Energy Tidbits

Good Time For JCPOA Deal This Week With Biden's State of the Union on March 1

Produced by: Dan Tsubouchi

February 20, 2022

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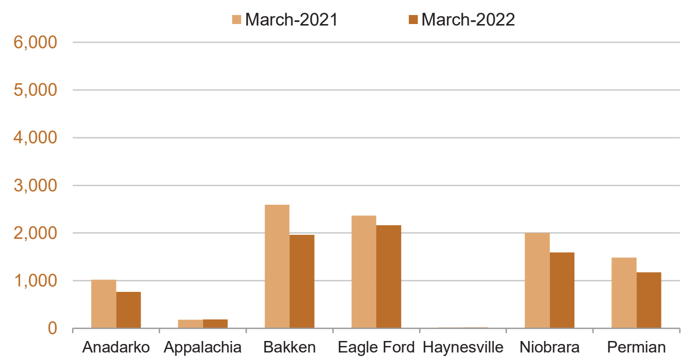
Year-over-year summary

Drilling Productivity Report

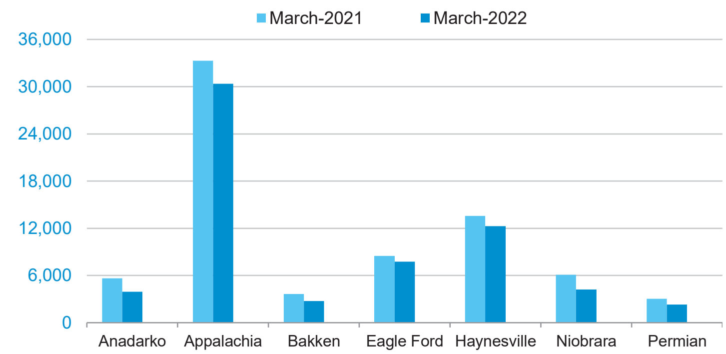
February 2022

drilling data through January
projected production through March

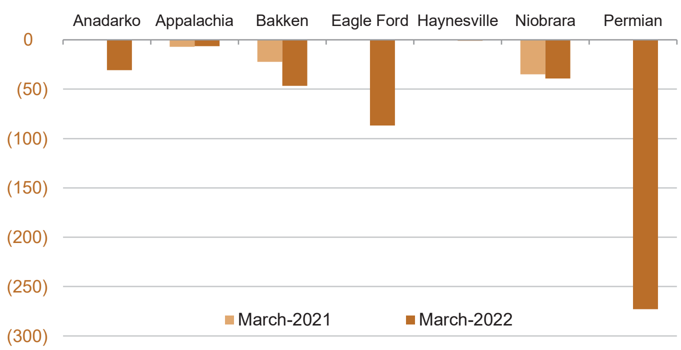
New-well oil production per rig
barrels/day



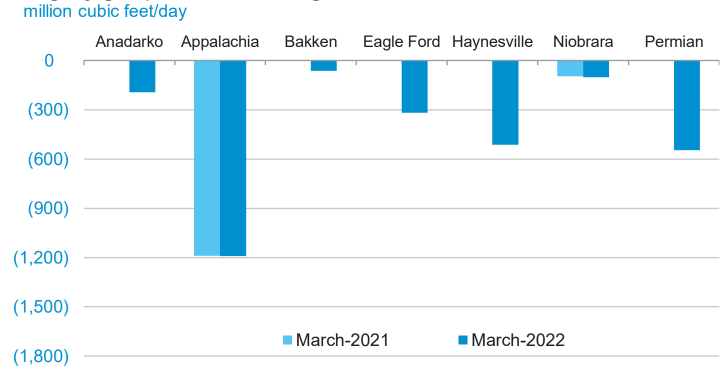
New-well gas production per rig
thousand cubic feet/day



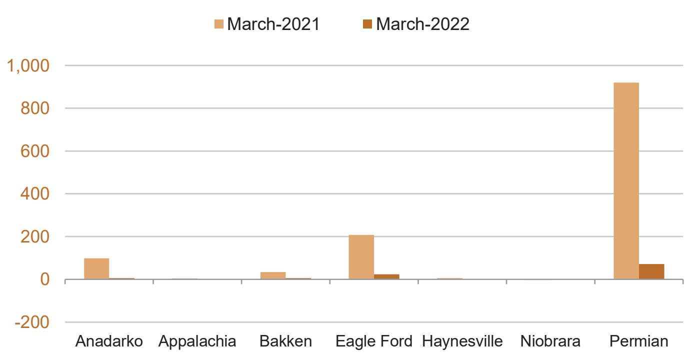
Legacy oil production change
thousand barrels/day



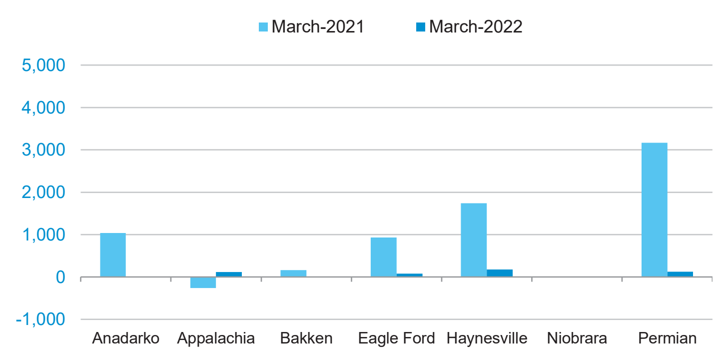
Legacy gas production change
million cubic feet/day



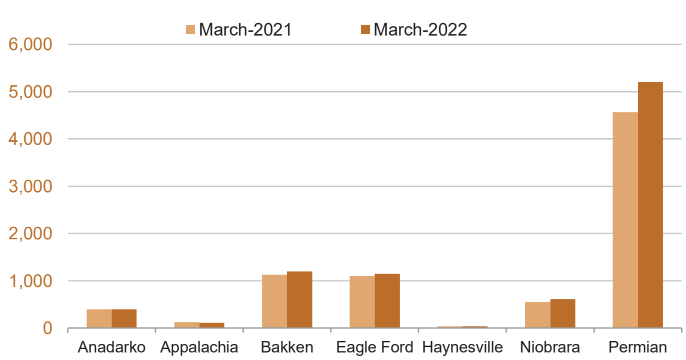
Indicated monthly change in oil production (Mar vs. Feb)
thousand barrels/day



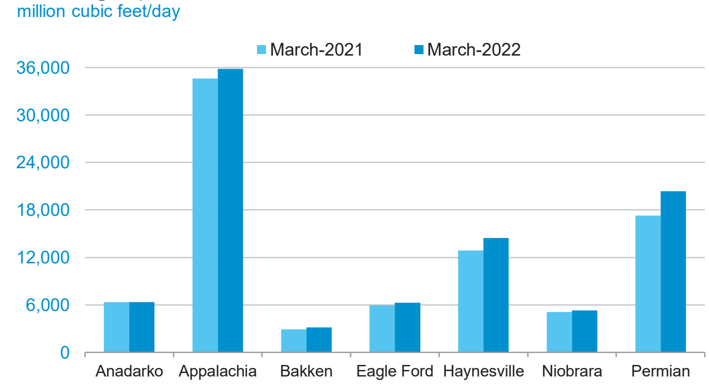
Indicated monthly change in gas production (Mar vs. Feb)
million cubic feet/day



Oil production
thousand barrels/day



Natural gas production
million cubic feet/day

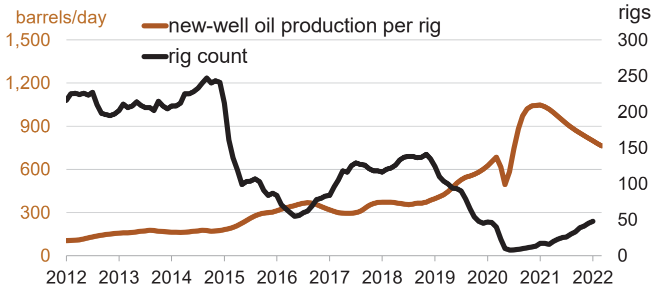


Anadarko Region
Drilling Productivity Report

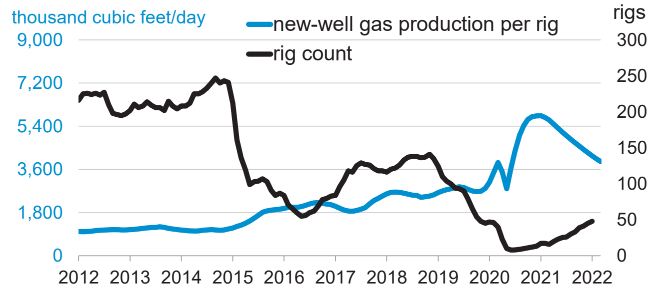
February 2022
drilling data through January
projected production through March

Oil -17 barrels/day month over month	**764** *March* **781** *February* barrels/day	**Monthly additions from one average rig**	*March* **3,923** *February* **4,044** thousand cubic feet/day	**Gas -121** thousand cubic feet/day month over month

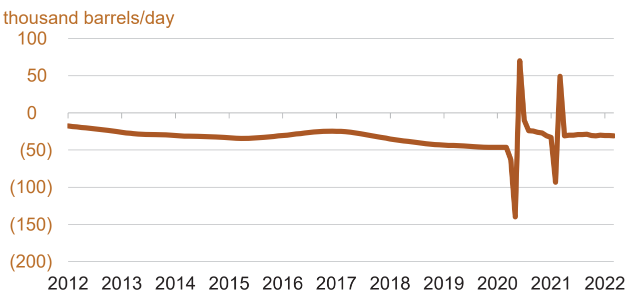
Anadarko Region
New-well oil production per rig
Rig count



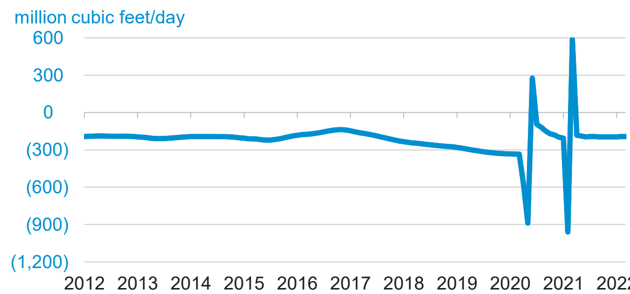
Anadarko Region
New-well gas production per rig
Rig count



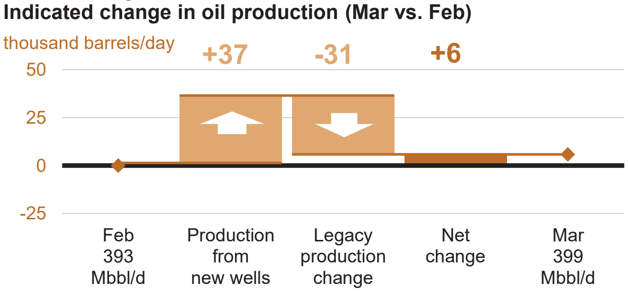
Anadarko Region
Legacy oil production change



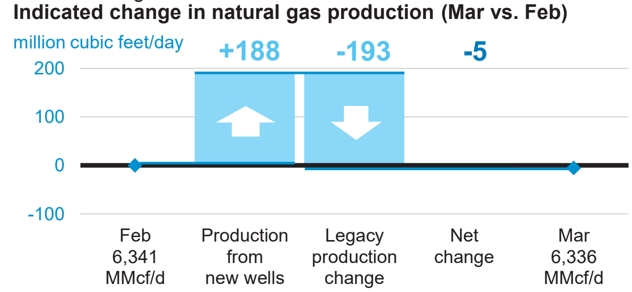
Anadarko Region
Legacy gas production change



Anadarko Region
Indicated change in oil production (Mar vs. Feb)

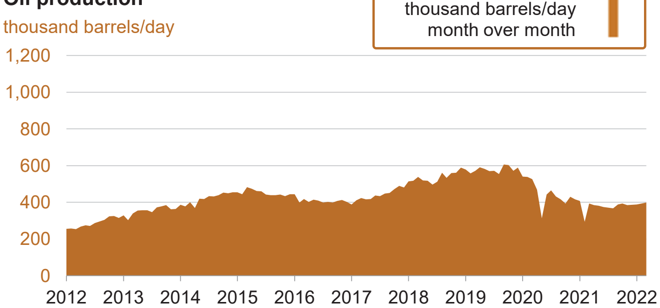


Anadarko Region
Indicated change in natural gas production (Mar vs. Feb)



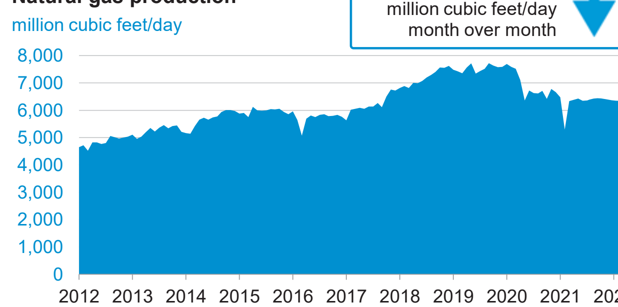
Anadarko Region
Oil production

Oil +6
thousand barrels/day
month over month



Anadarko Region
Natural gas production

Gas -5
million cubic feet/day
month over month



Appalachia Region
Drilling Productivity Report

February 2022
drilling data through January
projected production through March

Oil
0
barrels/day
month over month

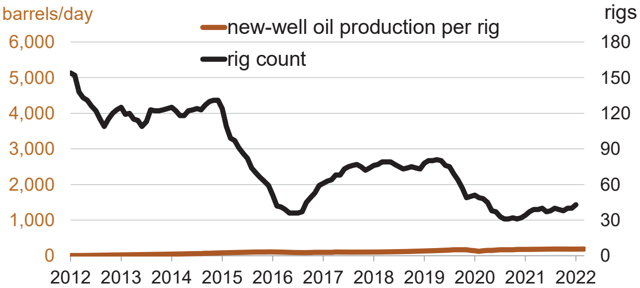
189 *March*
189 *February*
barrels/day

Monthly additions from one average rig

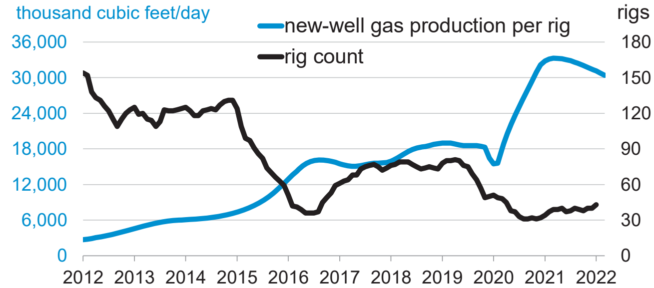
March **30,378**
February **30,747**
thousand cubic feet/day

Gas
-369
thousand cubic feet/day
month over month

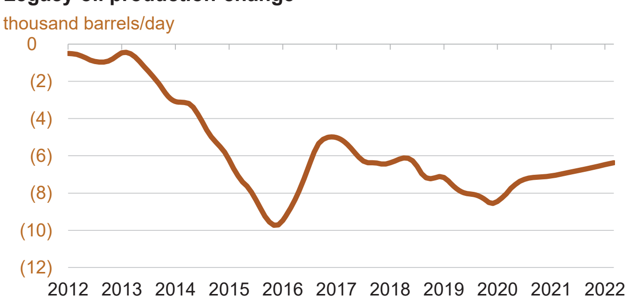
Appalachia Region
New-well oil production per rig



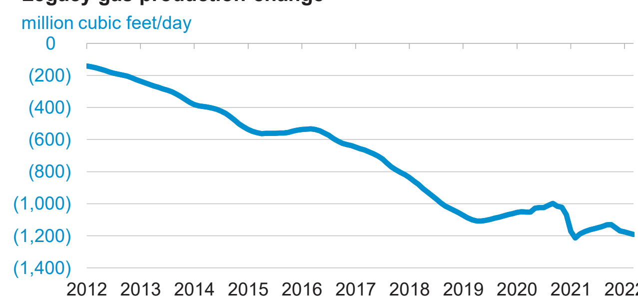
Appalachia Region
New-well gas production per rig



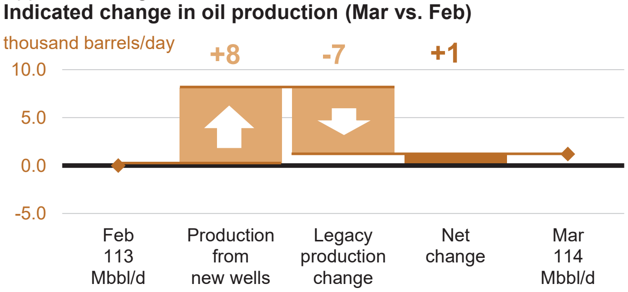
Appalachia Region
Legacy oil production change



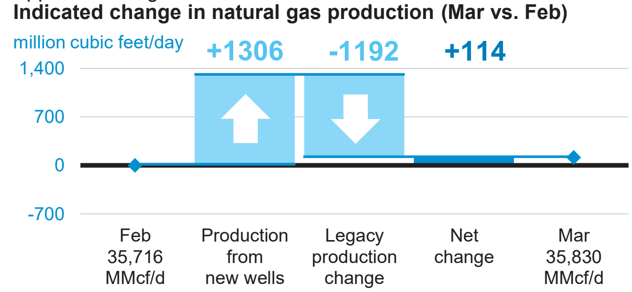
Appalachia Region
Legacy gas production change



Appalachia Region
Indicated change in oil production (Mar vs. Feb)

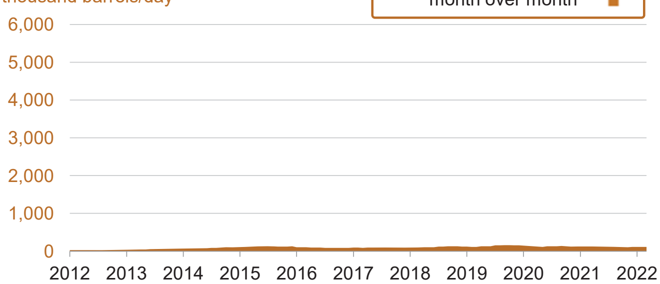


Appalachia Region
Indicated change in natural gas production (Mar vs. Feb)



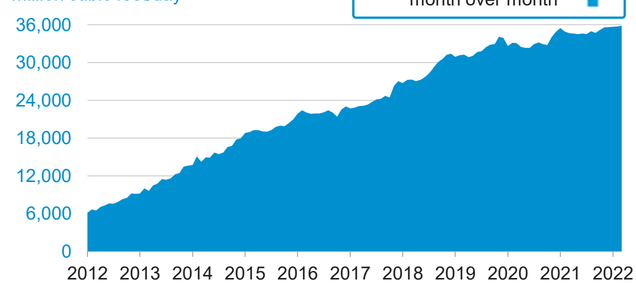
Appalachia Region
Oil production

Oil +1
thousand barrels/day
month over month



Appalachia Region
Natural gas production

Gas +114
million cubic feet/day
month over month



Bakken Region

Drilling Productivity Report

February 2022

drilling data through January
projected production through March

Oil
-93
barrels/day
month over month

1,963 *March*
2,056 *February*
barrels/day

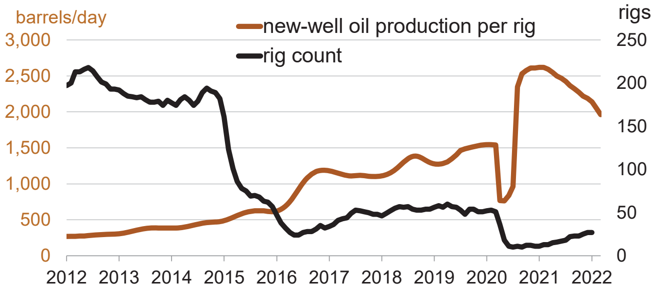
Monthly additions from one average rig

March **2,748**
February **2,878**
thousand cubic feet/day

Gas
-130
thousand cubic feet/day
month over month

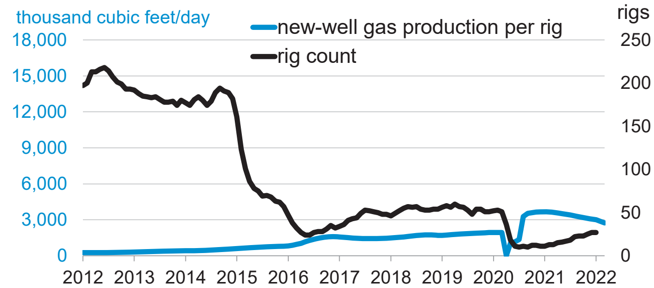
Bakken Region
New-well oil production per rig

Rig count

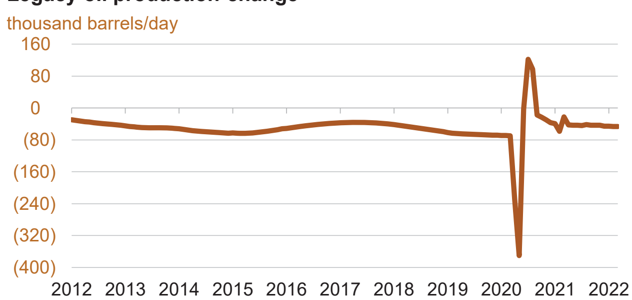


Bakken Region
New-well gas production per rig

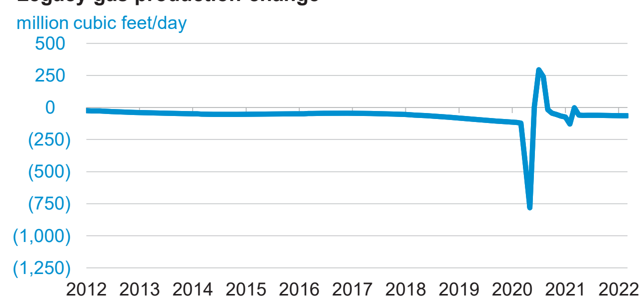
Rig count



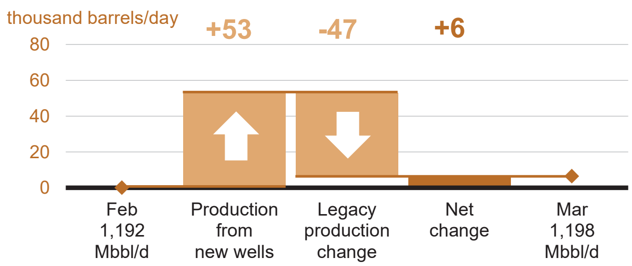
Bakken Region
Legacy oil production change



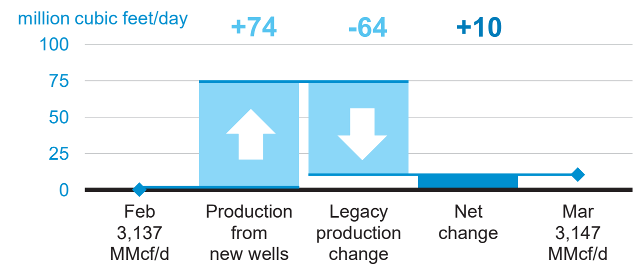
Bakken Region
Legacy gas production change



Bakken Region
Indicated change in oil production (Mar vs. Feb)

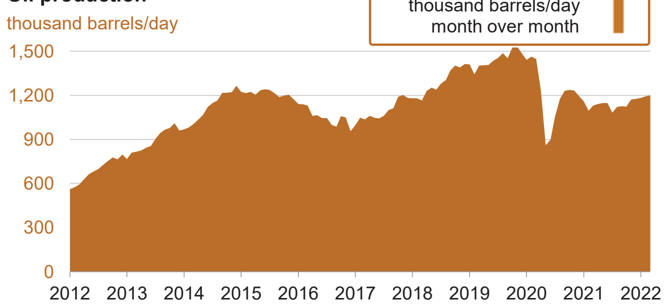


Bakken Region
Indicated change in natural gas production (Mar vs. Feb)



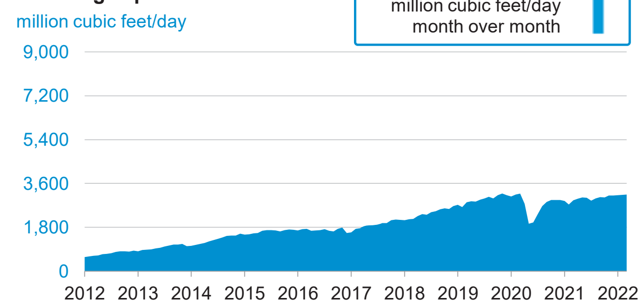
Bakken Region
Oil production

Oil +6
thousand barrels/day
month over month



Bakken Region
Natural gas production

Gas +10
million cubic feet/day
month over month



Eagle Ford Region

Drilling Productivity Report

February 2022

drilling data through January
projected production through March

Oil -66
barrels/day
month over month

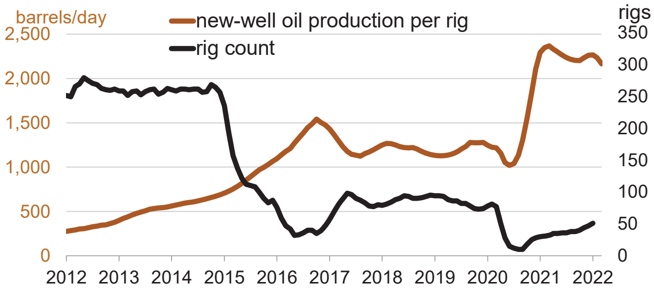
2,166 *March*
2,232 *February*
barrels/day

Monthly additions from one average rig

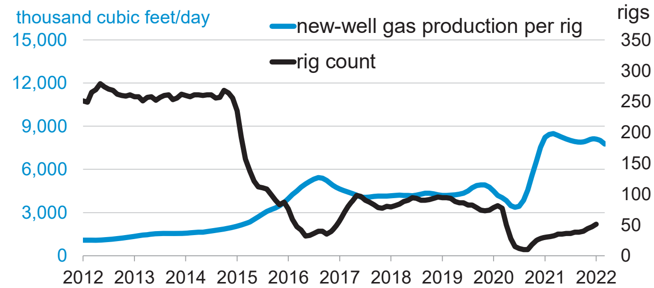
March **7,764**
February **8,005**
thousand cubic feet/day

Gas -241
thousand cubic feet/day
month over month

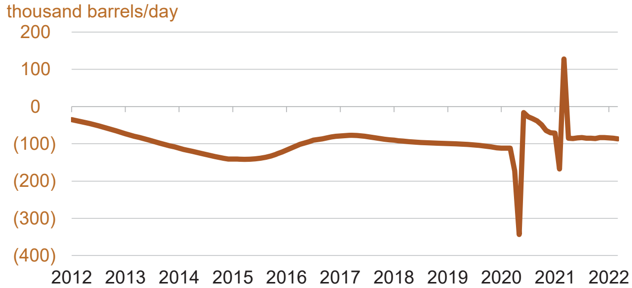
Eagle Ford Region
New-well oil production per rig **Rig count**



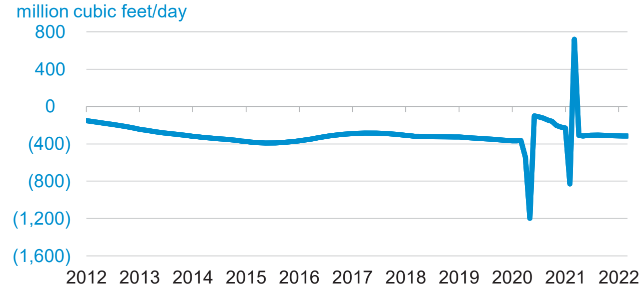
Eagle Ford Region
New-well gas production per rig **Rig count**



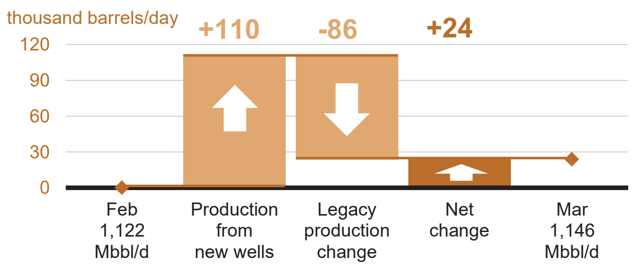
Eagle Ford Region
Legacy oil production change



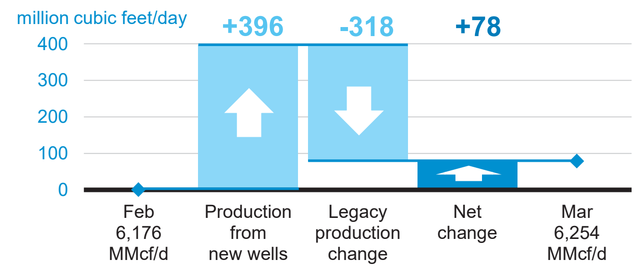
Eagle Ford Region
Legacy gas production change



Eagle Ford Region
Indicated change in oil production (Mar vs. Feb)

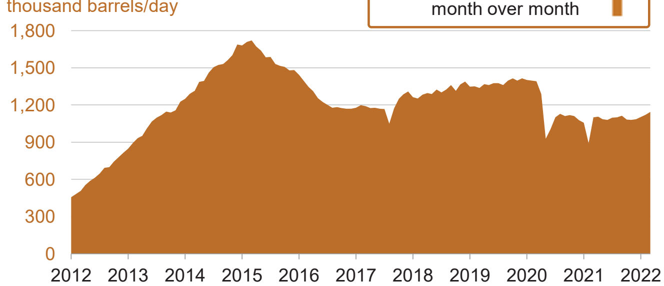


Eagle Ford Region
Indicated change in natural gas production (Mar vs. Feb)



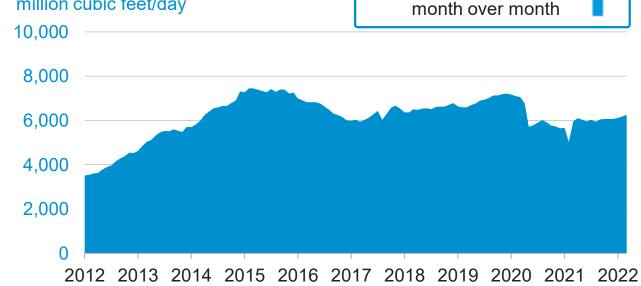
Eagle Ford Region
Oil production

Oil +24
thousand barrels/day
month over month



Eagle Ford Region
Natural gas production

Gas +78
million cubic feet/day
month over month



Haynesville Region
Drilling Productivity Report

February 2022
drilling data through January
projected production through March

Oil
0
barrels/day
month over month

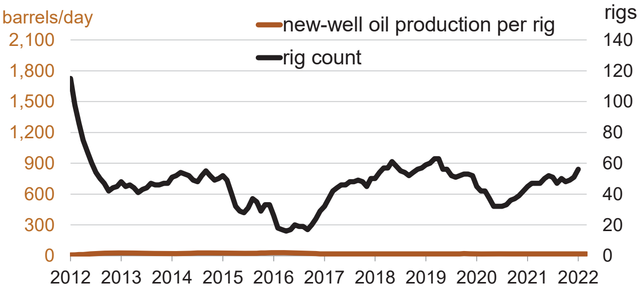
19 *March*
19 *February*
barrels/day

Monthly additions from one average rig

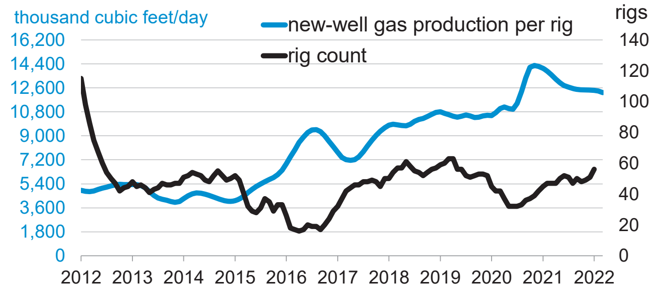
March **12,255**
February **12,354**
thousand cubic feet/day

Gas
-99
thousand cubic feet/day
month over month

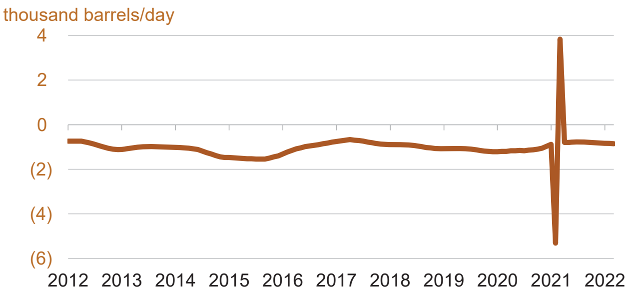
Haynesville Region
New-well oil production per rig



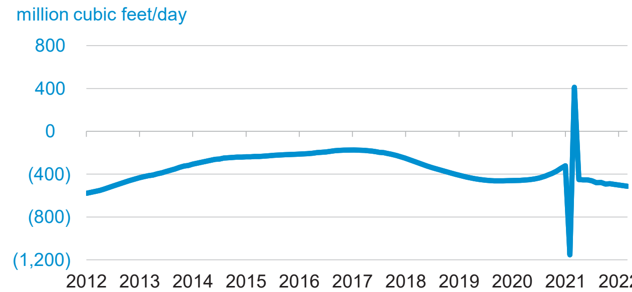
Haynesville Region
New-well gas production per rig



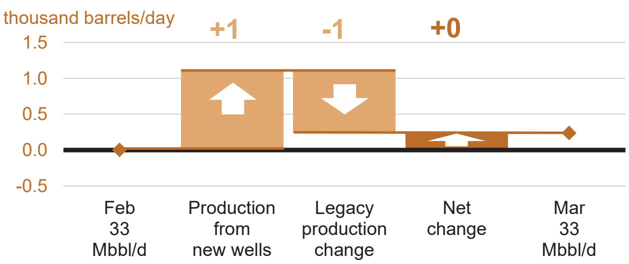
Haynesville Region
Legacy oil production change



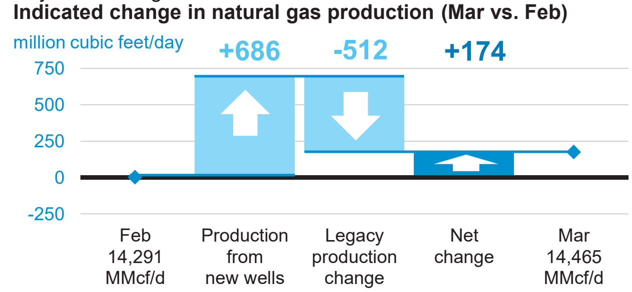
Haynesville Region
Legacy gas production change



Haynesville Region
Indicated change in oil production (Mar vs. Feb)

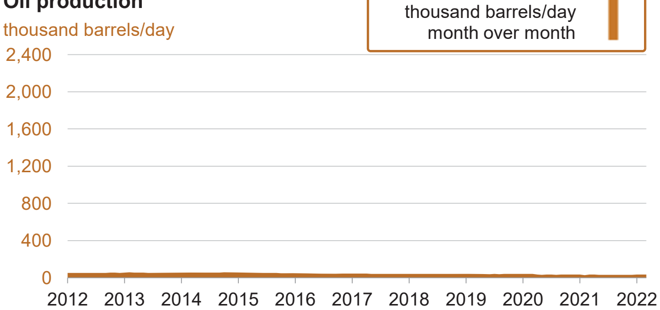


Haynesville Region
Indicated change in natural gas production (Mar vs. Feb)



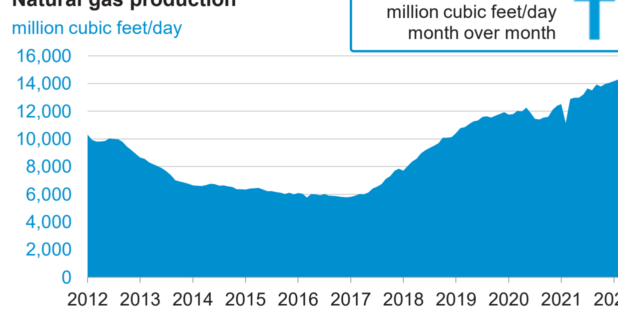
Haynesville Region
Oil production

Oil +0
thousand barrels/day
month over month



Haynesville Region
Natural gas production

Gas +174
million cubic feet/day
month over month



Niobrara Region

Drilling Productivity Report

February 2022

drilling data through January
projected production through March

Oil
-16
barrels/day
month over month

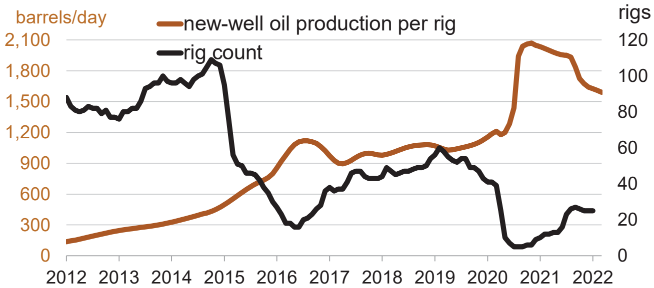
1,592 *March*
1,608 *February*
barrels/day

Monthly additions from one average rig

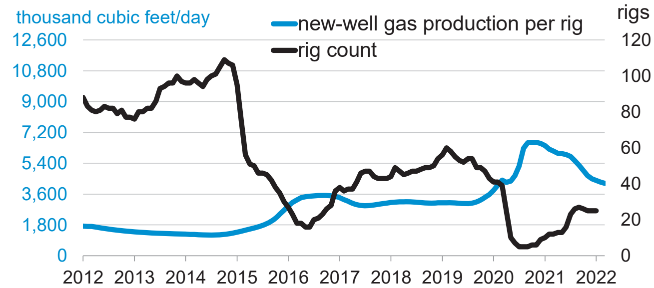
March **4,220**
February **4,306**
thousand cubic feet/day

Gas
-86
thousand cubic feet/day
month over month

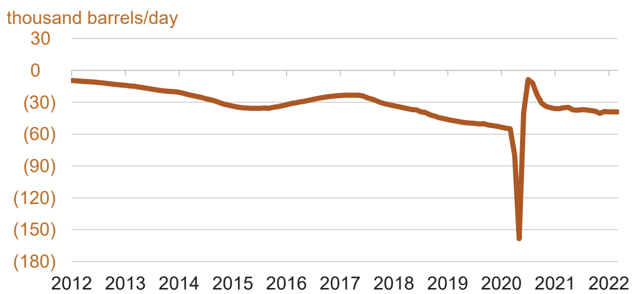
Niobrara Region
New-well oil production per rig **Rig count**



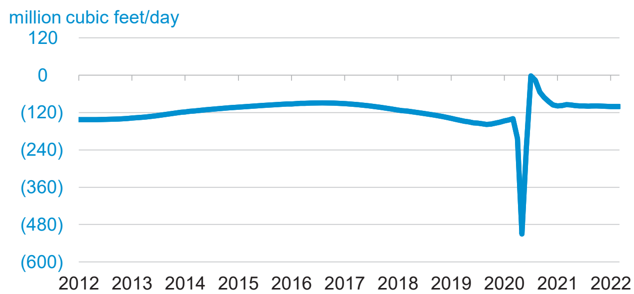
Niobrara Region
New-well gas production per rig **Rig count**



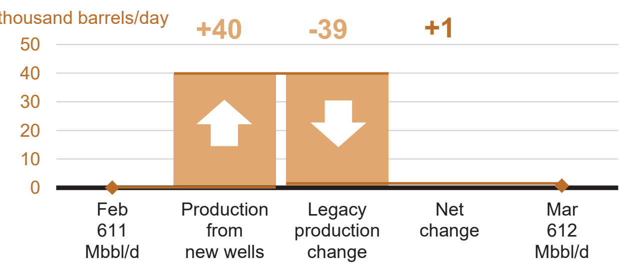
Niobrara Region
Legacy oil production change



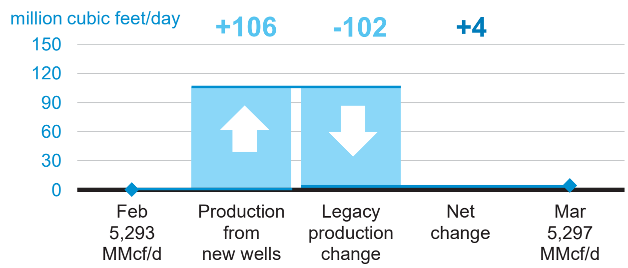
Niobrara Region
Legacy gas production change



Niobrara Region
Indicated change in oil production (Mar vs. Feb)

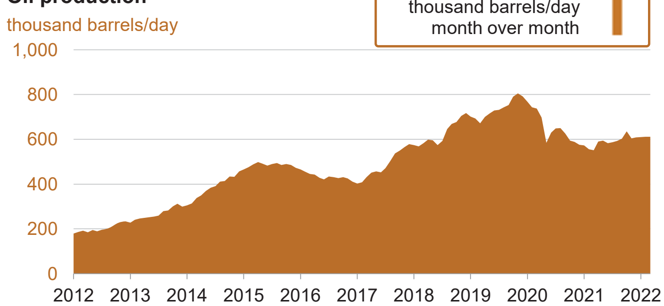


Niobrara Region
Indicated change in natural gas production (Mar vs. Feb)



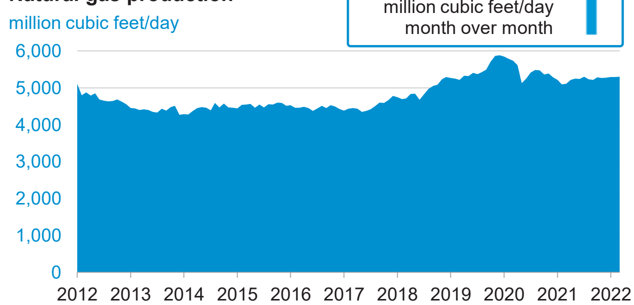
Niobrara Region
Oil production

Oil +1
thousand barrels/day
month over month



Niobrara Region
Natural gas production

Gas +4
million cubic feet/day
month over month



Permian Region

Drilling Productivity Report

February 2022

drilling data through January
projected production through March

Oil
-14
barrels/day
month over month

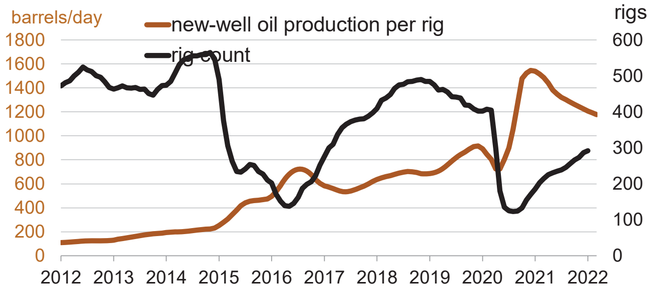
1,178 *March*
1,192 *February*
barrels/day

Monthly additions from one average rig

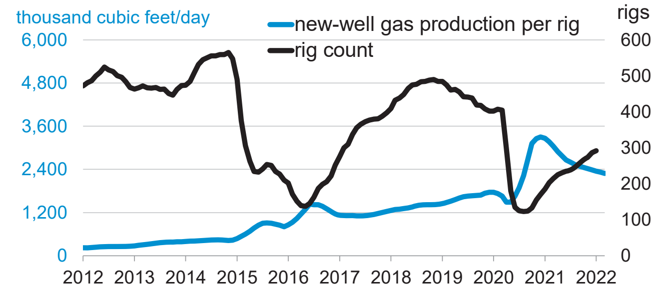
March **2,293**
February **2,321**
thousand cubic feet/day

Gas
-28
thousand cubic feet/day
month over month

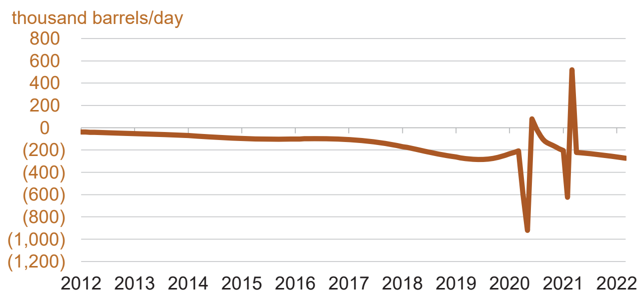
Permian Region
New-well oil production per rig **Rig count**



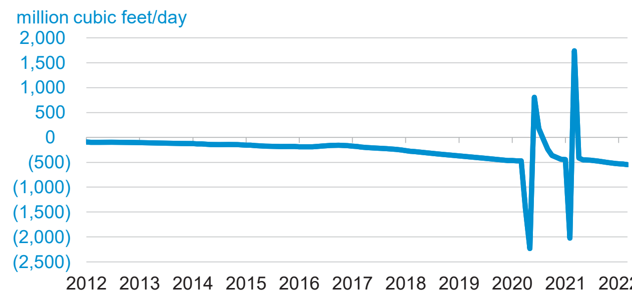
Permian Region
New-well gas production per rig **Rig count**



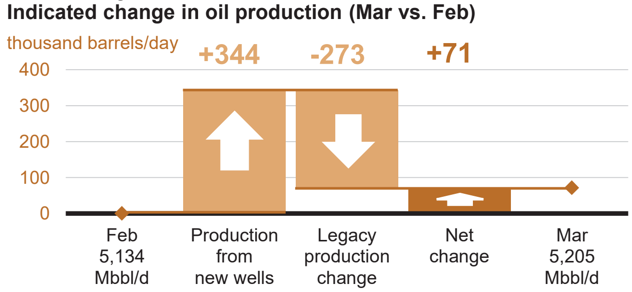
Permian Region
Legacy oil production change



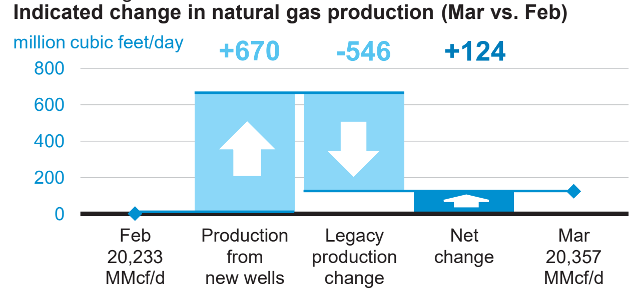
Permian Region
Legacy gas production change



Permian Region
Indicated change in oil production (Mar vs. Feb)

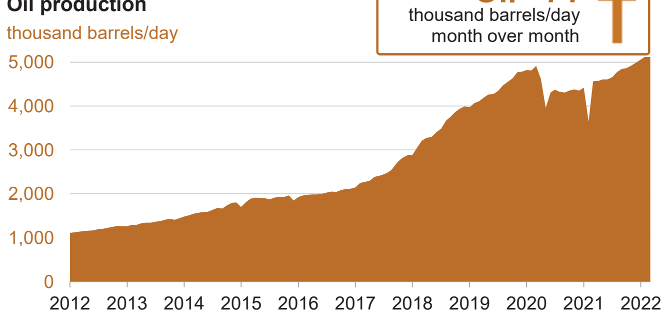


Permian Region
Indicated change in natural gas production (Mar vs. Feb)



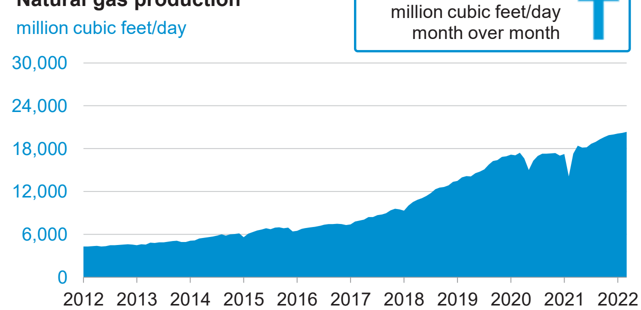
Permian Region
Oil production

Oil +71
thousand barrels/day
month over month



Permian Region
Natural gas production

Gas +124
million cubic feet/day
month over month



The Drilling Productivity Report uses recent data on the total number of drilling rigs in operation along with estimates of drilling productivity and estimated changes in production from existing oil and natural gas wells to provide estimated changes in oil[1] and natural gas[2] production for seven key regions. EIA's approach does not distinguish between oil-directed rigs and gas-directed rigs because once a well is completed it may produce both oil and gas; more than half of the wells do that.

