SAF | GROUP

Energy Tidbits

Bullish For LNG: Russia Confirms Arctic LNG-2 is Nowhere Near Timing to Add 0.87 bcf/d in Each of 2023, 2024 & 2025

Produced by: Dan Tsubouchi

August 7, 2022

Dan Tsubouchi
Principal, Chief Market Strategist
dtsubouchi@safgroup.ca

Ryan Dunfield
Principal, CEO
rdunfield@safgroup.ca

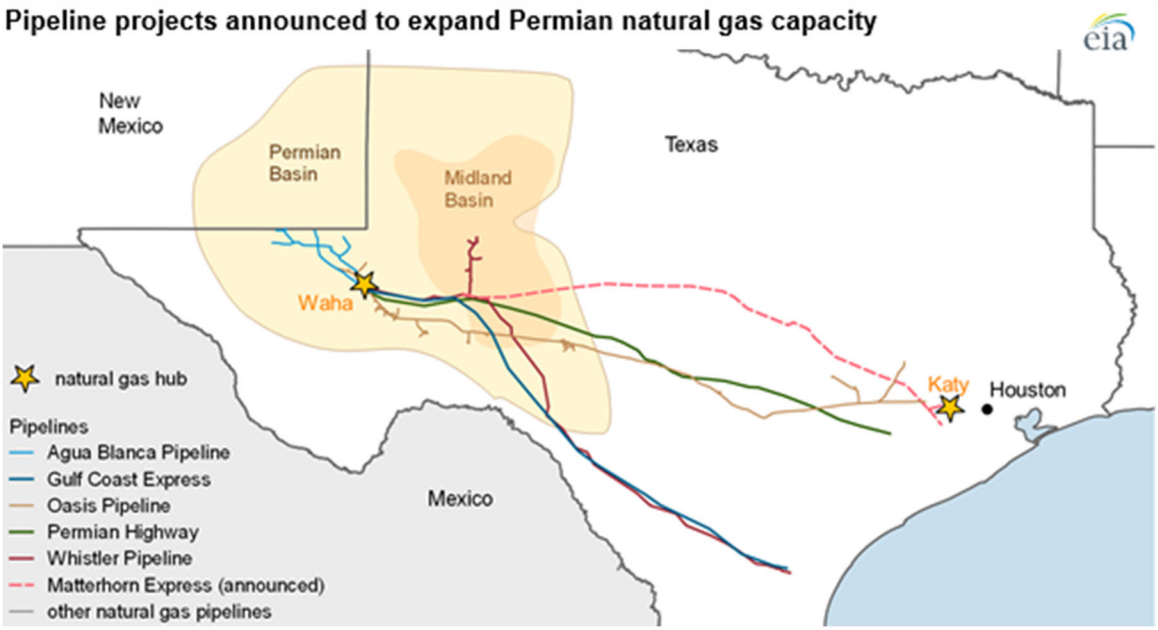
Aaron Bunting
Principal, COO, CFO
abunting@safgroup.ca

Ryan Haughn
Principal, Energy
rhaughn@safgroup.ca

https://www.eia.gov/todayinenergy/detail.php?id=53319#

AUGUST 4, 2022

Pipeline projects announced to expand Permian natural gas capacity



Data source: U.S. Energy Information Administration, Natural Gas Pipeline Project Tracker

Our latest Natural Gas Pipeline Project Tracker includes five new projects—four newly announced projects and one project under construction—since the last update in April 2022. Of the four new projects, three will expand capacity for existing pipelines, and one will be a new pipeline. If completed as planned, these five projects together would increase takeaway capacity out of the Permian Basin by a combined 4.18 billion cubic feet per day (Bcf/d) over the next two years.

The three capacity expansion projects were announced in May and June:

- The Gulf Coast Express Pipeline Expansion, announced by Kinder Morgan on May 16, will expand compression on the pipeline, increasing capacity by 0.57 Bcf/d to 2.55 Bcf/d. The project is expected to enter service in December 2023.
- The Permian Highway Pipeline Expansion, which reached a final investment decision by Kinder Morgan on June 29, will also expand compression, increasing capacity by 0.55 Bcf/d to 2.65 Bcf/d. The project is expected to enter service in November 2023.
- The Whistler Pipeline Capacity Expansion, announced on May 2 by WhiteWater and MPLX, is a joint venture between Stonepeak and West Texas Gas, Inc., that will expand compression by installing three new compressor stations on the pipeline, increasing capacity by 0.5 Bcf/d to 2.5 Bcf/d. The project is expected to enter service in September 2023.

The new pipeline project reached a final investment decision on May 19:

- The Matterhorn Express Pipeline is a joint venture among WhiteWater, EnLink Midstream, Devon Energy Corp, and MPLX. This pipeline will be 490 miles long and will be able to transport up to 2.5 Bcf/d of natural gas from the Waha Hub in West Texas to Katy, Texas. The pipeline will receive natural gas from upstream Permian Basin connections and from direct connections at processing facilities in the Midland Basin before connecting to the Agua Blanca Pipeline. The pipeline is expected to enter service in the third quarter of 2024.

The project already under construction is expected to be completed by the end of 2022:

- The Oasis Pipeline Modernization Project will modernize and optimize Energy Transfer's existing Oasis Pipeline. This expansion would provide an additional 0.06 Bcf/d of Permian Basin takeaway capacity.

According to the July 2022 *Short-Term Energy Outlook*, we expect production in the Permian Basin to increase by 2.3 Bcf/d in 2022 and an additional 1.4 Bcf/d in 2023.

Principal contributor: Stephen York

http://www.newsrouter.com/NewsRouter_Uploads/77/Freeport%20LNG%20and%20PHMSA%20Enter%20into%20Consent%20Agreement.pdf

FREEPORT LNG AND PIPELINE HAZARDOUS MATERIALS SAFETY ADMINISTRATION ENTER INTO CONSENT AGREEMENT

Houston, TX, August 3, 2022 – Freeport LNG Development, L.P. (Freeport LNG) and the Pipeline Hazardous Materials Safety Administration (PHMSA) have entered into a Consent Agreement related to the June 8 incident at Freeport LNG's liquefaction facility. Freeport LNG has a long history of commitment to safety and safe operation and overall, the obligations under the Consent Agreement are intended to ensure that Freeport LNG can safely and confidently resume initial LNG production and thereafter ultimately return to full operation of all liquefaction facilities.

In the near term, the Consent Agreement includes certain corrective measures, many of which are currently underway, that Freeport LNG is to take to obtain PHMSA approval for an initial resumption of LNG production from its liquefaction facility. Freeport LNG continues to believe that it can complete the necessary corrective measures, along with the applicable repair and restoration activities, in order to resume initial operations in early October. Those initial operations are expected to consist of three liquefaction trains, two LNG storage tanks and one LNG loading dock, which the company believes will enable delivery of approximately 2 BCF per day of LNG, enough to support its existing long-term customer agreements. In addition to the repair and replacement of Freeport LNG's physical infrastructure that was damaged in the incident, and as part of the corrective measures under the Consent Agreement, the company is evaluating and advancing initiatives related to training, process safety management, operations and maintenance procedure improvements, and facility inspections.

ABOUT FREEPORT LNG

Freeport LNG is an LNG export company headquartered in Houston, Texas. The company's three train, 15 MTPA liquefaction facility is the seventh largest in the world and second largest in the U.S. Freeport LNG's liquefaction facility is the largest all-electric drive motor plant of its kind in the world, making it the most environmentally sustainable site of its kind. The facility's electric drive motors reduce carbon emissions by over 90% relative to gas turbine-driven liquefaction facilities. Freeport plans to expand by adding a fourth liquefaction train, which has received all regulatory approvals for construction. Freeport was formed in 2002 to develop, own and operate an LNG terminal on Quintana Island, near Freeport, Texas. The terminal started LNG import operations in June 2008 and began LNG export operations in 2019. Further information can be found on Freeport's website at www.freeportlng.com.

https://www.facebook.com/pages/category/Labor-Union/Offshore-Alliance-524335271311416/

Offshore Alliance

August 2 at 10:17 PM ·

Earlier today, Shell HR confirmed that they ripped off the Prelude FLNG workforce by taking twice as much as what they were lawfully allowed to deduct, from members' July pay packets, for the June PIA stoppages. Of course it was just an accident....

Shell's wage theft of members does not end there as the Offshore Alliance believe that Shell's pro-rata deduction of the Offshore Allowance and Commuting Allowance is unlawful.

Our lawyers are currently reviewing Shell's actions with a view to prosecuting them in the Federal Court. It has the stench of Coercion and Adverse Action about it.

Shell management have now advised our Prelude members that they are digging in for the long haul and will be preparing for the Prelude to be shut down for months.

Shell have now missed 6 offtakes and $960 million of revenue.

A shutdown until Xmas will cost Shell an additional $5.5 Billion of gas revenue - not to mention the deferral of the Turnaround by 10 months.

Shell's HR and Operations team responsible for the Prelude EBA debacle must feel very proud of their efforts.

There is a growing number of Shell's management team who are privately seething about the pig-headed and irrational actions of the Shell managers responsible for not sorting out the Prelude EBA, and for the 54 days of Protected Industrial Action.

Heads will roll once the dust settles (if not before), and plenty of them. No HR or Operations manager gets to burn $1 Billion of revenue without consequence.

The Offshore Alliance has a simple message for Shell. We will go one day longer and one day stronger.

Offshore Alliance

August 2 at 2:00 PM ·

Whilst Europe is heading for “fuel poverty” and a deep freeze and the East Coast of Australia runs out of gas, Shell’s Prelude FLNG management have locked themselves into a bargaining dispute that has cost Shell close to $1 Billion in lost gas production.

Shell are now telling our Prelude FLNG members that the Turnaround planned to commence in 28 days’ time is “unlikely to go ahead” and will be cancelled if the Prelude FLNG dispute isn’t resolved within 7 days.

The Turnaround crew will now have to source other work because there is not much chance of the PIA ending within 7 days.

There is even less chance that mediation by a private mediator without PIA will resolve the dispute whilst Shell refuse to negotiate or agree to job security, pay levels and the involvement of the FWC in resolving disciplinary matters.

Shells inability to complete the scheduled Turnaround may put Shell’s License to Operate at risk, unless NOPSEMA give Shell the green light to gamble with the health and safety of Prelude workers.

Shell reckon they've already struck a deal with the Regulator to continue on without doing the much needed Turnaround.

Once again, NOPSEMA appear to be folding to the demands of big oil and gas companies.

Shell are refusing to bargain for an Enterprise Agreement because they claim their management team are too busy dealing with PIA.

That is clearly bullshit, as the only thing Shell's management team are doing is counting the lost production and profit resulting from their failure to agree to job security provisions which prevent them from outsourcing the jobs of the Prelude crew to low-wage labour hire contractors.

Shell's claim that we are seeking a guarantee of 20 years work for members on the Prelude FLNG shows how little they understand our bargaining claims.

They will never understand our bargaining claims if they don't get back to the bargaining table.

All the while, Europe is ratcheting up the rationing of gas, and Australia's East Coast is facing significant under-supply issues heading into next year.

Shell's handling of the Prelude FLNG EBA is diabolical and the management team responsible for this mess will inevitably be sacked and sent to purgatory. It's simply a matter of when.

Eni Plans Second LNG Platform Off Mozambique as Europe Seeks Gas
2022-08-02 09:32:49.478 GMT

By Matthew Hill

(Bloomberg) -- Eni SpA is planning a second liquefied natural gas production vessel offshore Mozambique that could be built in less than four years to help Europe diversify supplies of the fuel, according to a company executive.

The Italian oil and gas producer's potential project would complement its $7-billion Coral-Sul FLNG platform moored off Mozambique's northern coast that's scheduled to start exporting the fuel this year. If Eni decides to proceed by early 2023, output could begin even before TotalEnergies SE's $20-billion onshore project that abruptly halted construction last year due to security issues.

European nations are seeking new energy sources after Russia's invasion of Ukraine, causing gas prices for the bloc to jump more than four times higher than a year ago. For Mozambique, a second floating LNG export platform would help boost gas exports slowed by multiple delays.

"This is a great opportunity, to develop its resources and bring significant revenues," Guido Brusco, Eni's chief operating officer of natural resources said in an online interview with Bloomberg last week. "It is also a great opportunity for Europe to diversify their supplies. In this context, a project that could be delivered in less than four years has a tremendous opportunity window."

Before reaching a final investment decision, the company will need to agree to with partners including ExxonMobil Corp., China National Petroleum Corp. and Mozambican state-owned Empresa Nacional de Hidrocarbonetos. Eni is responsible for offshore projects with ExxonMobil in charge of onshore assets. ENH didn't respond to questions seeking comment.

Move Quickly

Coral-Sul has remained on schedule for first exports this year despite supply-chain lags caused by the pandemic. Located more than 50 kilometers (31 miles) offshore, it's also been unaffected by an insurgency linked to Islamic State that led TotalEnergies to freeze work last year on an onshore project that's planned to have almost four times the capacity of the floating vessel.

"I believe that to fully develop Mozambique's considerable gas resources, the right decision is to move toward both an onshore concept and an offshore concept," Brusco said.

The insurgency, which started in 2017 and has left at least 4,131 people dead, has also delayed a final investment decision from ExxonMobil for an onshore development the company plans together with Eni and the other consortium partners.

It's crucial to move quickly, as demand for floating LNG

platforms and the materials needed to build them will increase, said Brusco. “In the current situation, time is of essence.”

--With assistance from Borges Nhamire.

To contact the reporter on this story:
Matthew Hill in Mbombela at mhill58@bloomberg.net
To contact the editors responsible for this story:
Gordon Bell at gbell16@bloomberg.net
Paul Burkhardt, David Malingha

To view this story in Bloomberg click here:
https://blinks.bloomberg.com/news/stories/RFXH3VDWX2PV

https://clubofmozambique.com/news/mozambique-president-rules-out-the-possibility-of-totalenergies-abandoning-cabo-delgado-gas-project-222224/

Mozambique: President rules out the possibility of TotalEnergies abandoning Cabo Delgado gas project

3:12 CAT | 05 Aug 2022

Photo: ACIS

The Mozambican president on Thursday ruled out the possibility of TotalEnergies abandoning natural gas extraction in Cabo Delgado, adding that the company was putting pressure on the government to create conditions for the resumption of activities.

“We never thought that Total might not come back, and the conversation I’ve had with the company’s president [Patrick Pouyanné] never raised that possibility,” Filipe Nyusi declared during the CEO Community African Chapter Business Meeting in Maputo yesterday.

According to the Mozambican head of state, the French major has been pressuring the government to create the conditions for the restart of the company’s activities, and has meanwhile been supporting the authorities’ efforts to resolve the problem of the insurgency in the region through its community engagement programmes.

“Total is putting pressure on the government to do its part, which is to restore tranquillity and security. The company itself has been making its contribution to stabilising the situation, supporting youth,” the head of state noted.

Although he rules out the possibility of Total abandoning the project, Filipe Nyusi noted that the gas would not disappear if the French multinational decides to permanently suspend operations.

“We don’t consider [the possibility of] Total not returning, but, well, if that happens, the gas is [still] there […] there are those who can exploit it too – it’s not a product that disappears. But we don’t think negatively,” President Nyusi said, adding that, with the support of foreign forces, the situation in the district of Palma was now stable and the business community could return.

 *Photo: ACIS*

TotalEnergies, whose consortium will invest more than US$20 billion in natural gas exploitation in northern Mozambique, suspended development of the project in the region following a rebel attack in 2021 near project infrastructure in Palma district, Cabo Delgado province.

Speaking to the media in Gaza province, southern Mozambique, yesterday, Mozambique's Minister of Mineral Resources and Energy, Carlos Zacarias, promised that all conditions for the resumption of Total's natural gas project activities would be in place by the end of the year [2022].

READ: Mozambique: Minister sees conditions in place for TotalEnergies' return by year-end

Palma was the target of one of the most publicised attacks carried out by the rebels who have been terrorizing Cabo Delgado province since 2017, when on March 24, 2021, insurgents invaded the district headquarters, killing and wounding dozens of residents and putting to flight thousands more.

Source: Lusa

https://clubofmozambique.com/news/mozambique-minister-sees-conditions-in-place-for-totalenergies-return-by-year-end-222178/

Mozambique: Minister sees conditions in place for TotalEnergies' return by year-end

4:12 CAT | 04 Aug 2022

Screen grab: TVM

Mozambique's Minister of Mineral Resources and Energy Carlos Zacarias promised today that, by the end of this year, all conditions for the resumption of Total's natural gas project, suspended due to the war in Cabo Delgado will be in place.

"From our point of view, we expect that this year all the conditions will be created to guarantee and convince the concessionaires to resume activities," Carlos Zacarias told journalists on the sidelines of the seventh Ministry of Mineral Resources and Energy coordinating council.

