SAF | GROUP

Energy Tidbits

Baker Hughes' Hugely Bullish LNG Forecast Calls For 24 Bcf/d of New LNG FIDS by 2025 to Meet 2030 Required Capacity

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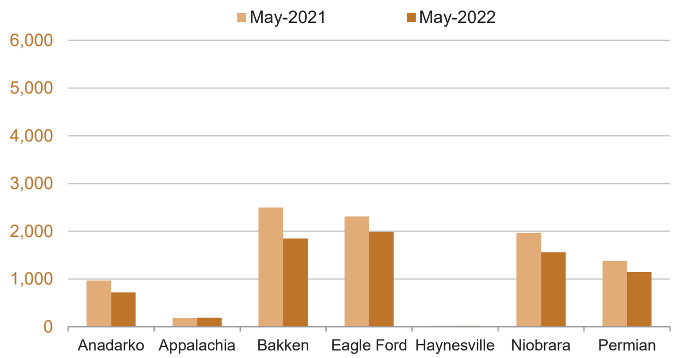
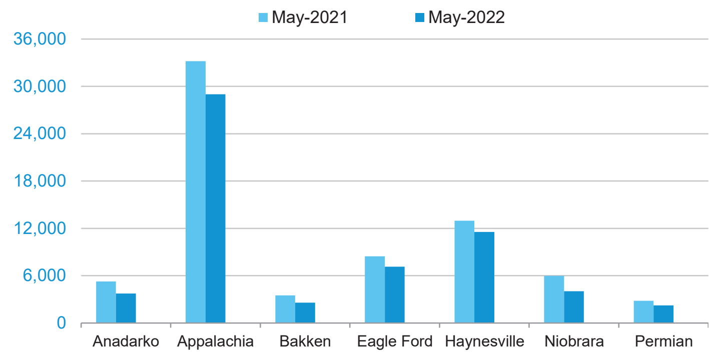
New-well oil production per rig

barrels/day



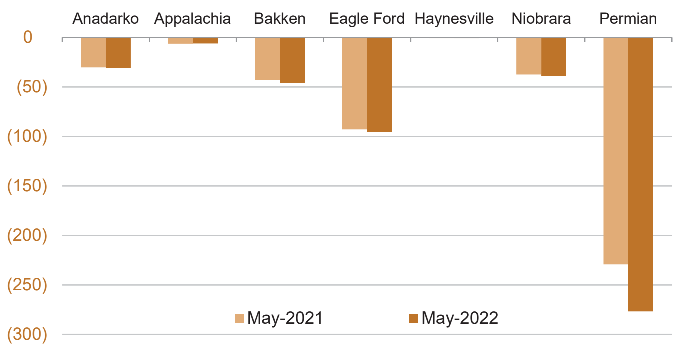
New-well gas production per rig

thousand cubic feet/day



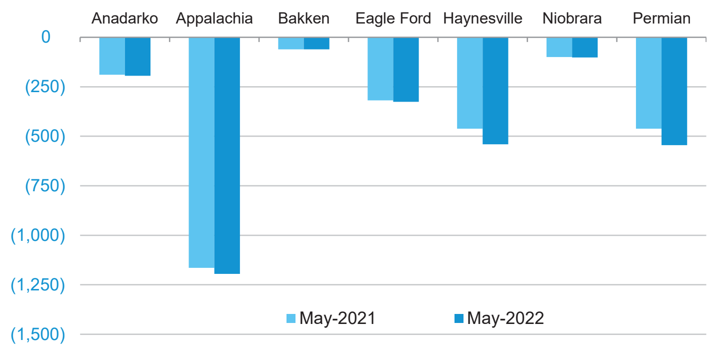
Legacy oil production change

thousand barrels/day



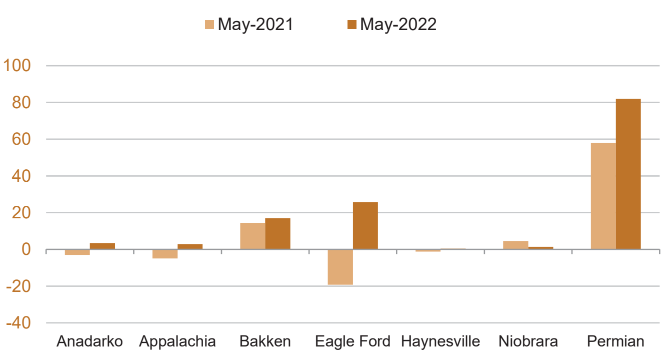
Legacy gas production change

million cubic feet/day



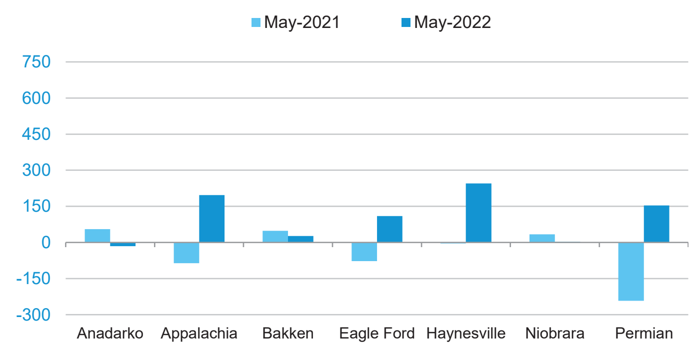
Indicated monthly change in oil production (May vs. Apr)

thousand barrels/day



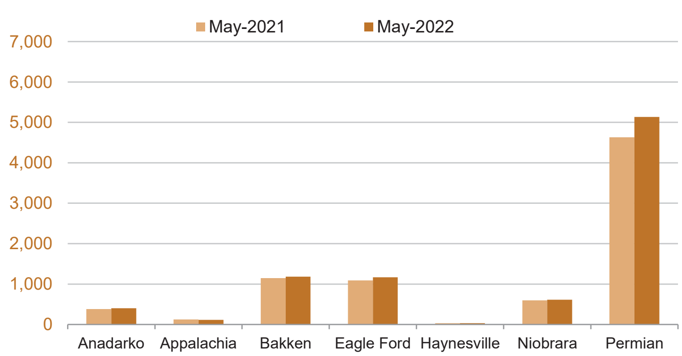
Indicated monthly change in gas production (May vs. Apr)

million cubic feet/day



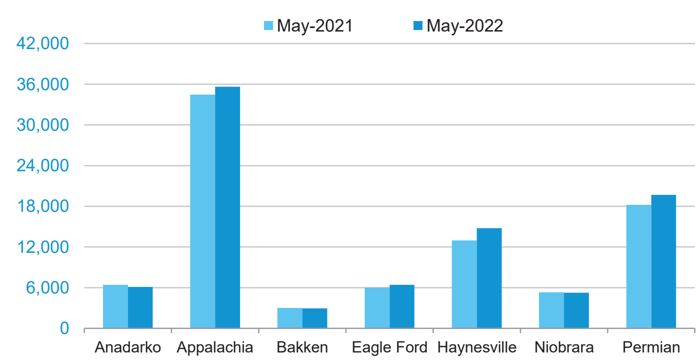
Oil production

thousand barrels/day



Natural gas production

million cubic feet/day



Anadarko Region

Drilling Productivity Report

April 2022

drilling data through March
projected production through May

Oil
-5
barrels/day
month over month

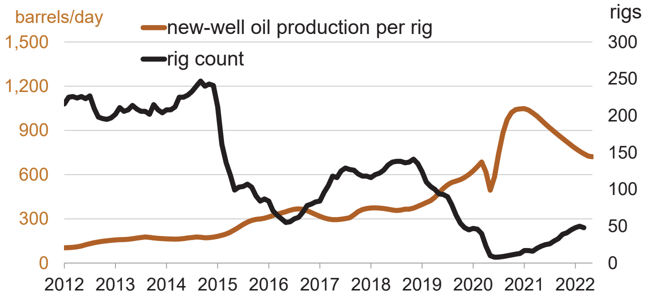
721 *May*
726 *April*
barrels/day

Monthly additions from one average rig

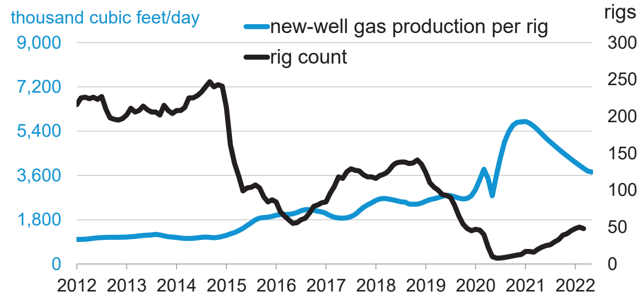
May **3,735**
April **3,773**
thousand cubic feet/day

Gas
-38
thousand cubic feet/day
month over month

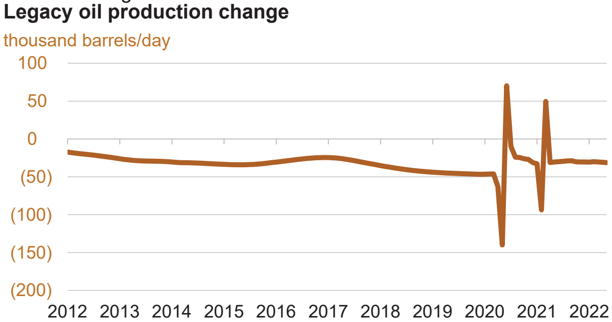
Anadarko Region
New-well oil production per rig



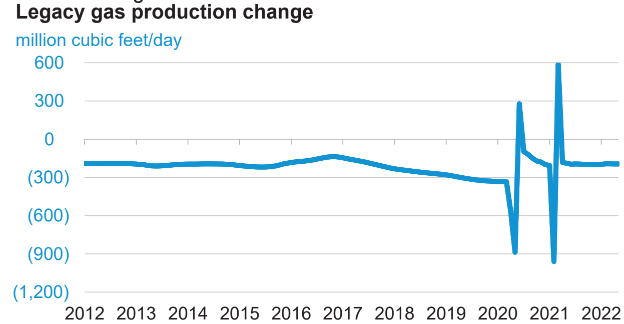
Anadarko Region
New-well gas production per rig



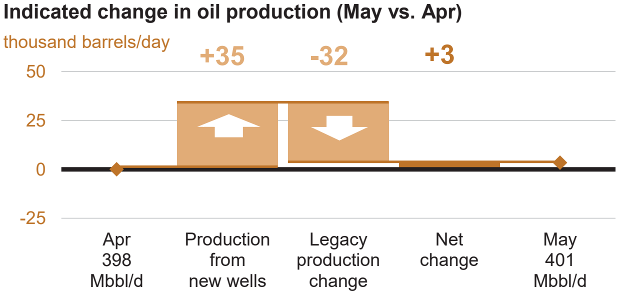
Anadarko Region
Legacy oil production change



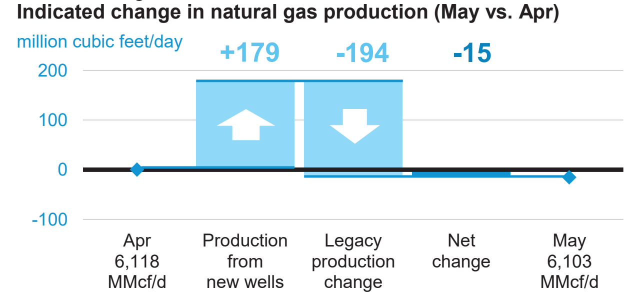
Anadarko Region
Legacy gas production change



Anadarko Region
Indicated change in oil production (May vs. Apr)

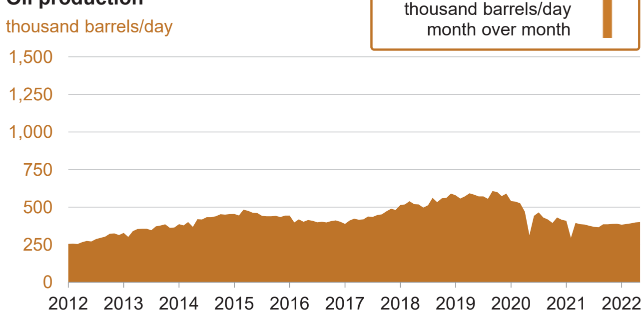


Anadarko Region
Indicated change in natural gas production (May vs. Apr)



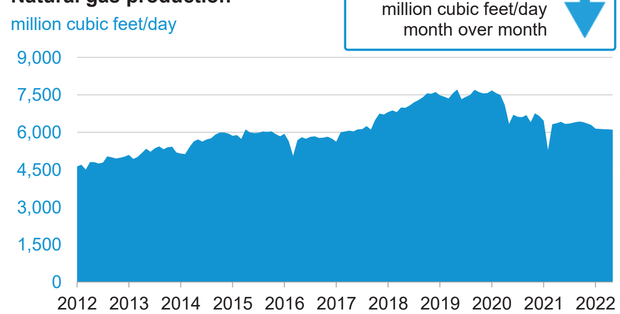
Anadarko Region
Oil production

Oil +3
thousand barrels/day
month over month



Anadarko Region
Natural gas production

Gas -15
million cubic feet/day
month over month



Appalachia Region

Drilling Productivity Report

April 2022

drilling data through March
projected production through May

Oil
0
barrels/day
month over month

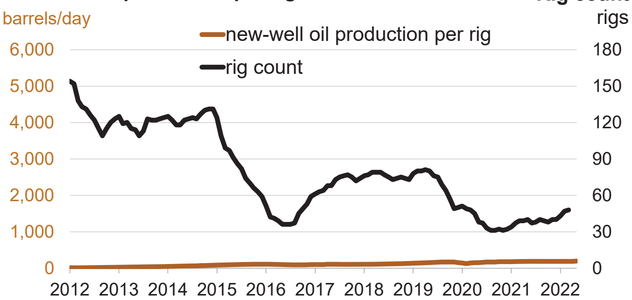
189 *May*
189 *April*
barrels/day

Monthly additions from one average rig

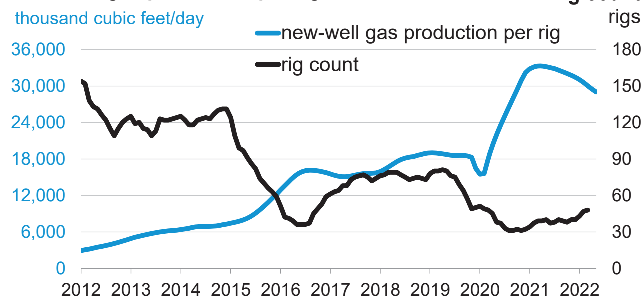
May **28,999**
April **29,500**
thousand cubic feet/day

Gas
-501
thousand cubic feet/day
month over month

Appalachia Region
New-well oil production per rig

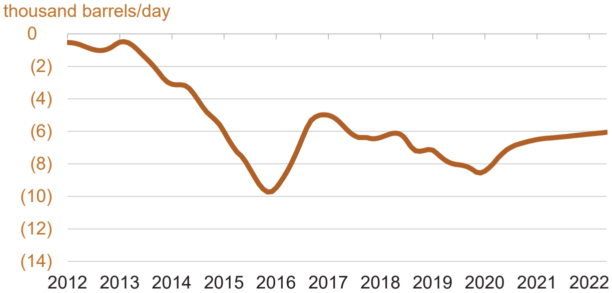


Appalachia Region
New-well gas production per rig



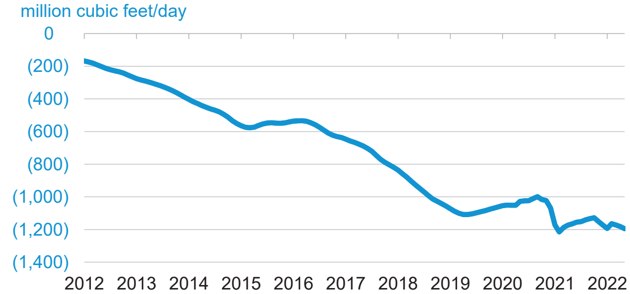
Appalachia Region
Legacy oil production change

thousand barrels/day



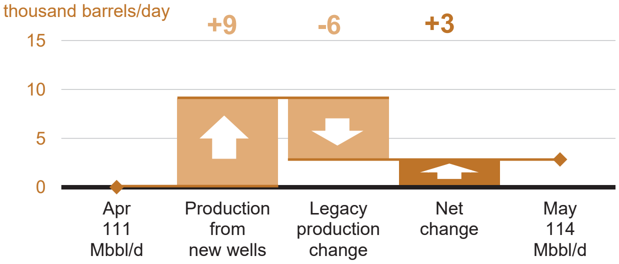
Appalachia Region
Legacy gas production change

million cubic feet/day



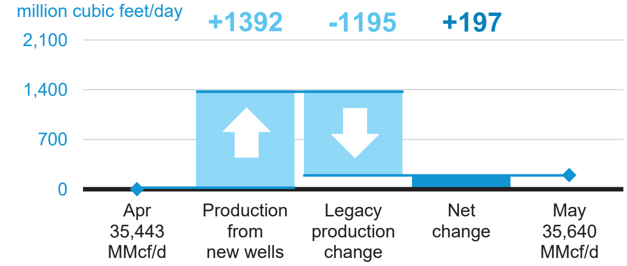
Appalachia Region
Indicated change in oil production (May vs. Apr)

thousand barrels/day



Appalachia Region
Indicated change in natural gas production (May vs. Apr)

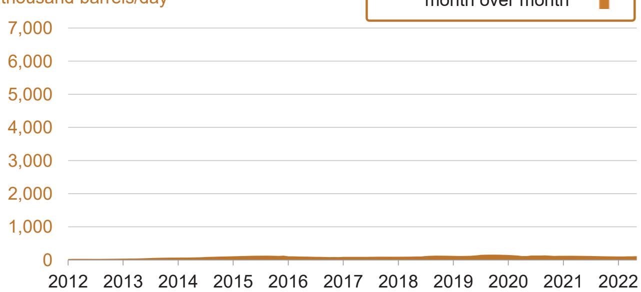
million cubic feet/day



Appalachia Region
Oil production

thousand barrels/day

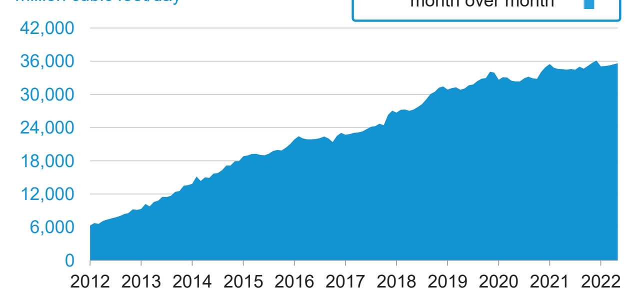
Oil +3
thousand barrels/day
month over month



Appalachia Region
Natural gas production

million cubic feet/day

Gas +197
million cubic feet/day
month over month



Bakken Region

Drilling Productivity Report

April 2022

drilling data through March
projected production through May

Oil -32
barrels/day
month over month

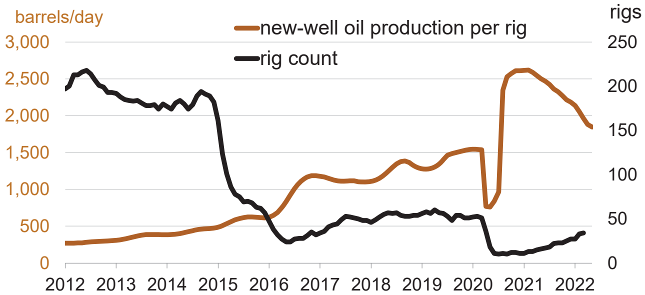
1,847 *May*
1,879 *April*
barrels/day

Monthly additions from one average rig

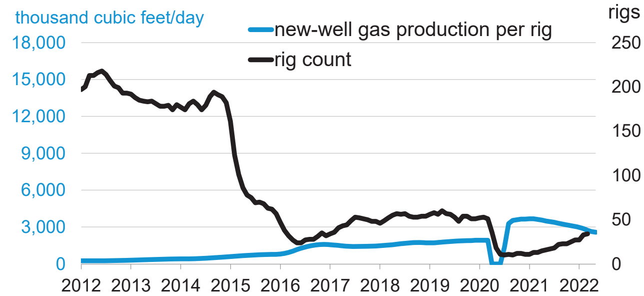
May **2,586**
April **2,630**
thousand cubic feet/day

Gas -44
thousand cubic feet/day
month over month

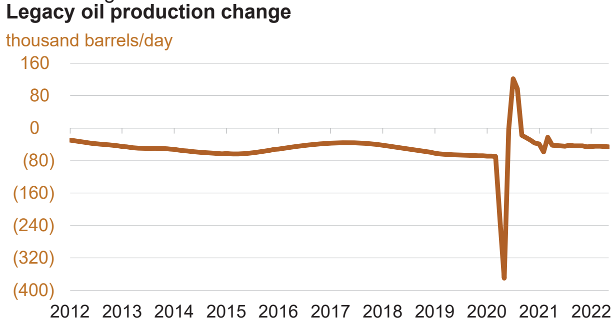
Bakken Region
New-well oil production per rig **Rig count**



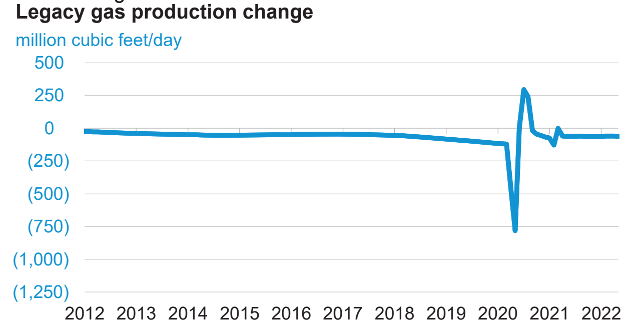
Bakken Region
New-well gas production per rig **Rig count**



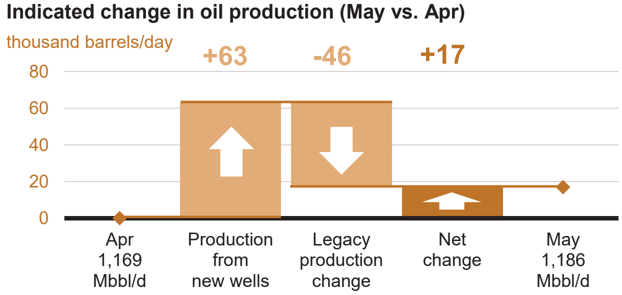
Bakken Region
Legacy oil production change



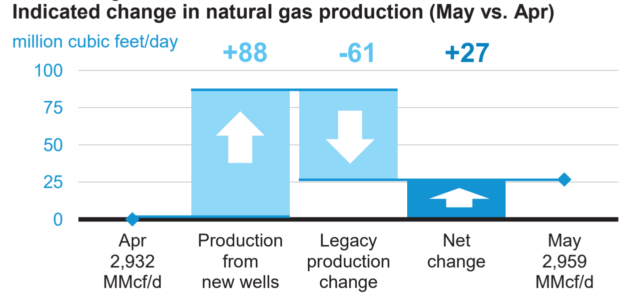
Bakken Region
Legacy gas production change



Bakken Region
Indicated change in oil production (May vs. Apr)

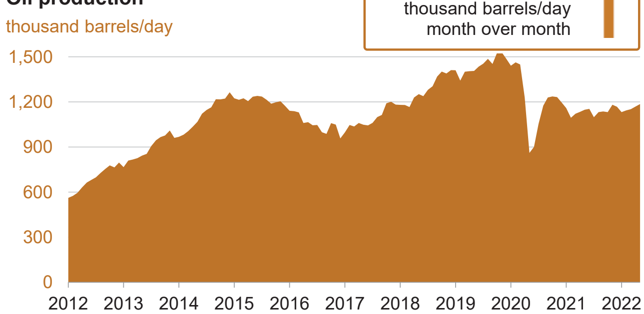


Bakken Region
Indicated change in natural gas production (May vs. Apr)



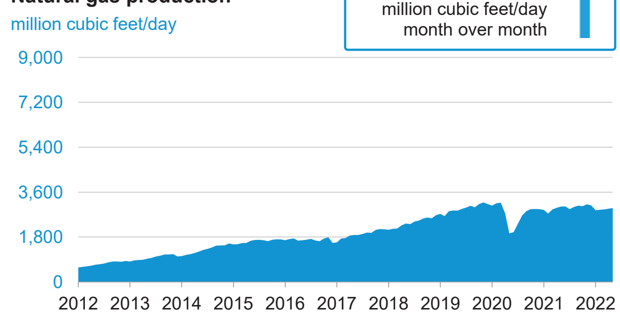
Bakken Region
Oil production

Oil +17
thousand barrels/day
month over month



Bakken Region
Natural gas production

Gas +27
million cubic feet/day
month over month



Eagle Ford Region

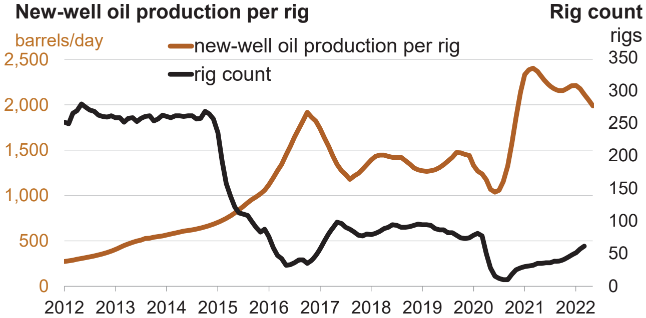
Drilling Productivity Report

April 2022

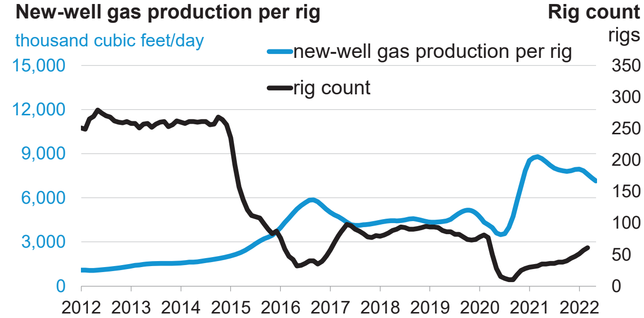
drilling data through March
projected production through May

Oil -62 barrels/day month over month	**1,990** May **2,052** April barrels/day	**Monthly additions from one average rig**	
Gas -221 thousand cubic feet/day month over month	May **7,149** April **7,370** thousand cubic feet/day		

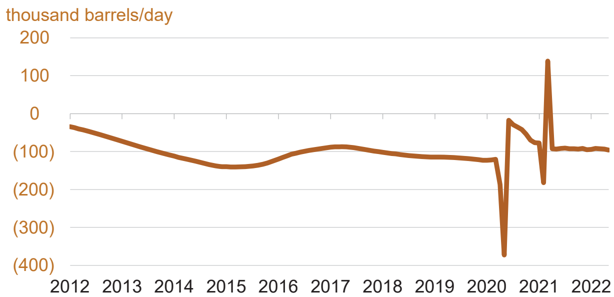
Eagle Ford Region
New-well oil production per rig **Rig count**



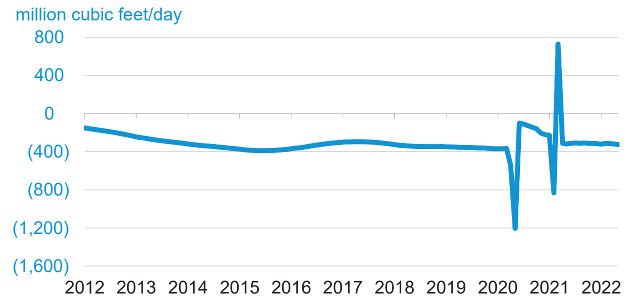
Eagle Ford Region
New-well gas production per rig **Rig count**



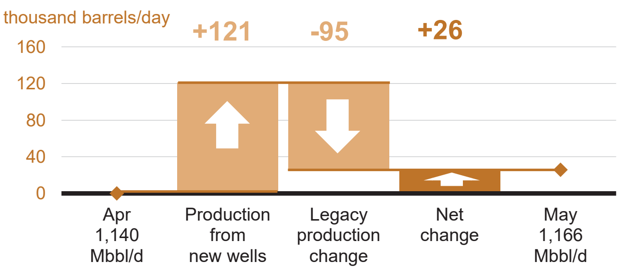
Eagle Ford Region
Legacy oil production change



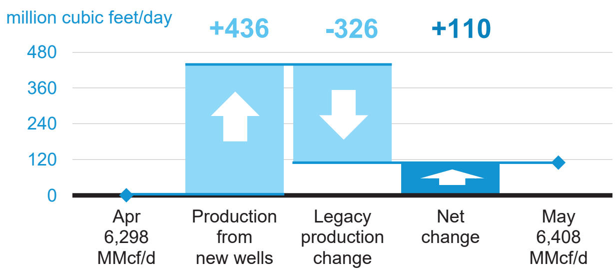
Eagle Ford Region
Legacy gas production change



Eagle Ford Region
Indicated change in oil production (May vs. Apr)

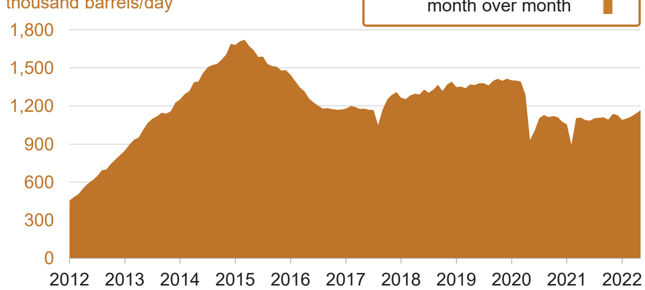


Eagle Ford Region
Indicated change in natural gas production (May vs. Apr)



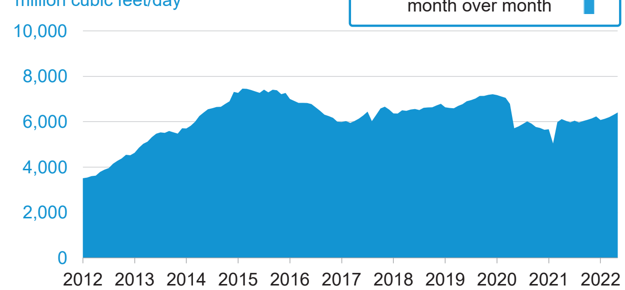
Eagle Ford Region
Oil production

Oil +26
thousand barrels/day
month over month



Eagle Ford Region
Natural gas production

Gas +110
million cubic feet/day
month over month



Haynesville Region

Drilling Productivity Report

April 2022

drilling data through March
projected production through May

Oil
0
barrels/day
month over month

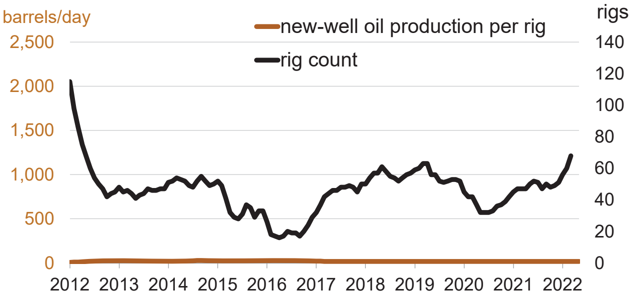
20 *May*
20 *April*
barrels/day

Monthly additions from one average rig

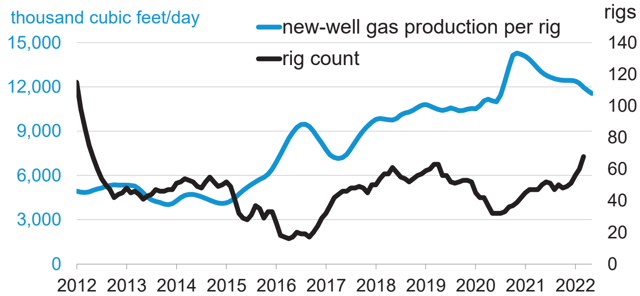
May **11,546**
April **11,757**
thousand cubic feet/day

Gas
-211
thousand cubic feet/day
month over month

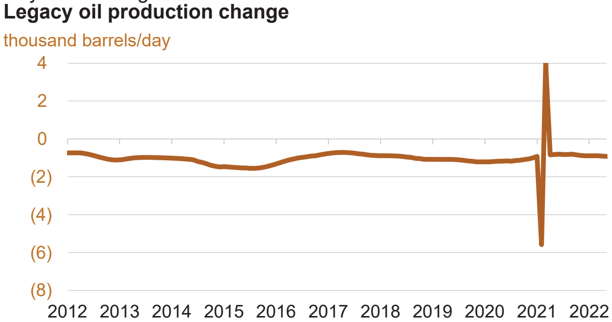
Haynesville Region
New-well oil production per rig **Rig count**



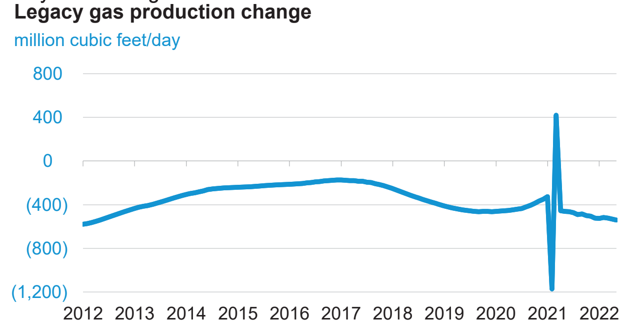
Haynesville Region
New-well gas production per rig **Rig count**



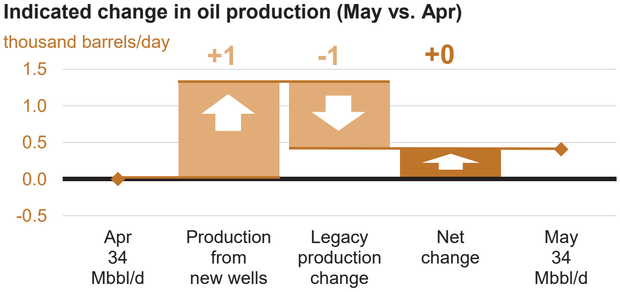
Haynesville Region
Legacy oil production change



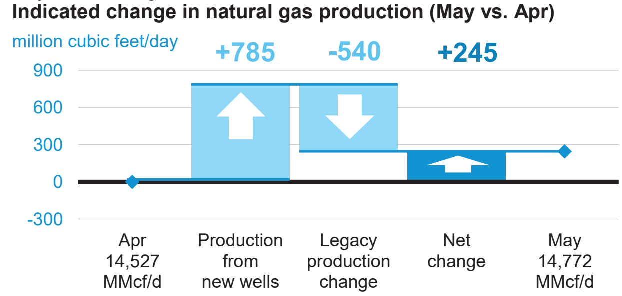
Haynesville Region
Legacy gas production change



Haynesville Region
Indicated change in oil production (May vs. Apr)

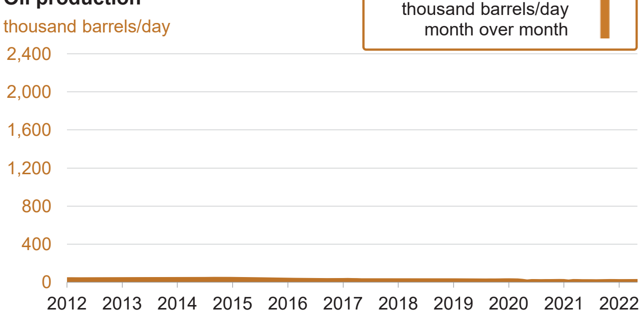


Haynesville Region
Indicated change in natural gas production (May vs. Apr)



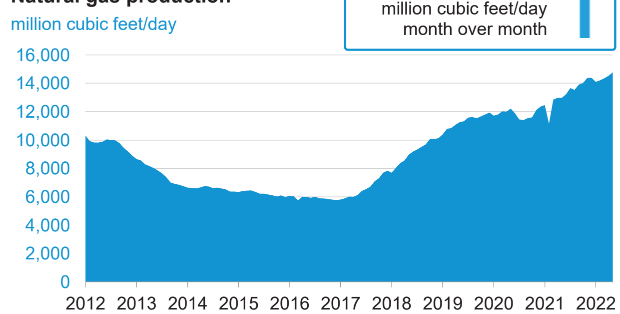
Haynesville Region
Oil production

Oil +0
thousand barrels/day
month over month



Haynesville Region
Natural gas production

Gas +245
million cubic feet/day
month over month



Niobrara Region

Drilling Productivity Report

April 2022

drilling data through March
projected production through May

Oil
-16
barrels/day
month over month

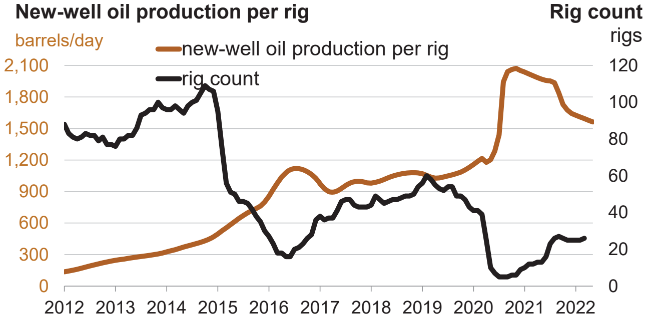
1,562 May
1,578 April
barrels/day

Monthly additions from one average rig

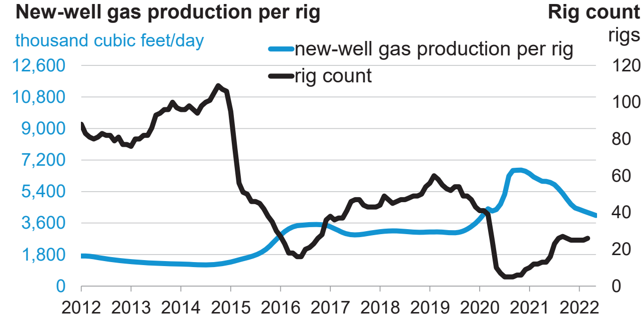
May **4,035**
April **4,117**
thousand cubic feet/day

Gas
-82
thousand cubic feet/day
month over month

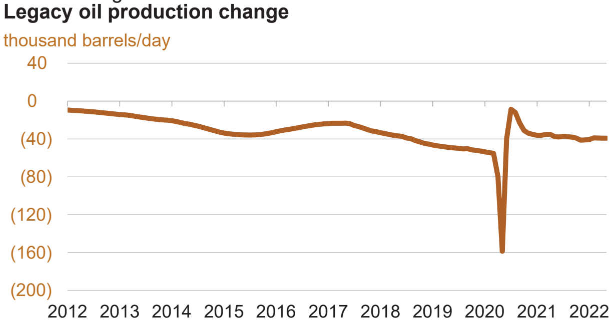
Niobrara Region
New-well oil production per rig **Rig count**



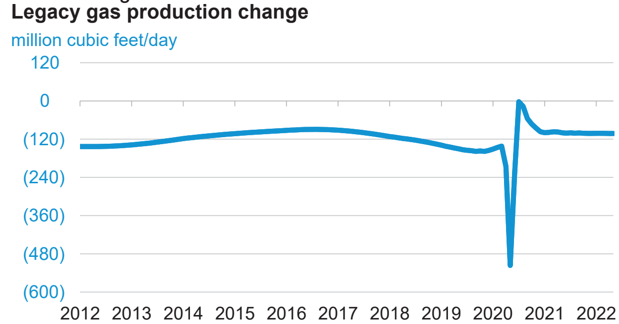
Niobrara Region
New-well gas production per rig **Rig count**



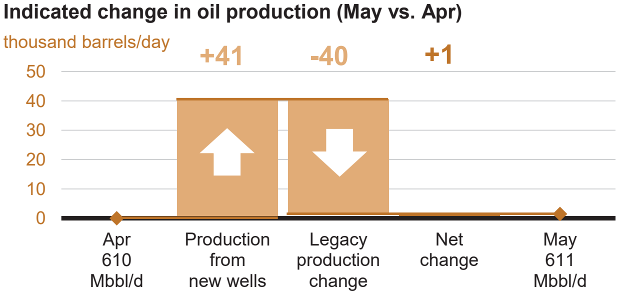
Niobrara Region
Legacy oil production change



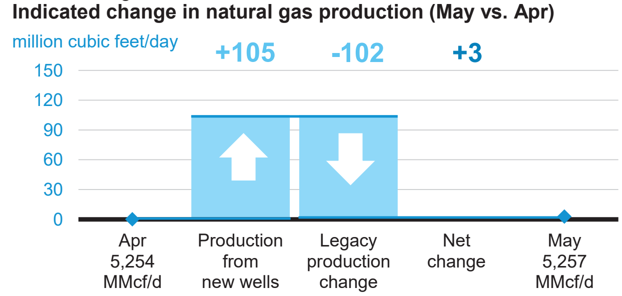
Niobrara Region
Legacy gas production change



Niobrara Region
Indicated change in oil production (May vs. Apr)

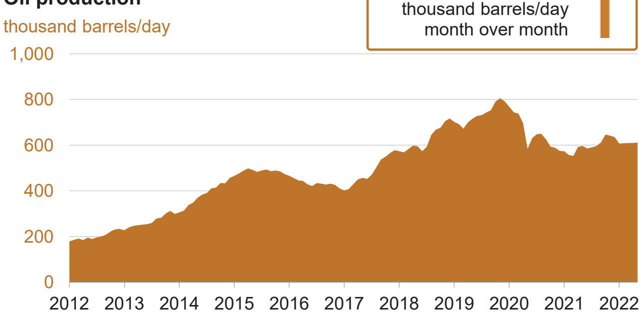


Niobrara Region
Indicated change in natural gas production (May vs. Apr)



