2	d	Nov. 1	1.99m people	TSA
Commercial flights	Worldwide	+39	-18	-2.8	d	Nov. 1	93,044	FlightRadar24
Air traffic (flights)	Europe		-20	-7.4	d	Nov. 1	22,027	Eurocontrol
Seat capacity	Worldwide	+40	-27		w	Nov. 1	77.8m	OAG
Seat cap.	U.S.	+68	-12		w	Nov. 1	n/a	OAG
Seat cap.	China	-8	-11		w	Nov. 1	n/a	OAG
Seat cap.	India	+57	-17		w	Nov. 1	n/a	OAG
Seat cap.	Spain	+147	-19		w	Nov. 1	n/a	OAG
Seat cap.	Japan	+4.8	-42		w	Nov. 1	n/a	OAG
Seat cap.	U.K.	+117	-38		w	Nov. 1	n/a	OAG
Seat cap.	Germany	+137	-39		w	Nov. 1	n/a	OAG
Seat cap.	Brazil	+41	-22		w	Nov. 1	n/a	OAG
Seat cap.	Mexico	+44	-5.6		w	Nov. 1	n/a	OAG
Seat cap.	France	+135	-18		w	Nov. 1	n/a	OAG
Seat cap.	Australia	+33	-69		w	Nov. 1	n/a	OAG
Seat cap.	S. Africa	+56	-36		w	Nov. 1	n/a	OAG
Seat cap.	Singapore	+129	-79		w	Nov. 1	n/a	OAG

NOTE: Comparisons versus 2019 are a better measure of a return to normal.

Refineries:

Measure	Location/area	y/y chg	vs 2019 chg	m/m chg	Latest as of Date	Latest Value	Source
		Changes in ppt unless noted					
Crude intake	U.S.	+12%	-5.9%	-2.4%	Oct. 22	15m b/d	EIA
Utilization	U.S.	+11	-2.6	-3	Oct. 22	85.1 %	EIA
Utilization	U.S. Gulf	+12	-5.5	-2.2	Oct. 22	84.2 %	EIA
Utilization	U.S. East	+10	+17	-14	Oct. 22	76.6 %	EIA
Utilization	U.S. Midwest	+4.6	-1.1	-4.2	Oct. 22	89.0 %	EIA
Apparent Oil Demand	China	-2%		-2.8%	September 2021	13.23 b/d	NBS
Indep. refs run rate	Shandong, China	-1.5	+6.4	+4.5	Oct. 29	72.6 %	SCI99
State refs run rate	East China	-2.1	-4.6	-3.7	Oct. 29	77.8 %	SCI99
State refs run rate	South China	-0.4	+3.4	-3.5	Oct. 29	80.7 %	SCI99

NOTE: All of the refinery data is weekly, except for SCI99 state refineries, which is twice per month, and the NBS apparent demand, which is usually monthly. Changes are shown in percentage point except for the rows on crude intake and apparent oil demand, which are shown in percent change.

PMI

Caixin China General Manufacturing PMI Press Release

2021.10

财新 Caixin

Caixin China General Manufacturing PMI™

Demand conditions improve, but power shortages weigh on output in October

Chinese manufacturers noted an improvement in demand during October, but power shortages and rising costs weighed on production, according to latest PMI data. Limited power supply and material shortages also dampened supplier performance, with lead times increasing at the fastest rate since March 2020. As a result, inflationary pressures intensified, with average input prices rising at the sharpest rate since December 2016, while the pace of output charge inflation also accelerated notably since September.

The headline seasonally adjusted *Purchasing Managers' Index™ (PMI™)* – a composite indicator designed to provide a single-figure snapshot of operating conditions in the manufacturing economy – picked up from 50.0 in September to 50.6 in October, to signal a renewed improvement in the health of China's manufacturing sector. Although only slight, the rate of expansion was the strongest recorded since June.

Stronger demand conditions helped to lift the headline PMI, with total new orders rising to the greatest extent in four months. Panel members often mentioned that client demand had improved over the month. However, underlying data indicated that the upturn was largely driven by stronger domestic demand, as foreign orders fell for the third month in a row. Some manufacturers mentioned that difficulties securing sales and shipping products to overseas clients had weighed on export business.

Despite rising amounts of overall new work, manufacturers recorded a third successive monthly decline in production, albeit one that was only mild. Panel members often indicated that limited power supply, material shortages and rising costs had constrained output at the start of the fourth quarter.

Lower production contributed to a further drop in manufacturing sector employment in October. That said, the rate of job shedding eased to a marginal pace. At the same time, backlogs of work expanded for the eighth month in a row, though the rate of accumulation was modest overall.

In line with the trend for output, buying activity fell in October. Anecdotal evidence indicated that reduced production and high purchasing costs had led firms to cut back on input buying. As a result, companies depleted their inventories of inputs for the fourth month in a row, and at the fastest rate since March 2020. Meanwhile, stocks of finished goods fell for the first time in three months.

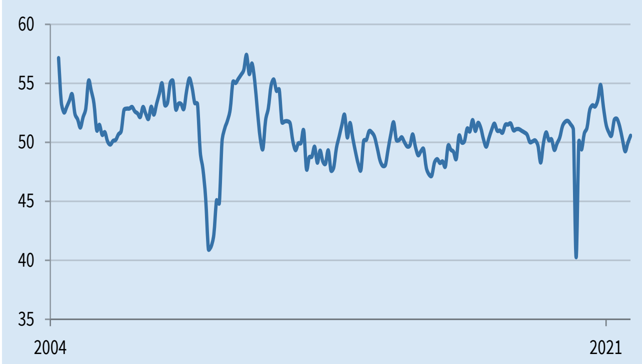
Supply chain delays became more widespread in October, with average lead times for inputs increasing at the fastest rate since March 2020. There were reports that a lack of stock at vendors and reduced power supply drove the latest deterioration in supplier performance.

Higher costs for materials, energy and transport drove a sharper rise in average input prices in October. The rate of inflation was the steepest seen since December 2016 and rapid overall. Consequently, output charges also rose at a notably quicker rate during October.

Chinese manufacturers were generally optimistic that output will rise over the next 12 months, though the degree of positive sentiment eased slightly since September. Some firms expressed concerns over ongoing supply chain disruptions and rising costs.

China General Manufacturing PMI

sa, >50 = improvement since previous month



Sources: Caixin, IHS Markit

Key findings:

Strongest increase in total new work for four months

Production falls modestly amid reports of rising costs and reduced power supply

Average lead times increase at fastest rate since March 2020

New Export Orders Index

sa, >50 = growth since previous month

Sources: Caixin, IHS Markit

Employment Index

sa, >50 = growth since previous month

Sources: Caixin, IHS Markit

Commenting on the China General Manufacturing PMI™ data, Dr. Wang Zhe, Senior Economist at Caixin Insight Group said:

"The Caixin China General Manufacturing PMI came in at 50.6 in October, up from 50 the previous month and returning to expansionary territory. In the past 18 months, the index only dropped below 50 once, in August.

"The manufacturing sector featured a combination of strong demand and weak supply last month. Output shrank for the third consecutive month, and at a faster clip than the previous month. Power cuts and rationing, raw material shortages and commodity price hikes were the reasons behind the supply contraction. Demand continued to recover with the subindex for total new orders rising further into expansionary territory. Overseas demand remained sluggish as new export orders dropped for the third straight month.

"The job market remained stable, though it shrank slightly due to weak supply. The gauge for employment had stayed in contractionary territory for three consecutive months.

"Inflationary pressure remained high. Input costs rose for the 17th month in a row, with the growth rate accelerating to the highest since December 2016. Raw material and energy prices rose sharply, pushing up manufacturers' costs. Transportation costs also increased. The measure for output prices jumped to the highest in five months as enterprises raised prices to pass their higher costs downstream. Increases in prices charged by producers of intermediate products were particularly substantial.

"Suppliers' delivery times rose sharply as the power crunch and raw material shortages disrupted logistics. The gauge for delivery times hit the lowest point since March 2020. Manufacturers cut purchases due to multiple factors including weak supply, the power crunch and raw material shortages. Last month, the gauges for quantity of purchases and stocks of purchases declined to the lowest since February 2020 and March 2020, respectively.

"Surveyed manufacturers remained optimistic about the outlook for business and market demand, but some expressed worries about the nominalization of supply chains.

"To sum up, manufacturing recovered slightly in October from the previous month. But downward pressure on economic growth continued. We noticed that the pandemic's impact on manufacturing faded from late September to mid-October as the number of new Covid-19 cases dropped, which boosted demand. However, supply strains became the paramount factor affecting the economy. Shortages of raw materials and soaring commodity prices, combined with electricity supply problems, created strong constraints for manufacturers and disrupted supply chains. Input costs for manufacturers have risen much faster than output prices for several months, putting a lot of pressure on downstream enterprises.

"Policymakers should not only take effective measures to stabilize commodity supplies and prices, but also pay close attention to downstream firms, especially small and midsize ones. In addition, a new wave of Covid-19 outbreaks has reappeared in many central and western regions since late October, which means re-emerging economic disruptions. It is critical to balance the goals of controlling the outbreaks and maintaining normal economic activity."

Survey methodology

The Caixin China General Manufacturing PMI™ is compiled by IHS Markit from responses to questionnaires sent to purchasing managers in a panel of around 500 private and state-owned manufacturers. The panel is stratified by detailed sector and company workforce size, based on contributions to GDP. For the purposes of this report, China is defined as mainland China, excluding Hong Kong SAR, Macao SAR and Taiwan.

Survey responses are collected in the second half of each month and indicate the direction of change compared to the previous month. A diffusion index is calculated for each survey variable. The index is the sum of the percentage of 'higher' responses and half the percentage of 'unchanged' responses. The indices vary between 0 and 100, with a reading above 50 indicating an overall increase compared to the previous month, and below 50 an overall decrease. The indices are then seasonally adjusted.

The headline figure is the Purchasing Managers' Index™ (PMI). The PMI is a weighted average of the following five indices: New Orders (30%), Output (25%), Employment (20%), Suppliers' Delivery Times (15%) and Stocks of Purchases (10%). For the PMI calculation the Suppliers' Delivery Times Index is inverted so that it moves in a comparable direction to the other indices.

Underlying survey data are not revised after publication, but seasonal adjustment factors may be revised from time to time as appropriate which will affect the seasonally adjusted data series.

For more information on the survey methodology, please contact: economics@ihsmarkit.com.

Survey dates and history

Data were collected 12-21 October 2021.

Data were first collected April 2004.

About PMI

Purchasing Managers' Index™ (PMI™) surveys are now available for over 40 countries and also for key regions including the eurozone. They are the most closely watched business surveys in the world, favoured by central banks, financial markets and business decision makers for their ability to provide up-to-date, accurate and often unique monthly indicators of economic trends.

https://ihsmarkit.com/products/pmi.html

About Caixin

Caixin is an all-in-one media group dedicated to providing financial and business news, data and information. Its multiple platforms cover quality news in both Chinese and English. Caixin Insight Group is a high-end financial research, data and service platform. It aims to be the builder of China's financial infrastructure in the new economic era.

Read more: https://www.caixinglobal.com/index/

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About IHS Markit

IHS Markit (NYSE: INFO) is a world leader in critical information, analytics and solutions for the major industries and markets that drive economies worldwide. The company delivers next-generation information, analytics and solutions to customers in business, finance and government, improving their operational efficiency and providing deep insights that lead to well-informed, confident decisions. IHS Markit has more than 50,000 business and government customers, including 80 percent of the Fortune Global 500 and the world's leading financial institutions.

Disclaimer

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SHELL U.S. STORM UPDATES

2021 Storm Season

- **Updated : Nov 05, 2021 08:00**

Hurricane Ida- Update #21

Shell Louisiana

(ISSUED AT 08:00 AM CST) Following further repairs to our West Delta 143 (WD-143) "A" offshore facility, operated by Shell Pipeline Company LP, we are now able to begin production from our Mars and Ursa assets in the Mars Corridor. Our other Gulf of Mexico assets, Appomattox, Olympus, Enchilada/Salsa, Auger, Perdido and Stones are all producing.

The Shell Norco Manufacturing Complex continues the process of restarting units and plans to be fully operational by mid-November.

As always, Shell's top priority is the safety of our people, the environment, and our assets.

To find out more about our hurricane preparedness, please visit the Shell Hurricane Center: **www.shell.us/stormcenter**.

Hurricane Ida- Update #21

https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/10/31/remarks-by-president-biden-at-press-conference-in-rome-italy/

Remarks by President Biden at Press Conference in Rome, Italy

OCTOBER 31, 2021•SPEECHES AND REMARKS

La Nuvola Rome, Italy

8:24 P.M. CET

THE PRESIDENT: Please, sit down. I apologize for keeping you waiting. We were playing with elevators. (Laughs.) Long story.

Anyway, good evening. I believe we've had a series of very productive meetings in the past few days, and I'm looking forward to continuing to make progress on critical global issues that we — as we head off to Glasgow.

Because of what we've seen again here in Rome, what I think is the power of America showing up and working with our allies and partners to make progress on issues that matter to all of us. And there's really no substitute for face-to-face discussions and negotiations among the leaders when it comes to building an understanding and cooperation.

I found in all of my meetings here, both the larger sessions and the one-on-one sessions — and I had many of those — a real eagerness among our partners and allies for American leadership to help bring the world together and solve some of these big problems.

I found my one-on-one engagements with so many of the leaders, and the importance of strong, personal relationships never feels — it never ceases to amaze me when it's — you're looking at someone straight in the eye when you're trying to get something done. They know me; I know them. We can get things done together.

And so, I want to thank the Italian people, by the way, for the G20, for their hospitality, and congratulate Prime Minister Draghi. He did one heck of a job leading the G20 through a difficult year marked by great global challenges, critically among them: ending the pandemic; driving a broad-based, sustainable global economic recovery; and tackling the climate crisis. I believe we made tangible progress on each of these issues, in part because of the commitment that the United States has brought to the table.

For example, I'm proud that the G20 endorsed the global minimum tax. This is something the United States has been driving for for over a year, building momentum up to this achievement. And this is an incredible win for all our countries.

Instead of nations competing against one another to attract investments by bottoming out corporate tax rates, this set a minimum floor of 15 percent to ensure that giant corporations begin to pay their fair share, no matter where they're headquartered, instead of hiding — hiding profits overseas.

We also agreed to establish a fund in the future that — for — countries can draw on to help prevent, if necessary, and respond to the next pandemic, prepared for the next time around.

Yesterday, together with Prime Minister Johnson and Merkel and Macron — President Macron, we came together to reiterate our shared belief that diplomacy — diplomacy is the best way to prevent Iran from gaining a nuclear weapon, and we discussed how best to encourage Iran to resume serious, good-faith negotiations.

I also wanted to note that, even as I've been here in Rome, as you might guess — and some of you, I suspect, do the same thing — American reporters — I've been focused on the vital issues that affect American workers and families at home.

I just finished meeting with a broad coalition of partners on how to address the immediate supply chain backlogs and dealing that — that the world has been dealing with and facing, and we're facing back at home, and how to make sure we have access to all the products we need — from shoes, to furniture, to electronics, to automobiles — to make sure that we talk about how better to secure ourself against these future shocks, whether a pandemic, climate change, or other disasters.