The minister asserted that the security situation in Cabo Delgado province, northern Mozambique, which hosts the natural gas exploitation projects, "has changed radically" against the armed groups active in the region since October, 2017.

"Of course, any resumption of activities will depend on the specific perception of each concessionaire regarding safety conditions," Minister Zacarias conceded.

TotalEnergies, whose consortium is to invest more than US$20 billion in natural gas exploration in northern Mozambique, suspended development of the project in the region following a rebel attack near project infrastructure in Palma district, Cabo Delgado province in 2021.

Palma was the target of one of the most publicised attacks carried out by the rebels terrorizing the province of Cabo Delgado for almost five years, when on March 24, 2021, insurgents invaded the district headquarters town, killing and wounding dozens and causing thousands of people to flee.

Cabo Delgado province, in northern Mozambique, is rich in natural gas, but has been terrorized since 2017 by armed rebels, with some attacks claimed by the Islamic State extremist group.

According to the International Organisation for Migration (IOM), about 784,000 persons have been internally displaced by the conflict, which has killed about 4,000, according to the ACLED conflict registry project.

Since July 2021, an offensive by government troops, with the support of Rwandan and later Southern African Development Community (SADC) troops, has recovered a number of areas from rebel control, but their flight has led to new attacks in districts through which they have passed or where they have taken up temporary refuge.

Source: Lusa

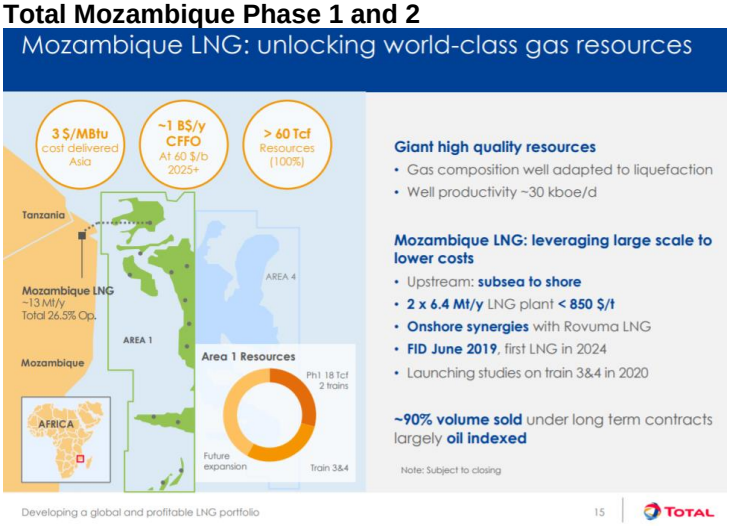
Multiple Brownfield LNG FIDs Now Needed To Fill New LNG Supply Gap From Mozambique Chaos? How About LNG Canada Phase 2?

Posted Wednesday April 28, 2021. 9:00 MT

The next six months will determine the size and length of the new LNG supply gap that is hitting harder and faster than anyone expected six months ago. Optimists will say the Mozambique government will bring sustainable security and safety to the northern Cabo Delgado province and provide the confidence to Total to quickly get back to LNG development such that its LNG in-service delay is a matter of months and not years. We hope so for Mozambique's domestic situation, but will it be that easy for Total's board to quickly look thru what just happened? Total suspended LNG development for 3 months, restarted development on March 25, but then 3 days of violence led it to suspend development again on March 28, and announce force majeure on Monday April 26. Even if the optimists are right, Mozambique LNG is counted on for LNG supply and the major LNG supply project that are in LNG supply forecasts are now all delayed – Total Phase 1 of 1.7 bcf/d and its follow on Phase 2 of 1.3 bcf/d, and Exxon's Rozuma Phase 1 of 2.0 bcf/d. It is important to remember this 5.0 bcf/d of major LNG supply is being counted in LNG supply forecasts and starting in 2024. At a minimum, we think the more likely scenario is a delay of at least 2 years in this 5.0 bcf/d from the pre-Covid timelines. And this creates a much bigger and sooner LNG supply gap starting ~2025 and stronger outlook for LNG prices. Thermal coal in Asia will play a role in keeping a lid on LNG prices. But there will be the opportunity for LNG suppliers to at least review the potential for brownfield LNG projects to fill the growing supply gap. The thought of increasing capex was a non-starter six months ago, but there is a much stronger outlook for global oil and gas prices. Oil and gas companies are pivoting from cutting capex to small increases in 2021 capex and expecting for higher capex in 2022. We believe this sets the stage for looking at potential FID of brownfield LNG projects before the end of 2021 to be included in 2022 capex budgets. Mozambique is causing an LNG supply gap that someone will try to fill. And if brownfield LNG is needed, what about Shell looking at 1.8 bcf/d brownfield LNG Canada Phase 2? Cdn natural gas producers hope so as this would mean more Cdn natural gas will be tied to Asian LNG markets and not competing in the US against Henry Hub.

Total declares force majeure on Mozambique LNG, Yesterday, Total announced [LINK] "*Considering the evolution of the security situation in the north of the Cabo Delgado province in Mozambique, Total confirms the withdrawal of all Mozambique LNG project personnel from the Afungi site. This situation leads Total, as operator of Mozambique LNG project, to declare force majeure. Total expresses its solidarity with the government and people of Mozambique and wishes that the actions carried out by the government of Mozambique and its regional and international partners will enable the restoration of security and stability in Cabo Delgado province in a sustained manner".* Total is working Phase 1 is ~1.7 bcf/d (Train 1 + 2, 6.45 mtpa/train) and was originally expected to being LNG deliveries in 2024. There was no specific timeline for Phase 2 of 1.3 bcf/d (Train 3 + 4, 5.0 mtpa/train), but was expected to follow Phase 1 in short order to keep capital costs under control with a continuous construction process with a potential onstream shortly after 2026.

Total Mozambique Phase 1 and 2



Source: Total Investor Day September 24, 2019

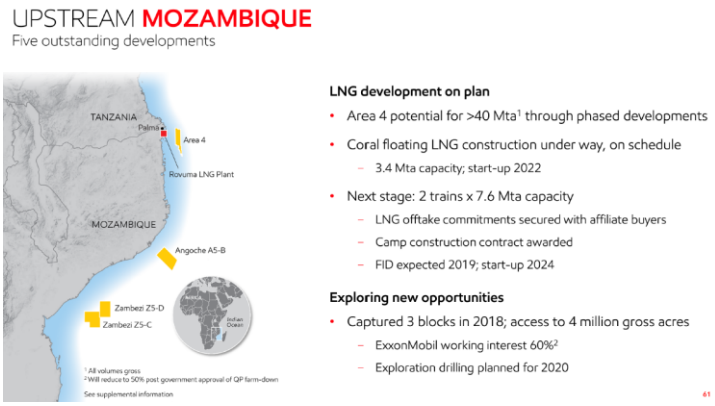
Total's Mozambique force majeure is no surprise, especially the need to the restoration of security and stability "in a sustained manner". Yesterday, Total announced [LINK] "*Considering the evolution of the security".* No one should be surprised by the force majeure or the sustained manner caveat. SAF Group posts a weekly Energy Tidbits research memo [LINK], wherein we have, in multiple weekly memos, that Total had shut down development in December for 3 months due to the violent 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. Local violence/attacks shut development down in Dec, the situation gets settled enough for Total to restart in March, only to be shut down 3 days thereafter. No one should be surprised especially with Total's need to see security and stability "in a sustained manner".

Does anyone really think Total will risk another quick 2-3 month restart or even in 2021? The Mozambique government will be working hard to convince Total to restart soon. We just find it hard to believe Total board will risk a replay of March 24-27 in 2021. Unfortunately, Mozambique has had internal conflict for years. It reached a milestone to the positive in August 2019. Our SAF Group August 11, 2019 Energy Tidbits memo [LINK] highlighted the signing of a peace pact between Mozambique President Nyusi and leader of the Renamo opposition Momade. This was the official end to a 2013 thru 2016 conflict following a failure to hold up the prior peace pact. At that time, FT reported [LINK] "Mr Nyusi has said that "*the government and Renamo will come together and hunt" rebels who fail to disarm. The government has struggled to stem the separate insurgency in the north, which has killed or displaced hundreds near the gas-rich areas during the past two years. While the roots of the conflict remain murky, it is linked to a local Islamist group and appears to be drawing on disaffection over sharing gas investment benefits, say analysts*." This is just a reminder this is not a new issue. LNG is a game changer to Mozambique's economic future. It is, but also has been, a government priority to have the security and safety for Total and Exxon to move on their LNG developments. Its hard to believe the Mozambique government will be able to quickly convince Total and Exxon boards that they can be comfortable there is a sustained security/safety situation and they can send their people back in to develop the LNG. Total's board would allow any resumption of development before year end 2021. The last thing Total wants is a replay of March 24-27. The first question is how long will it take before the Total board is convinced its safe to restart. Could you imagine them doing a replay of what just happened? Wait three months, restart development and have to stop again right away? We have to believe that could lead the Total board to believe it is unfixable for years. We just don't think they are to prepared to risk that decision in 3 months. Its why we have to think there isn't a restart approval until at least in 2022 at the earliest ie. why we think the likely scenario is a delay of 2-3 years, and not a matter of months.

Mozambique's security issues pushes back 5.0 bcf/d of new LNG supply at least a couple years. The global LNG issue is that 5 bcf/d of new Mozambique LNG supply (apart from the Eni Coral FLNG of 0.45 bcf/d) won't start up in 2024 and

continuing thru the 2020s. And we believe all LNG forecasts included this 5.0 bcf/d to be in service in the 2020s as Mozambique had been considered the best positioned LNG supply to access Asia after Australia and Papua New Guinea. (i) Eni Coral Sul (Rovuma Basin) FLNG of 0.45 bcf/d planned in service in 2022. [LINK] This is an offshore floating LNG vessel that is still expected to be in service in 2022. (ii) Total Phase 1 to add 1.7 bcf/d with an in service originally planned for 2024. We expect the in service data to be pushed back to at least 2026 assuming Total gives a development restart approval in Dec 2021. In theory, this would only be a 1 year loss of time. However, Total has let services go, the project will be idle for 9 months, it isn't clear if the need to get people out quickly let them do a complete put the project on hold, and how many people will be on site maintaining the status of the development during the force majeure. Also what new procedures and safety will be put in place for a restart. These all mean there will be added time needed to get the project back to where it was when force majeure was declared ie. why we think a 12 month time delay will be more like an 18 month project delay. (iii) Exxon's Rozuma Phase 1 LNG will add 2.0 bcf/d and, pre-Covid, was expected to be in service in 2025. We believe the delays related to security and safety at Total are also going to impact Exxon. We find it highly unlikely the Exxon board would take a different security and safety decision than Total. 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 in 2024. 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 the expectation was that FID would now be in 2022 (3 years later than original timeline0 and that would push first LNG likely to 2027. (iv) 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 2 years, so will Phase 2 so more likely 2028/2029.. (v) Total Phase 1 + 2 and Exxon Rozuma Phase 1 total 5.0 bcf/d and would have been (and still are) in all LNG supply forecasts for the 2020s. (vi) We aren't certain if the LNG supply forecasts include Exxon Rozuma Phase 2 ,which would be an additional 2.0 bcf/d on top of the 5.0 bcf/d noted above. Exxon Rozuma has always been expected to be at least 2 Phases. This has been the plan since the Anadarko days given the 85 tcf size of the resource on Exxon's Area 4. There was no firm in service data for Phase 2, but it was expected they would also closely follow Phase 1 to maintain services. We expect that original timeline would have been 2026/2027 and that would not be pushed back to 2029/2030. (vii) It doesn't matter if its only 5 bcf/ of Mozambique that is delayed 2 to 3 years, it will cause a bigger LNG supply gap and sooner. The issue for LNG markets is this is taking projects that are in development effectively out of the queue for some period.

Exxon Mozambique LNG



Source: Exxon Investor Day March 6, 2019

Won't LNG and natural gas get hit by Biden's push for carbon free electricity? Yes, in the US. For the last 9 months, we have warned on Biden's climate change plan that were his election platform and now form his administration's energy transition map. We posted our July 28, 2020 blog "*Biden To Put US On "Irreversible Path to Achieve Net-Zero Emissions, Economy-Wide" Is a Major Negative To US Natural Gas in 2020s* "[LINK] on Biden's platform "*The Biden Plan to Build a Modern, Sustainable Infrastructure and an Equitable Clean Energy Future*" [LINK]. Biden's new American Jobs Plan

[LINK] lines up with his campaign platform including to put the US "*on the path to achieving 100 percent carbon-free electricity by 2035*.". Our July 28, 2020 blog noted that it would require replacing ~60% of US electricity generation with more renewable and it could eliminate ~40% (33.5 bcf/d) of 2019 US natural gas consumption. If Biden is 25% successful by 2030, it would replace ~6.3 bcf/d of natural gas demand. It would be a negative to US natural gas and force more US natural gas to export markets. The wildcard when does US natural gas start to decline if producers are faced with the reality of natural gas being phased out for electricity. The other hope is that when Biden says "carbon-free", its not what ends up in the details of any formal policy statement ie. carbon electricity will be allowed with Biden's push for CCS.

Will Cdn natural gas be similarly hit by if Trudeau move to "emissions free" and not "net zero emissions" electricity? Yes and No. Our SAF Group April 25, 2021 Energy Tidbits memo [LINK] was titled ""*Bad News For Natural Gas, Trudeau's Electricity Goal is Now 100% "Emissions Free" And Not "Net Zero Emissions*". On Thursday, PM Trudeau spoke at Biden's global climate summit [LINK] and looks like he slipped in a new view on electricity than was in last Monday's budget and his Dec climate plan. Trudeau said "*In Canada, we've worked hard to get to over 80% emissions-free electricity, and we're not going to stop until we get to 100%."* Speeches, especially ones made on a global stage are checked carefully so this had to be deliberate. Trudeau said "*emissions free*" and not net zero emissions electricity. It seems like this language is carefully written to exclude any fossil fuels as they are not emissions free even if they are linked to CCS. Recall in Liberals big Dec 2020 climate announcement [LINK], Liberals said ""*Work with provinces, utilities and other partners to ensure that Canada's electricity generation achieves net-zero emissions before 2050*." There is no way Trudeau changed the language unless he meant to do so. And this is a major change as it would seem to indicate his plan to eliminate all fossil fuels used for electricity. If so this would be a negative to Cdn natural gas that would be stuck within Western Canada and/or continuing to push into the US when Biden is trying to switch to carbon free electricity. We recognize that there is still some ambiguity in what will be the details of policy and the Liberals aren't changing to no carbon sourced electricity at all. Let's hope so. But let's also be careful that politicians don't change language without a reason or at least with a view to setting up for some future hit. Plus Trudeau had a big warning in that same speech saying "*we will make it law to respect our new 2030 target and achieve net-zero emissions by 2050*". They plan to make it the law that Canada has to be on track for the Liberals 2030 emissions targets. This means that the future messaging will be that the Liberals have no choice but to take harder future emissions actions as it is the law. They will be just obeying the law as they will be obligated to obey the law. Everyone knows the messaging will be we have to do more get to Net Zero, that in itself will inevitably mean it will be the law if he actually does move to eliminate any carbon based electricity. So yes it's a negative, that is unless more Cdn natural gas can be exported via LNG to Asia. We believe this would be a plus to be priced against global LNG instead of Henry Hub.