Monthly additions from one average rig
Monthly additions from one average rig represent EIA's estimate of an average rig's[3] contribution to production of oil and natural gas from new wells.[4] The estimation of new-well production per rig uses several months of recent historical data on total production from new wells for each field divided by the region's monthly rig count, lagged by two months.[5] Current- and next-month values are listed on the top header. The month-over-month change is listed alongside, with +/- signs and color-coded arrows to highlight the growth or decline in oil (brown) or natural gas (blue).

New-well oil/gas production per rig
Charts present historical estimated monthly additions from one average rig coupled with the number of total drilling rigs as reported by Baker Hughes.

Legacy oil and natural gas production change
Charts present EIA's estimates of total oil and gas production changes from all the wells other than the new wells. The trend is dominated by the well depletion rates, but other circumstances can influence the direction of the change. For example, well freeze-offs or hurricanes can cause production to significantly decline in any given month, resulting in a production increase the next month when production simply returns to normal levels.

Projected change in monthly oil/gas production
Charts present the combined effects of new-well production and changes to legacy production. Total new-well production is offset by the anticipated change in legacy production to derive the net change in production. The estimated change in production does not reflect external circumstances that can affect the actual rates, such as infrastructure constraints, bad weather, or shut-ins based on environmental or economic issues.

Oil/gas production
Charts present all oil and natural gas production from both new and legacy wells since 2007. This production is based on all wells reported to the state oil and gas agencies. Where state data are not immediately available, EIA estimates the production based on estimated changes in new-well oil/gas production and the corresponding legacy change.

Footnotes:
1. Oil production represents both crude and condensate production from all formations in the region. Production is not limited to tight formations. The regions are defined by all selected counties, which include areas outside of tight oil formations.
2. Gas production represents gross (before processing) gas production from all formations in the region. Production is not limited to shale formations. The regions are defined by all selected counties, which include areas outside of shale formations.
3. The monthly average rig count used in this report is calculated from weekly data on total oil and gas rigs reported by Baker Hughes.
4. A new well is defined as one that began producing for the first time in the previous month. Each well belongs to the new-well category for only one month. Reworked and recompleted wells are excluded from the calculation.
5. Rig count data lag production data because EIA has observed that the best predictor of the number of new wells beginning production in a given month is the count of rigs in operation two months earlier.

The data used in the preparation of this report come from the following sources. EIA is solely responsible for the analysis, calculations, and conclusions.

Drilling Info (http://www.drillinginfo.com) Source of production, permit, and spud data for counties associated with this report. Source of real-time rig location to estimate new wells spudded and completed throughout the United States.

Baker Hughes (http://www.bakerhughes.com) Source of rig and well counts by county, state, and basin.

North Dakota Oil and Gas Division (https://www.dmr.nd.gov/oilgas) Source of well production, permit, and completion data in the counties associated with this report in North Dakota

Railroad Commission of Texas (http://www.rrc.state.tx.us) Source of well production, permit, and completion data in the counties associated with this report in Texas

Pennsylvania Department of Environmental Protection (https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Welcome/Welcome.aspx) Source of well production, permit, and completion data in the counties associated with this report in Pennsylvania

West Virginia Department of Environmental Protection (http://www.dep.wv.gov/oil-and-gas/Pages/default.aspx) Source of well production, permit, and completion data in the counties associated with this report in West Virginia

Colorado Oil and Gas Conservation Commission (http://cogcc.state.co.us) Source of well production, permit, and completion data in the counties associated with this report in Colorado

Wyoming Oil and Conservation Commission (http://wogcc.state.wy.us) Source of well production, permit, and completion data in the counties associated with this report in Wyoming

Louisiana Department of Natural Resources (http://dnr.louisiana.gov) Source of well production, permit, and completion data in the counties associated with this report in Louisiana

Ohio Department of Natural Resources (http://oilandgas.ohiodnr.gov) Source of well production, permit, and completion data in the counties associated with this report in Ohio

Oklahoma Corporation Commission (http://www.occeweb.com/og/oghome.htm) Source of well production, permit, and completion data in the counties associated with this report in Oklahoma

Executive summary

True to the famous words of Nietzsche, "What doesn't kill you makes you stronger", industrial gas consumption has made a record comeback after being deeply disrupted by the pandemic. Combined with strong heating demand and production freeze-offs, BloombergNEF's end of winter 2021-22 storage view tightens. However, this is not enough to stop ever-growing gas supply from loosening balances in the following seasons.

- **Production** during the current winter is seen dropping 81Bcf, mainly driven by freeze offs. Looking ahead, our production forecast adds 339Bcf over the previous monthly due to rising gas prices. The outlook assumes an eight-month delay to the start of the Mountain Valley Pipeline (MVP), capping Appalachia production near 35Bcf/d until its completion.
- **Industrial gas demand** for January 2022 came at an impressive 27.7Bcf/d, 4.1Bcf/d higher than the 23.6Bcf/d five-year average. The higher demand was partly driven by cold weather. BNEF forecasts 26.5bcf/d consumption for February 2022, following the previous month's momentum, before consumption falls back towards the five-year range in the following months.
- **February 2022** is set to deliver limited cold weather at 11 heating degree days (HDD) above normal. This is substantially lower than the previous month's 46HDD and February 2021's 105HDD above normal. January 2022 residential and commercial consumption was 1Bcf/d higher than our previous report's forecast and we've increased February by 0.4Bcf/d, tightening winter-end stocks.
- Weather variability between now and the end of winter adds 594Bcf of **storage uncertainty.** There is an 83% chance that balances end below the five-year average. The lower range is set by the winter of 2014-15.

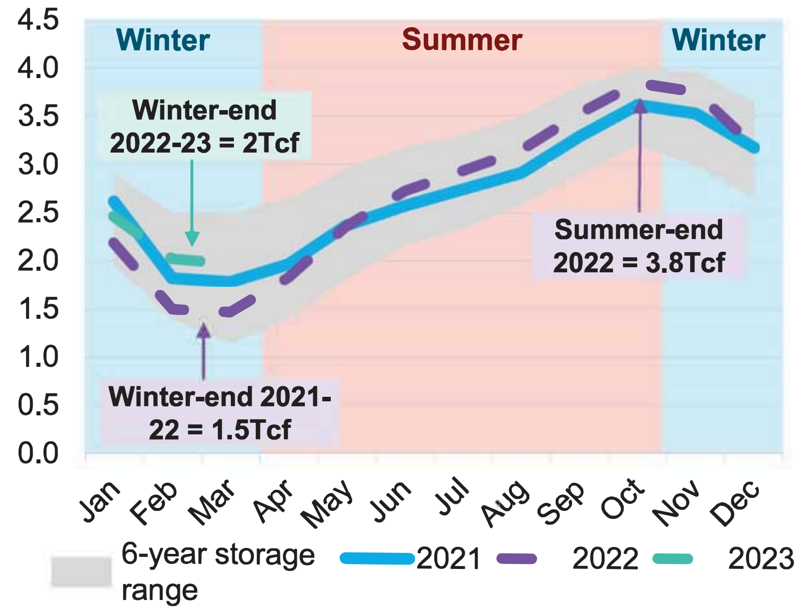
1,464Bcf Expected winter-end 2021-22 storage level

3,843Bcf Expected summer-end 2022 storage level

1,971Bcf Expected winter-end 2022-23 storage level

Natural gas inventory forecast

Trillion cubic feet



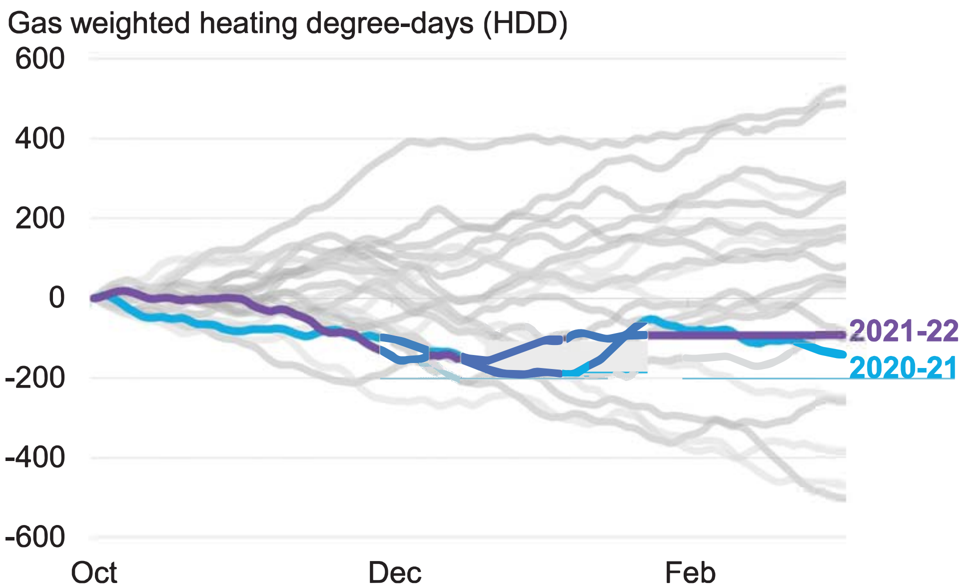
Source: BloombergNEF

Monthly injection forecasts

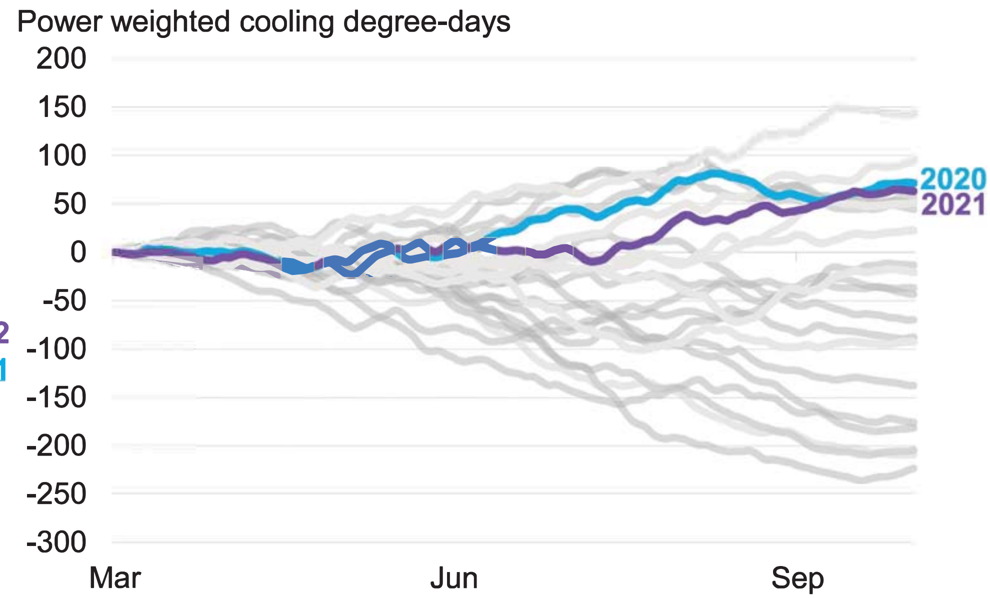
Winter 2021-22 headed to finish warmer than normal

Explore the data:
Weighted degree-day forecasts

Cumulative departure from 10-year weather normal for winter 2021-22



Cumulative departure from 10-year weather normal for summer 2021



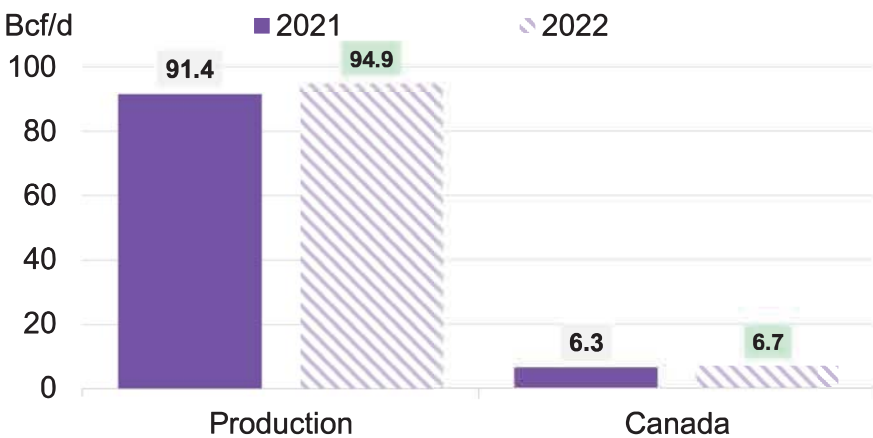
Source: BloombergNEF, WSI. Note: Weather forecast as of February 4, 15-day forecast ends on February 19.

- Winter 2021-22 will bring a total of 93HDD below normal assuming 10-year normal weather holds for the rest of the season. This follows the warmer winter 2020-21 which saw 142HDD below normal. Both winters have been characterized by warm starts followed by strong cold weather events mid-way through the season.
- The two winters were preceded by warmer than normal summer seasons. Summer 2021 saw 63CDD above normal, falling slightly below summer 2020 which had 71CDD above normal. This places the summers as the fourth and third warmest, respectively, in the last 20 years.

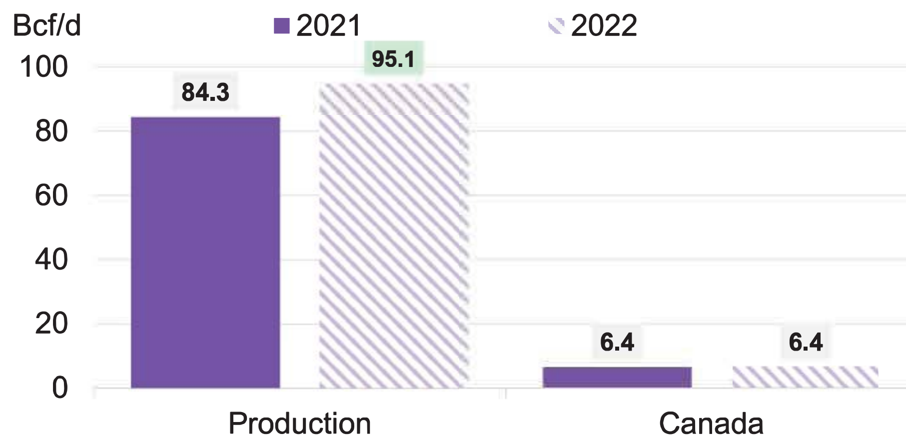
Monthly injection forecasts

Supply and demand by component for January and February

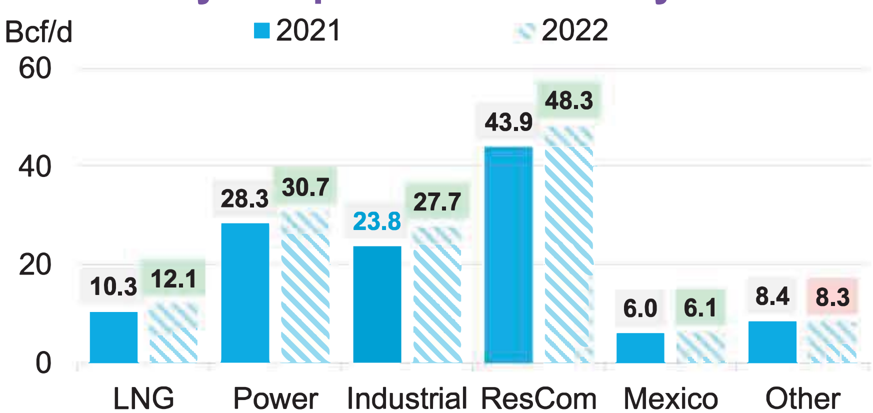
Supply by component for January 2022



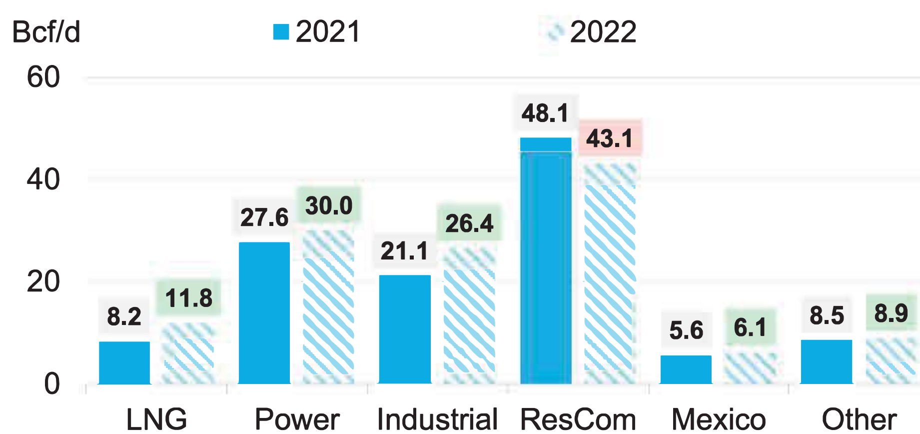
Supply by component for February 2022



Demand by component for January 2022



Demand by component for February 2022

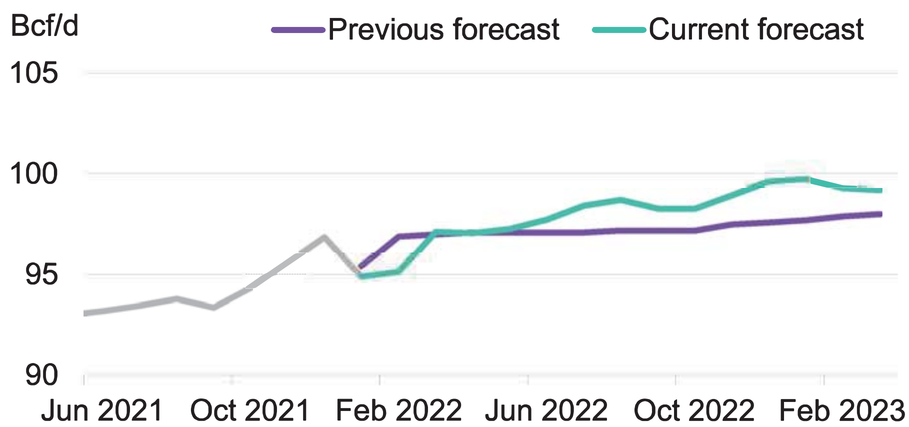


Source: BloombergNEF Note: ResCom refers to residential and commercial. Other includes pipe losses, plant fuel, and balancing item.

Supply and demand tracking

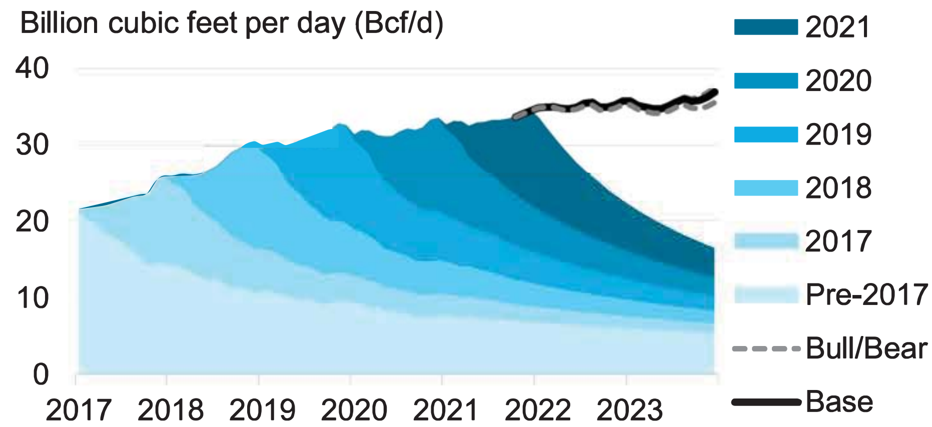
U.S. gas production will continue rising

Lower 48 gas production scenarios



Source: Enverus, company announcements, Energy Information Administration, BloombergNEF estimates.

Appalachia gas production forecast



Source: Enverus, company announcements, Energy Information Administration, BloombergNEF estimates.

- BNEF's latest U.S. Gas Production Outlook adds 339Bcf over the previous report as rising prices push production higher (current season to end-of-winter 2022-23). However, the current winter's production has declined by 81Bcf compared to our previous forecast, mainly due to freeze offs.
- The outlook assumes that Mountain Valley Pipeline (MVP) will face an eight-month delay from its previous start date of September 2022. This follows a decision from the 4th Circuit Appeals Court to reject the project's permit to cross part of a national forest in Virginia and West Virginia.
- Until MVP begins service, BNEF assumes a near 35Bcf/d cap for Appalachia gas production during the shoulder seasons. The pipeline will expand takeaway capacity from the region by 2Bcf/d when it goes online.
- Early February 2022 freeze offs drove an 11Bcf/d production drop (GSPRODUS Index <GO>) from 97Bcf/d in Jan 31, 2022, to 86Bcf/d in Feb 4, 2022. We assume production takes at least five days to recover from its lowest point. By March 2022, gas production will rise slightly above December 2021's 97Bcf/d.

Strong demand through February

U.S. L48 gas market supply-and-demand balance sheet

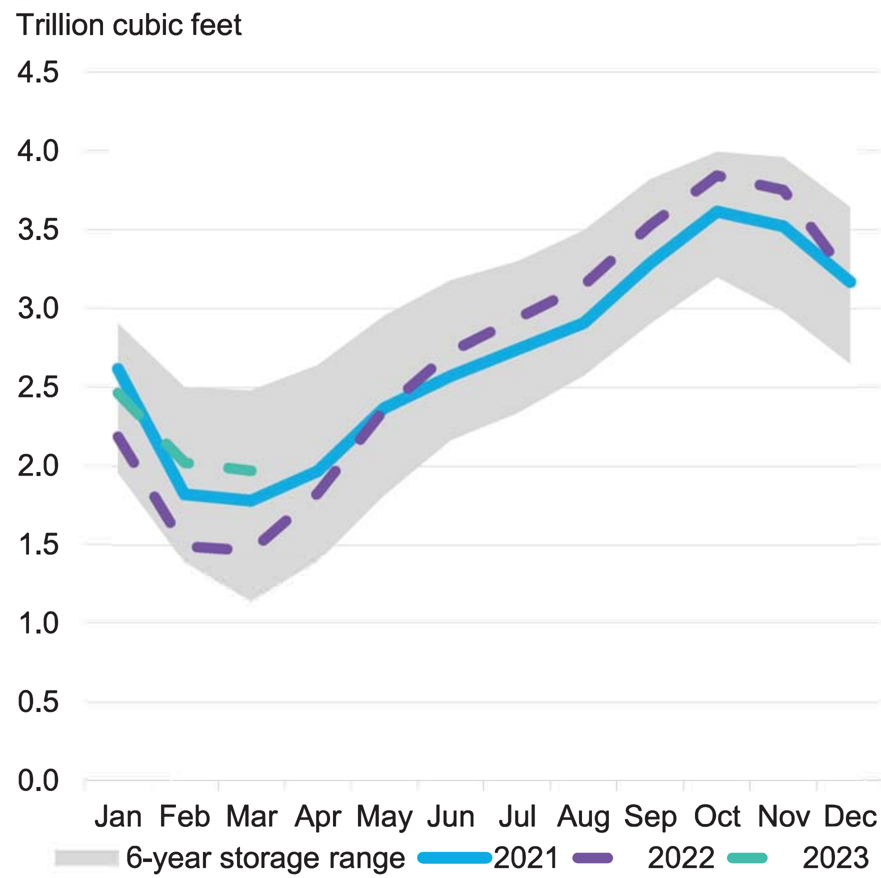
Bcf/d	Nov 21	Dec 21	Jan 22	Feb 22	Mar 22	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23
Dry production	95.6	96.9	94.9	95.1	97.1	97.1	97.3	97.7	98.4	98.7	98.3	98.3	98.9	99.6	99.7	99.3	99.2
Net imports from Canada	5.3	4.8	6.7	6.4	5.6	5.4	5.6	5.6	5.8	5.6	5.3	5.6	5.3	5.8	6.6	6.2	5.6
Total supply	**100.9**	**101.6**	**101.6**	**101.5**	**102.7**	**102.4**	**102.9**	**103.4**	**104.2**	**104.3**	**103.5**	**103.9**	**104.2**	**105.4**	**106.3**	**105.5**	**104.8**
Power consumption	29.1	28.4	30.7	30.0	23.0	22.6	26.2	34.1	40.0	40.3	34.9	29.4	27.4	28.9	28.2	24.9	23.9
Industrial consumption	24.3	25.1	27.7	26.4	22.8	21.8	21.5	21.7	22.0	21.8	21.5	22.5	24.1	25.3	25.1	24.4	22.8
Rescom consumption	27.1	32.6	48.3	43.1	31.2	20.3	12.2	8.7	7.9	7.8	8.9	15.7	27.9	40.6	46.8	42.6	31.2
Plant fuel	5.2	5.3	5.2	5.4	5.5	5.5	5.5	5.5	5.6	5.6	5.6	5.6	5.6	5.7	5.7	5.6	5.6
Pipe losses	2.9	3.0	3.8	3.5	3.0	2.5	2.2	2.3	2.5	2.5	2.3	2.3	2.8	3.3	3.9	3.6	3.0
Exports to Mexico	5.9	6.0	6.1	6.1	6.5	6.6	6.6	7.0	6.8	6.7	6.6	6.6	6.3	6.3	6.4	6.4	6.6
LNG exports	11.0	11.8	12.1	11.8	11.6	11.0	11.3	12.0	12.6	12.7	11.0	11.6	13.1	13.6	13.5	13.7	13.3
Total demand	**105.7**	**112.1**	**134.0**	**126.4**	**103.7**	**90.3**	**85.6**	**91.3**	**97.4**	**97.5**	**90.9**	**93.7**	**107.3**	**123.7**	**129.6**	**121.3**	**106.5**
Balancing item	**-1.7**	**0.9**	**-0.7**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Average daily storage change last year	-1.1	-18.0	-23.0	-28.3	-1.3	6.2	12.9	6.8	5.5	5.4	12.7	10.5	-3.1	-11.4	-31.6	-24.8	-0.9
Average daily storage change	-3.1	-11.4	-31.6	-24.8	-0.9	12.1	17.2	12.1	6.8	6.8	12.7	10.1	-3.1	-18.3	-23.2	-15.8	-1.7
Total monthly storage change (Bcf)	-92	-352	-981	-695	-29	363	535	362	212	212	380	315	-93	-566	-720	-442	-52
Storage level (Bcf)	**3,522**	**3,169**	**2,188**	**1,493**		**1,828**	**2,362**	**2,724**	**2,936**	**3,148**	**3,528**		**3,750**	**3,184**	**2,464**	**2,023**	**1,971**

BloombergNEF

Balance: U.S. gas storage levels to end winter 2022-23 at 1,971Bcf

Read previous monthly
U.S. Gas Monthly:
Don't Let the Cold Fool You

Natural gas inventory forecast, 2021-23



Source: BloombergNEF

BNEF's inventory forecast has tightened for end-of-winter 2021-22 and loosened for end-of-winter 2022-23 from last month. Strong rescom demand in January plus rising industrial consumption add considerable tightness this season. The following winter, balances loosen as Lower 48 gas production keeps breaking records.

Winter 2021-22: BNEF's **1,464Bcf** end-of-winter inventory view is **314Bcf** lower than last month's forecast. The difference is driven by a recovery in rescom and industrial demand.

Summer 2022: The summer-end estimate rises to **3,843Bcf,** just **22Bcf** above our previous estimate. The recovery in balances from the last season is driven by growing lower-48 production and falling power burns.

Winter 2022-23: Next winter ends at **1,971Bcf**, which is **286Bcf** higher than last month's report. During this period, rising lower-48 production loosens end-of-winter balances.

Year-on-year changes in major fundamental sectors

Sector	Winter 2021-22 (Bcf/d)	Summer 2022 (Bcf/d)	Winter 2022-23 (Bcf/d)
L48 Production	6.0	4.6	3.4
Power burns	1.4	-0.5	-1.6
Rescom	-0.7	0.4	1.4
Industrial	3.3	1.1	-0.9
LNG	1.7	1.4	1.8

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The Honorable Jennifer Granholm
Secretary, U.S. Department of Energy
1000 Independence Ave, S.W.
Washington, DC 20585

February 16, 2022

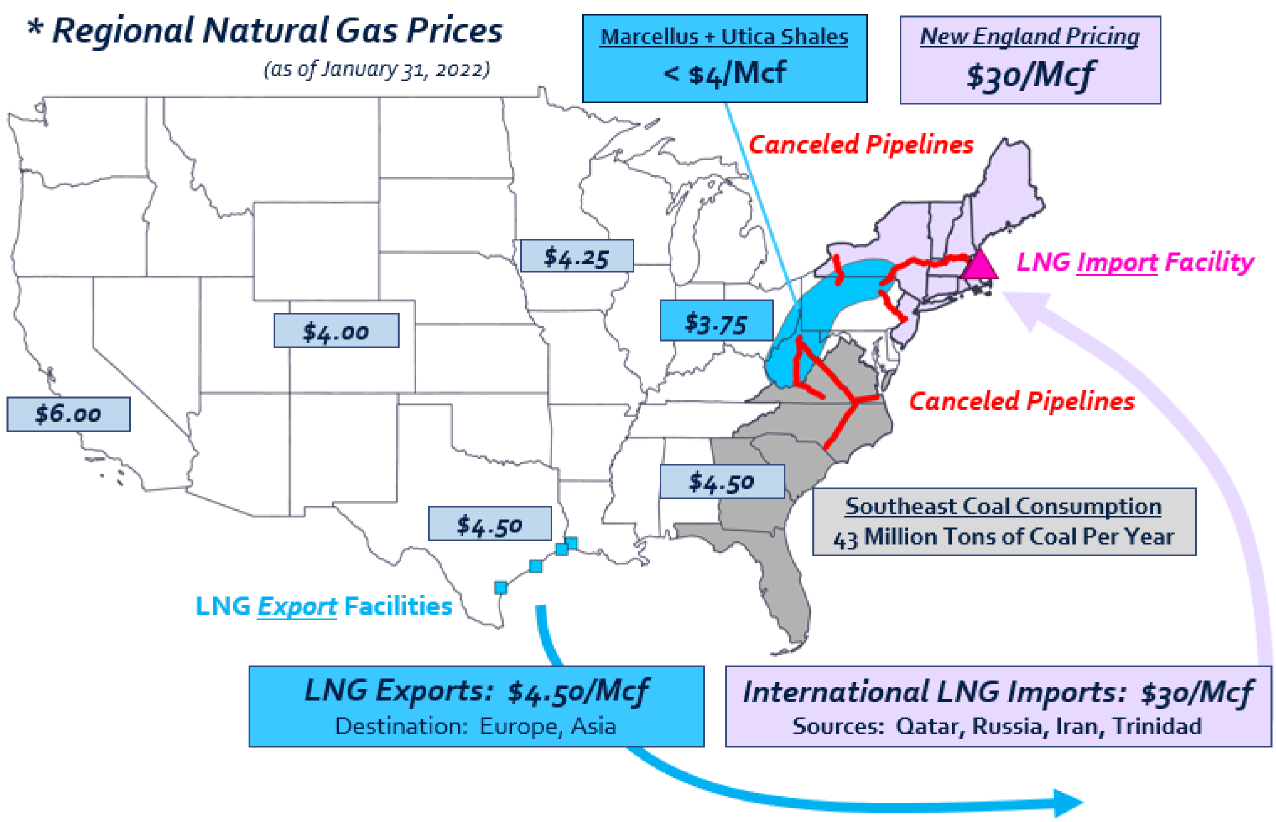
Dear Secretary Granholm-

I am writing to you in response to a recent letter from several U.S. Senators dated February 2, 2022 (the February 2nd Letter) wherein the signatories urged you to "take swift action to limit U.S. natural gas exports and examine their impact on domestic energy prices." The February 2nd Letter echoes a sentiment expressed by one of the signatories in a letter sent to several natural gas executives, including myself, in November 2021. My response thereto (the Response Letter) can be found here.

New England's "Canceling" of Natural Gas Infrastructure is the Cause of Recent Price Inflation

It is difficult to look past the fact that seven of the ten signatories to the February 2nd Letter hail from New England, as well as the timing of their letter. The weekend before the February 2nd Letter, natural gas pricing in New England reached levels that were among the highest in the world, approaching $30/mcf. At the same time, prices in Pennsylvania (and most of the United States) were around $5/mcf, below the 20-year average.

There is no need to "halt permit approvals of U.S. LNG export facilities" pending the conduct of "a review of LNG exports and their impact" on prices experienced by New Englanders. There is no active LNG export facility in New England, meaning there is no incremental demand from U.S. LNG in New England that would explain why it has prices over five times those of neighboring states.



American Natural Gas cannot physically flow to Eastern states due to pipeline cancelations

Canceled + Opposed Pipeline Projects

Project	Status	Gas Volumes (Bcfd)	Number of Homes it Would Have Served
Constitution	Canceled	0.7	2.5 Million
Penn East	Canceled	1.1	4.0 Million
Northern Access	Opposed	0.5	1.8 Million
Mountain Valley	Opposed	2.0	7.3 Million
Atlantic Coast	Canceled	1.5	5.5 Million
Northeast Direct	Canceled	1.2	4.4 Million
Total		7.0	25.5 Million

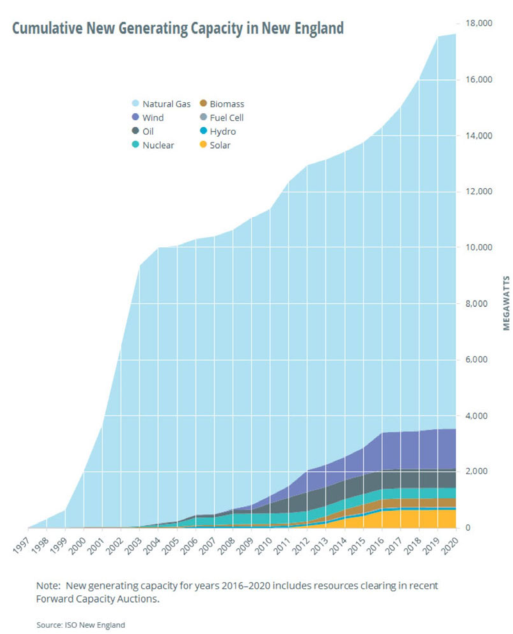
And it is not a question of domestic supply. We have ample resources, more than any other nation in the world[1], and well in excess of what would be needed to maintain the United States' leading position as the lowest-cost provider of natural gas for decades to come.

The problem is very straight forward: <u>the pipelines heading to New England are full, and as a result, we cannot physically flow that gas needed to meet growing demand without more infrastructure</u>. That's it.[2] And the way to solve this problem is equally straight forward: <u>allow the completion of pipeline projects such as those in the table noted above, many of which are substantially complete, and let us provide the natural gas … while also reducing New England's emissions</u>.

The True Impact of the Infrastructure "Cancelation" Movement

What we are seeing play out in New England is the result of a symbolic attempt to address climate change by canceling pipelines, thereby isolating itself from domestic supply.

I say "symbolic" for a few reasons. At the time, it was argued that the natural gas that the pipelines would deliver was not necessary, and that lower emissions alternatives were all that was needed. In reality, though, since canceling the first natural gas pipeline that would have accessed New England, <u>the consumption of natural gas by the region has increased, not decreased</u>. The consequence has been that New England has had to look to foreign natural gas to meet its energy needs.



<u>New England is the only region remaining in the United States that is importing LNG from foreign sources</u>. Rather than relying on natural gas sourced from Appalachia with some of the lowest methane emissions and smallest carbon footprints on the planet, New England instead has to source foreign supply shipped from over 2,000 miles away. <u>Not only has the cancelation movement resulted in New England's natural gas being the least responsibly-sourced with the highest emissions in the United States, it has also caused the region to be subject to international LNG pricing</u>. *This* is the reason New Englanders are paying five times more for natural gas than their neighbors.

[1] As used herein, references to U.S. natural resource are based on company analysis of economically recoverable reserves < $4/mcf.
[2] https://www.iso-ne.com/about/what-we-do/in-depth/natural-gas-infrastructure-constraints

And this highlights the fallacy underlying the infrastructure "cancelation" movement: it has been nothing more than a reckless insertion of costly inefficiencies into the energy ecosystem, and an exportation of accountability for emissions. It has not resulted in emissions reductions. In reality, it has resulted in increased cost and emissions. And as such, it has had results directly counter to the stated goal of its proponents (and their financiers).[3]

Had New England allowed the construction of pipelines into its region, it would be consuming the same amount of natural gas that it is today, but without the exorbitant costs being borne by its citizens.[4] Those savings could have gone towards investments in other decarbonization opportunities, such as renewables. Instead, New England is maxing out the consumption of other emissions-intensive power sources and importing foreign natural gas, both of which are worse for the environment. In fact, this winter, New England has had periods where approximately one-quarter of their electricity was sourced from burning oil,[5] and throughout the year, 34% of New England residents burn oil to heat their homes.[6] This energy mix, for which the pipeline cancelation movement is accountable, is comparable to what is seen in undeveloped countries, not the United States.

In the Southeast, the absence of accessible natural gas because of the cancelation movement is forcing the region to continue to consume coal. Coal power generation would have been the principal target for replacement had the Atlantic Coast Pipeline (canceled) or the Mountain Valley Pipeline (delayed) been constructed. Instead, because of the cancelation movement, we will continue to have tens of millions of tons of unneeded CO2e emitted per year.

A follower of the rhetoric may celebrate cancelation as a victory, but it is a Pyrrhic victory.

The Misguided "Solution" Would Increase New England's Prices

Which takes me to the proposed "solution" cited in the February 2nd Letter: limiting U.S. LNG to alleviate pricing.

I understand the political convenience of attacking U.S. LNG in a time of inflation and increased regional natural gas pricing. It is seen as a source of "extra" supply that can be targeted to answer the demand needs to reduce costs without the political inconvenience of having to support increased natural gas development.

The problem, however, is that limiting U.S. LNG export will do nothing to alleviate the natural gas pricing environment in New England for the very reasons stated above. If natural gas producers cannot deliver incremental volumes to New England from only 200 miles away due to a lack of pipeline infrastructure, neither can LNG cargoes docked in ports off the coast of Louisiana.

And ironically, "tak[ing] swift action to limit U.S. natural gas exports" would actually *increase* natural gas prices for New Englanders. By removing approximately 22% of supply from the global LNG market, the price for purchasers of global LNG such as New England would inherently increase, significantly.

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[3] This is not an argument that natural gas should grow in perpetuity, or that renewables are not a viable solution. It is more so an argument to highlight the shortcomings of the presumptions underpinning the "cancelation" movement, and the ramifications of those shortcomings. The "cancelation" movement rests on the presupposition that if supply of natural gas is blocked, renewables will immediately fill the demand void. This drastically overestimates the penetration rates of renewables seen to date, which have yet to grow at a rate that keeps pace with total energy demand growth. It also highlights the discrepancy between the full life-cycle costs of renewables and the common narrative suggesting renewables are currently cost-competitive with natural gas. New England should be a case study for those making this argument. If there were a readily available, lower-cost, lower emissions-intensive alternative capable of meeting New England's electricity needs, it would be the marginal cost of supply. But we are not there yet. We cannot make meaningful progress in addressing climate change if we sacrifice the available "good" for the not-yet-available "ideal." We can and should invest in renewables, but we also can and should invest in natural gas.

4 Cost is inherently a consideration in how to best address global climate change. Not only do costs flow back to American citizens, prioritizing lower cost decarbonization opportunities allows for savings to be deployed into additional decarbonization opportunities. As an example, due to the energy crisis currently playing out in Europe, which is principally the result of Europe's rapid transition away from traditional energy resources like natural gas, it is estimated that Europeans will spend approximately $1 trillion this year on energy versus an average year of approximately $500 billion. (https://www.bloomberg.com/news/articles/2022-01-12/europe-faces-1-trillion-energy-bill-this-year-citigroup-says) The difference – experienced in just one year – is roughly one quarter the total asserted cost of the Build Back Better Act.

5 https://www.forbes.com/sites/davidblackmon/2022/01/17/new-englands-clean-energy-transition-seems-heavy-on-fuel-oil/?sh=37232c9c7ee4

6 https://www.mass.gov/service-details/how-massachusetts-households-heat-their-homes

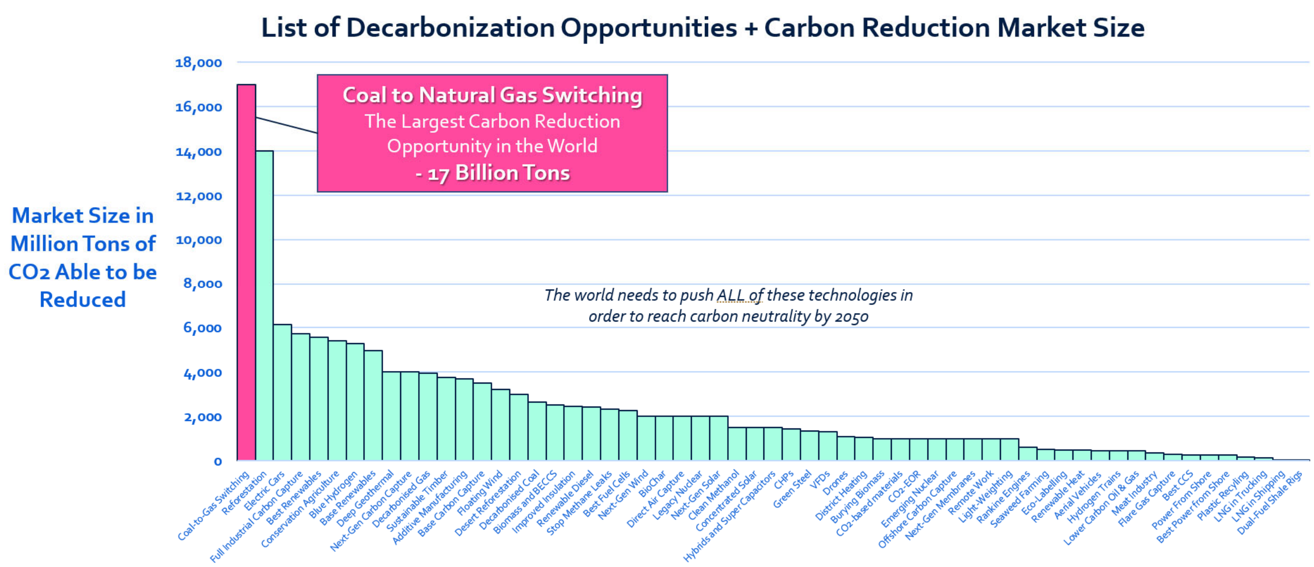
Like the pipeline cancelation movement, the U.S. LNG cancelation movement would be nothing more than the insertion of a costly inefficiency into our energy ecosystem resulting in consequences that are the exact opposite of the stated intent.