And the Build Back Better framework — which is, God willing, going to be voted on as early as — sometime this coming week — that I announced on Thursday includes, for the first time ever, sever- — several billion dollars to help strengthen the supply chains to make sure we have access to everything we need.

And it's going to give workers and folks making all these products just a little bit of breathing room. The Build Back Better will also — is going to make it easier for them to afford everything from childcare while they are at work, for their kids; two years of free high-quality preschool.

And finally, today I was proud to announce, together with our close part- — EU partners, another critical win for both American workers and the climate agenda.

The United States and the European Union have agreed to negotiate the world's first trade agreement based on how much carbon is in a product, as we negotiated the steel and aluminum tariffs that were in place.

We made agreement and, I might add, strong support of the U.S. steelworkers back home. And I want to thank them. I want to thank Tom Conway, who I spoke to today, president of the United Steelworkers, for his partnership in arriving at this deal.

The deal will immediately remove a point of significant tension with our friends in the European Union. And it rejects the false idea that we cannot grow an economy and support American workers while tackling the climate crisis at the same time.

We're talking about a lot — a lot during the G20, the COP26. But we also know tackling the climate crisis has been a all-hands-on-deck effort. American workers are a critical part of the solution.

And now I'm happy to take some questions. And I'm told I should start with AP, Zeke Miller. Zeke, you have a question?

Q   Thank you, Mr. President.

THE PRESIDENT: I didn't recognize you with the maks [sic] on — mask on. I apologize.

Q   Thank you, Mr. President. Here in Rome, you've tried to showcase that America is back. But back at home, your poll numbers have fallen. Your party's nominee for governor of Virginia is facing a very tough — a tougher-than-expected race. Your party spent months trying to negotiate the centerpiece of your Democrat — of your domestic legislative agenda.

We're one year now since your election. What — and you have done a lot in your year in office to try to turn the page on the last administration. But we've seen how presidents can turn the page very quickly from one to the other. So why should the world believe that when you say "America is back," that really it's here to stay?

THE PRESIDENT: Because of the way they reacted. You were here. They listened. Everyone sought me out. They wanted to know what our views were. And we helped lead what happened here.

It's just very simple: You know, if you're honest — you are honest; I didn't mean to imply you weren't — but that we were — we got significant support here. Significant support. We're the most — the United States of America is the most critical part of this entire agenda, and — and we did it.

And, by the way, look, the polls are going to up and down and up and down. They were high early, then they got medium, then they went back up, and now they're low.

Well, look, this is — look at every other president; the same thing has happened. But that's not why I ran. I didn't run to determine how well I'm going to do in the polls. I ran to make sure that I followed through on what I said I would do as President of the United States.

And I said that I would make sure that we were in a position where we dealt with climate change; where we moved in a direction that would significantly improve the prospects of American workers being able to have good jobs and good pay; and further, that I would make sure that we dealt with the crisis that was caused by COVID. We've done all of those; we continue to do them. And we'll see what happens.

But I'm not running because of the polls.

Next question was from Jeff Mason — for Jeff Mason of Reuters.

Q Thank you, Mr. President. A question on climate and energy. Can the world and others be confident that you will be able to follow or do — make good on the promises on climate change that you will — that you have made, when you're at Glasgow, without a vote having taken place on your bill?

And on the same topic, climate: Some NGOs are already saying that the G20 commitments today were underwhelming. How do you respond to their criticism that the G20 response is not a good sign for COP26?

THE PRESIDENT: I'll answer both questions.

Number one, I believe we will pass my Build Back Better plan, and I believe we will pass the infrastructure bill. Combined, they have $900 billion in climate resistance — in dealing with climate and resilience. And it's the largest investment in the history of the world that's ever occurred, and it's going to pass, in my view. But we'll see. We'll see.

You know, you've all believed it wouldn't happen from the very beginning, the moment I announced it, and you always seem amazed when it's alive again. Well, you may turn out to be right; maybe it won't work. But I believe we'll see by the end of next week, at home, that it's passed.

With regard to the — and, by the way, that infrastructure bill delivers an awful lot of things in terms of everything from tax credits for electric vehicles, to making sure we are able to invest, literally, billions of dollars in everything from highways, roads, bridges, public transit, airports, et cetera. But we'll see.

And with regard to the disappointment: The disappointment relates to the fact that Russia and — and — and including not only Russia, but China, basically didn't show up in terms of any commitments to deal with climate change. And there's a reason why people should be disappointed in that. I found it disappointing myself.

But what we did do — we passed a number of things here to end the subsidization of coal. We made commitments here from across the board, all of us, in terms of what we're going to bring to the ~~G26~~ [COP26].

And — and, I think, you know, as that old ba- — that old trite saying goes, "The proof of the pudding will be in the eating." I think you're going to see we've made significant progress and more has to be done. But it's going to require us to continue to focus on what China is not doing, what Russia is not doing, and what Saudi Arabia is not doing.

Q One follow-up on energy, sir. You also met with energy consumers about supply. What steps are you considering taking if OPEC Plus does not raise supply? And do you see any irony in pushing them to increase oil production at the same time that you're going to COP26 to urge people to lower emissions?

THE PRESIDENT: Well, on the surface, it seems like an irony, but the truth of the matter is — you've all known; everyone knows — that the idea we're going to be able to move to renewable energy overnight and not have — from this moment on, not use oil or not use gas or not use hydrogen is just not rational.

Certain things we can wipe out and we don't have to do. We should be moving immediately to get rid of — as they've adopted here my proposal — to end methane, to deal with a whole range of things.

But it does, on the surface, seem inconsistent, but it's not at all inconsistent in that no one has anticipated that this year we'd be in a position — or even next year — that we're not going to use any more oil or gas; that we're not going to be engaged in any fossil fuels. We're going to stop subsidizing those fossil fuels. We're going to be making significant changes.

And it just makes the argument that we should move more rapidly to renewable energy — to wind and solar and other means of energy.

But the idea that we're just going to end and somehow — but it does, on the surface, I admit to you. We're going to COP to deal with renewable energy, and I'm saying, "Why are you guys cutting off oil and raising the price just to make it look harder for us?" But it's a legitimate question.

I think, though, that if anybody thinks about it, no one ever thought that tomorrow — for example, it's going to take us between now and 2030 to have half the vehicles in America electric vehicles. So, the idea we're not going to need gasoline for automobiles is just not realistic. But we will get to the point that, by 2050, we have zero emissions.

Jim? Jim Tankersley, New York Times.

Q Thank you so much. I'd like to actually start by following up on Jeff's question and then ask you about supply chains as a follow-up to that.

But on the question of oil prices, economists say that, you know, when you raise the price of something, people will consume less of it. So why not allow even middle-class people around the world to pay more for gasoline in the hope that they would consume fewer fossil fuels and emit less?

THE PRESIDENT: Well, because they have to get to their work. They have to get in an automobile, turn on the key, get their kids to school. The school buses have to run. That's the reason why. You know that, Jim. That's the reason.

The idea that we can — that there's an alternative to walk away from being able to get in your automobile is just not realistic; it's not going to happen. And this wasn't intended to happen.

And, by the way, when — when — when the cost of a gallon of gasoline gets to above three hundred and — three hundred — $3.35 a gallon, it has profound impact on working-class families just to get back and forth to work. So, I don't see anything inconsistent with that.

But I do think that the idea that Russia and Saudi Arabia and other major producers are not going to pump more oil so people can have gasoline to get to and from work, for example, is — is — is not — is not right. But — and what we're considering doing on that, I'm reluctant to say before I have to do it.

Q And then on supply chain, sir: One of the, obviously, big problems in the United States for supply chains is not having enough workers, not enough people to drive trucks to unload at ports, for example, and a lot of other parts in the supply chain. Workers have not returned to the labor force in America as fast as your administration thought they would. Why do you think that is? Why aren't people coming back to work?

THE PRESIDENT: Because they're able to negotiate for higher wages, and they move from one job to another. That's one of the reasons why. A lot of people don't want to continue to do the job they did before, making 7, 8, 9 bucks an hour. An awful lot of the auto — excuse me, of the truck drivers are not unionized truck drivers. They're working like hell and not getting paid a whole lot.

And so what you're seeing here is a combination of the desire of people to be able to change professions, to be able to do more and take care of their families, and at the same time, dealing with the issue that, in fact, we are short of workers.

But worker pay has actually gone up. And we've employed 6 million people just since I got elected. So, employment is up. The economy is actually, in spite of all this, still growing. You have the significant number of — I forget the number; I think it was close to six- — 16 major economists acknowledging that what's going to happen is you're going to see continued economic growth under our proposals.

You had a total of 14 — I think it was 14 — Nobel laureate economists in economics saying this is going to — what I'm proposing is going to reduce the — the inflation, et cetera.

So, there's a lot going on. This — look, we really are — I know you're tired of hearing me say this — we really are at one of inflection points in history. So much is changing. So many pieces on the table are moving. And how they get resettled depends upon the judgments we make and whether or not the United States, among others, can lead the world in a direction that's going to increase the circumstances for a higher standard of living for workers here and abroad, as well as making sure that people have an opportunity. As I said — again, I use the phrase — "just have a little breathing room."

I meant what I said when I ran. My desire was to build this economy from the bottom up and the middle out, not from the top down. And that's what's in process of happening.

But in the meantime, there's been enormous changes as a consequence of COVID on the supply chains because why — why are we having trouble? An awful lot of the very factories and — and operations that, in fact, produced material that we need for supply chains, in everything from shoes to — to dealing with computer chips, you know, they're out sick; they're not working.

And so, it's changing. The economy is changing, and the United States has to stay ahead of the curve. That's why I introduced the infrastructure bill. That's why I also introduced the Build Back Better initiative.

The Washington Post, Seung Min Kim. Where — where are — there you are. I'm sorry. I couldn't see you.

Q   That's okay. Thank you, Mr. President.

On Iran: How will you determine whether the Iranians are serious about rejoining the nuclear talks, as they have indicated they will do by the end of November?

And what costs are you prepared to impose on Iran if it continues to carry out attacks against the United States, such as the recent drone strikes against U.S. forces in Syria?

THE PRESIDENT: Well, in a sense, they're two different issues. One is whether or not we get to the JCPOA — we rejoin that. And — and that depends — that's why I had the meetings with my colleagues here in — in Rome, who are part of the — the original group of six people — six nations that got together to say that we should negotiate a change, which I found that I think we're continuing to suffer from the very bad judgments that President Trump made in pulling out of the JCPOA.

And so, that's one issue. And that issue is going to depend on — whether and how that gets resolved is going to depend on their action and the willingness of our friends, who are part of the original agreement, to stick with us and make sure there's a price to pay economically for them if they fail to come back.

With regard to the issue of how we're going to respond to actions taken by them against the interests of the United States — whether they're drone strikes or anything else — is we're going to respond, and we're going to continue to respond.

ABC, Cecilia Vega.

It's hard to see you guys with a mask on. I apologize.

Q   And the masks are making my glasses fog up, so I apologize too.

Thank you, sir. On climate change: You just mentioned the incentives you have on renewable energy in your Build Back Better plan. You do have a number of incentives, but as it stands right now, there are no punitive measures in this plan to hold these companies accountable. And many experts firmly believe that you've got to have the stick along with the carrot in order to get to your goal to reduce emissions by 2030 by 50 percent. So can you stand here today and say to the world that you definitively will still meet that goal?

THE PRESIDENT: Yes, I can. Because what we're proposing and what we've initiated is everything from getting the automobile makers to — to commit to going all electric, number one. Getting the unions to agree to do that as well. Making sure we have the investment in battery technology that requires us to have the ability to generate electric vehicles, electric buses, electric transportation grids. Making sure that we are dealing with everything from — let me go through some of these: that we have tax credits for — of $320 billion for dealing with alternatives by people getting a tax credit for moving on — on solar panels, on wind, and a whole range of other things, and winterizing their properties.

I — I don't think you're going to need any — any punitive action to get people to step up and do those things. There's been no indication that's the case at all. With regard to, you know, the — there's a total of $555 billion in climate and — I'm just checking the numbers; make sure I'm right — and — climate investment, in terms of resilience.

We're now — it's very much in the interest of — of the industry to see to it that we move to making sure that we have the resilience to be able to, when those towers come down and the lines end up hitting the ground and burning down large swathes of — swaths of the West, to bury this underground.

There's a whole range of things. I don't think we're going to have to — everybody knows which direction it's going. And there's no indication that there has to be a punitive effort to get people to react the way in which we have to do — at least I don't believe so.

Q And a follow-up, sir, if I may. On your meeting with Pope Francis: The more than 50 million Catholics back at home are seeing something play out that has never happened before: this split in the conservative wing of the Catholic Church moving to deny someone like you, a Catholic president, the sacrament of Communion.

For these Catholics back home, what did it mean for you to hear Pope Francis, in the wake of this — in the middle of this debate, call you a good Catholic? And did what he tell you — should that put this debate to rest?

THE PRESIDENT: Look, I'm — I'm not going to — a lot of this is just personal. Pope Francis has become a — I don't want to exaggerate — has become a — someone who has provided great solace for my family when my son died.

He has — he is, in my view — there's always been this debate in the Catholic Church, going back to Pope John the 23rd, that talk about how we reach out and embrace people with differences.

If you notice what — what the Pope said when he was asked when he first got elected Pope — he was traveling with the press, and they said, "What's your position on homosexuals?" He said, "Who am I to judge?"

This is a man who is of great empathy. He is a man who understands that part of his Christianity is to reach out and to forgive. And so I just find my relationship with him one that I personally take great solace in. He is a really, truly genuine, decent man.

And I'll end by saying that, you know, there were an awful lot of people who — and many of you — I'm not — I'm not putting you in this position; I apologize — but many of you who are even in the press who went out of your way to express your empathy and sympathy when I lost the real part of my soul, when I — when my — when I lost my Beau, my son.

And I — my family will never forget — my extended family. Because when I had come — it was only a matter of days since my son had passed away, and Pope Francis came to the United States to visit with the — with not only President Obama but with — with the Catholic Church here. And I was asked if I would accompany him to Philadelphia, to the seminary, and — anyway.

And I did, but it was — the wounds were still raw of the loss of my son. And I had my extended family — and you're all tired of seeing my extended family; they're always — they're always around — my grandchildren, my children, my wife, my daughters-in-law.

And before he left and got on the plane, the Pope asked whether or not he could meet with my family. And we met in a hangar in — at the Philadelphia Airport. And he came in and he talked to my family for a considerable amount of time — 10, 15 minutes — about my son, Beau.

And he didn't just generically talk about him; he knew about him. He knew what he did. He knew who he was. He knew where he went to school. He knew what he — he knew what a man he was. And it had such a cathartic impact on his children and my wife and our family that it — it meant a great deal.

And as — I meant what I said — everybody was laughing; I didn't realize you all were able to film what I was doing with the Pope when I gave him a command coin. And — and I meant what I said: I — this is a man who is someone who is looking to establish peace and decency and honor, not just in the Catholic Church, but just generically.

When I won, he called me to tell me how much he appreciated the fact that I would focus on the poor and focus on the needs of people who were in trouble. And — and so, I — I just — again, I don't want to talk more about it, because so much of it is personal, but I'm — he is — he is everything I learned about Catholicism from the time I was a kid going from grade school through high school.