Biden's global climate summit reminded there is too much risk to skip over natural gas as the transition fuel. Apart from the US and Canada, we haven't seen a sea shift to eliminating natural gas for power generation, especially from energy import dependent countries. There is a strong belief that hydrogen and battery storage will one day be able to scale up at a competitive cost to lead to the acceleration away from fossil fuels. But that time isn't yet here, at least not for energy import dependent countries. One of the key themes from last week's leader's speeches at the Biden global climate summit – to get to Net Zero, the world is assuming there wilt be technological advances/discoveries that aren't here today and that have the potential to immediately ramp up in scale. IEA Executive Director Faith Birol was blunt in his message [LINK] saying "*Right now, the data does not match the rhetoric – and the gap is getting wider*." And "*IEA analysis shows that about half the reductions to get to net zero emissions in 2050 will need to come from technologies that are not yet ready for market. This calls for massive leaps in innovation. Innovation across batteries, hydrogen, synthetic fuels, carbon capture and many other technologies.* US Special Envoy for Climate John Kerry said a similar point that half of the emissions reductions will have to come from technologies that we don't yet have at scale. UK PM Johnson [LINK] didn't say it specifically, but points to this same issue saying "*To do these things we've got to be constantly original and optimistic about new technology and new solutions whether that's crops that are super-resistant to drought or more accurate weather forecasts like those we hope to see from the UK's new Met Office 1.2bn supercomputer that we're investing in*." It may well be that the US and other self sufficient energy countries are comfortable going on the basis of assuming technology developments will occur on a timely basis. But, its clear that countries like China, India, South Korea and others are not prepared to do so. And not prepared to have the confidence to rid themselves of coal power generation. This is why there hasn't been any material change in the LNG demand outlook

We expect the IEA's blunt message that the gap is getting wider will be reinforced on May 18. We have had a consistent view on the energy transition for the past few years. We believe it is going to happen, but it will take longer, be a bumpy road and cost more than expected. This is why we believe the demise of oil and natural gas won't be as easy and fast as hoped for by the climate change side. The IEA's blunt warning on the gap widening should not be a surprise as they warned on this in June 2020. Birol's climate speech also highlighted that the IEA will release on May 18 its roadmap for how the global energy sector can reach net zero by 2050. Our SAF Group June 11, 2020 blog "*Will The Demise Of Oil Take Longer, Just Like Coal? IEA and Shell Highlight Delays/Gaps To A Smooth Clean Energy Transition*" [LINK] feature the IEA's June 2020 warning that the critical energy technologies needed to reduce emissions are nowhere near where they need to be. In that blog, we said "there was an excellent illustration of the many significant areas, or major pieces of the puzzle, involved in an energy transition by the IEA last week. The IEA also noted the progress of each of the major pieces and the overall conclusion is that the vast majority of the pieces are behind or well behind where they should be to meet a smooth timely energy transition. It is important to note that these are just what the IEA calls the "*critical energy technologies*" and does not get into the wide range of other considerations needed to support the energy transition. The IEA divides these "critical energy technologies "into major groupings and then ranked the progress of each of these pieces in its report "*Tracking Clean Energy Progress"* [LINK] by on track, more efforts needed, or not on track". Our blog included the below IEA June 2020 chart.

IEA's Progress Ranking For "Critical Energy Technologies" For Clean Energy Transition

Power	Renewable Power	Geothermal
	Solar PV	Ocean Power
	Onshore Wind	Nuclear Power
	Offshore Wind	Natural Gas-Fired Power
	Hydropower	Coal-Fired Power
	Bioenergy Power Generation	CCUS in Power
	Concentrating Solar Power	
Fuel Supply	Methane Emissions from O&G	Flaring Emissions
Industry	Chemicals	Pulp and Paper
	Iron and Steel	Aluminum
	Cement	CCUS in Industry and Transformation
Transport	Electric Vehicles	Transport Biofuels
	Rail	Aviation
	Fuel Consumption of Cars and Vans	International Shipping
	Trucks and Busses	
Buildings	Building Envelopes	Lighting
	Heating	Appliances and Equipment
	Heat Pumps	Data Centres and Data Transmission Networks
	Cooling	
Energy Integration	Energy Storage	Demand Response
	Hydrogen	Direct Air Capture
	Smart Grids	

Source: IEA

On Track More Efforts Needed Not on Track

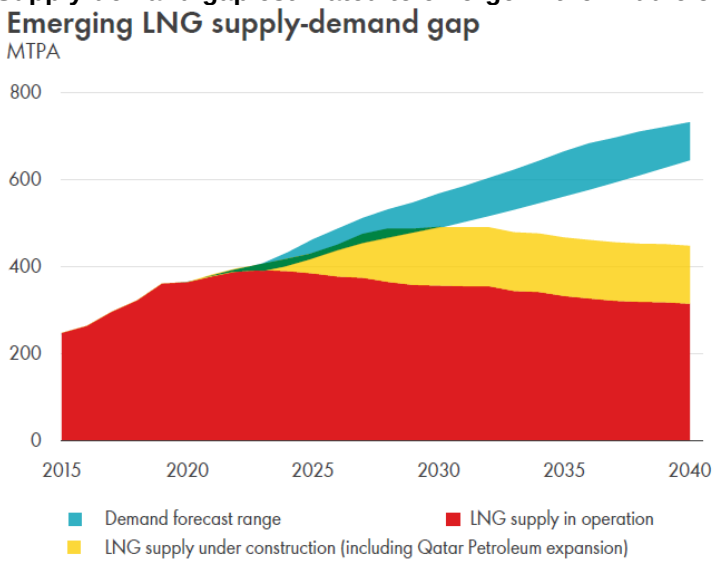
Source: IEA Tracking Clean Energy Progress, June 2020

We are referencing Shell's long term outlook for LNG We recognize there are many different forecasts for LNG, but are referencing Shell' LNG Outlook 2021 from Feb 25, 2021 for a few reasons. (i) Shell's view on LNG is the key view for when and what decision will be made for LNG Canada Phase 2. (ii) Shell is one of the global leaders in LNG supply and trading. (iii) Shell provides on the record LNG outlooks every year so there is the ability to compare and make sure the outlook fits the story. It does. (iv) Shell, like other supermajors, has had to make big capex cuts post pandemic and that certainly wouldn't put any bias to the need for more capex.

Shell's March 2021 long term outlook for LNG demand was basically unchanged vs 2020 and leads to a LNG supply gap in mid 2020s Shell does not provide the detailed numbers in their Feb 25, 2021 LNG forecast. We would assume they

would have reflected some delay, perhaps 1 year, at Mozambique but would be surprised if they put a 2-3 year delay in for the 5 bcf/d from Total Phase 1 +2 and Exxon Rozuma Phase 1. Compared to their LNG Outlook 2020, it looks like there was no change for their estimate of global natural gas demand growth to 2040, which looked relatively unchanged at approx. 5,000 bcm/yr or 484 bcf/d. Similarly, long term LNG demand looked unchanged to 2040 of ~700 mm tonnes (92 bcf/d) vs 360 mm tonnes (47 bcf/d) in 2020. In the 2021 outlook, Shell highlighted that the pandemic delayed project construction timelines and that the "*lasting impact expected on LNG supply not demand"*. And that Shell sees a LNG "*supply-demand gap estimated to emerge in the middle of the current decade as demand rebounds*". Comparing to 2020, it looks like the supply-demand gap is sooner.

Supply-demand gap estimated to emerge in the middle of the current decade



Source: Shell LNG Outlook 2021, Feb 25, 2021

Mozambique delays are redefining the LNG markets for the 2020s: Delaying 5 bcf/d of Mozambique new LNG supply 2-3 years means a much bigger supply gap starting in 2025.. Even if the optimists are right, there are now delays to all major Mozambique LNG supply from LNG supply forecasts. We don't have the detail, but we believe all LNG forecasts, including Shell's LNG Outlook 2021, would have included Total's Phase 1 and Phase 2 and Exxon Rozuma Phase 1. As noted earlier, we believe that the likely impact of the Mozambique security concerns is that these forecasts would likely have to push back 1.7 bcf/d from Total Phase 1 to at least 2026, 2.0 bcf/d Exxon Rozuma Phase 1 to at least 2027, and 1.3 bcf/d Total Phase 2 to at least 2028/2029 with the real risk these get pushed back even further. 5.0 bcf/d is equal to 38 mtpa. These delays would mean there is an increasing LNG supply gap in 2025 and increasingly significantly thereafter. And even if a new greenfield LNG project is FID's right away, it wouldn't be able to step in to replace Total Phase 1 prior startup timing for 2024 or likely the market at all until at least 2027. Its why the decision on filling the gap will fall on brownfield LNG projects.

And does this bigger, nearer supply gap force LNG players to look at what brownfield LNG projects they could advance? A greenfield LNG project would likely take at least until 2027 to be in operations. Its why we believe the Mozambique delays will effectively force major LNG players to look to see if there are brownfield LNG projects they should look to advance. Prior to the just passed winter, no one would think Shell or other major LNG players would be considering any new LNG FIDs in 2021. All the big companies are in capital reduction mode and debt reduction mode. But Brent oil is now solidly over $60 and LNG prices hit record levels in Jan 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. We would not expect any major LNG players to move to FID right away. But we see them watching to see if 2021 plays out to still support this increasing LNG supply gap. 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 5 months. The question facing Shell and others, 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 than expected a few months ago. We expect these decisions to be looked at before the end of 2021. LNG prices will be stronger, but we expect the limiting cap in Asia will be that thermal coal will be used to mitigate some LNG price pressure.

Back to Shell, does increasing LNG supply gap provide the opportunity to at least consider a LNG Canada Phase 2 FID over the next 9 months? 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 6 months ago. No one has been or is talking about this Mozambique impact and how it will at least force major LNG players to look at if they should FID new brownfield LNG projects to take advantage of this increasing supply gap. 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. No one is talking about the need for these new brownfield LNG projects, but, unless Total gets back developing Mozambique and keeps the delay to a matter of months, 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. A LNG Canada Phase 2 FID would be a big plus for Cdn natural gas. It would allow another ~1.8 bcf/d of Cdn natural gas to be priced against Asian LNG prices and not against 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 may be in Africa, but, unless sustained peace and security is attained, it is 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 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 to 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.

Key LNG trade highlights:
Week of July 25-31, 2022

- **Spot trade:** The share of spot volume in total global liquefied natural gas (LNG) trade was 20% for the week of July 25-31, falling from 26% the week before. Spot deliveries into European markets outside of the Northwest Europe region increased marginally, by 0.06 million metric tons. The Japan-Korea-China-Taiwan (JKCT) region saw spot deliveries decline by 0.4 million tons, mostly due to lower demand from Japan and South Korea. Northwest Europe and Italy also saw a drop of 0.13 million tons in spot deliveries, led by France.
- **Contract deliveries:** Global LNG trade volume decreased by 9% from the previous week, to 6.7 million tons, largely owing to the decline in spot volumes, especially in the JKCT region. Contract deliveries remained at similar levels to the previous week. The drop in contract supply into Northwest Europe, Italy and Southeast Asia was offset by an increase in other parts of Europe and the Americas.
- **Europe LNG deliveries:** Imports into Northwest Europe and Italy reached a total of 1.1 million tons over July 25-31, similar to the same period a month earlier (June 25-July 1). Supply from the US decreased, while Russia increased exports to Europe. Qatari deliveries to Europe stayed flat. Imports from the US were down 24% from the same week in the previous month, mostly attributable to no imports into Italy, the UK and Belgium. Russian LNG supply increased, with all three LNG cargoes delivered to France.
- **Transits:** Weekly laden LNG vessel transits via key routes totaled 14 cargoes, down two cargoes week-on-week, largely due to a drop in Suez Canal transits. Transits via the Suez Canal declined by six cargoes, reaching only six shipments, while Panama transits increased by three, to five cargoes. No Northern Sea Route crossings happened last week, the same as the week prior. Cape of Good Hope crossings totaled three, increasing by one cargo from the previous week. The southbound wait time was 11 days as of August 2, up from six days a week ago.
- **LNG on water:** Bloomberg's Index for loaded LNG tankers on the water for at least 20 days or more rose by 3% week-on-week, as floating LNG cargoes from the US and Qatar increased by one each. Shipments from Russia and Nigeria decreased by one each.
- **Weather forecast (as of July 31):** Temperature forecasts available from the Global Forecast System (GFS) for the next two weeks suggest higher-than-normal temperatures in Northwest and South Europe, Japan, South Korea and some parts of China.
  - For *more, see weather forecasts on WFOR <GO> on the Bloomberg Terminal.*

6.7 million tons

Total LNG deliveries for the week to July 31

20%

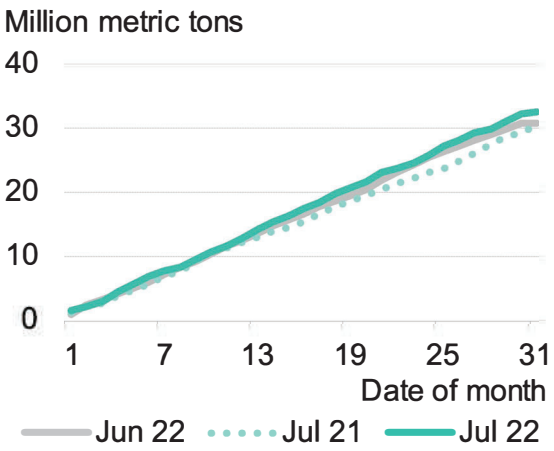
Spot LNG share of total weekly trade

11 days

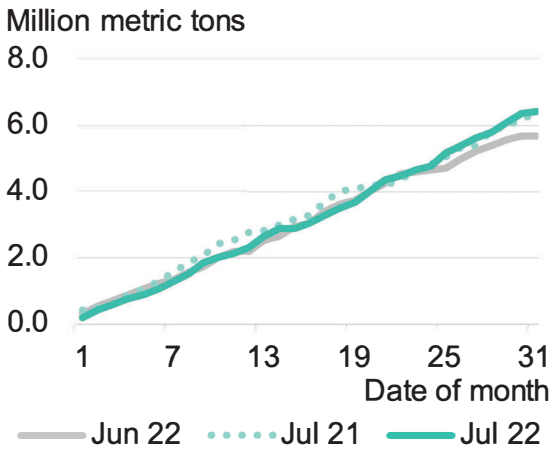
Panama Canal southbound wait time

Cumulative LNG imports
(As of July 31, 2022)

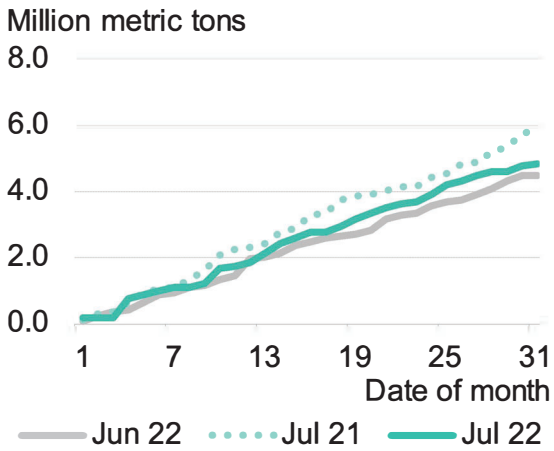
Global imports



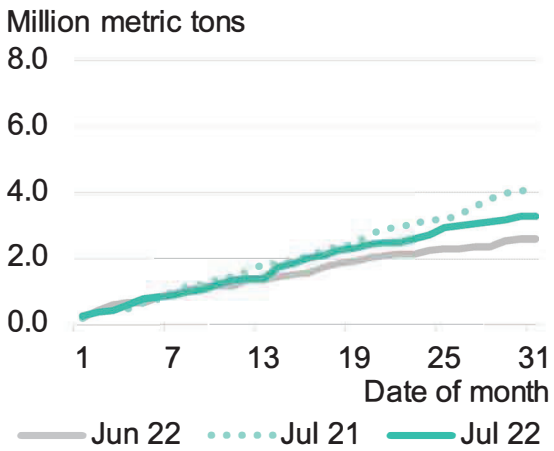
Japan



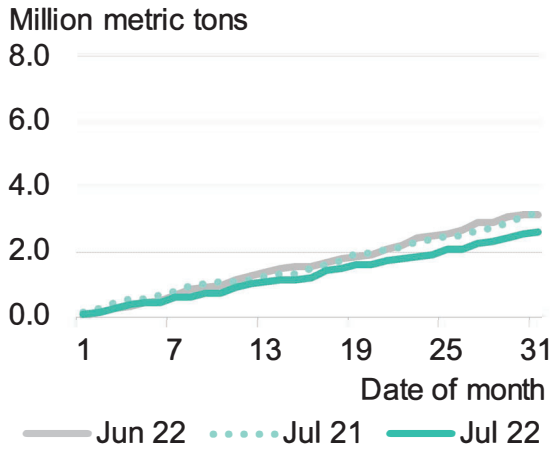
China



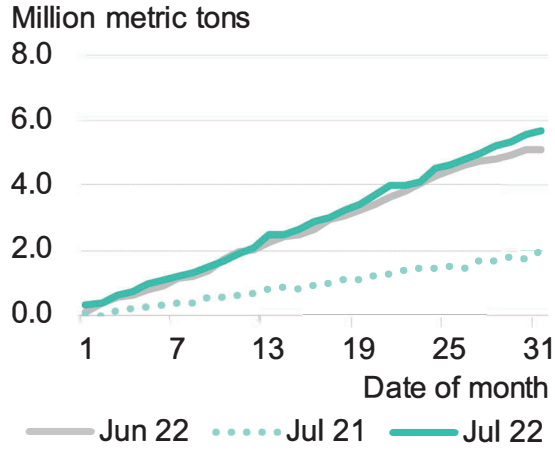
South Korea



South Asia



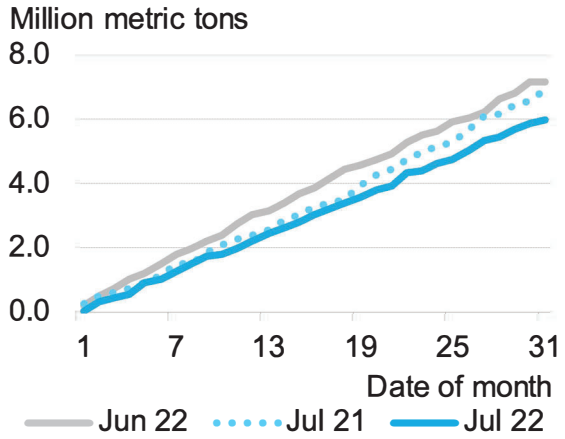
Northwest Europe and Italy



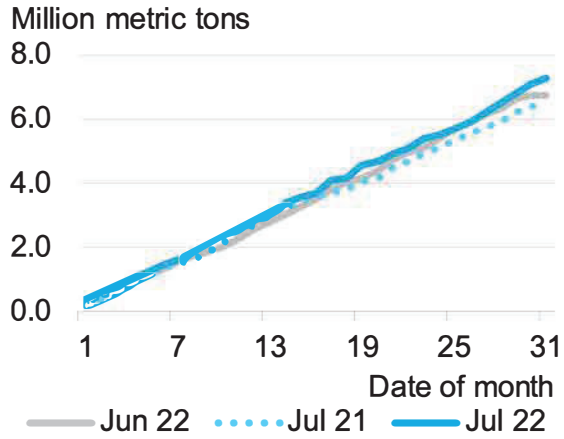
Source: Bloomberg AHOY JOURNEY <GO>, BloombergNEF. Note: Date is arrival date.