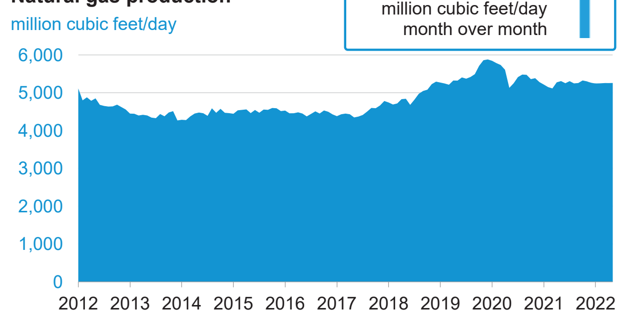
Niobrara Region
Oil production

Oil +1
thousand barrels/day
month over month



Niobrara Region
Natural gas production

Gas +3
million cubic feet/day
month over month



Permian Region

Drilling Productivity Report

April 2022

drilling data through March
projected production through May

Oil -14 barrels/day month over month

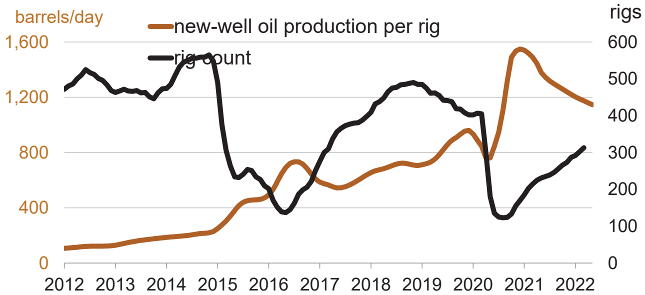
1,146 May
1,160 April
barrels/day

Monthly additions from one average rig

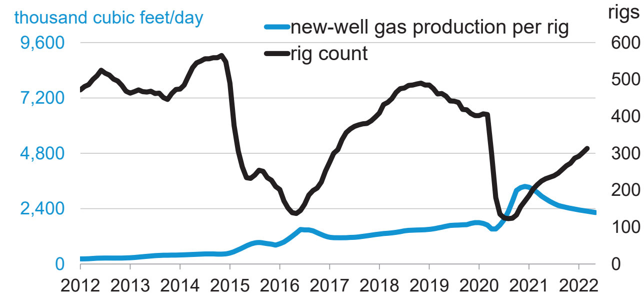
May **2,234**
April **2,261**
thousand cubic feet/day

Gas -27 thousand cubic feet/day month over month

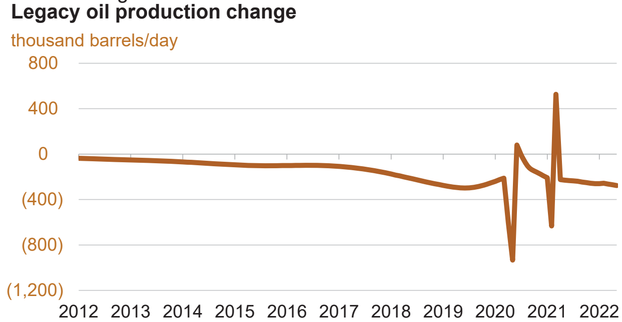
Permian Region
New-well oil production per rig — **Rig count**



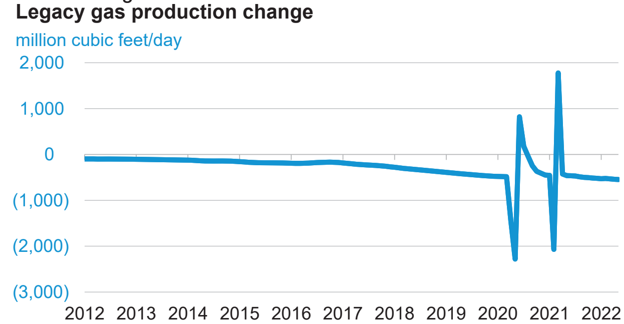
Permian Region
New-well gas production per rig — **Rig count**



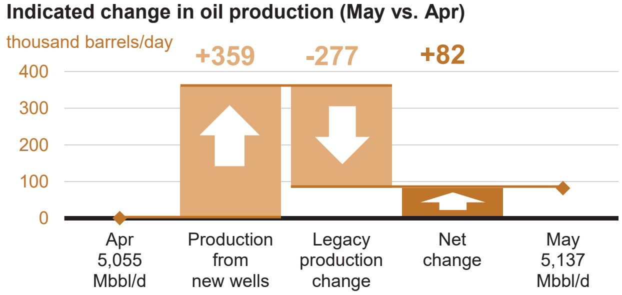
Permian Region
Legacy oil production change



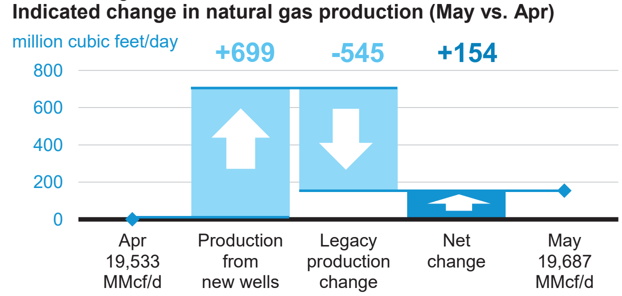
Permian Region
Legacy gas production change



Permian Region
Indicated change in oil production (May vs. Apr)

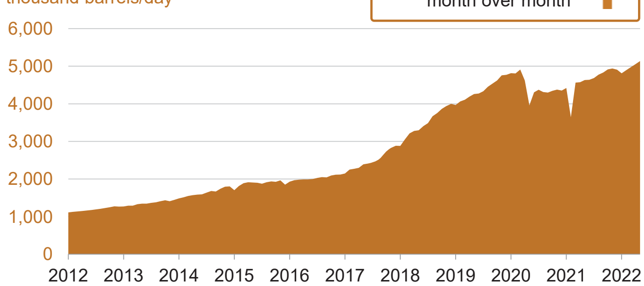


Permian Region
Indicated change in natural gas production (May vs. Apr)



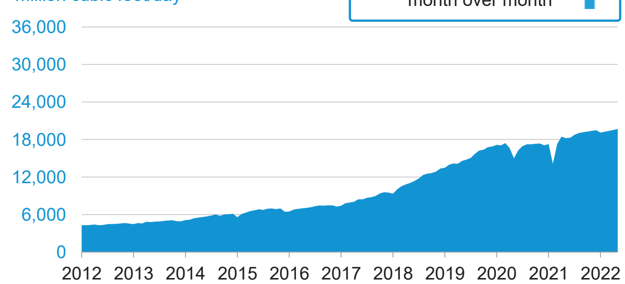
Permian Region
Oil production
thousand barrels/day

Oil +82 thousand barrels/day month over month



Permian Region
Natural gas production
million cubic feet/day

Gas +154 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

Excerpt https://my.tccustomerexpress.com/#Bulletin/3374720642

NGTL Non-Critical Notice

Notice Type: News
Effective Start Date Time: Apr 19, 2022 19:12 CCT
Subject: 2021 NGTL System Expansion Project Update

2021 NGTL System Expansion Project Update

NOVA Gas Transmission Ltd. (NGTL) is providing an update on the 2021 NGTL System Expansion Project (Project).

The Project consists of approximately 344 km of 48-inch pipe and three compressor unit additions along NGTL's existing Grande Prairie Mainline and Edson Mainline in Alberta. Once complete and all its facilities are placed into service, the Project will add 1.45 Bcf/d of capacity to the NGTL System, providing critical incremental capacity to our customers for the safe and reliable delivery of the energy people need, every day.

In its Project update of March 23, 2022, NGTL estimated providing up to 1.3 Bcf/d (90%) with a range of 0.94 Bcf/d (65%) to 1.3 Bcf/d (90%) of the Project's total capacity in late April and throughout May. Project construction continues; however, progress and facility in-service dates remain subject to ongoing construction and commissioning factors outside of NGTL's control (e.g. weather and ground conditions, road access, current labour market conditions etc.) and time required to obtain final leave to open (LTO) approvals by the Canada Energy Regulator.

Accordingly, our expectation is that we will either have 0.44 Bcf/d (30%) or 0.94 Bcf/d (65%) of the Project's facilities completed and placed into service during May or shortly thereafter. The likely case is 0.44 Bcf/d (30%) of Project capacity will be in service in that timeframe. NGTL will advise via bulletin once certainty of Project capacity has been determined. The revised capacity expectations are a result of not being able to continue to construct in environmentally sensitive areas and safely completing the tie-ins and commissioning of the remaining pipeline sections given weather, ground conditions, and road access to the area.

Construction will re-commence in mid-July when we can access the environmentally sensitive areas, and completion of facilities which will provide up to 1.3 Bcf/d (90%) is expected in September-October 2022, subject to weather, road access and ground conditions. The completion of the facilities which will provide the remaining 10% of the Project's capacity require winter construction conditions and therefore NGTL anticipates being able to provide this capacity early in the first quarter of 2023.

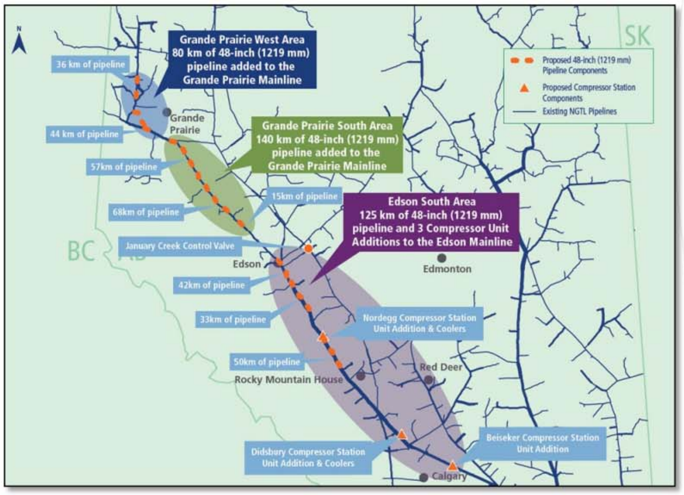
As previously communicated, until all the Project facilities are completed and in-service, NGTL does not have system capacity to declare contracts dependent on the Clearwater Unit Addition, on the Edson Mainline Expansion Project (EDML Project) and on the West Path Delivery 2022 Project (West Path 2022 Project). However, in the meantime, the Clearwater Unit Addition is available for added system reliability.

Marketing Representatives will be reaching out to each customer who has contracts dependent on the Projects.

The operational capacity charts and outage impacts in the DOP (Daily Operating Plan) are under evaluation and will be updated as soon as possible once capacity and planned maintenance have been assessed for the 2021 delay scenarios.

Excerpt TC Energy “2021 Expansion Update” March 24, 2022 Presentation [LINK]

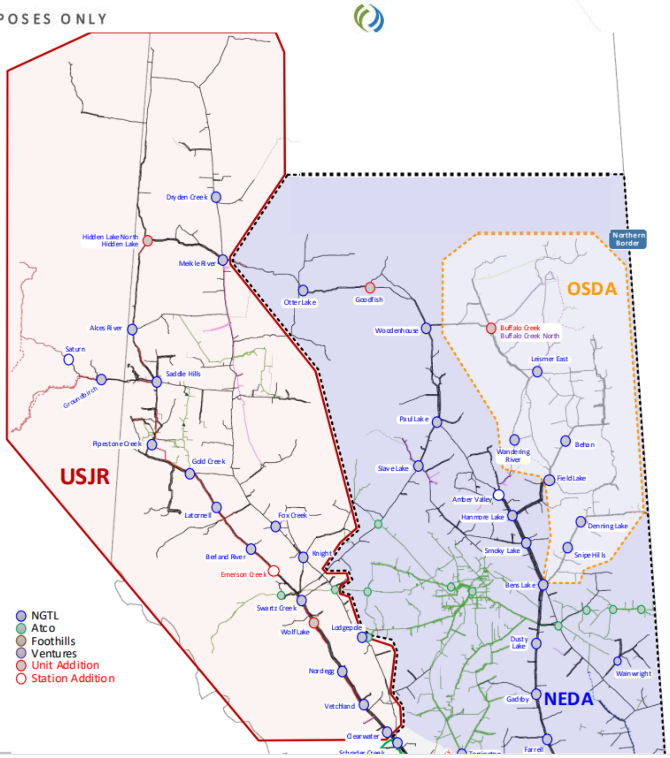
2021 NGTL Expansion



Project Components

~345km NPS 48 Pipeline
3 x 30 MW Compressor units
1 x Control valve

Majority of the facilities will be completed and placed into service in late April and throughout May to provide up to 1.3 Bcf/d, which is approximately 90% of the Project’s total capacity.



https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/lng/042222-s-koreas-kogas-to-import-158-mil-mtyear-us-produced-lng-from-bp

- COAL | ELECTRIC POWER | LNG | NATURAL GAS | OIL

- 22 Apr 2022 | 06:36 UTC

S Korea's Kogas to import 1.58 mil mt/year US-produced LNG from BP

HIGHLIGHTS

Deal to strengthen cooperation between Kogas, BP

SPA to help Kogas stabilize country's high gas prices

Deal linked to Henry Hub 'considered very competitive'

- Author Charles Lee

South Korea's state-run Korea Gas Corp. will import 1.58 million mt/year of LNG from BP for up to 18 years from 2025 under a new long-term deal as its existing purchase contracts are set to expire, the company said April 22.

The sales and purchase agreement with BP Singapore Limited follows a heads of agreement between the two sides that was concluded in September 2019.

The latest deal is the first long-term supply contract between the two companies, providing Kogas assured deliveries and an opportunity to stabilize the country's high gas prices.

Under the deal, BP will provide 1.58 million mt/year of LNG produced in BP-led projects in the US, such as Freeport LNG in Texas, Kogas said in a statement, adding that the SPA would also "serve as a catalyst to strengthen cooperation between the two companies."

The company did not disclose financial details of the agreement, but said the 18-year deal linked to the Henry Hub is "considered very competitive given current LNG prices and crude oil prices."

"The supply deal based on LNG produced in the US including Freeport LNG would help Kogas reduce its reliance on the Middle East and diversify supply sources," the statement said.

"The deal also allows Kogas to reduce import volumes and change unloading ports, which will help the state utility cope with possible changes in demand and supply," it said.

A timely outcome

The 18-year deal with BP comes at a time when many of Kogas's existing long-term supply agreements have been expiring since 2019. This includes four contracts totaling 5.78 million mt/year -- 2 million mt/year from Malaysia's MLNG II project, 2 million mt/year from Yemen's YLNG, 1 million mt/year from Brunei's BLNG, and 0.7 million mt/year from Indonesia -- which expired in 2019 alone.

Kogas will lose 7.02 million mt/year of Qatari LNG by 2026. The 20-year deal for 2 million mt/year of Rasgas LNG will also expire in 2032. Several more long-term deals Kogas has with other providers, such as 4 million mt/year from Oman's OLNG, are scheduled to expire before 2030.

The most-recently signed long-term supply deal was a 20-year agreement signed in 2012, under which Kogas has been importing 2.8 million mt/year from Cheniere's Sabine Pass terminal in Louisiana since June 2017.

Kogas said it has been tapping the market for new term contracts amid expirations of previous ones, adding that it will seek to diversify LNG supply sources beyond the Middle East and Southeast Asia to include Russia and the US.

In July 2021, Kogas signed an agreement with Qatar Petroleum under which the state utility will import 2 million mt/year of LNG from Qatar for 20 years from 2025.

The new supply deals come as Kogas increased LNG imports to meet growing demand for the fuel amid South Korea's push to reduce its reliance on coal and nuclear in power generation.

In 2021, Kogas, one of the world's biggest LNG buyers, imported 38.17 million mt, up 19.6% from 2020. Kogas imports in 2021 accounted for 83.1% of the country's total LNG imports of 45.93 million mt.

Some 70%-80% of Kogas LNG purchases are based on term contracts and the rest are spot purchases, according to Kogas officials.

Kogas currently has nine long-term contracts -- 9.02 million mt/ year in three contracts from Qatar, 4 million mt/year from Oman, 3.5 million mt/year from Australia, 2 million mt/year from Malaysia, 0.7 million mt/year from Indonesia, 1.5 million mt/year from Russia's Sakhalin, and 2.8 million mt/year from the US Sabin Pass.

LNG sales by Kogas, which has a monopoly in domestic natural gas sales, rose 4.4% year on year to 12.66 million in the first quarter this year, according to Kogas data compiled by S&P Global Commodity Insights.

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".*

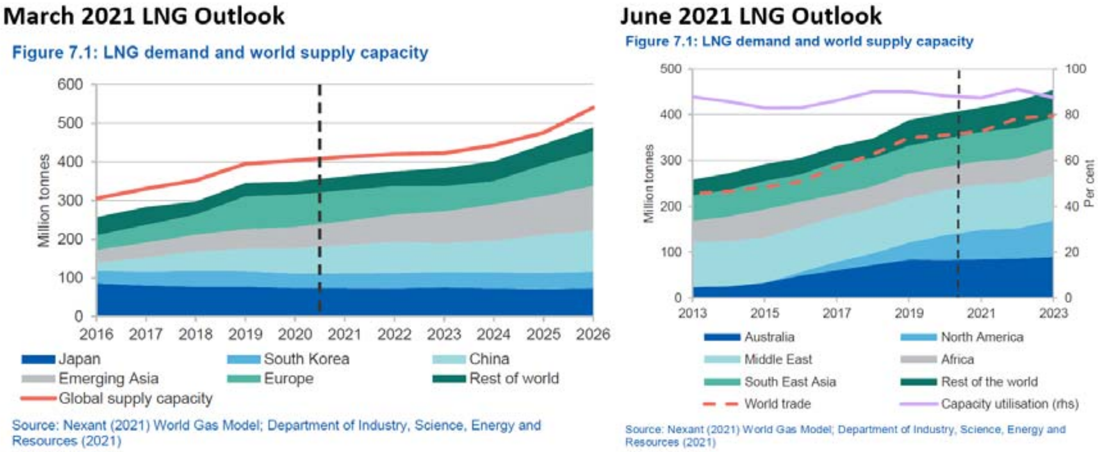
<u>There are other LNG supply delays/interruptions beyond Mozambique.</u> There have been a number of other smaller LNG delay or existing supply interruptions that add to Asian LNG buyers feeling less secure about the reliability of mid to long term LNG supply. Here are just a few examples. (i) Total 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."*

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

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

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

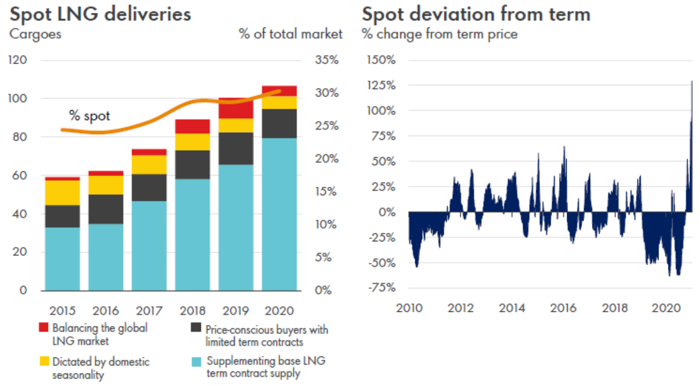


Source: Australia Resources and Energy Quarterly

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

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

Spot LNG deliveries and Spot deviation from term price



Source: Shell LNG Outlook 2021 on Feb 25, 2021

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

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

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

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

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

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

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

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

Remember Qatar's has a massive expansion but India alone needs 3x the Qatar expansion LNG capacity. In addition to the competition to be Qatar Petroleum's partners, we remind that, while this is a massive 4.3 bcf/d LNG expansion, India alone sees its LNG import growing by ~13 bcf/d to 2030. The Qatar announcement reminded they see a LNG supply gap and continued high LNG prices. We had a 3 part tweet. (i) First, we highlighted [LINK] "*1/3. #LNGSupplyGap coming. big support for @qatarpetroleum expansion to add 4.3 bcf/d LNG. but also say "there is a lack of investments that could cause a significant shortage in gas between 2025-2030" #NatGas #LNG".* This is after QPC accounts for their big LNG expansion. The QPC release said "*However, His Excellency Al-Kaabi voiced concern that during the global discussion on energy transition, there is a lack of investment in oil and gas projects, which could drive energy prices higher by stating that "while gas and LNG are important for the energy transition, there is a lack of investments that could cause a significant shortage in gas between 2025-2030, which in turn could cause a spike in the gas market."* (ii) Second, this is a big 4.3 bcf/d expansion, but India alone has 3x the increase in LNG import demand. We tweeted [LINK] "*2/3. Adding 4.3 bcf/d is big, but dwarfed by items like India. #Petronet gave 1st specific forecast for what it means if #NatGas is to be 15%*

of energy mix by 2030 - India will need to increase #LNG imports by ~13 bcf/d. See SAF Group June 20 Energy Tidbits memo." (iii) Third, Qatar's supply gap warning is driven by the lack of investments in LNG supply. We agree, but note that the lack of investment is in great part due to the delays in both projects under construction and in FIDs that were supposed to be done in 2019. We tweeted [LINK] "*3/3. #LNGSupplyGap is delay driven. $TOT Mozambique Phase 1 delay has chain effect, backs up 5 bcf/d. See SAF Group Apr 28 blog Multiple Brownfield LNG FIDs Now Needed To Fill New #LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2? #NatGas*."

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

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

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.

Posted on Novatek's website on April 22, 2022

https://www.novatek.ru/en/business/arctic-lng/

Project Arctic LNG 2

Arctic LNG 2 is another LNG production-related project of NOVATEK

The project includes the construction of three LNG trains, with a capacity of 6.6 mtpa of LNG each. The total LNG capacity of the three trains will be 19.8 mtpa and about 1.6 mtpa of stable gas condensate. The project employs an innovative construction concept using gravity-based structures (GBS). OOO Arctic LNG 2 is the operator and owner of all the assets.

The Utrenneye field is the resource base for Arctic LNG 2. The field is located in the Gydan Peninsula in YNAO approximately 70 km across the Ob Bay from Yamal LNG.

In 2018, we completed the front-end engineering design (FEED) and started site preparation, construction of early phase power supply facilities, production wells drilling, and construction of the quayside.

The participants of Arctic LNG 2 approved a final investment decision (FID) for the project in September 2019. Capital expenditures to launch the project at full capacity is estimated at $21.3 billion equivalent.

The GBS design concept as well as extensive localization of equipment and materials manufacturing in Russia will allow to considerably decrease the CAPEX per ton of LNG produced under this project. This will ensure a low cost structure of products and maximum competitiveness across the LNG markets.

LNG Construction Center

To provide fabrication of the GBS, assembly and installation of topside modules, we are building the LNG Construction Center in Belokamenka near Murmansk. The Center comprises two dry docks to build GBS, and facilities to manufacture topside modules. It sets up a state-of-the-art LNG technical basis in Russia, create new engineering and fabrication jobs, and contribute to the economic development of the region.

Competitive advantages

- Decrease in LNG production CAPEX by using GBS
- Onshore conventional reserve base
- Low F&D and lifting costs
- Access to the Atlantic Basin and Asia-Pacific markets

Project status

- Front-end engineering design (FEED) was completed in October 2018.
- Final investment decision (FID) made in September 2019.
- EPC-contract with TechnipFMC was signed.
- More than 90% of equipment for the project was contracted.
- Concluded 20-year LNG Sales and Purchase Agreements for the total LNG production volumes with all the Project’s participants.
- The external financing package with a consortium of international and Russian banks secures the required external funding for the Project. The maximum aggregate loan amount under the facilities to be provided by the Russian and international banks is EUR 9.5 billion for up to 15 years.
- In June 2021, the first plane landed at the Utrenniy airport built specifically for the Arctic LNG 2 project on the Gydan Peninsula.
- At the end of 2021, the overall progress for Arctic LNG 2 is estimated at 59%, the first train is roughly 78% completed.

- As of December 31, 2021, about 57% of the total Project’s planned capital expenditures had already been financed.
- At the end of 2021, we have drilled a total of 56 production wells. Essentially, we have drilled and completed enough wells to start production at GBS #1.

GENERAL LICENCE: Gazprombank Energy Payments

INT/2022/1630477

1. This licence is granted under regulation 64 of The Russia (Sanctions) (EU Exit) Regulations 2019 ("the Russia Regulations").

2. Any act which would otherwise breach the prohibitions in Regulations 11 - 17A of the Russia Regulations is exempt from those prohibitions to the extent required to give effect to the permissions in this licence.

3. In this licence:

"**Gazprombank**" means	Gazprombank
"**Subsidiary**" means	Any entity owned or controlled by Gazprombank
"**Gas**" means	any thing which falls within the UK commodity code 2711
a "**Person**" means	An individual, a body of persons corporate or unincorporate
a "**Relevant Institution**" means	A person that has permission under Part 4A of the Financial Services and Markets Act 2000(3) (permission to carry on regulated activity). A person that is authorised or registered under Part 2 of the Payment Services Regulations (SI 2017/752). A person that is authorised or registered under Part 2 of the Electronic Money Regulations (SI 2011/99). A person that is a "recognised clearing house", "third country central counterparty", "recognised CSD" or "third country CSD" for the purposes of s.285 of the Financial Services and Markets Act 2000. A person that is an operator of a recognised payment system (or that is a service provider in relation to recognised payment systems) for the purposes of Part 5 of the Banking Act 2009.

4. For the purposes of paragraph 3, whether or not a thing "falls within" the "commodity code" specified in that paragraph is to be determined in accordance with paragraph 1 in Part 1 of Schedule 3 to the Russia Regulations.

Permissions

5. A Person may continue to make payments to Gazprombank or a Subsidiary under a contract entered into prior to the date of this licence for the purpose of making Gas available for use in the European Union and a Person, Relevant Institution, or Gazprombank, or a Subsidiary can carry out any activity reasonably necessary to effect this including the opening and closing of bank accounts.

Record-keeping Requirements

6. A Person making a payment under this licence must keep accurate, complete and readable records, on paper or electronically, of any activity purporting to have been permitted under this licence for a minimum of 6 years.

General

7. The permissions in this licence do not authorise any act which the person carrying out the act knows, or has reasonable grounds for suspecting, will result in funds or economic resources being dealt with or made available in breach of the Russia Regulations save as permitted under this or other licences granted under the Russia Regulations.

8. Information provided to HM Treasury in connection with this licence shall be disclosed to third parties only in compliance with the UK General Data Protection Regulation and the Data Protection Act 2018.

9. This licence takes effect from 21 April 2022 and expires on 31 May 2022.

10. HM Treasury may vary, revoke or suspend this licence at any time.

Signed:

OFSI

Office of Financial Sanctions Implementation

HM Treasury

21 April 2022.

https://tass.ru/ekonomika/14401679
APR 18, 03:45Updated Apr 18, 04:25

Peskov: data on countries that will buy gas from Russia for rubles should not be published

The presidential press secretary drew attention to the fact that relevant departments, Deputy Prime Minister Alexander Novak and Gazprom deal directly with buyers with gas supplies.

Press Secretary of the President of the Russian Federation Dmitry Peskov

MOSCOW, 18 April. /TASS/. It is not worth publishing information about how many countries have agreed to buy Russian gas for rubles, said Dmitry Peskov, press secretary of the President of the Russian Federation.

"Such information is unlikely to be published," a Kremlin spokesman told reporters on Monday. He drew attention to the fact that the relevant departments, the relevant Deputy Prime Minister [Alexander] Novak and, of course, primarily Gazprom with their counterparts, that is, directly with buyers, deal with the issues of paying for gas supplies.

"It has already been said that payment will follow sometime in May for those deliveries that began after the presidential decree [of the Russian Federation Vladimir Putin on a new gas payment scheme] came into force," Peskov recalled. Therefore, in his opinion, "now there is still some time."

At the end of last week, Novak said that several buyers of Russian gas had already agreed to convert payments into rubles, and Moscow was waiting for a decision from other importers. He stressed that the transfer of payments for gas into the currency of the Russian Federation is caused by the desire to receive a 100% guarantee of payment, and for buyers the conditions remain as comfortable as possible.

On March 31, Russian President Vladimir Putin signed a decree that defines a new procedure for paying for gas supplies to the Russian Federation by buyers from unfriendly countries. According to the document, such states will start transferring funds in foreign currencies to Gazprombank, which will buy rubles on stock exchanges and transfer them to special ruble accounts of importers, from which payments will then be made for deliveries. The order of functioning of special accounts in Gazprombank was determined by the Central Bank. At the same time, the decree expressly prohibits the suspension of operations on such accounts, as well as the arrest and debiting of funds from them as part of the fulfillment of the buyer's obligations not related to payment for natural gas.

#

North Dakota | Mineral Resources
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Release Date: 4/19/2022
Director Lynn Helms

Director's Cut
February 2022 Production

Oil Production

January	33,746,995 barrels = 1,088,613 barrels/day (final)
(New Mexico)	*39,139,256 barrels = 1,262,557 barrels/day*
February	30,497,398 barrels = 1,089,193 barrels/day **(+/-0%)**
	1,048,081 barrels/day or 96% from Bakken and Three Forks
	41,112 barrels/day or 4% from legacy pools
	1,519,037 all-time North Dakota high Nov 2019
Revised Revenue Forecast	**= 1,200,000→1,100,000→1,000,000 barrels/day (-1%)**

Crude Price[1] ($/barrel)

	North Dakota Light Sweet	WTI	ND Market estimate
January	74.86	82.98	77.06 **RF +54%**
February	86.17	91.63	86.96 **RF +74%**
Today	110.75	108.21	109.48 **Est. RF +119%**
All-time high (6/2008)	$125.62	$134.02	$126.75
Revised Revenue Forecast			**= $50.00**

Gas Production & Capture

January Production	87,678,132 MCF = 2,828,327 MCF/day
Gas Captured: 93%	81,404,310 MCF = 2,625,945 MCF/day
February Production	80,378,263 MCF = 2,870,652 MCF/day **+1.5%**
Gas Captured: 94%	75,864,409 MCF = 2,528,814 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

January	31
February	34
March	34
Today	*38 NM 98*
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

	January	February	March	Revised Revenue Forecast
Permitted	39 drilling 1 seismic	32 drilling 0 seismic	65 drilling 0 seismic (All-time high was 370 – Oct. 2012)	-
Completed	75 (Final)	90 (Revised)	53 (Preliminary) **(+33% above RF)**	**30→40→50→60**
Inactive[2]	2,420	1,872	-	-
Waiting on Completion[3]	449	463	-	-
Producing	16,865	16,746 (Preliminary) *14,590 (87%) from unconventional Bakken – Three Forks* *2,153 (13%) from legacy conventional pools*	-	-

Fort Berthold Reservation Activity

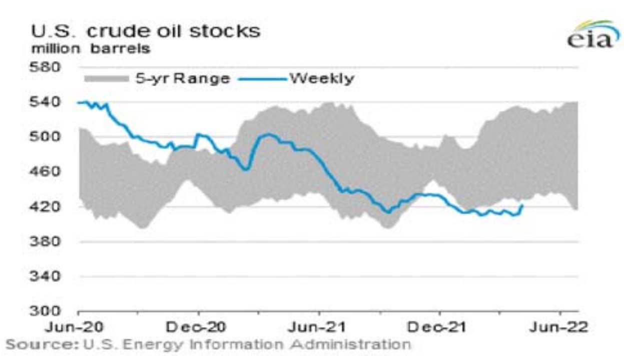
	Total	Fee Land	Trust Land
Oil Production (barrels/day)	218,456	90,253	128,203
Drilling Rigs	6	1	5
Active Wells	2,625	659	1,966
Waiting on completion	20		
Approved Drilling Permits	320	56	264
Potential Future Wells	3,927	1,105	2,822

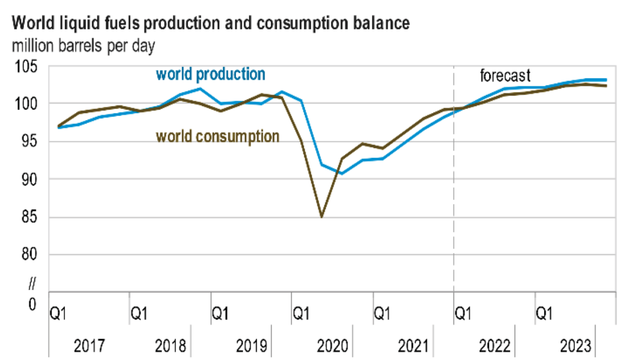
Drilling and Completions Activity & Crude Oil Markets

The drilling rig count continues to slowly increase.

The number of active completion crews increased to 12 this week.

OPEC+ continues to phase out oil production cuts beginning September 2021 through the end of 3Q 2022. At their April 2022 meeting OPEC+ decided to stick with their plan to increase production 400,000 barrels per day each month going forward. Russia sanctions have exacerbated an already tight market. The strategic petroleum reserve releases by OECD countries resulted in a short term drop in oil prices.





[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 until the USACOE EIS is completed.

Drilling activity is expected to slowly increase while operators maintain a permit inventory of approximately 12 months.

Gas Capture

US natural gas storage is now 18% below the five-year average. Crude oil inventories remain below normal in the US, and world storage is now within the five-year average.

The price of natural gas delivered to Northern Border at Watford City has returned to an elevated level of $6.14/MCF today. This results in a current oil to gas price ratio of 18 to 1. The state wide gas flared volume from January to February decreased 41,173 MCFD to 161,209 MCF per day, the statewide percent flared decreased to 5.4% and Bakken capture percentage increased to 95%.

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

Gas capture details are as follows:

Statewide	94%
Statewide Bakken	95%
Non-FBIR Bakken	95%
FBIR Bakken	94%
Trust FBIR Bakken	96%
Fee FBIR	81%

Big Bend Field	*71%*
Four Bears	*54%*
Twin Buttes	*61%*
Charlson	*78%*

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)
1	1	0	0	7	0	0

https://bismarcktribune.com/news/state-and-regional/blizzard-prompts-slowdown-in-north-dakotas-oil-patch/article_be4e733e-c02e-11ec-a174-9bd89c5d2fca.html

Blizzard prompts slowdown in North Dakota's oil patch

AMY R. SISK Apr 19, 2022 Updated Apr 20, 2022

Last week's blizzard caused North Dakota's daily oil output to drop by 25%, according to an estimate from state officials.

The storm also resulted in at least one significant spill and fire in the oil fields.

More winter weather expected this weekend could prolong the production slowdown, North Dakota Pipeline Authority Director Justin Kringstad said. The National Weather Service's Bismarck office forecasts rain and snow, with the most winter impacts in North Dakota's oil-producing regions, including the western third of the state and in the north central part.

It typically takes one to three weeks for the state's oil industry to recover from an extreme weather event, Kringstad said. Winter storms pose a host of issues for the oil industry, especially as they make roads impassable and prevent trucks from accessing well sites and other operations.

The blizzard was a factor in a fire that burned down a saltwater disposal site southeast of Keene in McKenzie County last Wednesday. A representative of McKenzie Energy Partners told the Tribune that it appears snow inundated an electrical panel, prompting the fire.

"The fire was ultimately put out by the fire department, but not before the facility was a total loss," said Todd Thurman, director of midstream for McKenzie.

He said it took two days before workers and local firefighters could reach the site to put out the blaze, on account of snow blocking the roads. No one was injured in the fire.

The incident also prompted a spill of 2,400 barrels or 100,800 gallons of saltwater, which is also known as brine or produced water in the oil fields. An additional 50 barrels or 2,100 gallons of oil spilled as well. The fluid was contained to the site, and the company is working on cleanup, Thurman said.

State officials reported one other sizable spill in the oil fields last week on Saturday, though it was not clear from an incident report that weather was a factor. Oil producer Ovintiv said a valve failure prompted a leak of 400 barrels or 16,800 gallons from two production tanks at a well site southwest of Mandaree in Dunn County. The spill was contained to the site.

State Mineral Resources Director Lynn Helms said the oil industry weathered the April blizzard better than in 2011, another year that saw extreme winter weather.

"When we had this occur in 2011, we had some very significant spills because we had tanks overflow," he said. "People hadn't implemented automatic shutdowns or remote shutdown devices."

Helms on Tuesday released the state's latest oil and gas production figures, which reflect data from February, the most recent month for which data is available. Oil production held flat from January to February at 1.089 million barrels per day.

Helms said North Dakota's rig count has climbed by four over the past month to 38, though most rig operators have moved their equipment south to the Permian oil fields of Texas and New Mexico. The best-case scenario he envisions for the state's oil industry is adding six more rigs over the next year, as it takes at least two months to hire and train a crew. A workforce shortage continues to plague the Bakken.

North Dakota's natural gas production saw a 1.5% increase to 2.871 billion cubic feet per day in February. State officials were pleased with the latest flaring numbers, as oil producers captured 94% of all gas produced in February, exceeding the state's 91% goal.