And I have great respect for people who have other religious views, but he is — he's just a fine, decent, honorable man. And I — he — and we keep in touch.

I thank you all very, very much for your patience. Thank you. Thank you.

Q   Mr. President, do you have commitments from Sinema and Manchin? Sir, do you have commitments from Sinema and Manchin? Just a “thumbs up.”

(The President gives a “thumbs up” as he departs.)

Q   Thumbs up!

8:50 P.M. CET

https://www.ft.com/content/8385f5d8-b045-46a7-a822-47a9ba09e219

Macron warns of threat to global economy from energy crisis

French president urges world leaders to act on climate change with more financial pledges ahead of COP26 summit

Leila Abboud in Paris and Leslie Hook in London YESTERDAY

President Emmanuel Macron has warned that an energy crisis threatens the world's post-pandemic recovery, calling for leaders at a G20 summit in Rome this weekend to work together to stabilise supplies.

In an interview, the French president also urged bigger financial commitments towards the fight against global warming on the eve of the COP26 climate summit in Scotland, and for particular attention to be paid to a deal to phase out coal power.

The G20 needed to co-ordinate between energy producers and consuming countries to prevent a supply breakdown this winter, which risked "extreme tensions both economically and socially", Macron said.

"In the coming weeks and months, we need to get better visibility and stability on prices so tension on the energy prices doesn't generate uncertainties, and undermine the global economic recovery, " he told the Financial Times in the Elysée Palace. "What we expect is to have co-ordination to avoid soaring prices."

Global energy costs have surged this year, disrupting industry and hitting consumers with higher prices. Eurozone inflation surged in October to a 13-year-high of 4.1 per cent, according to a flash estimate published by the EU's statistics arm on Friday.

"I don't think we're going to be able to lower prices given tensions on the demand side," Macron said. "But what we need to avoid is to have a break in supply [and further] increases in prices, particularly as we're moving into the winter period for the northern hemisphere."

Emmanuel Macron: 'I don't think we're going to be able to lower [gas] prices given tensions on the demand side' © Magali Delporte/FT

Rapid economic recovery from the pandemic has pushed up energy prices "almost too rapidly" which risked "weighing on economic growth and putting a burden on households", Macron said.

France and a number of other EU governments have sought to protect consumers and businesses with billions in aid and price freezes.

Concerns have mounted that Russia's state-backed gas producer Gazprom has kept storage levels unusually low in western Europe, exacerbating fears over supplies and driving up prices.

Asked whether he blamed high European energy prices on Russia, Macron said: "I have no evidence that there's been manipulation of prices and I'm not accusing anybody. These are trading relations. They shouldn't be used for geopolitical reasons."

Asked about Gazprom's power over Europe, Macron said: "It's not a matter of whether we're too dependent on a company or not, it's how do we create alternatives. And the only alternatives are to have European renewables and of course, European nuclear."

France is the EU's biggest user of nuclear power, contrasting with a move away from atomic power by Germany and some other countries.

Macron called for Europe to develop a more diverse gas supply but also to speed up a transition away from fossil fuels, which will be necessary to slow rising temperatures and tame the climate disruptions caused by global warming.

“What is happening now is ironic, because we are building a system where in the medium and long term fossil energy will cost more and more, that’s what we want [to fight climate change],” he said. “The problem is that industries and households will need to be accompanied in this transition . . . or it won’t be sustainable.”

The French president, who is facing national elections in April, has been a vocal advocate of multilateralism. He has pushed for more co-operation globally and at EU level to reach deals on issues including international taxation and global warming.

“The first subject for the G20 is to accelerate the exit from coal power” Emmanuel Macron

Against a backdrop of global tensions, a supply chain crisis and the Covid-19 pandemic, Macron said the G20 had a responsibility to work together, especially to help low-income countries. He urged leaders at the Rome summit to agree a plan for faster vaccine delivery to developing countries.

“France has always stressed the importance of maintaining multilateralism, but we have to get concrete results from it,” he said.

The leaders of China, Russia and Japan will not attend the summit in Rome in person this weekend because of Covid-19 concerns and an election in Japan.

Macron said the G20 meeting, which is being hosted by Italian leader Mario Draghi on the eve of COP26, would also give countries a chance to hammer out more ambitious plans to fight climate change.

“When we’ll be meeting in Rome, the major challenge is to ensure that members of G20 can usefully contribute in Glasgow, to making this COP26 a success,” he said. “Nothing can be taken for granted before a COP,” he added.

“The first subject for the G20 is to accelerate the exit from coal power,” he said. G20 leaders expect a heated debate this weekend over including a pledge to end international coal financing.

“We need the G20 to go right through to the eradication of all international financing of coal-fired power plants,” Macron said.

Macron also called for rich countries, particularly the US, to commit more financially to help developing countries meet their climate goals. And he called on China to bring forward the date at which it will peak emissions, from 2030, to 2025.

“So as not to lose more time, we have to do as much as is absolutely possible in terms of financing, and encourage the US administration so that they can convince Congress to front-load its financing.”

Another issue will be to hold countries to their emissions targets for 2030 and 2050. “Our objective is to get maximum results from all countries,” he said. “This pathway is possible, even if it’s a challenge, especially for emerging countries which at the same time are trying to recover from the Covid crisis.”

Macron also urged the G20 leaders to do more to help vaccinate the world against Covid-19. The group should end vaccine export bans, increase its donations of vaccine doses, and support vaccine production in Africa, he said.

“Every French person has given one vaccine to somebody else in the world,” he said, referring to the roughly 60m doses that were on the way to Covax, the World Health Organisation’s procurement scheme for low-income countries. “If everybody in the G20 could do that we would get to the 20 per cent of the population vaccinated. This is vital,” he said.

https://www.epa.gov/newsreleases/us-sharply-cut-methane-pollution-threatens-climate-and-public-health

U.S. to Sharply Cut Methane Pollution that Threatens the Climate and Public Health

November 2, 2021

Contact Information EPA Press Office (press@epa.gov)

WASHINGTON (Nov. 2, 2021) Today, the U.S. Environmental Protection Agency (EPA) took an important step forward to advance President Biden's commitment to action on climate change and protect people's health by proposing comprehensive new protections to sharply reduce pollution from the oil and natural gas industry – including, for the first time, reductions from existing sources nationwide. The proposed new Clean Air Act rule would lead to significant, cost-effective reductions in methane emissions and other health-harming air pollutants that endanger nearby communities. As part of today's action, to inform a supplemental proposal, EPA is seeking comment on additional sources of methane to further strengthen emission controls and increase reductions from oil and gas operations. EPA is issuing the proposal in response to President Biden's Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis.

"As global leaders convene at this pivotal moment in Glasgow for COP26, it is now abundantly clear that America is back and leading by example in confronting the climate crisis with bold ambition," **said EPA Administrator Michael S. Regan**. "With this historic action, EPA is addressing existing sources from the oil and natural gas industry nationwide, in addition to updating rules for new sources, to ensure robust and lasting cuts in pollution across the country. By building on existing technologies and encouraging innovative new solutions, we are committed to a durable final rule that is anchored in science and the law, that protects communities living near oil and natural gas facilities, and that advances our nation's climate goals under the Paris Agreement."

One third of the warming from greenhouse gases occurring today is due to human-caused emissions of methane, a potent greenhouse gas that traps about 30 times as much heat as carbon dioxide over 100 years, and sharp cuts over the next decade will have a near-term beneficial impact on the climate. In the United States, the oil and natural gas industry is the largest industrial source of methane emissions, emitting more methane than the total emissions of all greenhouse gases from 164 countries combined. Oil and natural gas operations also emit smog-forming volatile organic compounds (VOCs) and toxic air pollutants such as benzene that harm public health.

The proposal builds on the work of leading companies that are using the latest cost-effective technology to reduce methane emissions in the field and leverages lessons from the work of some major oil- and gas- producing states that require, or are proposing to require, oil and gas operations to reduce methane emissions. EPA analyzed the proposed rule's impact on natural gas and oil prices from 2023 to 2035 and estimates that changes would be small – pennies per barrel of oil or thousand cubic feet of gas.

The proposed rule would reduce 41 million tons of methane emissions from 2023 to 2035, the equivalent of 920 million metric tons of carbon dioxide. That's more than the amount of carbon dioxide emitted from all U.S. passenger cars and commercial aircraft in 2019. In 2030 alone, the rule would reduce methane emissions from sources covered in the proposal by 74 percent compared to 2005.

Pollution from oil and gas activities can occur in or near communities where people live, work and go to school – including minority and low-income communities, which are especially vulnerable to the effects of climate change. Based on an analysis of populations exposed to oil and gas pollution, EPA believes the proposed rule is likely to reduce these harmful effects.

EPA's Regulatory Impact Analysis estimates the value of cumulative net climate benefits from the proposed rule, after taking into account the costs of compliance as well as savings from recovered natural gas, is $48 to $49 billion from 2023 to 2035 - the equivalent of about $4.5 billion a year. The climate benefits are estimated using the social cost of greenhouse gases and represent the monetary value of avoided climate damages associated with a decrease in emissions of a greenhouse gas. In addition to these benefits, EPA estimates that from 2023 to 2025, the proposal would reduce VOC emissions by 12 million tons and hazardous air pollution by 480,000 tons.

It would accomplish this through 1) updated and broadened methane and VOC emission reduction requirements for new, modified, and reconstructed oil and gas sources, including standards that limit emissions from additional types of sources (such as intermittent vent pneumatic controllers, associated gas, and well liquids unloading) for the first time under the Clean Air Act; and 2) requirements that states develop plans to limit methane emissions from hundreds of thousands of existing sources nationwide, along with presumptive standards for existing sources to assist in the planning process.

Key features of the proposed rule include:

- a comprehensive monitoring program for new and existing well sites and compressor stations;
- a compliance option that allows owners and operators the flexibility to use advanced technology that can find major leaks more rapidly and at lower cost than ever before;
- a zero-emissions standard for new and existing pneumatic controllers (with a limited alternative standard for sites in Alaska), certain types of which account for approximately 30 percent of current methane emissions from the oil and natural gas sector;
- standards to eliminate venting of associated gas, and require capture and sale of gas where a sales line is available, at new and existing oil wells;
- proposed performance standards and presumptive standards for other new and existing sources, including storage tanks, pneumatic pumps, and compressors; and
- a requirement that states meaningfully engage with overburdened and underserved communities, among other stakeholders, in developing state plans.

EPA also is requesting information on additional sources of methane for the Agency to consider in developing a supplemental proposal to reduce emissions even further. In addition, EPA is taking comment on how to structure a community monitoring program that would empower the public to detect and report large emission events for appropriate follow-up by owners and operators for possible further development in a supplemental proposal. EPA intends to issue the supplemental proposal in 2022, and to issue a final rule before the end of 2022.

As it developed the rule, EPA conducted extensive public outreach to hear from the public and diverse perspectives including states, Tribal nations, communities affected by oil and gas pollution, environmental and public health organizations, and representatives of the oil and natural gas industry, all of which provided ideas and information that helped shape and inform the proposal.

EPA will take comment on the proposed rule for 60 days after it is published in the Federal Register. The Agency also will hold a virtual public hearing, and will host virtual trainings to help communities, Tribes and small businesses learn more about the proposed rule and participating in the public comment process. Those trainings begin November 16.

Excerpts from EPA Presentation “Reducing Methane from the Oil and Natural Gas Source Category”
https://www.epa.gov/system/files/documents/2021-11/epas-proposed-oil-and-gas-rules.presentation-11.2.2021.pdf

Finding and Repairing Methane Leaks at New and Existing Well Sites and Compressor Stations

- Focus monitoring efforts on sites and equipment that are **most likely to have large emissions**

Larger well sites (estimated emissions ≥ 3 tons per year): Must monitor for leaks **at least once every three months** and promptly repair any leaks found	**Smaller well sites** (estimated emissions < 3 tons per year): Must conduct a **one-time survey** to demonstrate no leaks or malfunctions; ongoing monitoring not required	EPA is co-proposing requirement that well sites with estimated emissions between 3 and 8 tons per year be monitored semi-annually, rather than quarterly
All new and existing **compressor stations** would monitor and repair leaks **at least once every three months**	Surveys must include inspections of equipment most **prone to large leaks and malfunctions**, including storage vessels and flares	Sources on the Alaska North Slope would have different monitoring schedules to account for weather

Encouraging Innovation by Incorporating Advanced Measurement Technologies

- **To find major leaks rapidly and at a lower cost**, many stakeholders have expressed strong support for the use of **advanced measurement technologies**
- EPA’s proposal includes **an alternative to the proposed fugitive monitoring requirements**, allowing owners and operators to use these advanced technologies to detect leaks at all well sites and compressor stations (including well sites with estimated emissions < 3 tons per year)

Any technology capable of meeting a rigorous minimum detection threshold would be permitted	Leak surveys and follow-up repairs using these advanced technologies would be required at least once every two months	To ensure smaller leaks are detected, surveys must be supplemented by annual monitoring using optical gas imaging or EPA Method 21

- EPA is taking comment on whether this advanced measurement technology pathway is the best system of emission reduction and should be required for all well sites and compressor stations

Transitioning to Zero-Emitting Technologies for Pneumatic Controllers

- EPA proposes to:

Regulate emissions from **intermittent** vent pneumatic controllers for the first time

Require all new and existing pneumatic controllers in production, processing, and transmission and storage facilities to have **zero methane and VOC emissions**, with the exception of sites in Alaska that do not have power

- Natural gas-driven pneumatic controllers are currently used extensively in production, processing, and transmission and storage facilities
  - The vast majority of these emissions come from intermittent vent controllers that are currently unregulated under the Clean Air Act
  - Multiple zero-emitting alternatives to these pneumatic controllers exist, and several major oil and gas-producing states and Canadian provinces now require their use at new and existing facilities

Eliminating Venting of Associated Gas from Oil Wells

- EPA's proposal would:

Eliminate venting of associated gas from oil wells and requires at least a 95 percent reduction in methane and VOC emissions from associated gas that cannot be captured and sold

Ensure that flares are operating properly through recordkeeping and reporting requirements

- Oil wells frequently produce large amounts of associated natural gas
  - In many areas, there is no sales line for this associated gas, so producers vent or flare the gas
  - This venting, currently unregulated under the Clean Air Act, releases large amounts of methane into the air (nearly 40,000 tons in 2019 alone)

Strengthening Requirements for Storage Tanks

- EPA's proposal would add storage tank batteries (groups of tanks that are adjacent and receive fluids from the same source) to the definition of a storage tank covered by the rule

For **new, modified, and reconstructed storage tanks or tank batteries** with a potential to emit **6 or more tons of VOC per year**, owners/operators would have to reduce VOC and methane emissions by 95 percent

Under the proposed presumptive standard, **existing storage tanks or tank batteries** with a potential to emit of **20 tons of methane per year or greater**, owners/operators would have to control their emissions by 95 percent

Excerpt from https://www.lecho.be/dossiers/cop26/frans-timmermans-nous-disons-au-monde-de-mettre-un-prix-au-carbone/10343902.html

INTERVIEW

Frans Timmermans: "We are telling the world to put a price on carbon"

Full screen view

FRÉDÉRIC ROHART

Today at 01:30

The "Mr. Climate" of the European executive therefore does not want to add his voice to this concert of remonstrances, but nonetheless underlines that it is in the process of going to the Conference of the Parties on Sunday - " I find it indefensible that there is no tax on kerosene, ”he bursts into flames when we broach the subject. "I find it unbearable that we have five - five! - daily flights between Amsterdam and Brussels, while we have an excellent fast train connection", he abounds, warning that if the sector does not move, the Commission will release the pen to legislate. We are on the 11th floor of the Berlaymont, where the First Vice-President of the Commission welcomes us for a collective interview, along with five other European newspapers.