Cumulative LNG supply
(As of July 31, 2022)

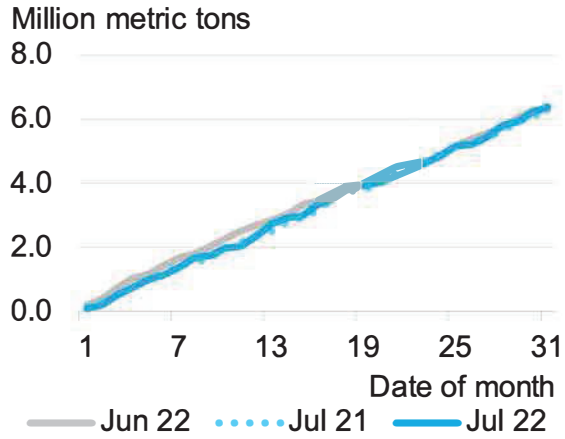
Australia



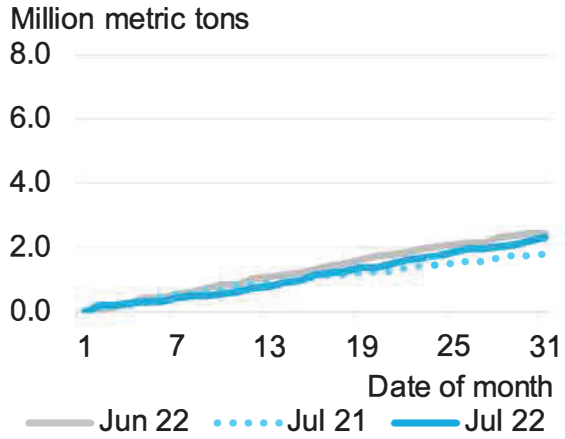
Qatar



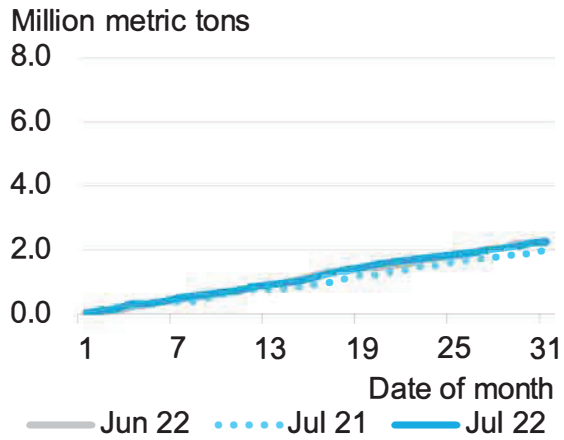
US



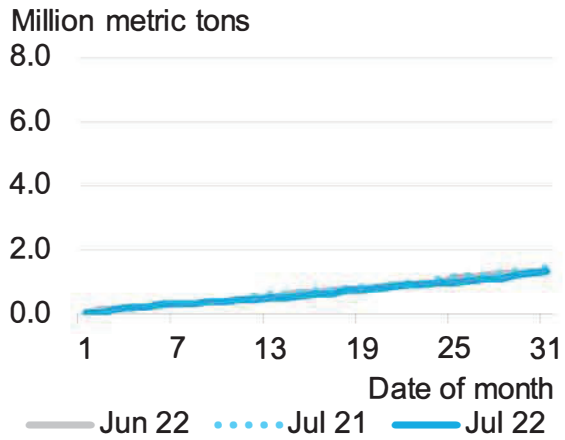
Russia



Malaysia



Nigeria



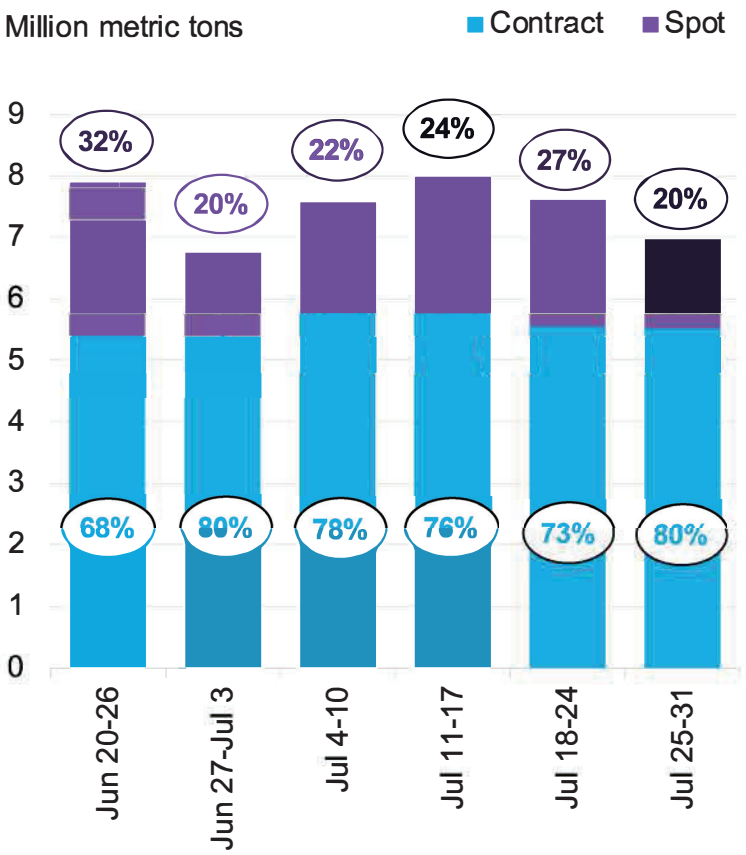
Source: Bloomberg AHOY JOURNEY<GO>, BloombergNEF. Note: Date is departure date.

BloombergNEF

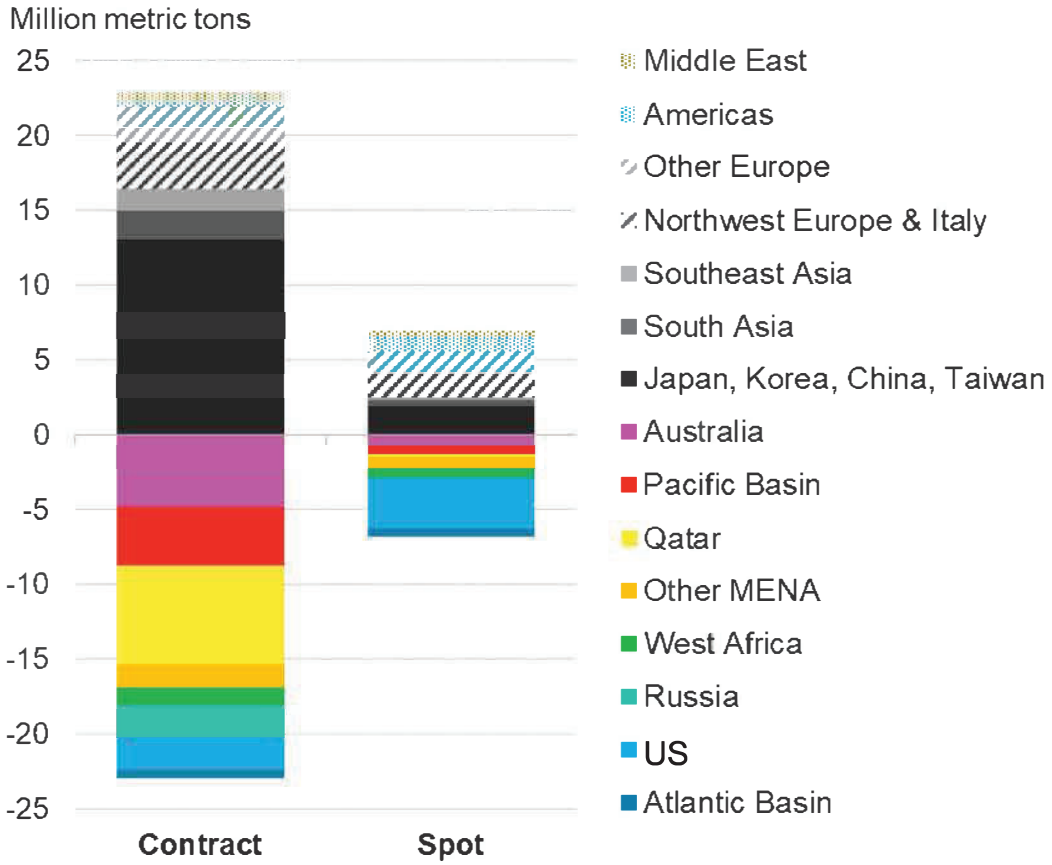
*See BNEF's **LNG Spot-Contract Trade Flow Playbook** (web | Terminal).*

Contract versus spot trade volume

Weekly contract versus spot volume and share



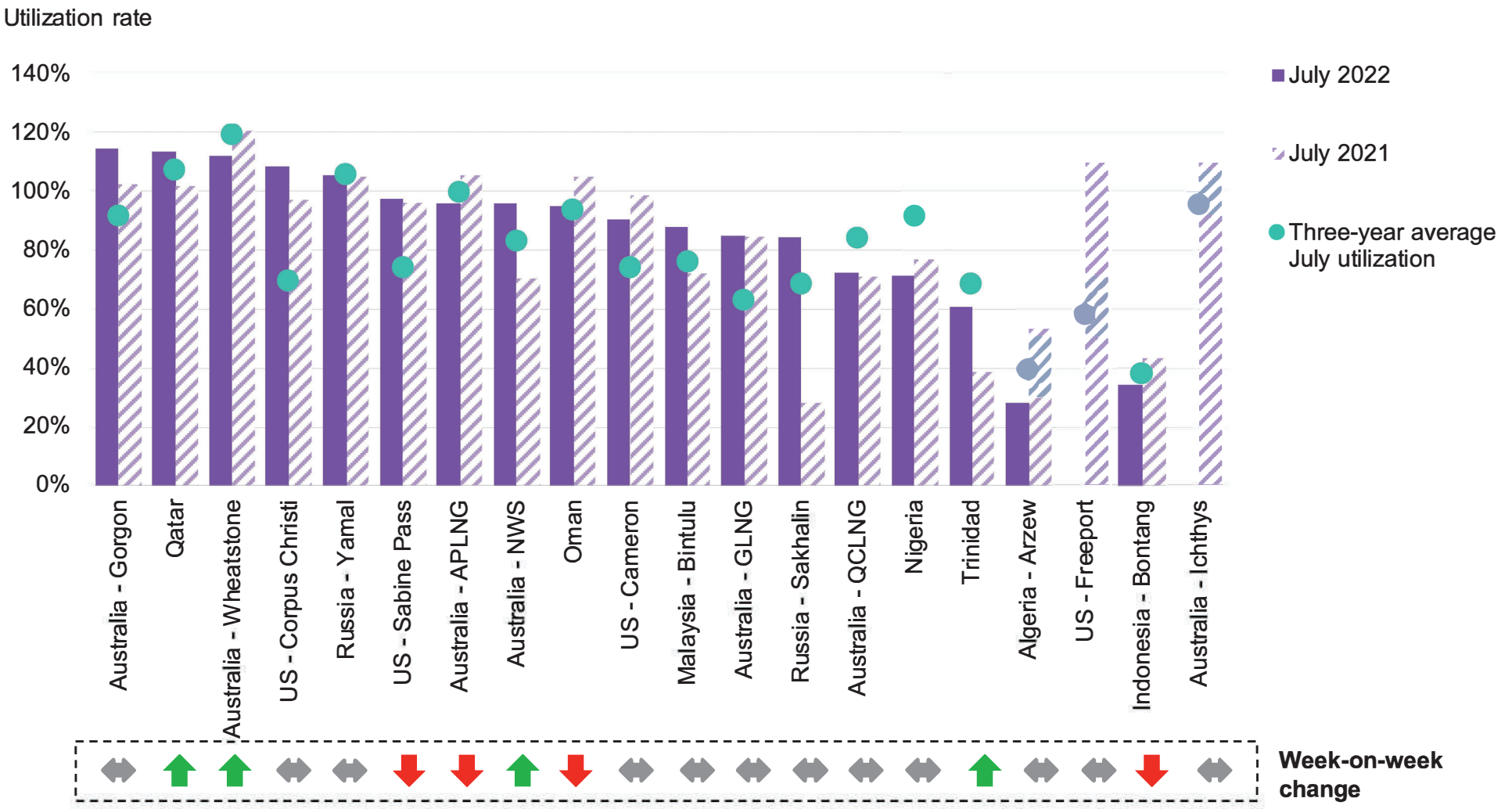
Spot and contract volume trade balance – cumulative last four weeks



Source: BloombergNEF. Note: MENA is Middle East and North Africa. Spot categorization is based on import market perspective, BNEF makes various assumptions for this analysis. Historical data may be updated.

LNG plant utilization rates

(As of July 31, 2022)



Source: BloombergNEF, Bloomberg AHOY JOURNEY <GO>. Note: Current month utilization is as of the last day of this week's report period. Utilization is calculated on a pro-rated basis, export capacity is apportioned to corresponding days of the month. Chart only shows 20 largest LNG plants/complexes. Three-year average is 2019-2021. Week-on-week change refers to the week prior to this report date range. If the week-on-week change is within a cargo (~0.06 million tons), it is shown as flat.

https://tass.com/economy/1489393
4 AUG, 06:12

Arctic LNG 2 to be commissioned in 2023, Obskiy Gas Chemical Complex in 2024

It is reported that the projects are being implemented by Novatek

MOSCOW, August 4. /TASS/. The Northern Sea Route (NSR) development plan through 2035 approved by Russian Prime Minister Mikhail Mishustin suggests the commissioning of the Arctic LNG 2, Obskiy GCC (Gas Chemical Complex) and Arctic LNG 1 projects in 2023, 2024, and 2027, respectively, according to the document.

All three projects are being implemented by Novatek. According to the NSR development plan, the flow of cargo from Arctic LNG 2 is projected at 3.6 mln tonnes in 2023, whereas by 2030 it may soar almost six-fold to 21 mln tonnes. The cargo traffic from Obskiy GCC may increase from 0.6 mln tonnes in 2023 to 5.2 mln tonnes in 2026, remaining at this level by 2035. The flow of cargo from Arctic LNG 1 is expected at 2.3 mln tonnes in 2027, potentially able to rise to 21.5 mln tonnes by 2035.

The document also mentions the projected volumes of cargo traffic from Rosneft's flagship project of Vostok Oil. Particularly, the flow of cargo from it may reach 30 mln tonnes in 2024, and up to 100 mln tonnes by 2030.

https://tass.ru/ekonomika/15225009https://tass.ru/ekonomika/15225009

July 15, 03:26,

updated July 15, 08:46

Manturov: Russia will be able to independently create all the equipment for gasification of the country

According to the head of the Ministry of Industry and Trade, the timing of testing and launching mass production of large gas turbines will be accelerated

MOSCOW, 15 July. /TASS/. Russia is capable of independently producing all the equipment for gasification of the country, said the head of the Ministry of Industry and Trade of the Russian Federation Denis Manturov during a speech in the State Duma.

“It is important here, on the one hand, to upgrade capacities by replacing foreign, exploration, drilling, offshore equipment and speeding up work on our own medium and large-tonnage LNG equipment. On the other hand, in the interests of domestic consumption, we will be able to supply all the technological piping ourselves for the entire gasification of our country," the minister said.