LNG is the Most Significant Decarbonization Opportunity for the United States to Influence Global Climate Change

To suggest limiting U.S. LNG at this time, however, is a political convenience taken too far. Not only will it not work, and not only is the request being made at a time when our allies are relying on U.S. LNG to counter Russian aggression, it is also severely detrimental to our collective efforts to address global climate change.

<u>Providing low-cost, reliable energy while simultaneously addressing global climate change requires solutions, not scapegoats</u>.

Natural gas replacing coal is a decarbonization opportunity, and a significant one, full stop. It is proven to be effective at scale, and it is actionable today. The more we can accomplish in the next decade by acting on available solutions such as coal-to-gas switching, the easier (and less costly to Americans) our efforts will be to address the balance of carbon reduction needs in the coming decades.[7]



Source: Thunder Said Energy, Data-set Limited to Sub-$100/ton Opportunities

As demonstrated in the Response Letter, natural gas replacing coal has a 20-year track record of success, reducing emissions at a scale and speed unmatched by any other single renewable technology. To put things into context: <u>EQT alone directly contributed to approximately 5% of the total emissions reduction in the United States from 2005 to 2019. The entire U.S. solar industry was 6%</u>.[8]

Not only has coal-to-gas switching been the leading contributor to the world-leading emissions reduction experienced in the United States over the last fifteen years, our ability to leverage U.S. LNG as our primary weapon against global emissions is equally proven and impactful. <u>Since the first installation of LNG export facilities in 2016, the</u>

[7] Of particular importance, as is relates to U.S. LNG and as explained in more detail in the Response Letter, "we" refers to the global "we," not the United States "we," the New England "we" or the Boston "we." Approximately 91% of coal consumption is international, requiring an international approach to coal-to-gas switching if we are to contribute in any meaningful way.

[8] Calculated by applying relative contribution to emissions reductions impact of coal-to-gas switching and non-carbon renewables on power sector emissions. (https://www.eia.gov/environment/emissions/carbon/archive/2019/) For example, EQT represented approximately 10% of domestic production growth over the period, allowing for coal-to-gas switching that in total contributed to the total coal-to-gas switching of 525 million MTs of emissions reduction, or approximately 52.5 million MTs attributable to EQT. Percent of total emissions reduction calculated by dividing impact (53.5 million MTs) by total U.S. emissions reduction, inclusive of non-power sector emissions (970 million MTs).

decarbonization impact of the U.S. LNG export industry replacing international coal is greater than the impact of the of the entire U.S. solar industry over the fifteen-year period of 2005 to 2019. Its emissions reduction impact has been the equivalent of electrifying approximately 140 million cars.[9] Our industry achieved this in the face of opposition from those that have erroneously believed that the best path to address global climate change was by pitting natural gas against other decarbonization opportunities.

And the natural gas industry can do more. Much more.

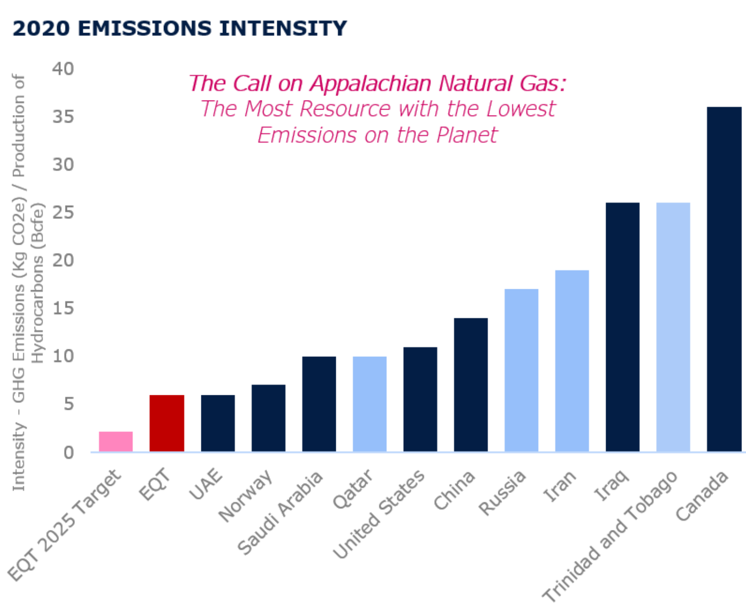
With Your Support and Leadership, the Natural Gas Industry Stands Ready to Deliver

This is the real world that we are living in, and supporters of addressing climate change need to start being honest about this. No decarbonization opportunity, let alone the largest opportunity this country has available to it, should be opposed at a time when it is apparent that we are not making the progress that we as a world need to make.[10] It is not an "either/or" choice between decarbonization opportunities, it is an "all of the above" solution.

The recent events in New England, Europe and Asia clearly demonstrate where we stand in our journey to address climate change. We do not have decades at our disposal to pursue policies that are not grounded in reality at the expense of policies that are. We need to move quickly and with a focus on opportunities that will provide meaningful progress today. And in that world, if we look at things in an honest manner, it is clear that U.S. LNG has the potential to be the largest green initiative on the planet.

And for each argument against increasing natural gas supply here in the United States to facilitate international coal-to-gas switching, I will highlight the following: four countries hold roughly two-thirds of the world's natural gas resources. The United States has the most, followed by Russia, Iran and Qatar.

Just as a lack of sound policy grounded in reality has resulted in Trinidad and Tobago supplying natural gas to New England instead of Appalachia, so too will Russia, Iran and Qatar supply the rest of the world if we continue to limit U.S. LNG. And the results will be the same: increased emissions and increased cost to Americans, with an added consequence of enhanced geopolitical risk.



Source: Rystad

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[9] Calculated using emissions reduction of coal-to-gas switching of approximately 30 million MTs per Bcf of natural gas supplied and 2.77 MTs per electrified car, as detailed in the Response Letter.

[10] The contemplated halting of LNG exports would be as damaging to our path to net zero as eliminating 100% of wind, solar, and electric vehicle manufacturing in the United States.

Conclusion

The solution to addressing elevated regional natural gas pricing is simple: let us connect our low-cost, low-emissions supply to demand with the pipelines our industry has proposed. We are ready to deliver, but we need your support.

In the long-term, after we have addressed the costly inefficiencies in our domestic system that are (unnecessarily) being borne by American citizens, that infrastructure can be used to expand upon the foundation of our largest weapon in addressing global climate change – an amplified U.S. LNG program targeting international coal.

The United States has more natural gas resources than any other country in the world. As such, the responsibility of the United States to be a leader inherently requires a reasoned, apolitical approach to the role of natural gas in addressing global climate change.

Now is **<u>not</u>** the time to limit the U.S. natural gas industry and U.S. LNG, now is the time to unleash it.

Sincerely,

Toby Z. Rice
President and Chief Executive Officer

https://rbnenergy.com/upside-down-how-global-prices-steer-us-lng-to-different-destinations

Upside Down - How Global Prices Steer U.S. LNG To Different Destinations

Tuesday, 02/15/2022
Published by: Lindsay Schneider

Even as winter starts to wind down, global natural gas prices remain elevated as rising tensions between Russia and the Western world have destabilized European energy markets and pushed LNG, and U.S. LNG in particular, to center stage. From a markets perspective, the story of the past year has been high global gas prices — a strong incentive for LNG producers to push production facilities to operate at peak capacity and produce additional cargoes. The tight market has also spurred demand for new long-term sales and purchase agreements (SPAs), creating momentum for a potential new wave of LNG development. But while gas prices in Europe and Asia have been elevated all year, they have not been elevated evenly. The Asia-Europe price spread has swung dramatically from favoring Asia last spring and summer to favoring Europe this winter, and U.S. export destinations have swung with it. Last summer, almost no destination-flexible LNG produced in the U.S. was landing in Europe and now Europe is consuming U.S. LNG at record levels. In today's RBN blog, we look at how global price spreads impact U.S. LNG export destinations and what the strength in European demand means for the future of LNG development.

U.S. LNG production is at an all-time high, driven both by new terminals coming online and the existing fleet operating at peak capacity for an extended period this winter (see Higher and Higher). High global demand for LNG has underpinned the market for over a year now, pushing gas prices to record highs repeatedly in the second half of 2021 (see Baby, It's Cold Outside). And while prices are down from their last ultra-peak of nearly $60/MMBtu in late December, they remain incredibly elevated compared to previous years, with increased uncertainty over Russia continuing to put upward pressure on gas prices even as winter enters its final weeks. European fundamentals have driven headlines around the global gas market all year, from record-low storage (see It's Too Late) to soaring carbon prices (see I Won't Back Down) to the prospect of a Russia-Ukraine armed conflict indefinitely postponing the startup of Nord Stream 2, the new pipeline from Russia to Germany which would have increased Russian piped exports to Europe. But despite the flashy headlines, summertime U.S. LNG exports to Europe were barely more than in the previous year, which was during the peak of COVID-related cargo cancellations. Even with prices having quadrupled from 2020 amid high global gas demand, Europe was consistently outbid for cargoes by other markets. Now, that's completely flipped. Last month, more than 75% of U.S. LNG, or 75 of the 98 cargoes exported in January, landed in Europe, nearly double the volume from the previous winter. It's an astonishing reversal, driven by the flexible nature of U.S. LNG contracts (see Just Can't Get Enough, Part 2) and the Asia-Europe price spread.

As we've said, one of the most important characteristics of U.S. LNG is its destination flexibility. Contracts and government regulations allow offtakers to market to any country not under U.S. sanctions and a diverse group of offtakers hold long-term contracts for U.S. LNG. In our LNG Voyager Quarterly report, RBN tracks all long-term contracts for existing LNG terminals and projects under development. We separate offtakers into five buckets: Asian Consumers, Asian Traders, Pacific Basin LNG Producers, Portfolio Players, and European Consumers. The two consumer categories comprise utilities in their respective continents, such as South Korea's KOGAS in Asia or Germany's Uniper in Europe. Utilities hold just under 40% of U.S. long-term offtake agreements, split evenly between Europe and Asia. The remaining three categories, which account for more than 60% of long-term U.S. contracts, are all inherently destination flexible as they are not themselves consumers — a mix of Asian traders such as Mitsui, global portfolio players like BP and TotalEnergies, and a small number of Pacific Basin producers, like Woodside. While many of these companies have sales agreements of their own with LNG end-users, they also have diverse supply sources to serve those obligations which allow them to optimize their logistics and shipping costs. The end result is that U.S. LNG destinations can change dramatically by season, over time, and in line with global gas prices.

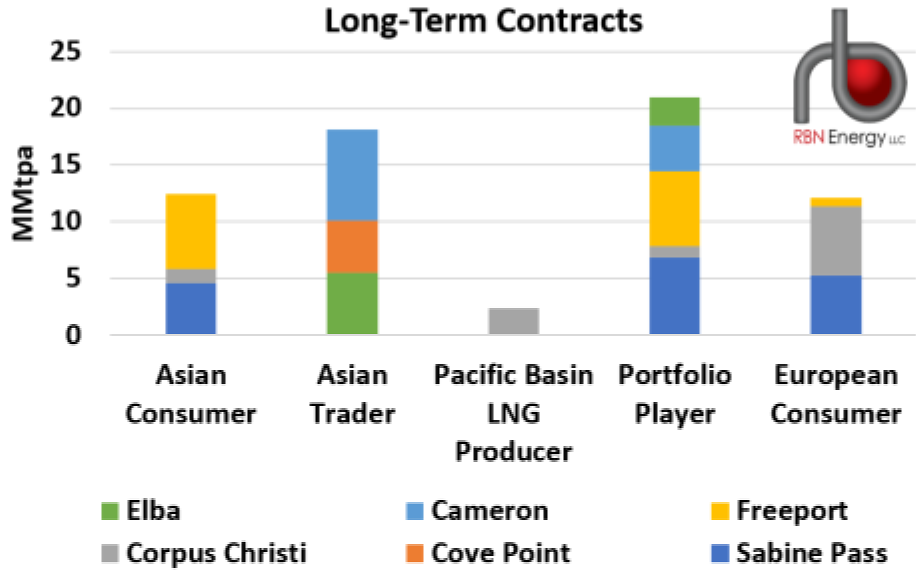

Figure 1. Long-Term Contracts from Operational U.S. LNG Terminals. Source: RBN LNG Voyager

Destination flexibility can and does extend beyond that 60% when prices warrant, as we've seen repeatedly over the past few years. First, if prices fall low enough, as we saw during the COVID-related market crash in the summer of 2020, offtakers can cancel cargoes. When prices are high, like now, all U.S. terminals have the ability to operate above their long-term capacity and produce additional cargoes for short-term contracts or the spot market (see Higher and Higher). Department of Energy (DOE) rule changes during the Trump administration allow LNG terminals to use their existing long-term export licenses to execute short-term and spot-market sales. As a consequence, spot-market LNG production is no longer specifically reported to the DOE, so it is impossible to quantify exactly, but based on feedgas intake and cargo activity it appears that every LNG production facility, except perhaps Freeport and Elba, has been active in the short-term sales market at some point this winter.

But there is also a lot of wiggle room in the market. If the price spread between Europe and Asia gets wide enough, even utilities have been known to resell and reroute cargoes. In January, just 13% of U.S. LNG cargoes looked as if they were headed to Asia (some cargoes exported in January are still in transit) — a level below what utilities have contracted for. To understand the way the price spread impacts cargo destinations, we have to talk a little about shipping. From the U.S. Gulf Coast, it takes a cargo about twice as long to get to Asia as it does to Europe, and that's if the cargo to Asia is using the Panama Canal (meaning additional transit fees), while longer routes through the Suez Canal (fees again) or around the Cape of Good Hope add more days, and therefore increased shipping costs, to the voyage. RBN has created a metric that we call the "Competitive Range" (gray shaded area in Figure 2) as a way to evaluate the Asia-Europe price spread in the context of variable and shipping costs over time and by destination. Of course, exact costs vary by specific contract, but using a likely range of costs from our export economics model, we can create a range to better understand how shipping cost differentials and prices interact (see Wild Thing). Figure 2 shows the price differential (black line) between Asia, denoted by the Japan Korea Marker (JKM), and Europe, denoted by the Dutch Title Transfer Facility (TTF). When the JKM-NBP price spread is in the blue area, Asia is the more economically favorable market for destination-flexible cargoes, and when it's in the orange area Europe is more favorable. When the spread is inside the gray area, neither market has a clear advantage and cargo destinations would tend to be more mixed.

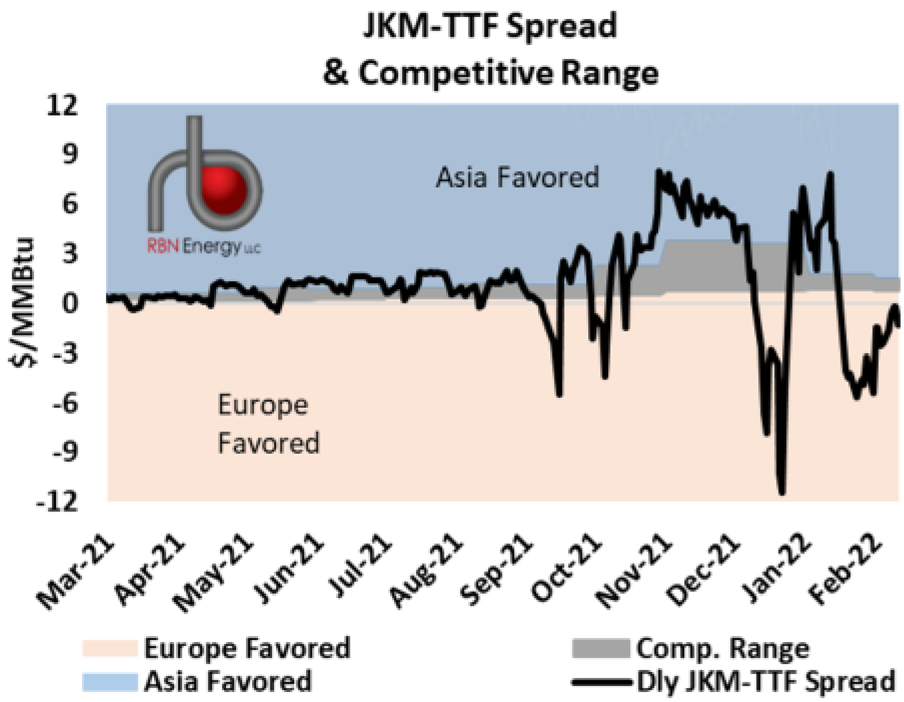

Figure 2. JKM-TTF Price Spread vs. Competitive Range. Source: RBN LNG Voyager

Of course, end-users don't always respond instantaneously to changes in the price spread, and decisions about lifting cargoes can often be made months in advance, but looking at the price spread over time in the context of shipping differentials is highly reflective and predictive of where U.S. exports land. Over the spring and summer, Asia was mostly the favorite destination. Between June and August, U.S. exports to Europe (orange bars in Figure 3) averaged just over 18% of the total, about the same as the volume under long-term contracts held by European utilities for U.S. LNG. During that time, just over 50% of U.S. exports landed in Asia, the rest heading to Latin America. Gas demand peaks in Latin America during winter, when it is summer in the Northern Hemisphere. Latin America does not have a liquid pricing index to compare in the global gas market but large volumes of U.S. LNG head there every summer even though no Latin American utilities currently hold long-term contracts with U.S. LNG terminals. This past summer, exports to Latin America and specifically to Brazil, which relies heavily on hydroelectricity, were especially high as LNG was needed to offset the impact of a severe drought. The U.S. exported nearly 100 cargoes to Brazil in 2021, compared with 17 in 2020. In the fall, the price spread began to flip, swinging aggressively toward Europe, with TTF even trading above JKM for periods during the fall and winter — a very rare occurrence. Exports to Europe from the U.S. began to ramp up over the fall, then climbed to astonishing record levels this winter. In January, more than 75% of all U.S. LNG — more than 70 cargoes — were headed for Europe. Prior to this winter, the all-time high for a single month was just 42 cargoes.

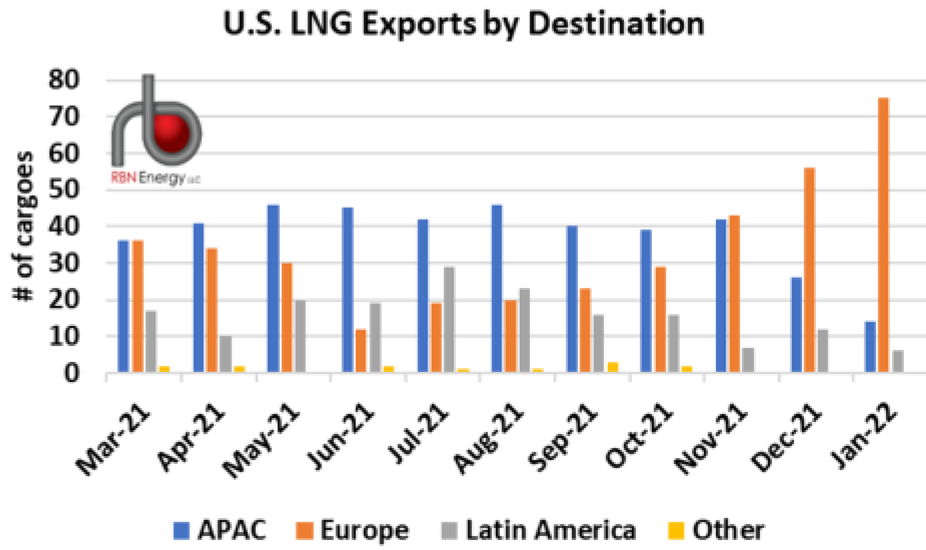

Figure 3. U.S. LNG Cargoes by End-Use Market. Sources: RBN LNG Voyager, DOE

The current extreme swing to Europe isn't over yet. TTF has settled above JKM almost every day since mid-January, an astonishingly long run of a pretty rare price differential. U.S. cargoes are still overwhelmingly heading toward Europe, but winter is almost up and a more balanced mix of cargoes is likely ahead for spring and summer as heating demand in the Northern Hemisphere declines and demand in Latin America picks back up. But demand for cargoes in Europe will remain high as European storage will come out of winter incredibly low and provide continued support to gas prices. The wild swing of cargo destinations from summer to winter highlights the flexibility of U.S. LNG, which has made it very attractive to offtakers. Global portfolio players continue to pursue new offtake capacity from the next generation of U.S. LNG (see Jump in the Line), but so do utilities. And with more uncertainty than ever around Russian piped gas exports to Europe, LNG is once again at the forefront of Europe's gas strategy. Thanks to proximity, this is particularly advantageous for Atlantic-based LNG — like all the existing U.S. terminals and many of the Gulf Coast projects hoping to take a final investment decision (FID) this year.

"Upside Down" was written by Nile Rodgers and Bernard Edwards (Chic) and appears as the first song on side one of Diana Ross's 11th studio album, *diana*. Released as the first single from the album, the song went to #1 on the Billboard Hot 100, Disco, and Soul Singles charts. It has been certified Gold by the Recording Industry Association of America. Personnel on the record were: Diana Ross (lead vocals), Bernard Edwards (bass), Nile Rodgers (guitar), Tony Thompson (drums), Andy Barrett (piano), Raymond Jones (keyboards), and Alfa Anderson, Fonzi Thornton, Luci Martin, Michelle Cobbs (backing vocals).

Recorded between December 1979 and March 1980 at the Power Station in New York, *diana* was produced by Bernard Edwards and Nile Rodgers. Ross and her production team had a falling out over the mixes, and she and Russ Terrana rerecorded her vocals and remixed the album at Electric Lady in New York, and Motown/Hitsville USA studio in Hollywood. The album was released in May 1980 and went to #1 on the Billboard Top R&B/Hip-Hop Albums, and #2 on the Billboard 200 Albums charts. It has been certified Platinum by the RIAA. Three charting singles were released from the LP.

Diana Ross is an American singer, songwriter, and actress from Detroit. Ross rose to fame as the lead vocalist for The Supremes, Motown's most successful act in the '60s. She left The Supremes in 1970 to embark on a solo career that continues to this day. As a solo artist, she has released 25 studio albums, five live albums, 30 compilation albums, one EP, four soundtrack albums, and 91 singles. As an actress, Ross has starred in five motion pictures and been featured in 35 television shows. She has won seven American Music Awards, one Grammy Award, one Golden Globe Award, and one Tony Award. She has been awarded a Lifetime Achievement Grammy Award, a Presidential Medal of Honor, a Kennedy Center Honor, and has a star on the Hollywood Walk of Fame. She still records and tours, and released her twenty-fifth studio album, *Thank You*, in November 2021.

https://bc-cb.rcmp-grc.gc.ca/ViewPage.action?siteNodeId=2130&languageId=1&contentId=73532

Police respond to acts of violence on the Marten Forest Service Road near Houston

Houston

2022-02-17 15:14 PST

File # 2022-310

Houston RCMP is presently investigating an incident where individuals allegedly engaged in a violent confrontation with employees of Coastal GasLink, and with attending police officers along the Morice River Forest Service Road near Houston, BC.

On Thursday, February 17, 2022, shortly after midnight, Houston RCMP was called to the Marten Forest Service Road (FSR) after Coastal Gas Link (CGL) security reported acts of violence at their work site.

It was reported approximately 20 people, some armed with axes, were attacking security guards and smashing their vehicle windows. It was initially reported that some CGL employees were trapped, but all had managed to safely leave the area.

Upon police attendance at the 41 km mark, the roadway had been blocked with downed trees, tar covered stumps, wire, boards with spikes in them, and fires had been lit throughout the debris. As police worked their way through the debris and traps, several people threw smoke bombs and fire lit sticks at the police, injuring one officer.

At the 43 km mark, an old school bus blocked the road. No one was located in this area and with the assistance of CGL, the bus was cleared from the road and police continued on.

When police arrived at the drill pad at the 63 km mark, they found significant damage had been done to heavy machinery, fencing, and portable buildings. Police did not encounter any further blockades or protestors as they made their way to the drill pad nor did they locate anyone at the site. The cost of damage done is extensive as seen in the photos.


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This is a very troubling escalation in violent criminal activity that could have resulted in serious injury or death. This was a calculated and organized violent attack that left its victims shaken and a multimillion dollar path of destruction, says Chief Superintendent Warren Brown, North District Commander. While we respect everyone's right to peacefully protest in Canada, we cannot tolerate this type of extreme violence and intimidation. Our investigators will work tirelessly to identify the culprits and hold them accountable for their actions.

The RCMP is appealing to the public for assistance about the incident. This type of criminal activity and level of violence impacts the entire community, so we are urging anyone that has any information about the individuals involved to contact the Houston RCMP at 250-845-2204.

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Feb 17, 2022

Workers shaken after violent attack at Morice River drill site

Posted by Coastal GasLink

During the early morning hours of Feb. 17, 2022, approximately 20 masked and violent attackers wearing camouflage surrounded and attacked Coastal GasLink workers in a highly planned and dangerous unprovoked assault. It happened near the Morice River drill pad site off the Marten Forest Service Road — the location of a former blockade and opposition camp last year that lasted 59 days. This coordinated and criminal attack from multiple directions threatened the lives of several workers. In one of the most concerning acts, an attempt was made to set a vehicle on fire while workers were inside. The attackers also wielded axes, swinging them at vehicles and through a truck's window. Flare guns were also fired at workers. Workers fled the site for their own safety and remain shaken by this violent incident. Fortunately, there were no physical injuries to Coastal GasLink workers.

The attackers used grinders to cut locks on a permitted gate to the active construction site and continued to vandalize and attack heavy equipment and construction trailers on-site, causing millions of dollars in damage to Coastal GasLink contractor equipment and property. Equipment hydraulic and fuel lines were also cut, causing dangerous leaks. Damage and environmental impacts are still being assessed. We are working to contain and clean up the environmental damage caused by the attackers. We also understand the attackers felled trees, placed tire spikes and lit fires on roads in an effort to impede access to the remote worksite.

The protection of people and the environment is paramount and we are taking a number of actions to address this incident. RCMP were called to the scene, and we understand a criminal investigation is underway. On behalf of our workers, we encourage a full investigation of those involved in the violent attack. The company is also asking for anyone with information about the attack to contact the RCMP.

As this situation evolves, we remain in close contact with our prime contractor and workforce. Our work is lawful, authorized, fully permitted and has the unprecedented support of local and Indigenous communities and agreements in place with all 20 elected First Nation councils across the 670 km route. Coastal GasLink is almost 60 per cent complete.

See photos of vandalized Coastal GasLink contractor equipment and blockades. These images were captured on Feb. 17, 2022 near Morice River worksite by Coastal GasLink. Media have permission to use images with credit to Coastal GasLink.


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https://www.thenews.com.pk/print/934321-no-let-up-in-gas-crisis-lng-firms-renege-on-commitment-to-provide-cargoes

No let-up in gas crisis: LNG firms renege on commitment to provide cargoes

In March, on LNG Terminal-2, only one LNG cargo from Qatar Gas Company would be offloaded under the 10-year agreement

By Khalid Mustafa
February 17, 2022

ISLAMABAD: The ongoing gas crisis is unlikely to subside when the mercury rises as LNG trading companies, Italy-based ENI and Singapore-based GUNVOR, have cancelled their term LNG cargoes, which were scheduled to be delivered in the first and second week of March 2022 respectively.

"This will be the fourth time when ENI will back out of delivering the term LNG cargo. However, GUNVOR will default for the second time as it earlier defaulted in November 2021. Both the LNG trading companies have emerged as habitual defaulters, which is simply unacceptable," a senior official at the Ministry of Energy told The News.

He said that both the LNG trading companies are involved in selling term cargoes of Pakistan in the spot market for monetary gains by repeatedly selling wherein LNG prices hover at $25-27 per MMBTU. "We will never allow them to make profit out of our term cargoes and to this effect a legal battle against both the two companies will start soon."

The News sent a question to both the Federal Minister for Energy and the spokesman of the Petroleum Division if ENI and GUNVOR had cancelled the LNG cargoes to be delivered in March, but both didn’t respond.

However, officials in Sui Gas companies on condition of anonymity confirmed that both the LNG cargoes have been cancelled, saying that the gas crisis will stay in March.

In March, on LNG Terminal-2 owned by PGPCL, only one LNG cargo from Qatar Gas Company would be offloaded under the 10-year agreement at the price of 10.2 percent of the Brent and two LNG cargoes, one from GUNVOR and other one from ENI, have been cancelled. And there is no arrangement by the Pakistan LNG Limited to arrange LNG cargo by purchasing it in the spot market. So the PGPCL terminal would in March remain over 80 percent underutilized.

The PLL has inked the term agreements with both the companies in 2017 to avoid purchase of LNG cargoes at higher prices, but both the companies have backed out and defaulted on the agreements for monetary gains in spot market.

Meanwhile, a high-level meeting in the Petroleum Division took place with Federal Minister for Energy Hammad Azhar to review the winter load management plan 2021-22. It decided that the CNG sector will remain closed till further orders despite the decision of ECC under which after February 15, the CNG sector will be provided sgas. But the sources said that because of non-availability of the two LNG cargoes, the gas crisis would continue to haunt the people of Pakistan even in the month of March 2022.

When contacted, official sources in the Pakistan LNG Limited (PLL) also confirmed the development about cancellation of the two LNG cargoes. They said that the PLL was making its mind to initiate a legal fight against the two LNG trading companies for perpetually breaching the agreements signed in 2017.

The term agreements with ENI and GUNVOR signed in 2017 are flawed and not in the interest of the country, an official in the Petroleum Division told The News. "In case LNG trading companies commit default, Pakistan LNG Limited (PLL) can impose a penalty of 30 percent of the term cargo price and not more than that." However, he said, the PLL is bound to pay 100 percent price of the term cargo under take or pay agreement if Pakistan, for any reason, cannot absorb the cargo in its system. In the wake of flawed agreement, both LNG trading companies do not hesitate to commit default as they are ready to pay 30 percent of the term cargo, which they sell in the market with windfall profit.

SAF Group created transcript of excerpt from TotalEnergies Q4 call hosted by CEO Patrick Pouyanne on Feb 10, 2022

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

At 6:44am MT, mgmt was asked about the on the ground security situation in Mozambique and the prospects about bringing back staff. Pouyanne replies "*Mozambique, I will give time to Jean Pierre. Difficult question. Mozambique. I visited Mozambique ten days ago. I met with President Nyusi and some of my people went into Cabo del Gado, not me at this stage. Let me be clear, it's a war, you have some terrorists. So it's no more a matter TotalEnergies to be involved in solving that situation. And we will come back, we could envisage to come back and to restart the project on the nuance there will be peace. A peaceful situation, which means not only having being able to having secure security to I would say take back control of the security. But also to have populations, civic populations back in the villages and with normal life. That will be the signal. We will not build a plant in a country where we will be surrounded by soldiers. It does not work like that. Having said that, there have been some clear improvement on the ground since the involvement and the Mozambique arrangement with the SADC, I would say troops, consortium of different countries including Rwanda. They managed to get back the security in some key areas around Palma where our project is, around xxx xxx Mozambique I have become an expert. But they do not control today, the full Cabo del Gado. And for me, as long as it's not controlled security wise, its important because the population will come back only when the security will under control. And all that is linked for us But, I have no idea when we can start the project back. But my view is that the conditions under which we could restart the project might be fulfilled, maybe it will take a year. I don't know. We'll see. We observe. And what is good, we have the same vision with the authorities of Mozambique of what needs to achieved. There is no pressure from us to exit out of force majeure. And we have established, I would say, we have frozen every xx contractors. We know that when we say yes we can come back, it will take six months really to start up again. But again, my priority is, it's a matter of sustainability of human rights. We will not announce a project as long as I see photos from refugee camps around the site. But, again, it's not negative. It's still for me a project and we are monitoring the situation because we think that the authorities of Mozambique are taking the right decisions in terms of security. So let's observe*"

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

https://www.reuters.com/business/energy/beijing-gas-talks-over-10-year-shell-lng-deal-says-source-2022-02-17/

February 17, 20221:49 AM MSTLast Updated 3 hours ago

Beijing Gas in talks over 10-year Shell LNG deal, says source

By Chen Aizhu

2 minute read

SINGAPORE, Feb 17 (Reuters) - China's Beijing Gas Group aims to conclude a 10-year liquefied natural gas (LNG) supply and purchase deal with Shell (SHEL.L) in the second quarter, a source with direct knowledge of the talks told Reuters.

Municipal government-backed Beijing Gas is one of China's so-called Tier 2 importers behind state energy giants such as PetroChina and CNOOC. The Tier 2 players are expected to lead growth in China's LNG imports for the coming decade.

Negotiations began in January, with Beijing Gas seeking 1.5 million tonnes a year of the super-chilled fuel, starting in 2023, in what will be the first long-term LNG contract for the state-owned piped gas distributor.

Shell became the first of three suppliers Beijing Gas short-listed around the end of last year, followed by Qatar Petroleum and China's CNOOC, the source said.

"A deal is expected in the second quarter at the latest," said the source, who asked not to be named because the discussions are not public.

Pricing of the gas will be indexed to the Brent crude benchmark and likely to be lower than the 12% of Brent rumoured to be under consideration, the source added.

Shell declined to comment and Beijing Gas said it could not comment immediately.

The gas will feed into a new terminal in Tianjin, which is expected to start operating around the end of this year with capacity of 5 million tonnes a year .

The 20 billion yuan ($3.16 billion) terminal, to be connected to Beijing via a 300 km pipeline, is one of the group's largest investments aimed at providing emergency supplies and storage for the Chinese capital.

Beijing Gas is also discussing similar long-term supplies with U.S. exporters, the source added without providing further details.

Chinese companies have signed up more than 10 million tonnes of annual U.S. LNG supply in recent months, enough to help them to become a major force in global spot trading of LNG. read more

Beijing Gas has long been the dominant gas supplier to Beijing, which burns about 6% of total Chinese gas consumed.

($1 = 6.3341 Chinese yuan renminbi)

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

Posted 11am on July 14, 2021

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.*

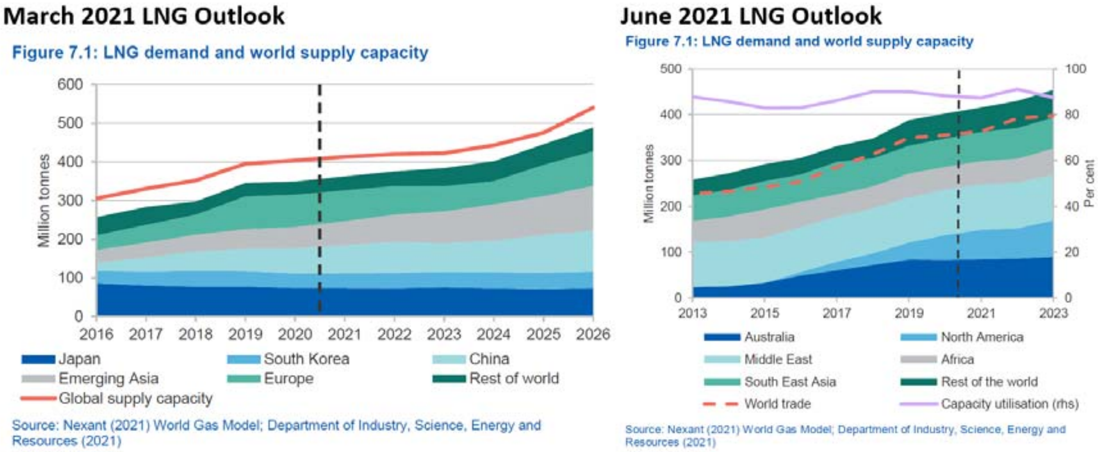
Common theme - new LNG supply is being delayed ie. [Total] Mozambique. Don't forget need capacity>demand due to normal maintenance, etc. Positive for LNG." (ii) Chevron's Gorgon. A big LNG story in H2/20 was the emergence of weld quality issues in the propane heat exchangers at Train 2, which required 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."*

<u>Cheniere stopped the game playing the game on June 30</u>. 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

<u>But we still see major LNG suppliers like Australia hinting but not outright saying that LNG supply gap is coming sooner.</u> 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

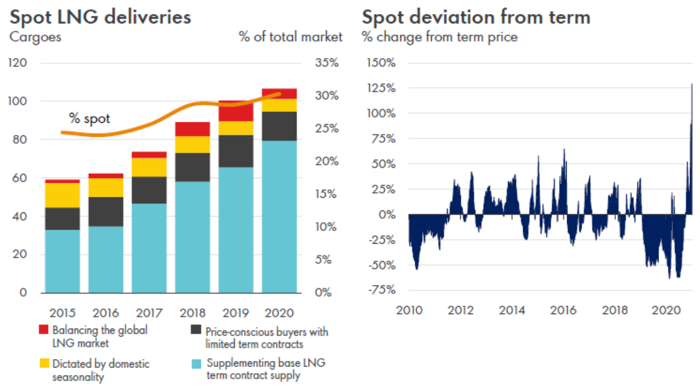


Source: Australia Resources and Energy Quarterly

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. 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.

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. 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.

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? 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.

A LNG Canada Phase 2 would be a big plus to Cdn natural gas. 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.

https://www.spglobal.com/platts/en/market-insights/latest-news/electric-power/021722-european-wind-narrowly-misses-all-time-high-to-average-116-gw-feb16

- 17 Feb 2022 | 13:13 UTC

European wind narrowly misses all-time high to average 116 GW Feb.16

- Author **Andreas Franke**

HIGHLIGHTS

Hourly peaks of 127 GW, total 2.8 TWh generated: WindEurope

More wind forecast for coming days deflate spot power prices

February on course for record, month-to-date average at 86 GW

European wind power generation was close to all-time records on Feb. 16, averaging 115.6 GW with an hourly peak of 127.4 GW, TSO data aggregated by WindEurope and analyzed by S&P Global Platts show.

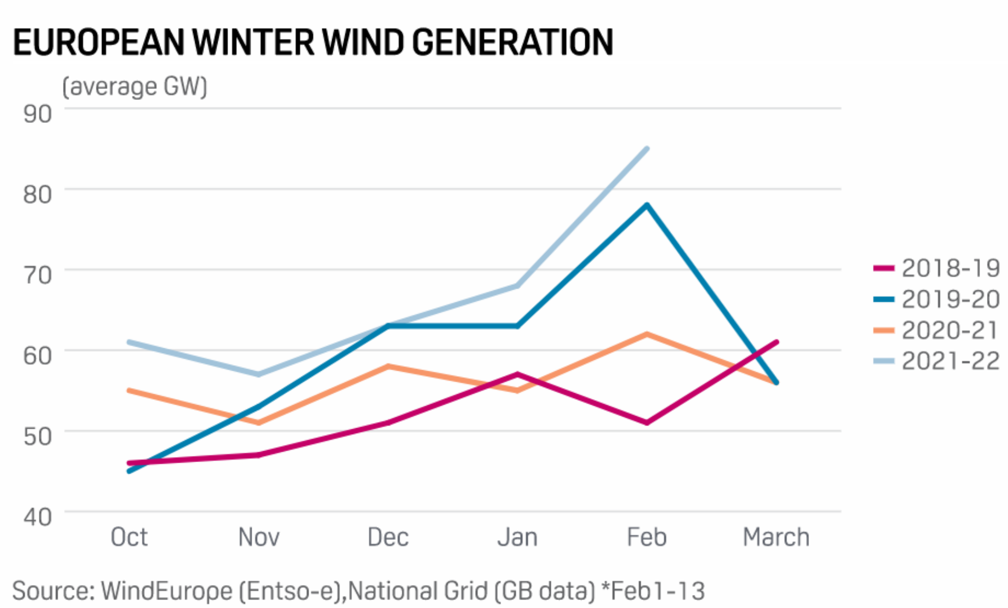
Total generation of 2.775 TWh over the 24-hour period covered 28.6% of power demand compared to a record 28.9% on March 11, 2021, the daily data showed.

Wind was forecast to remain very strong over the coming days, deflating spot power prices, but overall levels remained elevated due to nuclear production being down around 10 GW year on year, low hydro and high generation costs for fossil-fired power plants due to elevated gas, coal and EUA carbon prices.

German day-ahead baseload power for Feb. 17 fell to Eur68.64/MWh compared to the 2022 high of Eur297.29/MWh on Jan. 25 when European wind dropped to a 2022-low at 819 GWh, exchange data shows.

No negative hourly prices were registered with Feb. 18 prices rebounding again amid a slight dip in wind ahead of another surge forecast across Northwest Europe.

Month to date, wind turbines across Europe have already generated 33.2 TWh, averaging around 86 GW and putting February on course for a record month and exceed February 2020 levels.

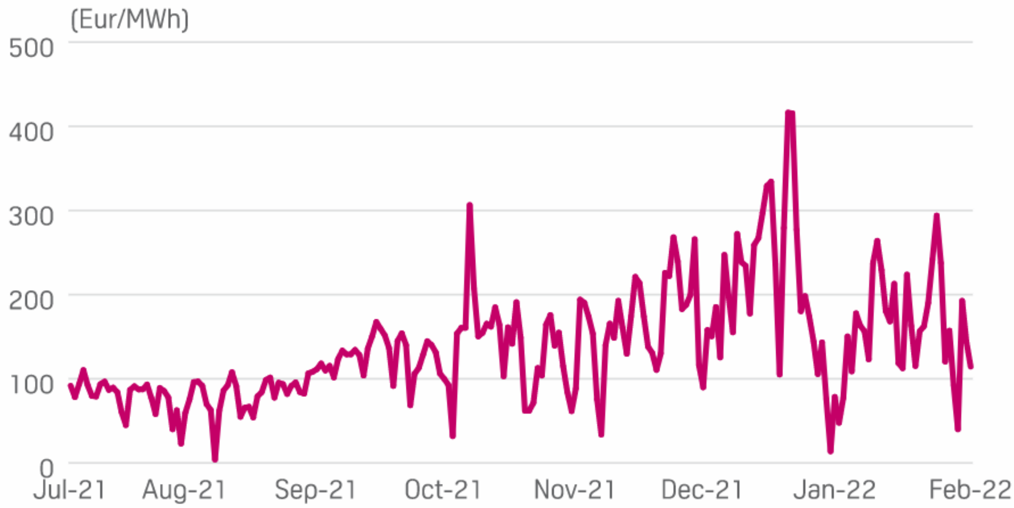


Capture prices for UK offshore wind eased to GBP146.50/MWh for Feb. 16, while those for German onshore wind dropped to Eur117.68/MWh, Platts Renewable Capture Price index shows.

Germany's has Europe's biggest onshore wind capacity, while Great Britain leads in offshore wind.

Daily capture prices for wind swing wildly pending actual production as well as overall price levels set by marginal plants, Platts data show.

GERMAN ONSHORE WIND CAPTURE PRICE



Source: S&P Global Platts

EUROPEAN NATIONAL WIND RECORDS (GW)

	Installed Capacity	Hourly Peak	Date
Germany	64.1	46.8	Nov. 30, 2021
Spain	27.6	20.1	Dec. 8, 2021
Great Britain	24.7	19.5	Jan. 29, 2022
France	18.5	14.5	March, 2021
Sweden	12.2	9.9	Jan. 2022
Italy	11.1	6.9	2021
Netherlands	7.8	4.1	Jan. 2022
Poland	7.1	6.7	Jan. 29, 2022
Denmark	7	5.8	Feb. 2022
Portugal	5.5	4.1	Jan. 2022

Source: S&P Global Platts, TSO data via Entso-e, WindEurope, IWR

North Dakota | Mineral Resources
Be Legendary.