What is your assessment of the Leaders' Summit at the start of COP26?

I am quite pleasantly surprised by the two management days in Glasgow. **We now have their statements, their announcements, we can use them very usefully in the negotiations** to have more concrete results in the weeks to come. We have very encouraging commitments, including that of India: huge quantities of renewable energies will be deployed, which has a major impact on the global transition.

China, the world's largest emitter, was not represented by its president… Why does it seem so difficult to have it on board at the moment?

I had a very long meeting with China's chief negotiator, Mr. Xie Zhenhua, last week. It gave me reason to be optimistic about what we can still achieve in the next two weeks.

"We need to know when [the Chinese] are going to start reducing their greenhouse gas emissions."

Of course, it would have been a clearer signal if President Xi Jinping had been present, but I wouldn't draw the conclusion from his absence that China does not intend to make significant strides in Glasgow. **They are much more positive on charcoal than I anticipated.** They are ambitious on the transition to renewable energies. But we need to know when they are going to start reducing their greenhouse gas emissions. They said "before 2030", but 2029 or 2025 makes a huge difference!

What do you still hope for from COP26?

Just before the conference, the commitments of nations led to a warming of 2.7 ° C. **I would like that at the end of COP26, we would be able to say: we are in the territory of the Paris Agreement** , we can stay well below 2 ° C and we still have a chance to reach 1.5 ° C.

What about the funding gap for developing countries, which expected $ 100 billion a year from 2020?

It is a question of credibility, it is a promise that has not yet been kept. According to OECD calculations, we will reach 100 billion in 2023. In the days to come, it will be up to **us to find ways of saying that we will achieve it next year** . Then we have to talk about how we use this money. Private financing is directed in particular towards emission reduction projects. So there is a greater responsibility of the public authorities on adaptation measures.

Europe pleads at the COP to create a global carbon market: how much do you count on it to mobilize green investments?

If you want to decarbonize, you have to put a price on carbon. There are different ways to do this. In industry, we have chosen to do this through a market system. It worked for us, and we believe it can also work to reduce transportation emissions and increase the energy efficiency of buildings. So we say to the world: **if you want to decarbonize, put a price on carbon.**

Our work for the creation of "Fit for 55" (the roadmap to achieve 55% reduction in emissions by 2030) has taught us that while it is easy to declare carbon neutrality for half of the century, it's much more difficult to map how you're going to get there. And that if we want to get there, we have to put a price on carbon. This, by the way, puts into perspective the need for a border carbon adjustment mechanism (CBAM).

You are betting on the market, but will it be enough? Or after the European recovery plan, should Europe launch new public investment plans?

The transition must happen at an unprecedented pace, investments must arrive quickly. So I think that public money will also be necessary.

"e need to create the best possible conditions for public and private investment to get to the right place quickly."

And you have to look - we do - what that means for our state aid and competition rules. And we have to look at the rules that govern economic and monetary union: are they still appropriate when we need large and rapid investments? This is the contribution that the Commission can give to the debate on how the next architecture should be designed. **We need to create the best possible conditions for public and private investment to get to the right place quickly.**

Nuclear power is on the rise in several Member States: how do you get this momentum?

We all know that nuclear energy has the considerable advantage of not emitting carbon, but we also know that it has disadvantages: the issue of waste, risk, and cost, which is considerable.
"We will support any member state that decides to go nuclear, that is our job. I just hope people will make rational decisions."

Especially when you take into account that renewables are getting cheaper and cheaper, while nuclear power is likely to get a bit more expensive. We will support any Member State which decides to choose nuclear power, that is our task. **I just hope people will make rational decisions.** Do the math! This is my hope.

The Commission must clarify its position on the taxonomy which defines the investments which can be categorized as "green". According to a press leak, nuclear and gas are in the project: will they stay there?

We have not yet made a decision, we will do so in a few weeks. Nuclear power is by no means green in the sense that it would be sustainable: there is a necessary fuel and waste. **The principle of green energy is that it does not need fuel and does not produce waste.** As for natural gas, your country is a good example: if you want renewable energies, in the transition you may need natural gas. You need to define its importance as transitional equipment, and you also need to avoid being locked into natural gas forever.

Does the energy price crisis have an impact on the will to move forward on the European Green Deal?

In politics there is always a risk that on the basis of a temporary crisis decisions will be taken which have undesirable long-term consequences. I therefore applaud the caution with which the European Council approaches this issue. Of which gasoline remains: the faster you make your transition to renewable energies, the sooner you limit the consequences of high gas prices. **So accelerating this transition is the best political response.** Are you asking me if the Green Deal is in danger https://pm.gc.ca/en/news/news-releases/2021/11/01/prime-minister-trudeau-announces-enhanced-and-ambitious-climate

Prime Minister Trudeau announces enhanced and ambitious climate action to cut pollution at the COP26 summit

November 1, 2021
Glasgow, United Kingdom

Since signing the historic Paris Agreement in 2015, the Government of Canada has taken significant action to address climate change. As a climate leader, Canada has put in place measures to reduce pollution to work toward meeting our Paris commitments, and achieving a net-zero economy by 2050. As the world shifts to a cleaner and greener economy, Canada will continue to take a leadership role in the fight against climate change, so we can keep creating new middle class jobs across all sectors and building a better future for everyone.

The Prime Minister, Justin Trudeau, today announced Canada's ambitious and enhanced plans to support the global phase-out of thermal coal, help developing countries transition to clean fuel alternatives as quickly as possible, and reduce pollution in the oil and gas sector.

Ending coal power emissions is one of the single most important steps the world must take in the fight against climate change. That is why the Prime Minister today announced that Canada is working toward ending exports of thermal coal by no later than 2030. The ban would follow action already taken, including accelerating the phasing out of conventional coal-fired electricity in our country by 2030, and putting in place investments of more than $185 million to support coal workers and their communities through the transition to cleaner energy.

To further support the global community's efforts to phase out coal-fired electricity, the Prime Minister also announced up to $1 billion for the Climate Investment Funds Accelerated Coal Transition Investment Program, through Canada's international climate finance contribution, to help developing countries transition from coal-fired electricity to clean power as quickly as possible. This investment will lead to the successful implementation of country-level strategies and associated kick-start projects, build support at the local and regional levels, and accelerate the retirement of existing coal mines and coal power plants, while enabling new economic activities and contributing to a socially inclusive and gender equal transition. In addition, the Prime Minister announced $25 million in funding to the Energy Sector Management Assistance Program, a partnership with the World Bank. This will help develop and implement clean energy alternatives, and support low- and middle-income countries in the transition to a cleaner economy.

Canada is among the world's biggest oil and gas producers, and all Canadians have benefitted from the sector's contributions to our economy. As our country and the world move to clean energy alternatives, we need the sector to continue to adapt, which will spur innovation and help create the jobs of the future. The Prime Minister today announced that Canada is the first major oil-producing country moving to capping and reducing pollution from the oil and gas sector to net zero by 2050. To help do this at a pace and scale needed to achieve the shared goal of net zero by 2050, the government will set 5-year targets, and will also ensure that the sector makes a meaningful contribution to meeting Canada's 2030 climate goals. In a letter sent today from Ministers Guilbeault and Wilkinson, the government is seeking the advice of the Net-Zero Advisory Body on how best to move forward on this approach.

Canada is leading the way toward a clean energy future by finding real solutions that the world is seeking. Together with Canadians, global partners, and industry, the government will continue to tackle the climate crisis so we can create new middle class jobs and build a better, cleaner future for everyone.

Quotes

"Climate action can't wait. Since 2015, Canada has been a committed partner in the fight against climate change, and as we move to a net-zero future, we will continue to do our part to cut pollution and build a cleaner future for everyone. Together, we will beat this crisis while creating a green economy and new middle class jobs for Canadians."

Rt. Hon. Justin Trudeau, Prime Minister of Canada
"Since the world came together for the Paris climate agreement in 2015, Canada has taken great strides in the fight against climate change – but there's still much work to be done. With our global partners, we will continue to play a constructive leadership role to move from ambitious hopes to realizing the benefits to our environment. Together, we will create jobs, build healthy communities, and transition to net zero."

Hon. Steven Guilbeault, Minister of Environment and Climate Change

Quick Facts

- Coal-fired electricity is responsible for 20 per cent of global greenhouse emissions.
- Moving away from coal will improve overall public health by creating cleaner, more breathable air. A recent analysis found that more than 800,000 people around the world die each year from the pollution generated by burning coal.
- Canada's electricity generation mix is already one of the cleanest in the world. But by phasing out coal-fired electricity, Canada will cut carbon pollution by nearly 13 million tonnes in 2030, representing a significant step toward reaching Canada's national target of reducing emissions by 40 to 45 per cent below 2005 levels by 2030.
- Canada is the fourth largest producer and third largest exporter of oil in the world. The oil and gas sector is the largest contributor to Canada's greenhouse gas emissions, accounting for about 25 per cent of total emissions.
- In 2020, Canada released its strengthened climate plan, *A Healthy Environment and a Healthy Economy*, to accelerate emissions reductions and build a stronger, cleaner, more resilient and inclusive economy, putting in place some of the actions Canada will take to reach to net-zero emissions by 2050.
- The Climate Investment Funds Accelerated Coal Transition Investment Program will support both public sector utilities and private sector operators with the relevant toolkit for transition, as appropriate and consistent with national priorities and Nationally Determined Contributions.
- The World Bank Energy Sector Management Assistance Program provides support to low- and middle-income countries to encourage low carbon development through a wide range of sustainable energy solutions.

Associated Links

Shell launches $1.4B fund to back companies in energy transition
2021-11-03 18:00:29.640 GMT

(Houston Chronicle)

Royal Dutch Shell, the Hague-based oil major, on Wednesday said it has set up a $1.4 billion fund to support innovative companies working to accelerate energy transition.

The fund, dedicated to start-up and scale-up companies over the next six years, is part of the oil giant's efforts to reach a net-zero target. Those efforts also include investments in renewable energy, storage and utilization, mobility, transportation and logistics, circular economy, and nature-based solutions, the company said.

"Our dedicated investment in venturing is testament to our commitment to do more and further support visionary entrepreneurs and innovators across industries," CEO Ben van Beurden said in a statement. "This is especially vital to the growth we're striving for in our Renewables & Energy Solutions business."

ROYAL DUTCH SHELL: Shell sets one of oil industry's most ambitious targets to end flaring

Shell is increasing its initiatives to reduce its carbon footprint as oil companies face continuing pressure from governments, corporations and consumers over climate change. In May, a Dutch court ordered Shell to cut its greenhouse gas emissions by 45 percent by 2030.

"As a company, we have invested and supported the start-up ecosystem for decades," Beurden said. "Our unique approach to venturing, with a focus on technology deployment, has enabled many of our portfolio companies to develop strategic relationships with Shell businesses. A win-win in my book, as Shell gets accelerated access to innovative technologies and business models, while our portfolio companies are able to achieve scale."

Nov/03/2021 18:00 GMT

To view this story in Bloomberg click here:
https://blinks.bloomberg.com/news/stories/R20COTBP34SN

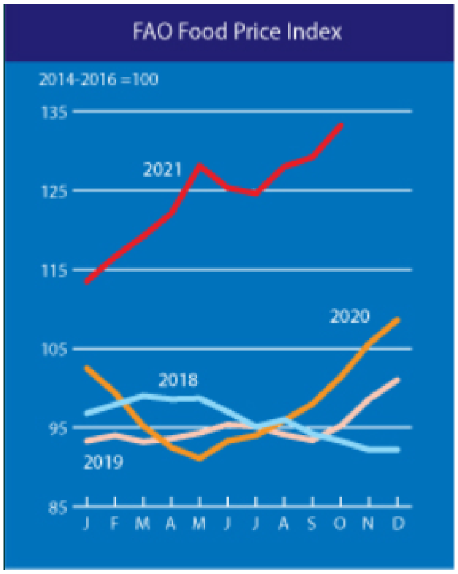
https://www.fao.org/worldfoodsituation/foodpricesindex/en/

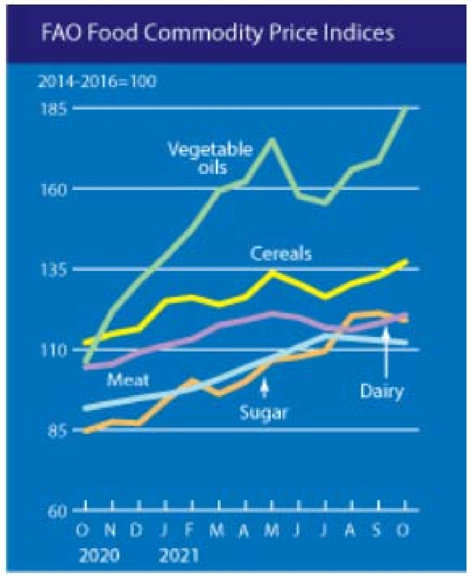
FAO Food Price Index

The FAO Food Price Index (FFPI) is a measure of the monthly change in international prices of a basket of food commodities. It consists of the average of five commodity group price indices weighted by the average export shares of each of the groups over 2014-2016. A feature article published in the June 2020 edition of the Food Outlook presents the revision of the base period for the calculation of the FFPI and the expansion of its price coverage, to be introduced from July 2020. A November 2013 article contains technical background on the previous construction of the FFPI.

The FAO Food Price Index at its highest since July 2011

Release date: 04/11/2021





» The **FAO Food Price Index** (FFPI) averaged 133.2 points in October 2021, up 3.9 points (3.0 percent) from September and 31.8 points (31.3 percent) from October 2020. After rising for three consecutive months, the FFPI in October stood at its highest level since July 2011. The latest month-on-month increase was primarily led by continued strength in the world prices of vegetable oils and cereals.

» The **FAO Cereal Price Index** averaged 137.1 points in October, up 4.3 points (3.2 percent) from September and 25.1 points (22.4 percent) above its level one year ago. International prices of all major cereals increased month-on-month. World wheat prices continued to surge for a fourth consecutive month, rising by a further 5 percent in October, to stand 38.3 percent higher year-on-year, and reaching their highest level since November 2012. Tighter availability in global markets due to reduced harvests in major exporters, especially Canada, the Russian Federation and the United States of America, continued to put upward pressure on prices. Reduced global supplies of higher quality wheat, in particular, exacerbated the pressure, with premium grades leading the price rise. Among coarse grains, international barley prices increased the most in October, underpinned by strong demand, reduced production prospects and price increases in other markets. World maize prices also firmed, supported by gains in energy markets. However, increased seasonal supplies and easing of port disruptions in the United States of America limited the increase in maize values. International rice prices also edged up further in October, although the onset of main crop harvests in various Asian suppliers capped the increases.