According to him, the timing of testing and launching mass production of large gas turbines will be accelerated. "In the interests of the Russian electric power industry, in addition to the already supplied small and medium-sized turbines, we are compressing the time for testing and entering a series of large 65 and 170 MW turbines," Manturov said.

The head of the ministry also announced the need to create a test center for high-voltage equipment. "With colleagues from the Ministry of Energy, we are consolidating and unifying the requests of power engineers under the CDA-2 program and the needs of oil and gas companies, taking into account their plans for the operation of existing and development of new fields," he also said.

Tags:

Manturov, Denis Valentinovich Russia

Google Translate version of Kommersant report in Russian
https://www.kommersant.ru/doc/5479813?from=glavnoe_3
24.07.2022, 17:02

Turbine is gaining paperwork

Gazprom has questions about the Canadian license

According to Kommersant's information, on July 24, Siemens Energy transferred Canada's export license to Gazprom, which allows it to repair and transport gas turbines for Nord Stream. Now, in order for Siemens to import the turbine to Russia, Gazprom must change the basis for delivering the machine from Montreal, Canada to the final destination in the Russian Federation. Due to paper delays, the turbine has already missed the ferry, which was supposed to leave Germany for Helsinki on July 23. If the parties successfully exchange documents, the transportation of the car may take place in the next few days. But Kommersant's sources doubt that the delivery of the turbine will lead to an increase in pumping through the Nord Stream: several more machines need to be repaired.

According to Kommersant, Siemens Energy sent Gazprom an export license issued by Canada, allowing it to repair, maintain and transport until the end of 2024 turbines for the Portovaya compressor station, which pumps gas into the Nord Stream pipeline. Gazprom applied to Siemens three times with a request to provide this document confirming the withdrawal of Gazprom equipment from the Canadian sanctions regime, emphasizing that so far it has not had any documentary evidence of the lifting of sanctions.

The turbine for Nord Stream was supposed to go by ferry from German Lübeck to Helsinki on July 23, and from there by land to the Russian Federation, but due to the lack of necessary documents from Gazprom, this was not possible.

Now the car, which is located in Germany, can be sent to the Russian Federation only in the middle of the week, but on the condition that Gazprom sends the documents necessary for customs control: a change in the delivery basis (now Montreal) to a point in Russia is required.

According to the current agreement with Siemens Energy for the repair of turbines, Gazprom had to pick up the repaired machine in Canada on its own: after the country imposed direct sanctions against Gazprom, this became impossible, and Siemens took over the delivery of the turbine to the Russian Federation. But the shipping documentation was not changed. Siemens Energy declined to comment, Gazprom did not provide them.

Initially, the car was supposed to be delivered to the Russian Federation on July 24, on July 17 it went by plane from Canada to Germany. This was preceded by several weeks of negotiations between Ottawa and Berlin: due to Canada's initial refusal to return the turbine, Gazprom on June 14 announced a decrease in pumping through Nord Stream.

At first, deliveries fell from 167 million to 100 million cubic meters per day, and on June 16 they dropped to 67 million cubic meters per day, or up to 40% of the nominal capacity of the pipe. This decision of the company caused alarm in the European gas market, reducing the rate of filling underground storage facilities for the coming winter (now 65.5%, the goal is at least 80% by October).

The interlocutors of Kommersant are not sure that sending the turbine will help increase the flow through the Nord Stream, since several more cars at the Portovaya station need to be repaired.

> **In theory, they can be sent for repairs at any time, Kommersant's interlocutors say, but Gazprom has not yet given permission for this. Repair of one car, according to Kommersant's interlocutors, takes about three months.**

According to the license issued by Siemens Energy, five more vehicles are allowed to be sent to Canada by the end of 2024. In total, the Portovaya compressor station has nine gas pumping units (comprised of a turbine

and a compressor). Of these, six Siemens SGT-A65 gas turbines (produced on the basis of Rolls-Royce aircraft engines) and three more less powerful SGT-A35 turbines. It follows from Gazprom's current statements that only three A65 turbines are currently operational at Portovaya.

Europe begins to prepare for the cessation of supplies from Russia

At the same time, Berlin does not believe that the lack of a turbine caused a decrease in supplies via Nord Stream, accusing Moscow of using gas supplies as a political weapon. Gazprom, in turn, stated that there are significant potential risks in case of non-compliance with all established procedures as part of the return of the engine for Nord Stream. The company emphasized that "the current terms of the contract do not provide for additional obligations of the Russian side to receive this engine," without explaining what obligations they are talking about.

Tatyana Dyatel

https://www.transmountain.com/news/2022/update-august-2022-capacity-announcement-for-the-trans-mountain-pipeline-system?utm_source=Trans+Mountain+Updates&utm_campaign=336cd29276-EMAIL_CAMPAIGN_12_2_2021_15_6_COPY_01&utm_medium=email&utm_term=0_f287e4f791-336cd29276-30713878

Update: August 2022 Capacity Announcement for the Trans Mountain Pipeline System

Home › News

Tags Operations

Aug. 3, 2022

Total system nominations for the Trans Mountain Pipeline system are apportioned by 13 per cent for August 2022.

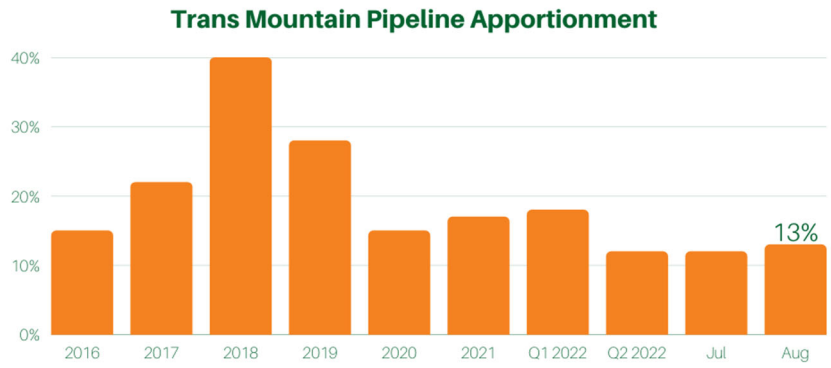
What is pipeline 'apportionment' and why is it important?

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

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

Trans Mountain Pipeline apportionment by the numbers

Apportionment of the Trans Mountain Pipeline system has been a regular monthly occurrence for the past decade. The chart below shows the apportionment for 2016, 2017, 2018, 2019, 2020, 2021 and apportionment to date for 2022.



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

Business case for expansion is strong

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

https://www.opec.org/opec_web/en/press_room/6984.htm

31st OPEC and non-OPEC Ministerial Meeting

No 23/2022 Vienna, Austria 03 Aug 2022

The 31st OPEC and non-OPEC Ministerial Meeting was held via videoconference on 3 August 2022.

The Meeting noted the dynamic and rapidly evolving oil market fundamentals, necessitating continuous assessment of market conditions.

The Meeting noted that the severely limited availability of excess capacity necessitates utilizing it with great caution in response to severe supply disruptions.

The Meeting noted that chronic underinvestment in the oil sector has reduced excess capacities along the value chain (upstream/midstream/downstream).

The Meeting highlighted with particular concern that insufficient investment into the upstream sector will impact the availability of adequate supply in a timely manner to meet growing demand beyond 2023 from non-participating non-OPEC oil-producing countries, some OPEC Member Countries and participating non-OPEC oil-producing countries.

It noted that preliminary data for OECD commercial oil stocks level stood at 2,712 mb in June 2022, which was 163 mb lower than the same time last year, and 236 mb below the 2015-2019 average, and that emergency oil stocks have reached their lowest levels in more than 30 years.

The Meeting also noted that Declaration of Cooperation conformity has averaged 130% since May 2020, supported by voluntary contributions of some participating countries.

Emphasizing the value and importance of maintaining consensus as essential to the cohesion of OPEC and participating non-OPEC oil-producing countries, and in view of the latest oil market fundamentals, the Participating Countries decided to:

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

2. Adjust upward the production level for OPEC and non-OPEC Participating Countries by 0.1 mb/d for the month of September 2022 as per the attached table. This adjustment does not affect the baselines decided on the above-mentioned Meeting on 18 July 2021.

3. Reiterate the critical importance of adhering to full conformity and to the compensation mechanism. Compensation plans should be submitted in accordance with the statement of the 15th OPEC and non-OPEC Ministerial Meeting.

4. Hold the 32nd OPEC and non-OPEC Ministerial Meeting on 5 September 2022.

September 2022 Required Production	
Algeria	1057
Angola	1529
Congo	325
Eq.Guinea	127
Gabon	187
Iraq	4663
Kuwait	2818
Nigeria	1830
Saudi Arabia	11030
UAE	3186
Azerbaijan	718
Bahrain	205
Brunei	102
Kazakhstan	1710
Malaysia	595
Mexico	1753
Oman	883
Russia	11030
Sudan	75
South Sudan	130
OPEC 10	26753
Non-OPEC	17202
OPEC+	43955

https://www.arabnews.com/node/2128761

Secret or reality: can Aramco produce 15 million barrels a day?

WAEL MAHDI
July 25, 202200:45
3474

I guess by now we all know that Saudi Arabia will not raise its production capacity beyond 13 million barrels a day by 2027 after the Kingdom's Crown Prince Mohammed bin Salman made it clear in his address during the regional summit this month that was attended by US President Joe Biden.

“The Kingdom will contribute to this field to increase its production capacity to 13 million barrels per day, and after that the Kingdom will not have any additional ability to increase production,” the Crown Prince said.

To many who are still under the influence of what Matt Simmons wrote 17 years ago in his book "Twilight in the Desert", the Saudi statement was a testament to the argument laid in the book that Saudi Arabia can't rescue the world anymore as its oil fields are aging and reaching a peak.

Those who remember the days of peak oil theory will definitely remember the many statements put out by officials from the ministry of petroleum and Aramco. Communication and PR practices back then weren't as elaborate and sophisticated as today because at that time Aramco wasn't listed yet on the Saudi stock exchange and the petroleum ministry was running the show.

The result was many statements that sounded contradictory or unrealistic when everyone was trying to defend their position against Matt Simmons' theories.

Those statements maybe were needed at that time to maintain confidence in Aramco but it surely didn't serve it well two decades later.

Aramco's officials thought that the market has very short memories that won't last this long, but they tend to forget that there are observers who have an agenda against the company because Aramco treated them with negligence or denial — the most common practice for Aramco officials when someone from outside the company has any say about it.

Those who remember that period would certainly recall Aramco's statements about being able to pump 12 or even 15 million barrels a day for decades.

So in retaliation, some observers now are trying to show how Aramco was contradictory about its production capacity in the light of the Crown Prince's recent statement.

In fact, the issue is more complicated than this.

Yes there were some contradictions because Aramco's officials were always speaking in fear in public.

They always feared that something they said would upset someone in the ministry in Riyadh so the focus was on keeping Riyadh happy but not explaining it right to the media what the company is capable of producing.

Thank God things have improved significantly today as the listing of Aramco on the Saudi stock market has served us all well.

Everything is public after being documented, audited, and scrutinized. We have better sourcing and understanding of the numbers of the company now than ever.

This, however, didn't solve all the problems because officials in the past left many ends untied. Former minister of petroleum Ali Al-Naimi, for example, explained many technical terms with reporters who didn't have any knowledge about petroleum engineering practices or who simply weren't interested in more than a simple statement they needed to send back to their editors.

Other officials from Aramco were even very aggressive in their response to the media on the output capacity issue. The result we all know: more confusion and less trust in the statements.

The issue of Aramco's ability to produce massive amounts of oil was at the center of any media discussion with Al-Naimi for years. Yet, there were periods when the issue was more pressing, especially during supply crises and skyrocketing oil prices.

In 2008, when oil prices were already on their way to $147, the world was looking for solutions and an energy meeting in Jeddah was held where tens of energy and oil ministers from around the world met to discuss the root cause of the crisis and where to go next.

As consuming countries like the US were accusing OPEC of being responsible for the crisis due to its inability to increase capacity, the producers were claiming that speculation and paper market trading practices are behind the price hikes.

As a response and to assure the market and consumers that there was never a supply crisis, Saudi Arabia told the ministers in Jeddah that it's already on its way to complete its program to increase maximum sustainable capacity to 12.5 million barrels a day by end of 2009, and it pledged to raise it further to 15 million if the world needed it.

For Saudi output capacity to hit 15 million barrels, the further daily capacity includes 900,000 barrels from the Zuluf field, 700,000 barrels from Safaniyah, 300,000 barrels from Berri, 300,000 barrels from Khurais and 250,000 barrels from Shaybah, as explained by minister Naimi at the time.

When Saudi officials were asked in later years about the 15 million barrels a day figure, they responded by saying that this was a scenario and never was a solid program.

I think the world now can say goodbye to the 15-million-barrels-a-day scenario. Many of these increments have already been developed to maintain Aramco's 12 million MSC. Khurais 300,000 and 250,000 are history now. As for Berri's increment, it is coming online over the next two years.

Now we will rely on Zuluf and Safaniyah to hit the 13 million barrels a day target and to compensate for the declines in older fields such as Abqaiq and Ghawar.

But is it really "that's it" for Saudi Arabia?

The confusion about Saudi production capacity always starts when answering this question. It's confusing for people inside Aramco, let alone people outside of it.

The simple answer is NO, but let's clear few misunderstandings about the issue first.

First of all, Saudi Aramco as a company has 12 million barrels a day as a maximum sustainable production capacity. This means Saudi oil reservoirs can only go up to this level without being damaged.

It can produce 12 million barrels and keep this level for a long period but this won't happen without massive investment in managing and maintaining the wells and without an aggressive drilling program.

The more an oil company produces from a well, the faster output declines. So oil companies keep drilling new wells all the time to first replace the oil produced, and second to keep the production rate steady from the field.

However, Saudi Aramco doesn't produce at this maximum production capacity as per policy. The Kingdom took on its shoulders the responsibility of keeping between 1 and 2 million barrels a day of oil as spare capacity. By industry definition, this is the amount of oil it can produce within 30 days and sustain for 90 days.

So in order for Aramco to increase production from 10 million barrels a day — its current comfortable level that forms the high end of the comfort zone for the company — to 11 or 12 million barrels a day and dive into its spare capacity, it needs more drilling and one month at the minimum. It's not a switch it can hit and output will go up by a million or two barrels.

Second of all, there is a big difference between maximum sustainable capacity or MSC and potential production. Whereas MSC is the amount of oil the reservoirs will allow Aramco to produce for a long period, potential production is what the company's surface facilities can process at any given day.

The shocking number for many of those who don't know the reality of Saudi oil production, is that the surface facilities of Aramco can allow it to produce up to 15 million barrels a day.

Yes, you heard it right, 15 million barrels as of today.

Then, how come Aramco only said it can pump 12 million barrels a day?!!

Aramco's daily production is constrained by many factors. First, it can't produce whatever it likes. It gets its output targets from the minister of energy based on the agreement the Kingdom has under OPEC and OPEC+.

Second, the government policy mandates Aramco to always keep 1 to 2 million barrels a day at any given time as a spare capacity that is to be used during any energy crisis. This spare capacity is a buffer for the global oil market and the unique proposition for Aramco and the Kingdom as there is no other producer in the world who has this much oil idled.

This idle capacity isn't free. It comes at a cost. There is an economic cost of not selling that oil, and there is a financial cost in the form of capex and opex to keep these wells and the surface facilities ready to pump this crude at any time.

The next question is, did Aramco ever produce 12 or 15 million barrels a day in its history? Are these numbers real or just on paper?

Let's look into history.

A decade ago, Al-Naimi told a limited number of journalists in one of the briefings that Aramco did process 14 million barrels a day in one single day and it loaded that much crude on ships on that day. Now, supplying 14 million barrels a day is totally different from producing that quantity from below the ground on that single day. What Al-Naimi was trying to sell to reporters was that Aramco can put that much crude out because its surface facilities can handle that much.

He also went on to say that the company actually hit near 12 million historically but that was in a "flush production" and he said "you guys don't need to worry about this." Flush production is the amount of high oil flow rate that comes out from new wells. As Society of Petroleum Engineers explains on its website, it "delivers a small, high rate flow every time the well is shut-in (recharges) and is brought back on line".

Al-Naimi didn't give much details about the timing for all this or any further information.
Moving on to recent times, in April 2020, Aramco finally showed the world it has 12 million barrels a day and it did pump at that level but not for too long. It was just a matter of days.
Aramco did produce at 11 million barrels a day, though, for weeks.

This year it will need to revisit this number when its OPEC+ agreement comes to an end in September.

I don't doubt the ability of Aramco to produce at 11 or 12 million barrels a day because I didn't get my information from the officials who smile at the media but from those who were against seeing the company producing at that level.

Aramco can do it but it will require more work for petroleum engineers who don't want to walk the extra mile and it will need massive investments and above all more reservoir management.