MONTHLY UPDATE

APRIL 2022 PRODUCTION & TRANSPORTATION

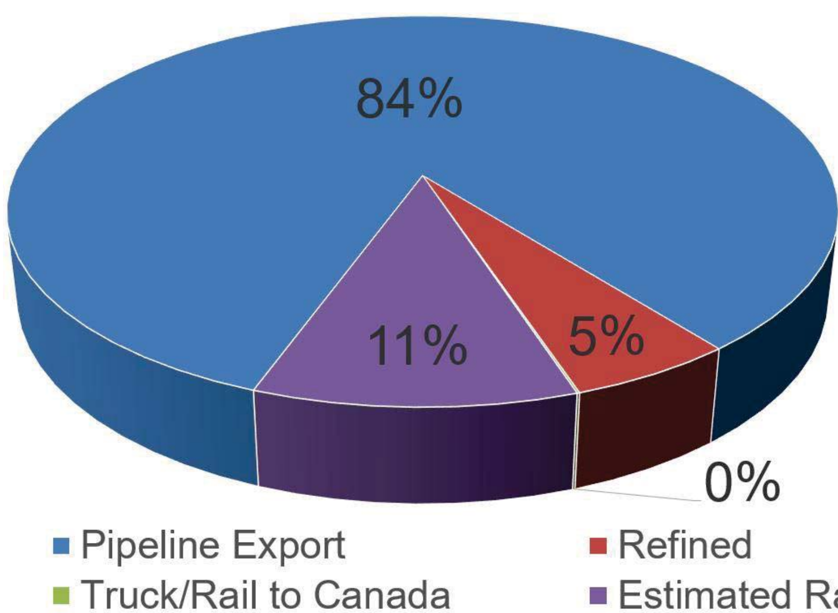
North Dakota Oil Production

Month	Monthly Total, BBL	Average, BOPD
Jan. 2022 - Final	33,746,995	1,088,613
Feb. 2022 - Prelim.	30,497,398	1,089,193

North Dakota Natural Gas Production

Month	Monthly Total, MCF	Average, MCFD
Jan. 2022 - Final	87,678,132	2,828,327
Feb. 2022 - Prelim.	80,378,263	2,870,652

Estimated Williston Basin Oil Transportation, Feb. 2022



CURRENT DRILLING ACTIVITY:

NORTH DAKOTA[1]

38 Rigs

EASTERN MONTANA[2]

1 Rigs

SOUTH DAKOTA[2]

0 Rigs

SOURCE (APR 19, 2022):

1. ND Oil & Gas Division
2. Baker Hughes

PRICES:

Crude (WTI): $102.56

Crude (Brent): $107.39

NYMEX Gas: $7.10

SOURCE: BLOOMBERG (APR 19, 2022 11AM CST)

GAS STATS*

95% CAPTURED & SOLD

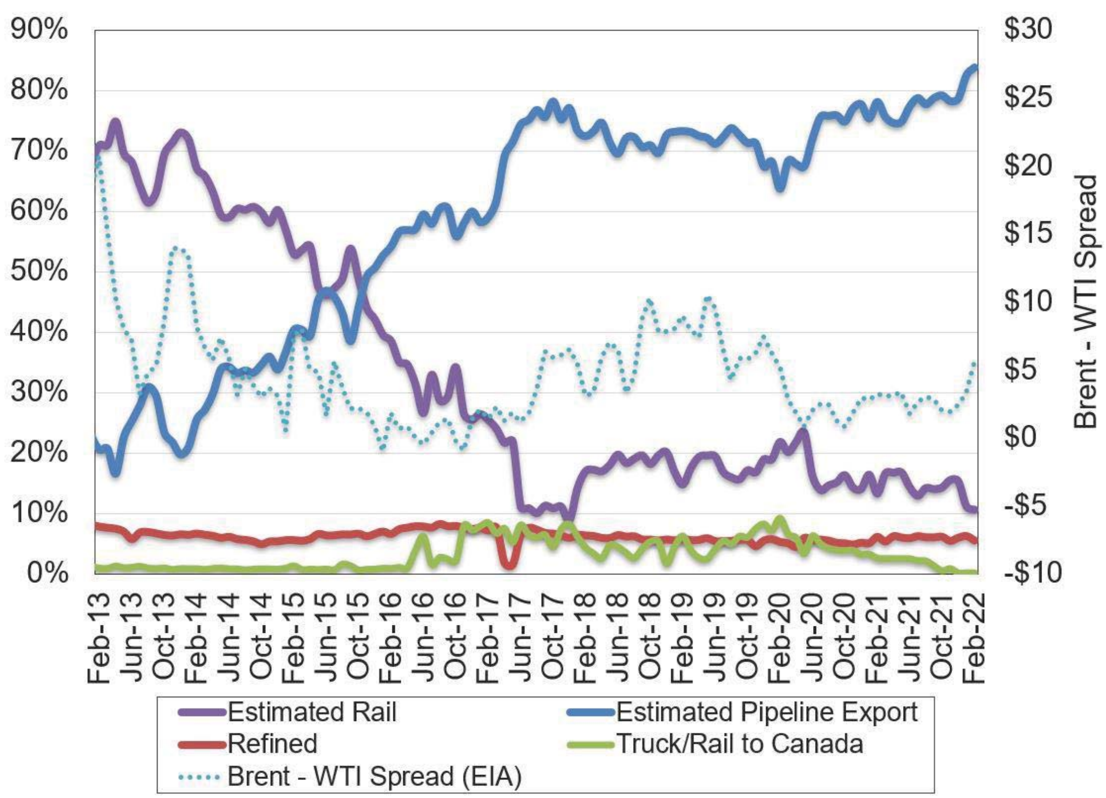
4% FLARED DUE TO CHALLENGES OR CONSTRAINTS ON EXISTING GATHERING SYSTEMS

1% FLARED FROM WELL WITH ZERO SALES

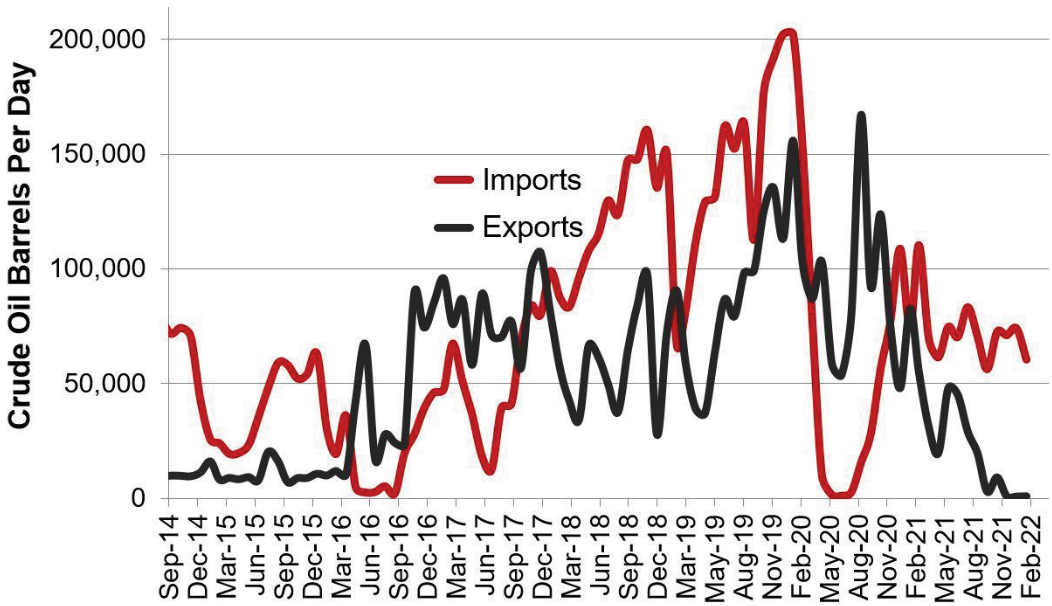
FEB. 2022 NON-CONF DATA

Estimated North Dakota Rail Export Volumes

Estimated Williston Basin Oil Transportation

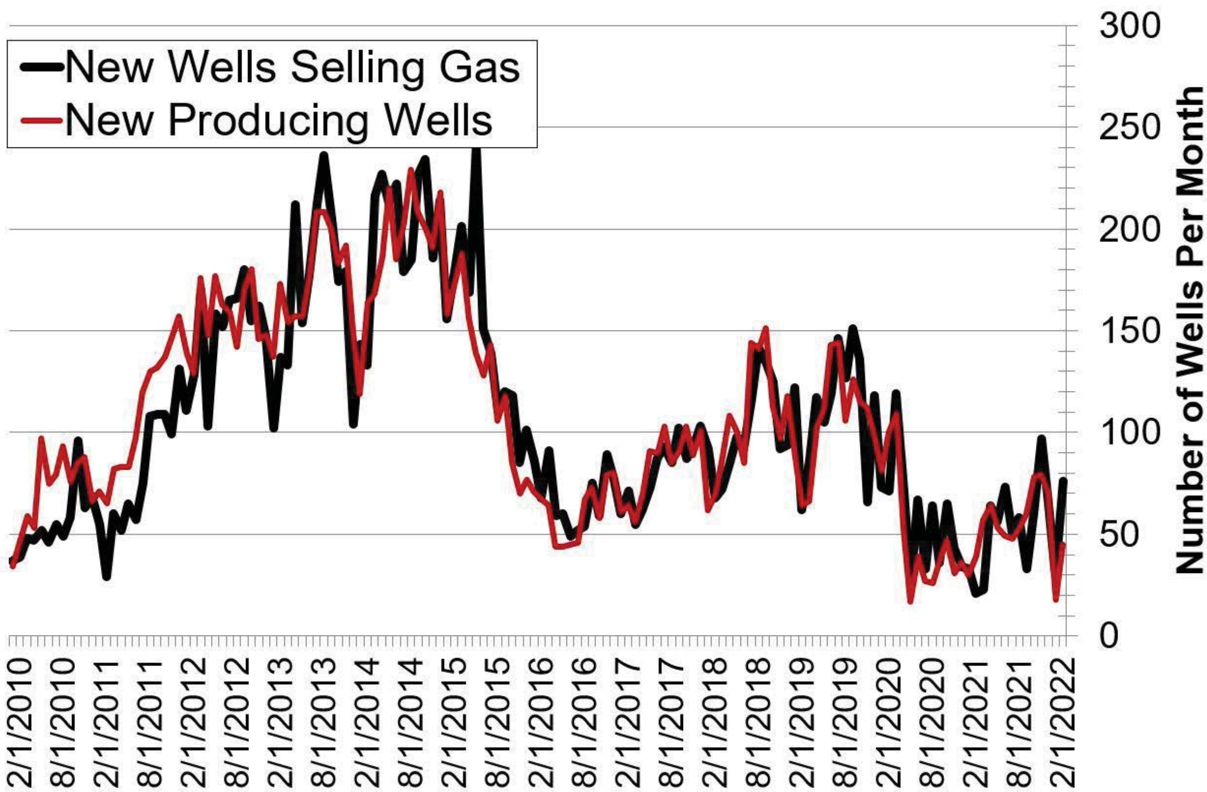


Williston Basin Truck/Rail Imports and Exports with Canada



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

2021

MONTH	ND	EASTERN MT*	SD	TOTAL
January	1,147,724	50,417	2,874	1,201,015
February	1,083,820	48,251	2,828	1,134,899
March	1,109,005	49,525	2,744	1,161,275
April	1,121,776	48,439	2,644	1,172,859
May	1,129,785	47,276	2,640	1,179,702
June	1,134,758	44,083	3,103	1,181,944
July	1,078,883	43,755	2,884	1,125,522
August	1,108,084	47,281	2,892	1,158,257
September	1,113,963	50,407	2,847	1,167,217
October	1,110,828	49,394	2,853	1,163,075
November	1,158,553	48,531	2,780	1,209,864
December	1,144,999	48,137	2,717	1,195,852

2022

MONTH	ND	EASTERN MT*	SD	TOTAL
January	1,088,613		2,709	
February	1,089,193			
March				
April				
May				
June				
July				
August				
September				
October				
November				
December				

** Eastern Montana production composed of the following Counties: Carter, Daniels, Dawson, Fallon, McCone, Powder River, Prairie, Richland, Roosevelt, Sheridan, Valley, Wibaux*

Reliance Industries Limited
Growth is Life

https://www.reuters.com/world/india/indias-reliance-buys-least-15-mln-barrels-russian-oil-traders-2022-04-22/

April 22, 20224:37 AM MDTLast Updated 2 hours ago

India's Reliance buys at least 15 mln barrels of Russian oil - traders

By Nidhi Verma
2 minute read

NEW DELHI, April 22 (Reuters) - Reliance Industries Ltd (RELI.NS), operator of the world's biggest oil refining complex, has ordered at least 15 million barrels of Russian oil since Russia invaded Ukraine in February, trade sources said.

Reliance has bought an average 5 million barrels a month for the June quarter, the sources said.

Reliance did not immediately respond to a Reuters' email seeking comment.

Before the Ukraine war, Indian refiners, including Reliance, rarely bought Russian oil owing to high freight costs.

But Western sanctions against Russia since its Ukraine invasion, which Moscow calls a "special operation", have prompted many oil importers to shun trade with Moscow, depressing its crude prices to record discount levels .

Indian refiners have snapped up the cheap barrels as India, the world's third-biggest oil importer and consumer, is hit hard by high oil prices. India imports about 85% of its 5 million barrels per day oil needs.

While New Delhi has called for an immediate ceasefire in Ukraine, it has not explicitly condemned Moscow's actions. India has also abstained from voting on multiple United Nations resolutions on the invasion. read more

Refinitiv's tanker flow data shows a supply of about 8 million barrels of Russian oil, mainly Urals, at the Reliance-operated Sikka port in western India, for arrival between April 5 and May 9.

Most of these barrels are supplied by Russian trader Litasco, the Refinitiv data shows.

Traders said Reliance is buying Russian oil on delivered basis.

Reliance is scheduled to received its first parcel of Russia's ESPO oil in early May, the Refinitiv data shows. This grade is mostly supplied to China.

Billionaire Mukesh Ambani's Reliance operates two refineries at the Jamnagar complex in western India that can process about 1.4 million barrels per day (bpd) of oil daily.

Reporting by Nidhi Verma. Editing by Jane Merriman https://www.wsj.com/articles/economic-impact-global-debate-limit-potential-actions-against-russia-yellen-says-11650569806

Economic Impacts, Global Politics Limit Potential Actions Against Russia, Yellen Says

Treasury Secretary talks about potential roadblocks to further reprimanding Moscow while promising more nonmilitary aid to Ukraine

Treasury Secretary Janet Yellen said Thursday that the U.S. and allies should determine how to trim Russia's revenues from energy sales without cutting off Europe from a critical energy supply.
PHOTO: SAUL LOEB/AGENCE FRANCE-PRESSE/GETTY IMAGES

By *Amara Omeokwe*

Follow

and *Andrew Duehren*

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Updated Apr. 21, 2022 5:18 pm ET

WASHINGTON—The U.S. and its allies are constrained in their efforts to reduce Russian energy revenue because of the risks posed to the global economy, while a push to remove Russia from international organizations like the Group of 20 major economies lacks international consensus, Treasury Secretary Janet Yellen said.

Ms. Yellen committed to providing an additional $500 million to help Ukraine pay general government expenses, adding to the roughly $500 million the U.S. already provided in nonmilitary aid to Ukraine. Ms. Yellen said the Biden administration soon would request more funds from Congress for the aid. President Biden outlined additional military aid on Thursday.

Ms. Yellen's remarks, at a Thursday news conference, came as the U.S. grapples with how to further assist Ukraine and faces pressure from some quarters to pursue further sanctions against Russia for its invasion.

As to further sanctions, Ms. Yellen said that some of them—such as a ban of Russian energy imports by European countries—would be difficult to enact. European countries are far more reliant than the U.S. on Russian energy. The U.S. already has banned imported oil and other energy sources from Russia.

"We need to be careful when we think about a complete European ban on, say, oil imports," Ms. Yellen said, speaking at a news conference. "That would clearly raise global oil prices, it would have a damaging impact on Europe and other parts of the world, and counterintuitively it could actually have very little negative impact on Russia because although Russia might export less, its price for its exports would go up."

The U.S. rolled out a new round of sanctions Wednesday, targeting another bank, firms owned by a blacklisted Russian oligarch and a cryptocurrency mining company. As the U.S. and its allies consider next steps, Ms. Yellen said they should consider how to reduce Russia's revenues from energy sales without completely cutting Europe off from a critical energy supply.

“If we could figure a way to do that without harming the entire globe through higher energy prices, that would be ideal, and that’s a matter that we’re all trying to think through together,” she said.

Ms. Yellen has recently said one alternative to banning energy imports outright would be to place energy payments in escrow and limit Russia’s ability to use the revenue. European officials have reviewed the possibility of a phased-in oil embargo, a tariff on Russian oil, as well as the possibility of placing payments in an escrow account. Russia has warned it would stop delivering energy if payments are held in escrow.

https://tass.ru/armiya-i-opk/14446141

APR 22, 02:14Updated Apr 22, 02:50

The Ministry of Defense called the tasks of the second stage of the special operation in Ukraine

One of the tasks is to establish full control over the Donbass and Southern Ukraine, this will allow creating a land corridor to Crimea and another exit to Transnistria, Major General Rustam Minnekaev, Deputy Commander of the Central Military District, said.

YEKATERINBURG, April 22. /TASS/. The Russian army during the second stage of the special operation should establish full control over the Donbass. This was stated by Deputy Commander of the Central Military District (CVO), Major General Rustam Minnekayev, at the annual meeting of the Union of Defense Industries of the Sverdlovsk Region.

"Since the beginning of the second phase of the special operation, it has already begun, literally two days ago, one of the tasks of the Russian army is to establish full control over the Donbass and southern Ukraine," he said.

The control of the RF Armed Forces over the Donbass will make it possible to create a land corridor to the Crimea, Minnekaev stressed.

"This (control over the Donbass - TASS note) will provide a land corridor to the Crimea, as well as influence the vital facilities of the Ukrainian [military forces], Black Sea ports through which agricultural and metallurgical products are delivered to [other] countries," - said the deputy commander.

"Control over the South of Ukraine is another way out to Transnistria, where there are also facts of oppression of the Russian-speaking population. Apparently, we are now at war with the whole world, as it was in the Great Patriotic War, all of Europe, the whole world was against us. And now the same thing, they never liked Russia," he added.

Minnekaev stressed that the technical superiority of the Russian army over the Ukrainian Armed Forces on land, sea and airspace is obvious.

"When striking, the Russian armed forces do not suffer any losses. This kills the morale of the personnel of the Armed Forces of Ukraine the most. The technical superiority of the Russian army on land, at sea and in the air has become obvious," he said.

Minnekaev added that the special operation should be "successfully brought to its logical conclusion." He stated that all tasks set will be fulfilled.

“We didn’t start this war, but we will finish it,” Minnekaev said.

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[LINK]

How U.S.-Saudi Relations Reached the Breaking Point

The decades long alliance is at risk over disagreements regarding oil production levels, security concerns and the invasion of Ukraine

President Biden speaking last year at the State Department in Washington. JIM LO SCALZO/EPA/BLOOMBERG NEWS

By *Stephen Kalin* Follow , *Summer Said* Follow and *David S. Cloud* Follow

Apr. 19, 2022 11:52 am ET

Saudi Crown Prince Mohammed bin Salman, wearing shorts at his seaside palace, sought a relaxed tone for his first meeting with President Biden's national security adviser, Jake Sullivan, last September.

The 36-year-old crown prince ended up shouting at Mr. Sullivan after he raised the 2018 killing of Saudi journalist Jamal Khashoggi. The prince told Mr. Sullivan he never wanted to discuss the matter again, said people familiar with the exchange. And the U.S. could forget about its request to boost oil production, he told Mr. Sullivan.

The relationship between the U.S. and Saudi Arabia has hit its lowest point in decades, with Mr. Biden saying in 2019 that the kingdom should be treated like a pariah over human-rights issues such as Mr. Khashoggi's murder.

The political fissures have deepened since Russia's invasion of Ukraine, senior Saudi and U.S. officials said. The White House wanted the Saudis to pump more crude, both to tame oil prices and undercut Moscow's war finances. The kingdom hasn't budged, keeping in line with Russian interests.

Prince Mohammed wants foremost to be recognized as the de facto Saudi ruler and future king. The crown prince runs the country's day-to-day affairs for his ailing father, King Salman bin Abdulaziz al Saud. But Mr. Biden hasn't yet met or spoken directly with the prince. Last summer, the president told Americans to blame low Saudi oil output for rising gas prices.

After the publication of this article online, Adrianne Watson, a White House National Security Council spokeswoman, reiterated President Biden's stated commitment that the U.S. would support the kingdom's territorial defense. She cited diplomatic achievements in recent weeks, such as the condemnation by Persian Gulf states, including Saudi Arabia, of Russia's invasion of Ukraine. She said Mr. Sullivan didn't discuss oil production with Prince Mohammed at their September meeting and that "there was no shouting."

A Saudi official at the kingdom's Washington embassy said after publication of this article online that the relationship between the U.S. and the kingdom remains strong. He called the meeting between Mr. Sullivan and Prince Mohammed cordial and respectful.

"Over the course of the last 77 years of Saudi-U.S relations, there have been many disagreements and differing points of view over many issues, but that has never stopped the two countries from finding a way to work together," the official said.

The risk for the U.S. is that Riyadh will align more closely with China and Russia, or at least remain neutral on issues of vital interest to Washington, as it has on Ukraine, Saudi officials said.

The U.S.-Saudi partnership was built on the premise that the American military would defend the kingdom from hostile powers to ensure the uninterrupted flow of oil to world markets. In turn, successive Saudi kings maintained a steady supply of crude at reasonable prices, with only occasional disruptions. But the economic underpinning of the relationship has changed. The Saudis no longer sell much oil to the U.S. and are instead the biggest supplier to China, reorienting Riyadh's commercial and political interests.

U.S. officials, including White House Middle East coordinator Brett McGurk, have visited the kingdom repeatedly to try to heal the breach, with an eye to addressing Saudi concerns about security threats from Iran and the Houthi rebels Iran backs in Yemen. Yet with Mr. Biden opposed to any broad concessions to the Saudis, the officials acknowledge making only modest progress.

The White House has stopped asking the Saudis to pump more oil. Instead, it asks only that Saudi Arabia not do anything that would hurt the West's efforts in Ukraine, a senior U.S. official said.

The Saudis cut short a high-level military delegation to Washington last summer and called off a visit last fall by Defense Secretary Lloyd Austin. A planned visit last month by Secretary of State Antony Blinken was canceled.

Saudi King Salman, with a cane, leaving the hospital after tests on March 16 in Riyadh, Saudi Arabia.PHOTO: SAUDI PRESS AGENCY/ASSOCIATED PRESS

Some close Biden aides, including Mr. McGurk, have been pushing for political detente with the Saudis, which they see as essential for the U.S. to advance its Middle East interests on everything from oil prices to establishing normal diplomatic relations between Saudi Arabia and Israel, according to officials in both countries.

Rapprochement won't be easy. Mr. Biden faces staunch opposition to improving ties with the Saudis from Democratic and Republican lawmakers, especially since Prince Mohammed has shown little willingness to retreat from a lucrative alliance with Moscow to keep a lid on oil-production levels.

White House officials this year worked to set up a call between Mr. Biden, King Salman and Prince Mohammed, said people familiar with the matter. As the date for the Feb. 9 call approached, Saudi officials told the Biden administration that the crown prince wouldn't take part, these people said.

The snub propelled simmering private frustrations into the open after The Wall Street Journal reported what happened.

Growing apart

The unlikely U.S.-Saudi marriage has endured over the past 75 years in part because of personal ties between the respective leaders of a democracy and a monarchy.

An ailing President Franklin Roosevelt traveled to the Middle East on a U.S. Navy cruiser in 1945 to launch the relationship with Saudi Arabia's founder, King Abdulaziz ibn Saud. Decades later, former President George W. Bush and the late King Abdullah hosted each other at their respective ranches.

The strategic relationship between the U.S. and Saudi Arabia has never been as difficult as it is now, said Norman Roule, a former senior U.S. intelligence official covering the Middle East and who maintains contact with senior Saudi officials.

Prince Mohammed doesn't like his treatment by the Biden administration, which released an intelligence report last year about the crown prince's alleged role in Mr. Khashoggi's killing and dismemberment inside the Saudi consulate in Istanbul. The Central Intelligence Agency concluded the prince likely ordered the killing. He denied directing the attack on one of his high-profile critics but has said he bears responsibility because it happened on his watch.

Saudi leaders are also upset about the U.S. approach to Yemen. The White House no longer classifies the Houthis as a terrorist organization and announced it was reducing support for the Saudi-led military campaign in Yemen, imposing a freeze on the sale of precision-guided missiles. Saudi Arabia saw an uptick in cross-border drone and missile attacks by the Houthis and was alarmed by the Pentagon removing several antimissile systems from Saudi Arabia in June. The U.S. said the move was for maintenance.

The Saudis were dismayed by the American withdrawal from Afghanistan, as well as the Biden administration's ongoing efforts to revive the Iran nuclear deal. They also have begun to question the U.S. military commitment to the Middle East and bristle at presumptions that the kingdom will fall in lockstep with Washington.

Prince Mohammed's demand for acknowledgment by Mr. Biden of his claim to inherit the throne has grown more complicated, Saudi officials said. A few months ago, a phone call may have been enough.

The Saudi embassy in Washington called the idea that Prince Mohammed wanted such acknowledgment "nonsensical."

The prince wants to put Mr. Khashoggi's murder behind him—he faces civil lawsuits over the killing—and secure legal immunity in the U.S., Saudi officials said. Mr. Biden could facilitate that by directing the State Department to recognize Prince Mohammad as a head of state.

Saudi Arabia wants more support for its intervention in Yemen's civil war and to bolster its defenses against cross-border attacks from Iran-allied Houthi fighters. Riyadh also wants help with its civilian nuclear capabilities and more investments in its economy by U.S. companies.

Mr. Biden is unable or unlikely to meet most of these demands, given the lack of support for Saudi Arabia in Congress, especially among Democrats. On April 13, 30 Democrats, including the leaders of the House foreign affairs and intelligence committees, called on the administration to take a tougher stance on Saudi Arabia, largely over the Saudi response to the Ukraine war and its refusal to boost oil production.

The U.S.-Saudi relationship has faltered before. The 1973 Arab oil embargo, led by Saudi Arabia in response to U.S. support for Israel during the Yom Kippur War, sparked the worst U.S. recession in 40 years.


A Patriot antimissile battery at the Prince Sultan Air Base in Saudi Arabia in 2020.PHOTO: IMAN AL-DABBAGH FOR THE WALL STREET JOURNAL

Weeks before the Sept. 11 attacks—in which the mastermind and 15 of the 19 hijackers were Saudi citizens—Riyadh nearly cut ties with the U.S. over what it saw as Washington's failure to rein in Israel during the Palestinian uprising known as the second intifada. Former President Barack Obama angered the Saudis with his support for the "Arab Spring" uprisings and Washington's secret nuclear talks with Iran.

President Donald Trump, who stood by Prince Mohammed after the Khashoggi killing, proposed a joint military response to Iran's attack on Saudi oil sites in 2019. The idea was shelved when Riyadh, fearing an escalating regional war, declined to take part, U.S. and Saudi officials said.

What is different this time is a breakdown at the highest level. When Mr. Biden spoke with King Salman last year, the White House said he viewed the 86-year-old monarch as his counterpart, not Prince Mohammed. The president designated Mr. Austin as the interlocutor for the crown prince, who also holds the title of defense minister.

The Saudis tried to accommodate the Biden administration by ending a three-year rift with Qatar before he took office and releasing several high-profile activists in the initial weeks of his administration. But the Saudis lost patience with what they viewed as too many U.S. demands.

When Mr. McGurk made an unannounced trip in February last year to lobby for the release of Prince Mohammed's uncle and cousin, who had been detained for allegedly plotting a coup, he was rebuffed, Saudi officials said. Ms. Watson of the NSC denied Mr. McGurk went to Saudi Arabia for this purpose.


Brett McGurk, White House Middle East coordinator, at the Capitol in 2019.PHOTO: ALEX WONG/GETTY IMAGES

In July, Prince Khalid bin Salman, who is Prince Mohammed's younger brother, met Messrs. Austin and Sullivan in Washington to discuss bolstering Saudi air defenses, U.S. and Saudi officials said.

Prince Khalid, the most senior Saudi official to visit the U.S. during the Biden administration, canceled a dinner for U.S. officials at the ambassador's Washington residence after being told he wouldn't get the amount of time with Mr. Blinken he had requested, a Saudi official said.

The next day, the two men talked briefly one-on-one, said the official and a person familiar with the visit, but the Saudis cut the trip short and left empty-handed. Ms. Watson said they "spent the better part of an hour one-on-one."

Favored nation

During meetings last year at the seaside palace, Prince Mohammed and King Salman huddled with advisers about what punitive actions Mr. Biden might be planning and how best to pre-empt them, senior Saudi officials said.

They discussed such options as bowing to White House pressure by releasing more political prisoners. Prince Mohammed instead chose a more aggressive path—threatening to solidify nascent alliances with Russia and China, the officials said.

In September, the Saudis called off Mr. Austin's visit, citing a scheduling conflict, and welcomed on the same night a senior Russian politician sanctioned by the U.S.

Two weeks later, Prince Mohammed, dressed in shorts, received Mr. Sullivan at the seaside palace and told him the Saudis would stick with a Russia-blessed oil production plan that didn't significantly raise output.

Since then, Mr. McGurk and Amos Hochstein, the State Department's energy envoy, have visited Saudi Arabia frequently for meetings with Prince Mohammed, Prince Khalid and their older half brother, energy minister Prince Abdulaziz bin Salman.

The White House resumed weapons sales for defensive purposes to Riyadh, agreeing to a $650 million sale of air-to-air missiles in November. That was followed by U.S. approval of a transfer from two other Persian Gulf countries of Patriot interceptors used to shoot down Houthi missiles. Last month, Saudi Arabia and the Houthis agreed to a rare truce in their seven-year-old conflict, following diplomacy by Mr. Biden's special envoy to Yemen.

Messrs. McGurk and Hochstein led a U.S. delegation to Riyadh days before Russia invaded Ukraine and again three weeks later. As oil surged toward $140 a barrel, Saudi Arabia took no action. The U.S. delegation got a chilly reception. The Saudis seemed to be leaning closer to the Kremlin over the Ukraine invasion, according to a person briefed by the Biden administration.

In March, weeks after rebuffing the White House invitation to speak with Mr. Biden, Prince Mohammed took a call from Russian President Vladimir Putin and affirmed Riyadh's commitment to maintaining its oil deal with Moscow.

Dion Nissenbaum and Benoit Faucon contributed to this article.

Write to Stephen Kalin at stephen.kalin@wsj.com, Summer Said at summer.said@wsj.com and David S. Cloud at david.cloud@wsj.com

BFW 04/20 08:38 China's Imports of Russian Crude Oil Declines Y/y; Rises M/m

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China Imported More Russian Crude Oil in March; Skipped Iran
2022-04-20 04:34:21.120 GMT

By Bloomberg News
(Bloomberg) -- China imported more crude from Russia in March while skipping Iranian purchases for a second month this year, according to customs data.
* NOTE: It's not uncommon for a shipment to clear Chinese customs in a particular month, but turn up in customs data about 2-3 months later
* Country breakdown for March vs Feb. :
** Russia 6.39m tons vs 5.41m tons
** Saudi Arabia 6.86m tons vs 6.65m tons
** Iraq 4.73m tons vs 3.11m tons
** Oman 3.07m tons vs 3.73m tons
** Malaysia 1.9m tons vs 861k tons
** UAE 3.22m tons vs 2.67m tons
** Angola 2.83m tons vs 3.29m tons
** U.S. 654k tons vs 414k tons
** Brazil 2.05m tons vs 1.6m tons
** Kuwait ~2.5m tons vs 3.12m tons

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SAF Group created transcript of excerpts from Halliburton Q1 call on April 19, 2022

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

Quotes from Chairman Jeff Little in introduction remarks. At 5:15mn mark *".. in addition, I expect an important change in our customer's behaviour and priorities will provide structural support to oil prices throughout this upcycle. I believe supply dynamics have fundamentally changed due to investor return requirements, public ESG commitments and regulatory pressure, which make it more difficult for operators to commit to long-cycle hydrocarbon investments and instead drive investment flexibility through short-cycle barrels. The pursuit of increased investment flexibility leads operators to prioritize short-cycle projects, development over exploration, tie-backs versus new infrastructure and shale rather than deep water.*

Clearly there are important exceptions where successful long term projects will be developed, but, painting with a broad brush, I believe most investments will be directed primarily toward short cycle activity in the near and medium term. The result of this focus is an industry wide increase in the level of investment flexibility for operators and the subsequent support to commodity prices.

With short cycle barrels, companies make investment decisions annually and can respond more quickly to commodity price signals. As a result, when investment stops, production, at a minimum, doesn't grow. And, in the case with unconventionals, it quickly declines. For example, when the pandemic drove the collapse of oil demand two years ago, US shale companies swiftly reduced activity and production declined 2 million barrels in 9 months.

In contrast, long cycle projects have two key elements: a long time horizon and large up-front capital investment. Once these projects begin, investment continues and production cannot quickly respond to price signals. This tends to result in market oversupply. The pivot to short-cycle barrels creates the opposite effect - a perpetual threat of undersupply that is supportive to commodity price."

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

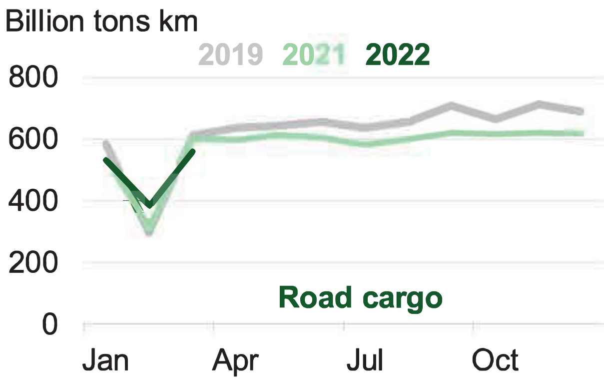
China oil markets monthly snapshot

	Indicator	Value	Change		Last update	Comment
Demand	**Traffic**		**M-o-M**	**Y-o-Y**		• Oil demand seems to have bottomed out as China strives to find a balance to boost the economy while sticking to its zero-Covid policy. Shanghai has encouraged factories to resume operations after weeks of lockdown. Diesel demand is set to benefit from increased industrial activities. Earlier restrictions on road freight have also eased as policy makers seek to streamline logistics. • However, the recovery could be slow, as jet fuel and gasoline consumption remain subdued. Flight cancellations at the 20 biggest airports remained elevated at 69% for the week ended April 19, showing no sign of improvement over the past month. Gasoline use edged slightly higher in the past week but could miss the May holiday boost as cities like Beijing advise caution for holiday travel. For more details, see the ***demand*** section from page 3.
	Road freight volume	558 bln tons-km	+46%	-7%	Mar 2022	
	Air passenger traffic	48 bln ppl-km	+6%	+35%	Feb 2022	
	Port cargo throughput	1.27 bln tons	+20%	-0%	Mar 2022	
	High frequency index		**W-o-W**	**M-o-M**		
	Road congestion index	95%	+2 ppt	-1 ppt	Apr 13, 2022	
	Subway traffic index	46%	-10 ppt	-12 ppt	Apr 17, 2022	
	Flight schedules		Decrease	Decrease	Apr 19-25, 2022	
Refining	**Refinery utilization**		**M-o-M**	**Y-o-Y**		• Both state and independent refineries have been operating below seasonal norms on lackluster demand. Refinery throughput in March dropped 2% year-on-year. Run rates from independent refiners stalled at 52% in mid-April, 22 percentage points lower than a year ago. • BloombergNEF expects refinery runs to remain sluggish in the coming weeks on high inventory levels and low margins. Diverging demand outlooks for different fuels will lead to a change in product slate, favoring diesel over jet fuel. For more details, see the *refining* section from page 7.
	Country-wide throughput	13.85 m b/d	-1%	-2%	Mar 2022	
	Independent refineries	52%	+1 ppt	-22 ppt	Apr 15, 2022	
	Refinery output (monthly)					
	Gasoline	13.72m tons	+5%	+11%	Mar 2022	
	Diesel	15.54m tons	+4%	+18%	Mar 2022	
	Jet kerosene	2.63m tons	-6%	-28%	Mar 2022	
Trade	**Crude imports**		**M-o-M**	**Y-o-Y**		• The shrinking fuels export quota for 2022 is facing a challenge as domestic supply is no longer an issue and refiners eye more exports. • State refiners have urged regulators to lift export quota as they need additional outlets for fuel surplus. Fuel exports in March increased by 38% month-on-month, with total exports in the first quarter having tapped nearly half of the quota. • Crude oil imports dropped 9% year-on-year in the first quarter of 2022, in line with the decline in refinery runs. For more details, see the ***trade*** section from page 10.
	National total	10.10m b/d	+6%	-14%	Mar 2022	
	Selected routes (BBG)	5.11m b/d	+8%	+9%	Mar 2022	
	Fuel exports					
	Quota usage*	47%	(*gasoline, diesel and kerosene only)		Jan-Mar 2022	
	Gasoline	1,160k tons	+14%	-26%	Mar 2022	
	Diesel	670k tons	+235%	-76%	Mar 2022	

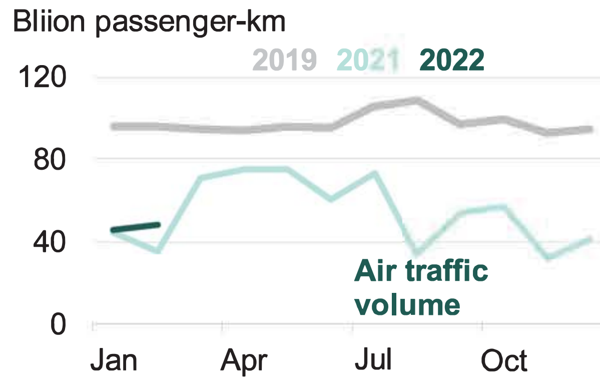
Monthly demand indicators

Road freight recovery hit by lockdowns and slower economy

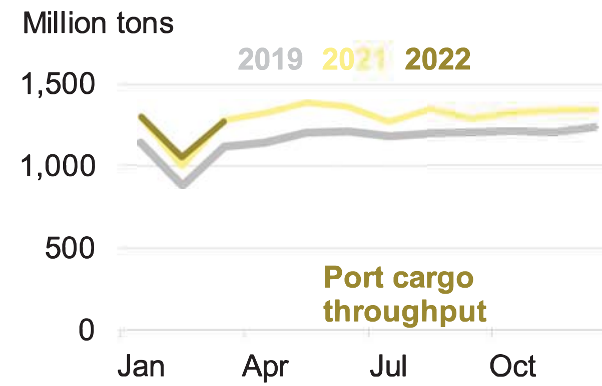
Road freight volume



Air traffic volume

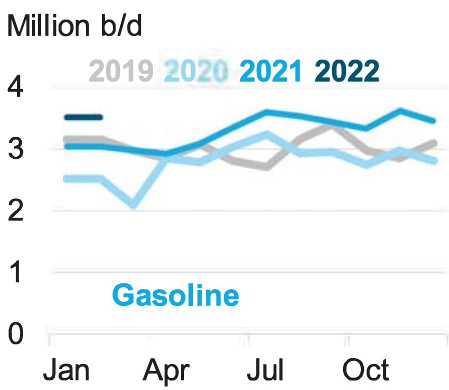


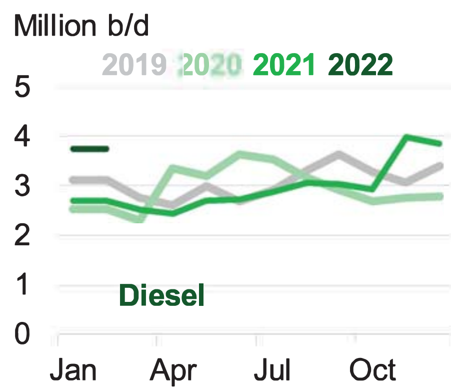
Port cargo volume

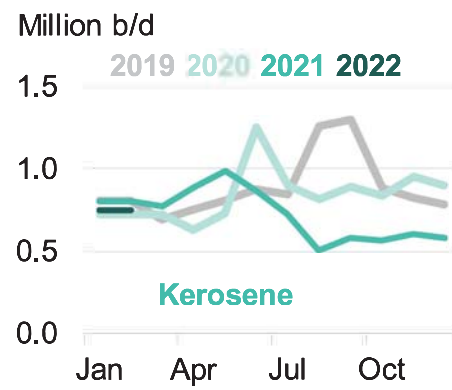


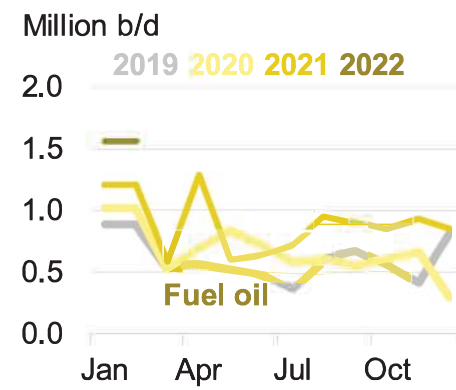
Source: National Bureau of Statistics of China

Apparent demand for transport fuels









Source: Bloomberg Terminal, BloombergNEF. Note: Apparent demand is calculated by deducting net exports from production (apparent demand = production + import – export). China's National Bureau of Statistics reports a combined value for January and February in each year. The charts represent this as an even split between the two months for illustrative purposes.

High frequency transport data

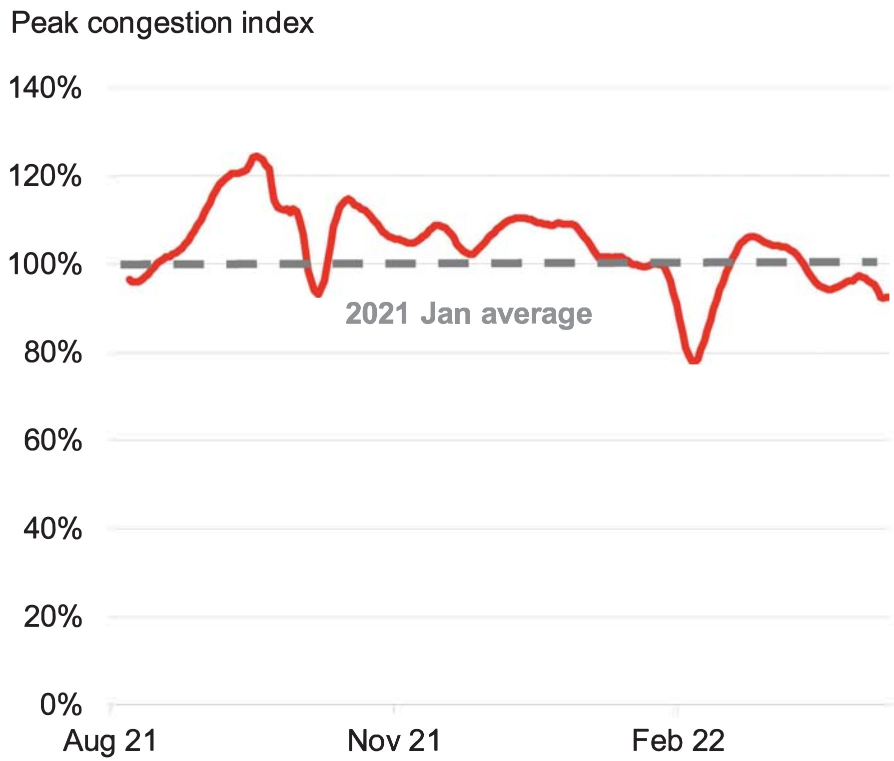
Road congestion sees a struggling recovery, while subway rides hit bottom as Shanghai remains in lockdown

Our weekly **road traffic report** is available on the BNEF Web or the Bloomberg Terminal

Our weekly **global aviation report** is available on the BNEF Web or the Bloomberg Terminal

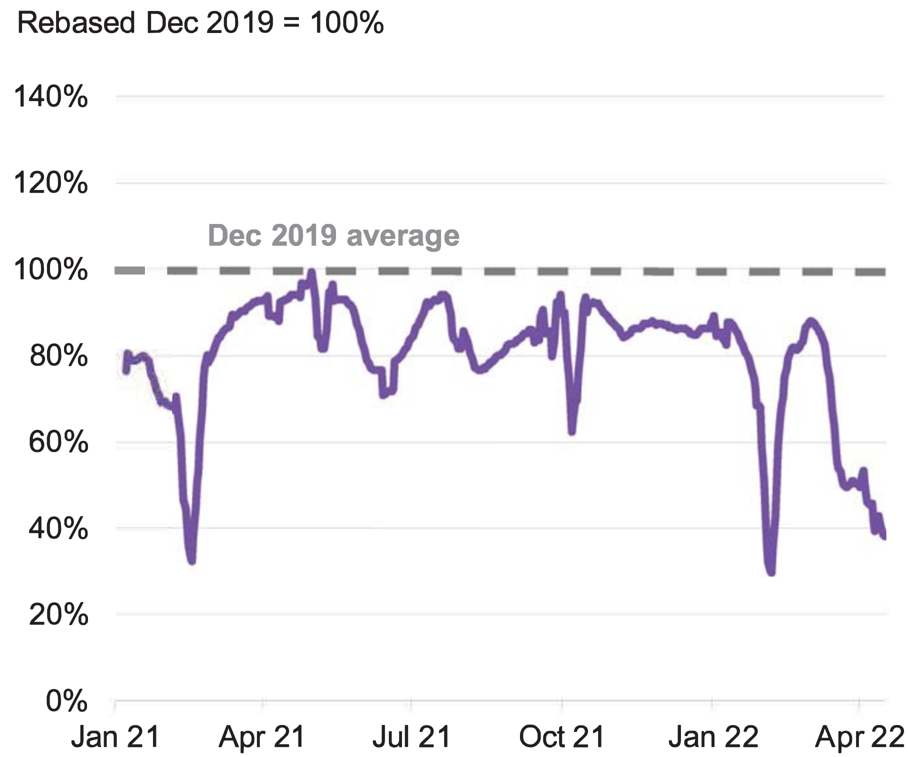
- BloombergNEF tracks road congestion data to gauge the impact of the Covid-19 outbreak on road fuel demand.
  - The China-15 congestion level is calculated by taking the weighted average of the congestion levels in the 15 cities and their vehicle registration numbers. The cities are top 15 cities with the highest number of vehicle registrations
- We track the daily subway rides of three major cities to measure overall usage of public transportation.