Release Date: 2/14/2022
Director Lynn Helms

Director's Cut
December 2021 Production

Oil Production

November 34,758,665 barrels = 1,158,622 barrels/day (final)

December 35,261,454 barrels = 1,137,466 barrels/day (**-2%**)
1,096,224 barrels/day or 96% from Bakken and Three Forks
41,242 barrels/day or 4% from legacy pools
Nov 1,310,561 barrels/day New Mexico
1,519,037 all-time North Dakota high Nov 2019

Revised Revenue Forecast **= 1,200,000→1,100,000→1,000,000 barrels/day** **(+3.4%)**

Crude Price[1] ($/barrel)

	North Dakota Light Sweet	WTI	ND Market estimate
November	72.03	79.18	73.70
December	65.46	71.69	66.88 **RF +34%**
Today	87.50	93.10	90.30 **Est. RF +81%**
All-time high (6/2008)	$125.62	$134.02	$126.75

Revised Revenue Forecast **= $50.00**

Gas Production & Capture

November Production 92,232,420 MCF = 3,074,414 MCF/day
Gas Captured: 94% 86,837,665 MCF = 2,802,183 MCF/day

December Production 92,700,548 MCF = 2,990,340 MCF/day **-3%**
Gas Captured: 93% 86,634,929 MCF = 2,887,831 MCF/day
3,145,172 MCF/day all-time high production Nov 2019
2,915,667 MCF/day all-time high capture Oct 2021

Rig Count

November	33
December	32
January	32
Today	*33 NM 92*
Federal Surface	0
All-time high	*218 (5/29/2012)*

[1] Pricing References: WTI: EIA and CME Group; ND Light Sweet: Flint Hills Resources

Wells

	November	December	January	Revised Revenue Forecast
Permitted	50 drilling 2 seismic	45 drilling 0 seismic	39 drilling 1 seismic (All-time high was 370 – Oct. 2012)	-
Completed	60 (Final)	81 (Revised)	75 (Preliminary) **(+88% above RF)**	**30→<u>40</u>→50→60**
Inactive[2]	1,957	1,975	-	-
Waiting on Completion[3]	416	475	-	-
Producing	17,245	17,114 (Preliminary) *14,880 (87%) from unconventional Bakken – Three Forks* *2,234 (13%) from legacy conventional pools*	-	-

Fort Berthold Reservation Activity

	Total	Fee Land	Trust Land
Oil Production (barrels/day)	223,449	90,786	132,663
Drilling Rigs	4	1	3
Active Wells	2,621	659	1,962
Waiting on completion	44		
Approved Drilling Permits	328	57	271
Potential Future Wells	3,931	1,105	2,826

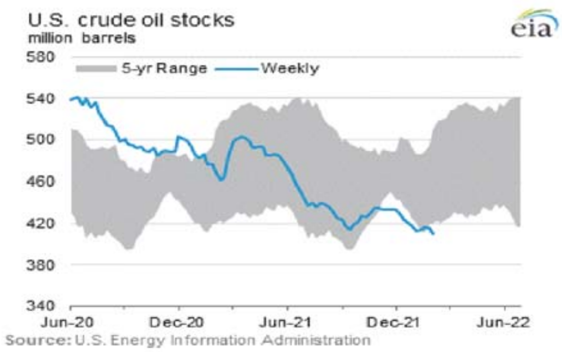
Drilling and Completions Activity & Crude Oil Markets

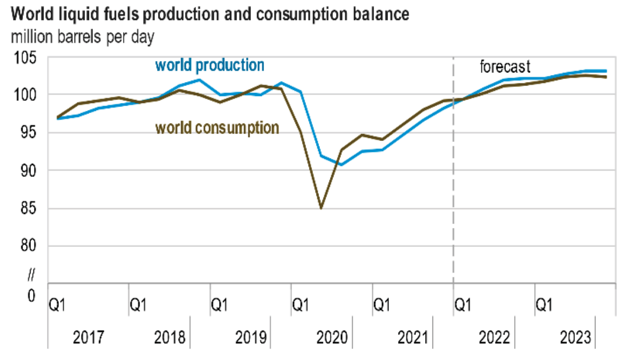
The drilling rig count was stable in the mid 50's second half of 2019 through May 2020. Drilling rig count fell 40% from January 2020 to December 2021, but is slowly increasing.

The number of well completions has been low and volatile since 2Q 2020 as the number of active completion crews dropped from 25 to 1 then increased to 10 this week.

OPEC+ continues to phase out oil production cuts beginning September 2021 through the end of 3Q 2022. At their February 2022 meeting OPEC+ decided to stick with their plan to increase production 400,000 barrels per day each month going forward. The International Energy Agency estimates a tight market despite the gradual OPEC supply boost.

[2] Includes all well types on IA and AB statuses: **IA** = Inactive shut in >3 months and <12 months;
AB = Abandoned (Shut in >12 months)
[3] The number of wells waiting on completions is an estimate on the part of the director based on idle well count and a typical five-year average. Neither the State of North Dakota, nor any agency officer, or employee of the State of North Dakota warrants the accuracy or reliability of this product and shall not be held responsible for any losses caused by this product. Portions of the information may be incorrect or out of date. Any person or entity that relies on any information obtained from this product does so at his or her own risk.





Crude oil transportation capacity including rail deliveries to coastal refineries is adequate, but could be disrupted due to:
US Appeals Court for the ninth circuit upholding of a lower court ruling protecting the Swinomish Indian Tribal Community's right to sue to enforce an agreement that restricts the number of trains that can cross its reservation in northwest Washington state.
DAPL Civil Action No. 16-1534 continues, but the courts have now ruled that DAPL can continue normal operations through March 2022.

Drilling activity is slowly increasing and operators continue to maintain a permit inventory of approximately 12 months.

Gas Capture

US natural gas storage is now 9.3% below the five-year average. Crude oil inventories are far below normal in the US, but world storage remains in the upper range of the five-year average.

The price of natural gas delivered to Northern Border at Watford City increased to $23.42/MCF February 17, 2021 but has returned to a slightly higher than normal level of $3.86/MCF today. This results in a current oil to gas price ratio of 23 to 1. The statewide gas flared volume from November to December increased 16,840 MCFD to 195,664 MCF per day, and the statewide percent flared increased to 6.5% while Bakken capture percentage decreased to 94%.

The historical high flared percent was 36% in 09/2011.

Gas capture details are as follows:

Statewide	93%
Statewide Bakken	94%
Non-FBIR Bakken	95%
FBIR Bakken	92%
Trust FBIR Bakken	92%
Fee FBIR	46%

Big Bend Field 13%
Burke County 76%
Charlson Field 77%

The Commission established the following gas capture goals:

74%	October 1, 2014 - December 31, 2014
77%	January 1, 2015 - March 31, 2016
80%	April 1, 2016 - October 31, 2016
85%	November 1, 2016 - October 31, 2018
88%	November 1, 2018 - October 31, 2020
91%	November 1, 2020

Seismic

There is currently no seismic activity for oil and gas.

Active Surveys	Recording	NDIC Reclamation Projects	Remediating	Suspended	Permitted (Oil and Gas)	Permitted (CCS)
3 (Both CCS)	0	0	0	3	0	0

Agency Updates

BIA has published a new final rule to update the process for obtaining rights of way on Indian land. The rule was published 11/19/15 and became effective 12/21/15. The final rule can be found at https://www.federalregister.gov/articles/2015/11/19/2015-28548/rights-of-way-on-indian-land. On 3/11/16, the Western Energy Alliance filed a complaint and motion for a temporary restraining order and/or a preliminary injunction. On 04/19/16, the US District court for the District of North Dakota issued an order denying the motion for a preliminary injunction. The new valuation requirements were resulting in increased delays so BIA provided a waiver that expires 04/05/2020. On 03/09/2020 the NDIC submitted comments supporting an extension of that waiver through 04/05/2021 to allow infrastructure development to continue while BIA develops and implements the new process. NDIC comments can be found at http://www.nd.gov/ndic/ic-press/Sweeney%20letter%20200309.pdf

BLM on 1/20/21 DOI issued order 3395 implementing a 60 day suspension of Federal Register publications; issuing, revising, or amending Resource Management Plans; granting rights of way and easements; approving or amending plans of operation; appointing, hiring or promoting personnel; leasing; and permits to drill. On 1/27/21 President Biden issued an executive order that mandates a “pause” on new oil and gas leasing on federal lands, onshore and offshore, “to the extent consistent with applicable law,” while a comprehensive review of oil and gas permitting and leasing is conducted by the Interior Department. There is no time limit on the review, which means the president’s moratorium on new leasing is indefinite. The order does not restrict energy activities on lands the government holds in trust for Native American tribes.
What is the percentage of federal lands in ND?
Mineral ownership in ND is 85% private, 9% federal (4% Indian lands and 5% federal public lands), and 6% state. 66% of ND spacing units contain no federal public or Indian minerals, 24% contain federal public minerals, 9% contain Indian minerals,1% contain both.
How many potential wells could be delayed or not drilled by a Biden administration ban on drilling permits and hydraulic fracturing on federal lands?
A spatial query found 3,443 undrilled wells in spacing units that would penetrate federal minerals, 2,902 undrilled wells in spacing units would penetrate BIA Trust minerals (700 tribal minerals and 2,202 allotted minerals), and the total number of wells potentially impacted is 6,345. The minimum number of future Bakken wells is 24,000 so the 3,443 wells on federal public lands = 14%, and the 2,902 wells on trust lands = 12%.
What is the potential federal royalty loss from a Biden administration ban on drilling permits and hydraulic fracturing on federal lands?
A recent study from University of Wyoming estimated the ND loss as follows: 2021-2025 $76 million, 2026-2030 $113 million, 2031-2035 $160 million, and 2036-2040 $221 million for a total of $570 million over 15 years. Please note that 50% of the royalties on federal public lands go to the state and 50% of the state share goes to the county where the oil was produced.

The U.S. Interior Department launched its review of the federal oil and gas leasing program on 3/25/21, a key step that will determine whether the Biden administration will permanently halt new leases on federal land and water. The review kicked off with a public forum on oil and gas leasing on federal land and water, with participants representing industry, environmental conservation and justice groups, labor and others, and commence an online comment period. This input will inform an interim report to be released in early summer outlining next steps and recommendations on the future of the program and what can be done to reform how leases are managed and how much revenue should go to taxpayers and other issues.

On 7/7/21 North Dakota sued the Department of Interior (DOI), Secretary of Interior Debra Haaland, Bureau of Land

MONTHLY UPDATE

FEBRUARY 2022 PRODUCTION & TRANSPORTATION

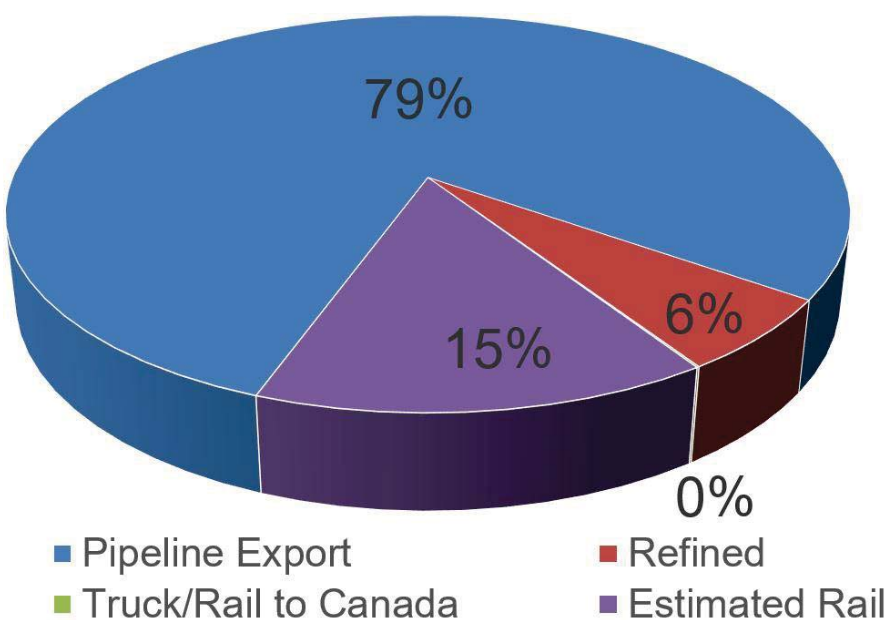
North Dakota Oil Production

Month	Monthly Total, BBL	Average, BOPD
Nov. 2021 - Final	34,758,665	1,158,622
Dec. 2021 - Prelim.	35,261,454	1,137,466

North Dakota Natural Gas Production

Month	Monthly Total, MCF	Average, MCFD
Nov. 2021 - Final	92,232,420	3,074,414
Dec. 2021 - Prelim.	92,700,548	2,990,340

Estimated Williston Basin Oil Transportation, Dec. 2021



CURRENT DRILLING ACTIVITY:

NORTH DAKOTA[1]

33 Rigs

EASTERN MONTANA[2]

1 Rigs

SOUTH DAKOTA[2]

0 Rigs

SOURCE (FEB 14, 2022):

1. ND Oil & Gas Division
2. Baker Hughes

PRICES:

Crude (WTI): $95.42

Crude (Brent): $96.49

NYMEX Gas: $4.22

SOURCE: BLOOMBERG (FEB 14, 2022 1PM CST)

GAS STATS*

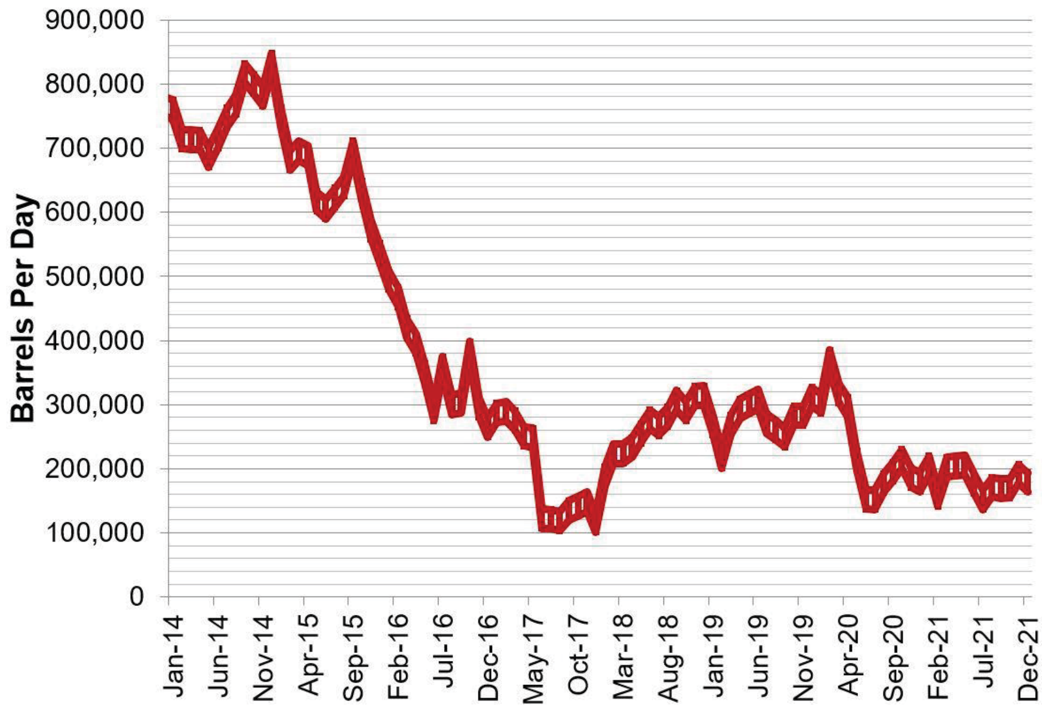
94% CAPTURED & SOLD

4% FLARED DUE TO CHALLENGES OR CONSTRAINTS ON EXISTING GATHERING SYSTEMS

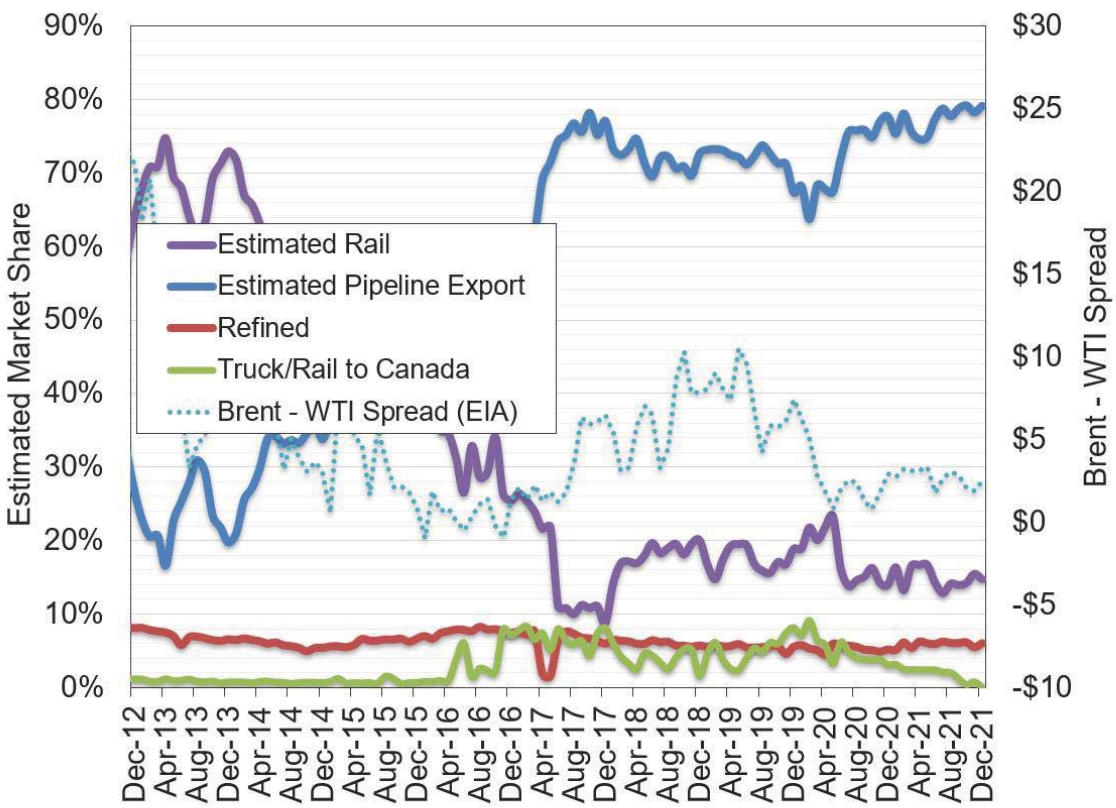
2% FLARED FROM WELL WITH ZERO SALES

DEC. 2021 NON-CONF DATA

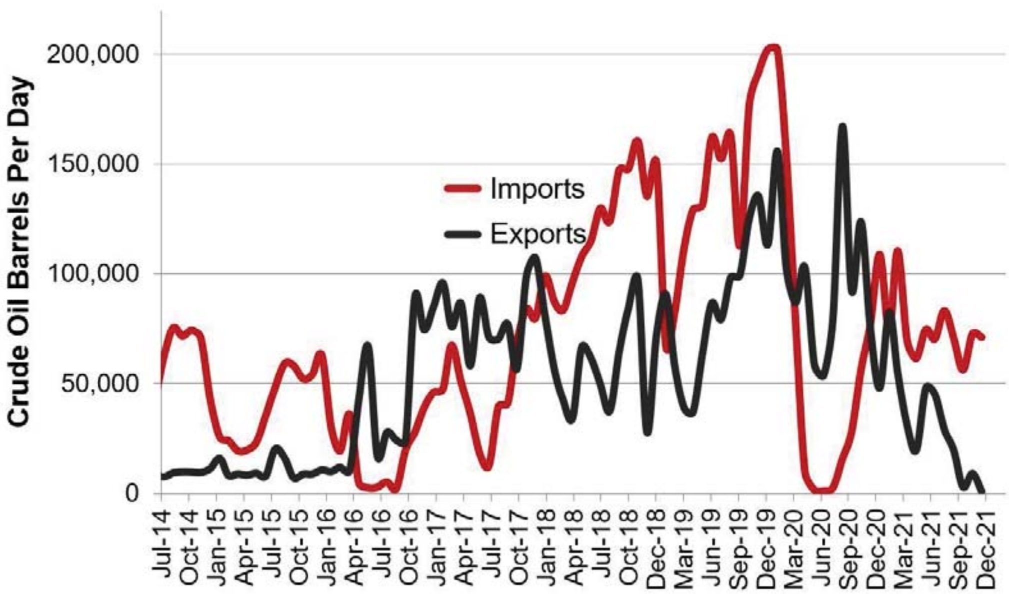
Estimated North Dakota Rail Export Volumes



Estimated Williston Basin Oil Transportation

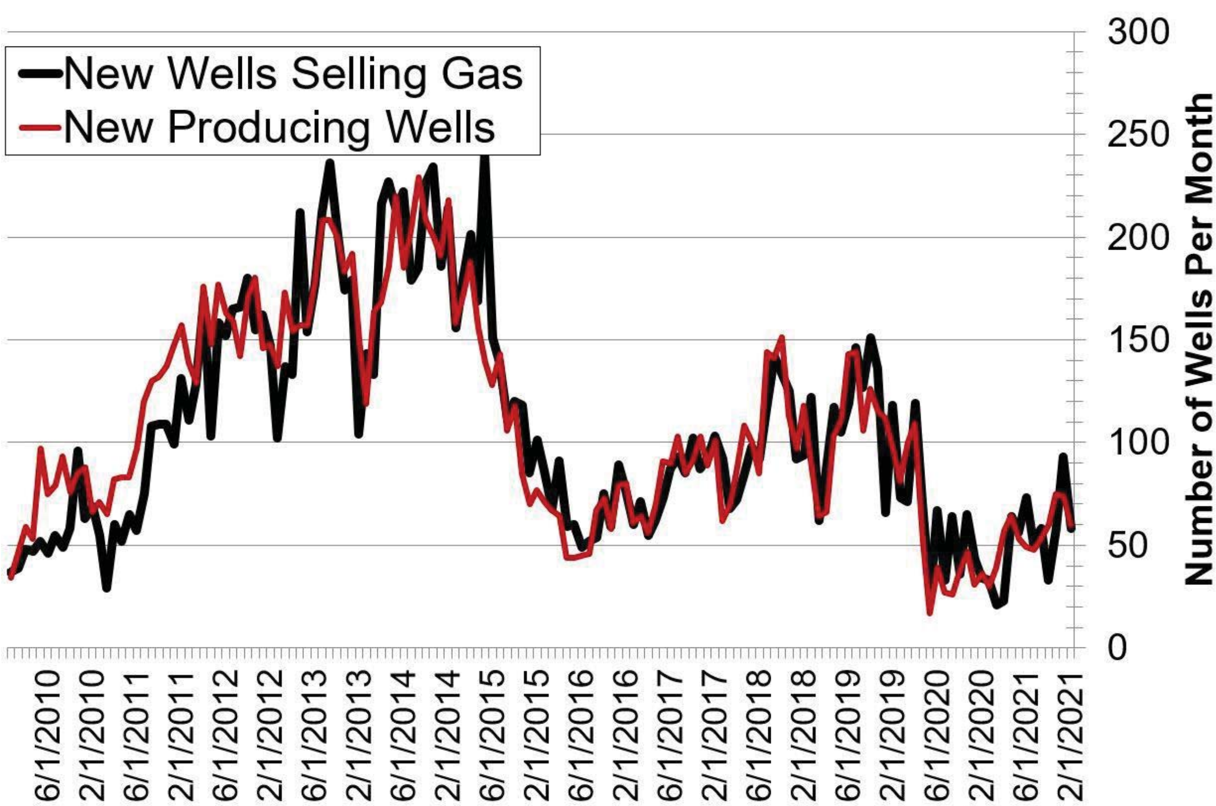


Williston Basin Truck/Rail Imports and Exports with Canada



Data for imports/exports chart is provided by the US International Trade Commission and represents traffic across US/Canada border in the Williston Basin area.

New Gas Sales Wells per Month



US Williston Basin Oil Production, BOPD

2020

MONTH	ND	EASTERN MT*	SD	TOTAL
January	1,431,679	57,460	3,091	1,492,230
February	1,507,069	55,425	3,070	1,565,563
March	1,435,200	57,725	2,946	1,495,870
April	1,225,476	49,042	2,610	1,277,128
May	862,254	37,066	2,466	901,786
June	895,208	42,847	2,680	940,735
July	1,043,089	48,668	3,435	1,095,192
August	1,166,242	47,212	2,807	1,216,260
September	1,224,008	47,522	2,837	1,274,366
October	1,244,056	46,899	2,749	1,293,703
November	1,226,409	45,444	2,798	1,274,650
December	1,191,429	44,814	2,827	1,239,070

2021

MONTH	ND	EASTERN MT*	SD	TOTAL
January	1,147,718	50,417	2,874	1,201,009
February	1,083,819	48,251	2,828	1,134,898
March	1,108,984	49,525	2,744	1,161,254
April	1,121,754	48,439	2,644	1,172,837
May	1,129,777	47,201	2,640	1,179,618
June	1,134,756	43,767	3,103	1,181,626
July	1,078,877	43,413	2,884	1,125,174
August	1,108,131	46,908	2,892	1,157,931
September	1,114,020	50,040	2,847	1,166,906
October	1,110,910	48,978	2,853	1,162,741
November	1,158,622	48,051	2,780	1,209,453
December	1,137,466			

** Eastern Montana production composed of the following Counties: Carter, Daniels, Dawson, Fallon, McCone, Powder River, Prairie, Richland, Roosevelt, Sheridan, Valley, Wibaux* https://www.willistonherald.com/news/oil_and_energy/helms-the-bakken-is-now-considered-a-mature-play-by-its-top-producers/article_46103c48-8dea-11ec-b2e1-872a6f52f268.html

Helms: The Bakken is now considered a 'mature play' by its top producers

- By Renée Jean rjean@willistonherald.com

Feb 14, 2022 Updated 19 hrs ago

A substantial number of the Bakken's top oil and gas producers now see the nation's No. 3 oil producer as a "mature play," North Dakota Director of Mineral Resources Lynn Helms told reporters in a media conference call on Monday, Feb. 14.

"The Bakken has been rebranded, whether we wanted it to be or not, as mature," Helms said. "And so you know, we all face that day when our friends and our significant other calls us mature. And for some of us that's a good thing, and in other ways not a good thing."

Helms spent last week in Houston talking to 10 or so of the Bakken's top 25 operators in Houston about the Bakken and their upcoming plans.

"The growth opportunities are considered to be in the Permian," Helms said. "The Bakken and Eagle Ford are now considered mature. So we're looking at very low rates of growth. Some companies will be just holding their production flat."

Helms said he was also told that the Bakken has become a "real cash cow" and that it still has very good economics.

"Those are positives," Helms said. "But they're not reinvesting all of that revenue back in as Capex."

That means flat production is the likely reality for the Bakken for the foreseeable future, Helms said,

North Dakota posted 1.138 million barrels of oil production per day for December, a 2 percent drop from November's 1.159 million barrels per day.

Prices however, were well above forecast, which puts the figures for the overall revenue forecast well ahead of what had been predicted.

Gas production, meanwhile, dropped 3 percent from 3.074 billion cubic feet per day to 2.99 billion cubic feet per day, with a statewide gas capture average of 93 percent.

Helms said with the exception of two companies, he's being told to expect no more than 1 percent growth, or even, in some cases, flat production.

That's going to be true, Helms added, regardless of $90 or even $100 oil.

"One would have expected activity to really pick up with those kind of oil prices," Helms said. "But with the rebranding of us as mature, that's not the plan. (The plan is) to actually be very disciplined and to offer investors a good return on investment and to capture that cash flow and probably invest in the Permian, which is still in a growth mode."

Most of the companies Helms talked to are now at a sage where they have a 10-year inventory of drilling locations, One company had a 15-year inventory. That, too, is in keeping with a "mature" basin, Helms said.

The characterization of the Bakken puts new pressure on cracking the enhanced oil recovery code in the Bakken, Helms acknowledged.

"People feel pretty relaxed about that," Helms said. "They think that's far enough out that they're not like really super excited about it, but they're all working on technology improvements to make that happen. They all recognize that 80 to 85 percent of the oil is still going to remain in the rock at the end of that 15-year window. So that's an enormous target. But because it's far enough out, there's not a huge amount of excitement and money going that way right now."

North Dakota has two enhanced oil recovery tests going on right now, and another one is on the upcoming NDIC docket for consideration. Other companies have enhanced oil recovery tests running in the Eagle Ford or Permian that they hope will be generally applicable to the Bakken.

"It's a very important piece of everything that we're doing," Helms said. "And we'll continue to push them on, but they're cautiously optimistic. I think that's the best way to describe it."

Meanwhile, the state's labor crunch is continuing to take the top off of its recovery, with companies struggling to bring in workers for additional rigs. Rig counts have been hovering around 32 and 33 for the last several months.

Helms told a story about an operator who had to try three times over three months to hire an additional rig crew to add a rig to its program.

“The first time, they hired, they put people out, and people took jobs, but didn’t even show up to be trained,” Helms said.
The second time, people showed up for the jobs, but it was a particularly cold week in December, and those workers didn’t stay.
Finally, the third time around, the company was able to get a 60-man crew for an additional rig.
A different operator, trying to do the same thing, ultimately didn’t get it’s next rig crew until another operator backed off a rig.
“It’s just that hard to get workers,” Helms said. “And so the expectation has changed from adding, you know, maybe a dozen rigs over the next year to hoping to add seven. Again, that’s a reflection of a mature basin and with, you know, slow growth, if at all, pretty much flat production.”
Gas, however, is a likely exception Helms added.
“Everyone does agree that gas production can grow, even with flat oil production,” Helms said. “Gas production is going to continue to grow. They’re all seeing it in their gas-oil ratios and in their test wells.”
The labor crunch comes with another potentially flattening force, and that is the ESG pressure to eliminate flaring. Most of the companies Helms talked to want gas capture to be in the high 90s, well above state requirements.
“(There’s) a great deal of interest in how we’re going to manage flare mitigation, and also the build-out of our natural gas infrastructure,” Helms said.

https://www.michiganradio.org/environment-climate-change/2022-02-18/line-5s-impact-on-climate-change-being-reviewed-as-part-of-tunnel-decision

Line 5's impact on climate change being reviewed as part of tunnel decision

Michigan Radio | By Lester Graham

Published February 18, 2022 at 7:00 AM EST

The view of the Mackinac Bridge from the site where Line 5 enters Michigan's Lower Peninsula.

The Michigan Public Service Commission is best known as the government body that decides whether gas and electric utilities can raise their rates.

But, the commission has other duties. Right now, it’s looking at whether Enbridge Energy’s plans to move a segment of its Line 5 oil and liquid natural gasses pipeline into a tunnel is safe.

In an unusual move, the commission is also reviewing what keeping Line 5 operating means for climate change.

Environmental groups, some businesses, Native American tribes and Governor Gretchen Whitmer, among others, want the nearly 70-year-old Line 5 pipeline shut down. Line 5 sits on the lakebed of the Straits of Mackinac which connects Lakes Michigan and Huron. Advocates are worried about the risk of an oil spill in the lakes.

The Enbridge Mackinaw Station helps transport the Line 5 oil through Michigan on its way to Sarnia, Ontario.

In a deal with the previous governor, Rick Snyder, Enbridge proposed constructing a tunnel under the Straits to house Line 5.

Typically, the Public Service Commission would look at the impacts of moving the line. Will construction bother the neighbors? Will it impact fishing or interfere with Native American tribal rights? Will it damage the environment?

Evaluating the impact on climate change if Line 5 continues to operate is new.

“We need to start treating climate as the expensive problem that it is,” said Margrethe Kearney, a senior attorney with the Environmental Law and Policy Center. She said the fact that the Public Service Commission is weighing those costs is precedent-setting for Michigan.

“It means that our agencies and our decision-makers are going to be taking climate into account moving forward, and that benefits all of us, because it will avoid those projects that have enormous greenhouse gas emissions that worsen climate change and impact us all on a financial and public health level.”

Kearney said it’s possible the Commission could turn down a permit to move Line 5 to the tunnel. Governor Whitmer has ordered Enbridge Energy to shut down Line 5, a matter that federal or state courts could decide. Enbridge could be forced to find different ways to get the Alberta tar sands oil to Canadian and U.S. markets some other way.

Kearney’s group argues that would ultimately cut the greenhouse gas emissions from fossil fuels.

“Because it's more expensive to ship that oil by other methods, especially by rail. Less of it will be shipped and less will be consumed and so on net you will have a reduction in greenhouse gas emissions,” she said.

But, environmental groups had to make a convincing argument to the Public Service Commission. The Environmental Law and Policy Center and Michigan Climate Action hired experts. One of them is the Climate Policy Program Director of the Stockholm Environment Institute, Peter Erickson.

He said shutting down Line 5 and transporting by rail or some other way could ultimately lead to fewer greenhouse gas emissions.

“If the Line 5 pipeline did not re-start, global oil prices would increase, and consumption and emissions would decrease,” he stated in written testimony.

Sarnia, Ontario is the eastern terminus of Line 5. It starts in Superior, Wisconsin, spans the Upper Peninsula of Michigan, crosses at the Mackinac Straits on its way to Sarnia's Enbridge facility.

Jeffrey Bennet is Enbridge Energy’s Senior Air Quality Engineer. He called the environmentalists’ analysis “flawed.” The pipeline company’s expert said they underestimate the capacity of the pipeline systems in Canada and the U.S. And he said they overestimate the cost of rail shipments. The company’s analysis shows the effect on crude oil prices would be negligible. He said that means the environmentalists’ projections about reduced consumption – and reduced emissions – are wrong.

The one thing they agreed on is that transporting the crude oil by rail would mean more greenhouse gasses emitted by trains – although their estimates of how much were very different.

In an emailed statement to Bridge and Michigan Radio, Enbridge Energy said, in part:

“Compared to the alternatives of truck, rail, or lake-going barges, pipelines are the safest mode of transport for moving fuel. Pipelines have lower emissions, and are more reliable and affordable. Placing the pipeline in the Great Lakes Tunnel also better protects the Great Lakes over the long-term.”

It also indicated the tunnel would assure long term energy reliability for Michigan.

Another expert said, there’s a larger issue.

Jonathan Overpeck is the Dean at the University of Michigan’s School for Environment and Sustainability. He is one of the Nobel prize-winning authors of the Intergovernmental Panel on Climate Change report.

“The amount of fossil fuel that gets transported through that pipeline in that tunnel will be huge. And it's equivalent to multiple coal fired power plants per year. And the climate change damages associated with that will be in the billions of dollars per year,” he said.

Overpeck noted increasingly frequent extreme storm events are flooding neighborhoods in Detroit, causing damaging effects on crops, tourism, and public health in Michigan, and triggered the failure of dams in Midland.

He said Line 5 is beyond its intended lifespan. It’s been hit and damaged by boat anchors. He added it’s an unsafe threat of an oil spill in the Great Lakes. He believes it should be shut down and a tunnel under the Straits should not be constructed.

“It makes no sense to spend the money, the investment that we as consumers will have to pay to build this infrastructure that then will essentially screw us going forward with even more costs associated with climate change.”

EDITOR'S NOTE: *Enbridge Energy is one of Michigan Radio's corporate sponsors* https://earthjustice.org/news/press/2022/experts-raise-major-environmental-and-public-safety-concerns-over-line-5-tunnel-project-before-michigan-public

February 18, 2022

Experts Raise Major Environmental and Public Safety Concerns over Line 5 Tunnel Project before Michigan Public Service Commission

The threats this project poses to frontline Tribal communities and increasing greenhouse gas emissions are too serious to justify approval of the Tunnel

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LANSING, MI —

Today a coalition of Indigenous Tribes, public safety experts, and environmental groups brought together all the pieces of their powerful case before the Michigan Public Service Commission (MPSC) to deny a permit for the Enbridge Line 5 Tunnel Project. In their initial briefs submitted to the Commission, the groups underscored the serious risks the pipeline tunnel in the Straits of Mackinac would pose to Tribal treaty rights, public safety, and efforts to combat the climate crisis.

The Bay Mills Indian Community, a Tribal Nation, has lived along the Straits of Mackinac for centuries and retains treaty-protected access to the waterway. One of the intervening parties opposing the project, the Tribe has been a vocal opponent of the existing pipeline and tunnel replacement and has been battling Enbridge for nearly a decade. Bay Mills stressed to the Commission how constructing an underwater tunnel to transport crude oil through such ecologically sensitive waters poses an untenable risk to its frontline Indigenous communities, fish populations, sacred burial sites, and medicinal plant species.

“The Straits of Mackinac are a precious and culturally sacred part of our ecosystem that should not be jeopardized in the name of corporate greed,” **said Bay Mills President Whitney Gravelle.** “It's more than just our food and water that’s at stake. It's our connectedness to the natural world, our cultural identity, and deep sense of community that this landscape keeps alive. This is not just a tribal fight; we are fighting on behalf of all who value the Great Lakes and our environment."

Due to the proposed tunnel's design, the likelihood of a catastrophic explosion that would cause irreparable harm to the Great Lakes and to surrounding communities is also a serious concern. "Enbridge's proposal to run a liquids pipeline through an enclosed tunnel has never been done before and creates the conditions for a catastrophic explosion in the Straits", **said Christopher Clark, attorney with Earthjustice**, which along with the Native American Rights Fund is representing the Tribe before the Public Service Commission. "This is not the right time or right place for such a dangerous experiment."

"Climate change is disproportionately ravaging the natural resources, economic livelihoods, and safety of the Tribal Nations located in Michigan," **said David Gover, attorney with the Native American Rights Fund**. "These are the very same communities that are bearing the brunt of the unacceptable risks posed by the existing Line 5 pipeline and this tunnel replacement."

All of the parties have submitted their initial briefs to the Commission. They will then have an opportunity to formally respond to each other's arguments by March 11th.

For the first time in Michigan history, the potential climate impacts of proposed fossil fuel infrastructure are being considered under the Michigan Environmental Protection Act (MEPA) during a separate but simultaneous permit hearing. That hearing is also before the Michigan Public Service Commission.

"This decision to allow consideration of potential climate impacts sets precedent that climate change is within the scope of MEPA," **said ELPC senior attorney Margrethe Kearney**. "This means, moving forward, MEPA can be a much more powerful tool in preventing investments in fossil fuels that create a worst-case climate scenario."

https://www.transmountain.com/news/2022/detailed-route-for-the-trans-mountain-expansion-project-approved?utm_source=Trans+Mountain+Updates&utm_campaign=c2bda1f1c7-EMAIL_CAMPAIGN_12_2_2021_15_6_COPY_01&utm_medium=email&utm_term=0_f287e4f791-c2bda1f1c7-30713878

Detailed Route for the Trans Mountain Expansion Project Approved

Tags Pipeline Regulatory Expansion Project

Feb. 16, 2022

Following a lengthy regulatory process, which first began in January 2017, the Canada Energy Regulator (CER) issued the final order approving all 1,147 kilometres of the detailed route for the Trans Mountain Expansion Project last year. As construction of the Project can only proceed on lands where the detailed route has been approved, and applicable conditions have been met, this final approval ensures a clear path forward.

As part of the CER's regulatory process, Trans Mountain submitted a Plan, Profile and Book of Reference (PPBoR). The PPBoR shows the proposed detailed right-of-way, as well as the landowners and occupants for more than 2,500 tracts of land required for the Project. These tracts are grouped on nearly 400 PPBoR sheets, which all required CER approval.

Landowners whose lands would be crossed by the pipeline, as well as Indigenous Peoples and others whose lands may be adversely affected, were able to object to the proposed detailed route. The CER assessed these objections, known as Statements of Opposition, according to the criteria set out in its decision on resuming regulatory processes for the Expansion Project.

Detailed route hearings were then held where the CER determined if a valid objection to the detailed route exists. The hearings allowed the panel appointed by the CER to listen to and consider people's concerns around the proposed route. CER experts in engineering, environmental protection, socio-economics, safety and emergency management assessed the line from the conceptual corridor to the detailed route.

Throughout the hearing, there was extensive consultation with Indigenous communities, local governments, landowners and community residents. The diverse perspectives of everyone who participated in this process helped the CER finalize the exact placement of the pipeline and the most appropriate methods and timing of construction.

To learn more about the detailed route visit the CER's website here.

https://www.transmountain.com/news/2022/trans-mountain-corporation-updates-expansion-project-cost-and-schedule

Trans Mountain Corporation Updates Expansion Project Cost and Schedule

Tags Expansion Project

Feb. 18, 2022

Improvements and Enhancements to Expansion Project is Building Legacy for Canadians

As we enter the second half of construction on the Trans Mountain Expansion Project, and after more than a decade of review, engagement, planning and engineering, this complex and large scale Project is making steady progress and setting new standards for major pipeline project execution, while overcoming significant challenges and obstacles.

Trans Mountain has completed a full review of its Project schedule and cost estimates. With all work fronts now active, mechanical completion of the Project is anticipated to occur in the third quarter of 2023. The total Project cost has increased from $12.6 to $21.4 billion. This estimate includes the costs of all known Project enhancements, changes, delays and financing, including impacts of the COVID-19 pandemic and the substantial preliminary impacts of the November 2021 BC floods in the Hope, Coquihalla and Fraser Valley areas.

"The progress we have made over the past two years is remarkable when you consider the unforeseen challenges we have faced including the global pandemic, wildfires, and flooding," said Ian Anderson, President and CEO of Trans Mountain Corporation. "At every step of the way, we have found solutions and responded. As a result, the Project is advancing with significantly improved safety and environmental management, and with a deep commitment to ensure this Project is being built the right way."

Notwithstanding the cost increase and revised completion schedule, the business case supporting the Project remains sound. Canada will benefit from the economic and tax contributions made by the Project once it is in operation. Trans Mountain will pay billions in taxes and royalties to the federal and provincial governments through the construction and operation of the Project over the next 20 years. In addition, Trans Mountain will make payments to British Columbia of between $25 million and $50 million annually, for a total contribution over a 20-year period of up to $1 billion. These funds are to be used by the BC Clean Communities program to fund local environmental projects in the province. In addition, Trans Mountain has negotiated agreements with local governments across BC and Alberta dedicating more than $16 million to community legacy projects such as trails and recreational infrastructure improvements that will have positive and lasting impacts on the lives of thousands of Canadians.

The Project proudly embodies unprecedented levels of involvement, and shared decision making, with Indigenous Peoples and communities. Through job creation, procurement opportunities, partnerships, and involvement in the environmental management and oversight process, long-term legacy and economic benefits for Indigenous Peoples are being created. Approximately 11 per cent of the Project workforce is Indigenous and Trans Mountain has close to 4,000 contracts with Indigenous businesses and partnerships worth over $2.7 billion. Route changes and new construction techniques have been undertaken as a result of continuous Indigenous engagement and the Project now has Mutual Benefit Agreements (MBA's) with 69 Indigenous communities.

The overall change in Project costs is summarized by the following material impact areas: Project enhancements, scheduling pressures, safety and security requirements, financing costs, as well as other external challenges including the COVID-19 pandemic and the impacts of the 2021 BC flooding.

Project enhancements total approximately $2.3 billion of the increase. This includes a substantial increase in trenchless construction activity, significantly more MBAs with Indigenous communities that provide enduring economic benefits, the installation of advanced leak detection systems, and new unplanned scope and route changes that avoid culturally and environmentally sensitive areas.

Schedule pressures total approximately $2.6 billion of the increase and include permitting processes required for the several thousand permits that are required for the Project, and significant construction challenges in both marine and difficult terrain which have extended the schedule into late 2023.

The Project has had to contend with generational events such as the COVID-19 pandemic and recent extreme weather in BC. These events, combined with contractor productivity shortfalls in some areas, have resulted in a $1.7 billion increase. The combined effects of extreme weather and COVID measures is approximately $1.4 billion.

Safety and security requirements total approximately $500 million of the increase. These cost impacts include the voluntary two-month stand-down across the Project in late 2020, including the related termination and replacement of a major construction contractor; additional safety and security measures across the project; and worker safety measures during the extreme heat and fires in BC last year.

Financing costs have increased by approximately $1.7 billion. The increase in financing costs will be incurred due to the increased cash expenditure required to construct the Project, and the extended construction schedule. Financing costs include interest paid to Trans Mountain's owner for money borrowed for the Project as well as an imputed non-cash cost of equity capital provided by the owner of the Project.

https://www.canada.ca/en/department-finance/news/2022/02/remarks-by-the-deputy-prime-minister-and-minister-of-finance-regarding-the-emergencies-act-and-the-trans-mountain-expansion-project.html

Remarks by the Deputy Prime Minister and Minister of Finance regarding the *Emergencies Act* and the Trans Mountain Expansion Project

From: Department of Finance Canada

Speech

February 18, 2022

I want to first provide a brief update on the financial measures that we introduced through the Emergencies Act to target the illegal blockades and those who fund them.

As I said yesterday, information is already being shared between our law enforcement agencies and Canada's financial services providers.

Action is being taken.

So let me repeat again what I said yesterday:

If your truck is being used in these protests, your bank account will be frozen, and your insurance will be suspended. The consequences for taking part in these illegal blockades are real.

If you are in Ottawa, it is time for you to go home. If you are thinking about driving to Ottawa to take part in the illegal occupation this weekend, you should not.

But I also want to say this: we have taken no joy in invoking these measures. They are unprecedented, and for good reason.

The vast majority of Canadians are hardworking and law-abiding. We are all sick and tired of a pandemic that we have been dealing with for almost two years.

When this crisis is over, all of us are going to need to work hard to heal our country.

But today, our economy and our democracy are facing a serious and foreign-funded threat.

These illegal blockades and occupations cannot be allowed to usurp the authority of democratically-elected governments.

They cannot be allowed to threaten peace, order, and good government — and they will not be allowed to do so.

These illegal blockades and occupations will end, and they will end for good.

This afternoon, I also want to speak to the news that was released by the Trans Mountain Corporation a short time ago.

TMC today announced their increased cost estimates, and the extended completion date for the Trans Mountain Expansion Project to the third quarter of 2023.