The internal pushback isn't new and as former Aramco's executive Sadad Al-Husseini pointed out in his account of the launch of Aramco's MSC program, engineers were against seeing Aramco producing more than 9 million in the late 1970s. Things haven't changed today.

Othman Al-Khowaiter, another Aramco veteran, is among those who made it publicly that he doesn't want to see Aramco pumping at more than 10 million barrels a day and sometimes stressed on the need to keep output at lower levels.

The decision, at the end, rests with the government. There are international commitments for Saudi Arabia and there are state financial needs that have to be covered. There is also a monetization strategy for oil resources that the government is implementing to ensure that the oil wealth is turned into cash income.

In the end, no matter what Aramco said or tried to prove when it comes to MSC, its words will fall on deaf ears as the jury is out and there has been an agenda against Aramco for years.

I can't blame the media entirely because the responsibility also falls on the shoulders of Aramco's and

other officials who unfortunately confused the public or were unable to tell the truth in the best possible way.

They had no trust in the media and the media had no trust in them.

Setting the issue of trust aside, we need to know if Aramco can produce more oil. The world needs to know this.

I can't speak for the company but I can share all what I've learned about this issue throughout the years.

I can comfortably register my testimony on this knowing that my words will be remembered years from now.

Aramco can hit 13 million barrels a day and Saudi Arabia as a whole can hit 13 million barrels a day or even more.

First, there are tens of fields that are still not developed. There are more than 100 discovered fields but the majority if not all of production is coming from less than 25 of them.

Yes all these undeveloped fields are giant but when combined can add something between 500,000 and 1 million barrels a day extra. However, the economics for bringing them online is still not there, not until the big fields are on decline.

Second, observers tend to forget that Saudi Arabia shares massive resources in the partitioned zone with Kuwait. Khafji network of offshore fields can produce up to 300,000 barrels a day, while onshore fields in Wafra are able to add 200,000 barrels a day.

Saudi Arabia was trying for years through Chevron to implement a steam flooding program that can unlock at least 5 billion barrels extra of heavy oil from Wafra. The steam injection project was undergoing until the two countries halted production from the entire zone between 2014 and 2015. With operations resuming normally in the zone, the prospect for seeing more oil from Wafra and Khafji is high.

Third, Aramco can supply the world with more oil not only by pumping more but freeing more oil for exports. Let's be reminded that Saudi Arabia is embarking on a program to replace liquids in all power plants with natural gas. In addition, the energy mix in Saudi Arabia by 2030 should be split between gas and renewables, which can free an additional 1 million barrels a day of oil at least.

Fourth, Saudi Arabia is turning to unconventional gas in its massive Jafurah field to power its future and that will free more oil.

Fifth, technology, technology, technology. No one can predict the impact of technological breakthroughs on oil production. The life of Aramco's reservoirs was extended thanks to horizontal drilling practices that the company followed in the 1990s. It's now investing big on research and development in an effort to find better ways to extend the lives of its fields. From small robots that can go into the reservoirs to better water and carbon injection methods, Aramco is not standing still.
It even has one of the largest supercomputers in the world at its EXPEC ARC center to simulate reservoirs.

So in conclusion, the world can still expect to see more oil from Saudi Arabia above the nameplate capacity.

The question that the world needs to answer is whether there is enough demand in the future for Saudi Arabia to make big investments in its oil production?

What the world must know is that producing an extra barrel of oil comes at huge cost. Why would the government allocate billions of dollars a year to invest in new capacity at a time when it needs every dollar to move its economy away from oil?

If the world wants Saudi Arabia to carry the responsibility of opening its oil taps endlessly, it must secure demand for oil.

What we are seeing, nevertheless, is the opposite. Therefore, I think the Crown Prince's statement seems to be fair and the world should live with 13 million barrels a day instead of complaining about it.

• *Wael Mahdi is a senior business editor at Arab News and co- author of "OPEC in a Shale Oil World: Where to Next?"* **twitter: @waelmahdi**

https://www.timesofisrael.com/top-eu-official-notes-progress-in-renewed-iran-talks-after-securing-us-assurances/

Top EU official notes progress in renewed Iran talks after securing US assurances

Official says it's agreed the US won't be able to scupper deal by withdrawing in the future, claims world powers looking to finalize text soon

By **AFP** and **TOI STAFF**5 August 2022, 5:30 am

21

Iran's chief nuclear negotiator Ali Bagheri Kani (L) leaves after talks at the Coburg Palais, the venue of the Joint Comprehensive Plan of Action (JCPOA) in Vienna on August 4, 2022. (Alex HALADA / AFP)

VIENNA — A senior EU official said progress was made after world powers reconvened in Vienna for a fresh round of talks to salvage the Iran nuclear deal.

Negotiators were meeting in the Austrian capital for the first time since March, when negotiations, which began in 2021 to reintegrate the United States into the agreement, stalled.

The senior EU official said the progress included guarantees that the United States would not scupper the deal by going back on its word in the future.

It was unclear how this would be possible, and a number of Republican presidential hopefuls have already pledged to once again withdraw the US from the agreement if elected in 2024

"We have now quite substantial guarantees," the EU official insisted. "It's my understanding that Iran is happy and feels satisfied with what is in the text."

A demand by Tehran that the United States remove the country's powerful Islamic Revolutionary Guard Corps from the State Department's official blacklist of "foreign terrorist organizations" has been dropped from the discussions, the official added. It will instead be handled "in the future" — after the deal.

Tehran and Washington still have to agree on "issues related to sanctions lifting and a couple of nuclear questions that did not exist in March as the Iranians advanced their program," the official said.

“We are a bit exhausted, I cannot imagine myself here in four weeks,” the EU source said. “This is not another round, we are here to finalize the text.”

“I think there is a real possibility, but it’s not going to be easy.”

US National Security Council spokesman John Kirby told reporters on Thursday there was “a deal on the table” and Iran “ought to take it.”

“You’ve heard the president say we’re not going to wait forever for Iran to take this deal,” Kirby said, adding that “clearly time does appear to be getting very short in terms of being able to get to a deal.”

In late June, Qatar hosted indirect talks between Tehran and Washington in the hope of getting the process back on track — but those talks failed to make a breakthrough.

In a last-ditch effort, EU foreign policy chief Josep Borrell submitted a compromise proposal last month and called on the parties to accept it to avoid a “dangerous nuclear crisis.”

Borrell said the draft text includes “hard-won compromises by all sides” and “addresses, in precise detail, the sanctions lifting as well as the nuclear steps needed to restore” the 2015 pact.

Bilateral talks began earlier on Thursday at Vienna’s luxury Palais Coburg hotel under the auspices of the European Union’s representative Enrique Mora.

The Iranian and Russian delegations, which have traditionally been close in the negotiations, held a separate meeting.

Britain, China, France, Germany, Iran, Russia and the United States signed the Joint Comprehensive Plan of Action, or JCPOA, in July 2015. Delegations from all parties were set to partake in Thursday’s talks, but officials from the US and Iran are not expected to meet face to face.

The JCPOA aims to guarantee the civilian nature of Iran’s nuclear program in exchange for a gradual lifting of sanctions.

But following the unilateral withdrawal of the United States in 2018 under former president Donald Trump and the re-imposition of US sanctions, Tehran has backtracked on its obligations.

Iran subsequently exceeded the JCPOA’s uranium enrichment rate of 3.67 percent, rising to 20% in early 2021.

It then crossed an unprecedented 60% threshold, getting closer to the 90% needed to make a bomb.

The head of the UN nuclear watchdog, Rafael Grossi, on Tuesday warned Iran's program was "moving ahead very, very fast" and "growing in ambition and capacity."

Cautious optimism

Ahead of Thursday's talks, officials expressed cautious optimism, while cautioning that the parties remained far apart on key issues.

These include sanctions, Iranian demands for guarantees and the end of a probe by the UN nuclear watchdog, the International Atomic Energy Agency.

The head of the US delegation, Rob Malley, and the head of Tehran's representatives, Ali Bagheri, said on Twitter ahead of the talks that they were coming in good faith but put the onus on each other.

Analysts said reviving the JCPOA remained the best option.

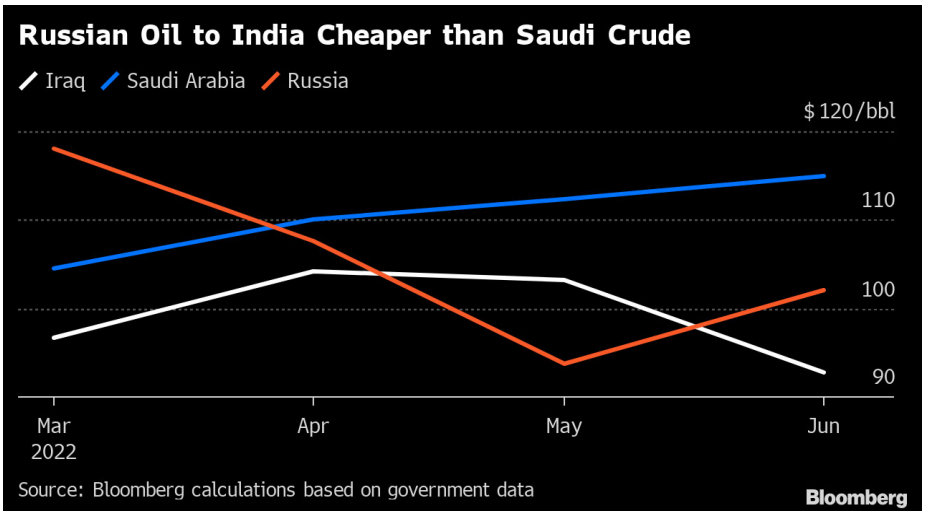
"The last thing the United States needs is a nuclear crisis with Iran that could easily escalate to a broader regional conflict," Suzanne DiMaggio, a senior fellow at the Carnegie Endowment for International Peace, said in a statement.

Ellie Geranmayeh, an analyst at the European Council on Foreign Relations (ECFR), said that "at the end of the day, Tehran and Washington know the alternatives to a JCPOA collapse are terrible."

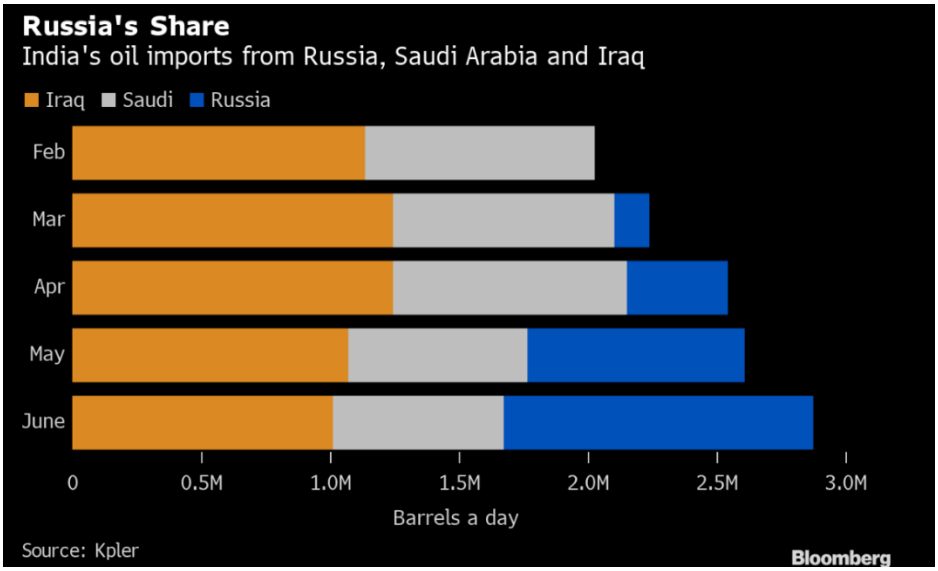
"This is unlikely to be a meeting that resolves the outstanding issues," but "it could create the breakthrough necessary to push the talks towards a finishing line rather than a collapse," she said.

Russia Undercuts Saudi Oil in India as Competition Heats Up
2022-08-04 21:00:00.3 GMT

By Debjit Chakraborty
(Bloomberg) -- A fierce battle is brewing in India where Russia has undercut the price of oil from its OPEC+ ally Saudi Arabia, paving the way for Moscow to expand market share in one of the biggest crude importers.
Russian barrels were cheaper than Saudi crude during April through June, with the discount widening to almost $19 a barrel in May, according to Bloomberg calculations based on Indian government data. Russia surpassed the kingdom as the second-biggest supplier to India in June, ranked just behind Iraq.



India and China have become willing consumers of Russian crude as most other buyers shunned its barrels following the invasion of Ukraine. The South Asian nation imports 85% of its oil needs, and cheap supplies provide some economic relief as the country faces elevated inflation and a record trade gap.
The nation's crude import bill swelled to $47.5 billion in the second quarter after a surge in global prices coincided with rebounding fuel demand, according to government data. That compares with $25.1 billion in the same period last year, when prices and volumes were lower. Oil has tumbled recently on concerns over an economic slowdown, offering some respite to consumers.
"Indian refiners are going to try and get their hands on the cheapest crude possible that works with their refinery and product configurations," said Vandana Hari, founder of Vanda Insights in Singapore. "Russian crude fits that bill for now. The Saudis and Iraqis are not entirely losing out because they are directing more supply to Europe."



While the discount of Russian oil to Saudi crude narrowed in June, barrels were still around $13 cheaper, averaging about $102. That compares with a premium of just over $13 in March, although most of India's monthly supply would have been fixed prior to the invasion in late February. The kingdom was the second-biggest supplier to India in 2021, while Russia was the ninth largest.

Iraq was the biggest crude supplier to India and has maintained that spot this year through June. Oil from the OPEC producer was around $9 a barrel higher than Russian barrels in May, but was at a discount in all other months. India's imports from Russia have surged tenfold since March.

*T

==========

Related news:

==========

Russia's Oil Deliveries to China and India Are 30% Below PeakNew Bench of Traders Muscles In to Ship Russian Oil to IndiaChina Facing Competition for Its Favorite Russian Oil From IndiaRussia Muscles In on India Oil Market at Cost of OPEC TitansChina and India Funnel $24 Billion to Putin in Energy Spree

*T

To contact the reporter on this story:
Debjit Chakraborty in New Delhi at dchakrabor10@bloomberg.net
To contact the editors responsible for this story:
Serene Cheong at scheong20@bloomberg.net
Ben Sharples, Andrew Janes

To view this story in Bloomberg click here:
https://blinks.bloomberg.com/news/stories/RG0REVDWLU68