Road congestion



Source: Baidu, BloombergNEF. Note: Last update April 13.

Subway rides



Source: BloombergNEF, Beijing Subway, Shanghai Metro, Guangzhou Metro. Note: Last update April 17.

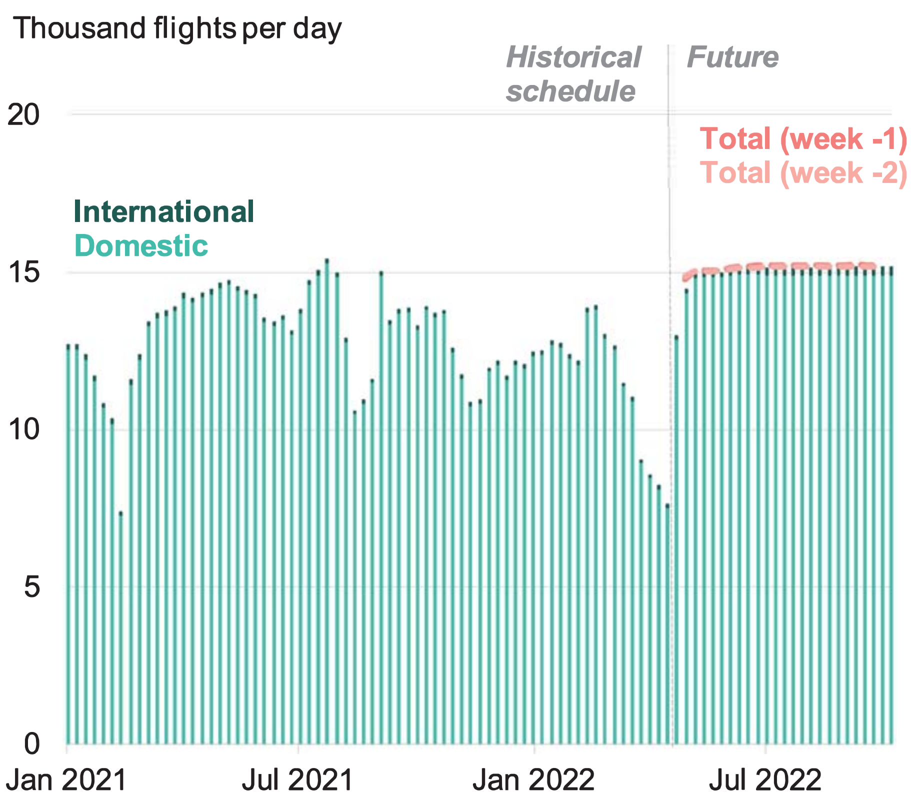
Flight schedules and jet fuel demand

Flight schedules dropped 45% from the 2022 peak in February

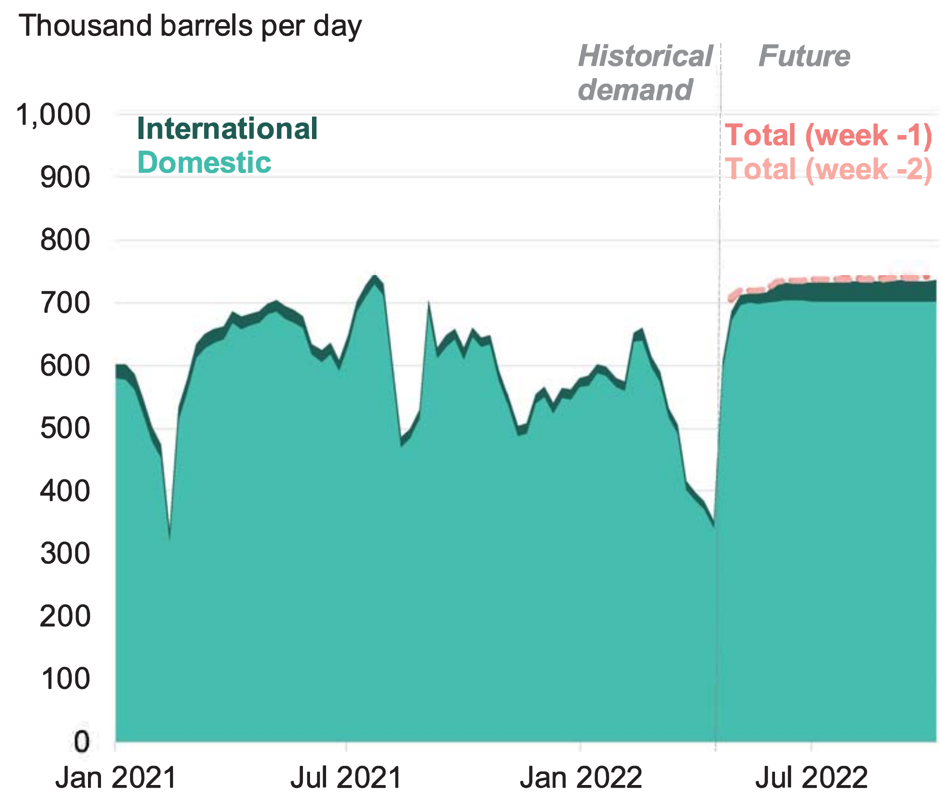
Our weekly **global aviation report** is available on the BNEF Web or the Bloomberg Terminal

- We track the flight schedules in major Chinese airports and estimate jet fuel consumption for the next six months based on data for planned routes and aircraft.
  - Schedules are based on the average daily scheduled passenger flight departures from Chinese airports
  - Oil consumption is based on the aircraft type, distance between origin and destination and the average volume of fuel consumed by each aircraft type for a given distance.
- **NEW:** Bloomberg Terminal users can use our new **DATA FLY <GO>** tool to track jet fuel demand and flight schedules.

Chinese airport flight departure schedules



Implied jet fuel demand



Source: BloombergNEF, Bloomberg Terminal FLY <GO>. Note: Last update April 13. Excludes cargo flights. The future flight schedule is subject to change. Terminal users can check DATA FLY <GO> for more details.

Oil price outlook – Snapshot: April 18, 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 higher over the past week as middle distillate cracks strengthened.
Fundamentals	**Crude stocks**	↓	• In the week ending April 8, land crude-oil storage levels in BloombergNEF's tracked regions (U.S., ARA, Japan) rose by 1.9% to 540.6 million barrels (m bbl). The stockpile **deficit** against the five-year average (2015-19) **narrowed from 81.5m bbl to 76.1m bbl**. • Including global floating crude stockpiles from the same week, total crude oil inventories increased by 3.7% to 637.5m bbl, with the stockpile **deficit narrowing from 52m bbl to 29.3m bbl.**
Fundamentals	**Product stocks**	↔	• In the week ending April 8, gasoline and light distillate stockpiles in BNEF's tracked regions (U.S., ARA, Singapore, Japan and Fujairah) were down 1.1% week-on-week to 270.2m bbl, with the stockpile **deficit** against the three-year average (2017-19) **widening from 5.4m bbl to 7.3m bbl**. Gasoil and middle distillate stockpiles in BNEF's tracked regions fell by 2.1% to 138.6m bbl, with the stockpile **deficit** against the three-year average **widening from 38.4m bbl to 39m bbl**. • Total oil product stockpiles in tracked regions decreased by 0.2% to 872.5m bbl, with the stockpile **deficit** against the three-year seasonal average **narrowing from 75.3m bbl to 74.7m bbl**. Altogether, crude and product stockpiles grew by 1.4% to 1,510m bbl, with the stockpile **deficit narrowing from 127.3m bbl to 104m bbl.**
Fundamentals	**Demand indicators**	↑	• In the week to April 12, global jet fuel demand from commercial passenger flights rose by 19,400 barrels per day (or +0.4%) week-on-week to 4.67 million barrels per day. Jet fuel consumption by international passenger departures was up by 49,900 barrels per day (or +2.0%) week-on-week, while consumption by domestic passenger departures fell by 30,500 barrels per day (or -1.5%). • Global mobility indices were higher over the past week. Apple's global driving activity index increased by 3% in the week to April 12, driven by growth in Europe (+7.8%), the Americas (+2.7%) and Asia Pacific ex-China (+1.4%). Google's global mobility index was up 1.4% in the week to April 13, reflecting growth in Europe (+4%), Asia Pacific ex-China (+1.5%) and the Americas (+1.2%). Road congestion in China's key 15 cities increased by 1.8 percentage points to 95% of January 2021 levels in the week to April 13, according to BNEF's calculation based on Baidu data. Apple's Mobility Trends Reports have been discontinued from April 14, 2022. • Daily average Covid-19 cases fell by 22% to 847,300 in the week to April 16. The Asia Pacific number fell by 24% to 359,300 daily cases, with China surging by 54% to 28,200 daily cases. Europe was down 25% to 404,700 daily cases, while the Americas dropped by 10% to 70,600 daily cases. Weather forecasts showed that temperatures in key Asian cities are increasing. European cities remained warm.
Financial	**Macro indicators**	↓	• The dollar index averaged at 100.2 over the past week, the highest level since May 2020, and was 0.7% higher than the week before.
Financial	**Hedge fund positioning**	↓	• In the week to April 12, Managed Money net positioning WTI crude decreased by 4.3m bbl (or 1.6%) week-on-week to 262.4m bbl, and was at the 34th percentile of the past five years. Data from the ICE exchange is delayed.
Financial	**Options chains and volatility**	↑	• Brent and WTI 1M volatility skews rose over the past week.
Outlook	**Weekly call**	↔	• BNEF is neutral on oil prices for the week ahead, with Brent Jun-22 trading at $112.88/bbl and WTI Jun-22 trading at $107.25/bbl at the time of writing. OPEC+ compliance rate to output cut deal swelled to 159% in March 2022, as the group marked its first monthly production decrease since February 2021. Libya's oil output in April is likely to be hit again, as its biggest oil field was shut down on Monday following demonstrations against the country's interim Prime Minister Abdul Hamid Dbeibah. These demonstrations could be the biggest threat to the country's oil production since the ceasefire agreement in October 2020, which enabled oil production to rebound from under 100,000 barrels per day to over 1 million barrels per day. Meanwhile, key agencies revised their oil demand growth forecasts for 2022 down to 2.65m b/d from 3.13m b/d, due to lower economic growth expectations and the tightening city-level mobility restrictions in China. For 2022, however, the Russian oil supply shortfall is still expected to outweigh demand reduction. The oil market could be in for another volatile week as the European Union is planning for a phased ban on Russian oil imports, according to a New York Times report.

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
April 18	↑	↓	↔	↑	↓	↑	↔	Brent-Jun: 112.88 WTI-**Jun**: 107.25	
April 11	↑	↓	↔	↓	↓	↓	↓	Brent-Jun: 98.84 WTI-May: 94.14	
April 4	↑	↑	↔	↑	↓	↓	↑	Brent-Jun: 104.71 WTI-May: 99.73	
March 28	↑	↔	↔	↔	↑	↓	↔	Brent-Jun: 109.53 WTI-May: 105.58	
March 21	↔	↔	↔	↓	↓	↔	↔	Brent-May: 112.35 WTI-May: 107.56	
March 14	↑	↑	↑	↔	↓	↓	↔	Brent-May: 108.66 WTI-Apr: 104.77	
February 28	↔	↔	↔	↑	↔	↔	↔	Brent-May: 99.00 WTI-Apr: 96.38	
February 21	↔	↔	↑	↑	↔	↔	↑	Brent-May: 91.50 WTI-Apr: 90.17	
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	

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

Fundamentals Financial

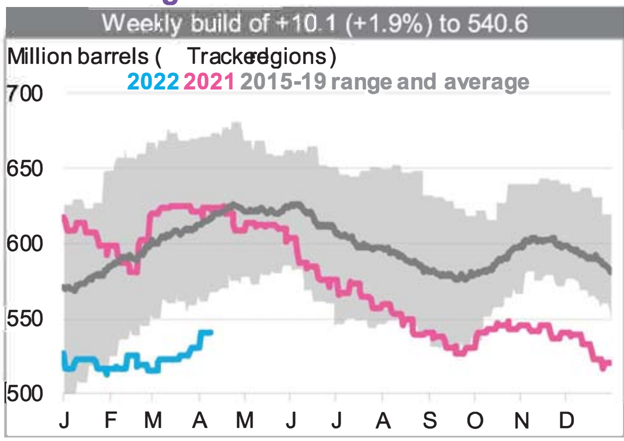
Crude stocks: Land

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 has been excluded since January 10.

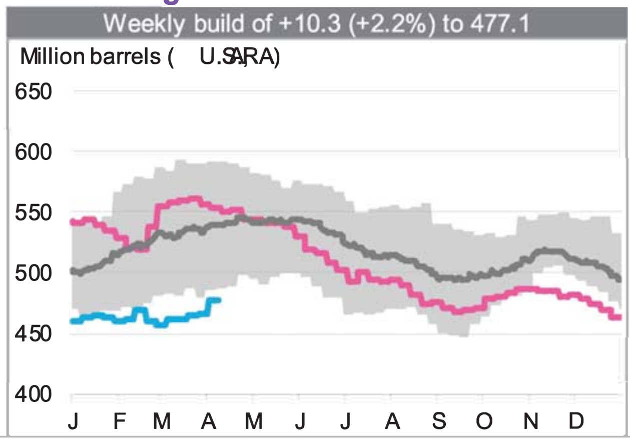
Bearish: Deficit narrowed from 81.5m bbl to 76.1m bbl against seasonal average

- 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.

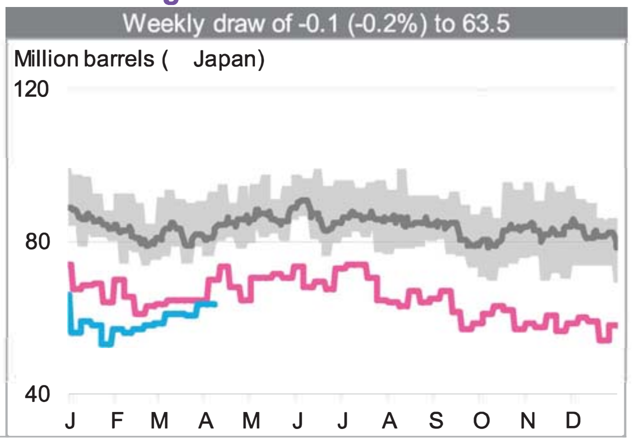
Land storage: Total



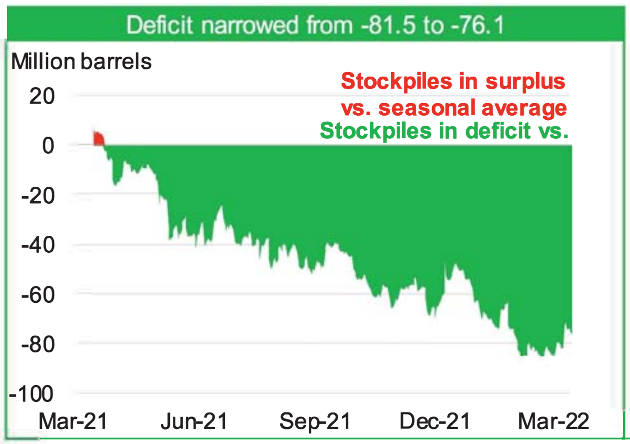
Land storage: West of Suez

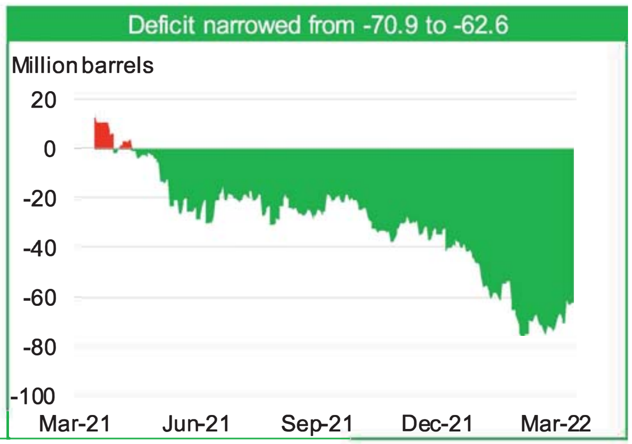


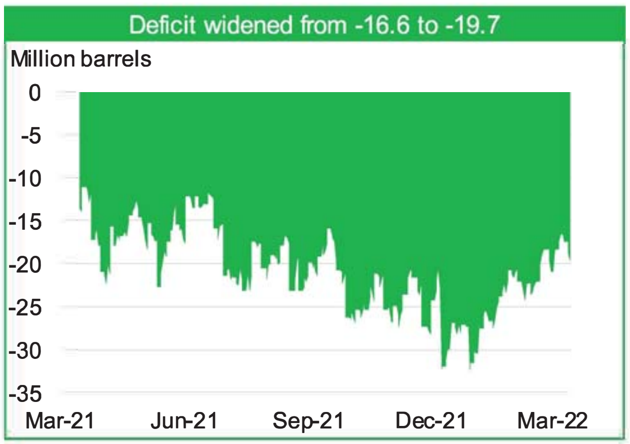
Land storage: East of Suez



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







Source: BloombergNEF, U.S. EIA, Genscape, PAJ, SCIG. Note: As of the ***week ending April 8.***

BloombergNEF

Crude stocks: Floating

Bullish: Surplus narrowed over the recent 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 are available in the table to the right.

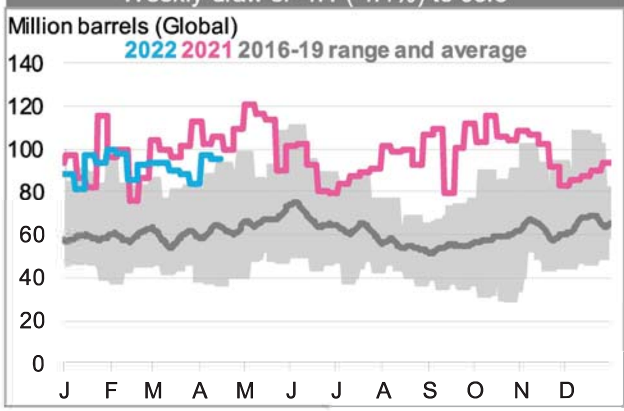
Vortexa's revision to global floating crude inventories

Million barrels	Previous report	Current report	Vortexa's revision
Inventories in week of Apr. 8	90.4	**96.9***	+6.5
Inventories in week of Apr. 1	86.2	84.1	-2.1

*Note: *Figure used to aggregate total oil inventories on page 12.*

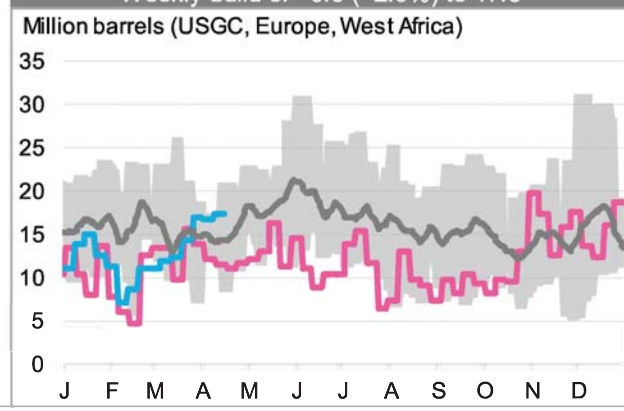
Floating storage: Total

Weekly draw of -1.1 (-1.1%) to 95.8



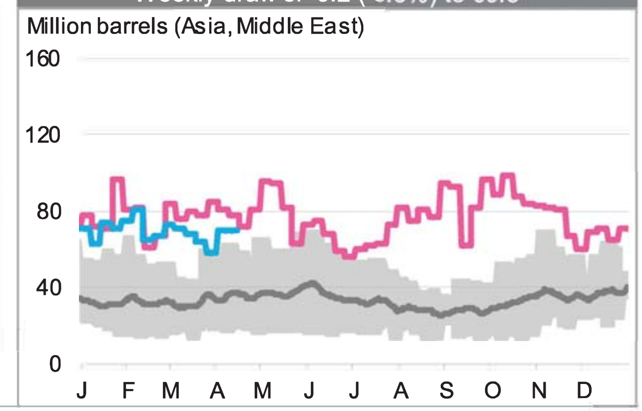
Floating storage: West of Suez

Weekly build of +0.5 (+2.9%) to 17.3



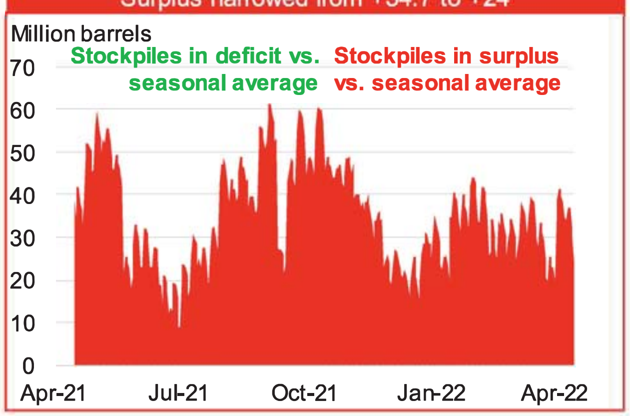
Floating storage: East of Suez

Weekly draw of -0.2 (-0.3%) to 69.5

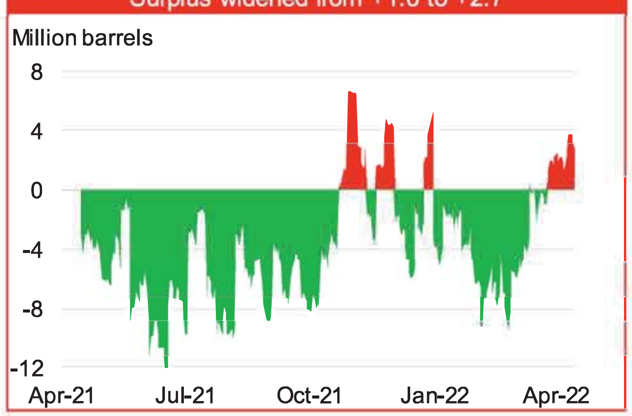


Charts below subtract current stockpiles by the 2016-19 (four-year) seasonal average

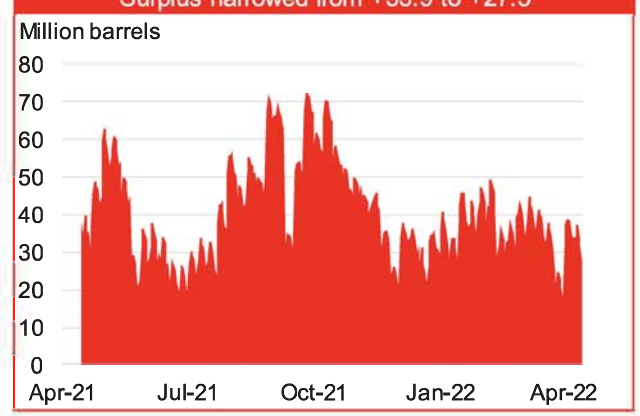
Surplus narrowed from +34.7 to +24



Surplus widened from +1.6 to +2.7



Surplus narrowed from +33.9 to +27.5



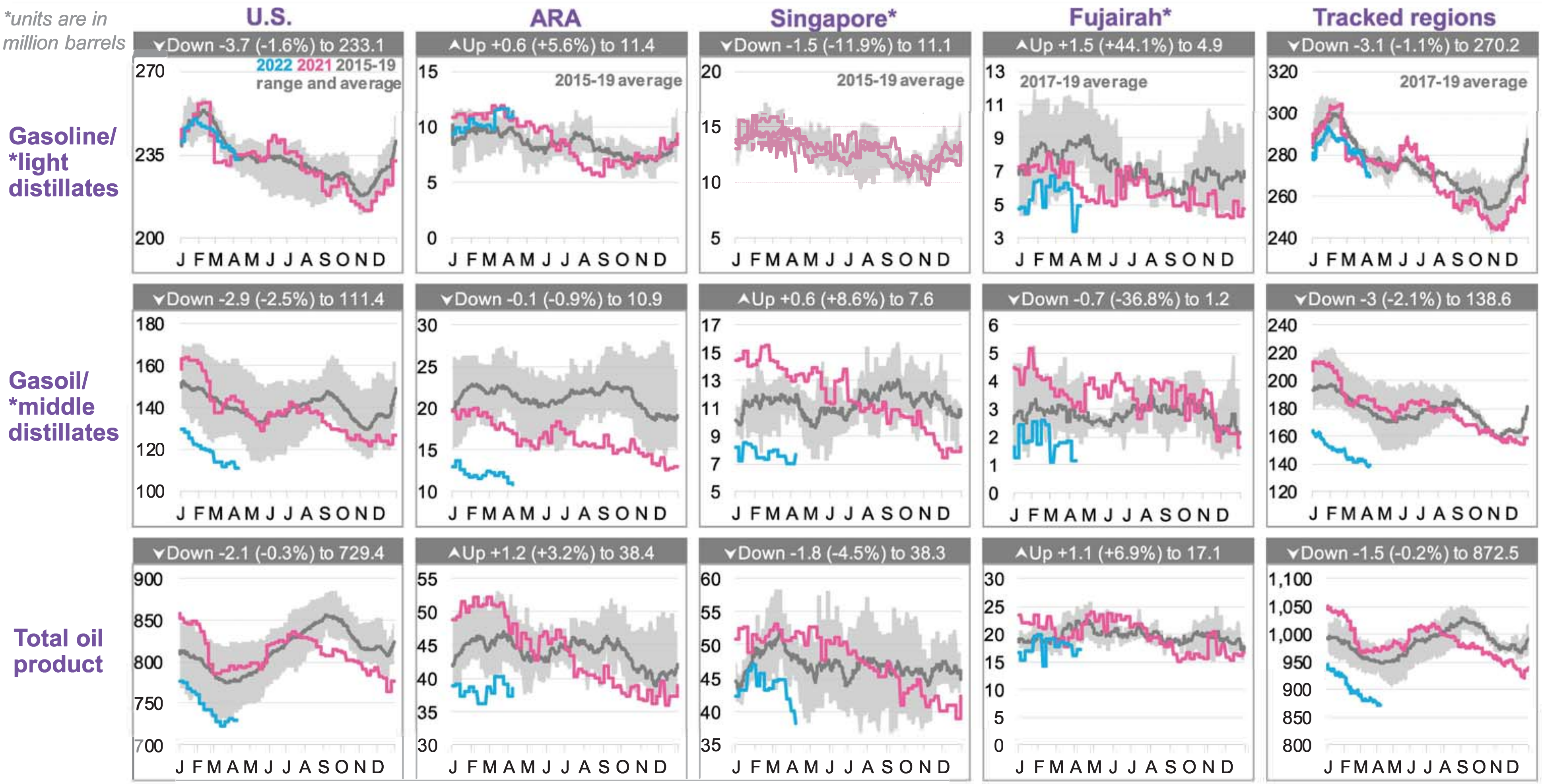
*Source: BloombergNEF, Vortexa. Note: As of the **week ending Apr 15**. ***Raw data from Vortexa are revised frequently, so the data in this report might change week-to-week.***

Fundamentals | Financial

Product stocks: Current vs. seasonal average

Neutral: Oil product stockpiles in tracked regions fell by 0.2% 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 April 8.***

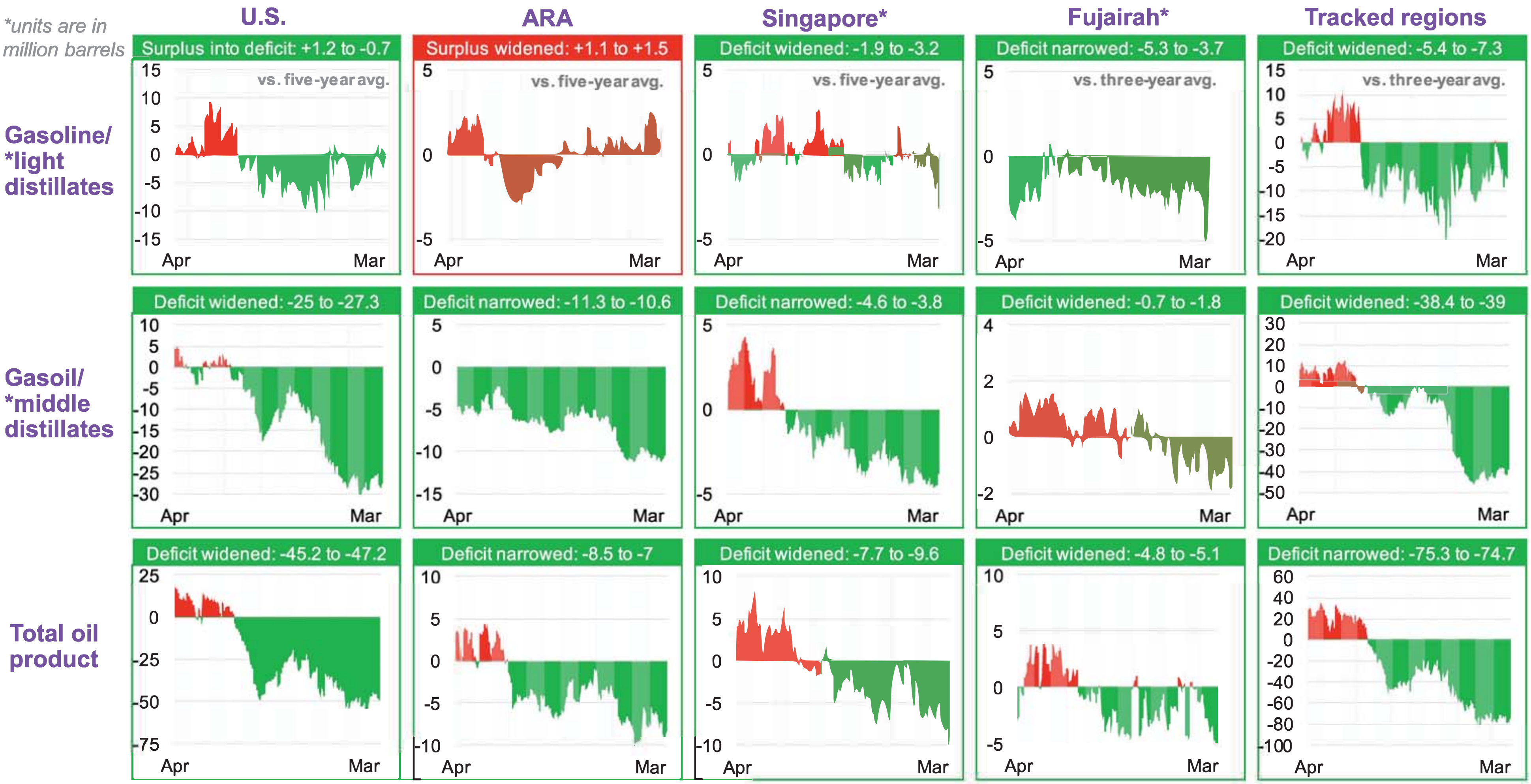
BloombergNEF

Fundamentals Financial

Product stocks: Current vs. seasonal average

Neutral: Oil product stockpile deficit against the seasonal average narrowed from 75.3m bbl to 74.7m 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 April 8.***

Fundamentals | Financial

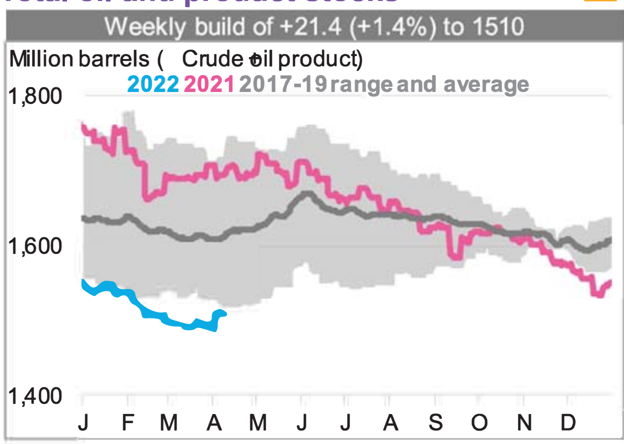
Aggregated oil stockpiles

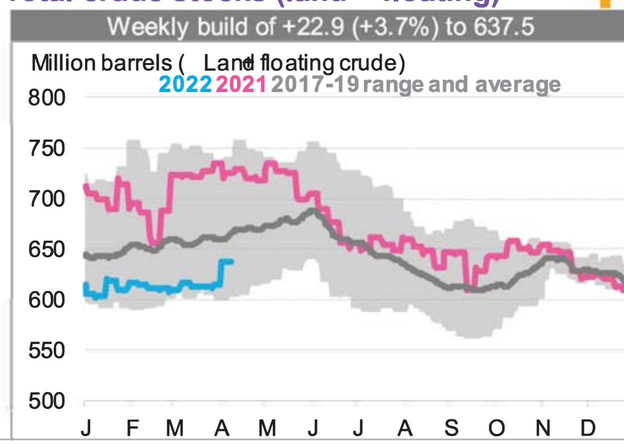
Note: We will continue to compare current inventory levels with the three-year (2017-19) seasonal average for the time being. Crude inventory data for Shandong teapots were excluded since January 10.

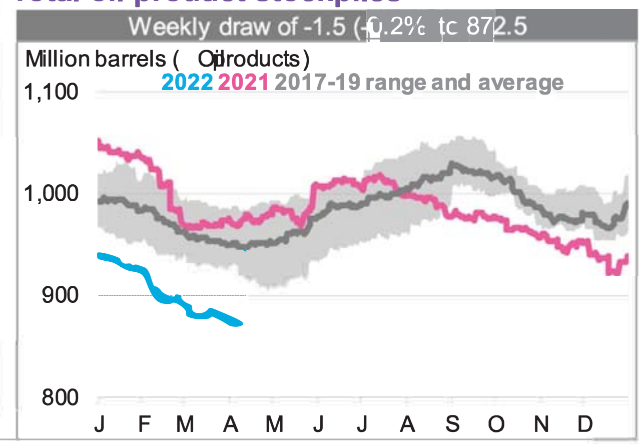
Neutral: Stockpiles deficit narrowed from 127.3m bbl to 104m bbl

- 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 further info.

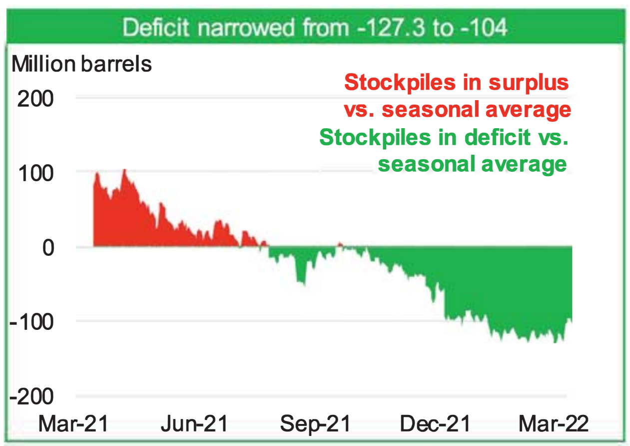
Total oil and product stocks = Total crude stocks (land + floating) + Total oil product stockpiles

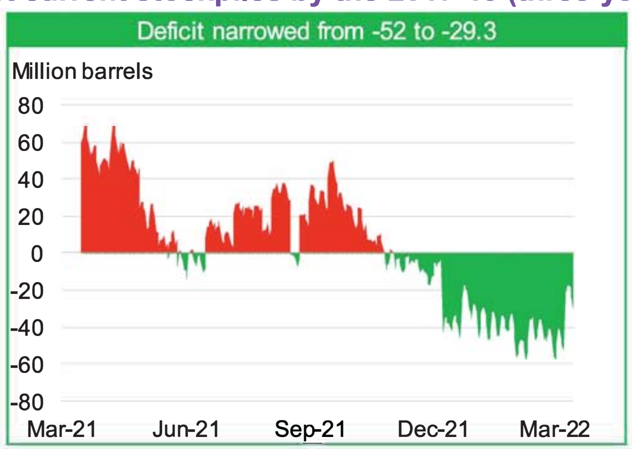


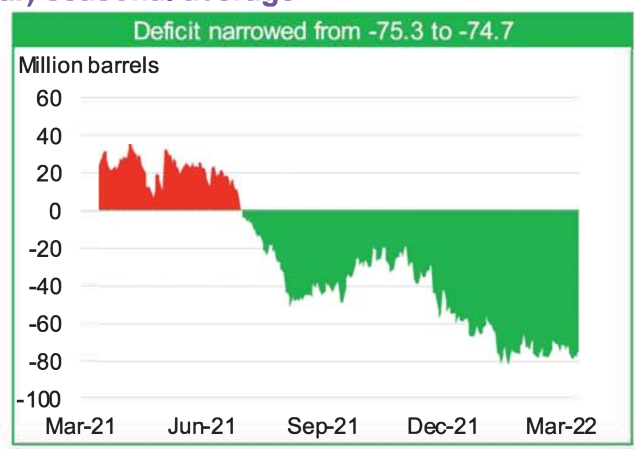




Charts below subtract current stockpiles by the 2017-19 (three-year) seasonal average







*Source: BloombergNEF, U.S. EIA, PJK, IE Singapore, FEDCom/Platts, PAJ ,Vortexa, Genscape, SCIG. As of the **week ending April 8.***

BloombergNEF

Apr 21, 2022 11:23:21

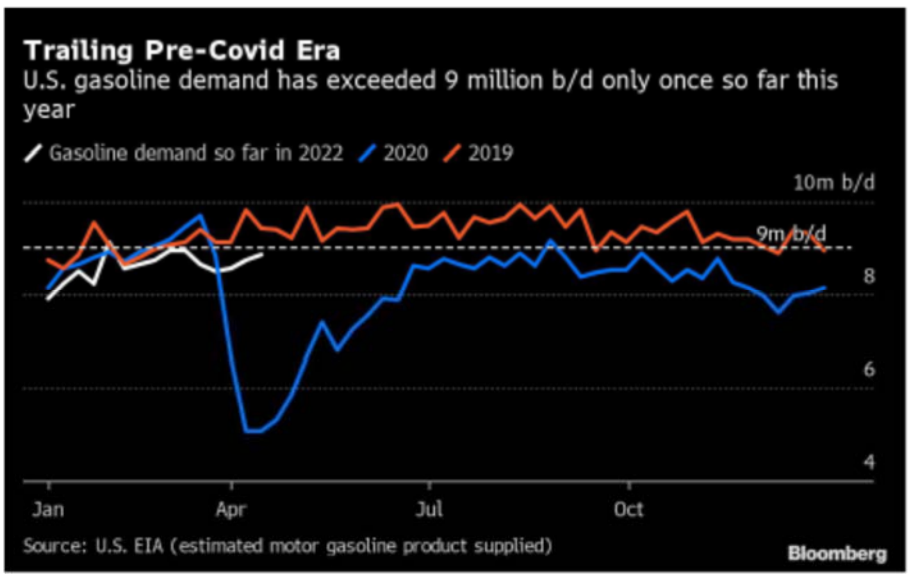
OIL DEMAND MONITOR: U.S. Gasoline Trails 2019; China Flying Hurt

- European flights on upward path; China seat capacity wanes
- Zero road congestion in Rome on Monday, due to Easter

By Stephen Voss

(Bloomberg) -- U.S. gasoline demand edged up for a third week yet remains below pre-pandemic levels, as stubbornly high retail prices erode consumer demand. China's lingering coronavirus infections continue to limit travel and aviation fuel needs.

Gasoline consumption in the U.S. is hovering below 9 million barrels a day currently, a threshold it exceeded in almost every week of 2019 from March through November, Energy Information Administration estimates show. Food and fuel price inflation means some consumers are already cutting back on spending though this impact is typically faster to emerge in developing nations.



Sales of India's most popular vehicle fuel -- diesel -- declined by 16% in the first half of April, from the month-earlier period, as a sharp increase in pump prices ended hoarding, according to refinery officials with knowledge of the matter. Gasoline demand in the subcontinent also weakened, month-on-month.

High-frequency travel data monitored by Bloomberg was mixed, with Easter holidays taking some regular commuters off the roads.

Out of 13 world cities regularly tracked for congestion levels at 8 a.m. local time on Monday morning in this monitor, only one of them, Jakarta, exceeded the 2019 average for that time of the week, according to TomTom NV data. European cities had negligible or zero congestion on Monday.