Reasons cited include the pandemic, the BC floods, and significant but necessary changes to deal with the terrain and to protect the environment.

However, I want to assure Canadians that there will be no additional public money invested in TMC.

TMC will secure necessary funding to complete the project through third-party financing, either in the public debt markets or with financial institutions.

Both BMO Capital Markets and TD Securities have been engaged by the government to provide advice on financial aspects of the project.

Their analyses confirm that public financing for the project is a feasible option that can be implemented swiftly. They have also confirmed that the project remains commercially viable.

Our government acquired TMC and the Trans Mountain Expansion Project in 2018 because we knew it was a serious and necessary investment. This project is in the national interest and will make Canada and the Canadian economy more sovereign and more resilient.

The transition to a net-zero economy will take many years. We will get there, but during that transition, our natural resources are needed globally.

The Trans Mountain Expansion will ensure Canada receives fair market value for our resources. That is not the case today, while we are dependent on the United States for market access.

Getting our resources to those global markets will be good our economy, and it will be good for our workers.

TMC has signed agreements with 75 Indigenous communities worth more than $580 million, and the project will generate over $2.7 billion in Indigenous-based contract awards.

Our government has also been working with Indigenous communities on further economic participation in Trans Mountain for more than two years, and we will announce the next step toward that important objective later this year.

As we have said from the very beginning, our government does not intend to be the long-term owner of the project. We will launch a divestment process in due course.

And before I close, on behalf of the Government of Canada, I want to publicly thank Ian Anderson, who is retiring as the President and CEO of Trans Mountain after many years of service.

TEAMSTERS CANADA RAIL CONFERENCE

General Committees of Adjustment Canadian Pacific Railway

Dave Fulton
Wayne Apsey
General Chairmen
Conductors, Trainmen, Yardmen

Greg Edwards
Ed Mogus
General Chairmen
Locomotive Engineers

February 10, 2022

VIA EMAIL

ALL TCRC LOCAL CHAIRS – CPR WESTERN AND EASTERN REGIONS – BULLETIN 7

On February 8, 9, 10 the Union was scheduled to meet with CP Rail in the presence of Federal Mediation and Conciliation Services (FMCS) in Calgary. Unfortunately, the parties met for a total of 30 minutes over the course of the 3 days. We are now scheduled to meet starting March 11, 2022 again in the presence of FMCS in Calgary.

Members should be starting to receive their ballot in the mail as they were sent out via Canada Post on February 01, 2022. We urge all to cast their vote in an act of solidarity in the interest of protecting your working conditions, benefits and wages. It is extremely important to send the Company a clear message that the Membership supports the TCRC Bargaining Committee and the proposals that have been put forward on behalf of the Membership.

The balloting will open on February 11th at 1200 EDT (Eastern Daylight Time) and the process will end on February 21st, 2022, EDT (Eastern Daylight Time). Should you require a replacement ballot please contact the National Office at info@teamstersrail.ca or by phone at 613-235-1828 for instructions on how to obtain a replacement immediately.

As always, our commitment to the Membership is to negotiate new Collective Agreements based upon the demands we have put forward.

Thank you for your attention to this matter, we remain,

In Solidarity,

D Fulton

Dave Fulton
General Chairman - CTY West

Greg Edwards
General Chairman - LE West

Wayne Apsey

Wayne Apsey
General Chairman - CTY East

Ed Mogus
General Chairman - LE East

cc: Lyndon Isaak, President TCRC, Dave McCulloch, Vice President, Christopher Friesen, Secretary-Treasurer TCRC

Oil price outlook – Snapshot: February 14, 2022

Disclaimer: Please note that BNEF does not offer investment advice. Clients must decide for themselves whether current market prices fully reflect the issues discussed in this note.

Category	Indicator	Signal	Comment
Fundamentals	**Refinery margins**		• Refinery margins were stronger in the U.S. Gulf Coast and Northwest Europe over the past week as gasoline cracks strengthened. Refinery margins in Singapore were mixed as fuel oil cracks weakened.
	Crude stocks		• In the week ending February 4, land crude-oil storage levels in BloombergNEF's tracked regions (U.S., ARA, Japan) rose slightly by 0.1 million barrels (m bbl) to 516.5m bbl. The stockpile **deficit** against its five-year average (2015-19) **widened from 66.3m bbl to 70.2m bbl.** • Including global floating crude stockpiles from the same week, total crude oil inventories increased by 1.3% to 625.5m bbl, with the stockpile **deficit narrowing from 38.8m bbl to 37.4m bbl.**
	Product stocks		• In the week ending February 4, gasoline and light distillate stockpiles in BNEF's tracked regions (U.S., ARA, Singapore, Japan and Fujairah) were down 1.4% week-on-week to 290m bbl, with the stockpile **deficit** against its three-year average (2017-19) **widening from 1.9m bbl to 9.3m bbl**. Gasoil and middle distillate stockpiles in BNEF's tracked regions dropped by 1.0% to 151.7m bbl, with the stockpile **deficit** against its three-year average **widening from 42.7m bbl to 44.3m bbl**. • Total oil product stockpiles in tracked regions decreased by 0.9% to 919.5m bbl, with the stockpile **deficit** against its three-year seasonal average **widening from 55.4m bbl to 65.0m bbl**. All in all, crude and product stockpiles dropped slightly by just 0.1m bbl to 1,545.0m bbl, with the stockpile **deficit widening from 94.1m bbl to 102.4m bbl.**
	Demand indicators		• In the week to February 8, global jet fuel demand from commercial passenger flights rose by 19,400 barrels per day (or 0.5%) week-on-week to 4.12 million barrels per day. Jet fuel consumption by international passenger departures was up by 34,000 barrels per day (or 1.7%) week-on-week, while consumption by domestic passenger departures fell by 14,700 barrels per day (or 0.7%). • Global mobility indices rose for the third straight week. Apple's global driving activity index increased by 5.0% in the week to February 10, driven by growth in Asia Pacific ex-China (+6.8%), Europe (+3.9%) and the Americas (+5.4%). Google's global mobility index was also up 3.0% in the week to February 10, reflecting growth in Asia Pacific ex-China (+2.7%), Europe (+2.3%) and the Americas (+4.1%). Road congestion in China decreased by 0.9 percentage points to 82.3% of January 2021 levels in the week to February 9, according to BNEF's calculation based on Baidu's data. • Daily average Covid-19 cases dropped 19% to 2.4 million in the week to February 12, the second straight week of decrease. Europe was down 23% to 1.1 million daily cases, Asia Pacific was down 11% to 360,000 daily cases and the Americas were down 35% to 465,000 daily cases. All numbers shown are the daily averages for the week ending February 12. • Weather forecasts showed that temperatures in European cities are becoming warmer. Temperatures in Asian cities turned colder but remained mild by historical trends.
Financial	**Macro indicators**		• The dollar index averaged at 95.6 over the past week and was 0.3% lower than the week before.
	Hedge fund positioning		• In the week to February 8, Managed Money net positioning in the oil complex decreased by 28.5m bbl (or 3.8%) week-on-week to 730.2m bbl, and fell to the 46th percentile (vs. the 50th last week) of the past five years. Funds are more cautious of going long as Brent surpasses $90/bbl.
	Options chains and volatility		• There was a surge in open interests for Brent front-month puts at $80-85/bbl strike. Brent and WTI 1-month volatility skews jumped to multi-year highs.
Outlook	**Weekly call**		• BNEF is bullish on oil prices for the week ahead, with Brent Apr-22 trading at $93.75/bbl and WTI Mar-22 trading at $92.46/bbl at the time of writing. Oil product markets are expected to remain tight over the coming weeks as refineries head into the maintenance season with product inventories hovering at very low levels. China's refinery run rates have already fallen due to the Winter Olympics and lower product export quotas. Oil demand also appears to have endured the worst of the omicron wave as driving activity picks up and commercial passenger jet fuel demand rose for the first time in four weeks. The possibility of sanctions or trade restrictions on Russia could also keep oil prices supported.

Past outlooks

Disclaimer: Please note that BNEF does not offer investment advice. Clients must decide for themselves whether current market prices fully reflect the issues discussed in this note

Date of report	Refinery margins	Crude stocks	Product stocks	Demand indicators	Commitment of traders	Options chain and volatility	BNEF week ahead call	Brent/WTI price at time of writing ($/bbl)	Web Link
February 14	↑	↔	↑	↑	↓	↔	↑	Brent-Apr: 93.75 WTI-Mar: 92.46	
February 7	↑	↑	↔	↑	↔	↔	↔	Brent-Apr: 92.83 WTI-Mar: 91.43	
January 31	↑	↔	↔	↑	↓	↔	↑	Brent-Apr: 89.17 WTI-Mar: 87.55	
January 24	↔	↑	↔	↔	↑	↓	↑	Brent-Mar: 87.19 WTI-Mar: 85.25	
January 17	↑	↑	↔	↔	↑	↑	↔	Brent-Mar: 85.78 WTI-Mar: 83.22	
January 10	↑	↓	↔	↓	↑	↑	↔	Brent-Mar: 81.71 WTI-Feb: 78.82	
January 3	↔	↔	↑	↓	↔	↔	↑	Brent-Mar: 78.84 WTI-Feb: 76.14	
December 13	↑	↑	↔	↑	↓	↔	↑	Brent-Feb: 75.25 WTI-Jan: 71.62	
December 6	↑	↔	↔	↔	↓	↑	↔	Brent-Feb: 71.63 WTI-Jan: 68.05	
November 29	↓	↔	↑	↔	↓	↓	↔	Brent-Feb: 74.47 WTI-Jan: 71.14	
November 22	↓	↑	↔	↔	↓	↓	↓	Brent-Jan: 79.00 WTI-Jan: 76.06	
November 15	↓	↔	↓	↔	↔	↓	↓	Brent-Jan: 81.27 WTI-Jan: 78.97	
November 8	↓	↑	↔	↓	↓	↔	↓	Brent-Jan: 83.86 WTI-Dec: 82.47	

To view past reports on terminal, go to NI BNEFOIL, search for the report and click on the icon to the far right:

Note: We will continue to compare current inventory levels with the three-year (2017-19) seasonal average for the time being. Crude inventory data for Shandong teapots were excluded since January 10.

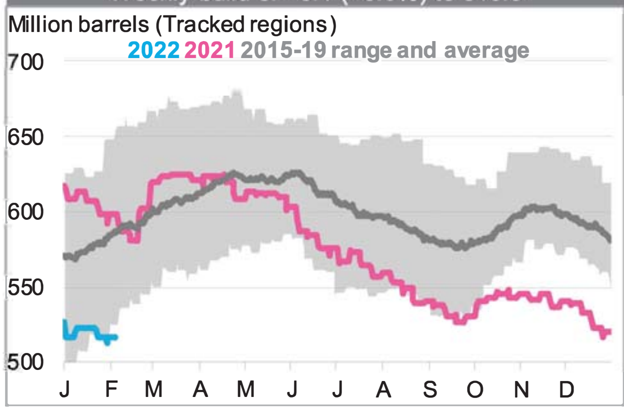
Crude stocks: Land

Neutral: Deficit widened from 66.3m bbl to 70.2m bbl against seasonal average

- Crude inventory rises when supply outstrips demand (meaning more physical oil is available than is needed). High or rising inventories are therefore a bearish factor for oil prices. Every year, storage levels fluctuate due to seasonal demand trends. The intra-year directional movement of stockpile levels is somewhat predictable, yet the magnitude of movement can differ significantly from expectations.
- A useful way to gauge if the intra-year storage levels differ from the norm is to measure the difference between the current and seasonal average inventory levels.

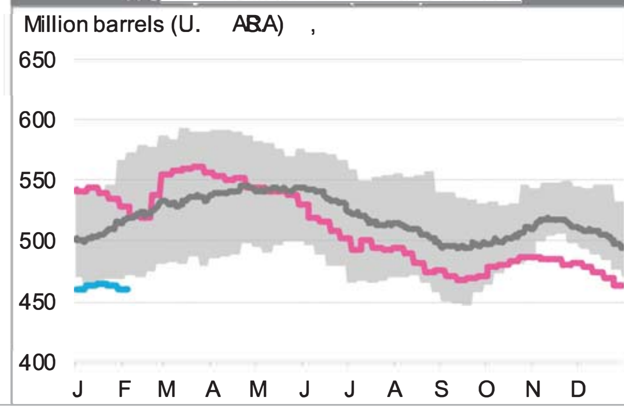
Land storage: Total

Weekly build of +0.1 (+0.0%) to 516.5



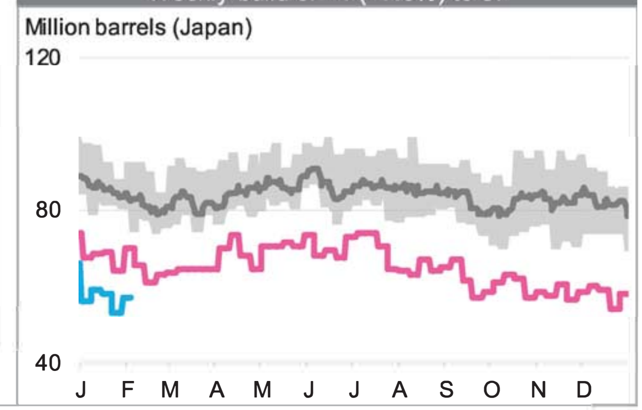
Land storage: West of Suez

Weekly draw of -3.8 (-0.8%) to 459.6



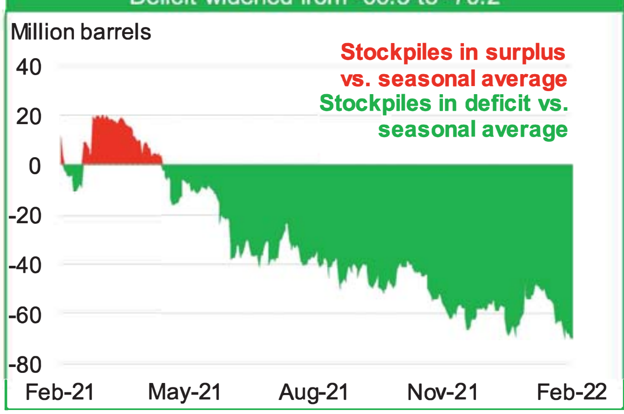
Land storage: East of Suez

Weekly build of +4 (+7.6%) to 57

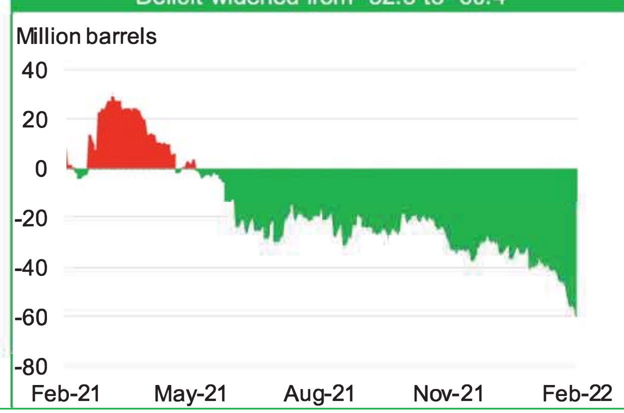


Charts below subtract current stockpiles by the 2015-19 (five-year) seasonal average

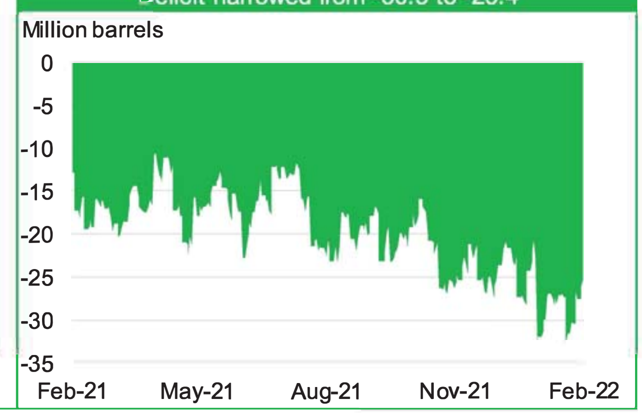
Deficit widened from -66.3 to -70.2



Deficit widened from -52.3 to -60.4



Deficit narrowed from -30.3 to -25.4



*Source: BloombergNEF, U.S. EIA, Genscape, PAJ, SCIG. Note: As of the **week ending Feb. 4.***

Fundamentals | Financial

Crude stocks: Floating

Neutral: Surplus narrowed over the past week

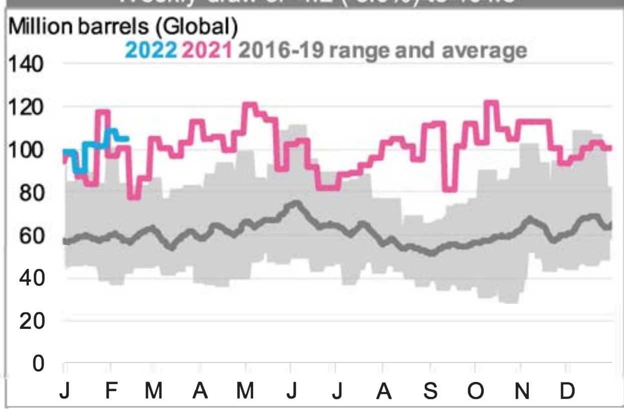
- Floating storage is only profitable if the strength of contango (future vs. prompt price) is greater than the tanker costs. Therefore, tankers become floating storage when the profit from a storage play exceeds the cost of the forward freight agreement (FFA).
- The floating storage data used in the "Oil Price Outlook" slide is for the previous week (i.e. the week before the latest data shown below). That data is available in the table to the right.

***Vortexa's revision to global floating crude inventories**

Million barrels	Previous report	Current report	*Vortexa's revision
Inventories in week of Feb. 4	108.3	109.0	+0.7
Inventories in week of Jan. 28	100.4	101.2	+0.8

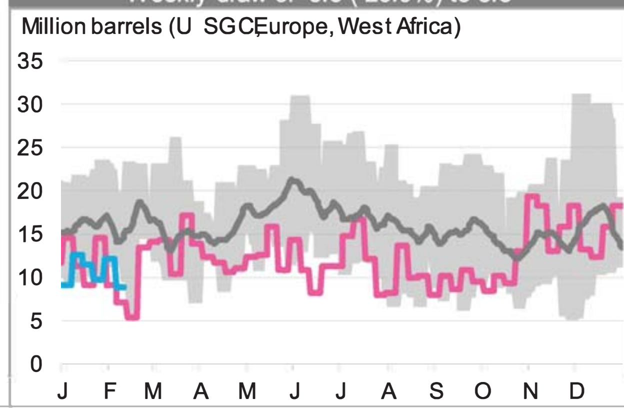
Floating storage: Total

Weekly draw of -4.2 (-3.9%) to 104.8



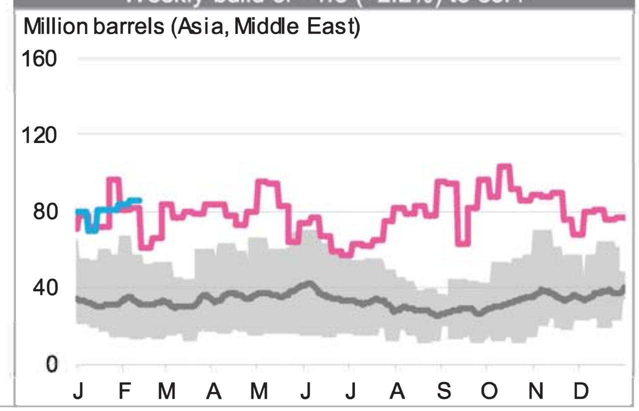
Floating storage: West of Suez

Weekly draw of -3.3 (-26.9%) to 8.8



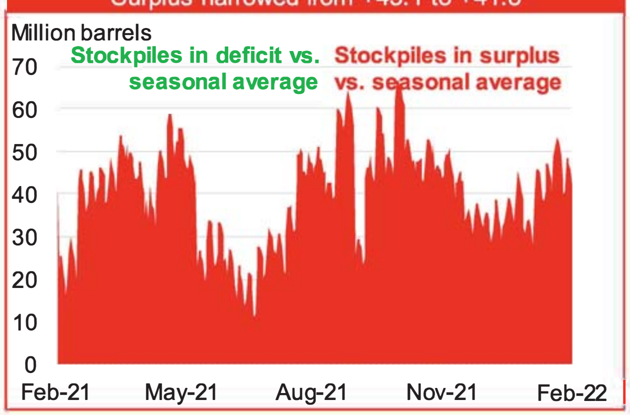
Floating storage: East of Suez

Weekly build of +1.8 (+2.2%) to 85.4

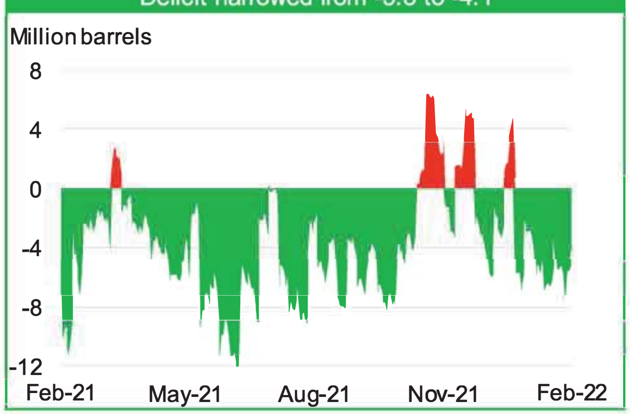


Charts below subtract current stockpiles by the 2016-19 (four-year) seasonal average

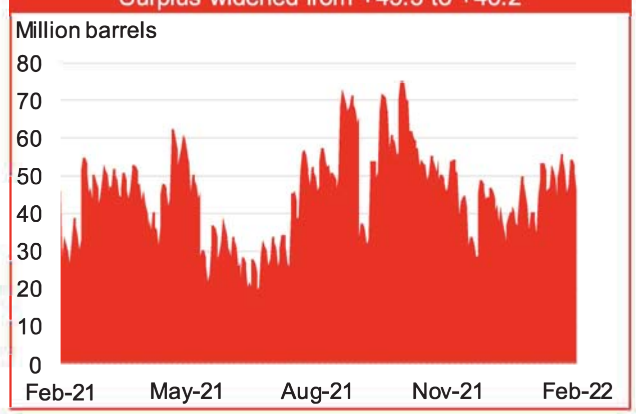
Surplus narrowed from +43.1 to +41.8



Deficit narrowed from -5.8 to -4.1



Surplus widened from +45.3 to +46.2

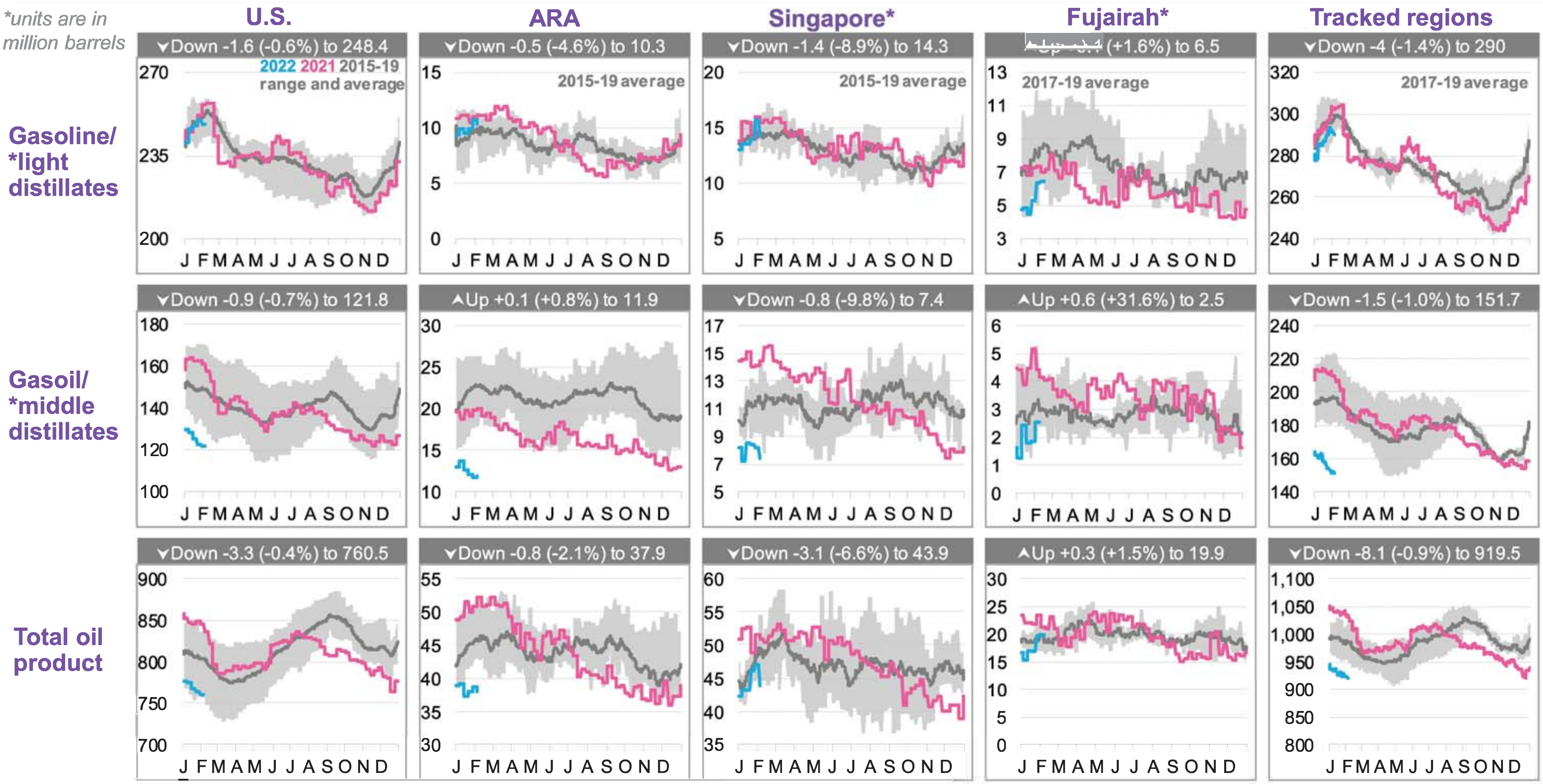


Source: BloombergNEF, Vortexa. Note: As of the ***week ending February 11. *Raw data from Vortexa is revised frequently, so the data in this report might change week-to-week.***

Product stocks: Current vs. seasonal average

Bullish: Oil product stockpiles in tracked regions fell by 1.4% week-on-week

- Chart legend are as follows: 2021, 2020 and the 2015-19 range and average. For Fujairah and tracked regions, the **2017-19 (three-year) seasonal range** is shown. Tracked regions include U.S., ARA, Singapore, Japan and Fujairah

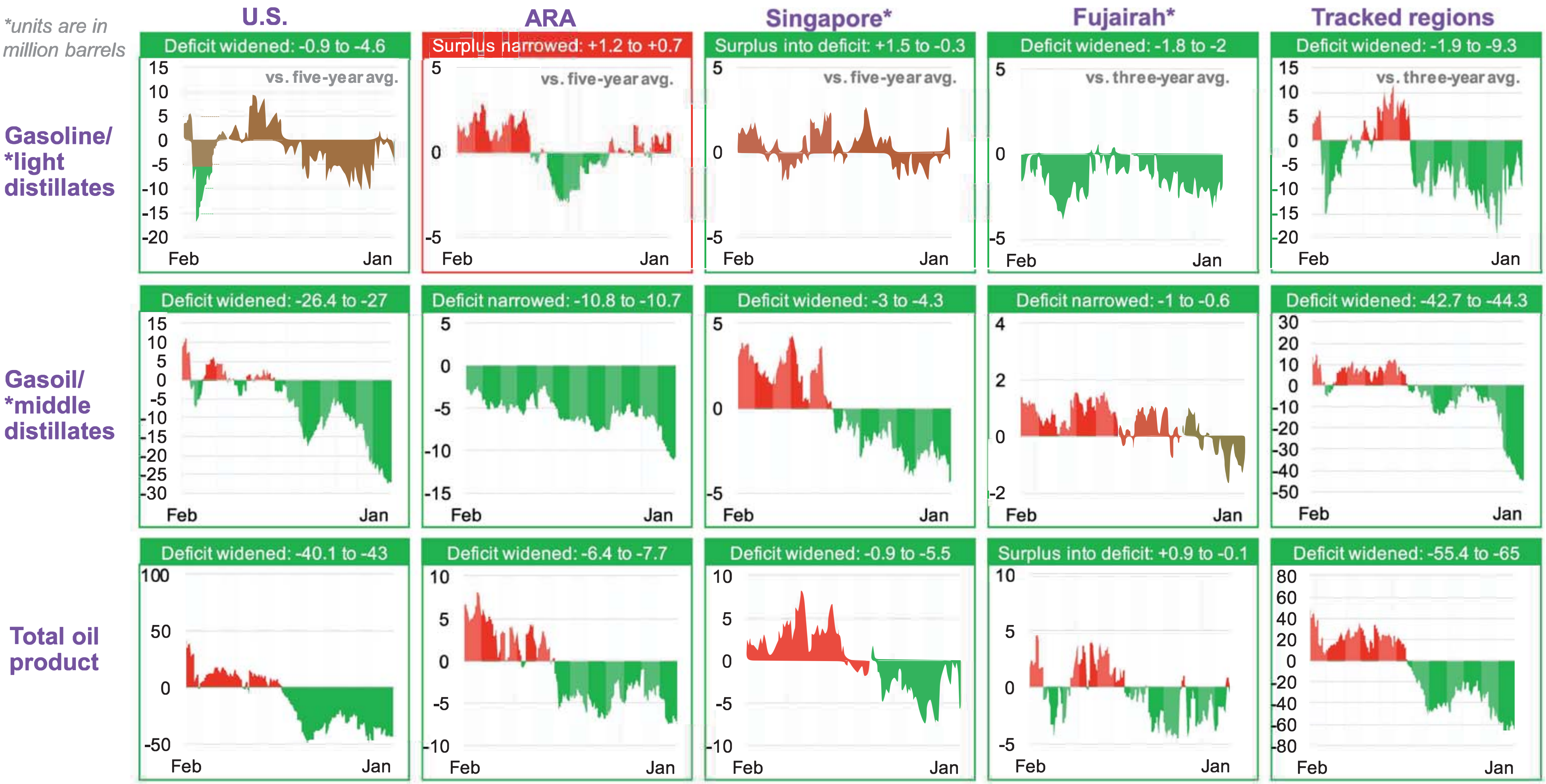


Source: BloombergNEF, U.S. EIA, PJK, IE Singapore, FEDCom/Platts, PAJ. Note: As of the **week ending Feb. 4.**

Product stocks: Current vs. seasonal average

Bullish: Oil product stockpile deficit against the seasonal average narrowed from 55.4m bbl to 65m bbl

- The charts below compare each respective regional product stockpile level against the seasonal average defined in the previous slide.
- **Red** signifies that the current stockpile levels are higher (in surplus) than the seasonal average, while **green** signals that the current stockpiles are lower (in deficit).



Source: BloombergNEF, U.S. EIA, PJK, IE Singapore, FEDCom/Platts, PAJ. Note: As of the **week ending Feb. 4.**

Fundamentals Financial

Aggregated oil stockpiles

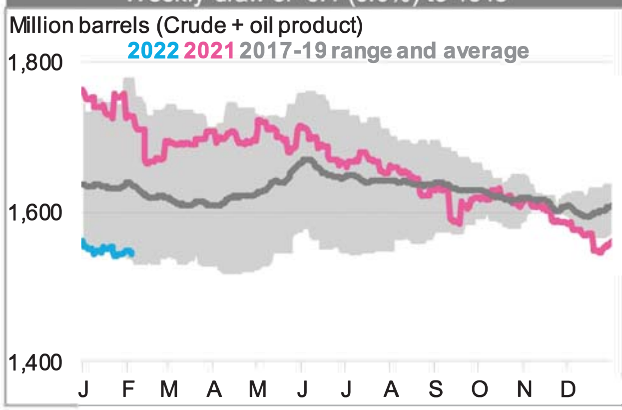
Bullish: Stockpiles deficit narrowed from 94.1m bbl to 102.4m bbl

Note: We will continue to compare current inventory levels with the three-year (2017-19) seasonal average for the time being. Crude inventory data for Shandong teapots were excluded since January 10.

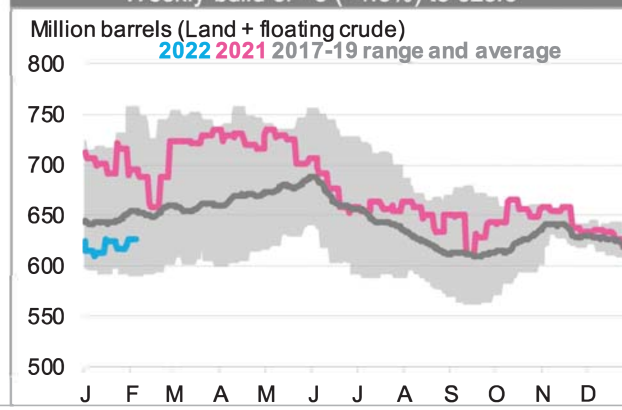
- Charts below use the **2017-19** (three-year) seasonal stockpiles. All calculations are recalibrated to measure against their respective three-year seasonal averages, so the values below might differ from the previous slides.
- Land crude inventories include the U.S., ARA, Japan and Shandong Teapots. Floating storage data are global. Oil product storage includes the U.S., ARA, Japan, Singapore, Shandong Teapots and Fujairah. Floating crude inventories may have been adjusted since the previous report – see slide 8 for more info.

Total oil and product stocks = Total crude stocks (land + floating) + Total oil product stockpiles

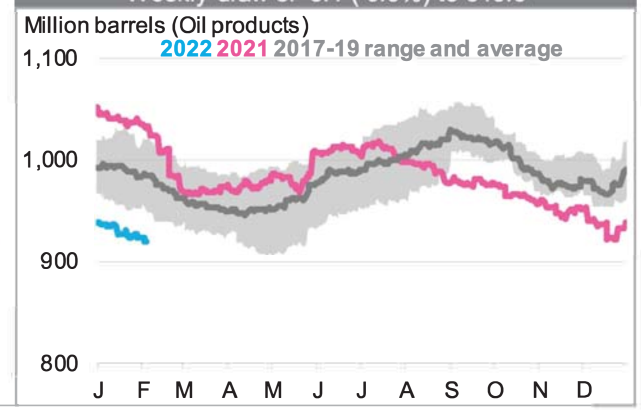
Weekly draw of -0.1 (0.0%) to 1545



Weekly build of +8 (+1.3%) to 625.5



Weekly draw of -8.1 (-0.9%) to 919.5



Charts below subtract current stockpiles by the 2017-19 (three-year) seasonal average

Deficit widened from -94.1 to -102.4

Deficit narrowed from -38.8 to -37.4

Deficit widened from -55.4 to -65

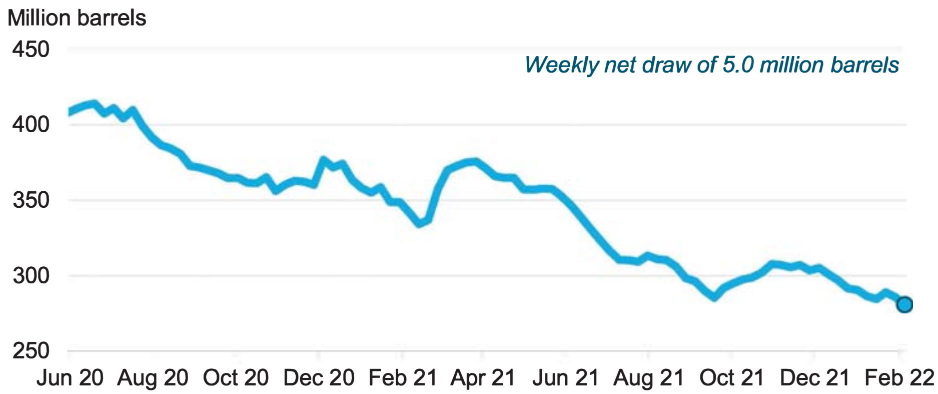
*Source: BloombergNEF, U.S. EIA, PJK, IE Singapore, FEDCom/Platts, PAJ ,Vortexa, Genscape, SCIG. As of the **week ending Feb. 4.***

U.S. crude storage utilization

DOE weekly data are available via NRGZ<GO> on the Bloomberg terminal

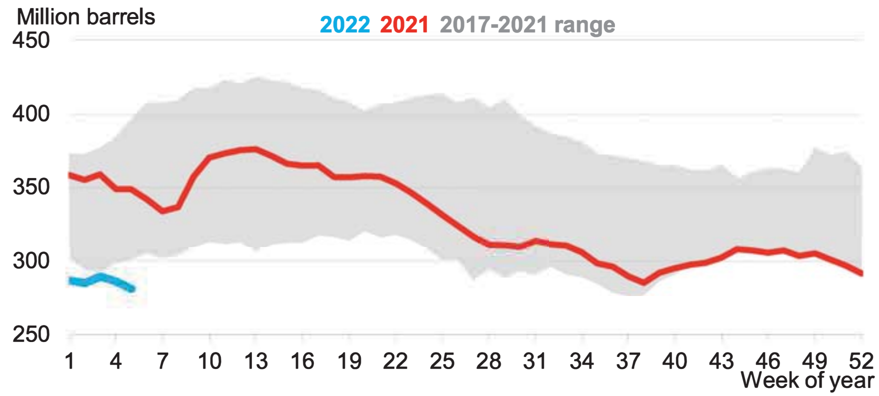
Crude stocks fell by 5 million barrels over the past week; storage capacity at 43%

U.S. net crude oil stocks: historical



Source: EIA. Note: Data excludes SPR, and accounts for pipeline fills.

U.S. net crude oil stocks: seasonal

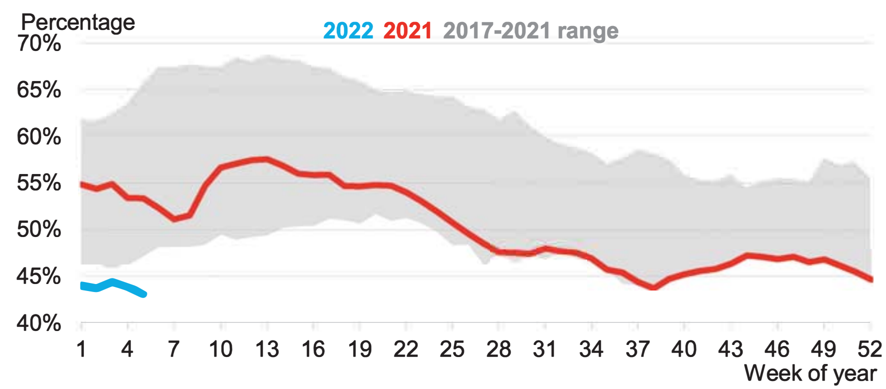


Source: EIA. Note: Data excludes SPR, and accounts for pipeline fills.

Working crude storage capacity filled: historical

Source: EIA

Working crude storage capacity filled: seasonal



Source: EIA

BloombergNEF

Feb 15, 2022 13:31:46

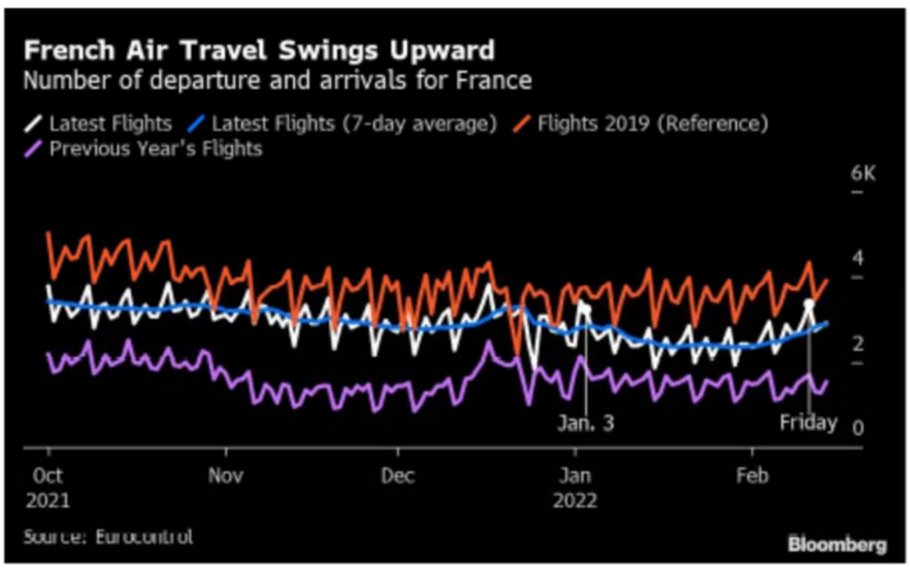
OIL DEMAND MONITOR: Air Travel Recovers More; Paris Roads Busy

- French air traffic tops early January level: Eurocontrol
- Paris, Taipei had busier Monday morning traffic than in 2019

By Stephen Voss

(Bloomberg) -- Aircraft tracking and passenger numbers show a continued recovery in flight activity in Europe, China and the U.S. Still, jet fuel demand remains depressed by lingering coronavirus restrictions even as gasoline and diesel consumption returns to near normal levels in parts of the world.
As more countries phase out various quarantine rules, air travel looks set to become more popular again. France plans to drop the mask requirement in public spaces where a proof of vaccine is required, and Germany is considering removing most pandemic rules by March 20.

The number of flights arriving to and departing from France topped 3,000 on Friday for the first time since Jan. 3, according to government-funded Eurocontrol. Overall air traffic in Europe was about 19,000 flights on Monday, some 30% less than the equivalent period in 2019, an improvement from a deficit of 33% a week earlier.



In the U.S., the number of passengers passing through airport turnstiles continues to grind higher from a low point in late January, and Chinese air passenger volumes have recovered from a steep dip at the end of last month, according to data from their respective transportation agencies. While China remains mostly closed for international travel, the country's Guangzhou airport is ranked as the third-busiest in the world this month, after Atlanta and Dubai, due to the strength of the large domestic market, according to DAG Aviation.

24% Down

Taking a more global view, the number of seats allocated by airlines for the week commencing Feb. 14 rose in 16 out of 17 broad geographical regions versus a week earlier, according to capacity estimates by DAG. That includes a notable jump for North East Asia, both for domestic and international travel. Globally, capacity is 52% higher than a year ago but still trails 2019 levels by about 24%.

By coincidence, U.S. jet fuel demand is also 24% less than 2019 levels for the week ended Feb. 4, according to the Energy Information Administration. The next set of weekly data is due on Wednesday. By contrast, gasoline demand was 0.6% higher than the pre-pandemic level, EIA data show.
Jet fuel consumption data for several nations often lags by one or two months, though some more recent information is available for India and Spain.

Indian aviation fuel demand in January was about 41% less than in January 2020 -- which was before the pandemic had much impact on the subcontinent -- according to Bloomberg surveys of the country's three biggest retailers. Withdrawals of jet fuel from Exolum's pipeline and storage network -- a proxy for domestic demand in Spain -- was 12% lower last month than in January 2019.

City Traffic

Turning to road traffic, Taipei and Paris had congestion levels Monday morning that were above the 2019 average for that time of the week, according to hourly data collected by navigation technology company TomTom NV. London dipped below the pre-pandemic level, perhaps as a result of English schools on a half-term break, and the other 10 world cities regularly tracked in this monitor were also below.

Atlantia Group is now publishing toll road data for Italy, France and Spain and three Latin American countries on a monthly basis, rather than every week. The January data show road volumes in Europe and Brazil lagging 2019 levels by a few percentage points while Chile and Mexico are ahead. All six countries show higher vehicle numbers than a year ago.

The Bloomberg weekly oil-demand monitor uses a range of high-frequency data to help identify emerging trends.