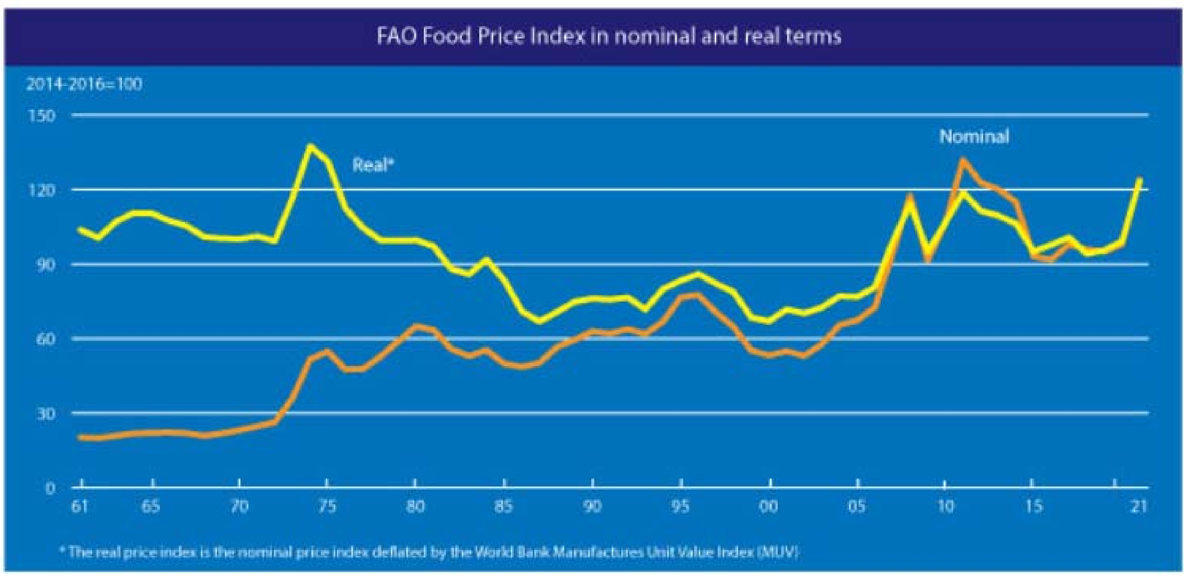
» The **FAO Vegetable Oil Price Index** averaged 184.8 points in October, up 16.3 points (or 9.6 percent) month-on-month and marking an all-time high. The increase was driven by firmer price quotations for palm, soy, sunflower and rapeseed oils. International palm oil prices increased for a fourth consecutive month in October, largely underpinned by persisting concerns over subdued output in Malaysia due to ongoing migrant labour shortages. In the meantime, world prices of palm, soy and sunflower oils received support from reviving global import demand, particularly from India that lowered import tariffs further on edible oils. As for rapeseed oil, the continued strength in international values chiefly stemmed from protracted global supply-demand tightness. Noticeably, rising crude oil prices also lent support to vegetable oil values.

» The **FAO Dairy Price Index** averaged 120.7 points in October, up 2.6 points (2.2 percent) from September and 16.2 points (15.5 percent) above its level in the corresponding month a year ago. In October, international price quotations for butter, skim milk powder and whole milk powder rose steeply for the second consecutive month, underpinned by firm global import demand amid buyers' efforts to secure supplies to build stocks. Seasonally low milk supplies and tight inventories in Europe and a slower start than earlier anticipated to the new milk production season in Oceania also lent support to world milk prices. By contrast, cheese prices remained largely stable, as supplies from major producers were adequate to meet global import demand.

» The **FAO Meat Price Index*** averaged 112.1 points in October, down 0.8 points (0.7 percent) from its revised value in September, marking the third monthly decline, though still 20.3 points (22.1 percent) above its value in the corresponding month last year. In October, international quotations for pig meat fell, principally underpinned by reduced purchases from China. Bovine meat prices also fell, reflecting a sharp decline in quotations for supplies from Brazil amid market uncertainty surrounding import suspensions by its leading trading partners over mad-cow disease concerns. By contrast, poultry meat quotations rose, boosted by high global demand, while production expansions remained weak due to high feed costs and avian flu outbreaks, especially in Europe. World ovine meat prices also increased slightly on continued supply limitations from Oceania due to high demand for flock rebuilding.

» The **FAO Sugar Price Index** averaged 119.1 points in October, down 2.1 points (1.8 percent) from September, marking the first decline after six consecutive monthly increases. International sugar quotations remained, however, more than 40 percent above their levels in the same month of last year, mainly underpinned by concerns over reduced output prospects in Brazil. The recent monthly decline in international sugar prices was triggered by limited global import demand and prospects of large export supplies from India and Thailand. The weakening of the Brazilian Real against the US dollar also contributed to lowering world sugar prices in October. Higher ethanol prices in Brazil, however, prevented more substantial sugar price declines.

** Unlike for other commodity groups, most prices utilized in the calculation of the FAO Meat Price Index are not available when the FAO Food Price Index is computed and published; therefore, the value of the Meat Price Index for the most recent months is derived from a mixture of projected and observed prices. This can, at times, require significant revisions in the final value of the FAO Meat Price Index which could in turn influence the value of the FAO Food Price Index.*



FAO food price index

		Food Price Index [1]	Meat [2]	Dairy [3]	Cereals [4]	Vegetables Oils [5]	Sugar [6]
2003		**57.8**	**58.3**	**54.5**	**59.4**	**62.6**	43.9
2004		**65.6**	**67.6**	**69.8**	**64.0**	**69.6**	44.3
2005		**67.4**	**71.8**	**77.2**	**60.8**	**64.4**	61.2
2006		**72.6**	**70.5**	**73.1**	**71.2**	**70.5**	91.4
2007		**94.3**	**76.9**	**122.4**	**100.9**	**107.3**	62.4
2008		**117.5**	**90.2**	**132.3**	**137.6**	**141.1**	79.2
2009		**91.7**	**81.2**	**91.4**	**97.2**	**94.4**	112.2
2010		**106.7**	**91.0**	**111.9**	**107.5**	**122.0**	131.7
2011		**131.9**	**105.3**	**129.9**	**142.2**	**156.5**	160.9
2012		**122.8**	**105.0**	**111.7**	**137.4**	**138.3**	133.3
2013		**120.1**	**106.2**	**140.9**	**129.1**	**119.5**	109.5
2014		**115.0**	**112.2**	**130.2**	**115.8**	**110.6**	105.2
2015		**93.0**	**96.7**	**87.1**	**95.9**	**89.9**	83.2
2016		**91.9**	**91.0**	**82.6**	**88.3**	**99.4**	111.6
2017		**98.0**	**97.7**	**108.0**	**91.0**	**101.9**	99.1
2018		**95.9**	**94.9**	**107.3**	**100.8**	**87.8**	77.4
2019		**95.1**	**100.0**	**102.8**	**96.6**	**83.2**	78.6
2020		**98.1**	**95.5**	**101.8**	**103.1**	**99.4**	79.5
2020	October	**101.4**	91.8	104.5	112.1	106.5	84.7
	November	**105.6**	93.3	105.4	114.8	121.9	87.5
	December	**108.6**	94.8	109.2	116.4	131.2	87.1
2021	January	**113.5**	96.0	111.2	125.0	138.9	94.2
	February	**116.6**	97.8	113.1	126.1	147.5	100.2
	March	**119.2**	100.8	117.5	123.9	159.3	96.2
	April	**122.1**	104.3	119.1	126.2	162.2	100.0
	May	**128.1**	107.4	121.1	133.7	174.9	106.8
	June	**125.3**	110.7	119.9	130.3	157.7	107.7
	July	**124.6**	114.1	116.7	126.3	155.5	109.6
	August	**128.0**	113.5	116.2	130.4	165.9	120.5
	September	**129.2**	112.8	118.1	132.8	168.6	121.2
	October	**133.2**	112.1	120.7	137.1	184.8	119.1

1 Food Price Index: Consists of the average of 5 commodity group price indices mentioned above, weighted with the average export shares of each of the groups for 2014-2016: in total 95 price quotations considered by FAO commodity specialists as representing the international prices of the food commodities are included in the overall index. Each sub-index is a weighted average of the price relatives of the commodities included in the group, with the base period price consisting of the averages for the years 2014-2016.

2 Meat Price Index: Based on 35 average export unit values/market prices of four meat types (bovine, pig, poultry and ovine) from 10 representative markets. Within each meat type, export unit values/prices are weighted by the trade shares of their respective markets, while the meat types are weighted by their average global export trade shares for 2014-2016. Quotations for the two most recent months may consist of estimates and be subject to revision.

3 Dairy Price Index: Computed using 8 price quotations of four dairy products (butter, cheese, SMP and WMP) from two representative markets. Within each dairy product, prices are weighted by the trade shares of their respective markets, while the dairy products are weighted by their average export shares for 2014-2016.

4 Cereals Price Index: Compiled using the International Grains Council (IGC) wheat price index (an average of 10 different wheat price quotations), the IGC maize price index (an average of 4 different maize price quotations), the IGC barley price index (an average of 5 different barley price quotations), 1 sorghum export quotation and the FAO All Rice Price Index. The FAO All Rice Price Index is based on 21 rice export quotations, combined into four groups consisting of Indica, Aromatic, Japonica and Glutinous rice varieties. Within each varietal group, a simple average of the relative prices of appropriate quotations is calculated; then the average relative prices of each of the four rice varieties are combined by weighting them with their (fixed) trade shares for 2014-2016. The Cereal Price Index combines the relative prices of sorghum, the IGC wheat, maize and barley price indices (re-based to 2014-2016) and the FAO All Rice Price Index by weighing each commodity with its average export trade share for 2014-2016.

5 Vegetable Oil Price Index: Consists of an average of 10 different oils weighted with average export trade shares of each oil product for 2014-2016.

6 Sugar Price Index: Index form of the International Sugar Agreement prices with 2014-2016 as base.

https://calgaryherald.com/news/local-news/calgarys-top-7-over-70-revealed-will-receive-award-at-may-gala

Calgary's Top 7 Over 70 revealed, will receive award at May gala

Award recognizes seniors for work they had undertaken after they had turned 70

Author of the article: **Dylan Short**

Publishing date: Nov 03, 2021 • 8 hours ago • 3 minute read • Join the conversation


Top 7 Over 70 - 2021 winners (from left) Murray McCann, Margaret Southern, , Miiksika'am (Elder Clarence Wolfleg), Sherali Saju, Louis B. Hobson, and Bonnie Kaplan were photographed in Gasoline Alley at Heritage Park in Calgary, Wednesday, November 3, 2021. Missing is Don Taylor. Gavin Young/Postmedia Gavin Young/Postmedia

Calgary’s top seven seniors over the age of 70 were revealed Wednesday ahead of a biennial gala scheduled for May.

The third group of recipients of the Top 7 Over 70 awards were unveiled at a ceremony at Heritage Park’s Gasoline Alley, with each individual being recognized for work they have done since they turned 70.

This year’s group of honourees include philanthropists, sports builders, an Indigenous elder, a playwright and a mental health researcher. They will officially receive their awards in the spring at a gala hosted at the Hyatt.

Miiksika’am, who was given the name Clarence Wolfleg at residential school, said as he accepted the award that he was thinking of everyone who has helped him in life, including his mother, father and wife.


Winner Miiksika’am (Elder Clarence Wolfleg) was photographed at Heritage Park in Calgary on Wednesday, November 3, 2021. Gavin Young/Postmedia

Miiksika'am is a residential school survivor who has served in the Canadian military and spent years on the council of the Siksika Nation. He has more recently been recognized with an honorary doctorate from Mount Royal University and has advised a number of institutions and organizations as a spiritual elder.

"Today, it's quite an honour," said Miiksika'am. "It's not so much my age. It's a bit about what I have been privileged to witness in my journey. You know, I acknowledge all these people that also were nominated for this award."

Miiksika'am continues to speak to younger generations about restorative justice, residential schools and stories from his past. He said he plans to move back to the Siksika Nation and will continue to speak to young people.

"The young people got to get back to their identity, not so much the negative things that are happening in our world today, but also to guide them to say, look at it from the positive point. You have to develop courage, like I did. So I'm going to be here to guide them in the future," said Miiksika'am.

Meanwhile, Margaret Southern was selected for her work building sports opportunities in Calgary. Southern co-founded the Spruce Meadows equestrian park and recently helped bring Cavalry FC to Calgary to give soccer players a chance to play professionally in Alberta.


Winner Margaret Southern was photographed at Heritage Park in Calgary on Wednesday, November 3, 2021. Gavin Young/Postmedia

Southern also helped establish the Spruce Meadows Leg Up Program that helps Calgarians in need. During the 2015 federal election, she travelled to Ontario to help get seniors out to vote.

"I think that all of the things that I've been able to get involved with have meant a lot to me," said Southern. "I hope they've helped."

The Top 7 Over 70 awards are given out once every two years, with the first set of recipients recognized in 2017.

Jim Gray, the founder of the awards, told the crowd at Wednesday's event that they were established to recognize seniors for work they had undertaken after they had turned 70.


Winners (from left) Margaret Southern, Murray McCann, Miiksika'am (Elder Clarence Wolfleg), Louis B. Hobson, Sherali Saju, and Bonnie Kaplan were photographed in Gasoline Alley at Heritage Park in Calgary, Wednesday, November 3, 2021. Missing is Don Taylor. Gavin Young/Postmedia

He said there are many awards for the top young people in the city, and there are lifetime achievement awards for older individuals, but there was not a space to recognize accomplishments made later in life.

"I have been truly amazed at the achievements of citizens over the age of 70. Over the years, I've met a growing number of people who have started all kinds of marvellous new ventures long after they formally retire, which is a word that I think should be retired," said Gray.

Along with recognizing older Calgarians, the awards partner with InterGen, an organization that works to connect young entrepreneurs with elders who can help guide them.


Winner Sherali Saju was photographed at Heritage Park in Calgary on Wednesday, November 3, 2021. Gavin Young/Postmedia

Sherali Saju, who helps new Canadians secure mortgages and loans to start businesses, was among Wednesday's recipients. He has worked to raise millions in funds to help people in the developing world.

Don Taylor is receiving the award for his philanthropy work, donating from his personal wealth to a number of institutions around Calgary, including Mount Royal University.


Don Taylor, one of the 2021 Top 7 Over 70 recipients in Calgary. Photo courtesy Taylor family.

Louis Hobson, a longtime theatre and film critic with a number of media organizations, including the Calgary Herald and Sun, will receive the award for his work.

On top of his work as a critic, he has been directing and writing theatre shows, including several that are scheduled to premiere when public health measures allow.


Winner Louis B. Hobson was photographed at Heritage Park in Calgary on Wednesday, November 3, 2021. Gavin Young/Postmedia

Bonnie Kaplan, a research psychologist and author, is being honoured for publishing a book, The Better Brain, on her research around mental health disorders and proper nutrition as well as her efforts to ensure young scientists can continue research in the field.