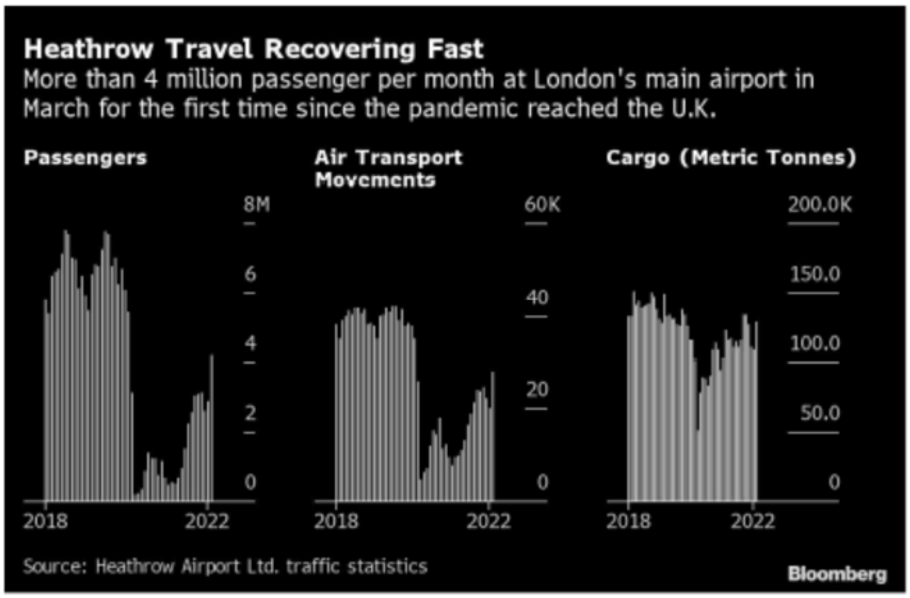
Easter Effect

A separate set of data also showed that U.K. road use was low on Monday, as usually happens at the end of a four-day holiday weekend. Car travel across the country was 15% lower than a pre-pandemic baseline for that day of the week, after being only about 10% lower in the previous few Mondays, according to daily data from the U.K. Department for Transportation. The impact on trucking was more severe, with activity down by 60% on Monday, compared with an average of 8% above the baseline for the first 14 days of April.

Service station sales data from another U.K. government department, meanwhile, show motorists continue to buy about 7% less fuel than they did before the pandemic.

Air travel numbers continue to improve, albeit slowly. European flight numbers are grinding higher most weeks, with the region now 17% below equivalent 2019 levels, compared with a deficit of 37% in late January when daily infection levels were peaking in the continent.

At London's Heathrow airport, the number of passengers jumped almost 50% last month and exceeded 4 million for the first time since February 2020.



A more global view from FlightRadar24 shows that the latest seven-day average of all commercial flights is about 21% below the equivalent level for 2019. Once one adds other kinds of flights --military, government, private jets and helicopters -- the deficit versus 2019 is reduced to just 0.4%, but that broader category is a much more volatile dataset.

Commercial airlines in the U.S. have expressed optimism recently, with American Airlines Group Inc. saying earlier Thursday that "the demand environment is very strong, and as a result, we expect to be profitable in the second quarter based on our current fuel price assumptions."

The laggard now is North East Asia, where Chinese lockdown measures have decimated international travel and hurt domestic routes as well. In contrast to a year ago, when China was the only major market that had more seats allocated than pre-Covid times, now the North East Asia region has a seat capacity 42% lower than the equivalent week of 2019, according to estimates by DAG Aviation.

Central-West Africa, South Asia, Central America and Upper South America are the only places out of 17 broad geographical regions that have seat capacity higher than 2019 levels, the DAG data shows. North America and Western Europe are down by 10% and 17%, respectively.

Refineries:

Another key gauge of the health of the oil market is how much crude U.S. refiners are processing, and that's recently been hovering very close to 2019 levels, either a few percentage points above or below.

Furthermore, overall U.S. refinery capacity -- the portion of refining equipment in active use -- was 91% in the week ended Friday and has been consistently above pre-pandemic levels now for nine weeks.

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.	-2.6	+67	-5.9	+2.7	w	April 15	8.87m b/d	EIA
Distillates	U.S.	-0.8	+22	+14	-15	w	April 15	3.82m b/d	EIA
Jet fuel	U.S.	+30	+149	-8.9	-12	w	April 15	1.53 b/d	EIA
Total oil products	U.S.	+1.4	+35	-4.3	-9.9	w	April 15	19.0m b/d	EIA
All vehicles miles traveled	U.S.			-1.7	-1.9	w	April 3	15.3b miles	DoT
Passenger car VMT	U.S.			-4.6		w	April 3	n/a	DoT
Truck VMT	U.S.			+7.8		w	April 3	n/a	DoT
All motor vehicle use index	U.K.	-13	+98	-19	-16	w	April 18	81	DfT
Car use	U.K.	-3.4	+124	-15	-6.6	w	April 18	85	DfT
Heavy goods vehicle use	U.K.	-63	-39	-60	-63	w	April 18	40	DfT
Gasoline (petrol) avg sales per filling station	U.K.	+24		-6.7	-1.5	w	April 10	6,801 liters/d	BEIS
Diesel avg sales per station	U.K.	+18		-6.9	-0.5	w	April 10	9,732 liters/d	BEIS

Gasoline	India	+12	+234	+20	-9.7	2/m	April 1-15	1.12m tons	Bberg
Diesel	India	+7.4	+170	+4.8	-16	2/m	April 1-15	2.98m tons	Bberg
LPG	India	-0.7	-4	+17	-21	2/m	April 1-15	1.03m tons	Bberg
Jet fuel	India	+9.8	+974	-26	-1.7	2/m	April 1-15	231k tons	Bberg
Total Products	India	+4.2	+22	-0.8	+10	m	March	19.4m tons	PPAC
Toll roads volume	France	+27		-2.2		m	March	n/a	Atlantia
Toll roads volume	Italy	+39		-3.7		m	March	n/a	Atlantia
Toll roads volume	Spain	+25		-11		m	March	n/a	Atlantia
Toll roads volume	Brazil	+19		+3.6		m	March	n/a	Atlantia
Toll roads volume	Chile	+30		+11		m	March	n/a	Atlantia
Toll roads volume	Mexico	+9.4		+13		m	March	n/a	Atlantia
Gasoline	Spain	+9.4			+5.4	m	March	448k m3	Exolum
Diesel (and heating oil)	Spain	-6.5			-3.2	m	March	2210k m3	Exolum
Jet fuel	Spain	+191			+27	m	March	390k m3	Exolum
Road fuel sales	France	+2.7			+11	m	March	4.144m m3	UFIP
Road fuel sales	France	+2.7			+11	m	March	4.144m m3	UFIP
Jet fuel	France	+93		-26	+23	m	March	507k m3	UFIP
Gasoline	France	+14				m	March	n/a	UFIP
Road diesel	France	-0.7				m	March	n/a	UFIP
All petroleum products	France	+6.7		+0.8	+11	m	March	4.771m tons	UFIP
All vehicles traffic	Italy	+30			+1	m	March	n/a	Anas
Heavy vehicle traffic	Italy	+1.6			+8	m	March	n/a	Anas
Gasoline	Portugal	+62	+61	+27	+46	m	March	105k tons	ENSE
Diesel	Portugal	+39	+44	+26	+36	m	March	504k tons	ENSE
Jet fuel	Portugal	+275	+20	-21	+16	m	March	87k tons	ENSE
Total fuel sales	Italy	+11		-2.5	+6	m	February	3.9m tons	Ministry
Gasoline	Italy	+18		+3.7	+7.4	m	February	539k tons	Ministry
Diesel /gasoil	Italy	+9.3		+1.5	+12	m	February	2.06m tons	Ministry
Jet fuel	Italy	+130		-45	-8.7	m	February	179k tons	Ministry

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 Feb. 2022 vs Feb. 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 publishing toll road data on a monthly basis, rather than the weekly format seen in 2021, and DoT has also switched to monthly data after the week ended April 3.

City congestion:

Measure	Location	vs avg 2019	% chg m/m	April 18	Apr. 11	Apr. 4	Mar. 28	Mar. 21	Mar. 14	Mar. 7	Feb. 28	Feb. 21
		(April 18)		Congestion minutes added to 1 hr trip at 8am* local time								
Congestion	Tokyo	-18	+292	31	28	31	34	8	36	35	34	35
Congestion	Taipei	-31	-27	25	26	3	50	34	31	49	3	44
Congestion	Jakarta	+2	+32	40	33	31	37	30	29	23	zero	12
Congestion	Mumbai	-53	+6	23	25	23	22	22	22	20	18	19
Congestion	New York	-58	-53	13	28	32	30	28	29	29	31	5
Congestion	Los Angeles	-29	-13	25	22	27	19	29	29	31	32	6
Congestion	London	-97	-97	1	18	23	36	40	44	42	43	47
Congestion	Rome	-100	-100	zero	42	37	33	35	43	37	35	35
Congestion	Madrid	-86	-86	5	4	23	23	35	34	43	8	24
Congestion	Paris	-99	-98	1	38	39	37	39	46	43	24	29
Congestion	Berlin	-98	-98	1	19	30	26	26	25	11	28	29
Congestion	Mexico City	-51	n/a	24	20	38	40	zero	39	37	35	32
Congestion	Sao Paulo	-31	-9	30	34	33	32	33	35	37	8	33

Source: TomTom. Click here for a PDF with more information on sources, methods.
* 9am statistics are used for Mumbai, rather than 8am. All other cities, including Sao Paulo, use 8am.
NOTE: m/m comparisons are April 18 vs March 21. Many European cities had Easter vacations on April 18, reducing traffic that day. TomTom has been unable to provide Chinese data since April 2021. Taipei and Jakarta were added to the table in December 2021.

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.	+83	+2032	-24	+6.6	+5.1	d	April 19	1.98m	TSA
Commercial flights	Worldwide	+16	+216	-21	-2.9	+2.5	d	April 20	88,703	FlightRadar24
All flights	Worldwide	+9.1	+174	-0.4	-0.7	+5.8	d	April 20	187,298	FlightRadar24
Air traffic (flights)	Europe			-17	+24	-0.2	d	April 20	25,249	Eurocontrol
Seat capacity	Worldwide	+40	+176	-22	+6.1	+0.6	w	April 18-24	85.7m	OAG
Seat capacity	North America			-10		-0.3	w	April 18-24	n/a	OAG
Seat capacity	North East Asia			-42		-0.5	w	April 18-24	n/a	OAG
Seat capacity	South East Asia			-41		+0.3	w	April 18-24	n/a	OAG
Seat capacity	South Asia			+9.3		+1.6	w	April 18-24	n/a	OAG
Seat capacity	Western Europe			-17		+2.3	w	April 18-24	n/a	OAG
Heathrow airport passengers	U.K.	+675	+35	-36	+47		m	March 2020	4.197m	Heathrow

NOTE: Comparisons versus 2019 are a better measure of a return to normal for most nations, rather than y /y comparisons.
FlightRadar24 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.	+6.4%	-2.2%	-1%	April 15	15.7m b/d	EIA
Apparent Oil Demand	China	+2.4%		-2.8	March 2022	13.33m b/d	NBS
Utilization	U.S.	+6	+3.3	-0.1	April 15	91 %	EIA
Utilization	U.S. Gulf	+6.4	+5.4	+0.4	April 15	94.7 %	EIA
Utilization	U.S. East	+16	+3.5	+4	April 15	84.6 %	EIA
Utilization	U.S. Midwest	+6.3	-2.9	+0.8	April 15	89.5 %	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. SCI99 data on Chinese refinery run rates was discontinued in late 2021.
NOTE: The latest NBS m/m change shows March versus the average for January and February combined.

https://www.trucking.org/news-insights/ata-truck-tonnage-index-jumped-24-march

ATA Truck Tonnage Index Jumped 2.4% in March

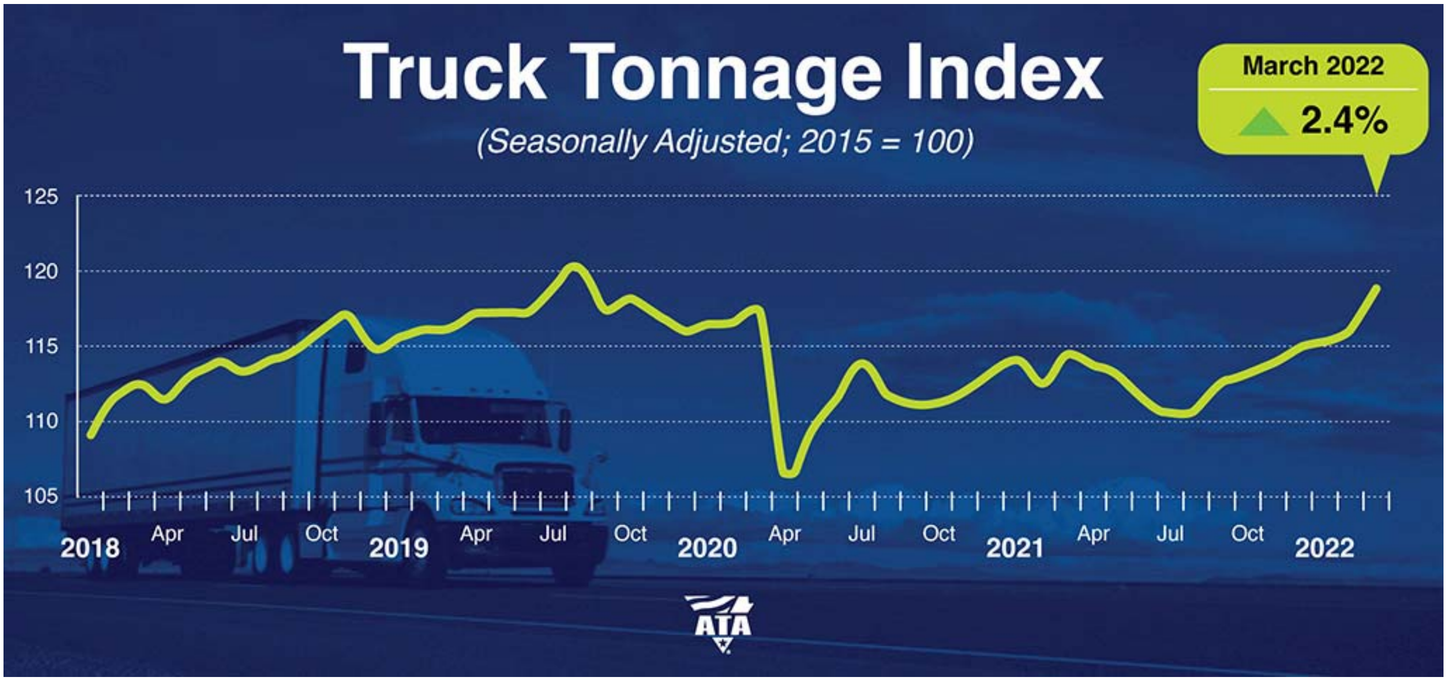
APR19

Media Contact: Sean McNally

Index 3.8% Above March 2021

Arlington, Virginia — American Trucking Associations' advanced seasonally adjusted (SA) For-Hire Truck Tonnage Index increased 2.4% in March after rising 0.7% in February. In March, the index equaled 118.8 (2015=100) versus 116.1 in February.

Image



"It is important to note that ATA's for-hire tonnage data is dominated by contract freight with minimal amounts of spot market loads," said **ATA Chief Economist Bob Costello**. "And clearly contract freight was solid in March, witnessing the largest sequential gain since May 2020. March was also the eighth straight month-to-month improvement, with a total increase of 7.4% over that period.

"During the first quarter, the index rose 2.4% from the final quarter of 2021 and increased 2.6% from a year earlier. While there might be some recent softness in the spot market, for-hire contract freight tonnage remains solid and is only limited by lack of capacity—both drivers and equipment—at contract fleets."

February's increase was revised higher from our March 22 press release.

Compared with March 2021, the SA index increased 3.8%, which was the seventh straight year-over-year gain and the largest over that period. In February, the index was up 3.2% from a year earlier. In 2022, year-to-date and compared with same period in 2021, tonnage was up 2.6%.

The not seasonally adjusted index, which represents the change in tonnage actually hauled by fleets before any seasonal adjustment, equaled 123.9 in March, 17.9% above the February level (105.1). In calculating the index, 100 represents 2015. ATA's For-Hire Truck Tonnage Index is dominated by contract freight as opposed to spot market freight.

Trucking serves as a barometer of the U.S. economy, representing 72.5% of tonnage carried by all modes of domestic freight transportation, including manufactured and retail goods. Trucks hauled 10.23 billion tons of freight in 2020. Motor carriers collected $732.3 billion, or 80.4% of total revenue earned by all transport modes.

ATA calculates the tonnage index based on surveys from its membership and has been doing so since the 1970s. This is a preliminary figure and subject to change in the final report issued around the 5th day of each month. The report includes month-to-month and year-over-year results, relevant economic comparisons, and key financial indicators.

Chief Executive Officer's review
continued

Rolling out our revised HSEC&HR governance framework

Through our HSEC&HR governance, policies, standards, procedures, and guidelines, we establish and implement ethical and consistent business practices and standards. These support our commitment to be a responsible and ethical operator and our aspiration to maintain our reputation for doing things the right way. We regularly review our framework to ensure it is meeting leading practice and stakeholder expectations.

During 2021, we rolled out Group-wide new and revised Group policies, and their supporting governance documents such as standards, procedures, and guidelines. We are tracking implementation progress through a gap analysis for each industrial asset and targeting substantial implementation by the end of 2023.

Implementing the new Global Tailings Standard

We rolled out our Tailings Management Framework, which sets out our approach to managing our tailings storage facilities (TSFs) and forms the basis of a tailings management system that aligns with the Global Industry Standard for Tailings Management (GISTM) requirements. Glencore has contributed to the GISTM through its participation in International Council on Mining and Metals (ICMM) led working groups.

We also progressed our reporting and auditing platforms to support implementation and conformance to the requirements of the GISTM. In line with GISTM's timeline, our TSFs with 'Extreme' or 'Very high' potential consequences will conform to its requirements by 5 August 2023. Our other TSFs not in a state of safe closure will meet GISTM's 5 August 2025 deadline.

Focus on ethics and compliance

We are committed to upholding a culture of ethics and compliance across our business.

During the year, we continued to cooperate extensively with the various authorities investigating Glencore and we presently expect to resolve the US, UK, and Brazilian investigations in 2022.

Considering what we have learned during the investigations, we have taken some remedial measures and have dedicated substantial resources over the last few years to upgrade and implement a best-in-class ethics and compliance programme.

This programme includes risk assessments, policies and procedures, training and awareness, monitoring, speaking openly and investigations. We work with experts to ensure our programme aligns with international best practice, taking guidance from relevant authorities.

To strengthen stakeholders' understanding of our approach, processes, and performance, we recently published a standalone Ethics and Compliance Report.

Governance

During 2021, we were pleased to have appointed Kalidas Madhavpeddi as Chairman of the Board and to welcome Cynthia Carroll and David Wormsley as new Independent Non-Executive Directors.

Kalidas has 40 years of experience in the international mining industry and will be a strong contributor in our efforts to achieving our objectives of delivering sustainable shareholder returns, playing a leading role in the green energy transition and securing our ambition of being a net zero total emissions company by 2050.

Going forward

Russia's invasion of Ukraine will have far reaching and long lasting impacts on commodity markets, including the likely realignment of commodity trade flows. This will take some time, with the immediate future marked by an environment of uncertainty.

Glencore's culture of entrepreneurialism stands our company in good stead to adapt to rapidly changing situations. The importance we place on responsible operations will continue to prioritise the wellbeing of our people, workplaces, and local communities. I have no doubt that through our work, we will continue to navigate the challenges ahead and focus on generating value for our stakeholders.

Gary Nagle,
Chief Executive Officer
21 April 2022

Contributing to the circular economy

Progressing and delivering the goals of the Paris Agreement require intensive consumption of both primary and secondary metals and minerals. Glencore's presence at key stages of the value chains for both new and recycled commodities – production, refining, recycling, sourcing, marketing, and distribution – supports the energy transition necessary for global decarbonisation.

Currently, around the world, most consumption is linear. Natural commodities are taken from the ground, commodities are turned into products, and ultimately products are disposed of as waste. For global decarbonisation to take place, the world needs to move to a circular economy, that is one where economic activity is decoupled from the consumption of finite resources through eliminating waste by recirculating products and materials. A circular economy is underpinned by a transition to renewable materials and energy.

Establishing a circular economy requires a global commitment driven by government policy and supported by consumer behaviour. At the same time, the challenge of meeting the increasing energy needs of a growing global population, while drastically reducing the world's carbon footprint, will require the continued production of primary metals for the products and energy supply needed to respond to changes in population and growth of developing economies, as well as deliver the energy transition needed to achieve a low-carbon economy.

The world will need both to produce and refine new metals and minerals, and to increase recycling and recovery efficiencies to meet its low-carbon objectives. Our production and sourcing of raw materials, together with our recycling business, make Glencore well positioned to contribute to supporting the delivery of the global transition to a lower-carbon economy, and meeting the growing demand for commodities.

To deliver the growing demand for commodities, we recognise that we must continue to manage our operational footprint in a responsible manner that delivers sustainable stakeholder benefits, while reducing our emissions footprint and continuing to meet our obligations to our customers.

Energy transition

As the world shifts away from fossil-based fuels to other sources of energy and governments and consumers begin to embrace renewable energy, energy storage, electric vehicles, and other decarbonising technologies, demand for the refined metals that enable these transitions is expected to keep growing exponentially.

We anticipate that the energy transition will be non-linear across time and geography. The global transition from fossil fuels to battery power will drive demand for metals such as copper, nickel, cobalt, vanadium, and zinc. Our industry-leading, large-scale, low-cost transition metals portfolio is uniquely positioned to provide the commodities core to the decarbonisation of the global economy. Our coal portfolio, while responsibly declining over time, will meet critical regional energy needs and affordability during this evolution.

Geopolitical events, such as Russia's invasion of Ukraine, place a spotlight on commodities' value chains. They contribute towards driving smarter resource use and growing expectations for responsible operations during the extraction, refinement, and production of metals and minerals, particularly as many resources are located in challenging operational contexts. They are also strengthening governments' ambitions for energy independence through building domestic renewable power capabilities dependent on batteries to ensure baseload security.

We recognise our responsibilities as a large-scale industrial miner to produce products in a manner that protects the environment, respects human rights, and delivers lasting benefits to the stakeholders affected by our operations.

Committed to responsible production

Our approach supports the identification, prevention and mitigation of potentially adverse impacts that could negatively affect people, the environment, or company reputation. It seeks to ensure the responsible and ethical sourcing and production of the minerals and metals that we bring to market, while meeting external expectations and complying with regulations.

In addition to focusing on our own production, we also tackle systemic challenges affecting our value chains. For example, in the Democratic Republic of Congo (DRC), the source of 70% of the global supply of cobalt, we do not source any artisanal small-scale mining (ASM) material, but we do support the development of responsible ASM, working in partnership with others, such as the Fair Cobalt Alliance (FCA).

The FCA 's mission is to transform ASM in the DRC in a positive manner through eliminating child and forced labour, supporting the professionalisation of ASM through the adoption of responsible mining practices, and identifying and supporting alternative livelihoods to help increase incomes and reduce poverty.

Developing and supplying low carbon products

We have spent decades developing a leading marketing business and expect it to continue to deliver healthy returns through leveraging market intelligence and identifying arbitrage opportunities.

As a vertically integrated extractive and marketing business, we can utilise our own carbon reduction efforts and market expertise to meet the increasing needs for attestable low-carbon products.

Our carbon desk supports the provision of synthetic and physical carbon-free products, ranging from green aluminium to carbon-free freight haulage, a value-add for our customers. Our marketing business' carbon strategy builds on our long-established market knowledge and opportunity identifying abilities to grow, adapt and respond to changing markets and demand for carbon solutions as the commodity supply chain evolves in response to decarbonisation.

Recycling

Achieving a low carbon economy will require offsetting the impact from product usage through changes to consumer behaviour, collaborations across the commodity value chain and delivering a circular economy. This highlights the need for education on reusing products and increasing recycling.

We strongly believe in the significant increased requirements for future recycling.

Lorenzo Simonelli {BIO 15243700 <GO>}

Thank you, Jud. Good morning, everyone, and thanks for joining us. Our first quarter results reflect operating in a very volatile market environment, during the first few months of 2022.On the positive side TPS orders were up over 100% year-over-year with TPS book to bill of 2.2 as the LNG order cycle continues to unfold. We also experienced some challenges in parts of our business due to continued pressures from broader global supply chain constraints as well as some impact from the recent geopolitical events.As we look ahead to the rest of 2022, we see a favorable oil and gas price backdrop.As well as a dynamic operating environment with perhaps the most challenging supply chain and inflationary environment, we have seen in several decades.

The recent and unfortunate geopolitical events are amplifying several trends including broad based inflation and supply pressure for key materials commodities and labor.Dividends are also driving changes on the economic front. Where the well this transitioning from an year of strong economic growth to an environment that is more tenuous and likely to feature diverging economic conditions regionally.Despite broader political uncertainty around the world. Baker Hughes is committed to helping deliver energy globally in a safe clean and reliable manner. While also maintaining our commitment to net zero carbon emissions and leadership in the energy transition.To meet the world's energy needs in a responsible manner. We believe multiple years of spending growth will be required as well as significant increase in LNG infrastructure investment.

While there is some near term risk on the demand side, we expect global oil and gas supply to remain constrained in the coming years.Which should support higher commodity prices and multiple years of spending growth from our customers. Recent geopolitical events have severely constrained what was already a tight global natural gas market.And have refocused the world on the importance of energy security diversity and reliability. As the world reacts to the rapid changes in the global commodity market. Governments are prioritizing natural gas and LNG as a key transition and destination fuel. We continue to see a focus on prioritizing LNG from stable, lower cost markets and locations that can provide cleaner LNG.

Given the current LNG price environment and the quickly changing dynamics, we believe the global LNG capacity will likely exceed 800 and TPA by the end of this decade to meet growing demand forecasts. This compares to the current global installed base of 460 MTPA and projects under construction totaling almost 150 MTPA.In order to be operational by 20 fatty this additional capacity will need to reach FID by around 2025.Despite the volatile yet improving medium term macro environment. Baker Hughes remains focused on executing our strategy and we continue to drive further optimization across the two core business areas of OFSE and IET.Earlier this year we created Climate Technology Solutions or CTs and Industrial Asset Management or IAM.

The creation of these two groups is critical to accelerating the speed of commercial development across our key growth areas of new energy frontiers and industrials. We continue to make steady progress in developing our climate technology solutions capabilities, with recent investments and partnerships in net Power HIF global and the acquisition of Mosaic Materials, which features a promising direct air capture technology.

American markets. We also see improving visibility for stronger growth in several key areas over the rest of 2022.In the international markets, underlying activity is improving broadly with particular strength in Southeast Asia, Latin America and the Middle East. The uncertainty in Russia is an offset. We expect growth in most international markets to continue with the strongest increases likely to come from the Middle East over the second half of the year and into 2023.Producers in the region are in the early stages of investing in capacity expansion and should help drive a multi-year increase in activity across the region.In North America, drilling and completion activity continues to move solidly higher with further increases expected over the course of the year.

Although current oil and gas prices with normally suggest a stronger increase in activity. The combination of E&P capital discipline and industry shortages in labor and equipment is likely to keep short term incremental increases more moderate in nature. While we are pleased with the growth in activity and the growing pipeline of whack [ph] in many regions.Underlying operations continue to be impacted by supply chain and inflationary pressures and most recently disruption to our operations in Russia. Our OFS team is working extremely hard to offset these headwinds with price increases, sourcing actions and our global team working to solve logistics constraints.

The product line that continues to feel the most supply chain related pressure is our production chemicals business.Where we have taken actions to enhance our sourcing and manufacturing functions.In addition to recently enacting a supply surcharge and changing out some of the leadership in our chemicals business. We are also taking steps to source and produce chemicals closer to key demand hubs with the opening of our production chemicals facility in Singapore later this year and the recently announced JV with those in Saudi Arabia. As we look over the balance of the year. We remain committed to achieving a 20% EBITDA margin by the fourth quarter Moving to TPS. The first quarter represented a continuation of the successes we achieved in 2021. TPS orders totaled $3 billion for the second consecutive quarter.Driven again by strong orders in LNG. We believe that we are at the beginning of another constructive LNG cycle. Which is being expedited by the current geopolitical situation particularly for US LNG projects.Our positive long-term view is also supported by the recent improvements in policy sentiment in southern parts of the world towards natural gas role within the energy transition. The recent EU taxonomy changes to now include natural gas as a transition fuel is an example of this and the added need to diversify and provide energy security will likely intensify policy efforts.As these market dynamics play out a number of projects should accelerate and we now believe that 100 MTPA to 150 MTPA of LNG FIDs [ph] will be authorized over the next two years. We have additional FID is becoming more likely in 2024 and 2025. Given the strong TPS orders performance in the first quarter as well as the acceleration in timing for several LNG projects, we now expect TPS orders to increase in 2022 versus 2021.During the first quarter, we were pleased to be awarded a major order to provide an LNG system for the first phase of Venture Global's Plaquemines LNG project.We will be providing 24 modularize compression trains, for the first phase of the project.And this award is part of a 70 MTPA master equipment supply agreement. The highly efficient liquefaction train system is modularize helping to lower construction and operational cost with a plug and play approach that enables faster installation and first cargo. This important order builds on an award in the fourth quarter of 2021 for power generation and the electrical distribution equipment for the comprehensive power Island system for the Plaquemines project.The Plaquemines order follows a similar contract for VG's Calcasieu Pass LNG terminal in 2019.In 2021 Baker Hughes successfully completed delivery of the nineth and final block for Calcasieu Pass.All shipments were finalized ahead of schedule. An excellent achievement by our team. Calcasieu Pass holds the global record for the fastest construction of a large scale greenfield LNG project moving from FID to first LNG in 29 months. Outside of LNG, we booked an award for NovaLT16 turbines, which will run on a 100% hydrogen for Air Products, new net-zero blue hydrogen energy complex in Edmonton Alberta.Our collaboration with our products will be critical for a net-zero future and this order follows the award we received for advanced compression technology for the carbon free green hydrogen project. We were also pleased to be awarded a contract-by-turn out to supply gas turbines and compressors that can run on a blend of natural gas and hydrogen for a new compression station for the Greek natural gas transmission system. Baker Hughes will provide free compression trains deploying on NovaLT12 hydrogen ready gas turbines and PCL compresses with the capability to transport up to 10% hydrogen for this project. The project directly supports the EU's hydrogen strategy goals to accelerate the development of clean hydrogen and show its role as a cornerstone of a climate neutral energy system by 2050. These latest hydrogen orders build on Baker Hughes has extensive experience in developing and supplying turbo machinery equipment to compress transport and utilized hydrogen. Next on Oilfield Equipment, we are encouraged to see improving demand trends across the different business areas.Although recent world events impacted fast-quarter results, we remain disappointed with the overall level of profitability.At a macro level trends in the Subsea and offshore markets continue to improve.In the Subsea Tree and flexible pipe market. We expect a solid increase in industry awards this year as a farm commodity price outlook supports a growing pipeline of deepwater opportunities in core markets.And our international wellhead business. We also see a positive order outlook across multiple regions and particularly in the Middle East. In the first quarter, we were awarded a contract in Asia to provide subsea wellheads and Subsea Production Systems plus related services, including 12 subsea trees for a deepwater gas field. We also achieved our first award in Ivory Coast where we will supply subsea trees flexible flow lines and rises to develop the deepwater oil field.In Latin America. We were pleased to build on our flexible pipe business success securing awards for Flexible Pipe Systems in services that will be deployed across a number of key post-salt revitalization programs enabling increased on a recovery and extending the life of multiple subsea developments. Finally in Digital Solutions order activity remained solid with growth across our industrial end markets, as well as improvement in the oil and gas markets. DS continues to be affected by supply chain challenges and electronic shortages as well as continued inflationary pressures. The team is working tirelessly to manage the situation and navigate the evolving supply chain issues that have been exasperated by recent events.In the first quarter, we made a number of changes in the DS business as we look to improve the overall performance. We unified our unique sensor business units Panametrics Reuter Stokes and drug and the one product line.Precision sensors and Instrumentation or PSI as a combined business PSI will better support potential investment opportunities crucial for the future development and help optimize the unique technology and commercial requirements of each brand. Unifying the businesses will also help drive better cost and operational performance.While we recognize that there is still more work to do. We also continue to make key personnel and operational changes across the US to drive performance profitability and return improvements and to ensure that we have the right team in place to take this business forward. During the quarter Bently Nevada secured an important contract with a refinery in Brazil.Our ARMS Reliability onePM solution will support the customers' operations by providing visibility on over 10,000 assets. We will be providing

As we look ahead to the second quarter underlying macro fundamentals continue to improve and we expect to see strong growth in both International and North American activity as well as improvement in pricing. This is likely to be partially offset by weakness in Russia, we estimate that our second quarter revenue should increase sequentially in the mid to high single digit range with this revenue framework, we would expect our margins to increase by approximately 100, 200 basis points sequentially.

For the full year 2022, we see an improving outlook across most major markets, which is partially tempered by global supply chain and geopolitical factors in the international market. We expect a continuation of a broad-based recovery with industry-wide activity growth in the low to mid-double digits in North America. We expect continued activity increases with the broader market set to experience strong growth in excess of 40%

Given this macro backdrop and some of the headwind considerations. I noted earlier, we would expect OFS revenue to increase in the low to mid-double digits. The largest variable to this range is the number of potential outcomes in Russia, despite this uncertainty. We still expect margin rates to increase throughout the year and continue to target 20% EBITDA margins by the fourth quarter.

Moving to Oilfield Equipment orders for the quarter were $739 million, an increase of over 100% or $394 million year-over-year. The strong orders. Performance was driven by SPS supported by a large subsea tree contract in Asia along with growth in Flexibles Surface Pressure Control and services. As a reminder, we removed Subsea Drilling Systems from consolidated OFE operations when we completed the merger with MHWirth in the fourth quarter of 2021

Revenue was $528 million, down 16% year-over-year primarily driven by SPS SPC and the removal of SDS partially offset by growth in services and Flexibles, operating loss was $8 million, down $12 million year-over-year primarily driven by lower volume in the quarter OFE is lower revenue and operating margin in the quarter were driven by lower equipment backlog conversion in SPS for the second quarter, we anticipate revenue to be approximately flat to up mid-single digit sequentially. Depending on the timing of backlog conversion. We expect operating income to be around breakeven or slightly positive

For the full year 2022, we expect to recovery in offshore activity and project awards, which should help drive a solid increase in orders. When adjusting for the removal of SDS. We expect OFE revenue to decline double-digits, primarily driven by the deconsolidation of SDS and OFE margin rate to be in the low single digit range. Next I will cover turbo machinery, the team delivered another strong quarter with solid execution orders in the quarter were $3 billion, up $1.6 billion year-over-year, a new quarterly record for TPS equipment orders were up $1.5 billion year-over-year driven by a significant award to provide an LNG system for the first phase of BG's Plaquemines LNG project in North America

Service orders in the quarter were up 8% year-over-year primarily driven by growth in contractual and transactional services, partially offset by lower order volumes and ability to adapt and execute as the rest of the year unfolds. With that I will turn the call back over to Jud.

Jud Bailey {BIO 6198676 <GO>}

Thanks, Brian. Operator, let's open the call for questions.

Questions And Answers

Operator

Thank you.(Operator Instructions). Now, first question coming from the line of James West with Evercore ISI. Your line is open.

Q - James West {BIO 19758684 <GO>}

Hey, good morning Lorenzo, Brian.

A - Unidentified Speaker

Hey, James.

Q - James West {BIO 19758684 <GO>}

So there was the, you gave some great detail on the LNG outlook. But I was wondering if you give a little more color from your conversations specifically with customers as things have clearly changed pretty dramatically in the last eight or nine weeks as LNG has come into focus here in the, if you could maybe provide us what they're seeing with the urgency level is kind of just a little more detail on how those conversations are going and how accelerated this build out cycle could be.

A - Lorenzo Simonelli {BIO 15243700 <GO>}

Yeah, sure. James, and I think it's clear the unfolding situation in Europe is definitely accelerated the pace of discussions on the next wave of LNG projects aiming to take FID. We already started to see market momentum pick up in 2021.As countries set net zero targets and also started to realize the role of natural gas and what it would play in the energy transition.Now I'd say we're arguably in the early stages and what could be a multi-year reorganizing of the global energy system. And with that, it will take time for the LNG landscape to evolve and based on the discussions with customers we see a significant step up in a number of customers looking to take earlier FIDs with also increased long-term supply agreements. We now expect 100 MTPA to 150 MTPA to take FID over the next two years with the potential of more FIDs in 24 and 25. As you know, a lot of these projects are in the US. So this US should be a big beneficiary as these are re-drawings of the global energy map.

But also as we look at to other places such as East, Middle East, Mexico and also Asia, we're seeing increasing interest from customers. I think we're very well positioned with some interesting concepts around flexibility and also speed to market and with a highly efficient modularize recollection train system, which again was emphasized in VG we're helping to lower construction and operational cost with the plug and play approach that enables faster installation. So feeling good about the LNG outlook for the number of years.

Q - James West {BIO 19758684 <GO>}

Sure. No. But that, thanks for that Lorenzo and then maybe just a quick follow-up for me. You made this investment in April I think we feel or we could go with HIF global to expand I think e fuels. Could you maybe comment on what exactly is going on there, what that market looks like how you see that that playing out.

A - Lorenzo Simonelli {BIO 15243700 <GO>}

Yeah, sure. James and HIF is a great opportunity and we're pleased to be involved with this customer and it's another example of how collaboration can really help to drive the energy transition. HIF global developed projects to produce e fuels by blending green hydrogen and CO2 and we've invested alongside AME, EIG Porsche and gemstone great partners to really help HIF continue to develop carbon-neutral If you'll projects in the United States, Chile and Australia.With a small minority investment in this equity around we'll be providing compressors, turbines, pumps valves and other technology on future projects and I think what's interesting here is again as you look at electricity based fuels e fuels there clean carbon-neutral fuels produced from renewable green hydrogen and carbon dioxide taken from the atmosphere and they can be used by existing cars and trucks, without any modification to the engines and e-fuels required no new infrastructure transportation or filling stations. So good opportunity and an expanding market for us.

Q - James West {BIO 19758684 <GO>}

Got it. Thanks for the that.

Operator

Our next question coming from the line of Chase Mulvehill with Bank of America. Your line is open.

Q - Unidentified Participant

Yeah, good morning everyone.

A - Unidentified Speaker

Hi, Chase.

Q - Unidentified Participant

I guess, kind of a follow-up question on James' question around LNG, obviously you've taken up your guidance for LNG. I'm sorry for TPS orders this year based on a strong LNG. So you've been guiding flat, now you expect kind of strong order growth momentum. So I don't know if you want to kind of quantify what strong means and then we can all understand what's happening in LNG and accelerated growth opportunities here. But maybe a step back a little bit and talk about your upstream onshore-offshore order opportunities because it ultimately looks like the base orders related to kind of some of shore offshore stuff is taken a step higher as well.

A - Lorenzo Simonelli {BIO 15243700 <GO>}

Yeah chase on TPS again, we are seeing a continued order momentum that we saw start at the end of 2021 and it's really accelerated in 2022. Primarily driven by LNG also the new energy opportunities even though they are smaller in nature. But when you look at the LNG projects that are moving forward. As I mentioned before. And you think about the likely timing it could translate in an order number for TPS of $8 billion to $9 billion in 2022. And importantly, based on customer discussions we'd expect order levels to remain elevated in 2023 as well.As you can see a lot of this on the LNG projects is a pull forward and also strong long-term LNG fundamentals and we also see a continued traction in the new energy space and as you saw, again in the first quarter we booked some awards on the new energy space and we are still at the upper end of 100 to 200 range as we continue to see new energy orders in 2022.

Q - Unidentified Participant

Okay, all right, that's helpful there. Nice to hear strong orders are going to continue into 2023 for TPS.The follow-up is really obviously the Russia, Ukraine conflict is causing Europe and in other countries to focus on energy security and obviously this is positive on the LNG front. But, so what does this ultimately mean for the energy transition do you think that it actually slows the pace of adoption does it speed it up. Like, what does it being for energy transition.

A - Lorenzo Simonelli {BIO 15243700 <GO>}

Yeah. Chase said some a question that many opposing then I think the focus right now in the near term has switched to energy security reliability and diversity. But we don't believe that sustainability goes away. In fact if you look at some of the policies even introduced in Germany that 20, 45 [ph] energy plan still continues to focus on sustainability. We think the current environment will actually accelerate clean energy initiatives particularly for fuels like hydrogen which EU is making a large part of its long-term energy plan, what we're seeing from the current situation is that you cannot become too reliant on one country or one source of energy so diversity of supply is critical.

And we think that pragmatism has come back into the discussion and the role of energy, not just renewables, but also as we've mentioned before gas playing a key critical role given the elevated commodity prices number of major oil companies and NOCs [ph] are going to report good profits and free cash flow. We think that will use debt to continue actually developing accelerating their carbon decarbonization plans as well as healthy shareholder returns. And you can see that also with an example like Aramco with its CapEx plans that includes significant hydrogen. So we think Baker Hughes is very well positioned, then with gas LNG hydrogen CCUS oil and pipelines and we've got the technologies that are going to continue to drive this transition.

Barring something unforeseen and there'll be some impacts in TPS associated with that, but look as we get more clarity on the situation will clearly react and take the appropriate cost actions to offsetting the declines in volume, which we also included in the framework that we provided you, and then as you think about Russia and the impact on the global environment we're obviously working through supply chain challenges that come with things coming out of Russia and Ukraine or not as the case may be. And then, kind of, you got to take a look, there is going to be some offsetting activity increased to soak up the supply to meet the demand that goes away from potential declines in Russia and output. And as you know, that's not going to be one for one, in terms of timing. So we are seeing increased activity in North America. You've seen increased plans, particularly in the Middle East to invest more to bring more supply to market. So we will see some impact from that, but there is likely to be a delay versus the impact you see in Russia.

Q - Unidentified Participant

Yeah, thanks for all that color. The last portion, you were talking about there was my follow-up. So basically, at this point have you seen any of your major international customers alter plans or accelerate plans or indicate that they are planning to accelerate, certainly it seems like there is going to be some loss of Russian oil volumes to the market, I'm curious how some of these bigger companies are going to respond to that.