Oil price outlook – Snapshot: August 2, 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 weakened slightly in Northwest Europe and Singapore over the past week due to higher natural gas prices.
	Crude stocks	↑	• In the week ending July 15, land crude-oil storage levels in BloombergNEF's tracked regions (the US, ARA and Japan) fell by 1.6% to 540.8 million barrels (m bbl). The stockpile **deficit** against the five-year average (2015-19) **widened from 48.0m bbl to 56.1m bbl**. • Including global floating crude stockpiles from the same week, total crude oil inventories decreased by 1.7% to 627.7m bbl, with the stockpile **deficit widening from 9.5m bbl to 21.4m bbl.**
	Product stocks	⇔	• In the week ending July 22, gasoline and light distillate stockpiles in BNEF's tracked regions (the US, ARA, Singapore, Japan and Fujairah) dropped by 0.4% week-on-week to 269.9m bbl, with the stockpile **surplus** against the three-year average (2017-19) **widening from 0.9m bbl to 1.9m bbl**. Gasoil and middle distillate stockpiles in BNEF's tracked regions were down 1.0% to 142.0m bbl, with the stockpile **deficit** against the three-year average **widening from 35.3m bbl to 38.7m bbl**. • Total oil product stockpiles in tracked regions increased by 0.03% to 943.1m bbl, with the stockpile **deficit** against the three-year seasonal average **widening from 55.0m bbl to 56.6m bbl**. Altogether, crude and product stockpiles fell by 0.7% to 1,570.7m bbl, with the stockpile **deficit widening from 64.5m bbl to 78.0m bbl.**
	Demand indicators	⇔	• In the week to August 2, global jet fuel demand from commercial passenger flights rose by 0.9% week-on-week to 5.75 million barrels per day. Jet fuel consumption by international passenger flight departures was up by 54,500 barrels per day (or +1.7%) week-on-week, while consumption by domestic passenger flight departures decreased by 3,200 barrels per day (or -0.1%). In the week to July 31, flight departures in the Eurocontrol area dropped slightly to 87.8% of the equivalent week in 2019, down from 88.0% last week. The four-week moving average grew to 87.4%, from 87.0%. Meanwhile, the week to July 31 saw passenger throughput in the US rise to 88.9% of the equivalent week in 2019, up from 87.9% last week. The four-week moving average fell to 87.5%, from 89.0%. • Global mobility indices were slightly higher over the past week, according to BNEF's calculations based on Google, TomTom and Baidu data. The Google global mobility index rose by 0.4% in the week to July 28, as growth in Europe (+0.4%) and the Americas (+0.4%) offset the decline in Asia Pacific ex-China (-0.1%). Meanwhile, in the week to July 27, TomTom's peak congestion data showed growth in Asia Pacific ex- China (+2.4%), but this was met with declines in North America (-4.6%) and Europe (-0.3%). Road congestion in China's key 15 cities was down by 0.4 percentage points to 101.9% of January 2021 levels in the week to July 27, according to BNEF's calculation based on Baidu data. • As data for several major countries are delayed, the new Covid-19 case numbers reported will be for the week to July 26. Global daily average Covid-19 cases decreased by 2.2% to one million new cases. The Asia Pacific number jumped by 39% to 376,000 daily cases (with the number in China more recently falling by 26% to 613 cases in the week to July 31), Europe dropped by 24% to 343,000 daily cases, and the Americas was down 2% to 253,000 daily cases.
Financial	**Macro indicators**	↓	• The dollar index averaged 106.5 over the past week and was 0.4% lower than the week before. The Global Manufacturing PMI slipped to 51.1 in July, from 52.2 in June.
	Hedge fund positioning	⇔	• In the week to July 26, Managed Money net positioning in the oil complex was up by 4.3m bbl (or +0.9%) week-on-week to 489.1m bbl, and remained at the 13th percentile of the past five years.
	Options chains and volatility	⇔	• There was a notable drop in open interests for WTI Dec-22 $120/bbl calls. Brent and WTI 1M volatility skews rose slightly over the past week.
Outlook	**Weekly call**	↓	• BNEF is bearish on oil prices for the week ahead, with Brent Oct-22 trading at $99.38/bbl and WTI Sep-22 trading at $93.42/bbl at the time of writing. • The global mobility index inched slightly higher over the past week, but has remained significantly below the average levels in 2Q as annual growth reached the lowest point seen in a year. Global jet fuel demand was slightly higher week-on-week, although air traffic in Europe and passenger throughput in the US are struggling to reach 90% of their respective 2019 levels. Weekly road congestion levels in China fell again for the third straight week, reaching levels last seen in May when Covid-19 restrictions were still in effect. • Weekly crude and oil product inventories – particularly middle distillates and crude – saw a bullish move over the past week. • Moderating demand growth and the likely return of Libyan oil supplies is set to alleviate some of the near-term supply tightness in the market. As Europe tries to curb gas demand due to curtailed and unstable Russian supply, oil demand could see a slight boost due to gas-to-oil switching, largely in the refining sector. Naphtha, liquified petroleum gases and other hydrocarbons can replace natural gas both as a feedstock and fuel, particularly in complex refineries such as those owned by Neste and Repsol. A key downside risk for the week ahead is if OPEC+ steps up efforts to raise output after President Biden's plea to Saudi Arabia.

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
August 2	↔	↑	↔	↔	↔	↔	↓	Brent-Oct: 99.38 WTI-Sep: 93.42	
July 26	↔	↓	↔	↓	↑	↔	↔	Brent-Oct: 101.94 WTI-Sep: 98.46	
July 19	↔	↓	↓	↓	↔	↔	↓	Brent-Sep: 105.88 WTI-Sep: 99.03	
July 11	↓	↓	↑	↓	↓	↓	↓	Brent-Sep: 105.18 WTI-Aug: 102.34	
July 5	↓	↑	↓	↑	↓	↓	↔	Brent-Sep: 111.71 WTI-Aug: 107.91	
June 21	↑	↓	↑	↑	↓	↓	↔	Brent-Aug: 115.81 WTI-Aug: 110.34	
June 13	↔	↑	↔	↔	↑	↔	↔	Brent-Aug: 120.06 WTI-Jul: 118.58	
June 6	↔	↑	↑	↔	↑	↔	↔	Brent-Aug: 119.88 WTI-Jul: 118.94	
May 30	↔	↑	↓	↔	↔	↔	↔	Brent-Aug: 116.46 WTI-Jul: 115.81	
May 23	↑	↑	↑	↔	↑	↑	↑	Brent-Aug: 110.88 WTI-Jul: 111.11	
May 16	↓	↓	↔	↑	↓	↓	↔	Brent-Jul: 112.22 WTI-Jul: 109.69	
May 9	↔	↓	↔	↑	↓	↔	↑	Brent-Jul: 109.93 WTI-Jun: 107.22	
May 2	↑	↔	↑	↑	↔	↔	↑	Brent-Jul: 103.87 WTI-Jun: 101.25	
April 25	↑	↑	↔	↓	↑	↔	↔	Brent-Jul: 101.31 WTI-Jun: 97.39	

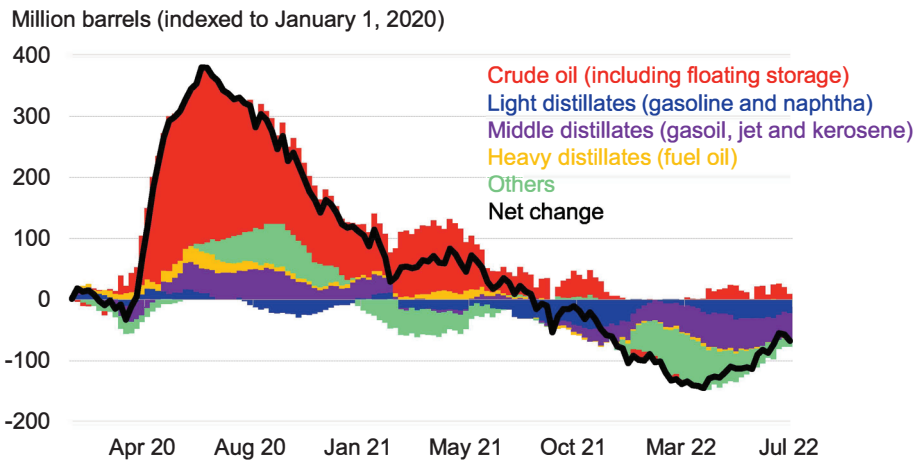
To view past reports on terminal, go to NI BNEFOIL, search for the report and click on the icon to the far right:

BloombergNEF

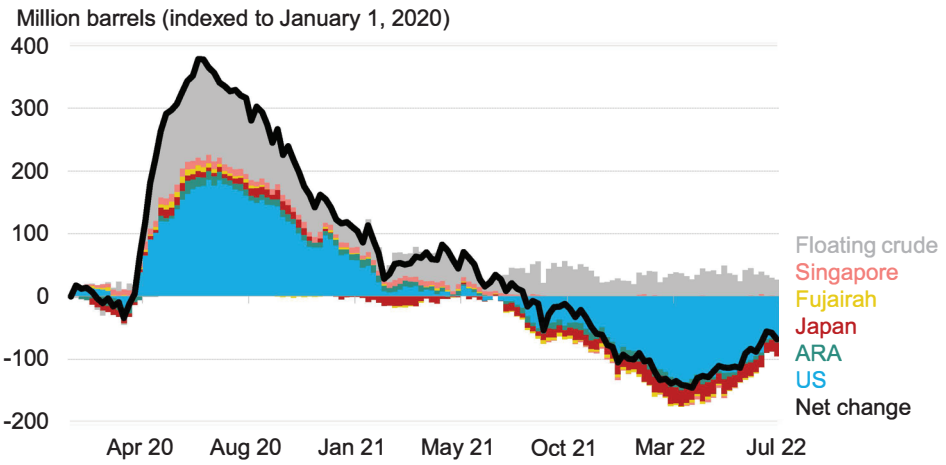
Weekly oil inventories

Oil inventories virtually flat over the past week

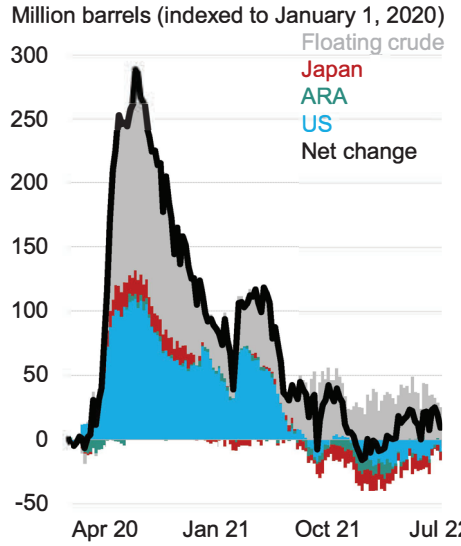
Weekly oil inventories by type



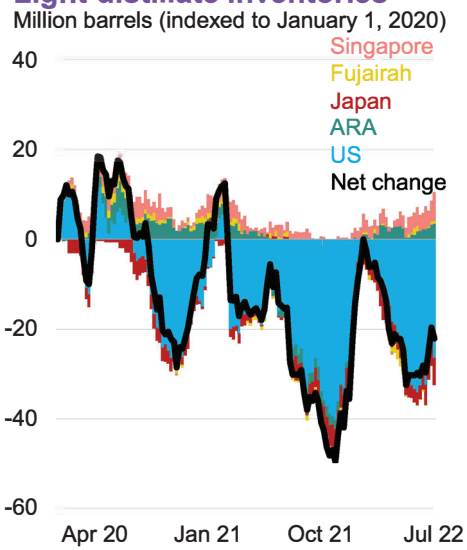
Weekly oil inventories by region



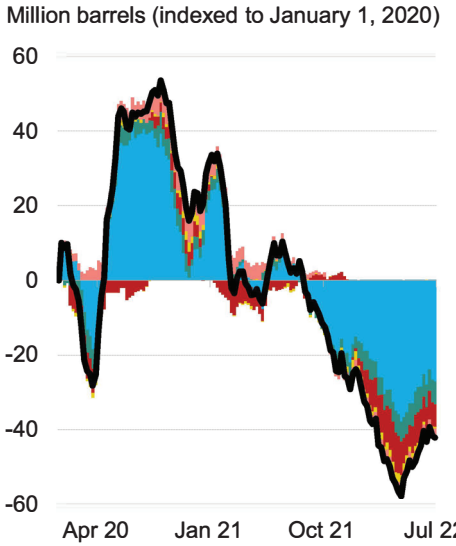
Crude inventories



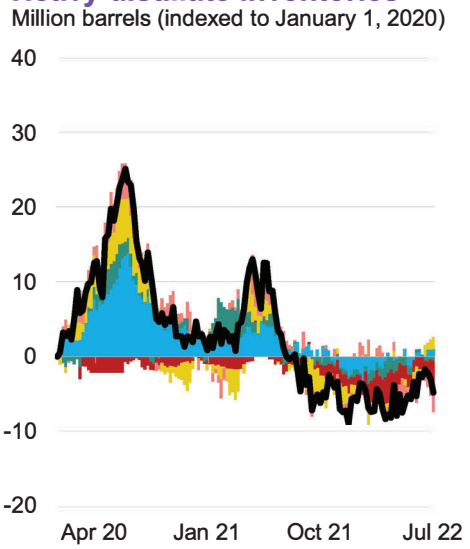
Light distillate inventories



Middle distillate inventories



Heavy distillate inventories



*Source: BloombergNEF, US EIA, PJK, IE Singapore, FEDCom/Platts, PAJ ,Vortexa, Genscape. Note: As of the week ending **July 22, 2022**.*

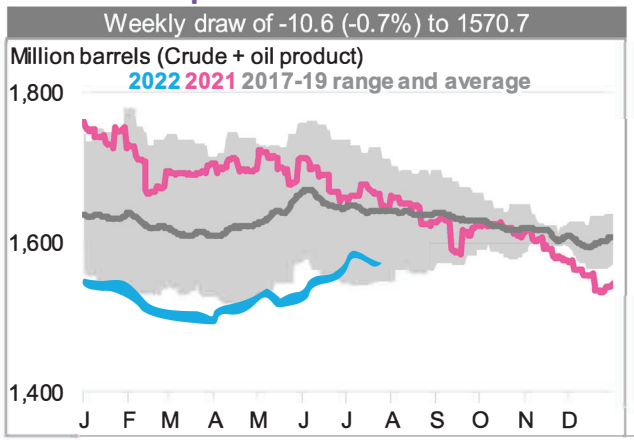
Aggregated oil stockpiles

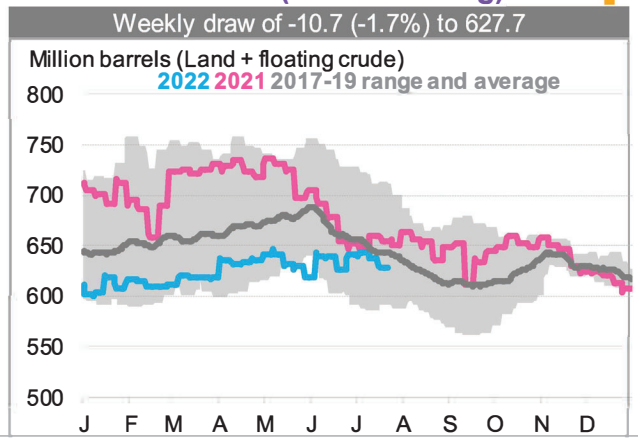
Note: We will continue to compare current inventory levels with the three-year (2017-19) seasonal average for the time being. Crude inventory data for Shandong teapots were excluded since January 10.

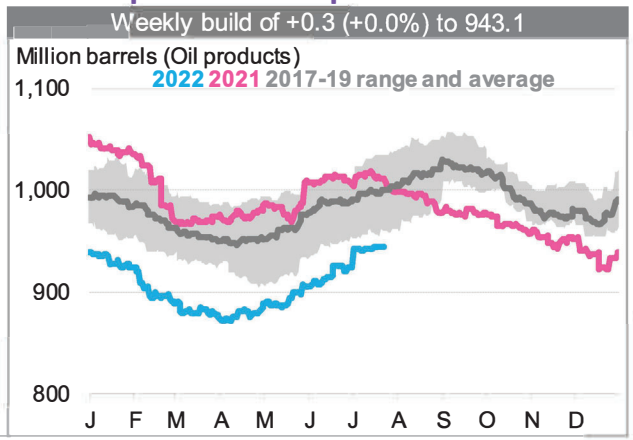
Bullish: Stockpiles deficit widened from 64.5m bbl to 78.0m bbl

- 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 may differ from the previous slides.
- Land crude inventories include the US, ARA, Japan and Shandong Teapots. Floating storage data are global. Oil product storage includes the US, ARA, Japan, Singapore, Shandong Teapots and Fujairah. Floating crude inventories may have been adjusted since the previous report – see slide 8 for further info.

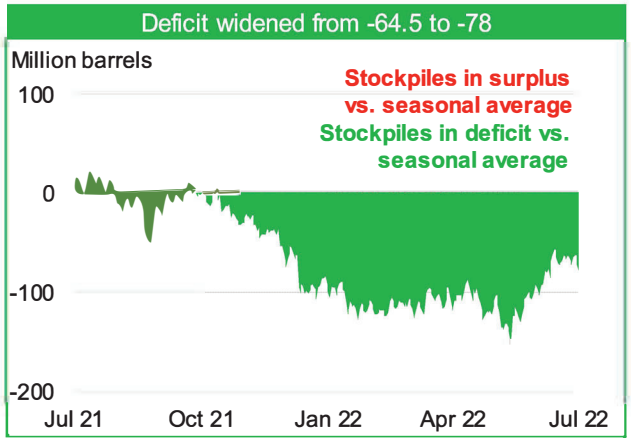
Total oil and product stocks = **Total crude stocks (land + floating)** + **Total oil product stockpiles**

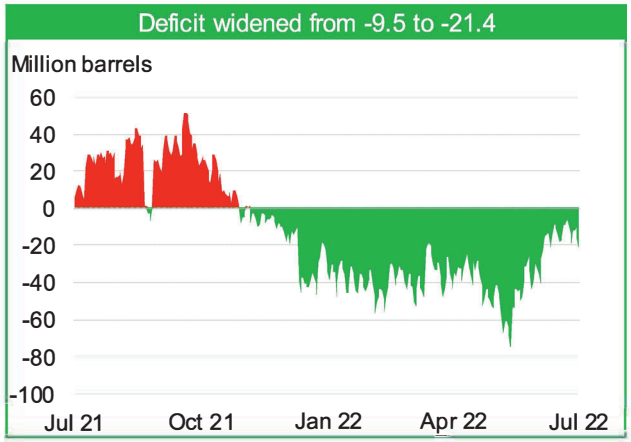


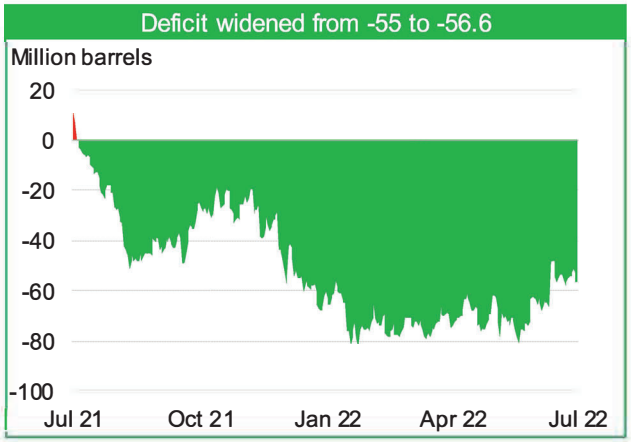




Charts below subtract current stockpiles by the 2017-19 (three-year) seasonal average







*Source: BloombergNEF, US EIA, PJK, IE Singapore, FEDCom/Platts, PAJ ,Vortexa, Genscape. Note: As of the **week ending July 22, 2022.***

BloombergNEF

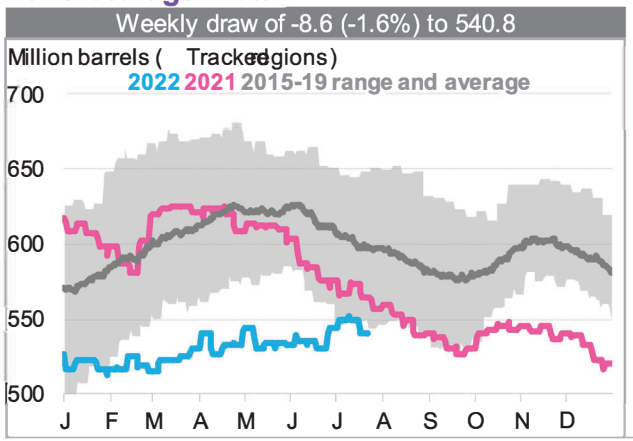
Crude stocks: Land

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 have been excluded since January 10.