Winner Bonnie Kaplan was photographed at Heritage Park in Calgary on Wednesday, November 3, 2021. Gavin Young/Postmedia

Murray McCann, the creator of the Field of Crosses along Memorial Drive, is being recognized for his work in changing the way veterans are honoured in southern Alberta.


Winner Murray McCann was photographed at Heritage Park in Calgary on Wednesday, November 3, 2021. Gavin Young/Postmedia

dshort@postmedia.com

Dan Tsubouchi @Energy_Tidbits · 4h

1/2 Great insights f/ @vitolnews Mike Muller on @gulf_intel New Silk Road on how China successfully talked down oil by policy & edit, but you cannot move markets by words, in the end its all about inventories & behaviour at the spot end of market. #OOTT.

soundcloud.com
PODCAST: Daily Energy Markets Forum - New Silk ...
Mike Muller, Head, Vitol Asia and Christof Rühl, Senior Research Scholar – Center on Global Energ...

1 4

Dan Tsubouchi @Energy_Tidbits · 17h

1/2. Note #Biden #Oil supply tease "there other tools in the arsenal that we have to deal - and I'm dealing with other countries; at an appropriate time, I will talk about it - that we can get more energy in the - in the pipeline, figuratively and literally speaking. #OOTT

Excerpt from https://www.whitehouse.gov/briefing-room/speeches-remarks/2021/11/06/remarks-by-president-biden-on-passage-of-the-bipartisan-infrastructure-deal/

Remarks by President Biden on Passage of the Bipartisan Infrastructure Deal

NOVEMBER 06, 2021

Q You are not going to have Republican votes, though, for your Build Back Better Agenda. Isn't it doomed?

And then my second question, Mr. President. OPEC Plus has snubbed your call to pump more oil. When will you respond with an SPR release?

THE PRESIDENT: Well, first of all, I'm not anticipating that OPEC would respond, that Russia and/or Saudi Arabia would respond. They're going to pump some more oil, whether they pump enough oil is a different thing.

There are other — are — there other tools in the arsenal that we have to deal — and I'm dealing with other countries; at an appropriate time, I will talk about it — that we can get more energy in the — in the pipeline, figuratively and literally speaking.

1 3 3

Dan Tsubouchi @Energy_Tidbits · 4h

2/2 China is very much in inventory building mode, its buyers haven't come to table yet to Jan Oil trading cycle, offers now $1/2 higher & "view on the street is they will buy because they need to". See SAF transcript of Muller's comment. Thx @sean_evers. Positive for #Oil. #OOTT

huge, still have a significant amount of oil in storage from stockpiling last year, is there an ability to bring that to for crossing over to power generation? Is there enough coal? What sort of winter does China face from a shortage point of view do you think?

Muller: *There's a few things there, Sean. Number one, China is a major part of the switching from gas to oil where that is possible. So there's a fleet of LNG trucks that don't make sense to run at spot marginal prices and therefore should be seeing themselves replaced by diesel fleets and so forth. There is coal to gas liquids manufacturing processes, which have been halted as well. China is pretty well the only place in the world that does it. China has gone through a cycle in the last few weeks where there have been shortages and embarrassments in terms of brownouts, traffic lights not working in some of the northern cities to edicts from the central government not to run out. to a depletion of the Australian coal that is still not open for trade but there were stockpiles in China and ships sitting off of China, which have all been sucked in to the tune of one million tons. And a clear build up in LNG stocks. And then there is the oil you refer to. China was going to release about 27 million barrels of oil in three phases. In three chunks of 7 million barrels each, in the months of October, November and December. And we saw the first cycle where only four and bit million barrels of the seven million barrels were awarded. only domestic companies can partake in this of course. And there is no sign of the second release, at present. And there always tends to be a bit of an overtone on price on this, but, if China had a conviction of sticking to what they were going to do, we would have seen the second tender by now. And we have not yet seen it. so my personal view is that China is very much in an inventory building mode because they don't want to be caught short in a colder winter. And they have had extremely high domestic prices. I mean for a couple of weeks in October, China had the world's highest LNG, coal, diesel and gasoline prices. And they very successfully talked this down by policy and by edict a couple weeks back such that the steam got taken out of the whole thing. But you cannot move markets by words, in the end its all about inventories and about behaviour at the spot end of the market. But yes. watch*

5

Dan Tsubouchi @Energy_Tidbits · 17h

2/2. what countries can get #Oil into US pipelines beside 🇨🇦? is that #Biden's tease? Record high Alberta oil storage of 76.65 mmb at 09/30. Be a nice boost to Cdn diffs to reduce storage. Thx @nationalbank NBC Energy team Dave Nielen Kevin Striemer et al. #OOTT

Energy and FX Commentary

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Strategy:
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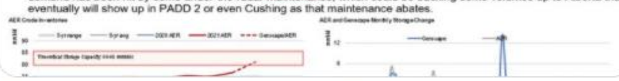
- But, for now Alberta remains on its own island in terms of storage as AER data for September was released late-last week, posting a **record high Alberta storage number of 76.65 MMb total.** From what we can tell, this could be followed by another build so far in October – according to Genscape's weekly data – implying that crude stocks in Alberta continue to build closer to the brim. There are a few factors that could make a difference in the coming weeks: 1) Genscape's ~4 MMb increase in October could be reflecting some operational/field level storage getting shifted to commercial/working storage ahead of L3R increasing. This means that October's Genscape increase – the dotted red line – might end up being smaller than what Genscape shows (maybe). 2) We've heard that downstream refining demand has been hit by some under-the-radar maintenance, which could be backing some volumes up to Alberta that eventually will show up in PADD 2 or even Cushing as that maintenance abates.



3 · 3 · 8

Dan Tsubouchi @Energy_Tidbits · Nov 6

Worth watching @SecGranholm interview. @tomkeene got Biden plan answer. She didn't respond well to @FerroTV direct questions, "real people use #FossilFuels" in response to @lisaabramowicz1. More in Sunday SAF Energy Tidbits safgroup.ca/news-insights/ #OOTT youtube.com/watch?v=OIhari...

> **Dan Tsubouchi** @Energy_Tidbits · Nov 6
>
> What is the Granholm plan to increase oil production in US? asks @tomkeene. @SecGranholm replies"Here's the Biden plan. I'm here in Glasgow. The #Biden plan is to diversify and to make sure that we move in the direction of clean energy where we're not reliant upon cartels" #OOTT
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> Keene. *"Let me cut to it if I may. In Sturgis, Michigan, it is two dollars eighty nine cents a gallon. I guess that's better than in California. What is the Granholm plan to increase oil production in America?"*
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> Granholm. *"[Laughing] That is hilarious. Would that I had the magic wand on this. As you know, of course, oil is a global market. It is controlled by a cartel. That cartel is called OPEC. And they made a decision yesterday that they were not going to increase beyond what they were already planning. So, you know the interesting thing is, you know the Department of Energy has an Energy Information Agency and that agency does the forecasting of what oil and gas prices are going to be. As of right now, their forecast for the beginning of December is that, on average, gas prices, gasoline prices will be about three dollars and five cents at the beginning of December. They will do an adjustment to that forecast in the next week or so. So we'll see if that holds. But, clearly the Biden administration is very concerned about the price at the pump. And certainly the price in people's wallets for natural gas as well for this winter including I would say propane and heating oil particularly in the Northeast."*
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> Keene. *"What is the American solution if they're the bad guys, Russia and OPEC, at the global price in the market. We all understand economics. What is the Biden plan to jumpstart energy production across America?"*
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> Granholm. *"Here's the Biden plan. I'm here in Glasgow. The Biden plan is to diversify and to make sure that we move in the direction of clean energy where we're not reliant upon cartels and we're not reliant upon geopolitical adversaries who may be creating choke points for our ability and our people to be able to access energy. So that's obviously a longer term strategy. And we will continue. This why this is called a transition. But if 80 plus dollars a barrel doesn't incentivize oil companies to get off the sidelines, I'm not sure what will."*

Dan Tsubouchi @Energy_Tidbits · Nov 6

Granholm said need to make sure "we're not reliant upon geopolitical adversaries who may be creating choke points for our ability and our people to be able access energy? #Biden nixed #KeystoneXL. #JonesAct waiver would see US #Oil going to US refineries & not export. #OOTT

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1 · 2 · 3

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2 3 1

Dan Tsubouchi @Energy_Tidbits · Nov 6

"I'm afraid we're going to have a food crisis" "want to say this loud & clear right now that we risk a very low crop in the next harvest" @yara CEO @stholsether. Record EU #NatGas prices = #Ammonia $1,000/tn vs $110 last summer. Thx @katherine_dunn #OOTT

fortune.com

Energy crisis is hitting fertilizer—and risking a food shortage

Unlike other shortages, a food crisis is "a matter of life or death", says the CEO of Yara International.

8 7

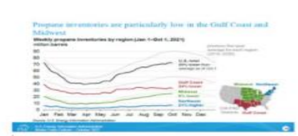
Dan Tsubouchi @Energy_Tidbits · Nov 5

#OOTT

Dan Tsubouchi @Energy_Tidbits · Nov 5

Replying to @bjlefebvre and @ziannlum

#Biden can refer to @SecGranholm's @EIAgov winter fuels outlook already fcasts Midwest winter propane prices +65% YoY assuming $ENB #Line5 is operating. Pre-Covid, #Line5 supplied 65% of Upper Peninsula #propane demand & 55% of Michigan statewide demand. Thx @bjlefebvre #OOTT



3 3

Dan Tsubouchi @Energy_Tidbits · Nov 5

still 40 min to sunrise but spectacular view looking over the Bow River in #Canmore at the Cdn Rockies

8

Dan Tsubouchi @Energy_Tidbits · Nov 5

Low #Oil capex 2019-21 = no future surplus capacity. "Unused capacity in OPEC Plus is going to be used up in the next two years, there is no extra supply. I'm a firm believer that we're going to be in $80 to $100 scenario over the next several years" @PXDtweets CEO. #OOTT

1 12

Dan Tsubouchi @Energy_Tidbits · Nov 5

#LNGSupplyGap for 2020s. Another Asian #LNG buyer locks up long term supply. @Cheniere 17-yr deal with @SinochemNews. See SAF Group 8-page Jul 14 blog Asian LNG Buyers Abruptly Change and Lock in Long Term Supply safgroup.ca/news-insights/ #OOTT

Dan Tsubouchi @Energy_Tidbits · Nov 4

"this tight [#LNG] market could extend well through 2025 & potentially tighter seasonal swings over the midterm period" "beginning to see this manifest in the market with long-term contracting activity, clearly increasing the last few months" says $LNG. Fits SAF Jul 14 blog #OOTT twitter.com/Energy_Tidbits...

5

Dan Tsubouchi @Energy_Tidbits · Nov 5

"i know the President is looking at it and will have more to say about it" says @SecGranholm to @FerroTV, who reminded her the SPR release is within US control, not #OPEC control, and asking when can we hear about #Biden deciding on #SPR oil release. #OOTT

2 1

Dan Tsubouchi @Energy_Tidbits · Nov 4

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> **Blog Summary**
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> Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs
>
> Posted Wednesday, July 14, 2021 at 10:00 MT
>
> The last 7 days has shown there is a sea change as Asian LNG buyers have made an abrupt change in their LNG contracting and are moving to lock in long term LNG supply. This is the complete opposite of what they were doing pre-Covid when they were trying to renegotiate Qatar LNG long term deals lower and moving away from long term deals to spot/short term sales. Why? We think they did the same math we did in our April 28 blog "Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?" and saw a much bigger and sooner LNG supply gap driven by the delay of 5 bcf/d of Mozambique LNG that was built into most, if not all LNG supply forecasts. Asian LNG buyers are committing real dollars to long term LNG deals, which we believe is the best validation for the LNG supply gap. Another validation, Shell, Total and others are aggressively competing to invest long term capital to partner in Qatar Petroleum's massive 4.3 bcf/d LNG expansion despite plans to reduce fossil fuels production in the 2020s. And even more importantly to LNG suppliers, the return to long term LNG contracts provides the financing capacity to commit to brownfield LNG FIDs. The abrupt change by Asian LNG buyers to long term contracts is a game changer for LNG markets and sets the stage for brownfield LNG FIDs likely as soon as before year end 2021. It has to be brownfield LNG FIDs if the gap is coming bigger and sooner. And we return to our April 28 blog point, if brownfield LNG is needed, what about Shell looking at 1.8 bcf/d brownfield LNG Canada Phase 2? LNG Canada Phase 1 at 1.8 bcf/d capacity is already a material positive for Cdn natural gas producers. A FID on LNG Canada Phase 2 would be huge, meaning 3.6 bcf/d of Cdn natural gas will be tied to Asian LNG markets and not competing in the US against Henry Hub. And with a much shorter distance to Asian LNG markets. This is why we focus on global LNG markets for our views on the future value of Canadian natural gas.

4 6

Dan Tsubouchi @Energy_Tidbits · Nov 4

Venture Global 'Very Close' to First Drops of #LNG at Calcasieu reports @business. Start of Calcasieu Pass 1.3 bcfd & Train 6 Sabine Pass 0.7 bcfd pull >700 bcf US #NatGas supply to export. See linked SAF Jul 25 Energy Tidbits on this big potential upside to HH/AECO prices. #OOTT

> The plant remains under construction but federal regulators gave the company permission earlier this morning to begin the startup process for the first liquefaction unit and a related storage tank. Eventually it'll be able to export 10 million tons of LNG a year.
>
> "We are very close, but I'm not allowed to break news on exactly what the specific schedule is," Sabel said. "So, I can say, just a few months away."
>
> The plant's commissioning cargoes will come into the global market at a time when LNG demand and prices are very high. Desperately seeking to stock up before winter, European and Asian buyers are having to pay almost four times the price of U.S. natural gas.
>
> Unlike other LNG companies that have used on-site construction, Venture Global chose to use a modular approach where small-scale production units known as "trains" are made at a Baker Hughes plant in Italy and shipped to the Louisiana site where they are installed. So far, the Calcasieu plant has received 16 out of the 18 trains needed. The final two trains are expected to arrive at the site "within days," Sabel said.
>
> "We're very proud of this because of how we easily configured and executed our facilities that even with the global pandemic and a couple of hurricane strikes, we're on our original schedule," Sabel said.
>
> Calcasieu Pass will be the seventh major U.S. LNG export plant to start up since 2016. In the span of just a few years, the U.S. has climbed the ranks to become the third biggest LNG exporter, behind Qatar and Australia, and could vie for the top spot over the winter as output ramps up.
>
> Earlier today, Venture Global announced a pair of deals with customers in China, supporting both the Calcasieu Pass and its proposed Plaquemines LNG project. Permitted to produce up to 20 million tons of LNG per year, the Plaquemines project is expected to be completely sold out by mid-2022, Sabel said. Even though construction on Plaquemines hasn't yet started.
>
> "We'll be in construction for all 20 million tons in 2022," Sabel said.

> **Dan Tsubouchi** @Energy_Tidbits · Jul 25
>
> 
>
> Our weekly SAF July 25, 2021 Energy Tidbits memo was just posted to our SAF Group website. This 53-pg energy research piece expands upon and covers many more items than tweeted this week. See the research section of the SAF website #Oil #OOTT #LNG ...