A - Brian Worrell {BIO 16231736 <GO>}

Yeah, Yes, we are seeing customers talk about increasing they're increasing their spend planned, I'd say particularly we've seen that in the Middle East, and have started to see awards increase and I think you'll start to see some of that flow through here in the second half of the year and into 23, obviously you talked about the outlook in North America, that's clearly reaction to what's going on in the market and what's happening in Russia and look, Lorenzo talked about what we're seeing in TPS orders for the year and the situation has current certainly had an impact on that. And ironically, a little bit Connor, as I look at everything we're seeing right now 23 is shaping up with some pretty good visibility. Maybe even a little better than 2022 because of the volatility.

Right now, but you know with the backlog that we're building on the back of potentially $8 billion to $9 billion of orders and TPS with some service tailwinds you saw service orders up in TPS 8% this quarter with strong returns and cash flow with a lot of operators I think you're likely to see that continue. And then we talked about what you're seeing in the upstream space and he talked about that timing disconnect and things coming in later, I think 23 years is shaping up with pretty good visibility and is looking to be pretty strong based on what we're seeing today. So look, we'll manage through the volatility in 22 but I think we're positioning things to be able to take advantage of the broader context of things going on in the marketplace across the portfolio.

Q - Unidentified Participant

Got it. Thanks very much.

Operator

Now our next question comes from the line of Scott Gruber with Citigroup. Your line is open.

Q - Unidentified Participant

Yes, thanks. So just building upon Connors last question there. It sounds like the visibility in the threes improving and what's the potential for the international OFS market to actually seeing an acceleration in spending in 23 given the fact that the budget for this year were set before the surge in oil prices and some additional color, if you will, on longer cycle projects we are building a building in the queue to support growth in 23 and beyond.

A - Lorenzo Simonelli {BIO 15243700 <GO>}

Yes, Scott, just on OFS international outlook based on the conversations with our customers. We expect broad based recovery internationally with all major geographies and overall international growth in the low to mid-teens, we believe, Middle East, could be one of the strongest markets in 2022 and it's likely in the early stages of a growth cycle as the NOCs in the region, look to add production capacity on a gradual long-term basis. So good outlook going into 2023 as well. And we also expect to see another strong year of growth in Latin America led by Brazil and Mexico. And then as we go forward, we would expect, North Sea and Asia-Pacific to see solid growth in 2022. I'm not a strong as Middle East or Latin America but solid growth and lastly, West Africa is also seeing some incremental activity and strong growth as we go forward.

I think on the offshore side, you know, we'd say at a macro level, the trends in the Subsea and offshore markets continue to improve. And as you look at our first quarter as well. From an orders perspective, you can see that and the Subsea Tree and flexible pipe market we expect to see a solid increase and industry awards this year and see it coming back for the foreseeable future.

Q - Unidentified Participant

Got it and with some of the international operators pulling forward some projects and responding to oil prices. Can you provide some color on the pricing trends you're seeing on the international side OFS market imagine, things are getting better but do you foresee sufficient momentum there to propel above normal incrementals in 23 and continue to expand your margins beyond the 20% threshold.

A - Lorenzo Simonelli {BIO 15243700 <GO>}

And Scott and generally speaking, we are starting to get good pricing leverage and getting net pricing, particularly in North America, but also in some of the international markets.Right now. It varies by market, but we're having more success and better discussions around higher pricing levels.

A - Brian Worrell {BIO 16231736 <GO>}

And look, I'd say particularly from an OFS perspective as the Chemicals business recovers. I would expect to see some improvement in incrementals there and then the only thing I would say Scott we're all dealing with inflation in the market and we're working hard to get surcharges and price increases and, but that's something you got to take into consideration as you think about the next 12 months or so.

Q - Unidentified Participant

Thanks, I appreciate the color.

Operator

And our next question coming from the line of Arun Jayaram with JP Morgan Chase. Your line is open.

Q - Unidentified Participant

Yeah, good morning. You booked of the LNG system this quarter with Venture Global and I believe Calcasieu Pass was booked in the third quarter of 2019. I was wondering if you could talk a little bit about the margin potential of this project relative to Calcasieu Pass, and obviously a much more challenging supply chain in the inflationary environment and what are you doing In order to protect your margins from those inflationary pressures.

A - Brian Worrell {BIO 16231736 <GO>}

Yeah. Arun, look, we are very

A - Unidentified Speaker

Pleased that we've gotten the second phase of our work with VG here with Plaquemines look, I think it's fair to assume that margins will be similar to what we saw (inaudible)on you, I mean there is a couple of things going on here. Obviously we've got experience with this type of project with this customer before, so there is some natural synergies that come through in this project that we didn't have in the first one, you did mentioned inflation there obviously we price that in and have worked on productivity to help offset that as well. And look, you can imagine, as we've said before when we, quote and when we win orders we go out and we place orders for long lead items, certainly have a view of what we believe is happening in the market today and what will happen and take the appropriate actions to protect ourselves and the customer from that inflation is as much as possible.

But look, this is a great order, for us it's similar to what we did with Calcasieu and you heard Lorenzo talk about, you know, we delivered all these modules ahead of schedule, which is very helpful for VG getting to first cargo and in record time. So our track record here is pretty good. And we're really excited about this space and this order in our partnership with DG.

Q - James West {BIO 19758684 <GO>}

Great. And I just had a follow-up, I think you delivered Calcasieu Pass, and less than 30 months or so, which is very, very impressive. One of the questions. We've been getting from clients just given what's going on and LNG is fast LNG concept, which is offshore.

These are generally a third the size of some of the, the onshore facilities, but could you talk a little bit about that does Baker have a tool kit that can participate in the offshore LNG market, how do you see this playing out. And is this a sandbox you do want to planned so

A - Unidentified Speaker

I think you know well We have capability and capacity to handle many different types of LNG equipment orders at the same time, we've got great capability in our facilities and as you look at the fatty years we've been in LNG, we've always been looking at new technologies to reduce the cycle time and also to plug and play. So this new modernized approach to fast LNG can be applied both to onshore and offshore.

And the number of customer discussions are intensifying around the speed to market. So I think again with the technology enhancements we've made. We are well positioned to capture the market here.

Q - Analyst

Great, thanks a lot.

Operator

Our next question coming from the line of Steven J&J with Stifel. Your line is open.

Q - Analyst

Thanks, good morning gentlemen,

A - Unidentified Speaker

Or good morning.

Q - Analyst

Could you, mind going back to your prepared comments on the Oilfield Services side and some of the changes you've made there. Can you, could you talk about sort of the path 20% EBITDA margins by the end of the year and maybe with some color around the impact some of these changes you've made

Operator

Yeah, look, so I'd say overall, we still feel confident Stephen in hitting our margin target rates and getting OFS 20% EBITDA margin rate on a consistent basis. And I'd take from here. There is a couple of things that should drive margin improvement. The biggest driver will be better profitability in our chemicals business, which is you know has been squeezed by higher input cost higher logistics and shipping cost and some raw material shortages as Lorenzo mentioned we put in pricing increases and surcharges to help offset that.

understands it just working through a little bit of a perfect storm here that seems to be abating

Q - Analyst

Very good. Thank you.

Operator

And our next question coming from the line of David Anderson with Barclays. Your line is open.Hey, good morning Lorenzo. So question global push to build out LNG capacity I had heard anecdotally as minimum of 4 years to bring a new train on start to finish what you're talking, I'm talking means and closer to 29 months of its modular design, is this the new standard that we should be thinking about these projects. And I guess related to that, is there a limit to how much equipment you can provide a given year in terms of your manufacturing capacity if these projects are accelerate.

A - Lorenzo Simonelli {BIO 15243700 <GO>}

Yeah, Dave and I think you have to go back to the tenure we've had in the LNG cycle and we've always said that there's going to be small scale, mid scale, large scale and we are going to be participating in all of those and also looking at modular as well as stick-built and depending on the customers' needs. We are going to be providing them clearly the modular is a fast with the market. It is a plug and play model.

So we are seeing increased interest from some of the independent players. And I'd say also within North America globally with some of the larger projects, they still continue on that the stick-built. We don't have a challenge on capacity again we've had big flows of LNG projects in the past and we feel good about being able to manage it and our facilities that are set up in Florence and mass and events in Italy a well prepared for the LNG project wave.

Q - David Anderson {BIO 6875231 <GO>}

So if we think about the US build out of export capacity, what is, are there any other kind of areas where you think there are bottlenecks that need to be freed up into, would you expect most of the awards going forward to be in this modular category. Just curious how you think about that kind of supply. Can you just one part of the course. I'm just wondering, looking at the rest of that. Are there other areas that are in bottlenecks

Q - Unidentified Participant

That could you to speed up or slow down these projects.

A - Lorenzo Simonelli {BIO 15243700 <GO>}

I think the area that time people are looking at and also reacting to is on the EPC side and that's one of the areas that I think it's a focus right now I'd say also the modular approach reduces some of the dependence on the full aspect of EPCs and so it's a faster approach from that respective, but labor continues to be constrained and so that's something that's being looked at.

Q - Unidentified Participant

Great, thank you.

Operator

Our next question coming from the line of Roger Read with (inaudible). Your line is open.

Q - Unidentified Participant

Yeah, thank you, good morning, how are you.

A - Unidentified Speaker

Good, Roger.

Q - Unidentified Participant

Just couple of quick questions, the first one is you've made the comment about supply chain easing up as the year goes on and understand chemicals a little different than some of the others, but as we think of some of the pieces that will go into these LNG orders, some of the issues going over in China, is there any risk of that affecting.

A - Brian Worrell {BIO 16231736 <GO>}

Hey, Roger. I'll go ahead you cut off there a little bit, but on supply chain, it tends to be challenging and obviously with everything going on in the global geopolitical space. It's been, a little more challenging. But look, I'd say from how it, how it impacts us and how we're dealing with we are managing the price increases and various metals like copper and steel and nickel there is no supply issue is just managing through those pricing and you can imagine that's going into our quotes and to deal with all of this, we have taken down the timing and validity of our quotes, to be able to deal with this. So customers know what's going on and they can have good visibility into what the cost of these projects are going to be look from a castings and forgings standpoint still able to get supply we're dealing with some scarcity in Europe and higher pricing there.

So we are seeing what we are doing with our customers, our suppliers are doing as well with quotes are only valid for a shorter period of time given the raw material pricing and a unique energy challenges in Europe. But look, that's the beauty of being part of a global company like Baker Hughes. I mean, we've been able to shift supply into China. We focused on North West China to be able to deal with some of the port issues and things we're seeing in COVID we had really good experience there. We've also moved some supply to Mexico and India So we are able to pivot because we've got a large supply base and can direct that demand to different places. So we feel good about what we're doing their own supply chain we expect to see some stabilization Come through, but have a great sourcing team working with the project team to make sure we can fulfill on the demand that we see coming through from a logistics standpoint I'd say the team has done an outstanding job of managing that our inflation we've seen in logistics is well below the headline prices that you've seen, we've changed airports that we're using in North America and China So we've been incredibly reactive here, I don't see it being a big constraint today for the LNG cycle that we're seeing. But that's something that we'll have to watch as it evolves.

Q - Unidentified Participant

Okay, great, thanks. And then the follow-up as we think about just. We had one of your competitors yesterday talk about exceptional tightness in North America. I was just curious, your view on availability and of equipment labor et cetera. As we think about the international markets ramping up and at what point you would see significant tightness really helping out on the pricing side there I understand, thank you should get better as this year goes along, given the guidance, but what we could see things get very, very good on the OFS and OFE sides.

A - Brian Worrell {BIO 16231736 <GO>}

Yeah, look, I'd say broadly tightness you're seeing outside of the US, it's similar to what you're seeing inside in North America, some labor tightness around the globe In some markets, not as much as you're seeing in North America and look, just given the overall increase in activity you are seeing tightness in supply of equipment. I think think we've all got capability I know we've got capability to ramp up and have been planning on that but look when you've got demand up as much as you're seeing in North America and globally, general economic tendencies come back into play and you start to see the ability to have more constructive pricing discussions deal with some of those supply demand issues, and I'd say the international market, as you know is more longer-term contract base versus spot market like you see in North America, where you see some real opportunity here is on some of that spot business and I'd say we're being very constructive with our customers taking into account what we're seeing on the supply chain. What we're seeing an overall demand and it's a constructive backdrop for for OFS at the moment.

Q - Unidentified Participant

Great, thank you.

Operator

And I'm showing no further questions at this time, I would now like to turn the call back over to Lorenzo Simonelli for any closing remarks.

A - Lorenzo Simonelli {BIO 15243700 <GO>}

Yeah. Thank you very much and thank you to everyone for joining our earnings call today. Just before we end the call. Wanted to leave you with some closing thoughts. Despite some of the challenges fiscally. We are optimistic on the outlook across both of our core business areas and excited about the new energy investments we're making for Baker Hughes. We believe that our upstream oil and gas businesses are poised to capitalize on a strong multi-year recovery. While our Industrial businesses are poised to benefit from a

Our comments today also include non-GAAP financial measures. Additional details and reconciliations to the most directly comparable GAAP financial measures are included in our first-quarter earnings release or in the Quarterly Results & Presentations section of our website. After our prepared remarks, we ask you to please limit yourself to one question and one related follow-up during the Q&A period in order to allow time for others who may be in the queue.

Now, I'll turn the call over to Jeff.

Jeffrey A. Miller {BIO 17768856 <GO>}

Thank you, David, and good morning, everyone. I'm pleased with Halliburton's first-quarter results. Our performance demonstrates the resilience of our unique strategy in action and the importance of our competitive positioning both in North America and international markets. Here are some highlights from the first quarter.

International revenue grew 15% compared to the first quarter of 2021 with activity accelerating across all international markets. Strong growth in Latin America and the Middle East Asia offset the winter weather impacts in Europe. In North America, revenue grew 37% year-on-year with the acceleration of both drilling and completions activity. Higher utilization in March and net pricing gains drove margin expansion despite the weather and sand disruptions earlier in the quarter.

Our Completion and Production division revenue grew 26% compared to the first quarter of 2021, on activity increases in North America, Africa, and the Middle East, while operating income increased 17% despite transitory US land/sand delivery disruptions. Our Drilling and Evaluation division grew revenue 22% year-on-year while margins expanded 440 basis points and started the year at 15% for the first time since 2010. This exceptional performance was largely driven by the strength of our directional drilling and project management businesses.

We added three new companies to Halliburton Labs, our clean energy accelerator. This brings the total number of program participants and alumni to 15 companies. Halliburton Labs allows us to actively participate in the future of clean energy value chains. Finally, we retired $600 million of our $1 billion of debt maturing in 2025 and nearly tripled our quarterly dividend to $0.12 per share. These actions strengthen our balance sheet and reflect our commitment to return cash to shareholders.

Before we continue, I want to provide a few comments about the current situation in Ukraine and Russia. This is a tragedy on many dimensions, and for us, especially for our people in both countries. As we've all seen, governments in the European Union, the United States, Switzerland, and other countries swiftly enacted far-reaching sanctions on new investment and export controls on goods, supplies, and technologies to Russia. In compliance with sanctions and consistent with our strategy for profitable international growth, we announced that we would begin steps toward a wind-down of our Russian operations and we remain active in that process.

Russia accounts for about 2% of our business. Sanctions and export compliance impact everyone in the oilfield, and operations and supply chains in Russia are at best, challenged. The situation is far too early and evolving to say more.

Moving onto our macro outlook. We expect oil and gas demand will grow over the near and medium-term, driven by economic expansion, energy security concerns, and population growth. At the same time, supply remains under a structural threat of scarcity. While the war in Ukraine has created a short-term dislocation in commodity markets, the fundamental supply tightness existed before this geopolitical conflict. Current oil supply tightness and commodity price levels strengthened my confidence in the accelerating multi-year upcycle and very busy years ahead for Halliburton. In addition, I expect an important change in our customers' behavior and priorities will provide structural support to oil prices throughout this upcycle.

I believe supply dynamics have fundamentally changed due to investor return requirements, public ESG commitments, and regulatory pressures, which make it more difficult for operators to commit to long cycle hydrocarbon investments and instead, drive investment flexibility through short cycle barrels. The pursuit of increased investment flexibility leads operators to prioritize short cycle projects, development over exploration, tie-backs versus new infrastructure, and shale rather than deepwater. Clearly, there are important exceptions where successful long-term projects will be developed, but painting with a broad brush, I believe most investments will be directed primarily towards short cycle activity in the near and medium term. The result of this focus is an industry wide increase in the level of investment flexibility for operators and the subsequent support to commodity prices. With short cycle barrels, companies make investment decisions annually and can respond more quickly to commodity price signals. As a result, when investment stops, production at a minimum doesn't grow and in the case with unconventionals, it quickly declines.

For example, when the pandemic drove the collapse of oil demand two years ago, US shale companies swiftly reduced activity and production declined 2 million barrels in nine months. In contrast, long cycle projects have two key elements, a long time horizon and large upfront capital investment. Once these projects begin, investment continues and production cannot quickly respond to price signals. This tends to result in market oversupply. The pivot to short cycle barrels creates the opposite effect, a perpetual threat of under-supply that is supportive to commodity price. I believe this pivot to short cycle barrels is great for Halliburton and sets a fantastic conditions for us to outperform.

Short cycle activity results in higher relative capital spend by operators aimed directly at the well board for services Halliburton provides as opposed to infrastructure investments required for long cycle projects. Our strong technology portfolio and market footprint match this activity globally. Halliburton works, innovates and invests where it matters most for our customers. And finally, Halliburton's value proposition to collaborate and engineer solutions to maximize asset value for our customers, explicitly focuses on helping operators maximize returns and cash flow. This makes Halliburton uniquely relevant for this environment.

Our five strategic priorities are clear and effective, and will drive our behavior in this upcycle. First, we focus on profitable growth in our strong international franchise. Second, we maximize value and cash flow in North America. Third, we accelerate the deployment and integration of automation and digital technologies. Fourth, we drive increased capital efficiency in all parts of our business. And fifth, we actively participate in advancing a sustainable energy future.

As demand for Halliburton services increases, both internationally and in North America, we will execute on our five strategic priorities to deliver industry-leading returns and strong free cash flow for our shareholders. As I look across the international markets, I continue to believe our customers' international spend will increase by mid teens this year. Here are some leading indicators.

First, we started with revenues in the first quarter much higher compared to the same period of last year. Second, our completion tool order book increased 50% year-on-year in the first quarter, which represents work generally delivered within the current year. And third, we have a strong pipeline of new projects scheduled to start in the second half of this year, particularly in the Middle East. We expect international activity to gain momentum in the second quarter led by the Middle East and Latin America and further accelerate in the second half of the year. More importantly, our strong first quarter Drilling and Evaluation division margins demonstrate our focus on profitable international growth.

Beyond the shift to short cycle barrels already discussed, we expect this international upcycle to be structurally different from prior cycles and Halliburton's international business is poised to benefit from it. Here's why.

National oil companies and independents comprise a larger portion of the international customer set. As a result of divestitures in the last few years, many international assets now have new owners who require a more collaborative service provider to help unlock remaining reserves and maximize value. Halliburton's collaborative approach, broad technology portfolio, local expertise, and reliable execution help customers achieve their efficiency and production objectives. Halliburton's execution of our technology roadmap has completely transformed our competitiveness in Drilling and Evaluation. We enter this upcycle with the best product portfolio in our history and we see increased customer demand for our high-end technology and a recognition of its value.

For example, Halliburton recently deployed our new StrataXaminer wireline imaging service for multiple customers in Norway and Morocco. StrataXaminer helped operators acquire more accurate well data in oil and synthetic-based muds, better evaluate production potential and save rig time with lockdown capability and increased logging speed. Another example is the latest addition to our Logging While Drilling suite, the StrataStar azimuthal resistivity service for thin, interbedded formations. Similar to our premium EarthStar service, the StrataStar combines high fidelity downhole sensors with powerful digital inversion capabilities. Multiple customers in the Middle East, Latin America, US and Canada use it for faster, more accurate reservoir characterization to precisely place wells in the most productive zones and maximize asset value.

We also see a slight uptick in offshore exploration activity, albeit from a historically low base. Halliburton's increased competitiveness in drilling and evaluation resulted in a doubling of our contract win rate in global exploration work over the last two years and we expect to benefit from any additional growth in this higher margin market.

Different from prior cycles, Halliburton's investments in specialty chemicals and artificial lift create unique growth opportunities as we expand the international footprint of these businesses. Last month, I attended the opening of our new chemical reaction plant in Saudi Arabia. Multiple years in the making, this world-class facility establishes our chemicals manufacturing footprint in the Eastern Hemisphere. It is our launch pad for profitable growth in the specialty chemicals industry in the Middle East and beyond. This quarter, it will start manufacturing products for our Production Chemicals contract with a large IOC in Oman and chemicals for our own product service lines.

Several years ago, I described digitalization as one of the defining trends in our industry for this decade. Today, digital innovations permeate all segments of the oilfield services market. At Halliburton, our strategy to drive digital and automation creates technological differentiation, contributes to higher international margins, and drives internal efficiencies in cost savings. Here are some examples.

On an integrated drilling project in Southeast Asia, Halliburton deployed Well Construction 4.0, our approach to digital transformation of well construction. It improve the rate of penetration by about 40% on initial wells and reduced rig site personnel by 21%. On an integrated project in the Middle East, we combined data science, smart bits[ph], drilling automation and project management services for a more than 40% reduction in average well delivery time. We also deployed our digital solutions to advance a sustainable energy future.

In the first quarter, Energean hired Halliburton to assess the carbon storage potential of the Prinos basin in Greece. We will use our DecisionSpace 365 cloud applications to perform long-term plume modeling, characterize the storage complex and create a conceptual development plan with performance modeling. We expect to deliver steady, profitable growth in the international markets for the rest of this year.

Increased activity and equipment tightness continued to sharpen our pricing discussions with customers. Pricing is increasing on current contract extensions. In the first quarter, the percentage of contract extensions exercised almost doubled compared to the same period last year as operators generally prefer to extend existing contracts rather than bid work in an inflationary market. Pricing is also increasing on new work.

Turning to North America. We see market tightness across all service segments. In the first quarter, average US rig count increased 14% sequentially and is up 62% year-on-year. Additionally, frac activity surged in March after winter weather and supply chain disruptions occurred earlier in the quarter. Halliburton

S hydraulic fracturing fleet remains sold out and the overall market appears all but sold out for the second half of the year. The market today presents several positive developments previously absent in North America and they give me confidence in the continued strength of this market over the coming years. First, in the largest service segment in North America, the hydraulic fracturing market structure has improved. Today, the largest four pressure pumping companies account for about 2/3 of the market.

Second, I believe that poor service industry returns over many years in North America ultimately resulted in a closed-loop capital system because access to meaningful outside capital doesn't exist today, market participants must generate their own cash in order to reinvest and grow their businesses. Broad-based profitability improvements are required to fund growth, not just what appears to be good economics on a single incremental fleet.

Finally, I see greater differentiation in hydraulic fracturing equipment types. In prior cycles, fleets were relatively the same. Today, all equipment is not created equal. Significant operational, environmental, and pricing differences exist ranging from electric fleets at the top, dual fuel and Tier 4 diesel in the middle, and finally, Tier 2 diesel equipment at the bottom.

We have a terrific fleet composition. Halliburton is the leader in low emissions frac equipment. Our Zeus e-fleets have committed contracts, earn attractive returns and deliver improved performance. Another technology that sets Halliburton apart from the rest of the hydraulic fracturing market is our SmartFleet Intelligent Fracturing System. Customers are adopting this groundbreaking technology, and it has moved from pilot to campaign mode. We are deploying it for multiple operators across different basins and expect a sixfold increase in the number of stages completed with SmartFleet this year.

Tightness in North America is not just in hydraulic fracturing equipment, it exists across the whole oil and gas value chain, in spare parts, engines, electronics and many other inputs that cost more and are sometimes not immediately available. While we generally pass these increased costs on to operators, we also have effective solutions that minimize this operational impact and provide reliable execution for our customers.

For example, our sophisticated supply chain organization responded by sourcing sand from Wisconsin when local mines were down in the Permian. In trucking, our collaboration with Vorto provides us with real-time information on the market-clearing price for drivers, and allows us to manage inflation and significantly reduce logistics-related nonproductive time.

Years of low pricing and low returns impacted the North American oilfield services sector and the larger supply chain that supports our industry. Sustainably improved pricing is required to avoid future supply chain disruptions and to invest in the equipment, people, and technology necessary to deliver production growth. I believe our customers understand this. Against this backdrop, we see a long runway for ongoing net pricing improvement across all of our product service lines. In this recovery, Halliburton is focused on maximizing value in North America. For us, this is a margin cycle, not a build cycle.

Last quarter I shared with you my view that North America customer spending would grow more than 25% year-on-year. Today, as I look at a combination of customer activity and inflation, my outlook has improved and I now expect North America spending to increase by over 35% this year. With respect to activity, over 60% of the US land rig count sits with private companies and they keep growing, while public E&Ps remain committed to their activity plans. Activity and demand for our services are increasing, both internationally and in North America. With our unique value proposition, clearly defined strategic priorities and global presence, I expect Halliburton will deliver profitable growth, solid free cash flow, and industry-leading returns and outperform as this upcycle accelerates.

Now, I will turn the call over to Lance to provide more details on our first quarter financial results. Lance?

Lance Loeffler {BIO 19748103 <GO>}

Thank you, Jeff, and good morning, everyone. Let me begin with a summary of our first quarter results compared to the first quarter of 2021. Total company revenue for the quarter was $4.3 billion, an increase of 24%. Adjusted operating income was $533 million or a 44% increase compared to the operating income of $370 million in the first quarter of 2021. These results were primarily driven by increased activity across all regions and improved pricing in North America.

In the first quarter, we recorded pretax charges of $64 million. Of these, impairments and other charges totaled $22 million, including $16 million of receivables related to the write-off of all of our assets in Ukraine. The remainder of the charges totaled $42 million and was related to the redemption premium and unamortized expenses associated with the early retirement of $600 million of our 2025 senior notes.

Now let me discuss our division results in more detail. Starting with our Completion and Production division, revenue was $2.4 billion, an increase of 26%, while operating income was $296 million or an increase of 17%. These results were primarily driven by increased pressure pumping services and artificial lift activity in the Western Hemisphere, higher completion tool sales throughout the Western Hemisphere in the Middle East, increased cementing activity in Africa and Middle East Asia, and improved well intervention services in North America land and the Eastern Hemisphere. These improvements were partially offset by lower activity across multiple product service lines in Europe and lower completion tool sales throughout Asia.

In our Drilling and Evaluation division, revenue was $1.9 billion, an increase of 22% while operating income was $294 million or a 72% increase. These results were due to increased drilling-related services globally, improved wireline activity in North America land, Latin America and the Middle East, increased testing services internationally and higher project management activity in Latin America, India and Oman. Partially offsetting these increases were lower project management activity in Iraq as well as lower fluid services in the Caribbean, Brunei and Mozambique.

Moving on to our geographic results. In North America, revenue increased 37%. This increase was primarily driven by improved pressure pumping activity and drilling-related services in North American land, higher stimulation, artificial lift and drilling-related activity in Canada and higher completion tool sales in the Gulf of Mexico. These increases were partially offset by reduced fluid services in the Gulf of Mexico.

Turning to Latin America. Revenue increased 22% due to improved activity across multiple product service lines in Brazil, Argentina, and Mexico, increased well construction services in Colombia, higher completion tool sales in Guyana, improved project management activity in Ecuador and Colombia, increased testing services and wireline activity across the region, and increased artificial lift activity in Ecuador. Partially offsetting these increases were reduced fluid services in the Caribbean and lower project management and stimulation activity in Mexico.

In Europe/Africa/CIS, revenue increased 7%. This improvement was primarily driven by higher activity across multiple product service lines in Egypt, increased drilling-related activity in Azerbaijan, increased well intervention and testing services across the region, improved well construction services in West Africa, and higher completion tool sales and cementing activity in Angola. These increases were partially offset by reduced activity across multiple product service lines in the United Kingdom, reduced well construction services and completion tool sales in Norway and decreased fluid services in Mozambique.

In the Middle East/Asia region, revenue increased 17%, primarily resulting from improved well construction services in Saudi Arabia and Oman, increased wireline activity and completion tool sales in the Middle East, and increased testing services across the region. These increases were partially offset by reduced project management activity in Iraq, lower completion tool sales throughout Asia, decreased fluid services in Brunei and lower stimulation activity in Bangladesh.

Our corporate and other expense for the quarter totaled $57 million, and I expect that to serve as a good quarterly run rate for the remainder of the year. Net interest expense for the quarter was $107 million. I expect this level of interest expense to drift slightly lower in the second quarter as a result of a full quarter impact of our reduced debt balance.

Our normalized effective tax rate for the first quarter was approximately 21%. Based on our anticipated geographic earnings mix, we expect our second quarter effective tax rate to be approximately 24%. Capital expenditures for the quarter were $189 million. Our expected CapEx spend for the full year remains at approximately $1 billion and we anticipate that our remaining capital expenditures will increase quarter-over-quarter into the end of the year.

Our first-quarter cash flow from operations and free cash flow was a use of cash of $50 million and $183 million respectively. These results were primarily driven by investment in working capital consistent with our strong activity growth. As is typical for our business in an upcycle, we expect our cash flow to be back-end loaded for the year. We still expect to generate strong free cash flow for the remainder of 2022.

Finally, turning to our near-term operational outlook, let me provide you with some comments on how we see the second quarter unfolding. In our Drilling and Evaluation division, we expect the seasonal revenue decline in software sales to be offset by further improvements in global drilling activity. Therefore, second-quarter revenue is anticipated to grow low to mid-single digits. As a result of the falloff of software sales, we expect D&E margins to decline 125 to 175 basis points. In the Completions and Production division, activity is accelerating globally and scarcity will drive pricing in North America in the second quarter. As such, we expect second-quarter revenue to grow in the mid-teens and margins to improve 350 to 400 basis points.

I'll now turn the call back over to Jeff. Jeff?

Jeffrey A. Miller {BIO 17768856 <GO>}

Thanks, Lance. Let me summarize what we've talked about today. We believe that this accelerating multiyear upcycle is different and more sustainable than prior cycles due to operators' focus on short-cycle barrels. Halliburton's strategic priorities are clear and effective and drive outperformance. Our technology portfolio and market presence mean that we are poised for profitable growth in the international markets.

In the tight North America market, we remain focused on maximizing value and improving returns. And finally, I expect Halliburton to continue to deliver profitable growth, strong free cash flow and industry-leading returns in this upcycle.

And now let's open it up for questions.

Questions And Answers

Operator

(Operator Instructions) Our first question comes from David Anderson with Barclays. Your line is open.

Q - David Anderson {BIO 6875231 <GO>}

Hi. Good morning, Jeff.

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Good morning, Dave.

Q - David Anderson {BIO 6875231 <GO>}

The sales force in the US has been playing defense for the past five or six years, returns[ph] of software, but now your customers are actually reaping record cash flows basically on the back of low service cost. And as you said, equipment is essentially sold out in the US, activity is ramping up, oil's at 100, fundamentals are pretty tight. I'm not sure if I've ever seen a better environment to push pricing. So I was wondering if you could talk about this process.

What are you telling your sales force now in terms of pricing? And more broadly, what's the pushback from E&P? I understand the sense of sticker shock, but the situation is only going to get worse a year from today. I don't see capacity being built, E&P costs are only going in one direction. If you could kind of frame your -- frame the whole pricing debate for me, I'd appreciate that. Thank you.

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Yeah, I will do that. Look, I think the most important -- I mean, obviously, pushing price all of the time so guidance to the sales force is literally this is the amount of equipment, we expect it to earn more. And the sold-out conditions make that a lot clearer certainly for our folks and I think for our customers as well. And I think the other key here is, though, it's a more iterative process and it continues to be iterative. By that, I mean, we've moved on price and we'll continue to move on prices. We'll work certainly this quarter, next quarter and through the year and so I expect to continue to move that direction with price.

I think it is a bit of a sticker shock because you're seeing inflation across the entire sector. So we've got inputs that are going up meaningfully, our own costs are going up meaningfully, and we're outpacing those costs in terms of net pricing. And so I would describe it, I think you're accurate. It's more around sticker shock. I described last quarter, we were moving around a little bit between customers as customers sort of felt around in the marketplace for what's out there, what's possible. And so, I think that obviously, we plan to continue moving.

Q - David Anderson {BIO 6875231 <GO>}

So Jeff, I recognize it's early to talk about 2023. A lot has changed over the last 90 days, though, especially kind of -- if you think about kind of global hydrocarbon movement. I was wondering, is it fair to say that your topline expectations for next year have materially increased, particularly around the international outlook that you're talking about ramping up? And kind of -- and part of that is 35% incremental margins are sort of the baseline, I guess if we talk about double-digit growth, but could that actually be closer to 40% or even 45% on how you see pricing, particularly on that -- based on what we saw in the mid-2000s? So it doesn't seem like much of a stretch.

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Yeah. Look, Dave, I'm really excited about the outlook. And what I don't want to do is get in the business of refining a two-year outlook every quarter. But clearly, every quarter trajectory changes and I'm very excited about those changes. And I think everything we see, including what you described as energy security, sets up a busier North America, clearly and strong growth internationally. And what's key is we're seeing them both at the same time. And that's -- it's something we really haven't seen in a very long time and sets up very well for certainly us.

Q - David Anderson {BIO 6875231 <GO>}

Thank you.

Operator

Our next question comes from James West with Evercore ISI. Your line is open.

Q - James West {BIO 7351884 <GO>}

Hey. Good morning, Jeff. Good morning, Lance.

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Hey, good morning, James.

A - Lance Loeffler {BIO 19748103 <GO>}

Good morning, James.

Q - James West {BIO 7351884 <GO>}

So, Jeff, you talked a lot about short-cycle barrels, which makes a ton of sense, given the situation the world's in now being short oil in a pretty significant way that, that would be the focus today. When do you think that, if it does, the cycle turns into one of a more balanced mix of short-cycle barrels and some longer-cycle barrels, some of the more complex, maybe more offshore or just maybe bigger development-type projects?

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Well, I think that what we see offshore generally today are tiebacks or development-type activity. But I think when I look further into the future, it's a combination of sort of ESG pressure is clearly one. Capital returns -- returns is another key element of that. And I don't think those are changing anytime soon. And so what I think we see is a marketplace that's going to have more optionality clearly for our clients and in some respects, for us as well. I mean that's the approach we've taken sort of longer term maximizing value in North America is a view that we are going to be where we need to be. But clearly, in places where we have optionality also, I think you see that in sort of CapEx spend. And I think that we've done -- everything I see, it just takes a long time to get those things underway and lots of money out front, and I just don't really see. Over a longer period of time, like I don't know -- I won't[ph] give you a time, but a much longer period of time, could we see that creep back in? We probably could, but I don't see it in the viewfinder today.

Q - James West {BIO 7351884 <GO>}

Okay. That's fair enough. And then Jeff, we hear a lot about and we've been talking to a lot of the NOCs, particularly the ones in the Middle East and North Africa, who are reworking their budgets or have been over the last seven, eight weeks and using a little bit higher oil price estimation. And I'm curious what they're telling you and probably your competitors as well about how these budget increases will flow through?

I mean these are, in some cases, fairly bureaucratic operators. And so their ability to change and to get capital into the field and get service companies lined up in rigs and frac spreads, et cetera, takes some time. So I know you're certainly more optimistic now than you were probably yesterday, the day before, and six weeks ago, but are -- do you think you see a lot of this in the back half or are we really starting to talk about a '23, '24, '25 story for a lot of these big NOCs?

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Look, I think we're going to see building activity sooner than that. I think it builds throughout the balance of 2022 and then probably continues to get legs in '23, likely beyond. I think the key is that a $100 oil, everything is busy. And people want to be busy, but the question is, can they be busy? And what we've seen is really seven years of underinvestment around the entire world, spending about half of what we used to spend. And that's not something that's overcome in a day or a year or -- that just takes time to get momentum. And I thought there are clearly all of Middle East, not the same. Clearly, there are NOCs that take a very long view and will build into growing production over time. But that's not the case everywhere. Lot of activity for us but I think -- and we'll see that sooner. But I don't think that you see the real long cycle-type work, it's just going to take quite a bit of time.

Q - James West {BIO 7351884 <GO>}

Alright. Okay, that's very helpful. Thanks, Jeff.

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Thank you.

Operator

Our next question comes from Chase Mulvehill with Bank of America. Your line is open.

Q - Chase Mulvehill {BIO 17240736 <GO>}

Hey. Good morning, everybody.

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Good morning, Chase.

A - Lance Loeffler {BIO 19748103 <GO>}

Hey, Chase.

Q - Chase Mulvehill {BIO 17240736 <GO>}

Hey, Jeff and Joe -- Lance. So I guess I wanted to follow up on the margin guidance on the C&P side. Obviously, pretty strong sequential increase. I think you said 350 to 400 bps of margin improvement on the C&P side. So Lance I don't know if you could step back and kind of walk us through some of the moving pieces. Obviously, 1Q was a little bit

Q - Neil Mehta {BIO 16213187 <GO>}

Good morning, team. Jeff, if I heard you right, you talked about North America growing 35% in terms of CapEx this year versus your previous estimate of 25%. Can you talk a little bit about what gives you confidence around that view? Is the composition of that more of the privates or do you actually see it showing up in public E&Ps? And is that activity-driven or is it inflation-driven? Any color around the margin because that's a material increase in your macro expectations.

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Well, a lot of that inflation that we see. It's -- and obviously, there's been a lot of inflation if we just look at the cost of inputs separate from our own, we've seen inputs ranging and cost increases from 20% to 100%, depending on what the item is. And so that weighs on it. Rig counts up 45% if we were to stop today, frac crews are up 20% if we were to stop today and the cost of each of those are more. And so look, I think really what we're seeing is public companies will stick -- are sticking with activity outlook. It's not necessarily increasing activity. And then with privates, we continue to see more activity and they keep growing. And so, I think that operators all have different strategies and are very, very sharp around this. And so I expect that they will manage their business the way they plan to manage it, but there's just no question that when I see inflation and activity and clearly privates. To make clear, the private growth is an important part of that outlook. We just -- my view is that we've moved up from where we were a quarter ago.

Q - Neil Mehta {BIO 16213187 <GO>}

And Jeff, we clearly doubled in the rig count here and we're seeing an intention for -- to come into '23 a little bit hotter from a production standpoint. But when we talk to producers, the constraint continues to be around labor and pressure pumping equipment. Do you see new capacity being added into the market by your competitors? And ultimately, will that be a constraint on the US production profile over the next couple of years?

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Yes. I think it will be a constraint. I'm going to go back to my earlier remarks about a closed-loop system and terms of generating cash in order to build equipment and there's a lot of equipment repair that needs to still happen or replacement in the marketplace. So, I think that will be a constraint, labor and certainly equipment. And that's one of the reasons we take a very long view of fleet health and we've got one of the healthiest fleets in the marketplace. But inside of our capital budget, we're always replacing aging equipment, and we're looking ahead today to '23 and '24 in terms of what that fleet composition needs to look like. So we're unique in that regard in terms of where we sit. But I do think that we don't -- I don't see capacity and I don't see meaningful capital to support any kind of build cycle at this point. Reality is this industry is still in recovery mode.

Q - Neil Mehta {BIO 16213187 <GO>}

Thank you, guys.

Operator

Our next question comes from Scott Gruber with Citigroup. Your line is open.

Q - Scott Gruber {BIO 6761975 <GO>}

Yes. Good morning. Just want to come back to the C&P margin outlook, especially given what's happening in the marketplace here with your improvement in frac pricing. When I look at the margins and the incrementals, obviously, a lot of noise in 1Q, which you've talked about. But when I look at margins embedded in your guide versus the second half of last year, the incremental still look pretty modest. But going forward, obviously, a building completion tool backlog, frac prices improving, but obviously, pretty stout inflation coming through the system. How should we think about those factors impacting C&P incrementals in the second half? Can we see incrementals rise into the 40s although inflation constrains those incrementals kind of in the 30s? How should we think about it?

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Yeah. Well, if we look at the Q2, I mean, the way you described it, everything we're doing is driving better margins in C&P, whether it's the operating leverage in the business, moving on price, equipment is tight. I think the Q2 guide is -- puts us in that sort of range. Yes, there's a lot of inflation on other inputs to the business that we are recovering, but even recovering the cost of those other inputs will have a bit of a dilutive impact on overall margins but that doesn't change the recovery for us, and the speed and the momentum of that recovery. And so I feel very good about where we're going and expect incrementals to be at the high end of what a range would be as we move through this process.

Q - Scott Gruber {BIO 6761975 <GO>}

Got it. Got it. And one of the concerns we've heard just on the capturing the next round of pricing in frac is just around timing. Your pricing leverage is improving. But I guess the question is, when do you see the next round really hitting? Is that kind of in 2Q, 3Q? Or do we have to wait until kind of late in the year in the next budget season to really see a -- the next big step-up? How quickly does the next round of pricing in frac (inaudible)?

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Yeah. Look I think -- crazy to get into the strategy for different customers and where we are but obviously, this is an iterative process, meaning it's not something we wait until next year to do again. It's something that we are doing sort of in real time on a very regular basis. And so I expect -- we're in a $100 oil environment here and this is part of the cost of delivering $100 oil. And so a healthy recovering industry, we will continue to iterate on price as we move through the year, not planning for next year.

Q - Scott Gruber {BIO 6761975 <GO>}

Got it. Understood. Thanks, Jeff.

Operator

Our next question comes from Ian Macpherson with Piper Sandler. Your line is open.

Q - Ian Macpherson {BIO 15106867 <GO>}

Good morning, team.

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Hi, good morning.