Following are the latest indicators. The first two tables shows fuel demand and mobility, the next shows air travel globally and the fourth is refinery activity:

Demand Measure	Location	% y/y	% vs 2020	% vs 2019	% m/m	Freq	Latest Date	Latest Value	Source
Gasoline	U.S.	+16	+4.6	+0.6	+15	w	Feb. 4	9.13m b/d	EIA
Distillates	U.S.	-0.3	+12	-8.1	+15	w	Feb. 4	4.3m b/d	EIA
Jet fuel	U.S.	+11	-16	-24	-13	w	Feb. 4	1.4m b/d	EIA
Total oil products	U.S.	+8.4	+4.4	+0.3	+5.1	w	Feb. 4	21.9m b/d	EIA
All vehicles miles traveled	U.S.			-6.4		w	Feb. 6	13.3b miles	DoT
Passenger car VMT	U.S.			-8.1		w	Feb. 6	n/a	DoT
Truck VMT	U.S.			+3.2		w	Feb. 6	n/a	DoT
All motor vehicle use index	U.K.	+53		-7	+6.9	w	Feb. 1-7	93	DfT
Car use	U.K.	+63		-12	+7.3	w	Feb. 1-7	88	DfT
Heavy goods vehicle use	U.K.	+12		+6	+3.9	w	Feb. 1-7	106	DfT
Gasoline (petrol) avg sales per filling station	U.K.	+52		-11	+23	w	Jan. 31-Feb. 6	6,495 liters/d	BEIS
Diesel avg sales per station	U.K.	+22		-12	+38	w	Jan. 31-Feb. 6	9,249 liters/d	BEIS
Total road fuels sales per station	U.K.	+33		-11	+31	w	Jan. 31-Feb. 6	15,744 liters/d	BEIS
Gasoline	India	-5.4	+0.2		-12	2/m	Jan. 1-31	2.23m tons	Bberg
Diesel	India	-6.9	-9		-13	2/m	Jan. 1-31	5.63m tons	Bberg
LPG	India	+4.1	+6.5		+4	2/m	Jan. 1-31	2.6m tons	Bberg
Jet fuel	India	-0.1	-41		-18	2/m	Jan. 1-31	415k tons	Bberg
Total Products	India	-0.2	-6	-4.9	-3.7	m	January	17.6m tons	PPAC
Toll roads volume	France	+16		-2.9		m	January	n/a	Atlantia
Toll roads volume	Italy	+43		-12		m	January	n/a	Atlantia
Toll roads volume	Spain	+53		-10		m	January	n/a	Atlantia
Toll roads volume	Brazil	+1.1		-3.4		m	January	n/a	Atlantia
Toll roads volume	Chile	+40		+12		m	January	n/a	Atlantia
Toll roads volume	Mexico	+15		+12		m	January	n/a	Atlantia
Gasoline	Spain	+36			-17	m	January	398k m3	Exolum
Diesel (and heating oil)	Spain	+5.6			-11	m	January	2197k m3	Exolum

Jet fuel	Spain	+149			-12	m	January	330k m3	Exolum
Road fuel sales	France	+12			+4.7	m	December	4.28m m3	UFIP
Jet fuel	France	+64			+11	m	December	507k m3	UFIP
All petroleum products	France	+14		-0.3	+5.9	m	December	4.83m tons	UFIP
Total fuel sales	Italy	+18		+1.6	+5.6	m	December	4.49m tons	Ministry
Gasoline	Italy	+33		+5.4	+10	m	December	644k tons	Ministry
Diesel /gasoil	Italy	+20		+6.6	+7.4	m	December	2.4m tons	Ministry
Jet fuel	Italy	+101		-39	-2.3	m	December	217k tons	Ministry
All vehicles traffic	Italy	+30			-12	m	January	n/a	Anas
Heavy vehicle traffic	Italy	unch			-11	m	January	n/a	Anas

Notes: Click here for a PDF with more information on sources, methods. The frequency column shows w for data updated weekly, 2/m for twice a month and m for monthly. The column showing "vs 2020" is used for some data, such as comparing Indian fuel demand for Jan. 2022 vs Jan. 2020.
In Dfr U.K. daily data, which is updated once a week, 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. daily data, which is updated once a week, 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.
Atlantia is now publishing toll road data on a monthly basis, not weekly.

City congestion:

Measure	Location	% chg vs avg 2019	% chg m/m	Feb. 14	Feb. 7	Jan. 31	Jan. 24	Jan. 17	Jan. 10	Jan. 3	Dec. 27	Dec. 20
		(Feb. 14)		Congestion minutes added to 1 hr trip at 8am* local time								
Congestion	Tokyo	-32	-28	25	31	28	32	35	5	1	31	38
Congestion	Taipei	+32	+42	47	23	2	32	33	32	32	43	31
Congestion	Jakarta	-71	-69	11	19	14	31	37	32	26	20	28
Congestion	Mumbai	-65	+133	17	8	13	9	7	7	10	11	14
Congestion	New York	-12	+557	28	33	36	26	4	19	11	5	20
Congestion	Los Angeles	-19	+269	29	32	26	26	8	13	10	6	16
Congestion	London	-44	-49	21	45	43	41	41	37	1	1	13
Congestion	Rome	-31	+51	34	35	25	25	22	28	7	10	44
Congestion	Madrid	-29	+110	25	18	14	16	12	12	2	3	13
Congestion	Paris	+4	+33	46	43	35	34	35	36	19	10	18
Congestion	Berlin	-23	-10	26	25	16	25	29	29	20	9	22
Congestion	Mexico City	-40	+96	29	zero	22	18	15	20	13	11	20
Congestion	Sao Paulo	-29	+81	28	33	28	14	16	19	10	11	23

Source: TomTom. Click here for a PDF with more information on sources, methods.
* Mumbai and Sao Paulo use 9am statistics rather than 8am.
NOTE: m/m comparisons are Feb. 14 vs Jan. 17, and show a large gain for New York and Los Angeles because it was a public holiday on Jan. 17. TomTom has been unable to provide Chinese data since April 2021. Taipei and Jakarta were added to the table in December 2021. It was a public holiday in Mexico City on Feb. 7 and in Taipei on Jan. 31.

Air Travel:

Measure	Location	y/y	vs 2 yrs ago	vs 2019	m/m	w/w	Freq.	Latest Date	Latest Value	Source
		changes shown as %								
Airline passenger throughput	U.S.	+79	-19	-16	+1.9	+8.8	d	Feb. 14	1.73m	TSA
Commercial flights	Worldwide	+53	-9.6	-14	+3.8	+1.6	d	Feb. 14	91,084	FlightRadar24
Air traffic (flights)	Europe			-30	+12	+4.1	d	Feb. 14	19,149	Eurocontrol
Seat capacity	Worldwide	+52	-15	-24	+5	+1.5	w	Feb. 14-20	80.1m	OAG
Seat capacity	North America			-13		+3.3	w	Feb. 14-20	n/a	OAG
Seat capacity	North East Asia			-22		+21	w	Feb. 14-20	n/a	OAG
Seat capacity	South East Asia			-47		+1.8	w	Feb. 14-20	n/a	OAG
Seat capacity	South Asia			-14		+15	w	Feb. 14-20	n/a	OAG
Seat capacity	Western Europe			-34		+12	w	Feb. 14-20	n/a	OAG

NOTE: Comparisons versus 201 9 or versus the early weeks of 2020 are a better measure of a return to normal for most nations, rather than y/y comparisons.
FlightRadar 24 data shown above, and comparisons thereof, all use 7-day moving averages, except for w/w which uses single day data.

Refineries:

Measure	Location/area	y/y	chg vs 2019	m/m chg	Latest as of Date	Latest Value	Source
		Changes are in ppt unless noted					
Crude intake	U.S.	+5.3%	-6.3%	unch	Feb. 4	15.6m b/d	EIA
Apparent Oil Demand	China	+2.5%		-3.8%	December 2021	13.65m b/d	NBS
Utilization	U.S.	+5.2	-2.5	-0.2	Feb. 4	88.2 %	EIA
Utilization	U.S. Gulf	+3.6	-2	-0.8	Feb. 4	88.9 %	EIA
Utilization	U.S. East	+17	+11	-1.8	Feb. 4	85.2 %	EIA
Utilization	U.S. Midwest	+8.4	+0.9	+0.5	Feb. 4	93.8 %	EIA

NOTE: All of the refinery data is weekly, except NBS apparent demand, which is usually monthly. Changes are shown in percentages for the rows on crude intake and Chinese apparent oil demand, while refinery utilization changes are shown in percentage points. SCI 99 data on Chinese refinery run rates was discontinued in late 2021.

U.S. Oil Indicators Weekly

Takeaways: The cold spell earlier this month knocked out power to several refineries along the Gulf Coast, potentially taking out 1.2 million barrels a day of combined capacity. Resulting outages are likely a driver in the surprise build in U.S. crude-oil inventories, which grew 1.1 million barrels based on EIA data for the week ending on February 11. The slight build blurs a bit of the full picture, however, as expected gains in Gulf Coast stocks were partially dampened by yet another Cushing draw. Inventories at the Oklahoma hub fell nearly 2 million barrels and are rapidly approaching critical lows. On the production front, the U.S. rig count reported its largest weekly increase since February 2018 as domestic crude output held flat at 11.6 million barrels a day

	Frequency	Source	Snapshot: February 17, 2022
Overall market indicators:			
Jobless claims by state	Weekly	U.S. Dept. of Labor	U.S. initial jobless claims fell for a third consecutive week to 238,000 in the first week of February. Ongoing claims were unchanged at 1.62 million
Mobility	Daily	Google mobility	North American traffic levels posted their first weekly decline of 2022, according to TomTom's congestion index; Google mobility data continues to steadily improve
Economic activity	Daily	New York MTA, Moovit, OpenTable, Prodco	U.S. restaurant activity looks to have stalled around 20% below 2019 levels; NYC subway ridership is clawing back, inching closer to 2 million daily riders
Oil demand:			
Road congestion & gasoline	Weekly, Hourly	U.S. EIA, TomTom	Gasoline demand's four-week moving average rose for a second straight week as drivers emerged from the winter doldrums. It now sits about 180,000 b/d below the five-year average
Air travel & jet fuel	Daily	U.S. TSA, FlightStats	U.S. airport activity is inching closer to pre-pandemic levels. TSA traveler throughput reached 83% of 2019 levels last week, up from 72% in late January
Refinery operations	Daily	U.S. EIA	Gulf Coast refinery utilization fell to 83.5% of capacity in response to freeze-related power outages last week. Disruptions may continue as affected refineries ramp back up
Crude/product inventories	Weekly	U.S. EIA	Crude inventories caught a break from recent declines with a surprise build of 1.1 million barrels last week; Cushing inventories continue to plummet to record lows
Oil production	Weekly	U.S. EIA	The U.S. rig count increased by 22 last week, the largest weekly gain since February 2018. Crude production held flat at 11.6 million barrels a day

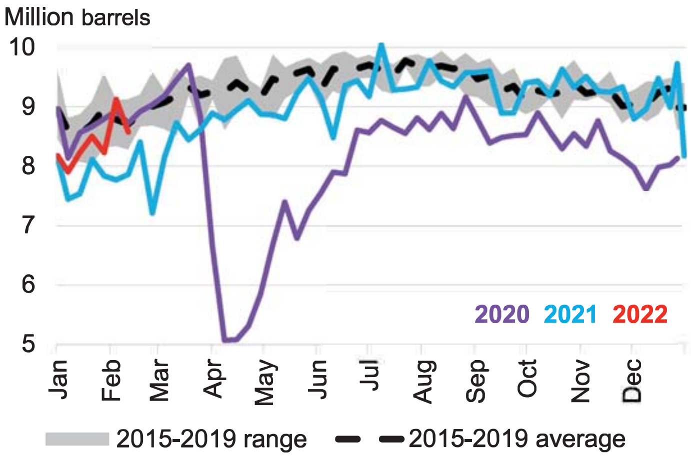
Source: BloombergNEF. Note: Green signals an upturn from the disruption caused by Covid-19, red indicates downturn, orange indicates no/mixed change. In most cases, the colors are indicative of changes from the prior week.

Gasoline demand

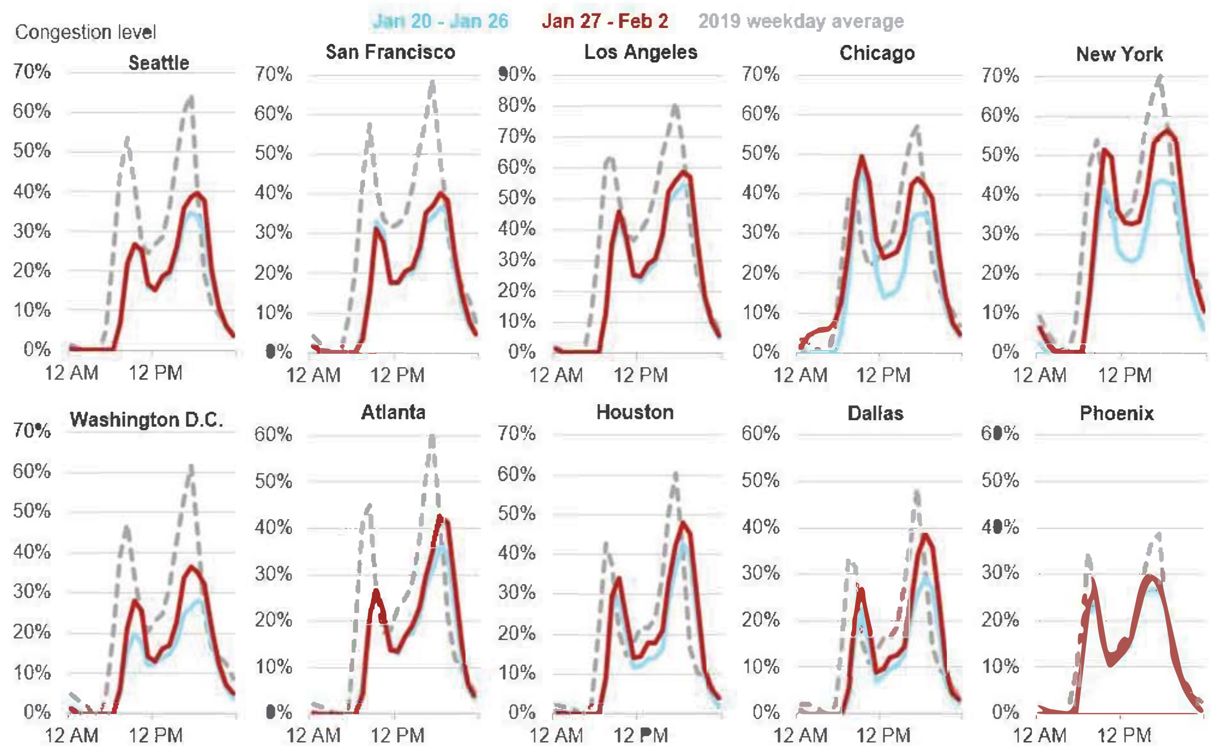
Gasoline demand's four-week moving average rose for a second straight week as drivers emerged from the winter doldrums. It now sits about 180,000 b/d below the five-year average

Implied demand

DOEDMGAS Index

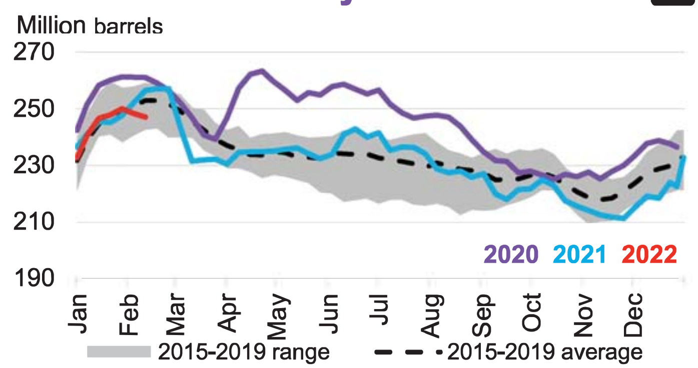


Hourly congestion



Gasoline inventory

DOESTMGS Index



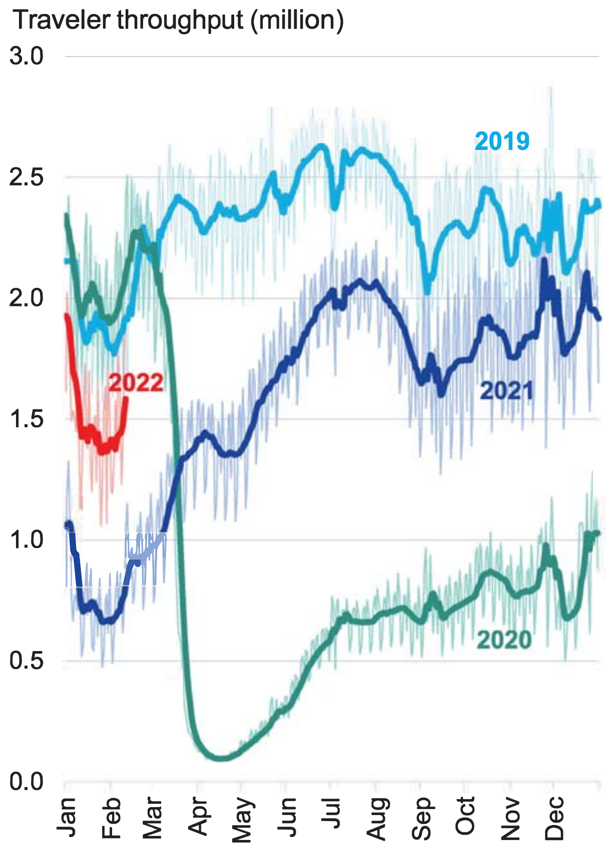
For more data on congestion around the world, see the BNEF Covid-19 Indicators: Road Traffic

Source: BloombergNEF, EIA, TomTom Traffic Index. Note: 'Congestion level' is an estimate of the increase in time that a journey within a city will take compared to uncongested conditions – so 40% congestion implies that a journey will take 40% longer than on empty roads. Charts show Mon-Fri average hourly congestion levels.

Jet fuel demand

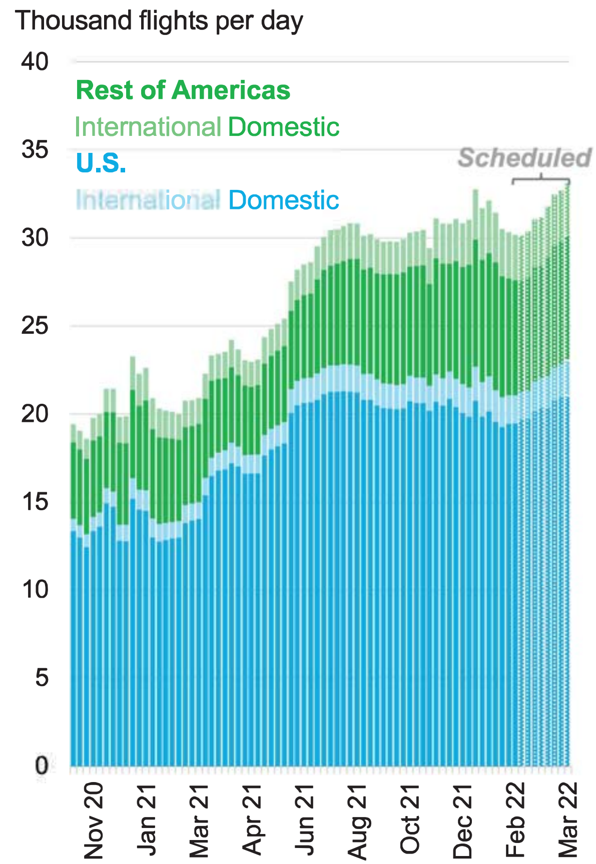
U.S. airport activity is inching closer to pre-pandemic levels. TSA traveler throughput reached 83% of 2019 levels last week, up from 72% in late January

TSA checkpoint traffic



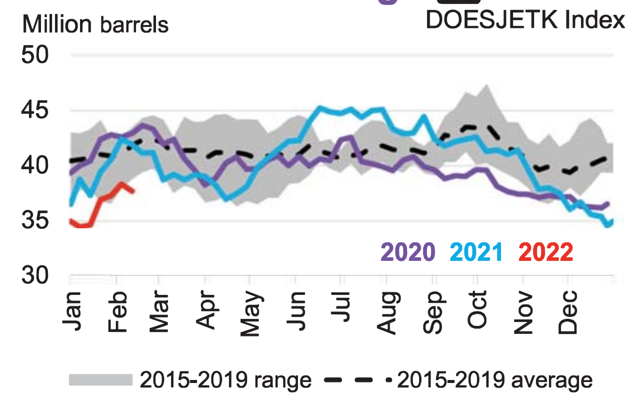
Source: BloombergNEF, TSA

Daily flight departures

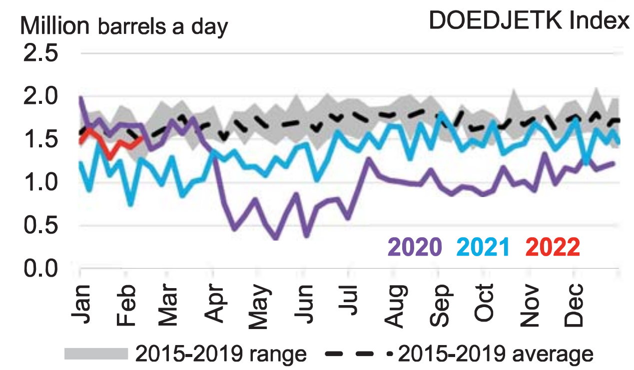


Source: BloombergNEF, FlightStats.

Jet kerosene storage



Jet kerosene implied demand



Source: BloombergNEF, EIA

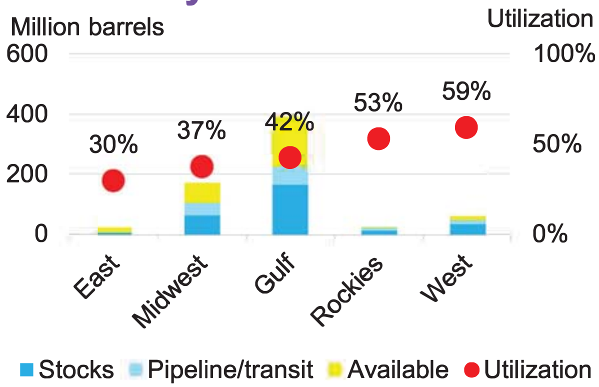
For more data on congestion around the world, see the BNEF Covid-19 Indicators: Aviation

Oil markets

Crude and product inventories

Crude inventories caught a break from recent declines with a surprise build of 1.1 million barrels last week; Cushing inventories continue to plummet to record lows

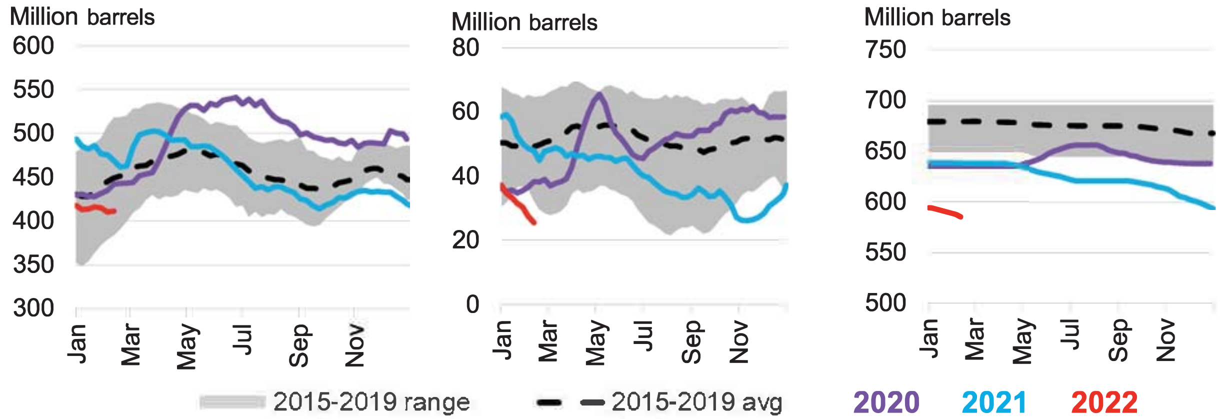
Commercial crude storage availability



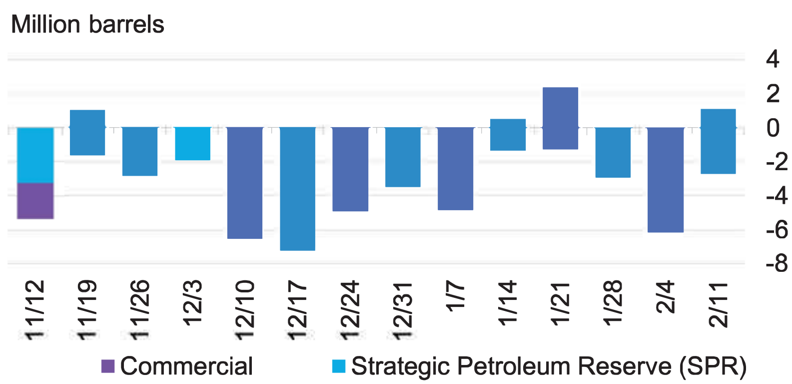
Commercial crude

Crude at Cushing

SPR



Commercial vs SPR weekly crude inventory change



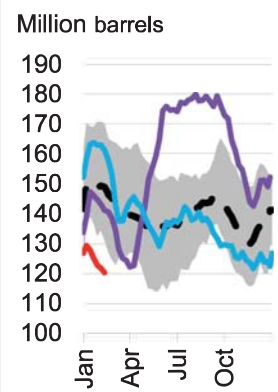
Source: BloombergNEF, U.S. Energy Information Administration

A note on crude storage

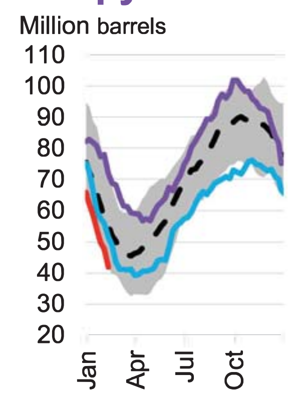
It is important to note how the EIA measures crude oil stocks. Typically, as shown in the graphs above, the EIA reports stocks held in above-ground tanks and underground storage, as well as crude in pipelines at refineries and tank farms plus stocks in transit by water and rail.

However, when considering how *full* storage is, volumes in pipeline and transit should be omitted. The graph above shows what portion of reported crude stocks is in the form of pipeline/transport, and the resulting storage utilization status excluding these volumes.

Distillate



Propane/ Propylene



For more data on storage inventories, see NRGZ<GO> on the Bloomberg Terminal

Aviation Indicators Weekly

BloombergNEF is tracking the evolution of passenger flight schedules and departures globally. This note provides a weekly update of these data points to guide expectations of the demand for aviation fuel.

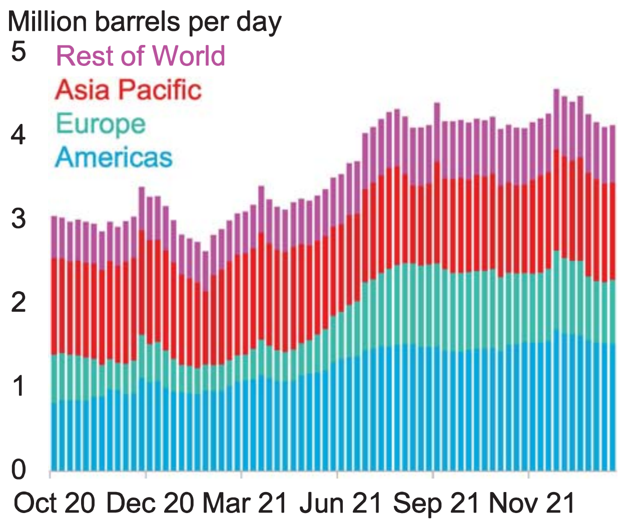
Metric	Frequency	February 3 to February 9
Passenger flight schedule	Weekly	Week-on-week scheduled departures decreased by a small amount.
Implied fuel consumption	Weekly	Week-on-week implied fuel consumption decreased by a small amount.
APAC jet fuel demand	Weekly	APAC jet fuel demand declined week-on-week but rose year-on-year
Europe jet fuel demand	Weekly	Europe jet fuel demand grew week-on-week and grew year-on-year
Americas jet fuel demand	Weekly	Americas jet fuel demand declined week-on-week but grew year-on-year
Rest of World jet fuel demand	Weekly	Rest of World jet fuel demand grew week-on-week and grew year-on-year

Source: DATA FLY<GO>, BloombergNEF. Note: Green signals an upturn from the disruption caused by Covid-19, red indicates no upturn, orange indicates a possible upturn.

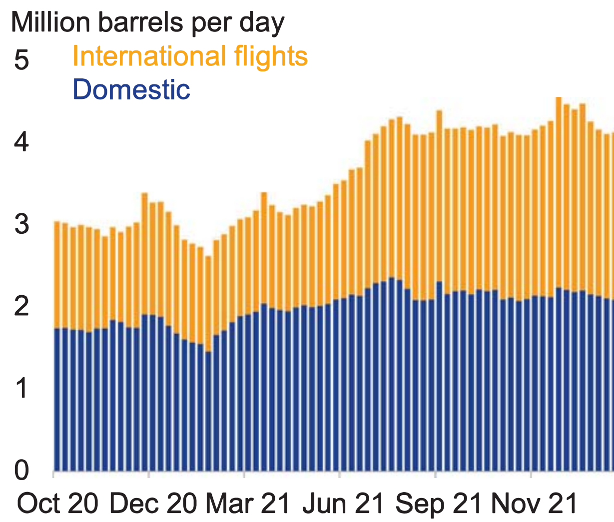
- Global passenger jet fuel demand declined by 0.5% week-on-week, led by declines in Asia Pacific.
- With the U.K., Australia, India, Greece and Portugal all relaxing testing requirements in February, travel has become easier and will likely result in higher levels of air travel entering the summer season.
- Based on the number of passenger flights scheduled, jet fuel demand over the next four weeks will average 4.4 million barrels per day. Cancellations since last week have removed on average just 155,000 barrels per day of jet fuel demand over the same four weeks. This is the lowest level in several weeks.
- In Europe, departures in the Eurocontrol area increased by 8% week-on-week and are now at 70% of 2019 levels over the equivalent week. This represents a spike in departures. British Airways, easyJet, Air France and Ryanair led an increase in flights as restrictions and travel requirements in large markets like the U.K. are relaxed. Seasonally, this should continue into summer.
- U.S. passenger numbers increased by 13% week-on-week, reaching 1.6 million passengers on average each day. Hawaii, Aruba and Bermuda are among tourist destinations easing travel requirements, which may boost demand to fly in the U.S.
- In Asia Pacific, China cut fewer flights than at any stage in the past two months in a positive sign for airlines like China Southern, China Eastern and Shenzhen Airlines.

Commercial passenger flight jet fuel demand

Demand by departure region



Demand by flight type



- Global passenger jet fuel demand grew 0.5% week-on-week.
- Asia Pacific led declines as the Lunar New Year holiday saw fewer travel than in previous years.
- Jet fuel demand remains at levels registered in late November 2021.
- For more cuts of this data see DATA FLY<GO>.

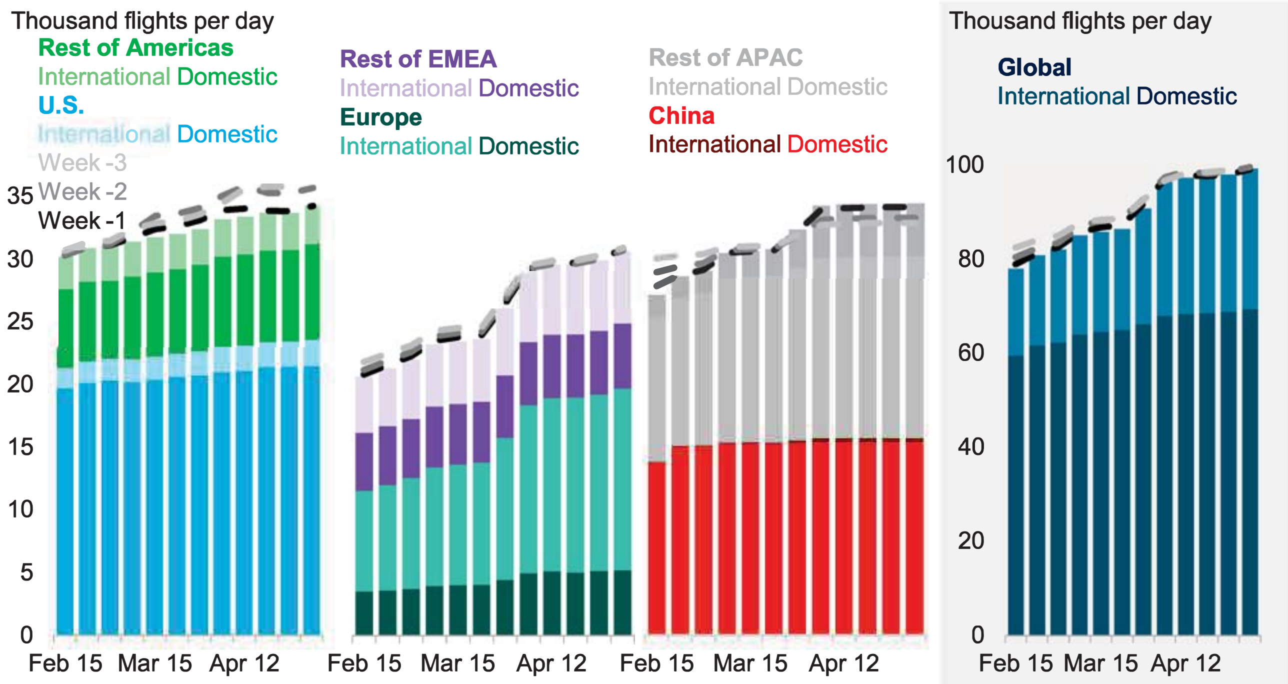
For more on demand and pricing fundamentals see Oil Price Indicators Weekly

K bbl per day	Latest	Week Δ	Four-week Δ	Year-on-year Δ
World	**4,122**	19.4 (+0.5%)	-350.5 (-7.8%)	1391.3 (+51.0%)
Americas	**1,522**	-2.8 (-0.2%)	-98.4 (-6.1%)	605.4 (+66.1%)
Asia Pacific	**1,159**	-20.8 (-1.8%)	-71.6 (-5.8%)	143.2 (+14.1%)
Europe	**763**	34.9 (+4.8%)	-127.2 (-14.3%)	448.4 (+142.4%)
Rest of World	**678**	8.0 (+1.2%)	-53.2 (-7.3%)	194.3 (+40.2%)

K bbl per day	Latest	Week Δ	Four-week Δ	Year-on-year Δ
International	**2,033**	34.0 (+1.7%)	-235.6 (-10.4%)	857.0 (+72.9%)
Domestic	**2,089**	-14.7 (-0.7%)	-114.9 (-5.2%)	534.3 (+34.4%)

Source: BloombergNEF, Bloomberg terminal DATA FLY<GO>. Note: The model does not account for load factors of aircraft, route inefficiencies or cargo flights.

12-week-ahead passenger departure schedule

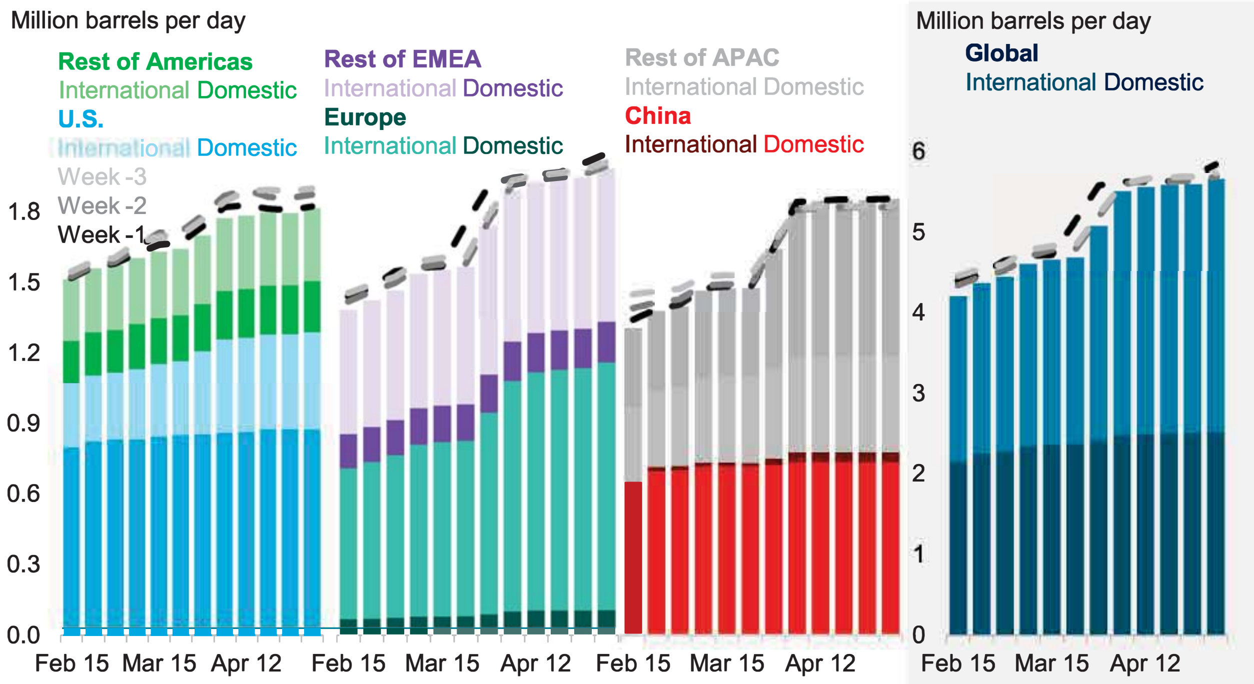


- Globally, the passenger flight schedule for the 12 weeks ahead is 0.7% lower week-on-week, the lowest level of cuts in several months.
- On average, more than 600 flights per day have been canceled each day over the coming 12 weeks since last week. Half the level registered in recent weeks.
- Cuts to scheduled flights in China have eased significantly, with less severe restrictions in major air traffic centers in recent weeks.
- Terminal users can explore the airlines, regions and airports leading cuts here.

Source: BloombergNEF, Bloomberg terminal DATA FLY<GO>.

Note: As of February 9. Based on more than 11,000 commercial airports, taking the average daily scheduled flight departures per week. Excludes cargo flights. Europe is defined as the EU 27, EFTA and the U.K. Intra-Europe flights are defined as international.

Jet fuel demand implied by scheduled flights



- Based on the number of passenger flights scheduled, jet fuel demand over the next four weeks will average 4.4 million barrels per day. Fuel consumed in cargo flights is not included in this number.
- Cancellations since last week have removed on average more than 155,000 barrels per day of jet fuel demand over the same four weeks. Again, a far lower number than in previous weeks.
- For more cuts of this data see DATA FLY<GO>.

Source: BloombergNEF, Bloomberg terminal DATA FLY<GO>.

Note: As of February 9. Oil consumption is based on the aircraft model, distance between origin and destination airport and the fuel efficiency of each aircraft type. Consumption is allocated to the departure airport and does not account for load factor, or inefficiencies such as longer routes or circling at an arrival airport. Intra-Europe flights are defined as international.

https://www.ft.com/content/32331a55-817c-46fc-87f7-a08e150294b7

Eni chief predicts gas market will remain tight for at least four years

Italian energy major reports its highest annual profits since 2012 thanks to soaring prices

Eni chief executive Claudio Descalzi: 'I don't think the situation can change drastically because most of the major companies are engaged in the transformation, in climate change action' © Christopher Goodney/Bloomberg

Tom Wilson in London YESTERDAY

Natural gas markets will remain tight for at least the next four years, Eni's chief executive has said, as the Italian energy major reported its highest annual profits since 2012 thanks to soaring prices.

European gas prices are at record levels and oil at a seven-year high as supply has struggled to keep pace with resurgent demand.

Eni boss Claudio Descalzi said the imbalance predated the pandemic and was a result of falling investment in oil and gas production since 2015.

"I don't think the situation can change drastically because most of the major companies are engaged in the transformation, in climate change action," he said.

As a result, he expected the oil market to remain "structurally undersupplied" for at least another two years, and the gas market for the next four to five years, until a planned major expansion of liquefied natural gas production in Qatar is completed around 2026.

These market dynamics helped Eni rebound from a loss in 2020 to record adjusted net profits of €4.7bn in 2021, the highest in eight years. Profits for the past three months of 2021 were €2.1bn, up from €1.4bn in the third quarter, beating company-compiled average analysts' estimates of €1.9bn.

"As with peers these are Eni's best annual results in a decade," said Oswald Clint, an analyst at Bernstein.

Eni was the last of the western energy majors to report earnings but unlike its rivals, all of which have reported bumper profits, it did not announce further share buybacks. It confirmed a divided of €0.86 for 2021. Any changes to the dividend or buyback programme would be announced in March, Descalzi said.

Eni shares rose about 1 per cent in morning trading on Friday in Milan.

Like its peers, Eni is at the start of a major restructuring, but has been more willing than other supermajors to consider hiving off parts of the company in preparation for the energy transition.

It listed a stake in Vaar Energi, its Norwegian upstream oil and gas joint venture, this year and is preparing an initial public offering later this year of Plenitude, its retail, renewables and mobility business.

Plenitude's earnings before interest tax depreciation and amortisation increased 25 per cent year on year to €0.6bn in 2021.

Eni, which will retain a majority stake in the business, says floating Plenitude will help it to access cheaper funding and grow faster.

Most of Eni's competitors, including Shell and BP, have argued they will be better able to succeed in the energy transition as integrated companies.

Spinning off Plenitude, and possibly other divisions in the future, while retaining majority stakes, will enable Eni to create "more agile vehicles" with dedicated management teams and still benefit from the growth of those businesses, Descalzi said.

“When you face a transition, most of the time you have to change your model, your industrial model, your financial model,” he said. “It makes a huge difference if you keep something in the big body of the oil gas company that has a different kind of culture.”

Excerpts from CNBC posted transcript of excerpts from CNBC Squawk Box Andrew Ross-Sorkin interview with BlackRock CEO Larry Fink on Jan 18, 2022.

Excerpt from CNBC posted transcript of portions of the Fink interview [LINK]

SORKIN: So, one of the things that you have been very outspoken about and have singularly perhaps changed the conversation in boardrooms around the country and around the world is about the environment, and really pushing companies to focus more on the environment. But at the same time, you say in this letter this year, you say, "We focus on sustainability not because we're environmentalists, but because we are capitalists and fiduciaries to our clients." And so maybe this is a chicken and the egg kind of thing here. But how much of this is your view that the environment really does matter? And how much of it is your view that the profits matter? And you think it's gonna come because people are focused on the environment?

FINK: I am just as much as a, as focused on environmental issues as I've ever been. And I believe we need to be moving forward. And I'm really pleased to say that $4 trillion of money has moved into more sustainable strategies and it's accelerating. I talked about in my, in my 2020 letter about the tectonic shift that we are seeing, we are going to see it if anything COVID and the way we live and work today has accelerated the investments towards sustainability. But that being said, I had a great deal of frustration in 2021 about the means in which we're moving forward. I wrote over the last few years about to move forward in a more sustainable decarbonized world, it requires a combination of government and private sector and that's just not happening. We are not seeing the totality of society moving forward together. We need to be working with hydrocarbon companies, not against them. We need to be working with the communities that are involved in hydrocarbons, not against them. But we also need to be working with all, with new startup companies to rapidly deploy and create new technologies so we can get to a decarbonized world by 2050. At the present pace, Andrew, we're not going to get there.

SORKIN: How do you distinguish and how should the public and the investor class distinguish between a hydrocarbon company that you think is on the good side of being a hydrocarbon company and a hydrocarbon company that you think is on the bad side? Because right now, it appears but oftentimes these things are thought of in a very binary way. You're either a hydrocarbon company, or you're not.

FINK: Society is dependent on hydrocarbons right now. We are, you know, we will not survive with the society that we are talking to without hydrocarbons right now. We need to rapidly admit that and we need to have fair and just solutions about how do we utilize hydrocarbons as we move more towards a decarbonized way. We need to be advancing ideas about green and blue hydrogen. We need to be advancing new ideas and creating new mechanisms to decarbonize steel and decarbonize cement. We need to find technologies to, to so we can afford the sequestering of carbon. These are all going to be the tools in which we can create a more sustainable world, but it has to be done together. It's not going to happen overnight. If we want to just admonish the hydrocarbon companies today and say stop investing, get out of your business. We're going to have a very unequal outcome.

https://www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter

LARRY FINK'S 2022 LETTER TO CEOS:

The Power of Capitalism

Dear CEO,

Each year I make it a priority to write to you on behalf of BlackRock's clients, who are shareholders in your company. The majority of our clients are investing to finance retirement. Their time horizons can span decades.

The financial security we seek to help our clients achieve is not created overnight. It is a long-term endeavor, and we take a long-term approach. That is why, for the past decade, I have written to you, as CEOs and Chairs of the companies our clients are invested in. I write these letters as a fiduciary for our clients who entrust us to manage their assets – to highlight the themes that I believe are vital to driving durable long-term returns and to helping them reach their goals.

When my partners and I founded BlackRock as a startup 34 years ago, I had no experience running a company. Over the past three decades, I've had the opportunity to talk with countless CEOs and to learn what distinguishes truly great companies. Time and again, what they all share is that they have a clear sense of purpose; consistent values; and, crucially, they recognize the importance of engaging with and delivering for their key stakeholders. This is the foundation of stakeholder capitalism.

Stakeholder capitalism is not about politics. It is not a social or ideological agenda. It is not "woke." *It is capitalism*, driven by mutually beneficial relationships between you and the employees, customers, suppliers, and communities your company relies on to *prosper*. This is the power of capitalism.

In today's globally interconnected world, a company must create value for and be valued by its full range of stakeholders in order to deliver long-term value for its shareholders. It is through effective stakeholder capitalism that capital is efficiently allocated, companies achieve durable profitability, and value is created and sustained over the long-term. Make no mistake, the fair pursuit of profit is still what animates markets; and long-term profitability is the measure by which markets will ultimately determine your company's success.