2 4

Dan Tsubouchi @Energy_Tidbits · Nov 4

as good as the Q3 reporting as been so far for the Cdn E&P, don't forget Q4 will be even better with prices so far in Q4 well above Q3 average prices. #Oil #NatGas #OOTT

> **Dan Tsubouchi** @Energy_Tidbits · Oct 31
>
> "Great quarter guys" will be the analysts line this week with ramp up of Cdn #Oil #NatGas Q3 reporting. Q3 cash flows will be great and up big QoQ vs Q2. And remember Q4 cash flows should be even better with Oct oil & gas prices. #OOTT

Q1/18	$67.00	$62.86	$57.19	$37.11	$3.09	$2.06
Q2/18	$74.41	$67.83	$60.78	$49.88	$2.84	$1.23
Q3/18	$75.27	$69.69	$59.81	$42.32	$2.92	$1.25
Q4/18	$68.18	$59.41	$36.53	$25.63	$3.78	$1.62
Q1/19	$62.91	$54.49	$50.28	$43.79	$2.92	$2.55
Q2/19	$68.58	$59.96	$54.41	$47.46	$2.55	$1.13
Q3/19	$61.95	$56.48	$52.43	$43.91	$2.37	$1.00
Q4/19	$62.51	$56.83	$50.61	$37.98	$2.36	$2.46
Q1/20	$51.28	$46.73	$39.75	$28.55	$1.91	$2.04
Q2/20	$31.14	$27.67	$21.84	$18.02	$1.70	$2.00
Q3/20	$42.70	$40.87	$36.83	$31.13	$1.98	$2.26
Q4/20	$44.47	$42.67	$37.92	$31.34	$2.47	$2.65
Q1/21	$60.51	$57.75	$54.17	$45.83	$3.39	$3.13
Q2/21	$68.44	$65.90	$61.94	$53.11	$2.89	$2.95
Q3/21	$72.95	$70.57	$66.90	$57.65	$4.28	$3.41
Q4/21	$83.40	$80.92	$78.44	$66.95	$5.48	$5.04

1 4

Dan Tsubouchi @Energy_Tidbits · Nov 4

#OPEC's message today to #Biden is we're doing our job maintaining stable/balanced #Oil markets, but not sure about the rest of you on the rest of #NatGas #EnergyTransition etc. Check out the added long sentence to #OPEC's release today vs Oct 4. #OOTT opec.org/opec_web/en/pr…

> Today's OPEC release lead paragraph added the new lengthy opening sentence ""The meeting reaffirmed the continued commitment of the Participating Countries in the Declaration of Cooperation (DoC) to ensure a stable and a balanced oil market, the efficient and secure supply to consumers and to provide clarity to the market at times when other parts of the energy complex outside the boundaries of oil markets are experiencing extreme volatility and instability, and to continue to adopt a proactive and transparent approach which has provided stability to oil markets. In view of current oil market fundamentals and the consensus on its outlook, the Meeting resolved to:"
> https://www.opec.org/opec_web/en/press_room/6690.htm
>
> OPEC's Oct 4 release lead paragraph was short and sweet "In view of current oil market fundamentals and the consensus on its outlook, OPEC and participating non-OPEC oil producing countries:" https://www.opec.org/opec_web/en/press_room/6647.htm

1 6

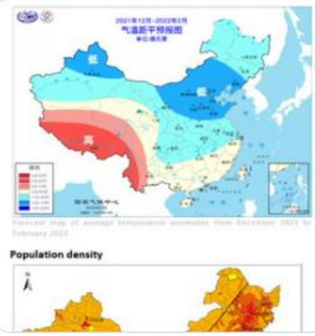
Dan Tsubouchi @Energy_Tidbits · Nov 4

#OPEC+ press conference in 30 min, reports Reuters. if less than 90 min from start of JMMC to press conference, can it point to anything but a rubber stamp of existing +400,000 b/d schedule? will know shortly. #OOTT

1 1

Dan Tsubouchi @Energy_Tidbits · Nov 4

Cold winter forecast for China, note how forecast cold regions overlap with key high population regions. Provides support for winter #LNG #NatGas prices. Forecast by National Climate Center of China. #OOTT



7 12

Dan Tsubouchi @Energy_Tidbits · Nov 4

#LNGSupplyGap in 2020s. Another Asian #LNG buyer locks up long term supply. #Sinopec 20-yr deal for 0.5 bcfd from #VentureGlobal. See SAF Group 8-pg July 14 blog, mulitple deals since then. 2020s look very good for #LNG #NatGas. #OOTT prnewswire.com/news-releases/...

Dan Tsubouchi @Energy_Tidbits · Jul 14

SAF Group blog "Asian LNG Buyers Abruptly Change and Lock in Long Term Supply – Validates Supply Gap, Provides Support For Brownfield LNG FIDs" just posted. Hope it helps in your #LNG #NatGas #LNGSupplyGap #OOTT perspective. safgroup.ca/insights/trend...

Blog Summary

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Posted Wednesday, July 14, 2021 at 10:00 MT

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2 4

Dan Tsubouchi @Energy_Tidbits · Nov 4

Did EC's "Mr. Climate" @TimmermansEU just guide to the EC granting #NuclearPower & #NatGas a "green" label under its sustatainable finance taxonomy, its guide for climate friendly investments? Definitely not what EC wants to announce at #COP26🌏. Great interview @F_Rohart. #OOTT

to the Conference of the Parties on Sunday - " I find it indefensible that there is no tax on kerosene, "he bursts into flames when we broach the subject. "I find it unbearable that we have five - five! - daily flights between Amsterdam and Brussels, while we have an excellent fast train connection", he abounds, warning that if the sector does not move, the Commission will release the pen to legislate. We are on the 11th floor of the Berlaymont, where the First Vice-President of the Commission welcomes us for a collective interview, along with five other European newspapers.

Nuclear power is on the rise in several Member States: how do you get this momentum?

We all know that nuclear energy has the considerable advantage of not emitting carbon, but we also know that it has disadvantages: the issue of waste, risk, and cost, which is considerable.
Especially when you take into account that renewables are getting cheaper and cheaper, while nuclear power is likely to get a bit more expensive. We will support any Member State which decides to choose nuclear power, that is our task. **I just hope people will make rational decisions.** Do the math! This is my hope.

frédéric Rohart @F_Rohart · Nov 4

Après les discours, des avancées concrètes à la #COP26🌏 ? Point d'étape avec @TimmermansEU qui se prépare pour la session ministérielle de Glasgow. | @lecho lecho.be/dossiers/cop26...

1 3

Dan Tsubouchi @Energy_Tidbits · Nov 3

#JCPOA to resume Nov 29 says Iran's nuclear negotiator and deputy foreign minister. #OOTT

> **علی باقری کنی** @Bagheri_Kani · Nov 3
>
> In a phone call with @enriquemora_ , we agreed to start the negotiations aiming at removal of unlawful & inhumane sanctions on 29 November in Vienna.

1

Dan Tsubouchi @Energy_Tidbits · Nov 3

Q4 will see even bigger cash flows than the big cash flows being reported in Q3 results. this is for both #Oil and #NatGas. #OOTT

> **Dan Tsubouchi** @Energy_Tidbits · Oct 31
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Q4/21	$83.40	$80.92	$78.44	$66.95	$5.48	$5.04

1 5

Dan Tsubouchi @Energy_Tidbits · Nov 3

Another amazing #Woodspirits carving from my brother-in-law (just outside #Toronto). This is his passion, spends his weekends creating like an artist, not manufacturing, #woodcarvings, #LiveEdge tables/benches, #LiveEdge cutting boards, etc.

> **Dan Tsubouchi** @Energy_Tidbits · Oct 10, 2020
>
> 
>
> Do a Google search, i think you will agree there aren't many wood spirits carvings that can capture the emotion from eyes and expression that my brother-in-law in Orono (Ontario) accomplished here. Most of us just watch NFL on weekends, he does this. ...

1 4 18

Dan Tsubouchi @Energy_Tidbits · Nov 3

For those not near their laptop. @EIAgov weekly #Oil #Gasoline #Distillates inventory data as of Oct 29 just out. Prior to release, WTI was $81.80. #OOTT

ir.eia.gov/wpsr/overview....

Oil/Products Inventory Oct 29: EIA, Bloomberg Survey Expectations, API			
(million barrels)	EIA	Expectations	API
Oil	3.29	2.25	3.59
Gasoline	-1.49	-1.25	-0.55
Distillates	2.16	-1.25	0.57
	3.96	-0.25	3.61
Note: Not included in the above, there was 1.6 mmb draw from SPR for Oct 29 week			
Note: Included in the data, Cushing had a draw of 0.9 mmb for Oct 29 week			
Source EIA, Bloomberg			
Prepared by SAF Group			

1

Dan Tsubouchi @Energy_Tidbits · Nov 3

#OOTT #Gasoline. @gulf_intel New Silk Road 🇨🇦 snowbird tidbit f/ guest Randall Mohammed say millions of Cdns to decend on FL w/ Nov 8 reopening. Pre-Covid, Cdn Snowbird Assoc est ~3.5 mm Cdns, incl ~0.5 mm snowbirds visit FL each year. Most by driving

tampabay.com

What will a winter with fewer Canadian snowbirds mean for Tampa Bay?

Sure, traffic might not be as bad. But Florida's already struggling tourism economy usually feeds off our neighbors to the north.

Dan Tsubouchi @Energy_Tidbits · Nov 2

Reminder why gas stations don't want EV charging too fast. @BP CFO notes fast EV charging can be double the ICE fill up time, "hopefully, they come in, & they get a nice cup of Wild Bean coffee & a sandwich, & then that will certainly enhance those returns". Thx @business #OOTT

Excerpt from Bloomberg transcript of BP Q3 call Q&A today.

Question: "... *And I was wondering if there are some key metrics you're looking at in terms of percentage of EV penetration or utilization of your charging points that really are key to achieve profitability in this rising and growing business. Thank you"*

BP CFO Auchincloss "*And if you wanted to measure returns, the general stat we hold is if you get 10% utilization on a fast charger, you'll make a 10% return. That's just the pure electrons themselves. Of course, this is not just about the electrons. It's about the convenience as well. And when somebody goes to charge their car, they spend probably eight minutes as opposed to four minutes. And hopefully, they come in, and they get a nice cup of Wild Bean coffee and a sandwich, and then that will certainly enhance those returns".*

3 8

Dan Tsubouchi @Energy_Tidbits · Nov 2

Did #Trudeau just infer #Lytton 06/30/21 fire was because of #ClimateChange? Even #Liberals, and others like me who believe in climate change, can't be impressed using Lytton tragedy to add drama to his #COP26 global speech knowing #Lytton residents see a different reason.

Canada is warming, on average, twice as quickly as the rest of the world.
And in our north, it's three times quicker.
The science is clear: we must do more, and faster.
So that's the pledge and the call I bring to this historic meeting.
We've already laid the groundwork.
In 2015, at the COP in Paris, I committed that Canada would put a price on pollution.
We did that.
And despite stiff opposition, the Supreme Court upheld it and Canadians supported it in our last two elections.
We know pollution pricing is key to getting emissions down while getting innovation up and running.
Our carbon price trajectory is one of the most ambitious ones globally.
And it's rising to $170 per tonne in 2030.
This is a meaningful price on pollution designed not just to make life cleaner, but also make life more affordable and less expensive for Canadians.
I call on other countries to do the same.
Just as globally we've agreed to a minimum corporate tax, we must work together to ensure it is no longer free to pollute anywhere around the world.
That means establishing a shared minimum standard for pricing pollution.
Of course, what's even better than pricing emissions is ensuring that they don't happen in the first place.
Which brings me to my next major commitment.
We'll cap oil and gas sector emissions today and ensure they decrease tomorrow at a pace and scale needed to reach net-zero by 2050.
That's no small task for a major oil- and gas-producing country.
It's a big step that's absolutely necessary.
To do our part globally, we've doubled our climate financing, including up to $1 billion for the transition away from coal.
And to help deal with the consequences of climate change, Canada's making our first contribution to the Adaptation Fund.
We need to find solutions that work for our citizens in their daily lives.
That is why Canada has set a goal of selling only zero-emission cars and establishing a net-zero emissions electricity grid

2 1 1

Dan Tsubouchi @Energy_Tidbits · Nov 2

just came downstairs to get some lunch. and see the local #Calgary deer in the Elbow River. we had snow on the weekend

1 1 11

Dan Tsubouchi @Energy_Tidbits · Nov 2

164,309 (38%) of US #oil wells produce <1 b/d for total 46,300 b/d. Another 48,409 wells (11%) of US produce 1-2 b/d for total 61,400 b/d. look for a big chunk of these to become "inactive" ie. ready to be abandoned or orphaned if new @EPA #Methane proposals go thru. #OOTT

Dan Tsubouchi @Energy_Tidbits · Nov 2

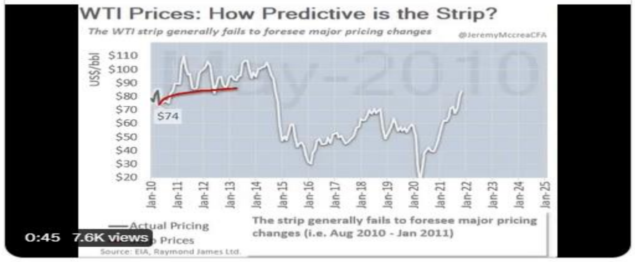
"U.S. to Sharply Cut Methane Pollution that Threatens the Climate and Public Health". @EPA reducing methane from ALL #Oil #NatGas, minor AK excl. would be big impact on lower rate onshore/offshore wells, smaller operators. Only #Oil #NatGas in this methan...

7 10

Dan Tsubouchi @Energy_Tidbits · Nov 2

i also think the last year represents markets underestimating the ability of The Man, @MoEnergy_Saudi Energy Minister Abdulaziz, to use real time shipping/demand data to keep #OPEC+ in line & manage the inventory correction. Thx again @JeremyMcCreaCFA for sharing. #OOTT

> **Jeremy McCrea, CFA** @JeremyMcCreaCFA · Nov 1
>
> Institutional investors have expressed some recent reluctance given the strip vs. spot. But how predictive are strip prices anyway with oil?
> We show the past ten years and how often the strip fails to anticipate the larger moves in WTI - something to consider for 2022 #opec #OOTT



3 · 5

Dan Tsubouchi @Energy_Tidbits · Nov 2

good food for thought. Thx @JeremyMcCreaCFA #OOTT

> **Jeremy McCrea, CFA** @JeremyMcCreaCFA · Nov 1
>
> Institutional investors have expressed some recent reluctance given the strip vs. spot. But how predictive are strip prices anyway with oil?
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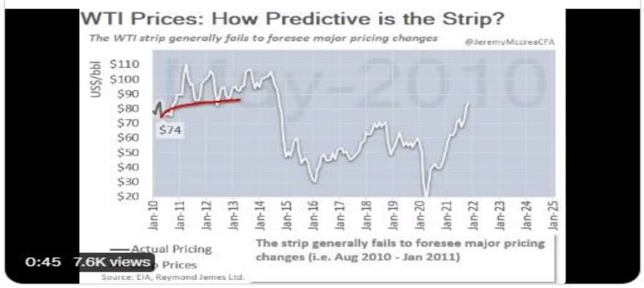


1 · 1

Dan Tsubouchi @Energy_Tidbits · Nov 2

typo, meant 2020s will be good for #Oil #NatGas, but reality is that will inevitably carry into the 2030s as #PeakOilDemand won't be as fas as #NetZero leaders assumed in their plans

> **Dan Tsubouchi** @Energy_Tidbits · Nov 2
>
> #Biden #Macron @ other #NetZero leaders have changed their assumptions on how fast #Oil #NatGas demand will decline & now realize, but won't say in public, their push to reduce supply is leading to oil and gas crunch for years to come. 2030s will be good for #Oil #NatGas. #OOTT twitter.com/energy_tidbits...