Q - Ian Macpherson {BIO 15106867 <GO>}

Hi. The situation in Russia has shifted the paradigm not only for crude, obviously, but also natural gas and coal, both of which land on the shoulders of natural gas everywhere else. So, we've seen that strip move radically recently. What do you think the customer response will be from US and international producers of natural gas with regard to activity response to what might be a structural higher strip just like crude that maybe hasn't shown up yet in the fundamentals of your business through April?

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Yeah. Look, I think, Ian, that has to strengthen certainly in terms of activity and I expect we'll see that in the important gas-producing countries internationally, we will see more of that activity and even likely in the US. But the fact is, there still are some important constraints in place around pipeline capacity and whatnot that is serving to keep some of that market constrained today. But look, our business in the gas basins is improving and is busy and really not too dissimilar from kind of the demand response or the activity response that we see from oil.

Q - Ian Macpherson {BIO 15106867 <GO>}

Okay. And then, Jeff, just going back to the outlook on C&P margins. You -- obviously, there was significant weather and sand bottlenecks that distorted Q1 and you have a healthy recovery guided for Q2. But does your margin guidance for Q2 for C&P embed an assumption that the sand problem is sort of contained fully now or do you -- or is that an area for remaining incremental recovery of margins from enduring bottleneck on sand as you've guided Q2 later in the year?

A - Jeffrey A. Miller {BIO 17768856 <GO>}

No, I think the sand is largely behind us. That was a good example of underinvestment in supply chain. And as it was turned back on, it had a lot of maintenance -- lack of maintenance thereof, and we even participated with some of our vendors to help them get things back online. And I believe that's largely behind us.

Look, I think the important point here is this trend is moving up. We're going to see all sorts of things but our guide accounts for sort of all of the things that we see. And I think that we are just in this place where we're going to continue seeing improvement sort of over whatever the labor bottlenecks happen to be, those are going to all be overcome consistently as we move through this year, next year, and really beyond. I mean I think that we'll continue to power through all of that and continue to see solid incremental growth at margins.

Q - Ian Macpherson {BIO 15106867 <GO>}

Super. Thanks, Jeff.

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Yeah, thank you.

Operator

Our next question comes from Connor Lynagh with Morgan Stanley. Your line is open.

Q - Connor Lynagh {BIO 19713242 <GO>}

Yeah. Thank you. I know it's a bit early to say precisely, but just returning to the topic of international pricing. Do you see meaningful constraints in either your available equipment in select markets or your availability of labor? Or is that more of a US issue at this point?

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Look, I think a lot of the same tightness discussion that we talk about in the US is similar internationally. It comes in smaller pockets generally because it's 70 countries as opposed to one. But we're seeing more tightness in tools, clearly, in people, and I think that's what's driving extensions today. I described the increase in the number of extensions we are seeing at higher prices. That's a great sign, but that's really predicated on tightening markets and the importance of having services available. Equipment is getting tighter. New work is pricing better. It moves more slowly than the US, so it may be a little less pronounced, but I expect that continues to improve.

The large tenders remain competitive, but the fact is they're soaking up noticeable equipment. And in fact, some of that tightness in the marketplace is creating opportunity for Halliburton. There are a number of situations where, because of our supply chain and access to raw materials and products, we were able to supply when others could not. And so I think that's a real -- that's the evidence that, that market is getting tighter. When we get a third call from a customer, hey, do you have anything, and we're able to supply it, that's an indicator that the market is getting tighter.

Q - Connor Lynagh {BIO 19713242 <GO>}

Got it. That's helpful color. Just on the supply chain side of things, there's obviously been a lot changing in the world over the last month or two here. Have you had any sort of hot spots that you're monitoring? Are there any areas that we should think about being -- something we should be watching as you ramp activity through the back half of the year here?

A - Jeffrey A. Miller {BIO 17768856 <GO>}

No, I don't think so. I mean I think what we're going to just see is the lengthening of delivery times. Things take longer to deliver and therefore, planning matters more than ever. Obviously planning on our part, but also planning on the parts of our customers. And again, it is creating opportunity for us and I think along the way, the key here is we can't and won't subsidize operators in this process. So we've been very transparent in terms of the cost to acquire things, the timing to acquire things. And I think that, again, our supply chain organization is very sophisticated and it outperforms. And so, I put Halliburton right at the top of that when it comes to solving those kinds of shortages, bottlenecks, whatever it may be.

Q - Connor Lynagh {BIO 19713242 <GO>}

Got it. Thank you very much.

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Thank you.

Operator

Our next question comes from Stephens Gengaro with Stifel. Your line is open.

Q - Stephen Gengaro {BIO 1506867 <GO>}

Thanks. good morning, gentlemen.

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Good morning, Steven.

Q - Stephen Gengaro {BIO 1506867 <GO>}

Two things for me. Just to start with -- with the world evolving and you mentioned kind of the pull on short-cycle barrels, how do you think about CapEx? How do you think about investing in assets which have five-year-plus lives in an environment where things have changed so dramatically?

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Well, we look at that returns on that equipment inside the time that we know it will work. And so, it dials back speculative build. We really don't do much of that at all. Anything that we're doing, we've got a line of sight to not only the initial project but it's full cycle return and expect that to get returned in the life of that contract. I'd use e-fleets as an example of that, where our view is they have to make a return on capital and a return of capital inside of the time it goes -- its initial contract and we view a lot of things that way. And so I think just as operators sort of retain flexibility -- budget flexibility around what they choose to do, we're doing the same. And that's what allows us, really, in my view, to confidently drive profitable growth internationally, which D&E margins are an example of that, and then also maximize value in North America, which is sort of our approach to

North America is demonstrating that also. And so, I really like our strategy very much, and I think it's very consistent with the kind of market that we see unfolding.

Q - Stephen Gengaro {BIO 1506867 <GO>}

Thanks. And I guess the follow-up, just when you think about -- and you mentioned the concentration of frac equipment in the hands of just a few operators now and you've seen consolidation. Have you seen behavioral change from -- in general, just from all the players in the market? Do you think it's just a function of the market being sold out? Do you think other -- your competitors are truly acting better when it comes to pricing?

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Look, I can't comment there. I mean, what I see is an industry broadly that has underperformed for a long time. And I know in our own case, for Halliburton, in order to reinvest in even replacement equipment, we need fundamentals that are better and returns that are higher in order to generate the cash back to my point around maximizing value in North America. We're only going to do that if the investment is produced by the equipment that is working in the marketplace. And so independent of what others are doing, that's what we are doing. And when I look across the marketplace, I see a whole industry that has largely suffered the same thing. And so that's just pure economics at work there.

Q - Stephen Gengaro {BIO 1506867 <GO>}

Great. Thank you.

Operator

Thank you. That concludes our question-and-answer session for today. I'd like to turn the conference back over to Jeff Miller for closing remarks.

A - Jeffrey A. Miller {BIO 17768856 <GO>}

Yeah. Thank you, Michelle. Look, before we end the call, let me just close with these comments. I am confident in my outlook on the strength of this market upcycle and I expect Halliburton will deliver profitable growth, strong free cash flow and industry-leading returns as this upcycle accelerates. The pivot to short-cycle barrels only confirms this upcycle staying power.

Look forward to speaking with you next quarter. Michelle, let's close out the call.

Operator

Thank you. Ladies and gentlemen, this concludes today's conference. Thank you for joining and have a wonderful day.

https://www.nbim.no/en/the-fund/news-list/2022/negative-return-in-the-first-quarter/

Negative return in the first quarter

In the first quarter of 2022, the Government Pension Fund Global returned -4.9 percent, equivalent to -653 billion kroner.

21 April 2022

The return on the fund's equity investments was -5.2 percent. The return on the investments in fixed income was -4.8 percent, whereas the investments in unlisted real estate returned 4.1 percent.

The fund's return was 0.66 percentage points, or 82 billion kroner, stronger than the return on the benchmark index.

"The first quarter has been characterised by geopolitical turbulence, which has also affected the markets. The return was negative for both equities and fixed income, but positive for unlisted real state", says Deputy CEO at Norges Bank Investment Management Trond Grande.

The krone strengthened against several major currencies in course of the quarter. Currency movements contributed to a decrease in the fund's value of 171 billion kroner. In the first quarter, inflow into the fund amounted to 141 billion kroner.

The fund had a value of 11,657 billion kroner as at 31 March 2022. 70.9 percent of the fund was invested in equities, 26.3 percent in fixed income, 2.7 percent in unlisted real estate, and 0.1 percent in unlisted renewable energy infrastructure.

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Key figures 1Q 2022

The fund's market value decreased by 683 billion kroner to 11,657 billion kroner in the first quarter of 2022. The fund returned -4,9 percent, equivalent to -653 billion kroner. This was 0,66 percentage point higher than the return of the benchmark index.

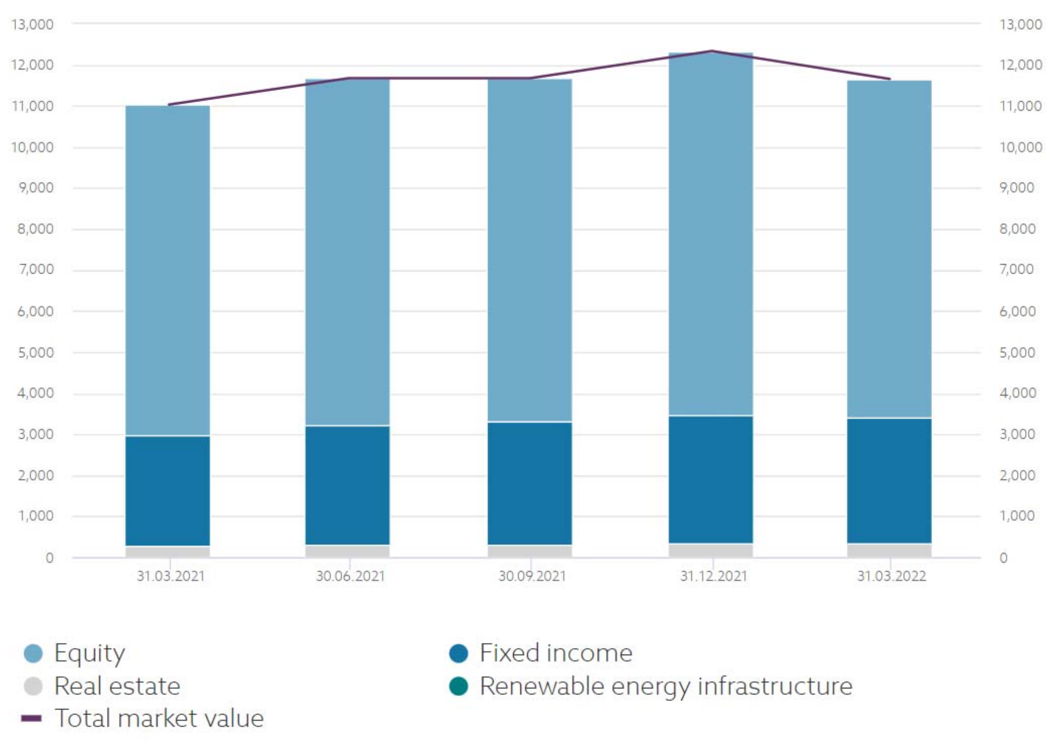
21 April 2022

"*The first quarter has been characterised by geopolitical turbulence, which has also affected the markets. The return was negative for both equities and fixed income, but positive for unlisted real state*", says Deputy CEO Trond Grande

At the end of the first quarter of 2022 the fund's market value was 11,657 billion kroner.

The fund’s equity investments had a market value of 8,262 billion kroner, while the market value of the fixed-income investments was 3,066 billion kroner. The unlisted real estate investments had a market value of 315 billion kroner and renewable energy infrastructure 13 billion kroner. 70.9 percent of the fund was invested in equities, 26.3 percent in fixed income, 2.7 percent in unlisted real estate, and 0.1 percent in unlisted renewable energy infrastructure.

The values in the chart below are in billions of kroner and shows the last five quarters**.**



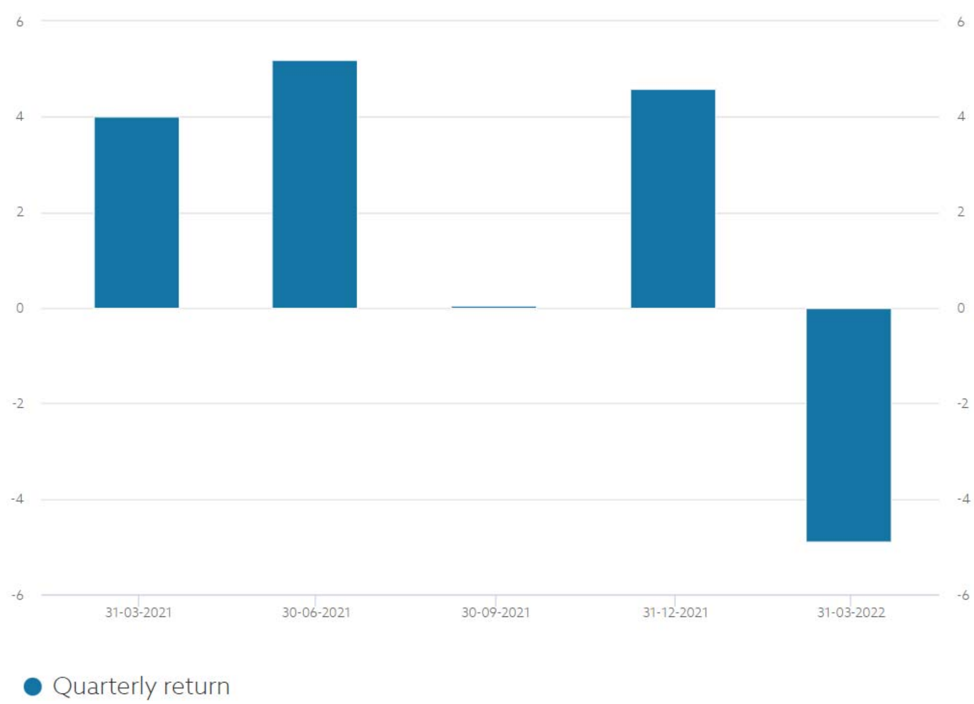
More than half of the fund's market value is return on the investments, and totaled to -653 billion kroner. 141 kroner was net inflows from the government and -171 billion kroner came from currency.

The values in the chart below are in billions of kroner.

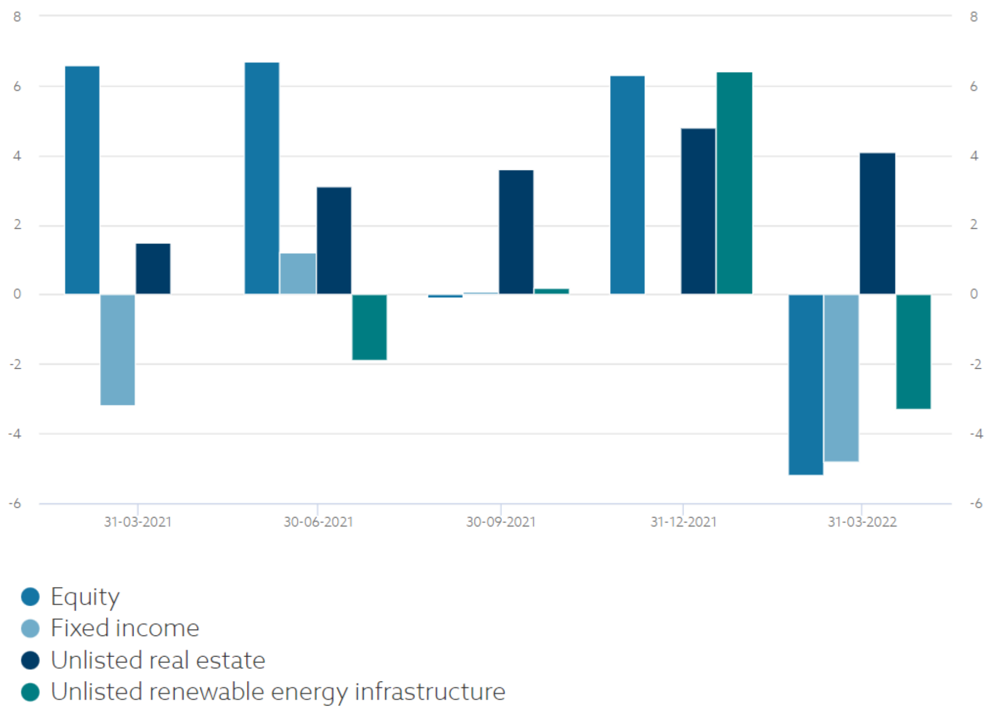
See the fund's market value since 1998

-4,9 percent return in the first quarter

The values in in the chart below are in percent.



The return on the fund's equity investments was -5.2 percent, the return on the fixed-income investments was -4.8 percent, whereas investments in unlisted real estate returned 4.1 percent. The return on unlisted renewable energy infrastructure was -3.3 percent.



See historic returns since 1998

Historical key figures

Values in billions of kroner.

	31.02.2022	31.12.2021
Total inflow of capital	3,794	3,654
Total withdrawal of capital[1]	-687	-687
Total return	7,355	8,007
Management fees	-60	-58
Accrued, not paid, management fees	2	-1
Changes due to fluctuations in krone	1,252	1,423
Market value of fund	11,657	12,340

[1] Total withdrawal of capital shown in this table is adjusted for accrued, not paid, management fees.

Annualised return in percent

As at 31 March 2022. Measured in the fund's currency basket.

	Since 01.01.1998	Last 10 years
Return on fund	6.33	8.41
Annual inflation	1.95	1.93
Annual management costs	0.08	0.05
Net real return on fund	4.22	6.30

https://www.norges-bank.no/aktuelt/nyheter-og-hendelser/Foredrag-og-taler/2021/2021-12-21-borsum/

Ownership and climate risk in the GPFG - on the instruments for managing climate risk in the GPFG

Speech by Deputy Governor Øystein Børsum, 21 December 2021.

Actual performance may differ from published text

Introduction

Climate challenges are an engaging theme.

Figure: Emissions must be reduced

The world economy, as it operates today, is not sustainable. It must be, and then emissions must go down. It concerns us all - and not least our common fund. With a broadly diversified, global portfolio and a long horizon, we are in many ways burdened with the world economy.

Norges Bank is a financial investor. We will secure and create financial value for future generations. It is our task as manager of the fund. But how the assignment is carried out can also have an impact beyond the purely financial. Among other things, in the transition to a low-emission society. What our role should be - what our work should consist of - is what I want to talk about today.

This summer, an expert group submitted a report to the Ministry of Finance with recommendations on how climate risk should be managed in the fund. During the autumn, we at Norges Bank worked to assess the proposals and look at how they can be implemented.

A couple of days ago, the Executive Board sent its response to the Ministry of Finance. In the bank's management of climate risk, a lot is already being done, and we are outlining even more ambitious plans for the future. As a long-term and global investor with ownership interests in several thousand companies, we have a financial interest in the companies adapting to the risk and opportunities that climate change entails in a good way.

We propose that Norges Bank be a driving force for the companies we are invested in to adjust to net zero emissions over time - that the companies we invest in reflect the restructuring that the world has to go through.

The fund as an investor

Our characteristics as an investor

The climate risk in the fund is related to who we are as an investor and our overall investment strategy. In short: The fund is large, broadly diversified, long-term and close to the index.

Chart: Large, broadly diversified, long-term and index-linked

Of the fund's more than 12,000 billion, 70 per cent is invested in shares. With that, we are one of the world's largest shareholders. We are owners of 9000 companies in 70 countries.

And we are long-term. By using only the real return, the fund can in principle be perpetual.

The strategy is based somewhat simply on the following: If we are to achieve the best balance between expected return and risk, we must spread the investments widely and own a little of everything in the market. There is a solid professional basis for this approach.

How climate risk is relevant to the fund

What does this way of managing the fund have to say for the fund's climate risk? By spreading the investments widely, we are protected against incidents that only affect individual companies or special sectors. But we can not protect ourselves from events or developments that affect everyone.

The fund is exposed to two types of climate risk - physical risk and transition risk.

Transition risk is about whether the *companies* we own will manage the transition to a low-emission economy. Here the challenge is very different across sectors and companies.

Chart: Transition risk and the fund

The fund's equity investments can be categorized according to transition risk as assessed by the research company MSCI today. The blue bars in the figure show shares of the fund's portfolio. The white bars show the emissions in the companies. The companies that have ended up in the category «restructuring» have high emissions and must therefore restructure significantly. They make up 14 percent of the equity portfolio. The rest are companies that are either considered to be neutrally positioned or are considered to make a positive contribution to a green transition. The latter are thus part of the solution. [1]

Physical risk is more directly linked to climate change. The easiest to think about are acute events such as extreme weather, but also more gradual changes such as warmer climates, droughts and increased sea levels can affect individual investments in both negative and positive directions.

In a scenario where the world does not succeed in the transition to a low-emission economy, the risk increases, also for the fund, because the consequences of major climate change will be felt everywhere. As owners of shares, bonds and real assets, we are invested in everything from real estate and infrastructure, forestry and the food industry to all kinds of production capital. All of these are investments that can be affected by changes in the environment, including heat waves, floods and fires. We own a little of everything.

For a large, long-term, global fund, there will be nowhere to hide.

Climate risk is a long-term and important risk that the fund must deal with.

What does a long-term goal of net zero emissions mean for the fund?

A key recommendation from the expert group is that Norges Bank's responsible management be given a long-term goal of working towards net zero emissions from the companies in which the fund is invested. Norges Bank supports this recommendation.

Some may interpret this as a plan to sell shares in companies with large emissions.

But that is not our approach, nor is it the expert group's proposal. Instead of selling ourselves out, we will through active ownership be a *driving force* for the companies to adapt. In order to influence, we must actually be owners.

And we believe that ownership work works.

It works because we are big. Norges Bank is among the ten largest owners in about half of the companies we are invested in, and we have experienced that the companies listen when we talk.

Responsible management - a chain of instruments

Figure: Responsible management - a chain of instruments

Responsible management is our foremost tool in the work with climate risk and climate-related investment opportunities. I will now consider some important parts of this work. We are already doing a lot, and now we want to do even more.

The work can be grouped into three: The work we do towards the markets, towards the companies and with the portfolio. Together, this constitutes a coherent chain of instruments. I can not take a full review of the work here, but will highlight some points.

Default setting

The first point, standard setting, is about standards for reporting and measuring companies' climate risk.

Good common standards are important. This enables us as managers to assess the companies' prospects, prioritize ownership work and make good investment decisions.

But not just us. Better reporting will make the financial markets more well-functioning and better able to allocate capital. International standards provide equal conditions across markets and set the list for all companies. We, and other major investors, have an important role to play in contributing to the development of these standards.

Among the particularly important initiatives we have supported are climate reporting from the Task Force on Climate-Related Financial Disclosures (TCFD). Such reporting has been voluntary, but we believe that it must now become a requirement. Another issue we are working on is a comprehensive standard for sustainability reporting in line with the recently launched International Sustainability Standards Board (ISSB).

We will also work for good standards for reporting on companies' indirect emissions in the value chain, so-called "framework 3". In many sectors, this is crucial for understanding the companies' climate risk. We will also work with other climate-related issues where international standards may be appropriate. The use of various forms of climate quotas can be an example of this.

Our work with the companies starts with setting clear expectations.

We have formulated our expectations in our own expectations documents. In the climate area, we already expect companies to have a climate strategy, set emission targets, report on developments and stress test their business models against different climate scenarios. Going forward, it is natural for us to emphasize the horizon towards zero emissions. This will provide a clearer direction for the exercise of ownership.

Exercise of ownership

The exercise of ownership will be central to the work to manage the fund's climate risk. Not least, the dialogue with the companies is important.

Figure: Climate is more often a theme in the dialogue

The dialogue with the companies follows our expectations. Last year we had about 3,000 meetings with the companies, and as you can see from this figure, sustainability is increasingly on the agenda.

Going forward, we will increase ownership activity on climate, both in scope and depth.

We will give particular priority to ownership activity towards the companies that have the largest emissions, towards those that have not published their own climate plans or have inadequate climate reporting. We will also strengthen the ownership activity aimed at the financial sector, which is indirectly exposed to climate risk through lending and investments.

The dialogue is adapted to the sector and situation. Steel and cement are an example. These companies currently have large emissions, but are also manufacturers of products we also need in a low-emission society. Therefore, the dialogue is precisely about transition plans, much about the technological measures and investments needed for change. We also address the need for industry standards and lobbying, which is a significant challenge.

Figure: Companies report better on climate

We see signs that the work is working. For example, when we analyze the reporting from 1,500 companies, we see that the companies we have been actively involved in have made greater progress in reporting on climate strategy than the other companies. Of course, we should not take all the credit for these advances. But there is progress.

In the future, we will report more about the dialogue with the companies, what they are about and changes we see. That it is visible is a tool in itself.

Reporting and voting

The dialogue with the companies will not succeed in all cases. We can then hold the boards responsible for their decisions through our voting. This year, we have, among other things, in six cases voted against renewed confidence in board members due to inadequate management of climate risk. This sounds small, but in the future we will work to use this tool to a greater extent than today.

We have started by announcing our voting five days before the actual voting. What we do is noticed.

Another alternative is to promote shareholder proposals, alone or together with others. In the past year, we have supported 19 shareholder proposals on climate. One of those who gained a majority led to a large international company initiating work on reporting on emissions in the value chain ("Box 3"). Going forward, we will also consider promoting our own shareholder proposals.

Risk-based divestments

A last resort, when the exercise of ownership does not succeed, is the sale. It will not be the case that we automatically sell out if the ownership work does not succeed. But in some cases it can be the result.

Norges Bank can sell out of a company on a financial basis. This is what we call risk-based divestments. These are companies that we believe handle climate risk in a very deficient way - and thus provide an increased financial risk. This is about avoiding companies that we believe do not have sustainable business models.

Figure: More than half of the sales are related to climate

Risk-based divestments are active decisions made by Norges Bank, which draw on the fund's framework for deviations from the benchmark index. In the period 2012-2020, we have made more than 300 such sales, and more than half have been linked to climate change.

We are ready to do more of this in the future.

As a continuation of risk-based divestments, we have also begun to systematically assess companies' sustainability risk before entering the fund's benchmark index.

The fund is managed close to the index. Risk-based divestments will therefore mainly be relevant for smaller companies. For larger companies, we have more limited room for maneuver, as such sales will to a greater extent draw on the framework for deviations from the benchmark index.

The behavioral criterion

Figure - Responsible management - a chain of instruments

This takes me over to the second form of divestiture, namely exclusion on ethical grounds. The fund's ethical guidelines contain both a product-based coal criterion and a behavior-based climate criterion.

The latter includes companies that are linked to serious environmental damage or to an unacceptable degree lead to greenhouse gas emissions.

The Council on Ethics advises observing or excluding a company based on this criterion. Based on their recommendations, the Executive Board of Norges Bank makes the final decision based on these recommendations. A decision on exclusion means that the company is excluded from both the portfolio and the benchmark index. It therefore does not draw on our framework for deviations.

It is our experience that the practice of this criterion is complex and that it requires broad insight and detailed information about companies' activities and plans.

Norges Bank expects that we will - in light of the work I have talked about today - gather further detailed information about the companies' climate risk and climate plans. We will share this information with the Council on Ethics.

Downsizing or exclusion is the last link in the chain of instruments, but far from the most important. We plan for Norges Bank to be a driving force for the companies in the portfolio to adjust to net zero emissions over time. Active ownership is the key tool.

End

Before I conclude, I would like to mention that we invest in companies that can contribute to solutions to the climate challenges, both through the environmental mandates and in the rest of equity management. We are now also in the process of building up a portfolio of high-quality wind and solar power plants.

The first environmental mandates were established in December 2009, and have had positive learning effects for several parts of the organization. As we write in the letter to the ministry, we will in future draw more on the competence of the managers of the environmental mandates in other parts of the administration.

Overall: Our ambition is for us to be a leader in responsible management. In collaboration with other large investors, we will contribute to the development of standards and methods for reporting. We will strengthen our dialogue with companies about climate both in scope and depth, and utilize the entire toolbox we have as an investor. We will influence companies to take the restructuring seriously. We expect concrete plans, not empty words or greenwashing! And not least - we must have a clear voice in our ownership work.

Footnote

[1] The calculations are based on the analysis company MSCI's classification of companies' transition risk. 80 per cent of the market value of the fund's equity portfolio ends up in the group of companies that are neutrally exposed to transition risk.

PUBLISHED December 21, 2021 9:00 AM

https://carbonherald.com/worlds-largest-carbon-removal-plant-orca-freezes-over-in-iceland/#:~:text=World's%20Largest%20Carbon%20Removal%20Plant%20'Orca'%20Freezes%20Over%20In%20Iceland,-byViolet%20George&text=The%20world's%20largest%20carbon%20removal,putting%20its%20operations%20behind%20schedule

World’s Largest Carbon Removal Plant ‘Orca’ Freezes Over In Iceland

by**Violet George**
April 13, 2022

The world’s largest carbon removal plant located to the east of Reykjavik, Iceland, has frozen, putting its operations behind schedule.

Climeworks, the company behind the ambitious plant named ‘Orca’, had set out to capture 4,000 metric tons of CO2 every year directly from the air – a process known as direct air capture or DAC.

By the end of the decade, in fact, the project’s capacity is expected to reach as much as 1 million tons of carbon dioxide.

However, as it became apparent, the plant was not equipped to handle the harsh weather conditions in Iceland and some of the machinery froze.

Climeworks was thus forced to urgently make modifications, which will inevitably be a bump in the road towards the company’s carbon removal goals in Iceland.

The Orca plant was officially launched in September 2021 and was even praised by the country’s prime minister Katrin Jakobsdottir and dubbed a ‘milestone’ in the global battle against the climate crisis.

Furthermore, the DAC facility runs on power from geothermal energy sources, meaning it is as sustainable as can be.

Recently, Climeworks signed several new carbon removal agreements with major companies, such as Swarovski, Rothesay Life, and others and raised $650 million to scale its technology.

https://blogs.imf.org/2022/04/19/war-dims-global-economic-outlook-as-inflation-accelerates/

War Dims Global Economic Outlook as Inflation Accelerates

About the Blog

IMFBlog is a forum for the views of the International Monetary Fund (IMF) staff and officials on pressing economic and policy issues of the day.

The views expressed are those of the author(s) and do not necessarily represent the views of the IMF and its Executive Board.

APRIL 19, 2022
By Pierre-Olivier Gourinchas

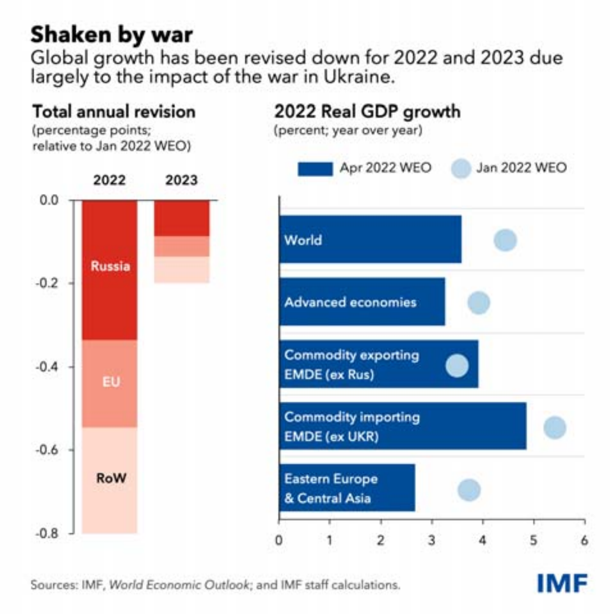
The effects of the war will propagate far and wide, adding to price pressures and exacerbating significant policy challenges.

Global economic prospects have been severely set back, largely because of Russia's invasion of Ukraine.

This crisis unfolds even as the global economy has not yet fully recovered from the pandemic. Even before the war, inflation in many countries had been rising due to supply-demand imbalances and policy support during the pandemic, prompting a tightening of monetary policy. The latest lockdowns in China could cause new bottlenecks in global supply chains.

In this context, beyond its immediate and tragic humanitarian impact, the war will slow economic growth and increase inflation. Overall economic risks have risen sharply, and policy tradeoffs have become even more challenging.

Compared to our January forecast, we have revised our projection for global growth downwards to 3.6 percent in both 2022 and 2023. This reflects the direct impact of the war on Ukraine and sanctions on Russia, with both countries projected to experience steep contractions. This year's growth outlook for the European Union has been revised downward by 1.1 percentage points due to the indirect effects of the war, making it the second largest contributor to the overall downward revision.

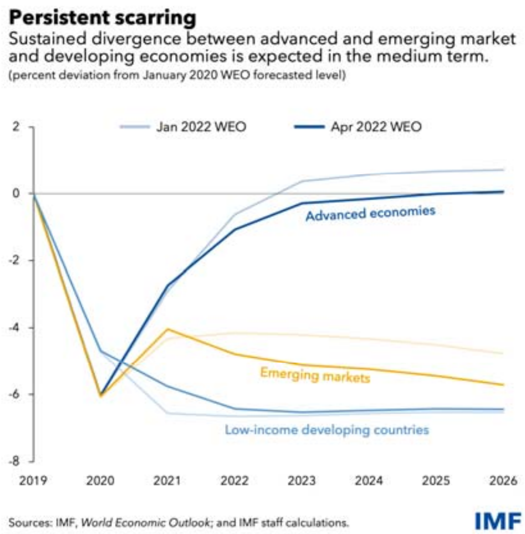


The war adds to the series of supply shocks that have struck the global economy in recent years. Like seismic waves, its effects will propagate far and wide—through commodity markets, trade, and financial linkages. Russia is a major supplier of oil, gas, and metals, and, together with Ukraine, of wheat and corn. Reduced supplies of these commodities have driven their prices up sharply. Commodity importers in Europe, the Caucasus and Central Asia, the Middle East and North Africa, and sub-Saharan Africa are most affected. But the surge in food and fuel prices will hurt lower-income households globally, including in the Americas and the rest of Asia.

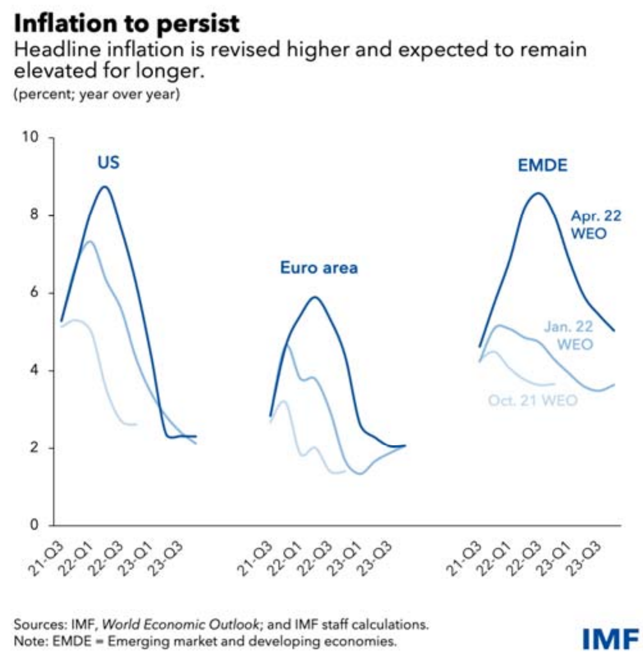
Eastern Europe and Central Asia have large direct trade and remittance links with Russia and are expected to suffer. The displacement of about 5 million Ukrainian people to neighboring countries, especially Poland, Romania, Moldova and Hungary, adds to economic pressures in the region.

Pressures amplified

The medium-term outlook is revised downwards for all groups, except commodity exporters who benefit from the surge in energy and food prices. Aggregate output for advanced economies will take longer to recover to its pre-pandemic trend. And the divergence that opened up in 2021 between advanced and emerging market and developing economies is expected to persist, suggesting some permanent scarring from the pandemic.



Inflation has become a clear and present danger for many countries. Even prior to the war, it surged on the back of soaring commodity prices and supply-demand imbalances. Many central banks, such as the Federal Reserve, had already moved toward tightening monetary policy. War-related disruptions amplify those pressures. We now project inflation will remain elevated for much longer. In the United States and some European countries, it has reached its highest level in more than 40 years, in the context of tight labor markets.



The risk is rising that inflation expectations drift away from central bank inflation targets, prompting a more aggressive tightening response from policymakers. Furthermore, increases in food and fuel prices may also significantly increase the prospect of social unrest in poorer countries.

Immediately after the invasion, financial conditions tightened for emerging markets and developing countries. So far, this repricing has been mostly orderly. Yet, several financial fragility risks remain, raising the prospect of a sharp tightening of global financial conditions as well as capital outflows.

On the fiscal side, policy space was already eroded in many countries by the pandemic. Withdrawal of extraordinary fiscal support was projected to continue. The surge in commodity prices and the increase in global interest rates will further reduce fiscal space, especially for oil- and food-importing emerging markets and developing economies.

The war also increases the risk of a more permanent fragmentation of the world economy into geopolitical blocks with distinct technology standards, cross-border payment systems, and reserve currencies. Such a tectonic shift would cause long-run efficiency losses, increase volatility and represent a major challenge to the rules-based framework that has governed international and economic relations for the last 75 years.

Policy priorities

Uncertainty around these projections is considerable, well-beyond the usual range. Growth could slow down further while inflation could exceed our projections if, for instance, sanctions extend to Russian energy exports. Continued spread of the virus could give rise to more lethal variants that escape vaccines, prompting new lockdowns and production disruptions.

In this difficult environment, national-level policies and multilateral efforts will play an important role. Central banks will need to adjust their policies decisively to ensure that medium- and long-term inflation expectations remain anchored. Clear communication and forward guidance on the outlook for monetary policy will be essential to minimize the risk of disruptive adjustments.

Several economies will need to consolidate their fiscal balances. This should not impede governments from providing well-targeted support for vulnerable populations, especially in light of high energy and food prices. Embedding such efforts in a medium-term framework with a clear, credible path for stabilizing public debt can help create room to deliver the needed support.

Even as policymakers focus on cushioning the impact of the war and the pandemic, other goals will require their attention.

The most immediate priority is to end the war.

On climate, we must close the gap between stated ambitions and policy actions. An international carbon price floor differentiated by country income levels would provide a way to coordinate national efforts aimed at reducing the risks of catastrophic climate events. Equally important is the need to secure equitable worldwide access to the full complement of COVID-19 tools to contain the virus, and to address other global health priorities. Multilateral cooperation remains essential to advance these goals.

Policymakers should also ensure that the global financial safety net operates effectively. For some countries, this means securing adequate liquidity support to tide over short-term refinancing difficulties. But for others, comprehensive sovereign debt restructuring will be required. The Group of Twenty's Common Framework for Debt Treatments offers guidance for such restructuring but has yet to deliver. The absence of an effective and expeditious framework is a fault line in the global financial system.

Particular attention should also be paid to the overall stability of the global economic order to make sure that the multilateral framework that has lifted hundreds of millions out of poverty is not dismantled.

These risks and policies interact in complex ways over varying timeframes. Rising interest rates and the need to protect vulnerable populations against high food and energy prices make it more difficult to maintain fiscal sustainability. In turn, the erosion of fiscal space makes it harder to invest in the climate transition, while delays in dealing with the climate crisis make economies more vulnerable to commodity price shocks, which feeds into inflation and economic instability. Geopolitical fragmentation worsens all these trade-offs, increasing the risk of conflict and economic volatility and decreasing overall efficiency.

In the matter of a few weeks, the world has yet again experienced a major shock. Just as a durable recovery from the pandemic was in sight, war broke out, potentially erasing recent gains. The many challenges we face call for commensurate and concerted policy actions at the national and multilateral levels to prevent even worse outcomes and improve economic prospects for all.

Latest World Economic Outlook Growth Projections

(real GDP, annual percent change)	2021	PROJECTIONS 2022	2023
World Output	**6.1**	**3.6**	**3.6**
Advanced Economies	**5.2**	**3.3**	**2.4**
United States	5.7	3.7	2.3
Euro Area	5.3	2.8	2.3
Germany	2.8	2.1	2.7
France	7.0	2.9	1.4
Italy	6.6	2.3	1.7
Spain	5.1	4.8	3.3
Japan	1.6	2.4	2.3
United Kingdom	7.4	3.7	1.2
Canada	4.6	3.9	2.8
Other Advanced Economies	5.0	3.1	3.0
Emerging Market and Developing Economies	**6.8**	**3.8**	**4.4**
Emerging and Developing Asia	7.3	5.4	5.6
China	8.1	4.4	5.1
India	8.9	8.2	6.9
ASEAN-5	3.4	5.3	5.9
Emerging and Developing Europe	6.7	-2.9	1.3
Russia	4.7	-8.5	-2.3
Latin America and the Caribbean	6.8	2.5	2.5
Brazil	4.6	0.8	1.4
Mexico	4.8	2.0	2.5
Middle East and Central Asia	5.7	4.6	3.7
Saudi Arabia	3.2	7.6	3.6
Sub-Saharan Africa	4.5	3.8	4.0
Nigeria	3.6	3.4	3.1
South Africa	4.9	1.9	1.4
Memorandum			
Emerging Market and Middle-Income Economies	7.0	3.8	4.3
Low-Income Developing Countries	4.0	4.6	5.4

Source: IMF, *World Economic Outlook*, April 2022

Note: For India, data and forecasts are presented on a fiscal year basis, with FY 2021/2022 starting in April 2021. For the April 2022 WEO, India's growth projections are 8.9 percent in 2022 and 5.2 percent in 2023 based on calendar year.