At the foundation of capitalism is the process of constant reinvention – how companies must continually evolve as the world around them changes or risk being replaced by new competitors. The pandemic has turbocharged an evolution in the operating environment for virtually every company. It's changing how people work and how consumers buy. It's creating new businesses and destroying others. Most notably, it's dramatically accelerating how technology is reshaping life and business. Innovative companies looking to adapt to this environment have easier access to capital to realize their visions than ever before. And the relationship between a company, its employees, and society is being redefined.

COVID-19 has also deepened the erosion of trust in traditional institutions and exacerbated polarization in many Western societies. This polarization presents a host of new challenges for CEOs.

Political activists, or the media, may politicize things your company does. They may hijack your brand to advance their own agendas. In this environment, facts themselves are frequently in dispute, but businesses have an opportunity to lead. Employees are increasingly looking to their employer as the most trusted, competent, and ethical source of information – more so than government, the media, and NGOs.

That is why your voice is more important than ever. It's never been more essential for CEOs to have a consistent voice, a clear purpose, a coherent strategy, and a long-term view. Your company's purpose is its north star in this tumultuous environment. The stakeholders your company relies upon to deliver profits for shareholders need to hear directly from you – to be engaged and inspired by you. They don't want to hear us, as CEOs, opine on every issue of the day, but they do need to know where we stand on the societal issues intrinsic to our companies' long-term success.

Putting your company's purpose at the foundation of your relationships with your stakeholders is critical to long-term success.

Putting your company's purpose at the foundation of your relationships with your stakeholders is critical to long-term success. Employees need to understand and connect with your purpose; and when they do, they can be your staunchest advocates. Customers want to see and hear what you stand for as they increasingly look to do business with companies that share their values. And shareholders need to understand the guiding principle driving your vision and mission. They will be more likely to support you in difficult moments if they have a clear understanding of your strategy and what is behind it.

A new world of work

No relationship has been changed more by the pandemic than the one between employers and employees. The quit rate in the US and the UK is at historic highs. And in the US, we are seeing some of the highest wage growth in decades. Workers seizing new opportunities is a good thing: It demonstrates their confidence in a growing economy.

While turnover and rising pay are not a feature of every region or sector, employees across the globe are looking for more from their employer – including more flexibility and more meaningful work. As companies rebuild themselves coming out of the pandemic, CEOs face a profoundly different paradigm than we are used to. Companies expected workers to come to the office five days a week. Mental health was rarely discussed in the workplace. And wages for those on low and middle incomes barely grew.

That world is gone.

Workers demanding more from their employers is an essential feature of effective capitalism. It drives prosperity and creates a more competitive landscape for talent, pushing companies to create better, more innovative environments for their employees – actions that will help them achieve greater profits for their shareholders. Companies that deliver are reaping the rewards. Our research shows that companies who forged strong bonds with their employees have seen lower levels of turnover and higher returns through the pandemic.[1]

Companies not adjusting to this new reality and responding to their workers do so at their own peril. Turnover drives up expenses, drives down productivity, and erodes culture and corporate memory. CEOs need to be asking themselves whether they are creating an environment that helps them compete for talent. At BlackRock we are doing the same: working with our own employees to navigate this new world of work.

Creating that environment is more complex than ever and reaches beyond issues of pay and flexibility. In addition to upending our relationship with where we physically work, the pandemic also shone a light on issues like racial equity, childcare, and mental health – and revealed the gap between generational expectations at work. These themes are now center stage for CEOs, who must be thoughtful about how they use their voice and connect on social issues important to their employees. Those who show humility and stay grounded in their purpose are more likely to build the kind of bond that endures the span of someone's career.

At BlackRock, we want to understand how this trend is impacting your industry and your company. What are you doing to deepen the bond with your employees? How are you ensuring that employees of all backgrounds feel safe enough to maximize their creativity, innovation, and productivity? How are you ensuring your board has the right oversight of these critical issues? Where and how we work will never be the same as it was. How is your company's culture adapting to this new world?

New sources of capital fueling market disruption

Over the past four decades, we have seen an explosion in the availability of capital. Today, global financial assets total $400 trillion.[2] This exponential growth brings with it risks and opportunities for investors and companies alike, and it means that banks alone are no longer the gatekeepers to funding.

Young, innovative companies have never had easier access to capital. Never has there been more money available for new ideas to become reality. This is fueling a dynamic landscape of innovation. It means that virtually every sector has an abundance of disruptive startups trying to topple market leaders. CEOs of established companies need to understand this changing landscape and the diversity of available capital if they want to stay competitive in the face of smaller, more nimble businesses.

BlackRock wants to see the companies we invest in for our clients evolve and grow so that they generate attractive returns for decades to come. As long-term investors, we are committed to working with companies from all industries. But we too must be nimble and ensure our clients' assets are invested, consistent with their goals, in the most dynamic companies – whether startups or established players – with the best chances at succeeding over time. As capitalists and as stewards, that's our job.

I believe in capitalism's ability to help individuals achieve better futures, to drive innovation, to build resilient economies, and to solve some of our most intractable challenges. Capital markets have allowed companies and countries to flourish. But access to capital is not a right. It is a privilege. And the duty to attract that capital in a responsible and sustainable way lies with you.

Capitalism and sustainability

Most stakeholders – from shareholders, to employees, to customers, to communities, and regulators – now expect companies to play a role in decarbonizing the global economy. Few things will impact capital allocation decisions – and thereby the long-term value of your company – more than how effectively you navigate the global energy transition in the years ahead.

It's been two years since I wrote that climate risk is investment risk. And in that short period, we have seen a tectonic shift of capital.[3] Sustainable investments have now reached $4 trillion.[4] Actions and ambitions towards decarbonization have also increased. This is just the beginning – the tectonic shift towards sustainable investing is still accelerating. Whether it is capital being deployed into new ventures focused on energy innovation, or capital transferring from traditional indexes into more customized portfolios and products, we will see more money in motion.

Every company and every industry will be transformed by the transition to a net zero world. The question is, will you lead, or will you be led?

In a few short years, we have all watched innovators reimagine the auto industry. And today, every car manufacturer is racing toward an electric future. The auto industry, however, is merely on the leading edge – every sector will be transformed by new, sustainable technology.

Engineers and scientists are working around the clock on how to decarbonize cement, steel, and plastics; shipping, trucking, and aviation; agriculture, energy, and construction. I believe the decarbonizing of the global economy is going to create the greatest investment opportunity of our lifetime. It will also leave behind the companies that don't adapt, regardless of what industry they are in. And just as some companies risk being left behind, so do cities and countries that don't plan for the future. They risk losing jobs, even as other places gain them. The decarbonization of the economy will be accompanied by enormous job creation for those that engage in the necessary long-term planning.

The next 1,000 unicorns won't be search engines or social media companies, they'll be sustainable, scalable innovators – startups that help the world decarbonize and make the energy transition affordable for all consumers. We need to be honest about the fact that green products often come at a higher cost today. Bringing down this green premium will be essential for an orderly and just transition. With the unprecedented amount of capital looking for new ideas, incumbents need to be clear about their pathway succeeding in a net zero economy. And it's not just startups that can and will disrupt industries. Bold incumbents can and must do it too. Indeed, many incumbents have an advantage in capital, market knowledge, and technical expertise on the global scale required for the disruption ahead.

Our question to these companies is: what are you doing to disrupt your business? How are you preparing for and participating in the net zero transition? As your industry gets transformed by the energy transition, will you go the way of the dodo, or will you be a phoenix?

We focus on sustainability not because we're environmentalists, but because we are capitalists and fiduciaries to our clients.

We focus on sustainability not because we're environmentalists, but because we are capitalists and fiduciaries to our clients. That requires understanding how companies are adjusting their businesses for the massive changes the economy is undergoing. As part of that focus, we are asking companies to set short-, medium-, and long-term targets for greenhouse gas reductions. These targets, and the quality of plans to meet them, are critical to the long-term economic interests of your shareholders. It's also why we ask you to issue reports consistent with the Task Force on Climate-related Financial Disclosures (TCFD): because we believe these are essential tools for understanding a company's ability to adapt for the future.

The transition to net zero is already uneven with different parts of the global economy moving at different speeds. It will not happen overnight. We need to pass through shades of brown to shades of green. For example, to ensure continuity of affordable energy supplies during the transition, traditional fossil fuels like natural gas will play an important role both for power generation and heating in certain regions, as well as for the production of hydrogen.

The pace of change will be very different in developing and developed countries. But all markets will require unprecedented investment in decarbonization technology. We need transformative discoveries on a level with the electric light bulb, and we need to foster investment in them so that they are scalable and affordable.

As we pursue these ambitious goals - which will take time - governments and companies must ensure that people continue to have access to reliable and affordable energy sources. This is the only way we will create a green economy that is fair and just and avoid societal discord. And any plan that focuses solely on limiting supply and fails to address demand for hydrocarbons will drive up energy prices for those who can least afford it, resulting in greater polarization around climate change and eroding progress.

Divesting from entire sectors – or simply passing carbon-intensive assets from public markets to private markets – will not get the world to net zero. And BlackRock does not pursue divestment from oil and gas companies as a policy. We do have some clients who choose to divest their assets while other clients reject that approach. Foresighted companies across a wide range of carbon intensive sectors are transforming their businesses, and their actions are a critical part of decarbonization. We believe the companies leading the transition present a vital investment opportunity for our clients and driving capital towards these phoenixes will be essential to achieving a net zero world.

[redacted]

Capitalism has the power to shape society and act as a powerful catalyst for change.

Capitalism has the power to shape society and act as a powerful catalyst for change. But businesses can't do this alone, and they cannot be the climate police. That will not be a good outcome for society. We need governments to provide clear pathways and a consistent taxonomy for sustainability policy, regulation, and disclosure across markets. They must also support communities affected by the transition, help catalyze capital for the emerging markets, and invest in the innovation and technology that will be essential to decarbonizing the global economy.

It was the partnership between government and the private sector that led to the development of COVID-19 vaccines in record time. When we harness the power of both the public and private sectors, we can achieve truly incredible things. This is what we must do to get to net zero.

Empowering clients with choice on ESG votes

Stakeholder capitalism is all about delivering long-term, durable returns for shareholders. And transparency around your company's planning for a net zero world is an important element of that. But it's just one of many disclosures we and other investors ask companies to make. As stewards of our clients' capital, we ask businesses to demonstrate how they're going to deliver on their responsibility to shareholders, including through sound environmental, social, and governance practices and policies.

In 2018, I wrote that we would double the size of our stewardship team and it remains the largest in the industry. We've built this team so we can understand your company's progress throughout the year, not just during proxy season. It's up to you to chart your own course and to tell us how you're moving forward. We seek to understand the full range of issues that you face, not just the ones on the ballot – and that includes your long-term strategy.

Just as other stakeholders are adjusting their relationships with companies, many people are rethinking their relationships with companies as shareholders. We see a growing interest among shareholders – including among our own clients – in the corporate governance of public companies. That is why we are pursuing an initiative to use technology to give more of our clients the option to have a say in how proxy votes are cast at companies their money is invested in. We now offer this option to certain institutional clients, including pension funds that support 60 million people. We are working to expand that universe.

We are committed to a future where every investor – even individual investors – can have the option to participate in the proxy voting process if they choose.

We know there are significant regulatory and logistical hurdles to achieving this today, but we believe this could bring more democracy and more voices to capitalism. Every investor deserves the right to be heard. We will continue to pursue innovation and work with other market participants and regulators to help advance this vision toward reality.

Of course, many corporate leaders are responsible for overseeing equity assets, whether through employee pension funds, corporate treasury accounts, or other investments your company makes. I encourage you to ask that your asset manager gives you the opportunity to participate in the proxy voting process more directly.

BlackRock’s Investment Stewardship team remains core to our fiduciary approach, and many of our clients prefer that the team continues to engage and execute voting on their behalf. But fundamentally, clients should at least be given the choice and chance to participate in voting more directly.

Our conviction at BlackRock is that companies perform better when they are deliberate about their role in society and act in the interests of their employees, customers, communities, and their shareholders.

However, we also believe that there is still much to learn about how a company’s relationship with stakeholders impacts long-term value. That's why we are launching a Center for Stakeholder Capitalism, to create a forum for research, dialogue, and debate. It will help us to further explore the relationships between companies and their stakeholders and between stakeholder engagement and shareholder value. We will bring together leading CEOs, investors, policy experts, and academics to share their experience and deliver their insights.

Delivering on the competing interests of a company’s many divergent stakeholders is not easy. As a CEO, I know this firsthand. In this polarized world, CEOs will invariably have one set of stakeholders demanding that we do one thing, while another set of stakeholders demand that we do just the opposite.

That is why it is more important than ever that your company and its management be guided by its purpose. If you stay true to your company's purpose and focus on the long term, while adapting to this new world around us, you will deliver durable returns for shareholders and help realize the power of capitalism for all.

Sincerely,

Larry Fink

Chairman and Chief Executive Officer

https://www.blackrock.com/ca/investors/en/transition-investing

A FRAMEWORK FOR OUR CLIENTS

How to invest in the net zero transition

Dear Client,

We are writing to you as a client who has expressed interest in the net zero transition. As the transition becomes increasingly pivotal to your long-term investment goals, it is our responsibility to help provide you with the answers and the tools you need to help address it in your portfolio. The choice of how to approach the transition, as always, remains with you, and as your fiduciary, we commit to helping guide and advise you as it unfolds.

We are hearing a range of questions about the transition from clients – how do I safeguard my portfolio against physical risk and transition risk? How do I measure and implement my net zero commitments? Which companies will thrive in the transition and which won't? How do I capitalize on the promise of new technologies? How will different hydrocarbon companies adapt to the transition and how will that impact my portfolio? These questions are of growing importance to long-term investors – but also difficult to answer as the economy undergoes such a profound transformation.

Decarbonization is proceeding at different speeds across different parts of the economy and the world. The shocks we see in the energy sector today are one example of the challenges the transition poses. Increased investment in the supply of renewables outpaced the reduced investment in fossil fuels. Now, increased demand for fossil fuels in the restart of economic activity and impaired supply have driven up the price and use of gas, oil, and coal. There will be periods like this when traditional energy performs well – periods that should not be seen as counter to the transition, but as part of it.

At the same time, the net zero transition is also advancing. The share of countries committed to net zero has swelled from less than 10 percent to 95 percent of global emissions. In the beginnings of a tectonic shift[1] of capital, investors have moved their money into sustainable investments at six times the growth rate of traditional investments, with assets globally now totaling $4 trillion across all ESG categories.[2] And there has been striking change across carbon-intensive industries, from energy to heavy industry to agriculture, to decarbonize and remake their businesses.

The speed and shape of the transition are deeply uncertain, and it will take decades to play out. It is essential that governments, businesses, and finance work together to manage the transition in an orderly fashion, ensuring reliable energy supply and cost along the way.

The ambition and effectiveness of government policy will be a major factor in determining the future role for hydrocarbons. Effective, long-term planning is necessary to deliver cost-efficient clean energy alternatives at scale. Without it, hydrocarbons will continue to play a central role in the global economy for a much longer time. To date, public policy has primarily focused on limiting hydrocarbon supply but has not done enough to address demand – for example, by retooling energy-intensive industries or accelerating adoption of zero-carbon energy sources – resulting in higher energy prices in some instances. And as we have seen in emerging markets, rising natural gas prices can also drive increased use of coal.

Today there is a significant degree of uncertainty about the transition. The issue, however, is no longer *whether* **the net zero transition will happen but** *how* **– and what that means for your portfolio**. Our focus on understanding the *how* of the net zero transition is driven, as always, by our role as a fiduciary. It is based on our abiding conviction that long-term investors must consider the implications on their portfolios of both physical climate risk and the transition to net zero in the real economy, and that by taking these factors into account, they can more effectively manage risk, seize new investment opportunities, and achieve better long-term returns. We delve deeper into these topics in a new paper from the BlackRock Investment Institute, "Managing the net zero transition."

We hope to answer your questions about the transition and offer you a comprehensive set of options to help you address them – whether it's tilting your broad market strategies to be more climate-aware, investing in carbon-intensive companies that are transforming their businesses, or gaining exposure to the new technologies and business models of a net zero world. We are committed to providing the full range of investment choices to help you find the best path for you and your stakeholders, and regardless of which approach you choose, we are profoundly excited to help you navigate this transformation.

We have taken a number of steps over the past two years to help you address the transition: integrating ESG risk considerations into our active investment process, introducing more than 200 new sustainable funds, building Aladdin® Climate to help you understand physical and transition risk in your portfolio; forming Decarbonization Partners to invest in innovative decarbonization technologies and businesses; and establishing a heightened scrutiny framework to help manage exposure to climate-related risk in active portfolios.

We are working to help address some of the most difficult questions in decarbonization. Our Climate Finance Partnership, a global consortium of governments, philanthropies, and institutional investors, is focused on investing in climate infrastructure in emerging markets. And the BlackRock Foundation has partnered with Breakthrough Energy Catalyst, in order to help increase the commercial viability of critical climate technologies.

We have also taken action to increase transparency for our clients, including publishing **implied temperature rise metrics** for our ETFs and public index funds. You can read a more detailed update **here**.

In 2022 and beyond, we aim to:

- Build and deliver the **industry's most sophisticated transition tools, analytics, and portfolio advice**, powered by Aladdin and designed to help investors to invest amidst high uncertainty about the pace of change in policy and the real economy.

- Offer you a **framework** for thinking about how to invest in the transition – a spectrum of "*navigate, drive, and invent.*" With capital already flowing fast to green technologies, we believe there is also a significant investment opportunity for managers who can identify the carbon-intensive companies with the best strategies for decarbonization.

- **Establish a new capability** to bring together BlackRock's efforts focused on transition finance and to incubate transition-focused investment strategies.

Helping guide you through the transition

Clients have long expected their asset manager to have a sophisticated understanding of the direction of interest rates, inflation, and macroeconomic growth. Increasingly, they expect the same sophisticated understanding of the net-zero transition.

For investors to navigate the transition, they need to be able to measure and model it. That's why we have been building Aladdin Climate – a collection of data, models, analytics and tools to help investors understand, report, and act on physical and transition risk in their portfolios and capture related opportunities.

Aladdin Climate analyzes how securities and portfolios are impacted by and contribute to forward-looking climate scenarios and decarbonization pathways. The technology integrates these analytics into a platform that investors use to manage risk and investments. These climate metrics are delivered alongside traditional financial metrics and portfolio construction capabilities, providing investors with a consistent way to evaluate risks and identify new investment opportunities.

Starting with Aladdin – and drawing on BlackRock's proprietary insights and tools across public and private markets, we aim to build the industry's clearest map of how the transition is likely to unfold across technologies, sectors, and regions. The **BlackRock Transition Scenario** will put our analytical and modeling capabilities at the fingertips of portfolio managers and clients to help illuminate the path to navigate, drive and invent the transition.

We are also augmenting our sustainable investing capabilities through tools such as BlackRock Sustainable Investing Intelligence™ – our proprietary framework that goes beyond traditional financial accounting metrics to identify companies best prepared to mitigate risks and capture opportunities associated with the transition.

In addition, BlackRock Investment Stewardship's engagement with companies about their transition plans is an essential aspect of informing our views on the transition and promoting long-term value for our clients. We ask every company to help its investors understand how it may be impacted by climate-related risk and opportunities, and how these factors are considered in a manner consistent with the company's business model and sector. BlackRock Investment Stewardship **Global Principles** contain further details on our approach.

A transition framework: navigate, drive, and invent

After hundreds of conversations with clients to inform our thinking, we have developed a framework to help you achieve your investment objectives as the transition unfolds. While we offer you a variety of ways to approach the transition, all of them recognize that a clear understanding of the transition is vital to achieving better long-term returns.

Markets are already bearing this argument out – for example, our research has shown that more sustainable companies are seeing their cost of capital fall. And while short time periods are not determinative, it is striking that in 2021, 70 percent of a selection of broad-market ESG indices outperformed their non-ESG counterparts, with average outperformance of over 100 basis points.[3]

However, we also believe that markets are only beginning to price in the effects of the climate transition on asset prices, creating a significant opportunity for our clients. Indeed, understanding sustainability characteristics is key to our ability to generate alpha, and as the transition accelerates, an understanding of these characteristics will be even more pivotal to outperformance.

Navigate

At the center of any sound investment approach is an understanding not only of how the world looks today, but how it might look tomorrow. That question increasingly hinges on understanding the net zero transition – and having the right approach to navigate it effectively.

Virtually every client is asking: how do I navigate the transition to manage risk and capture opportunity? How do I think about climate not only in terms of green technologies, but across the whole economy? How do I reconcile the ongoing role of fossil fuels – even the need for continued upstream investment – with the push to accelerate clean energy deployment? These are increasingly existential questions for portfolio construction because no investor can afford to ignore the transition as it accelerates.

Navigation isn't just about making an allocation to sustainable investments. It is about understanding as precisely as possible how the multiple forces of decarbonization will impact your *entire* portfolio – for example, how evolving technology, energy prices, government policy, and other factors interact to paint a picture of how the transition is unfolding, with implications at the security, sector, and portfolio level.

BlackRock already offers you a number of ways to navigate, including transition benchmarks and next-generation tilts that leverage proprietary data, research and insights – customizing and optimizing to lean into financially-material decarbonization and ESG objectives aligned to our clients' goals. Our active portfolios are ESG-integrated, which means that portfolio managers take sustainability-related characteristics of issuers into account in their investment decisions.

In 2022, we are committing to offer you more targeted ways to invest in line with the way decarbonization is projected to unfold.

- More strategies to enable investors to "green the core" of their portfolio by accessing climate-aware broad-market exposures and drawing on BlackRock Sustainable Investing Intelligence, including potential options for investors focused on retirement.
- We also plan to offer new fundamental and systematic active strategies and to continue to expand our iShares® strategies to include climate benchmarks.
- We will expand our Portfolio Consulting and Outsourced Chief Investment Officer capabilities to incorporate climate transition analytics and allow for greater customization to enable our clients to achieve their unique sustainability objectives.

Drive

Given the inevitability of the net zero transition, we believe navigation should be the default posture of investors. But we are hearing from more and more clients who want to do more than just understand how the transition may unfold and adjust their portfolios accordingly. They want to help **drive** it forward, positioning themselves to capture value while contributing to accelerated progress.

In this context, many of you are asking us: should my ambition be to remove as much carbon as possible from my portfolio today, or should I invest in carbon-intensive sectors that are in the process of going green? To paraphrase one climate-focused global investor, having a zero-carbon portfolio today doesn't necessarily drive decarbonization tomorrow.

Capital markets are already channeling capital to companies with green business models, such as producers of **renewable energy, suppliers of electric mobility technology, or companies focused on nature-based solutions**. We believe an underappreciated opportunity for investors seeking to drive the transition lies in **identifying carbon-intensive companies that are positioning themselves to lead decarbonization within their industries**.

The transition to net zero, of course, will take decades. The global economy will continue to rely on fossil fuels as emissions-intensive sectors like electricity, industry, and transport work to decarbonize. Some incumbents will be displaced by new technologies or more agile startups, and some will lose out to competitors who are decarbonizing more successfully. **But many other incumbents will thrive, providing important investment opportunities for our clients, and successful decarbonization plans by these companies will be critical to an orderly transition.**

What might driving successful decarbonization look like at the industry level? For a utility, it might mean negotiating the early closure of a coal-fired power plant and using free cash flow to invest in grid-scale battery technology. For a steel producer, it might mean replacing traditional blast furnaces with electric arc furnaces. For an automaker, it might be committing to all-electric vehicle designs faster than its competitors.

BlackRock already provides a number of ways for clients to drive the transition – from one of the world's leading renewable power franchises, to our Climate Finance Partnership, to a range of thematic strategies.

In 2022, we are deepening our focus on the question of decarbonization across our investment platform, integrating it more deeply into our existing strategies, and offering **new** active public-markets strategies**,** index thematic strategies, and green bond strategies. In addition, our private-markets strategies are increasingly focused on helping clients access a range of transition-focused opportunities, both in renewables and in companies seeking to decarbonize.

Invent

Finally, clients will have enormous opportunities to invest in the technologies and businesses needed to i**nvent** major aspects of a truly zero-emissions economy. Clients are asking, how can I invest in the climate tech of the future? What are the climate unicorns of the 21st century that will have the biggest impact on the transition and generate outsize returns?

Many of these technologies exist but are not yet economically competitive – such as green hydrogen, carbon capture, green cement, or sustainable aviation fuel. Capital is necessary to commercialize these new technologies and invent others, and many of you have told us you see this area as one of the most exciting investment opportunities of the coming decades.

Last year, we announced the formation of Decarbonization Partners with Temasek, which will seek to make investments in early-stage growth companies targeting proven, next-generation renewable and mobility technology. And just last week, we announced the dedicated investment team, which has already begun identifying an exciting pipeline of investment opportunities.

This year, we will establish a new capability to bring together BlackRock's efforts focused on transition finance – a hub for select strategies related to the transition; an incubator for new investment strategies; and a forum for BlackRock to connect with companies, academics, and other organizations to better understand the transition and seek the best investment opportunities on behalf of our clients.

Conclusion

The transition is a process that will unfold over many years. It will take careful planning and coordinated action among government, business and investors. We believe there is still a great deal to learn about how best to move forward, and your voice and your insights will be essential. We look forward to learning and working together, and we hope you will consider joining us for a summit on transition finance, which we will host later this year.

We are committed to being the world's leading advisor and expert on investing in the net zero transition. We are committed to giving you the most sophisticated, up-to-date analytics and the deepest understanding of how the transition will unfold. And we are committed to helping you select the investment options that are right for you and your stakeholders. It is our privilege to work with you to navigate, drive, and invent this economic and financial transformation.

https://www.argusmedia.com/en/news/2303389-australias-energy-transition-accelerates?backToResults=true

Australia's energy transition accelerates

Published date: 18 February 2022
Share:

The closure of Australia's largest black-coal fired power station, the 2,880MW Eraring, seven years earlier than previous planned in August 2025 follows increased competition from renewables, accelerating the country's energy transition that will affect demand for gas power peaking plants and hydrogen projects.

The plant will be partly replaced by a planned 700MW battery that Australian utility Origin Energy intends to install at the Eraring site in the coal-producing Hunter valley region of New South Wales (NSW). The deployment of further renewable power capacity from wind and solar, gas peaking plants, as well as additional transmission power infrastructure will all help replace the power generated from Eraring, Origin's chief executive Frank Calabria said.

Coal in terminal decline

The planned closure of Eraring will come a little more than two years after the 1,680MW Liddell black-coal fired plant that is to fully close by April 2023. This will mean that almost 46pc of NSW's black coal-fired power capacity will close within 3½ years, to be replaced by renewables, batteries, gas peaking plants and imported electricity from South Australia (SA) with the 800MW EnergyConnect transmission link due to open by 2024 after starting construction this week.

The expected electricity transmitted to NSW via the EnergyConnect link will be generated by wind and solar as SA has some of the cheapest renewable resources in the country.

The closure of Liddell and Eraring will be followed by the shutting of the 2,640MW Bayswater coal-fired power plant by as early as 2030. Its closure was brought forward last week by Australian utility AGL Energy, which had previously earmarked the plant to close in 2036. Bayswater, Eraring and Liddell are all located in the Hunter valley, the largest thermal coal exporting region in Australia and were built there there because of the proximity to coal reserves.

The 1,320MW Vales Point is scheduled to close in 2029, meaning that there may be only one coal-fired power plant in NSW by the end of the decade with the 1,400MW Mount Piper earmarked to close in 2040.

Coal generated 68pc of NSW's electricity in the past 12 months, according to data from the OpenNEM website. Mount Piper represents about 14pc of NSW's existing coal-fired power plant nameplate capacity. The shutting of four coal-fired power plants will affect domestic NSW coal consumption, which totalled 25.8mn t in the 2019-20 fiscal year to 30 June or more than a quarter of domestic national use over the same period.

Most of the mines supplying NSW coal plants are dedicated to these power stations. They are not connected to the rail network supplying coal to NSW's Newcastle port that is the country's largest thermal coal export port.

Power shock or change

The Australian federal government has warned of higher power prices and possible outages with the coal-fired power plant closures. This has been a consistent message from Canberra since Australian energy minister Angus Taylor took up his role in August 2018.

Shortly after he became minister Taylor unveiled plans for the federal government to underwrite new generation to provide firming capacity to the network to back up renewables, which at the time accounted for 20pc of power generation in the National Electricity Market (NEM) that covers east Australia.

Officials from the Department of Industry, Science, Energy and Resources on 14 February at a hearing in the upper house of parliament the Senate said the federal government had not yet provided any underwriting to the 12 projects on a short list to provide the renewables back-up. These include five gas peaking plants, the upgrade of Vales Point and six pumped hydropower projects.

Origin cited the rise in renewables, which have lower operating costs than coal-fired power plants, as the main factor behind the accelerated closure of Eraring. This was already highlighted in the latest quarterly energy dynamics report from the Australian Energy Market Operator (Aemo) of the displacing of the equivalent of around 850MW of thermal power generation capacity in the October-December 2021 quarter compared with the same period a year earlier.

Renewables accounted for about a third of power generation in the NEM in the past 12 months, with it expected to extend the trend of increasing market share. The NSW state government this week said it had received more than A$100bn ($72bn) worth of proposed renewable energy projects with a total nameplate capacity of 40,000MW for the Hunter valley and central coast region, which is one of five renewable energy zones (REZ) the state government plans. This is in addition to 95,000MW of renewable energy project proposals covering its other REZs.

Transitioning to hydrogen

This volume of proposed projects also underline the expected increase in electricity demand, as more electric vehicles are deployed in Australia and the expected development of hydrogen projects using renewable energy instead of fossil fuels. This is part of efforts to lower greenhouse gas (GHG) emissions and help Australia meet its emissions reduction targets of between 26-28pc by 2030.

The NSW government plans to be a significant producer of hydrogen for domestic use and export, through a A$3bn state-funded investment plan for the expansion of renewable energy to produce hydrogen rather than for alternative methods of producing hydrogen from coal or gas. It has targeted a hydrogen price made from renewable energy, otherwise known as green hydrogen, at A$2.80/kg by 2030 from around A$8.60/kg currently. A move to more renewable energy is part of the plan to lower hydrogen production prices.

Cutting emissions

Australia's electricity generation accounts for about a third of national GHG emissions and was estimated to be around 179mn t of carbon dioxide equivalent (CO2e) in 2019, the last year that Australia's GHG accounts were audited.

NSW electricity accounts for 52mn t of CO2e. Origin estimated that Eraring's emissions were more than 12mn t of CO2e last year. AGL has said the closure of Liddell will reduce GHG emissions by 8mn t/yr of CO2e. The closure of their two coal-fired power plants will cut emissions by a total of around 20mn t of CO2e by the end of 2025, or 38pc of NSW's emissions from electricity and 11pc of emissions from the NEM.

These GHG reductions are all within Australia's emissions projections, which forecasts that renewables will account for 61pc of Australia's electricity by the end of the decade and 11,000MW of coal-fired capacity would close by 2030. The accelerated closures of Eraring and Bayswater now means that the government's forecasts of coal closures by 2030 is now more or less met (*see table*).

The pace of change in Australia's power generation may see further announcements of earlier closures of coal-fired power plants with Aemo modelling 14,000MW of such closures by the end of 2030.

By Kevin Morrison

East Australia coal-fired power plant closures by 2030 (MW)				
	Capacity	Owner	Closure	State
Liddell	1,680	AGL	2023	NSW
Eraring	2,880	Origin	2025	NSW
Vales Point	1,320	Delta	2029	NSW
Yallourn	1,480	EnergyAustralia	2029	Victoria
Callide B	700	CS Energy	2029	Queensland
Bayswater	2,640	AGL	2030-33	NSW
Total	10,700			
Source, AGL, Origin, EnergyAustralia, Delta, CS Energy, Aemo				

https://www.canada.ca/en/public-safety-canada/news/2022/02/federal-government-declares-a-public-order-emergency-under-the-emergencies-act-to-end-disruptions-blockades-and-the-occupation-of-the-city-of-ottawa.html

Federal Government declares a public order emergency under the *Emergencies Act* to end disruptions, blockades and the occupation of the city of Ottawa

From: Public Safety Canada

News release

The Government of Canada's top priority remains to keep people and communities safe, and to protect jobs, trade, and our economy. The federal government is working with provinces and municipalities to get the current situation under control and end the ongoing illegal blockades and occupations taking place across the country.

Today, the Honourable David Lametti, Minister of Justice and Attorney General of Canada, with the support of the Honourable Marco Mendicino, Minister of Public Safety, and the Honourable Bill Blair, President of the Queen's Privy Council in Canada and Minister of Emergency Preparedness, announced the declaration of a public order emergency under the *Emergencies Act*, to end disruptions, border blockades and the occupation of Ottawa's downtown core.

The public order emergency grants the Government the authority to apply the following temporary measures:

- Regulating and prohibiting public assemblies, including blockades, other than lawful advocacy, protest or dissent
- Regulating the use of specified property, including goods to be used with respect to a blockade
- Designating and securing places where blockades are to be prohibited (e.g. borders, approaches to borders, other critical infrastructure)
- Directing specified persons to render essential services to relieve impacts of blockades on Canada's economy
- Authorizing or directing specified financial institutions to render essential services to relieve the impact of blockades, including by regulating and prohibiting the use of property to fund or support the blockades
- Measures with respect to authorizing the Royal Canadian Mounted Police to enforce municipal and provincial laws by means of incorporation by reference
- The imposition of fines or imprisonment for contravening on any of the measures declared under this public order emergency

In order to declare a public order emergency, the *Emergencies Act* requires that there be an emergency that arises from threats to the security of Canada that are so serious as to be a national emergency. Threats to the security of Canada may include the threat or use of acts of serious violence against persons or property for the purpose of achieving a political or ideological objective. A national emergency is an urgent, temporary and critical situation that seriously endangers the health and safety of Canadians that cannot be effectively dealt with by the provinces or territories, or that seriously threatens the ability of the Government of Canada to preserve the sovereignty, security and territorial integrity of Canada. It must be a situation that cannot be effectively dealt with by any other law of Canada.

When a declaration of a public order emergency is made under the *Emergencies Act,* it allows the federal government to make orders and regulations that it believes are necessary for dealing with the emergency, on reasonable and proportional grounds.

The *Emergencies Act* has stringent, built-in protections which ensure democratic oversight of the use of these powers. Any declaration under the *Emergencies Act* must be laid before both the House of Commons and the Senate within timelines set out in the Act for confirmation. Any steps taken by the Government under the *Emergencies Act* must be consistent with the [*Canadian Charter of Rights and Freedoms*], and must be reasonable and proportional to the risks to the public health and safety of Canadians.

Anyone participating in the blockades is urged to return to their communities peacefully and immediately. The Government's top priority remains to keep people and communities safe, and to protect jobs, trade, and our economy. These blockades must be brought to an end, and the federal government will continue working on every option to end them.

Quotes

"Over the past several weeks, illegal blockades and occupations have disrupted the peace in many communities across Canada, and have hurt our economy. Today's declaration of a public order emergency is an extraordinary measure that is time-limited, and that will ensure that we restore peace in our communities."

The Honourable David Lametti, P.C., Q.C., M.P.

Minister of Justice and Attorney General of Canada
"The authorities granted under the Emergencies Act will help end the illegal blockades and uphold the law. They are targeted, measured, temporary - and proportionate to the urgent circumstances facing our country. These authorities are part of a responsible & scalable approach, and are entirely consistent with the Charter. We will continue to support law enforcement at all levels to secure our borders and critical infrastructure, safeguard our economy and protect the health and safety of Canadians."

The Honourable Marco Mendicino

Minister of Public Safety
"This is a critical moment for our country. The Government of Canada is taking these extraordinary steps to support law enforcement and swiftly end the unlawful blockades that are threatening the safety of our communities, our infrastructure, and our borders."

The Honourable Bill Blair

President of the Queen's Privy Council for Canada and Minister of Emergency Preparedness

Quick facts

- There are four types of national emergencies that can be declared under the Emergencies Act: a public welfare emergency, a public order emergency, an international emergency, or a war emergency.
- A national emergency is an urgent, temporary and critical situation that seriously endangers the health and safety of Canadians that cannot be effectively dealt with by the provinces or territories, or that seriously threatens the ability of the Government of Canada to preserve the sovereignty, security and territorial integrity of Canada. It must be a situation that cannot be effectively dealt with by any other law of Canada.
- A public order emergency may be declared where an emergency arises from threats to the security of Canada that are so serious as to be a national emergency. Threats to the security of Canada may include the threat or use of acts of serious violence against persons or property for the purpose of achieving a political or ideological objective.
- The Act can grant the federal government additional powers, compared to what is usually available outside of a time of emergency. However, the Act contains provisions limiting which orders or regulations the federal government can make.
- The Emergencies Act requires consultation with provinces and territories before a public order emergency can be declared, unless the provinces and territories cannot be adequately consulted without unduly jeopardizing the effectiveness of the proposed action. On the basis of those consultations, and when the Government concludes that the situation cannot be effectively dealt with

under any other federal, provincial or territorial law, the Government may make a declaration of a public order emergency.

- The measures introduced by the Government of Canada demonstrate respect for constitutionally protected rights and freedoms, including the right of citizens to enter Canada and the right to life, liberty and security of person, as well as Canada's obligations under international law.
- Once the Government makes a formal declaration of a public order emergency, the declaration is effective for up to 30 days. However, the Houses of Parliament must confirm this declaration, and it has the power to revoke it at any time, as does the Government.
- If the federal government determines that it is necessary to extend the Declaration, this continuation must be confirmed by the Houses of Parliament. The provinces and territories must also be consulted again before a Declaration may be extended.
- A foreign national must not enter Canada with the intent to participate in or facilitate a prohibited assembly. Foreign nationals who seek to enter Canada for these purposes can be denied boarding prior to departure, and denied entry at a port of entry. There are limited exemptions to the prohibition on entry, for specified classes of foreign nationals.

Related products

- Backgrounder: Canada's Emergencies Act

Contacts

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https://www.gazette.gc.ca/rp-pr/p2/2022/2022-02-15-x1/html/sor-dors21-eng.html

Emergency Measures Regulations: SOR/2022-21

Canada Gazette, Part II, Volume 156, Extra Number 1

Registration
SOR/2022-21 February 15, 2022

EMERGENCIES ACT

P.C. 2022-107 February 15, 2022

Whereas the Governor in Council has, by a proclamation made pursuant to subsection 17(1) of the *Emergencies Act* [footnotea], declared that a public order emergency exists;
And whereas the Governor in Council believes on reasonable grounds, that the regulation or prohibition of public assemblies in the areas referred to in these Regulations are necessary;

Therefore, Her Excellency the Governor General in Council, on the recommendation of the Minister of Public Safety and Emergency Preparedness, pursuant to subsection 19(1) of the *Emergencies Act* [footnotea], makes the annexed *Emergency Measures Regulations*.

Emergency Measures Regulations

Interpretation

1 The following definitions apply to these Regulations

Act

means the *Emergencies Act* (*Loi*)

critical infrastructure

means the following places, including any land on which they are located:

- **(a)** airports, aerodromes, heliports, harbours, ports, piers, lighthouses, canals, railway stations, railways, tramway lines, bus stations, bus depots and truck depots;
- **(b)** infrastructure for the supply of utilities such as water, gas, sanitation and telecommunications;
- **(c)** international and interprovincial bridges and crossings;
- **(d)** power generation and transmission facilities;
- **(e)** hospitals and locations where COVID-19 vaccines are administered;
- **(f)** trade corridors and international border crossings, including ports of entry, ferry terminals, customs offices, bonded warehouses, and sufferance warehouses. (*infrastructures essentielles*)

foreign national

has the same meaning as in subsection 2(1) of the *Immigration and Refugee Protection Act* (*étranger*)

peace officer

means a police officer, police constable, constable, or other person employed for the preservation and maintenance of the public peace (*agent de la paix*)

protected person

has the same meaning as in subsection 95(2) of the *Immigration and Refugee Protection Act* (*personne protégée*)

Prohibition — public assembly

2 (1) A person must not participate in a public assembly that may reasonably be expected to lead to a breach of the peace by:

- **(a)** the serious disruption of the movement of persons or goods or the serious interference with trade;
- **(b)** the interference with the functioning of critical infrastructure; or
- **(c)** the support of the threat or use of acts of serious violence against persons or property.

Minor

(2) A person must not cause a person under the age of eighteen years to participate in an assembly referred to in subsection (1).

Prohibition — entry to Canada — foreign national

3 (1) A foreign national must not enter Canada with the intent to participate in or facilitate an assembly referred to in subsection 2(1).

Exemption

(2) Subsection (1) does not apply to

- **(a)** a person registered as an Indian under the *Indian Act*;
- **(b)** a person who has been recognized as a Convention refugee or a person in similar circumstances to those of a Convention refugee within the meaning of subsection 146(1) of the *Immigration and Refugee Protection Regulations* who is issued a permanent resident visa under subsection 139(1) of those regulations;
- **(c)** a person who has been issued a temporary resident permit within the meaning of subsection 24(1) of the *Immigration and Refugee Protection Act* and who seeks to enter Canada as a protected temporary resident under subsection 151.1(2) of the *Immigration and Refugee Protection Regulations*;
- **(d)** a person who seeks to enter Canada for the purpose of making a claim for refugee protection;
- **(e)** a protected person;
- **(f)** a person or any person in a class of persons whose presence in Canada, as determined by the Minister of Citizenship and Immigration or the Minister of Public Safety and Emergency Preparedness, is in the national interest.

Travel

4 (1) A person must not travel to or within an area where an assembly referred to in subsection 2(1) is taking place.

Minor — travel near public assembly

(2) A person must not cause a person under the age of eighteen years to travel to or within 500 metres of an area where an assembly referred to in subsection 2(1) is taking place.

Exemptions

(3) A person is not in contravention of subsections (1) and (2) if they are

- **(a)** a person who, within of the assembly area, resides, works or is moving through that area for reasons other than to participate in or facilitate the assembly;

- **(b)** a person who, within the assembly area, is acting with the permission of a peace officer or the Minister of Public Safety and Emergency Preparedness;
- **(c)** a peace officer; or
- **(d)** an employee or agent of the government of Canada or a province who is acting in the execution of their duties.

Use of property — prohibited assembly

5 A person must not, directly or indirectly, use, collect, provide make available or invite a person to provide property to facilitate or participate in any assembly referred to in subsection 2(1) or for the purpose of benefiting any person who is facilitating or participating in such an activity.

Designation of protected places

6 The following places are designated as protected and may be secured:

- **(a)** critical infrastructures;
- **(b)** *Parliament Hill* and the *parliamentary precinct* as they are defined in section 79.51 of the *Parliament of Canada Act;*
- **(c)** official residences;
- **(d)** government buildings and defence buildings
- **(e)** any property that is a building, structure or part thereof that primarily serves as a monument to honour persons who were killed or died as a consequence of a war, including a war memorial or cenotaph, or an object associated with honouring or remembering those persons that is located in or on the grounds of such a building or structure, or a cemetery;
- **(f)** any other place as designated by the Minister of Public Safety and Emergency Preparedness.

Direction to render essential goods and services

7 (1) Any person must make available and render the essential goods and services requested by the Minister of Public Safety and Emergency Preparedness, the Commissioner of the Royal Canadian Mounted Police or a person acting on their behalf for the removal, towing and storage of any vehicle, equipment, structure or other object that is part of a blockade.

Method of request

(2) Any request made under subsection (1) may be made in writing or given verbally by a person acting on their behalf.

Verbal request

(3) Any verbal request must be confirmed in writing as soon as possible.

Period of request

8 A person who, in accordance with these Regulations, is subject to a request under section 7 to render essential goods and services must comply immediately with that request until the earlier of any of the following:

- **(a)** the day referred to in the request;
- **(b)** the day on which the declaration of the public order emergency expires or is revoked; or
- **(c)** the day on which these Regulations are repealed.

Compensation for essential goods and services

9 (1) Her Majesty in right of Canada is to provide reasonable compensation to a person for any goods or services that they have rendered at their request under section 7, which amount must be equal to the current market price for those goods or services of that same type, in the area in which the goods or services are rendered.

Compensation

(2) Any person who suffers loss, injury or damage as a result of anything done or purported to be done under these Regulations may make an application for compensation in accordance with Part V of the *Emergencies Act* and any regulations made under that Part, as the case may be.

Compliance — peace officer

10 (1) In the case of a failure to comply with these Regulations, any peace officer may take the necessary measures to ensure the compliance with these Regulations and with any provincial or municipal laws and allow for the prosecution for that failure to comply.

Contravention of Regulations

(2) In the case of a failure to comply with these Regulations, any peace officer may take the necessary measures to ensure the compliance and allow for the prosecution for that failure to comply

- **(a)** on summary conviction, to a fine not exceeding five hundred dollars or to imprisonment for a term not exceeding six months or to both; or
- **(b)** on indictment, to a fine not exceeding five thousand dollars or to imprisonment for a term not exceeding five years or to both.