1 · 4

Dan Tsubouchi @Energy_Tidbits · Nov 2

#Biden #Macron @ other #NetZero leaders have changed their assumptions on how fast #Oil #NatGas demand will decline & now realize, but won't say in public, their push to reduce supply is leading to oil and gas crunch for years to come. 2030s will be good for #Oil #NatGas. #OOTT

> Dan Tsubouchi @Energy_Tidbits · Oct 31
>
> Is #Biden following #Macron & finally realizing demand for #Oil #NatGas is going to be more for 2020s than in his #NetZero aspiration? Oops, cancel #KeystoneXL, do zero to support US oil supply growth, etc. 2020s will be very good for #Oil #NatGas prices & #OPEC+. #OOTT twitter.com/Energy_Tidbits...

3 4

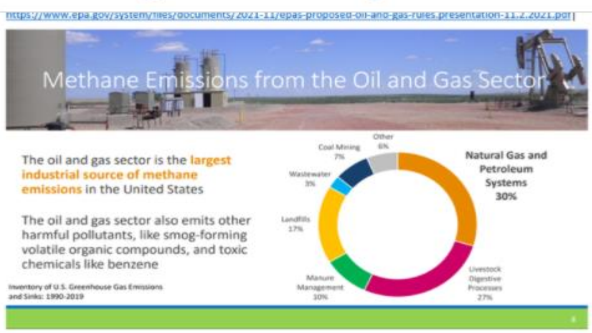
Dan Tsubouchi @Energy_Tidbits · Nov 2

"U.S. to Sharply Cut Methane Pollution that Threatens the Climate and Public Health". @EPA reducing methane from ALL #Oil #NatGas, minor AK excl. would be big impact on lower rate onshore/offshore wells, smaller operators. Only #Oil #NatGas in this methane reduction push. #OOTT

2 3

Dan Tsubouchi @Energy_Tidbits · Nov 2

Did you know? #MethaneEmissions ranking by @EPA. #Oil #NatGas was most at 30% of US, just beat out livestock burps & farts at 27%. But oil & gas would be far behind the 37% of livestock if include manure mgmt at 10%. #OOTT #EnergyTransition #ClimateChange



1 1

Dan Tsubouchi @Energy_Tidbits · Nov 2

Venezuela's exports averarge 711,193 b/d in Oct from "30 cargos of crude and refined products, mostly to Asia". no split of #Oil vs products, but still much higher than most expect vs production >500,000 b/d. Thx @mariannaparraga @MircelyG #OOTT #OPEC reuters.com/article/venezu ...

Nigeria	1,786	1,579	1,413	1,423	1,376	1,385	1,296	1,451	156
Saudi Arabia	9,794	9,182	8,445	8,503	9,544	9,420	9,539	9,678	139
UAE	3,094	2,802	2,610	2,644	2,761	2,722	2,774	2,789	14
Venezuela	796	500	517	511	528	526	533	527	-6
Total OPEC	**29,361**	**25,650**	**25,156**	**25,526**	**26,922**	**26,609**	**26,842**	**27,328**	**486**

Notes: Totals may not add up due to independent rounding, given available secondary sources to date. Source: OPEC.

Table 5 - 8: OPEC crude oil production based on *direct communication*, tb/d

Direct communication	2019	2020	1Q21	2Q21	3Q21	Jul 21	Aug 21	Sep 21	Change Sep/Aug
Algeria	1,023	899	874	886	924	915	921	937	16
Angola	1,373	1,271	1,136	1,125	1,114	1,103	1,129	1,110	-19
Congo	329	300	276	265	265	248	270	277	8
Equatorial Guinea	110	114	104	99	97	100	101	91	-10
Gabon	218	207	183	179	180	185	179	175	-4
IR Iran	..	..	..	..	..	..	..	..	..
Iraq	4,576	3,997	3,846	3,890	3,979	3,886	3,961	4,093	132
Kuwait	2,678	2,438	2,327	2,355	2,447	2,423	2,445	2,474	29
Libya	..	389	1,214	1,213	1,220	1,273	1,223	1,161	-62
Nigeria	1,737	1,493	1,404	1,343	1,270	1,323	1,239	1,247	8
Saudi Arabia	9,808	9,213	8,473	8,535	9,565	9,474	9,562	9,662	100
UAE	3,058	2,779	2,610	2,645	2,758	2,722	2,768	2,786	18
Venezuela	1,013	569	533	556	635	614	641	650	9
Total OPEC	..	..	..	..	..	..	..	..	..

1 3 8

Dan Tsubouchi @Energy_Tidbits · Nov 1

Its only Nov 1, Tokyo high 21c, low 15c ie. no heating or AC demand, yet some Japanese utilities are "purposefully producing less electricity" to conserve fuel & reduce spot #LNG purchases. Japan & others better hope its not a cold start to winter. Thx @shoko_oda #OOTT #NatGas

Some Japanese utilities are purposefully producing less electricity in order to conserve fuel supplies and reduce the need to procure pricey fuel shipments from the spot market, according to traders with knowledge of the matter. And an outlook for colder winter weather means that power prices are poised to extend gains through February.
Japan's utilities already expect the ongoing global energy crisis to hurt profits for the current fiscal year. Tokyo Electric Power Co. said it forecast its first annual loss in nine years, while Chugoku Electric Power Co. reduced its year-end dividend on an uncertain outlook.
Meanwhile, Akira Amari, the secretary general of Japan's ruling Liberal Democratic Party, has been reported to resign from his post after losing his seat in a local election over the weekend. Amari has previously said the country will need to restart 30 of its nuclear reactors in order to achieve its 2030 carbon emission goals, drumming up support for replacing the country's nuclear power plants with new small modular reactors.
Still, the LDP -- which supports restarting nuclear reactors -- maintained its majority in Japan's parliament, which

1 2 5

Dan Tsubouchi @Energy_Tidbits · Nov 1

#Trudeau #COP26 looks like #Liberals platform & Sept climate plan. Big hit to come for Cdn #Oil #NatGas #OilSands w/ yet to be disclosed 2025 emissions reduction target. Note platform also has thermal #Coal halt "through CAN" See SAF Sept 5 Energy Tidbits safgroup.ca/news-insights/...

Dan Tsubouchi @Energy_Tidbits · Sep 21

election big risk. Liberals selected the Cdn oil & gas sector, in total, to commit to #NetZero with still to be disclosed 2025 emissions reductions target to ensure #Oil #NatGas #OilSands are on track. Hmm! What other sectors? Thx @ChrisVarcoe. #OOTT ...

1 2 7

Dan Tsubouchi @Energy_Tidbits · Nov 1

CMA Nov 1 fcast sees "strong cold air will invade most of China" coming in ~Nov 4. Early freeze in mid-Oct turned a little warmer than normal to end Oct, but now looking to go back colder to give #LNG #NatGas support. Thx @cangsizhi for flagging. #OOTT

China National Meteorological Center

Daily weather reminder

Production: Liu bamboo core issue of: Wallace Cheung 2021 Nian 11 Yue 01 Ri 08 when

Heavy snowfall in northern Xinjiang will continue in the next three days and strong cold air will hit on the 4th

Yesterday, there was obvious rain and snow in northern Xinjiang and eastern Qinghai. The local precipitation in Altay, Xinjiang reached 10-18 mm. It is expected that in the next three days, heavy rain and snow will continue in northern Xinjiang. There will be blizzards in the northern Tacheng and northern Altay high-altitude areas, and heavy snowstorms in the local area. The cumulative amount of rain and snow can reach 20-50 mm in the process.

In addition, the Central Meteorological Observatory' s latest forecast is that starting from November 4th, a strong cold air will invade most of China, bringing st rong winds and rain and snow. The temperature in some northern areas can drop by 10 to 15 degrees Celsius, accompanied by 5 ~6 northerly winds, gusts up to 7 to 8, there will be large-scale rain and snow in Northwest China, North China, Northeast China and other places. The cold air has a wide range of impacts, and the te

1 1 12

Dan Tsubouchi @Energy_Tidbits · Nov 1

AMLO's stop #Oil exports in H2/22 also sees increasing efficiencies at existing refineries. #Pemex is reversing 6-7 yrs of refinery declines. Refineries oil input up 0.1 mmb/d YoY in 2021 & expected to hit 1 mmb/d in 2022. Less MEX oil exports = positive for Cdn med/heavy. #OOTT

emex Crude Inputs to Refineries

(Thousand b/d)	2013	2014	2015	2016	2017	2018	2019	2020	20/19	2021	21/20
Jan	1,253	1,194	1,022	1,079	916	594	507	558	10.0%	703	26.0%
Feb	1,234	1,102	1,054	1,068	930	544	601	464	-22.8%	710	53.1%
Mar	1,222	1,194	1,096	1,096	995	652	572	599	4.7%	824	37.6%
Apr	1,295	1,232	1,063	1,037	978	767	570	670	17.4%	647	-3.4%
May	1,300	1,168	1,068	1,008	916	685	570	640	12.3%	682	6.5%
June	1,298	1,197	1,043	1,018	820	662	645	584	-9.5%	668	14.3%
July	1,270	1,208	1,068	929	667	646	657	520	-20.8%	637	22.4%
Aug	1,233	1,147	1,057	849	734	670	659	616	-6.4%	657	6.6%
Sept	1,085	1,180	1,058	766	537	604	654	680	4.0%	793	16.6%
Oct	1,070	1,086	1,061	802	544	485	511	589	15.2%		
Nov	1,197	1,079	1,057	780	610	519	590	509	-13.7%		
Dec	1,231	1,073	1,124	769	569	511	571	653	14.3%		

ource: Pemex

Dan Tsubouchi @Energy_Tidbits · Oct 27

H2/22 #Oil supply gap >0.5 mmbd heavy/med to PADD 3. #Pemex Dos Bocas refinery start up 07/01/22, AMLO says MX oil prod needed for refineries & to stop exports. Should be upside to 🇨🇦 heavy/med. Thx @CarolinaBGP. See SAF Group 12/27/20 Energy ...

1 6

Dan Tsubouchi @Energy_Tidbits · Oct 31

#Caixin China PMI just out at 7:45pm MT. Oct 50.6 vs est 50.0 vs 50.0 in Sept & 49.2 in Aug. Thx @IHSMarkitPMI #OOTT

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Dan Tsubouchi @Energy_Tidbits · Oct 31

Part of $Trillions for #NetZero. JSA $10b/yr for 25 yrs to transition ships to zero-emission vessels powered by carbon recycled methane, hydrogen & ammonia. 🇯🇵 is ~11% of world, use Japan est = $2.27T for world. That's vessels only, no infrastructure. #EnergyTransition #OOTT

industry, whose field of operations is the world's oceans, the reduction of GHG as a measure to grapple with climate change is an issue of the most vital importance.

- With COP26 in sight, the whole world, including Japan, is moving GHG reduction measures forward aggressively. In the circumstances, the Japanese shipping industry has committed itself to the challenge of 2050 Net Zero GHG as a current and future leader in the global shipping field.
- Through this challenge, Japanese shipping will actively continue to contribute to the preservation of the global environment and believes that active efforts towards GHG reduction will create a new source of competitiveness for the industry.
- Making efforts throughout the whole supply chain, such as research and the development of new ships and new fuels and the establishment of fuel supply facilities, will be needed for 2050 net zero GHG.
- The transition to zero-emission vessels, which will be powered by new fuels such as carbon-recycled methane, hydrogen and ammonia, is essential. For the Japanese merchant fleet, composed of about 2,200 vessels alone, it is thought that an average of 100 ships per year will need to be built, requiring investment in shipbuilding of about US$10 billion annually for 25 years to 2050.

1 1 7

Dan Tsubouchi @Energy_Tidbits · Oct 31

Is #Biden following #Macron & finally realizing demand for #Oil #NatGas is going to be more for 2020s than in his #NetZero aspiration? Oops, cancel #KeystoneXL, do zero to support US oil supply growth, etc. 2020s will be very good for #Oil #NatGas prices & #OPEC+. #OOTT

Remarks by President Biden at Press Conference in Rome, Italy

> **Dan Tsubouchi** @Energy_Tidbits · Oct 30
>
> 
>
> Oops, #Macron on #EnergyTransition "ironic, because we are building a system where in the medium & long term fossil energy will cost more & more, that's what we want to [to fight climate change]". 2020s will be very good for #Oil #NatGas prices. Great report ...

2 5 13

Dan Tsubouchi @Energy_Tidbits · Oct 31

Here is an aspiring 6 min video. saw it on #NFLCountdown, how can it not be a great story to see Noah beat cancer, what an amazing young man. so happy for him & his family. Kudos to @TB12sports for taking time to make a difference. unfortunately the video doesn't play in Canada.

> **Jeff Darlington** @JeffDarlington · Oct 31
>
> You might have seen a moment at the end of last week's game when @TomBrady met a boy who beat cancer. His name was Noah Reeb, and this week, I went to Utah to learn more about his story. I'm so honored to share it with you. Produced by Josh Volensky.
>
> espn.com/video/clip?id=...

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SAF GROUP

Dan Tsubouchi @Energy_Tidbits · Oct 31

Our weekly SAF Oct 31, 2021 Energy Tidbits memo is posted on our SAF Group website. This 50-pg energy research memo expands upon & covers more items than tweeted this week. See news/insights section of SAF website #Oil #OOTT #LNG #NatGas #EnergyTransition safgroup.ca/news-insights/

Welcome to new Energy Tidbits memo readers. We are continuing to add new readers to our Energy Tidbits memo, energy blogs and tweets. The focus and concept for the memo was set in 1999 with input from PMs, who were looking for research (both positive and negative items) that helped them shape their investment thesis to the energy space, and not just focusing on daily trading. Our priority was and still is to not just report on events, but also try to interpret and point out implications therefrom. The best example is our review of investor days, conferences and earnings calls focusing on sector developments that are relevant to the sector and not just a specific company results. Our target is to write on 48 to 50 weekends per year and to post by noon mountain time on Sunday.

This week's memo highlights:

1. Macron admits that the Energy Transition will lead to oil and natural gas prices costing more and more in the medium and long term (Click Here)
2. Biden tries to get Iran back to JCPOA table with new commitment to stay in JCPOA as long as Iran complies (Click Here)
3. New York's rejection of 2 natural gas power plants is the blueprint for Liberals to reject Cdn oil and gas projects (Click Here)
4. Australia's long term Net Zero plan reminds that half of emissions reduction need to come from technology advancements (Click Here)
5. Bad week for Libya oil production, now down <1 mmb/d and worry what happens after Dec 24 election (Click Here)