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Excerpt https://mnpdebt.ca/en/resources/mnp-debt-blog/consumer-debt-index-hits-low-amid-growing-concern-about-debt-and-rising-interest-rates

MNP Consumer Debt Index hits record low amid growing concern about debt and rising interest rates among Canadians

2022-04-18 **Grant Bazian**

MNP Consumer Debt Index

- *More than half say they're beginning to feel the effects of interest rate increases (52%, +5pts).*
- *Nearly six in 10 say they're more concerned about their ability to pay their debts (57%, +3pts).*
- *Four in 10 say rising interest rates could drive them closer to Bankruptcy (39%, +4pts).*
- *Two in 10 say they're not financially prepared to deal with increasing interest rates (22%, +2pts).*
- *Nearly half are concerned they won't be able to cover all living / family expenses in the coming year without going further into debt (46%, +2pts).*

CALGARY, AB – April 18, 2022 – The enduring financial impacts of COVID-19 coupled with the pressures of rising interest rates and a higher cost of living are weighing down Canadians' confidence in their personal finances, according to the MNP Consumer Debt Index which is conducted quarterly by Ipsos on behalf of MNP LTD.

Now in its twentieth wave, the Index tracks Canadians' attitudes about their debt situation and their ability to meet their monthly payment obligations. It remains at an all-time low since its inception in June 2017, dropping one point in the first quarter of this year.

Interest rate hikes have more people worried than last quarter, with four in 10 (39%) Canadians saying rising rates could drive them closer to Bankruptcy — a notable four-point increase since December. Six in 10 (57%, +3pts) say they're more concerned about their ability to pay their debts.

"The affordability crisis is increasing the financial pressure on Canadian households," says Grant Bazian, President of MNP LTD, the country's largest insolvency firm.

"Many are likely to rack up more debt to keep up with the cost of living and rising interest rates — but as interest rates rise, so will the cost of servicing some of those debts, making it more difficult to pay them down. It's extremely hard to break free of that cycle once it begins."

More than half of Canadians say they're already feeling the effects of interest rate increases (52%, +5pts). Looking ahead, six in 10 (57%, +4pts) say they're concerned about the impact of rising interest rates on their financial situation, and two in 10 (22%, +2pts) say they're not financially prepared to deal with a rate increase of one percentage point.

"Those who own a home or who plan to renew their mortgage are at a higher risk when it comes to being unable to absorb higher interest rates. They'll be facing monthly payments that are potentially hundreds of dollars higher than they'd initially planned for. With the increasing costs of food, gas, and groceries, it's a perfect storm for some households that are already stretched to the max," says Bazian.

Five percent, or nearly two million Canadians, say they will be renewing their mortgage in the next 12 months. Concerned about how they could be affected by rising rates, this group is more likely to say they are being more be careful with how they spend their money compared to the general population (91% vs. 81%).

"While mortgage holders can be particularly vulnerable to interest rate changes, their acute awareness of this vulnerability will hopefully help them prepare for the potential impact of future rate hikes," says Bazian.

Those who rent their homes are not free from worry, however. Renters are most likely to be in a more precarious financial position in general — and to have their own concerns about the impact of higher interest rates. Renters are more likely to say they're more concerned about their ability to repay their debts than they used to be compared to the general population (65% vs. 57%), and that they'll be in financial trouble if interest rates go up much more (62% vs. 51%). They're also more likely to say rising interest rates could move them towards Bankruptcy (50% vs. 39%).

"The past two years have depleted many people's rainy-day savings funds, and those who don't own a home haven't benefited from rising real estate values," explains Bazian.

"We're seeing household budgets contracting across the country to the point where it will eventually become impossible for many people to cover their monthly expenses — especially those who are already living in the red. When that happens, those people will be technically insolvent."

Many households could find themselves becoming insolvent within the next 12 months; nearly half (49%, +3) report they are $200 away or less from not being able to meet all their financial obligations — including 31 percent who say they already don't make enough to cover their bills and debt payments. In addition, the average amount Canadians have left over at the end of the month has marginally decreased to $728, down $15 from December.

Almost half (46%, +2pts) are concerned they won't be able to cover all living / family expenses in the coming year without going further into debt. About two in five Canadians say they're concerned about their current level of debt (41%, -2pts) and regret the amount of debt they've taken on in life (44%, -1pt).

"People often feel a great deal of shame and regret about their debt situation. The stress and anxiety brought on by excessive debt can lead many to convince themselves of things that simply aren't true: they've failed, they're alone, they're beyond help, or they can never get out of debt," explains Bazian.

"We've all been through a lot over the last two years, including a financially devastating pandemic and associated job loss. My advice to anyone struggling is go easy on yourself and seek professional debt advice right away."

Licensed Insolvency Trustees are the only professionals that can offer deeply indebted individuals with debt-relief options, including Consumer Proposals and Bankruptcy.

While many people fear they will lose their house or car in a Bankruptcy, Bazian notes there are alternative options that can still provide a clear path out of debt. In a Consumer Proposal, for example, an individual can hold onto their assets and repay unsecured debts via interest free and budget friendly monthly payments.

Both Bankruptcy and Consumer Proposals also offer legal protections to stop wage garnishments and end harassing phone calls from creditors.

"If you've reached a point where you're covering your bills with credit cards and other debt, or are about to reach that point, that's the time to speak with a government licensed professional who can give you unbiased advice about your debt-relief options," says Bazian.

Other survey highlights include:

- Women and those aged 35 to 54 are the most likely to be feeling the effects of interest rate increases, are more concerned about being able to repay debts, and will be more cautious with their spending.
- Across the country, British Columbians experienced the largest decrease in disposable income, with $269 less at month-end, now down to $734. This is a surprising reversal from last quarter when they had the most disposable income amongst the provinces, indicating the rising cost of living is having a significant impact on the province. Saskatchewan and Manitoba residents, who currently have the least amount of disposable income amongst the other provinces ($467), experienced a similar decline, with $224 less leftover at month-end.
- Across the country, most Canadians (81%, unchanged) agree they will be more careful about how they spend their money with interest rates rising.

About MNP LTD

MNP LTD, a division of the national accounting firm MNP LLP, is the largest insolvency practice in Canada. For more than 50 years, our experienced team of Licensed Insolvency Trustees and advisors have been working with individuals to help them recover from times of financial distress and regain control of their finances. With more than 240 offices from coast-to-coast, MNP helps thousands of Canadians who are struggling with an overwhelming amount of debt each year. Visit **MNPdebt.ca** to contact a Licensed Insolvency Trustee or use our free **Do it Yourself (DIY) debt assessment tools**. For regular, bite-sized insights about debt and personal finances, subscribe to the **MNP 3 Minute Debt Break Podcast**.

About the MNP Consumer Debt Index

The **MNP Consumer Debt Index** measures Canadians' attitudes toward their consumer debt and gauges their ability to pay their bills, endure unexpected expenses, and absorb interest-rate fluctuations without approaching insolvency. Conducted by Ipsos and updated quarterly, the Index is an industry-leading barometer of financial pressure or relief among Canadians.

Now in its twentieth wave, the Index has dropped one point since last quarter to 87 points, remaining at an all-time low since its inception in June 2017. Visit **MNPdebt.ca/CDI** to learn more.

The data was compiled by Ipsos on behalf of MNP LTD between March 9 and March 15, 2022. For this survey, a sample of 2,000 Canadians aged 18 years and over was interviewed. Weighting was then employed to balance demographics to ensure that the sample's composition reflects that of the adult population according to Census data and to provide results intended to approximate the sample universe. The precision of Ipsos online polls is measured using a credibility interval. In this case, the poll is accurate to within ±2.5 percentage points, 19 times out of 20, had all Canadian adults been polled. The credibility interval will be wider among subsets of the population. All sample surveys and polls may be subject to other sources of error, including, but not limited to, coverage error and measurement error.

A summary of some of the provincial data is available by request.

Dan Tsubouchi @Energy_Tidbits · 13h

Libya #Oil shut-ins now >400,000 b/d due to closures imposed on major export fields and ports says Oil Minister Aoun. #OOTT

libyaobserver.ly

Libya loses 70 million dollars per day due to oil closures

The Minister of Oil and Gas, Mohamed Aoun, has revealed that Libya is currently losing about 50 to 70 million dollars and more than 400,00...

1 3

Dan Tsubouchi @Energy_Tidbits · 19h

#Vortexa crude #Oil floating storage for 04/22 est 101.96 mmb, -5.14 mmb WoW vs revised up 107.1 mmb at 04/15. Big revisions up to past several wks, not too surprising, coincides with timing RUS invasion of UA. Thx @Vortexa @TheTerminal #OOTT

Vortexa Crude Oil Floating Storage Estimated as of April 23, noon MT

Source: Bloomberg, Vortexa

Est as of Apr 23, noon MT

FZWWFST VTXA Index

Date	FZWWFST VT... Mid Px
Fr 04/22/2022	101.958k
Fr 04/15/2022	107.1k
Fr 04/08/2022	103.317k
Fr 04/01/2022	92621
Fr 03/25/2022	97776
Fr 03/18/2022	98006
Fr 03/11/2022	102.976k
Fr 03/04/2022	99424
Fr 02/25/2022	97694
Fr 02/18/2022	91072
Fr 02/11/2022	102.693k

Est as of Apr 16, noon MT

FZWWFST VTXA Index

Date	FZWWFST VT... Mid Px
Fr 04/15/2022	91882
Fr 04/08/2022	93949
Fr 04/01/2022	84450
Fr 03/25/2022	89304
Fr 03/18/2022	90780
Fr 03/11/2022	93993
Fr 03/04/2022	93116
Fr 02/25/2022	92805
Fr 02/18/2022	86368
Fr 02/11/2022	97959
Fr 02/04/2022	99663

Est as of Apr 9, noon MT

FZWWFST VTXA Index

Date	FZWWFST V... Mid Px
Fr 04/08/2022	87295
Fr 04/01/2022	85965
Fr 03/25/2022	89581
Fr 03/18/2022	91542
Fr 03/11/2022	93402
Fr 03/04/2022	92397
Fr 02/25/2022	92181
Fr 02/18/2022	84472
Fr 02/11/2022	97403
Fr 02/04/2022	98271
Fr 01/28/2022	93433

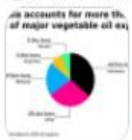
Source: Bloomberg, Vortexa

4 6

Dan Tsubouchi @Energy_Tidbits · Apr 23

a big hit to global markets, moreso to key importers of Indonesia palm oil like India/China that were also the big imports of Ukraine sunflower oil. UN FAO Food Price Index already had vegetable oils seeing highest cost inflation of any food group. Thx @SStapczynski

Stephen Stapczynski @SStapczynski · Apr 22



A world hunger crisis is looming as the global supply of cooking oil is thrown into chaos

🌾⚠️

🇮🇩 Indonesia said Friday it will ban exports of cookin...

Show this thread

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Dan Tsubouchi @Energy_Tidbits · Apr 22

Make Ukraine landlocked. #TASS reports "one of the tasks of the Russian army is to establish full control over the Donbass and southern Ukraine" says RUS ministry of defense. Area around Odesa is critical for west to make sure doesn't fall.

https://tass.ru/armiya-i-opk/14446141
APR 22, 02:14 Updated Apr 22, 02:30

The Ministry of Defense called the tasks of the second stage of the special operation in Ukraine

One of the tasks is to establish full control over the Donbass and Southern Ukraine, this will allow creating a land corridor to Crimea and another exit to Transnistria, Major General Rustam Minnekaev, Deputy Commander of the Central Military District, said.

YEKATERINBURG, April 22. /TASS/. The Russian army during the second stage of the special operation should establish full control over the Donbass. This was stated by Deputy Commander of the Central Military District (CVD), Major General Rustam Minnekayev, at the annual meeting of the Union of Defense Industries of the Sverdlovsk Region.

"Since the beginning of the second phase of the special operation, it has already begun, literally two days ago, one of the tasks of the Russian army is to establish full control over the Donbass and southern Ukraine," he said.

The control of the RF Armed Forces over the Donbass will make it possible to create a land corridor to the Crimea, Minnekaev stressed.

"This (control over the Donbass - TASS note) will provide a land corridor to the Crimea, as well as influence the vital facilities of the Ukrainian [military forces], Black Sea ports through which agricultural and metallurgical products are delivered to [other] countries," - said the deputy commander.

"Control over the South of Ukraine is another way out to Transnistria, where there are also facts of oppression of the Russian-speaking population. Apparently, we are now at war with the whole world, as it was in the Great Patriotic War, all of Europe, the whole world was against us. And now the same thing, they never liked Russia," he added.

Minnekaev stressed that the technical superiority of the Russian army over the Ukrainian Armed Forces on land, sea and airspace is obvious.

"When striking, the Russian armed forces do not suffer any losses. This kills the morale of the personnel of the Armed Forces of Ukraine the most. The technical superiority of the Russian army on land, at sea and in the air has become obvious," he said.

Minnekaev added that the special operation should be "successfully brought to its logical conclusion." He stated that all tasks set will be fulfilled.

"We didn't start this war, but we will finish it," Minnekaev said.

Follow our news on Telegram, VKontakte and Odnoklassniki.

Dan Tsubouchi @Energy_Tidbits · Apr 17

Great maps paint a clear picture and tell a story. Ukraine would be landlocked if RUS can take control of Odessa region. Thx @TheStudyofWar for great maps. #OOTT
twitter.com/TheStudyofWar/...

2

SAF

Dan Tsubouchi @Energy_Tidbits · Apr 22

...

Positive #Oil #NatGas for 2020s. "energy security & supply diversification have also emerged as pre-eminent global drivers that will shape the future or our industry" "This new dimension will have long lasting, positive implications for energy investments" #Schlumberger CEO #OOTT

Schlumberger

SAF Group created transcript of excerpt from Schlumberger CEO Le Peuch introductory comments in Q1 call on April 22, 2022.

Items in "italics" are SAF Group created transcript.

Le Peuch *"The energy landscape has evolved significantly over the past few months. Recent events on one hand resulted into a change in the pace of demand recovery while energy security and supply diversification have also emerged as pre-eminent global drivers that will shape the future or our industry, in addition to decarbonization, capital discipline and digital transformation. This new dimension will have long lasting, positive implications for energy investments over the next few years. I would like to share how we see these dynamics developing over the short and long term horizons. And more importantly, how this condition will play to Schlumberger's differentiated strength. First, in the short term, commodity prices are elevated as supply conditions continue to tighten due to the impact of capital discipline, consistent OPEC+ policy implementation, and the potential impact of supply dislocation from Russia. The industry is responding to this new, to these high commodity price environment with accelerated short-cycle investments in North America led by the private producers and a gradual increase in investment by the public operators albeit [xx?] by capital discipline and bottlenecks in capacity and supply chain. Internationally, short-cycle investments are set to accelerate thru the seasonal rebound in the second quarter, and more strongly in the second half of the year led by the Middle East and key international offshore basin. Second, the elevation of energy security as a priority will drive further capacity expansion and optionality to deliver more diverse oil and gas supply. This with [xx?] additional long cycle development projects, exploration activity and brownfield third generation [xx?]"*

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

3 7

Dan Tsubouchi @Energy_Tidbits · Apr 22

guess the only way to think about this is we need th moisture in southern Alberta, just started snowing an hour ago in #Calgary.

1 13

Dan Tsubouchi @Energy_Tidbits · Apr 22

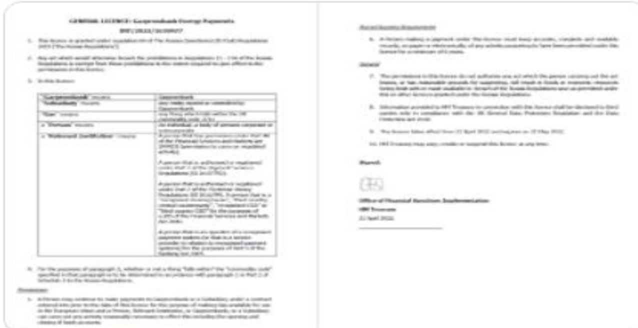
positive for #Oil. usual good insights from @ea_amrita to @tomkeene. based on flaring, see Russia #Oil production could be down almost 1.7 mmpd vs feb and obviously going lower as storage is full. #OOTT

3 14 43

SAF

Dan Tsubouchi @Energy_Tidbits · Apr 22

Putin's #NatGas payment process. UK approves payments to Gazprombank for prior contracts to supply #NatGas to EU incl "any activity reasonably necessary to effect this including the opening and closing of bank accounts." Thx @business @MaznevaElena #OOTT assets.publishing.service.gov.uk/government/upl...



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Dan Tsubouchi @Energy_Tidbits · Apr 22

Negative #Oil story. Shanghai to launch "new" campaigns against Covid-19. so much for Shanghai about to reopen. Unknown, how much of China is under some form of lockdowns, but Shanghai approach suggests Covid fighting will continue drag on economy & #OilDemand. #OOTT

Update: Shanghai to launch new campaigns against COVID-19

Source: Xinhua

Editor: huaxia

SHANGHAI, April 22 (Xinhua) -- Shanghai will start a series of campaigns on Friday to cut off all COVID-19 transmission chains in communities as soon as possible, local authorities said.

Tiered community control measures will be carried out to minimize the movements and gatherings of people, according to the arrangements of the municipal committee of the Communist Party of China and the local government.

Shanghai will also adopt different policies for COVID-19 testing and screening in different areas.

Shanghai has divided the whole city into areas belonging to three categories as part of its targeted efforts to overcome the recent resurgence, which are closed-off management areas, restrictive control areas, and prevention areas.

Other campaigns include carrying out epidemiological investigations, traditional Chinese medicine intervention, as well as cleaning and disinfection.

Shanghai reported 2,634 local confirmed cases and 15,861 local asymptomatic carriers on Wednesday, the municipal health commission said Thursday. ■

2 2

Dan Tsubouchi @Energy_Tidbits · Apr 21

Can't make this stuff up. US been trying to get EU to stop importing RUS #Oil, now @SecYellen "we need to be careful when we think about a complete European ban on, say oil imports"from RUS "would clearly raise global oil prices". Thx @TheAmaraReport @aduehren #OOTT

Excerpt https://www.wsj.com/articles/economic-impact-global-debate-limit-potential-actions-against-russia-yellen-says-11650569806

Economic Impacts, Global Politics Limit Potential Actions Against Russia, Yellen Says

Treasury Secretary Janet Yellen said Thursday that the U.S. and allies should determine how to trim Russia's revenues from energy sales without cutting off Europe from a critical energy supply.
PHOTO: SAUL LOEB/AGENCE FRANCE-PRESSE/GETTY IMAGES

By Amara Omeokwe Follow and Andrew Duehren Follow
Updated Apr. 21, 2022 5:18 pm ET

As to further sanctions, Ms. Yellen said that some of them—such as a ban of Russian energy imports by European countries—would be difficult to enact. European countries are far more reliant than the U.S. on Russian energy. The U.S. already has banned imported oil and other energy sources from Russia.

"We need to be careful when we think about a complete European ban on, say, oil imports," Ms. Yellen said, speaking at a news conference. "That would clearly raise global oil prices, it would have a damaging impact on Europe and other parts of the world, and counterintuitively it could actually have very little negative impact on Russia because although Russia might export less, its price for its exports would go up."

"If we could figure a way to do that without harming the entire globe through higher energy prices, that would be ideal, and that's a matter that we're all trying to think through together," she said.

1 4 12

Dan Tsubouchi @Energy_Tidbits · Apr 21

1/2. #CriticalMinerals, #Oil, #NatGas needed just to get to "low-carbon" economy. #Glencore "the challenge of meeting the increasing energy needs of a growing global population, while drastically reducing
the world's carbon footprint, will require the ..." #OOTT #LNG

1 1 4

Dan Tsubouchi @Energy_Tidbits · Apr 21

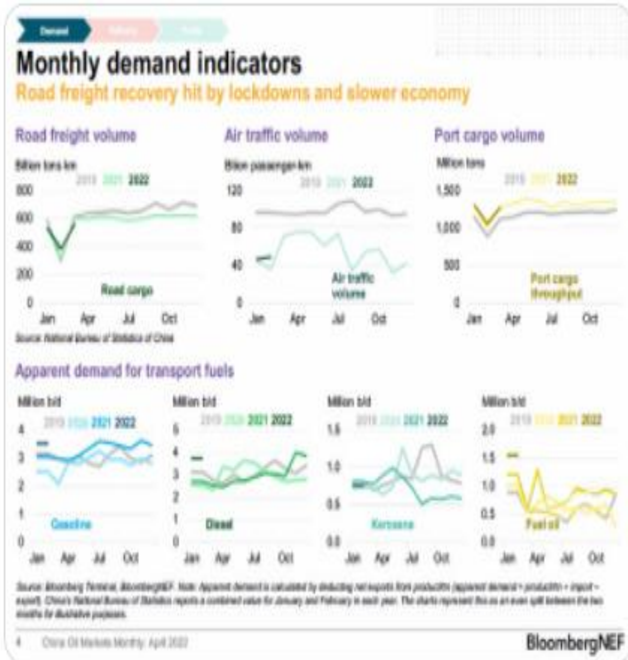
2/2. ".. continued production of primary metals for the products and energy supply needed to respond to changes in population and growth of developing economies, as well as deliver the energy transition needed to achieve a low-carbon economy." #Glencore #OOTT #NatGas #Oil

Contributing to the circular economy

3

Dan Tsubouchi @Energy_Tidbits · Apr 21

China #OilDemand "seems to have bottomed out" "the recovery could be slow as jet fuel and gasoline consumption remain subdued" says @BloombergNEF's China Oil Markets Monthly. Thx stang237@bloomberg.net for recap of China oil demand indicators. #OOTT

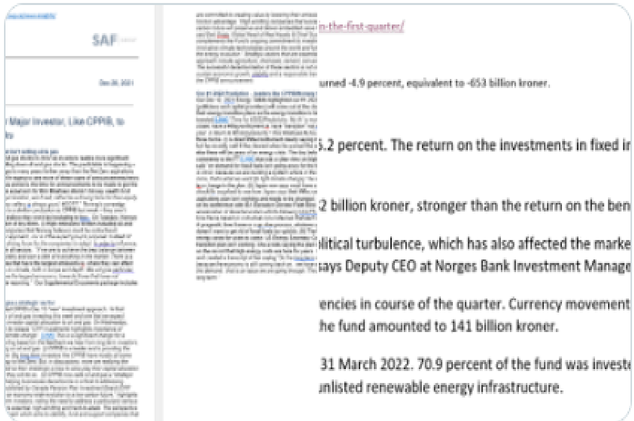


3 5

Dan Tsubouchi @Energy_Tidbits · Apr 21

Tough Q1 for Norway wealth fund, equities -5.2%. Good thing Norway wealth fund decided to keep #Oil #NatGas stocks. Their biggest energy holding at 12/31 was #Shell, which is +30% YTD. See 👇 SAF Group Dec 26/21 Energy Tidbits. #OOTT

twitter.com/Energy_Tidbits...



n-the-first-quarter/

urned -4.9 percent, equivalent to -653 billion kroner.

5.2 percent. The return on the investments in fixed ir

2 billion kroner, stronger than the return on the ben

litical turbulence, which has also affected the marke

says Deputy CEO at Norges Bank Investment Manage

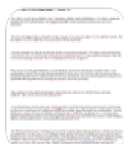
encies in course of the quarter. Currency movement

he fund amounted to 141 billion kroner.

31 March 2022. 70.9 percent of the fund was investe

unlisted renewable energy infrastructure.

Dan Tsubouchi @Energy_Tidbits · Dec 21, 2021



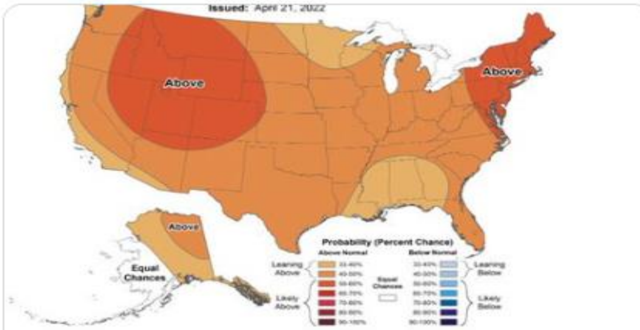
Multiple expansion for #Oil #NatGas stocks? Norway wealth fund has #MacronMoment & follows @cppib to slow play #EnergyTransition, won't sell, rather be a driving force for their equity investments to "adjust to #NetZero emissions over time". Less sellers is always ...

1

Dan Tsubouchi @Energy_Tidbits · Apr 21

Positive for summer #NatGas consumption. @NOAA updated seasonal outlook calls for hot July/Aug/Sept across the US. May not be much weather demand difference vs summer 2021, which was 3rd hottest in the last 127 years. #OOTT

#OOTT
cpc.ncep.noaa.gov/products/predi...



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Dan Tsubouchi @Energy_Tidbits · Apr 20

Big draw in #Oil inventories. For those not near their laptop, @EIAgov weekly #Oil #Gasoline #Distillates inventory data as of April 15 just out. Prior to release, WTI was $102.25. #OOTT
ir.eia.gov/wpsr/overview....

s Inventory April 15: EIA, Bloomberg Survey Expectations

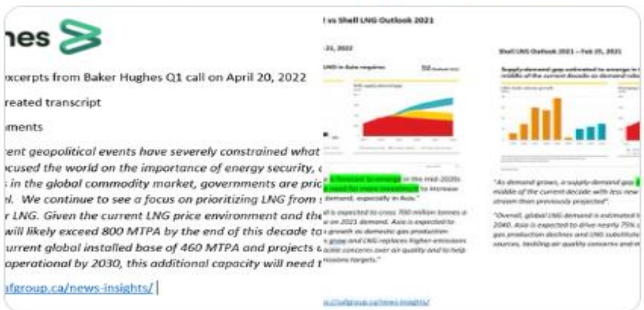
ɫls)	EIA	Expectations
	-8.02	3.00
	-0.76	-1.10
	-2.66	-0.80
	-11.44	1.10

:ommercial so builds in impact of 4.7 mmb draw from SPR for A
ɘd in the oil data, Cushing had a build of 0.19 mmb for Apr 15 v
Bloomberg
SAF Group https://safgroup.ca/news-insights/

1 6

Dan Tsubouchi @Energy_Tidbits · Apr 20

Must read transcript 👇. Huge #LNG growth fcast by #BakerHughes @simonelli_l. LNG capacity in 2030 >105 bcfd less current cap 61 bcfd less under construction 20 bcfd = FIDs needed by 2025 of 24 bcfd. Surely Shell will FID #LNGCanada Phase 2? Big plus to 🇨🇦 Cdn #NatGas. #OOTT



7 17

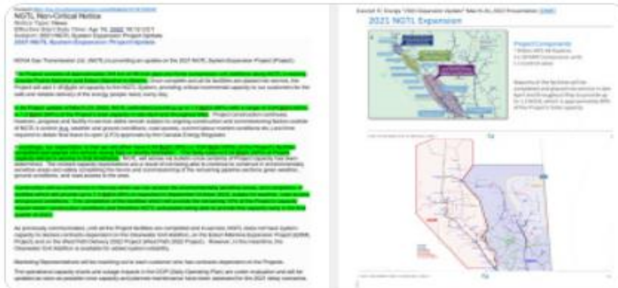
Dan Tsubouchi @Energy_Tidbits · Apr 20

LNG growth is hugely more than expectations. On @business "Baker Hughes CEO Says Global LNG Capacity Will Exceed 800 MTPA By End Of This Decade". That's 105 bcf/d capacity. Recall Shell's LNG Outlook 2022 on 02/21 forecast #LNG demand of ~92 bcf/d in 2040. #LNGCanada #OOTT

1 6 11

Dan Tsubouchi @Energy_Tidbits · Apr 19 ···

Expect #AECO price hit as unexpected #NatGas will be forced into storage this summer. @TCEnergy likely case delays in USJR capacity addition in-service for ~0.9 bcf/d, most for ~5 mths, small % to early Q1/23. Thx @GregSheaWorkBee for flagging. #OOTT my.tccustomerexpress.com/#Bulletin/3374...



1 4 9

Dan Tsubouchi @Energy_Tidbits · Apr 19 ···

started snowing late this morning in #Calgary. sure doesn't feel like April 19th. supposed to be similar for the next few days

4 3 15

Dan Tsubouchi @Energy_Tidbits · Apr 19

"pivot to short-cycle barrels creates the opposite effect - a perpetual threat of undersupply that is supportive to commodity price" says @Halliburton. Just in time #Oil supply in a world of supply interruptions/delays & demand > expectations. Oil looks great for 2020s. #OOTT

HALLIBURTON

Q1 2022 Halliburton Company Earnings Conference Call

SAF Group created transcript of excerpts from Halliburton Q1 call on April 19, 2022

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

Quotes from Chairman Jeff Little in introduction remarks. At 5:15mn mark "*.. In addition, I expect an important change in our customer's behaviour and priorities will provide structural support to oil prices throughout this upcycle. I believe supply dynamics have fundamentally changed due to investor return requirements, public ESG commitments and regulatory pressure, which make it more difficult for operators to commit to long-cycle hydrocarbon investments and instead drive investment flexibility through short-cycle barrels. The pursuit of increased investment flexibility leads operators to prioritize short-cycle projects, development over exploration, tie backs versus new infrastructure and shale rather than deep water.*

Clearly there are important exceptions where successful long term projects will be developed, but, pointing with a broad brush, I believe most investments will be directed primarily toward short cycle activity in the near and medium term. The result of this focus is an industry wide increase in the level of investment flexibility for operators and the subsequent support to commodity prices.

With short cycle barrels, companies make investment decisions annually and can respond more quickly to commodity price signals. As a result, when investment stops, production, at a minimum, doesn't grow. And, in the case with unconventionals, it quickly declines. For example, when the pandemic drove the collapse of oil demand two years ago, US shale companies swiftly reduced activity and production declined 2 million barrels in 9 months.

In contrast, long cycle projects have two key elements: a long time horizon and large up-front capital investment. Once these projects begin, investment continues and production cannot quickly respond to price signals. This tends to result in market oversupply. The pivot to short-cycle barrels creates the opposite effect - a perpetual threat of undersupply that is supportive to commodity price."

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

30 93

Dan Tsubouchi @Energy_Tidbits · Apr 19

#Halliburton Q1 call is still ongoing. Chair Jeff Little just said now expecting North Amerian customer spend to be +35% YoY, up from +25% prior estimate. Also had excellent perspective for why a bullish #Oil outlook for 2020s, will get to post the Q&A. #OOTT

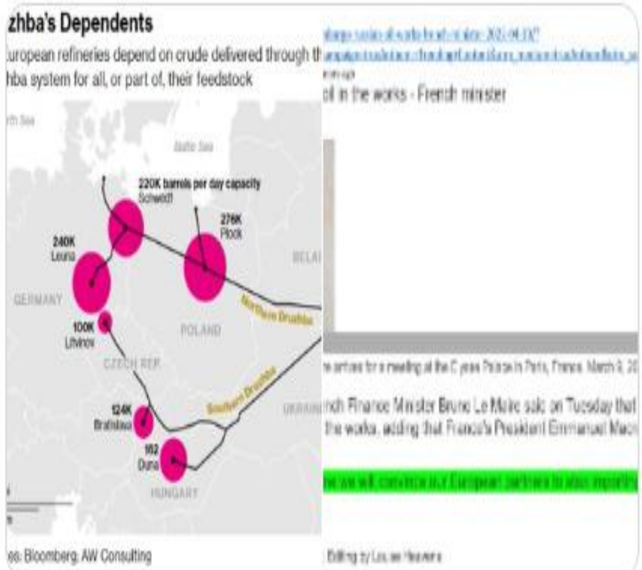
3 14

SAF

Dan Tsubouchi @Energy_Tidbits · Apr 19

"I hope that in the weeks to come we will convince our European partners to stop importing Russian oil," says France. Reality check, how can Druzhba pipeline dependent #EU countries agree to this? #OOTT

reuters.com/world/an-eu-em...



1

Dan Tsubouchi @Energy_Tidbits · Apr 18

Scary @MNPdebt survey. Rising interest rates & inflation are becoming a crisis for many Cdns. Could have been a higher capital priority if Cdn Budget2022 on 04/07 was based on then current & not Feb assumptions. Good time for us to help fellow Cdns in need
mnpdebt.ca/en/resources/m...

Excerpt https://mnpdebt.ca/en/resources/mnp-debt-blog/consumer-debt-index-hits-low-amid-growing-concern-about-debt-and-rising-interest-rates

MNP Consumer Debt Index hits record low amid growing concern about debt and rising interest rates among Canadians

2022-04-18 Grant Bazian

MNP Consumer Debt Index

- *More than half say they're beginning to feel the effects of interest rate increases (52%, +5pts).*
- *Nearly six in 10 say they're more concerned about their ability to pay their debts (57%, +3pts).*
- *Four in 10 say rising interest rates could drive them closer to Bankruptcy (39%, +4pts).*
- *Two in 10 say they're not financially prepared to deal with increasing interest rates (22%, +2pts).*
- *Nearly half are concerned they won't be able to cover all living / family expenses in the coming year without going further into debt (46%, +2pts).*

CALGARY, AB – April 18, 2022 – The enduring financial impacts of COVID-19 coupled with the pressures of rising interest rates and a higher cost of living are weighing down Canadians' confidence in their personal finances, according to the MNP Consumer Debt Index which is conducted quarterly by Ipsos on behalf of MNP LTD.

1

Dan Tsubouchi @Energy_Tidbits · Apr 18

Will Russia cut off #NatGas to European customers if May payments for April deliveries aren't in rubles? TASS "Novak said that several buyers of Russian gas had already agreed to convert payment into rubles and Moscow are waiting for a decision from other importers". #OOTT #LNG

https://tass.ru/ekonomika/14401679

APR 18, 03:45Updated Apr 18, 04:25

Peskov: data on countries that will buy gas from Russia for rubles should not be published

The presidential press secretary drew attention to the fact that relevant departments, Deputy Prime Minister Alexander Novak and Gazprom deal directly with buyers with gas supplies.

Press Secretary of the President of the Russian Federation Dmitry Peskov.
© Sergey Bobylev/TASS

MOSCOW, 18 April. /TASS/. It is not worth publishing information about how many countries have agreed to buy Russian gas for rubles, said Dmitry Peskov, press secretary of the President of the Russian Federation.

"Such information is unlikely to be published," a Kremlin spokesman told reporters on Monday. He drew attention to the fact that the relevant departments, the relevant Deputy Prime Minister [Alexander] Novak and, of course, primarily Gazprom with their counterparts, that is, directly with buyers, deal with the issues of paying for gas supplies.

"It has already been said that payment will follow sometime in May for those deliveries that began after the presidential decree [of the Russian Federation Vladimir Putin on a new gas payment scheme] came into force," Peskov recalled. Therefore, in his opinion, "now there is still some time."

At the end of last week, Novak said that several buyers of Russian gas had already agreed to convert payments into rubles, and Moscow was waiting for a decision from other importers. He stressed that the transfer of payments for gas into the currency of the Russian Federation is caused by the desire to receive a 100% guarantee of payment, and for buyers the conditions remain as comfortable as possible.

On March 31, Russian President Vladimir Putin signed a decree that defines a new procedure for paying for gas supplies to the Russian Federation by buyers from unfriendly countries. According to the document, such states will start transferring funds in foreign currencies to Gazprombank, which will buy rubles on stock exchanges and transfer them to special ruble accounts of importers, from which payments will then be made for deliveries. The order of functioning of special accounts in Gazprombank was determined by the Central Bank. At the same time, the decree expressly prohibits the suspension of operations on such accounts, as well as the arrest and debiting of funds from them as part of the fulfillment of the buyer's obligations not related to payment for natural gas.

4 6

Dan Tsubouchi @Energy_Tidbits · Apr 18

Positive for #Oil. Only the start of Libya #Oil shut downs. @NOC_Libya "announces the state of force majeure of Zueitina port, and warns of the start of a painful wave of closures at the time of the oil and gas price boom". #OOTT noc.ly/index.php/en/n...

> **Dan Tsubouchi** @Energy_Tidbits · Apr 17
>
> No surprise, reports Sharara #Oil field now shut in. Last time @NOC_Libya's Sharara & nearby El Feel were shut in, it was estimated 330,000 b/d went offline. still feels like more oil supply interruptions are to come. #OOTT
>
> twitter.com/ObservatoryLY/...
> twitter.com/Lyobserver/sta...

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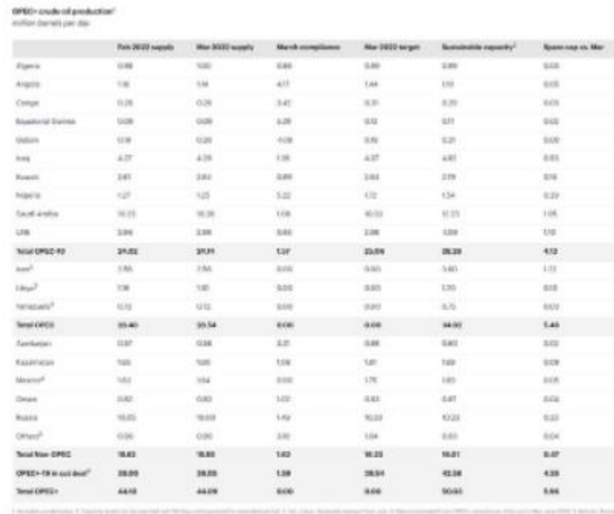
SAF

Dan Tsubouchi @Energy_Tidbits · Apr 17

There are only a few countries that can pick up the slack for oil shut-ins at Libya and Russia. new @IEA table shows the only significant sustainable spare #Oil capacity is Saudi 1.95 mmb/d, Iran 1.22 mmb/d, UAE 1.10 mmb/d & Kuwait 0.53 mmb/d. #OOTT

> **Dan Tsubouchi** @Energy_Tidbits · Apr 13
>
> Here's why @MoEnergy_Saudi Abdulaziz ("The Man") & #OPEC+ are in control of #Oil prices for next few years - New @IEA OMR table est only 1.16 mmb/d of gobal spare sustainable capacity outside of Saudi 1.95, Iran 1.22, UAE 1.10 & Kuwait 0.53. #OOTT
>
> 
>
> Source: IEA Oil Market Report April 2022

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Dan Tsubouchi @Energy_Tidbits · Apr 17

No surprise, reports Sharara #Oil field now shut in. Last time @NOC_Libya 's Sharara & nearby El Feel were shut in, it was estimated 330,000 b/d went offline. still feels like more oil supply interruptions are to come. #OOTT

twitter.com/ObservatoryLY/...
twitter.com/Lyobserver/sta...

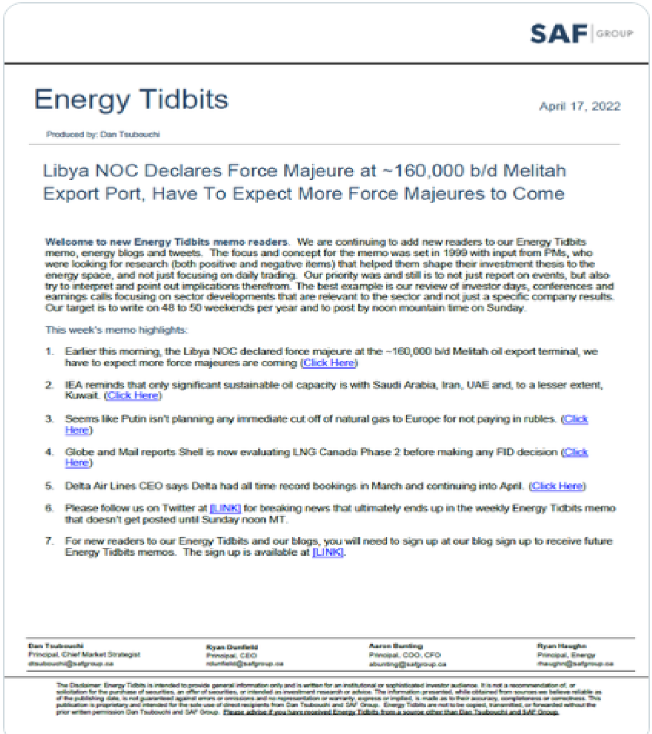
Dan Tsubouchi @Energy_Tidbits · Apr 16

Remember Eastern Libya military leaders left 5+5 JMC a week ago and urged Haftar to shut in Libya #Oil exports. It's why it feels like there are more oil supply interruptions than just El Feel still to come. #OOTT
twitter.com/Energy_Tidbits...

2 6

Dan Tsubouchi @Energy_Tidbits · Apr 17

Our weekly SAF Apr 17, 2022 Energy Tidbits memo is posted on our SAF Group website. This 50-pg energy research memo expands upon & covers more items than tweeted this week. See news/insights section of SAF website #Oil #OOTT #LNG #NatGas #EnergyTransition safgroup.ca/news-insights/



SAF GROUP

Energy Tidbits

April 17, 2022

Produced by: Dan Tsubouchi

Libya NOC Declares Force Majeure at ~160,000 b/d Melitah Export Port, Have To Expect More Force Majeures to Come

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. Earlier this morning, the Libya NOC declared force majeure at the ~160,000 b/d Melitah oil export terminal, we have to expect more force majeures are coming (Click Here)
2. IEA reminds that only significant sustainable oil capacity is with Saudi Arabia, Iran, UAE and, to a lesser extent, Kuwait. (Click Here)
3. Seems like Putin isn't planning any immediate cut off of natural gas to Europe for not paying in rubles. (Click Here)
4. Globe and Mail reports Shell is now evaluating LNG Canada Phase 2 before making any FID decision (Click Here)
5. Delta Air Lines CEO says Delta had all time record bookings in March and continuing into April. (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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