Coming into force

11 This Order comes into force on the day on which it is registered.

Footnote

Footnote a

R.S., c. 22 (4th Supp.)

https://www.gazette.gc.ca/rp-pr/p2/2022/2022-02-15-x1/html/sor-dors22-eng.html

Emergency Economic Measures Order: SOR/2022-22

Canada Gazette, Part II, Volume 156, Extra Number 1

Registration
SOR/2022-22 February 15, 2022

EMERGENCIES ACT

P.C. 2022-108 February 15, 2022

Whereas the Governor in Council has, by a proclamation made pursuant to subsection 17(1) of the *Emergencies Act*, declared that a public order emergency exists;

And whereas the Governor in Council has reasonable grounds to believe that the measures with respect to property referred to in this Order are necessary;

Therefore, Her Excellency the Governor General in Council, on the recommendation of the Minister of Public Safety and Emergency Preparedness, pursuant to subsection 19(1) of the *Emergencies Act*, makes the annexed *Emergency Economic Measures Order*.

Emergency Economic Measures Order

Definitions

1 The following definitions apply to this Order:

designated person

means any individual or entity that is engaged, directly or indirectly, in an activity prohibited by sections 2 to 5 of the *Emergency Measures Regulations*. (*personne désignée*)

entity

includes a corporation, trust, partnership, fund, unincorporated association or organization or foreign state. (*entité*)

Duty to cease dealings

2 (1) Any entity set out in section 3 must, upon the coming into force of this Order, cease

- **(a)** dealing in any property, wherever situated, that is owned, held or controlled, directly or indirectly, by a designated person or by a person acting on behalf of or at the direction of that designated person;
- **(b)** facilitating any transaction related to a dealing referred to in paragraph (a);
- **(c)** making available any property, including funds or virtual currency, to or for the benefit of a designated person or to a person acting on behalf of or at the direction of a designated person; or
- **(d)** providing any financial or related services to or for the benefit of any designated person or acquire any such services from or for the benefit of any such person or entity.

Insurance policy

(2) Paragraph 2(1)(d) does not apply in respect of any insurance policy which was valid prior to the coming in force of this Order other than an insurance policy for any vehicle being used in a public assembly referred to in subsection 2(1) of the *Emergency Measures Regulations*.

Duty to determine

3 The following entities must determine on a continuing basis whether they are in possession or control of property that is owned, held or controlled by or on behalf of a designated person:

- **(a)** *authorized foreign banks*, as defined in section 2 of the *Bank Act*, in respect of their business in Canada, and banks regulated by that Act;
- **(b)** cooperative credit societies, savings and credit unions and caisses populaires regulated by a provincial Act and associations regulated by the *Cooperative Credit Associations Act*;
- **(c)** *foreign companies*, as defined in subsection 2(1) of the *Insurance Companies Act*, in respect of their insurance business in Canada;
- **(d)** *companies*, *provincial companies* and *societies*, as those terms are defined in subsection 2(1) of the *Insurance Companies Act*;
- **(e)** fraternal benefit societies regulated by a provincial Act in respect of their insurance activities and insurance companies and other entities regulated by a provincial Act that are engaged in the business of insuring risks;
- **(f)** companies regulated by the *Trust and Loan Companies Act*;
- **(g)** trust companies regulated by a provincial Act;
- **(h)** loan companies regulated by a provincial Act;
- **(i)** entities that engage in any activity described in paragraphs 5(h) and (h.1) of the *Proceeds of Crime (Money Laundering) and Terrorist Financing Act*;
- **(j)** entities authorized under provincial legislation to engage in the business of dealing in securities or to provide portfolio management or investment counselling services;
- **(k)** entities that provide a platform to raise funds or virtual currency through donations; and
- **(l)** entities that perform any of the following payment functions:
  - **(i)** the provision or maintenance of an account that, in relation to an electronic funds transfer, is held on behalf of one or more end users,
  - **(ii)** the holding of funds on behalf of an end user until they are withdrawn by the end user or transferred to another individual or entity,
  - **(iii)** the initiation of an electronic funds transfer at the request of an end user,
  - **(iv)** the authorization of an electronic funds transfer or the transmission, reception or facilitation of an instruction in relation to an electronic funds transfer, or
  - **(v)** the provision of clearing or settlement services.

Registration requirement — FINTRAC

4 (1) The entities referred to in paragraphs 3(k) and (l) must register with the Financial Transactions and Reports Analysis Centre of Canada established by section 41 of the *Proceeds of Crime (Money Laundering) and Terrorist Financing Act* if they are in possession or control of property that is owned, held or controlled by or on behalf of a designated person.

Reporting obligation — suspicious transactions

(2) Those entities must also report to the Centre every financial transaction that occurs or that is attempted in the course of their activities and in respect of which there are reasonable grounds to suspect that

- **(a)** the transaction is related to the commission or the attempted commission of a money laundering offence by a designated person; or

- **(b)** the transaction is related to the commission or the attempted commission of a terrorist activity financing offence by a designated person.

Reporting obligation — other transactions

(3) Those entities must also report to the Centre the transactions and information set out in subsections 30(1) and 33(1) of the *Proceeds of Crime (Money Laundering) and Terrorist Financing Regulations*.

Duty to disclose — RCMP or CSIS

5 Every entity set out in section 3 must disclose without delay to the Commissioner of the Royal Canadian Mounted Police or to the Director of the Canadian Security Intelligence Service

- **(a)** the existence of property in their possession or control that they have reason to believe is owned, held or controlled by or on behalf of a designated person; and
- **(b)** any information about a transaction or proposed transaction in respect of property referred to in paragraph (a).

Disclosure of information

6 A Government of Canada, provincial or territorial institution may disclose information to any entity set out in section 3, if the disclosing institution is satisfied that the disclosure will contribute to the application of this Order.

Immunity

7 No proceedings under the *Emergencies Act* and no civil proceedings lie against an entity for complying with this Order.

Coming into force

8 This Order comes into force on the day on which it is registered.

https://www.gazette.gc.ca/rp-pr/p2/2022/2022-02-15-x1/html/sor-dors20-eng.html

Proclamation Declaring a Public Order Emergency: SOR/2022-20

Canada Gazette, Part II, Volume 156, Extra Number 1

Registration
SOR/2022-20 February 15, 2022

EMERGENCIES ACT

Proclamation Declaring a Public Order Emergency

Mary May Simon

[L.S.]

Canada

ELIZABETH THE SECOND, by the Grace of God of the United Kingdom, Canada and Her other Realms and Territories QUEEN, Head of the Commonwealth, Defender of the Faith.

François Daigle
Deputy Attorney General of Canada

Great Seal of Canada

TO ALL WHOM these presents shall come or whom the same may in any way concern,

GREETING:

A Proclamation

Whereas the Governor in Council believes, on reasonable grounds, that a public order emergency exists and necessitates the taking of special temporary measures for dealing with the emergency;

Whereas the Governor in Council has, before declaring a public order emergency and in accordance with subsection 25(1) of the *Emergencies Act*, consulted the Lieutenant Governor in Council of each province, the Commissioners of Yukon and the Northwest Territories, acting with consent of their respective Executive Councils, and the Commissioner of Nunavut;

Now Know You that We, by and with the advice of Our Privy Council for Canada, pursuant to subsection 17(1) of the *Emergencies Act*, do by this Our Proclamation declare that a public order emergency exists throughout Canada and necessitates the taking of special temporary measures for dealing with the emergency;

And We do specify the emergency as constituted of

- **(a)** the continuing blockades by both persons and motor vehicles that is occurring at various locations throughout Canada and the continuing threats to oppose measures to remove the blockades, including by force, which blockades are being carried on in conjunction with activities that are directed toward or in support of the threat or use of acts of serious violence against persons or property, including critical infrastructure, for the purpose of achieving a political or ideological objective within Canada,
- **(b)** the adverse effects on the Canadian economy — recovering from the impact of the pandemic known as the coronavirus disease 2019 (COVID-19) — and threats to its economic security resulting from the impacts of blockades of critical infrastructure, including trade corridors and international border crossings,

- **(c)** the adverse effects resulting from the impacts of the blockades on Canada's relationship with its trading partners, including the United States, that are detrimental to the interests of Canada,
- **(d)** the breakdown in the distribution chain and availability of essential goods, services and resources caused by the existing blockades and the risk that this breakdown will continue as blockades continue and increase in number, and
- **(e)** the potential for an increase in the level of unrest and violence that would further threaten the safety and security of Canadians;

And We do further specify that the special temporary measures that may be necessary for dealing with the emergency, as anticipated by the Governor in Council, are

- **(a)** measures to regulate or prohibit any public assembly — other than lawful advocacy, protest or dissent — that may reasonably be expected to lead to a breach of the peace, or the travel to, from or within any specified area, to regulate or prohibit the use of specified property, including goods to be used with respect to a blockade, and to designate and secure protected places, including critical infrastructure,
- **(b)** measures to authorize or direct any person to render essential services of a type that the person is competent to provide, including services related to removal, towing and storage of any vehicle, equipment, structure or other object that is part of a blockade anywhere in Canada, to relieve the impacts of the blockades on Canada's public and economic safety, including measures to identify those essential services and the persons competent to render them and the provision of reasonable compensation in respect of services so rendered,
- **(c)** measures to authorize or direct any person to render essential services to relieve the impacts of the blockade, including to regulate or prohibit the use of property to fund or support the blockade, to require any crowdfunding platform and payment processor to report certain transactions to the Financial Transactions and Reports Analysis Centre of Canada and to require any financial service provider to determine whether they have in their possession or control property that belongs to a person who participates in the blockade,
- **(d)** measures to authorize the Royal Canadian Mounted Police to enforce municipal and provincial laws by means of incorporation by reference,
- **(e)** the imposition of fines or imprisonment for contravention of any order or regulation made under section 19 of the *Emergencies Act*; and
- **(f)** other temporary measures authorized under section 19 of the *Emergencies Act* that are not yet known.

In testimony whereof, We have caused this Our Proclamation to be published and the Great Seal of Canada to be affixed to it.

WITNESS:

Our Right Trusty and Well-beloved Mary May Simon, Chancellor and Principal Companion of Our Order of Canada, Chancellor and Commander of Our Order of Military Merit, Chancellor and Commander of Our Order of Merit of the Police Forces, Governor General and Commander-in-Chief of Canada.

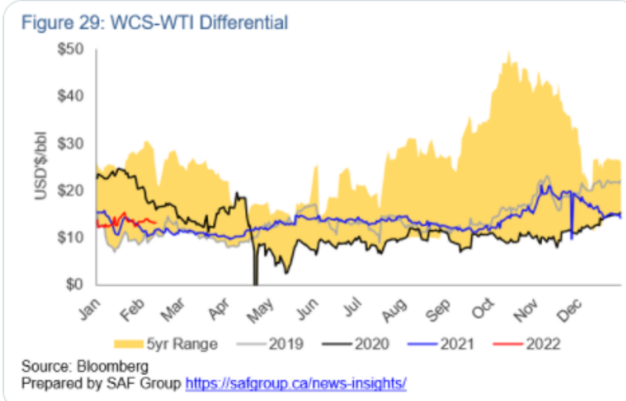
At Our Government House, in Our City of Ottawa, this fourteenth day of February in the year of Our Lord two thousand and twenty-two and in the seventy-first year of Our Reign.

BY COMMAND,

Simon Kennedy
Deputy Registrar General of Canada

Dan Tsubouchi @Energy_Tidbits · 1h

Big increase in asphalt/paving should be positive to Cdn heavy oil. WCS-WTI diffs normally narrow as refiners move to maximize asphalt production ahead of paving season. note the normal seasonal narrowing below. Thx @katekelly #OOTT



Kate Kelly @katekelly · 22h

Of all the industries that stand to benefit from President Biden's infrastructure package, asphalt may be the single biggest one. My piece on how, and why: nytimes.com/2022/02/19/us/...

2 9

Dan Tsubouchi @Energy_Tidbits · 15h

#EnbridgeLine5. "In an unusual move, the commission [@MichiganPSC] is also reviewing what keeping Line 5 operating means for climate change. initial briefs yesterday. MI not giving up in trying to shut Line 5 down. Thx @MichiganWatch. #OOTT

michiganradio.org

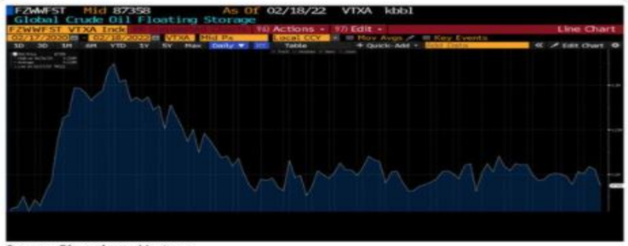
Line 5's impact on climate change being reviewed as part of tunnel de...

The Michigan Public Service Commission included climate change impact as it considers Enbridge Energy's request to move its Line 5 oil...

2 2

Dan Tsubouchi @Energy_Tidbits · 19h

#Vortexa crude #Oil floating storage for 02/18 est 87.36 mmb, -18.15 WoW vs revised up 105.51 at 02/11. Been holding ~100 mmb for last couple months despite OPEC+ mthly increases, normal seasonal softness & still Covid impacts. Thx @Vortexa @TheTerminal #OOTT



Source: Bloomberg, Vortexa

Feb 19, 3pm MT estimate

FZWWFST VTXA Index 02/17/2020 - 02/18/2022

	Date	FZWWFST V... Mid Px
Fr	02/18/2022	87358
Fr	02/11/2022	105.508k
Fr	02/04/2022	108.86k
Fr	01/28/2022	100.734k
Fr	01/21/2022	103.197k
Fr	01/14/2022	88542
Fr	01/07/2022	97261
Fr	12/31/2021	100.096k
Fr	12/24/2021	101.285k
Fr	12/17/2021	99643
Fr	12/10/2021	94172

Feb 12 Noon MT estimate

FZWWFST VTXA Index 02/10/2020 - 02/11/2022

	Date	FZWWFST V... Mid Px
Fr	02/11/2022	101.514k
Fr	02/04/2022	109.153k
Fr	01/28/2022	101.597k
Fr	01/21/2022	103.983k
Fr	01/14/2022	90920
Fr	01/07/2022	99166
Fr	12/31/2021	100.133k
Fr	12/24/2021	102.646k
Fr	12/17/2021	100.084k
Fr	12/10/2021	95330
Fr	12/03/2021	93699

Feb 7. 5am MT Estimate

FZWWFST VTXA Index 02/03/2020 - 02/04/2022

	Date	FZWWFST VT... Mid Px
Fr	02/04/2022	108.29k
Fr	01/28/2022	100.389k
Fr	01/21/2022	102.233k
Fr	01/14/2022	90348
Fr	01/07/2022	98349
Fr	12/31/2021	99732
Fr	12/24/2021	102.167k
Fr	12/17/2021	99777
Fr	12/10/2021	95780
Fr	12/03/2021	92225
Fr	11/26/2021	100.026k

Source: Bloomberg, Vortexa

2 10

Dan Tsubouchi @Energy_Tidbits · Feb 19

#Eni CEO expects "oil market to remain "structurally undersupplied" for at least another 2 years, and the gas market for the next 4 to 5 years". why didn't he give this outlook in Q4 call? Thx to @thomas_m_wilson for this insight. #OOTT #NatGas

> **Tom Wilson** @thomas_m_wilson · Feb 18
>
> Eni chief predicts gas market will remain tight for at least four years
> ft.com/content/32331a...

1 5 12

Dan Tsubouchi @Energy_Tidbits · Feb 19

looks like the local #Canmore elk realized there was the best food in our backyard. just saw them all running down past my screen

8

Dan Tsubouchi @Energy_Tidbits · Feb 19

Buckle up. We've only just begun trend of higher energy costs under #EnergyTransition. makes sense its 2x LNG cost, RFP is for green or blue #Hydrogen so instead of existing #NatGas/#LNG supply chain, use #NatGas with #CCS under a to be created #BlueHydrogen supply chain. #OOTT

> Stephen Stapczynski @SStapczynski · Feb 18
>
> The clean ammonia that Jera plans to procure will cost two-times more than LNG. Not a cheap investment
>
> Source: twitter.com/electric_taro/...
>
> Show this thread

1 5 18

Dan Tsubouchi @Energy_Tidbits · Feb 18

Note @Qatargas says Trains 6 & 7 are planned and not unplanned maintenance. Wish they had said how long these large 1.0 bcf/d #LNG capacity trains would be down. #OOTT #NatGas

qatargas.com/english/MediaC...

> **Dan Tsubouchi** @Energy_Tidbits · Feb 16
>
> Worth watching to see how long these big #Qatargas #LNG trains 6 & 7 are offline. And if planned or unplanned maintenance. Each train has capacity of 1.0 bcf/d. Good thing thru most of winter and its been warm in most key regions. Thx @SStapczynski @Kayrros #NatGas #OOTT
>
> Qatargas LNG Trains 6 and 7 Shut Earlier This Month: Kayrros
> 2022-02-16 11:24:46.687 GMT
>
> By Stephen Stapczynski
> (Bloomberg) -- Qatargas LNG Train 7 has been offline since at least Feb. 6, according energy data provider Kayrros, which gathers operational data via satellites.
> * Qatargas LNG Train 6 has been shut since at least Feb. 13, Kayrros said in an emailed statement
> * The trains were still offline in a satellite image Kayrros acquired on Feb. 15
> * It isn't immediately clear if the outage is due to planned or unplanned maintenance
> * Qatar Energy and Qatargas didn't immediately respond to a requests for comment
> * NOTE: Both trains have a capacity of 7.8m tons/year
>
> --With assistance from Verity Ratcliffe.
>
> To contact the reporter on this story:
> Stephen Stapczynski in Singapore at sstapczynsk1@bloomberg.net
> To contact the editors responsible for this story:
> David Stringer at dstringer3@bloomberg.net
> Lars Paulsson
>
> To view this story in Bloomberg click here:
> https://blinks.bloomberg.com/news/stories/R7E9G2T1UM0Z

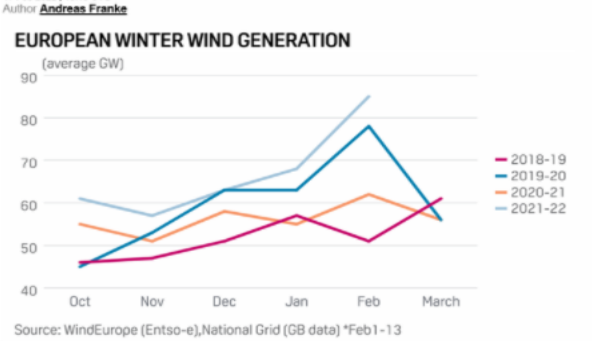
1 1

Dan Tsubouchi @Energy_Tidbits · Feb 18

EU had a big break this winter as everything lined up to not run out of #NatGas. It was warmer than normal, high EU prices attracted US #LNG cargos and best @Wind generation all winter vs recent years. Great graph from @AFrankeEUenergy. #OOTT

https://www.spglobal.com/platts/en/market-insights/latest-news/electric-power/021722-european-wind-narrowly-misses-all-time-high-to-average-116-gw-feb16

17 Feb 2022 | 13:13 UTC
Author **Andreas Franke**



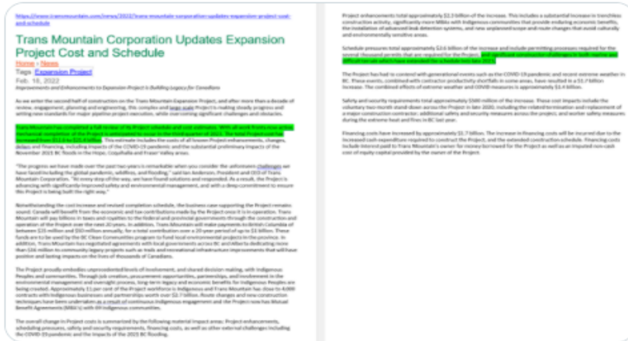
> **Dan Tsubouchi** @Energy_Tidbits · Feb 17
>
> The lucky break on winter warm temps/strong winds for EU also thwarted Putin's #NatGas supply squeeze. if it had been normal temp, it would have been outages not just high EU #NatGas prices. thx @WillHares for RUS reminder. #OOTT twitter.com/Energy_Tidbits...

1

Dan Tsubouchi @Energy_Tidbits · Feb 18

#TransMountain revises #TMX expansion to now cost $21.4b (was $12.6) and start up pushed back a year into late 2023. Good early catch @ChrisVarcoe.
#Oil #OOTT

transmountain.com/news/2022/tran...


Trans Mountain Corporation Updates Expansion Project Cost and Schedule

> **ChrisVarcoe** @ChrisVarcoe · Feb 3
> Trans Mountain expansion running over budget by billions of dollars & is months behind schedule.
> The project is now forecast to cost more than $17 billion & likely won't be done until sometime in 2023
> calgaryherald.com/news/canada/tr... #cdnpoli #yyc #ableg

1 1 5

Dan Tsubouchi @Energy_Tidbits · Feb 18

No longer peaceful protest, anti @CoastalGasLink escalated to violent attacks & significant damage. And #RCMP says "several people threw smoke bombs and fire lit sticks at the police, injuring one office". #OOTT #NatGas #LNGCanada

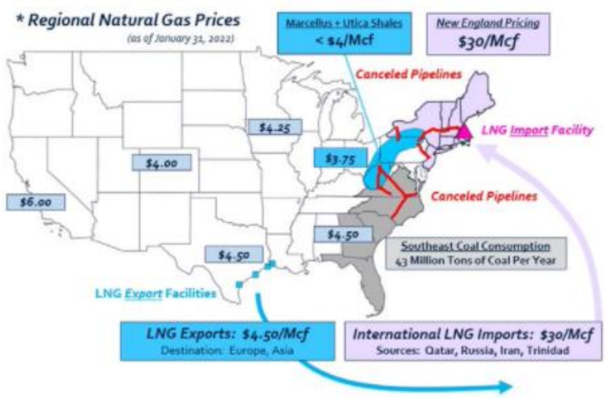
bc-cb.rcmp-grc.gc.ca/ViewPage.actio...

SAF

Dan Tsubouchi @Energy_Tidbits · Feb 18

unfortunately, a great reminder the $30 #NatGas price in New England is self inflicted. Hopefully @SecGranholm takes the 10 minutes to read the @Shalennial letter even if just to understand the situation as it will come up next winter unless its a warm winter #OOTT

> **EQTCorp** @EQTCorp · Feb 17
>
> The solution to addressing elevated regional natural gas prices is simple: let us connect supply to demand. Read our new letter to the DOE: bddy.me/3HXYS9L



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SAF

Dan Tsubouchi @Energy_Tidbits · Feb 18

An excellent data/info resource that should be bookmarked. supply interruptions recaps, maps, data, risks, Great job by @SPGlobalPlatts team. Thx @HermsTheWord #OOTT #Oil

> **Herman Wang** @HermsTheWord · Feb 18
>
> Security risks to energy markets are plenty. We captured the geopolitics of oil in our updated @SPGlobalPlatts Oil Security Sentinel, an interactive website, with maps, graphics and more. Check it out below! #OOTT twitter.com/SPGlobalPlatts...

1

Dan Tsubouchi @Energy_Tidbits · Feb 17

Sign pointing to a #JCPOA deal is coming soon - details are now starting to leak out. Still some issues to be finalized, but don't normally see leaks of some specific details until getting close. Thx @francoismurphy @PHREUTERS @IrishJReuters #OOTT

> François Murphy @francoismurphy · Feb 17
>
> A peek at one aspect of the agreement taking shape at the #IranTalks , with @PHREUTERS and @IrishJReuters
>
> reuters.com/world/exclusiv...

4

Dan Tsubouchi @Energy_Tidbits · Feb 17

"There is no and is not planned any "Russian invasion" of Ukraine" says RUS in its reaction to the US response on security guarantees. at least they didn't use western politician's line that "have no current plans". #OOTT

tass.ru

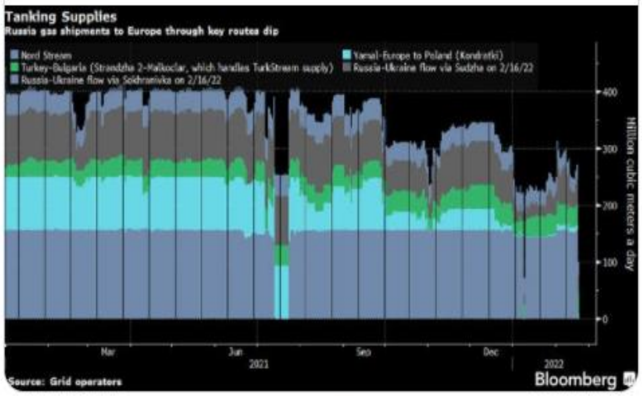
Реакция России на ответ США по гарантиям безопасности. Полный текст

1 2 1

Dan Tsubouchi @Energy_Tidbits · Feb 17

Here is the data to support the Russian #NatGas squeeze play on Europe. Would have worked big time if it hadn't been a warm winter. Thx @WillHares

> **Will Hares** @WillHares · Feb 17
>
> Replying to @Energy_Tidbits
>
> here is our data on Russian piped supply to Europe - flows are down nearly 40% from normal levels last year. Mostly from Yamal (Poland) and Sokhranivka (Ukraine) pipelines | #oott #ongt



1 1 2

Dan Tsubouchi @Energy_Tidbits · Feb 17

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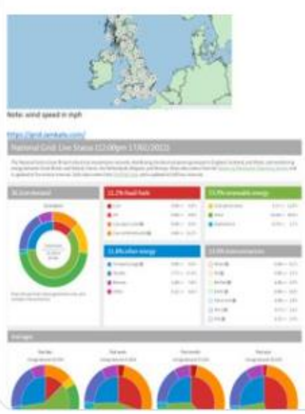
> **Dan Tsubouchi** @Energy_Tidbits · Feb 17
>
> Why EU should make it thru winter without burning all #NatGas storage - the gamble on weather worked and US #LNG imports came to the rescue! A warm Feb and strong winds lead to very strong #Wind electricity generation. #OOTT



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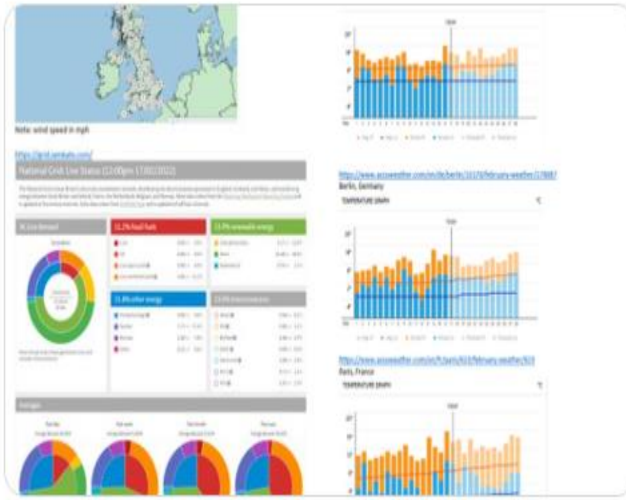

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Dan Tsubouchi @Energy_Tidbits · Feb 17

RUS/Ukraine. another day of will they or won't they. "coupled with provocative actions that have only intensified in the last day or several days, this is a very, very dangerous situation" says Kremlin's Peskov. #OOTT

https://tass.ru/politika/13738893
FEB 17, 02:50Updated Feb 17, 04:22

The Kremlin announced the intensification of Kiev's provocations near the line of demarcation in Donbass

According to the press secretary of the President of Russia Dmitry Peskov, the Kremlin is getting acquainted with the media materials on the current situation in the south-east of Ukraine, stating that the situation in this region is escalating

MOSCOW, 17 February. /TASS/. Kiev's provocative actions near the demarcation line in Donbass have intensified in recent days, press secretary of the Russian President Dmitry Peskov told reporters on Thursday. He noted that the Kremlin is getting acquainted with the media materials on the current situation in the south-east of Ukraine, stating that the situation in this region is being escalated.

"Over the past 24 hours, we have been hearing reports that, they say, Russia retains a huge strike potential on the border, but we are talking about our own territory. But no one, not a single Western representative, talks about the huge strike potential of the Ukrainian armed forces on the line And, coupled with provocative actions that have only intensified in the last day or several days, this is a very, very dangerous situation," Peskov stressed.

At the same time, he drew attention to the fact that representatives of a number of Western states and organizations are displaying open informational aggression against Moscow and the real state of affairs around what is happening in Ukraine.

"Representatives of many Western countries, representatives of many organizations, including NATO, have recently been carrying out, in essence, their statements, undisguised information aggression against our country and against the real state of affairs," the Russian leader's press secretary stated.

The situation on the line of contact

The situation on the border between Russia and Ukraine is stable, and tension is growing on the line of contact in the Donbass, Peskov said, commenting on the statements of the Ukrainian security forces in a conversation with journalists that the situation in the Donbass is stable.

"On the Russian-Ukrainian border, the situation is indeed stable," the Kremlin spokesman said. "By the way, we have repeatedly heard statements from the Ukrainian military that they do not see any extraordinary potential on the part of Russian territory, which contrasts strongly with the statements of other countries that all the time refer to their intelligence, which the Ukrainians themselves do not confirm.

At the same time, Peskov emphasized that as regards the line of contact with the territories of the proclaimed Donetsk and Lugansk People's Republics, "there we see tension growing."

According to the Kremlin representative, the situation in Ukraine could at any moment go beyond information attacks and ignite. "Every moment risks moving from the field of information attacks to the consequences that will cause a new outbreak of war in the immediate vicinity of our borders," he said.

According to Peskov, Moscow is closely monitoring the situation in the south-east of Ukraine, the Kremlin's actions will depend on its development. "We are watching closely. We will see how the situation [in Ukraine] develops," he said, answering the question whether the Kremlin is planning any actions in this regard.

Journalists also asked if negotiations between Moscow and Kiev were planned in connection with the current situation. Peskov said that "there are no plans for negotiations with Kiev." "But this, of course, is a matter of very, very deep concern," the Kremlin spokesman stressed.

Peskov pointed out that Russia hopes that "opponents from Western capitals" will use all their influence to warn the Kiev authorities against further escalation of tensions.

"We have repeatedly warned that the excessive concentration of the armed forces of Ukraine in the immediate vicinity of the demarcation line, coupled with possible provocations, could pose a terrible danger. We now see that these provocations are taking place. We are seeing reports from representatives of the self-proclaimed republics that on the line "There is an exchange of blows that the first blows came from Ukraine. This is alarming information. We continue to observe very carefully," he said. "We hope that our opponents from Western capitals, from the United States, from NATO will use all their influence to to warn the Kiev authorities against further escalation of tensions."

2

Dan Tsubouchi @Energy_Tidbits · Feb 16

Tues @WhiteHouse briefing re #Biden's work to lower gasoline prices. "you mean, encouraging other [oil producing] countries to produce more?" @PressSec "correct". see below, #KingSalman said no. Who else can help in quick timing besides UAE & Iran? #OOTT

> **Dan Tsubouchi** @Energy_Tidbits · Feb 9
>
> Note @WhiteHouse didn't mention #KingSalman "stressed the importance of maintaining balance and stability in the oil markets, highlighting the role of the historic #OPEC+ agreement in this regard, and the importance of maintaining the agreement" to #Biden on #Oil. #OOTT
>
> https://www.spa.gov.sa/viewstory.php?lang=en&newsid=2328223
>
> **Custodian of the Two Holy Mosques Receives Telephone Call from President of the United States of America**
>
> Wednesday 1443/7/8 - 2022/02/09
>
> Riyadh, February 09, 2022, SPA -- The Custodian of the Two Holy Mosques King Salman bin Abdulaziz Al Saud received a telephone call from President Joseph R. Biden of the United States of America.
>
> During the call, the two leaders reaffirmed the historic and strategic partnership between the Kingdom and the United States, and the need to solidify and strengthen cooperation to promote both countries' interests, and achieve stability in the region and the world.
>
> The Custodian of the Two Holy Mosques underscored the importance of strengthening mutual security cooperation to confront terrorism and its financing.
>
> The Custodian of the Two Holy Mosques commended H.E the President for expressing the United States' commitment to support the Kingdom in its defense of its lands and citizens. The Custodian of the Two Holy Mosques praised the United States for standing with the Kingdom and meeting its defensive needs, which will increase efforts to preserve security and stability in the Kingdom and the region. His Majesty cited the Kingdom's support to efforts by the United States to prevent Iran from obtaining nuclear weapons, and stressed the need to work together to counter the destabilizing activities of Iran's proxies in the region. The Custodian of the Two Holy Mosques affirmed that the Kingdom is committed to deescalating tensions in the region and promoting dialogue.
>
> The Custodian of the Two Holy Mosques expressed the Kingdom's resolve in reaching a comprehensive political resolution in Yemen, and its efforts to bring prosperity and security for the Yemeni people, referring to the Kingdom's continuing humanitarian aid and reconstruction efforts.
>
> Regarding energy and oil markets, the Custodian of the Two Holy Mosques stressed the importance of maintaining balance and stability in the oil markets, highlighting the role of the historic OPEC Plus agreement in this regard, and the importance of maintaining the agreement.
> --SPA 23:50 LOCAL TIME 20:50 GMT
>
> https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/09/readout-of-president-joseph-r-biden-jr-s-call-with-king-salman-bin-abdulaziz-al-saud-of-saudi-arabia/
>
> **Readout of President Joseph R. Biden, Jr.'s Call with King Salman bin Abdulaziz Al-Saud of Saudi Arabia**
>
> FEBRUARY 09, 2022-STATEMENTS AND RELEASES
> President Joseph R. Biden, Jr. spoke today with King Salman bin Abdulaziz al-Saud of Saudi Arabia to discuss regional developments and issues of mutual concern, including Iranian-enabled attacks by the Houthis against civilian targets in Saudi Arabia. The President underscored the U.S. commitment to support Saudi Arabia in the defense of its people and territory from these attacks and full support for UN-led efforts to end the war in Yemen. The President noted his commitment to ensuring that Iran can never obtain a nuclear weapon and briefed the King on ongoing multilateral talks to reestablish constraints on Iran's nuclear program. The two leaders discussed matters pertaining to the Middle East region and Europe and agreed that their teams would remain closely coordinated over the coming weeks and months. Both leaders further reiterated the United States' and Saudi Arabia's commitment to ensuring the stability of global energy supplies.
>
> ###

Dan Tsubouchi @Energy_Tidbits · Feb 16

For those not near their laptop (ie. watching #TeamCanada down 1.0 to Sweden with <5 min left), @EIA weekly #Oil #Gasoline #Distillates inventory at Feb 13 just out. Prior to release, WTI was $94.04 #OOTT ir.eia.gov/wpsr/overview....

nventory Feb 11: EIA, Bloomberg Survey Expectations,

)	EIA	Expectations	
	1.12	-2.17	
	-1.33	0.50	
	-1.55	-1.50	
	-1.76	-3.17	

mmercial so builds in impact of 2.7 mmb draw from SPR for F

in the oil data, Cushing had a draw of 1.90 mmb for Feb 11 \

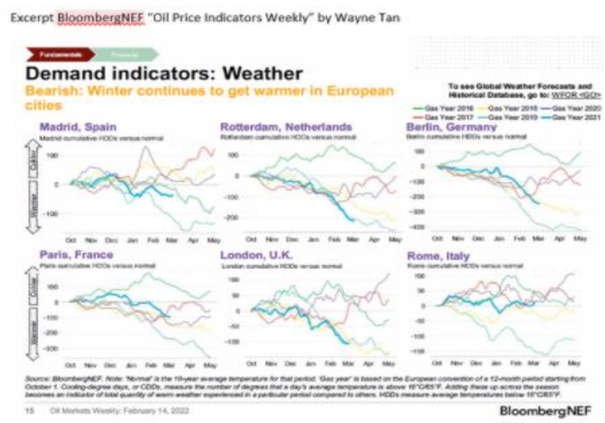
loomberg			
AF Group			

2

Dan Tsubouchi @Energy_Tidbits · Feb 16

reminder absent a war the most important factor for #NatGas #LNG winter prices is temperature and in EU case also #Wind. it's been warm and winds are strong #OOTT

> **Dan Tsubouchi** @Energy_Tidbits · Feb 14
>
> Looking better for Europe to skate thru winter without burning all #NatGas storage. High level of #LNG imports continuing & most importantly, looks like the warmer than normal temps should continue thru Feb. Note Europe temp charts courtesly of @BloombergNEF @WayneTanMing #OOTT



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Dan Tsubouchi @Energy_Tidbits · Feb 16

Worth watching to see how long these big #Qatargas #LNG trains 6 & 7 are offline. And if planned or unplanned maintenance. Each train has capacity of 1.0 bcf/d. Good thing thru most of winter and its been warm in most key regions. Thx @SStapczynski @Kayrros #NatGas #OOTT

> Qatargas LNG Trains 6 and 7 Shut Earlier This Month: Kayrros
> 2022-02-16 11:24:46.687 GMT
>
> By Stephen Stapczynski
> (Bloomberg) -- Qatargas LNG Train 7 has been offline since at least Feb. 6, according energy data provider Kayrros, which gathers operational data via satellites.
> * Qatargas LNG Train 6 has been shut since at least Feb. 13, Kayrros said in an emailed statement
> * The trains were still offline in a satellite image Kayrros acquired on Feb. 15
> * It isn't immediately clear if the outage is due to planned or unplanned maintenance
> * Qatar Energy and Qatargas didn't immediately respond to a requests for comment
> * NOTE: Both trains have a capacity of 7.8m tons/year
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> --With assistance from Verity Ratcliffe.
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> https://blinks.bloomberg.com/news/stories/R7E9G2T1UM0Z

2 · 10 · 21

Dan Tsubouchi @Energy_Tidbits · Feb 15

Time to change #Bakken #Oil production from growth to "pretty much flat production) even under $90/$100 oil. Producers telling #NorthDakota Bakken is a "mature play" but with surplus free cash flow for investors, #Permian, etc. Great report @mondaknewsbug #OOTT

4 27

Dan Tsubouchi @Energy_Tidbits · Feb 15

#JCPOA. "together with our P5+1 partners, all of whom recognize the importance of concluding, in whatever form that takes, these talks in short order" says @StateDeptSpox. Does anyone actually believe #Biden will walk away from a deal? #OOTT

ate.gov/briefings/department-press-briefing-february-14-2022/

nt Press Briefing – February 14, 2022

ARTMENT SPOKESPERSON

022

e you any update? We've seen very positive comments on the progress made in Vienna by Josep Borrell, by the Russian delegate there. Do
omments? You guys have said before this round of talks resumed last week we will see very, very quickly if there is the political will, decision
ou seen that?

rancesco, as you know, the special envoy and his team remain on the ground in Vienna. I have to say that we are going to be a bit more circ
ess that we may be seeing on the ground in Vienna precisely because we are in the final stages of what is by any measure a complex nego
ers. The fact is that this is the final decisive period during which we'll be in a position to determine whether a mutual return to compliance w
s a possibility. Our European partners as well as China and Russia - all of us urgently seek to achieve an understanding, but time is almost
king away. We have been very clear that at the current rate of Iran's nuclear advances, we have little time left, and that's precisely because
n those nuclear advances will obviate the advantages that the JCPOA, as it was finalized in 2015 and implemented in 2016, initially conveye

re continuing to meet. For our part, those discussions continue to be indirect with the Iranian delegation, but we know that we are speakin
with our P5+1 partners, all of whom recognize the importance of concluding, in whatever form that takes, these talks in short order.

3 2 2

Dan Tsubouchi @Energy_Tidbits · Feb 15

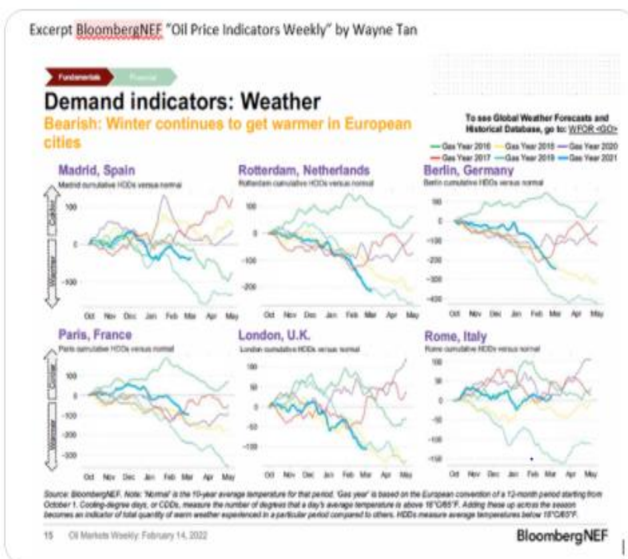
Breaking. Russia ministry of defense statement "on the return of formations and military units to their permanent deployment points". Brent -$2.55, WTI -$2.80. #UkraineCrisis #Oil #OOTT

> **Минобороны России** @mod_russia · Feb 15
>
> Правительственная учетная запись, Россия
>
> Заявление официального представителя Министерства обороны Российской Федерации генерал-майора Игоря Конашенкова о возвращении соединений и воинских частей в пункты постоянной дислокации s.mil.ru/3gOt37l

4 1

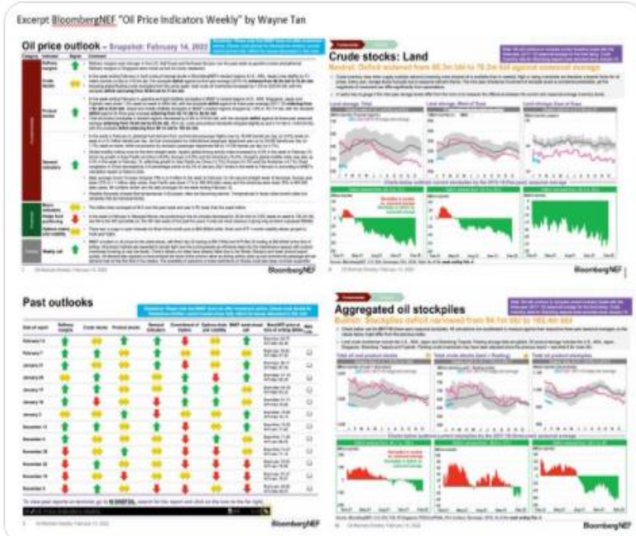
Dan Tsubouchi @Energy_Tidbits · Feb 14

Looking better for Europe to skate thru winter without burning all #NatGas storage. High level of #LNG imports continuing & most importantly, looks like the warmer than normal temps should continue thru Feb. Note Europe temp charts courtesly of @BloombergNEF @WayneTanMing #OOTT



Dan Tsubouchi @Energy_Tidbits · Feb 14

Continued #Oil price support from key data indicator - global land + floating oil stocks below 2017-19 average. Note WoW trends chart still shows mostly neutral or up WoW trends ie. not pointing to any approaching big negative. Great charts @BloombergNEF @WayneTanMing #OOTT



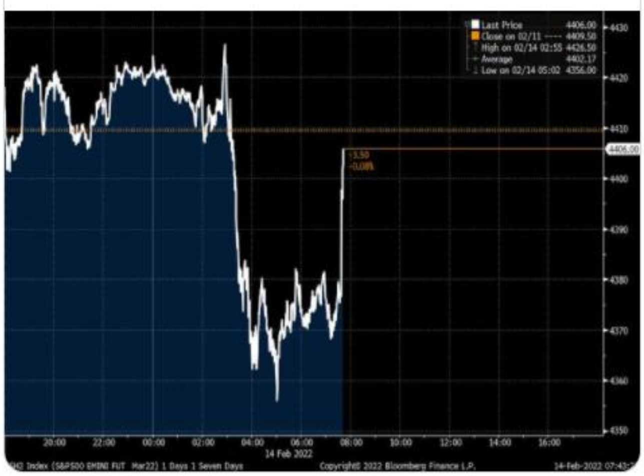
2 7

Dan Tsubouchi @Energy_Tidbits · Feb 14

breaking news. tone changing. lavrov there's always a chance to agree. markets reversing. stocks turning up. #Oil turning down. #OOTT

Jonathan Ferro @FerroTV · Feb 14

Equities recover and yields turn higher as Russian Foreign Minister Lavrov proposes to continue diplomatic measures



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Dan Tsubouchi @Energy_Tidbits · Feb 13

#Oil up $1.50 tonight. Bengals lost but beat the spread. a lot of people are making money tonight. #OOTT

1 1 10

Dan Tsubouchi @Energy_Tidbits · Feb 13

Our weekly SAF Feb 13, 2022 Energy Tidbits memo is posted on our SAF Group website. This 47-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/

SAF GROUP

Energy Tidbits

Feb 13, 2022

Produced by: Dan Tsubouchi

BlackRock's New "*How to Invest in the Net Zero Transition*" is Positive for Oil and Natural Gas Stocks

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. BlackRock's new "*How to invest n the Net Zero transition*" is positive for oil and natural gas stocks. (Click Here)
2. TotalEnergies CEO points another year before it is likely able to lift its Mozambique LNG force majeure, which is holding back ~5 bcf/d of new LNG supply (Click Here)
3. IEA Oil Market Report includes "*a reassessment of historical data has resulted in a significant upgrade to our demand estimates.*" (Click Here)
4. Looks like geopolitical risk premium to Libya oil will be returning with eastern Libya parliament to return to its own PM. (Click Here)
5. Western Canada crude oil inventories are down >14 mmb since early Nov to <25 mmb at Jan 31. (Click Here)
6. Please follow us on Twitter at [LINK] for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [LINK]

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