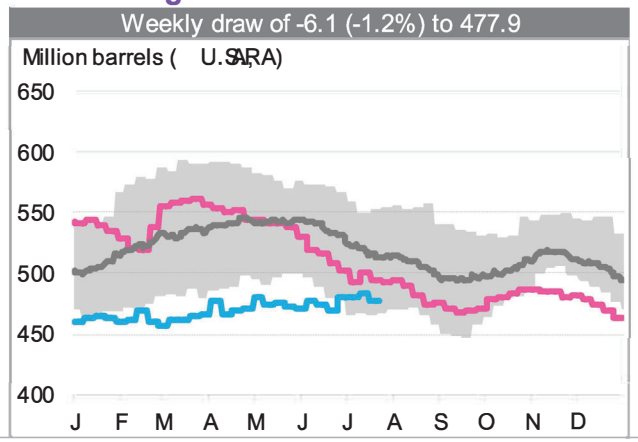
Bullish: Deficit widened from 48.0m bbl to 56.1m bbl against the seasonal average

- 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.

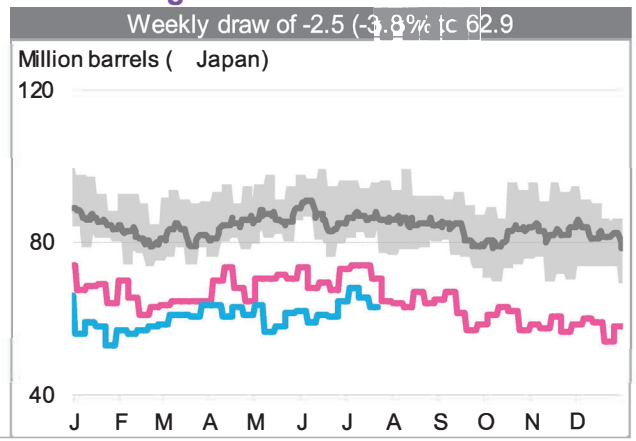
Land storage: Total



Land storage: West of Suez

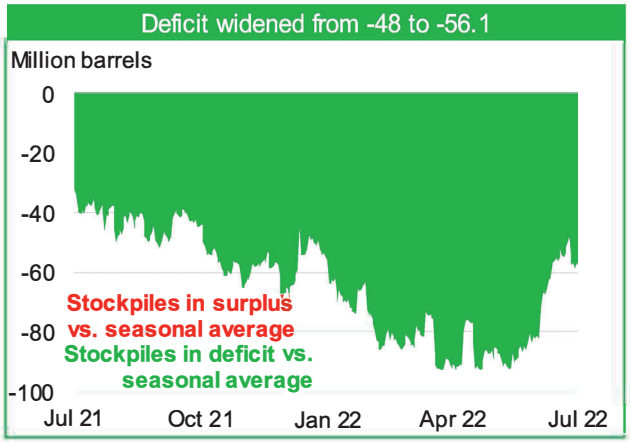


Land storage: East of Suez

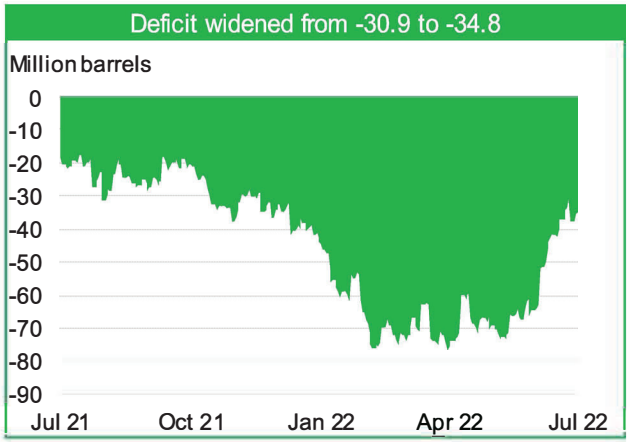


Charts below subtract current stockpiles by the 2015-19 (five-year) seasonal average

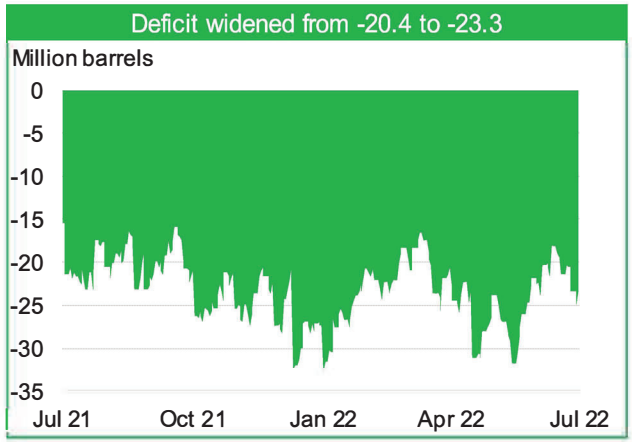
Deficit widened from -48 to -56.1



Deficit widened from -30.9 to -34.8



Deficit widened from -20.4 to -23.3



*Source: BloombergNEF, US EIA, Genscape, PAJ. Note: As of the **week ending July 22, 2022.***

BloombergNEF

Crude stocks: Floating

Bearish: Surplus widened over the past week

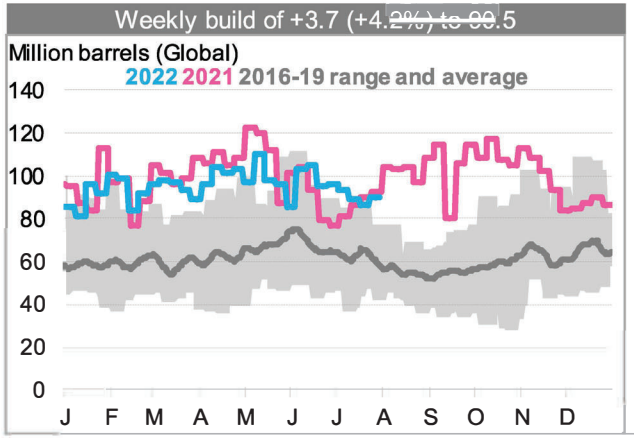
- Floating storage is only profitable if the strength of contango (future versus prompt price) is greater than the tanker costs. Therefore, tankers become floating storage when the profit from a storage play exceeds the cost of the forward freight agreement (FFA).
- The floating storage data used in 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

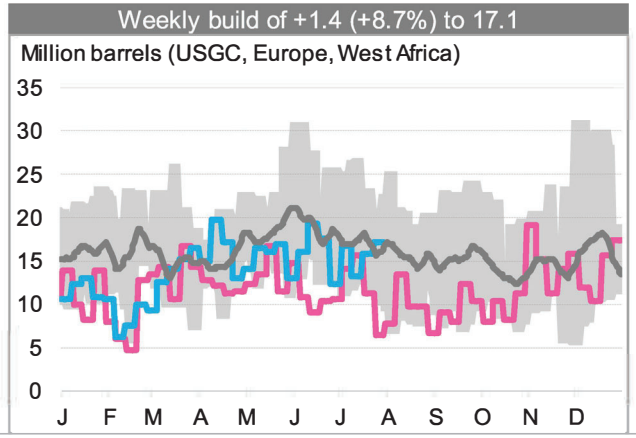
Million barrels	Previous report	Current report	Vortexa's revision
Inventories in week of July 22	83.2	**86.8***	+3.6
Inventories in week of July 15	84.9	89.1	+4.2

*Note: *Figure used to aggregate total oil inventories on page 8.*

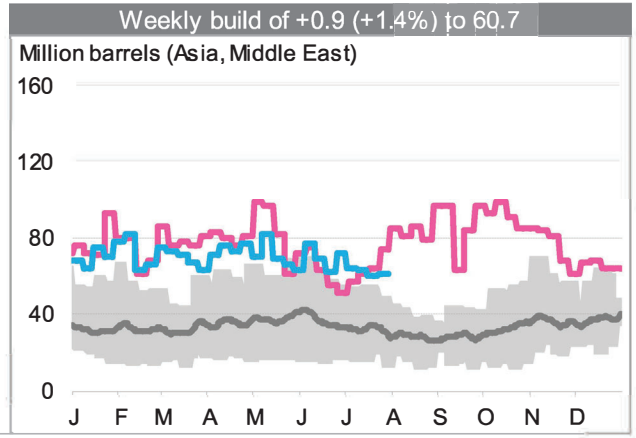
Floating storage: Total



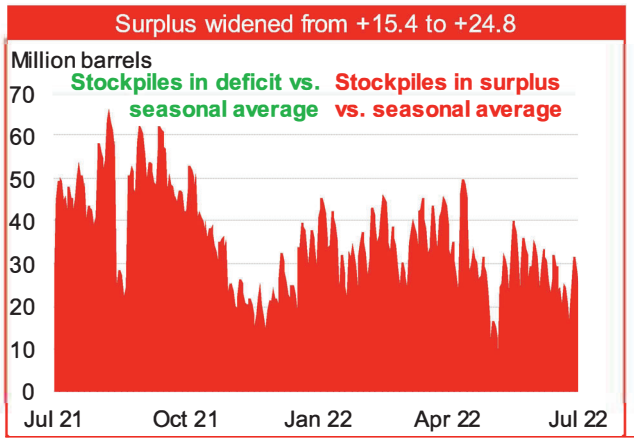
Floating storage: West of Suez

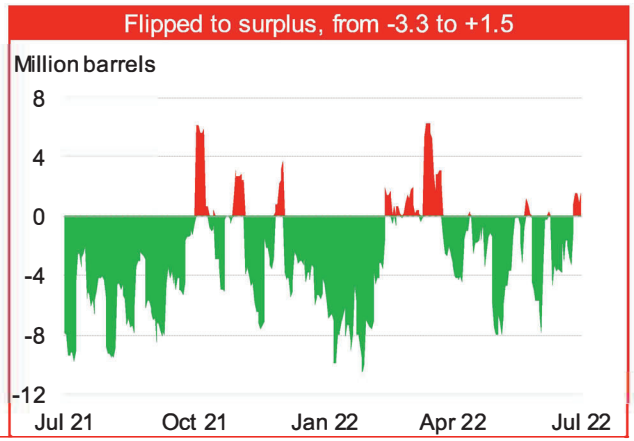


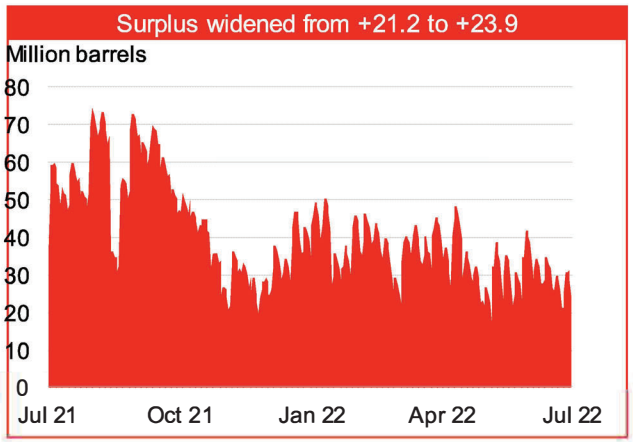
Floating storage: East of Suez



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







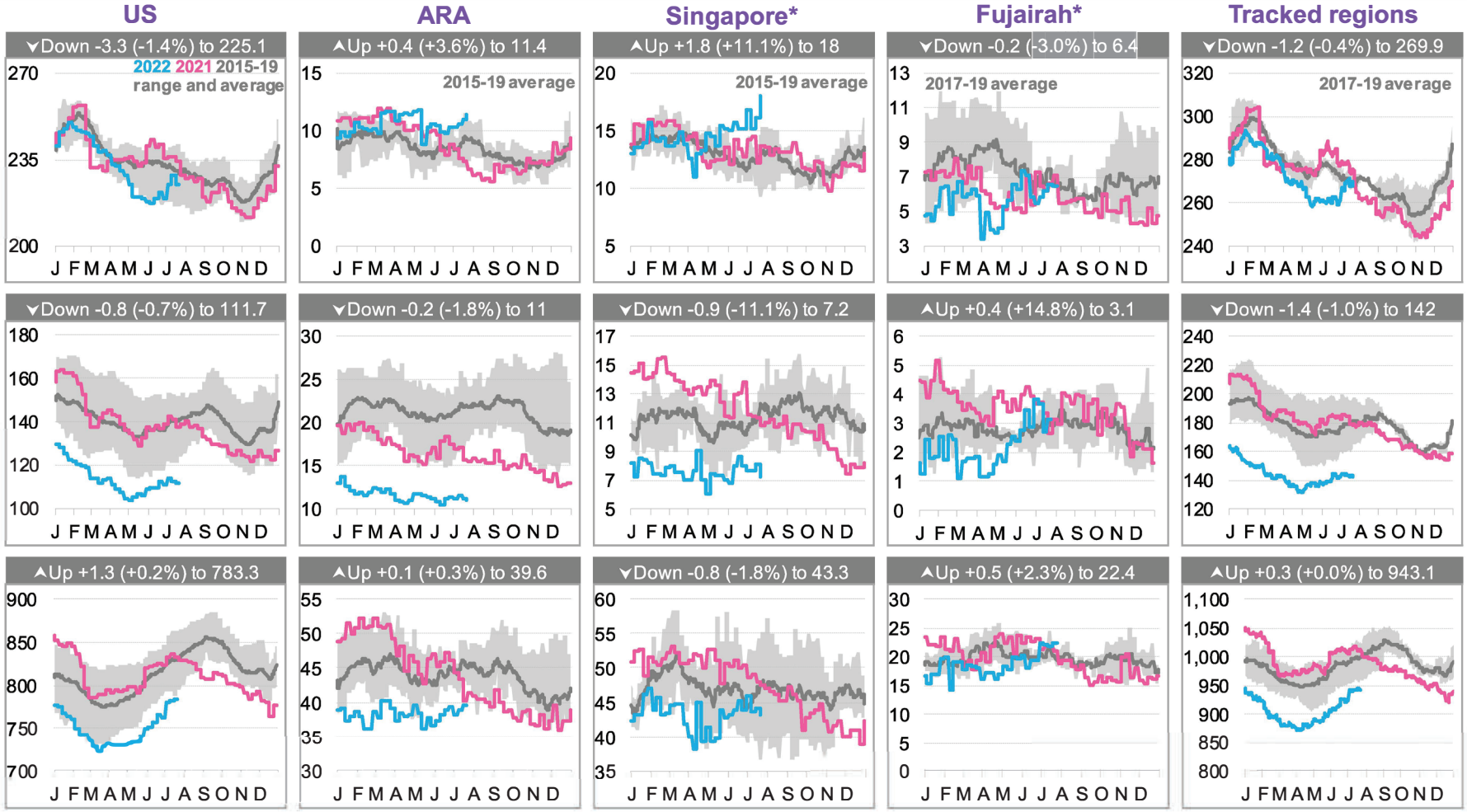
*Source: BloombergNEF, Vortexa. Note: As of the **week ending July 22, 2022**. ***Raw data from Vortexa are revised frequently, so the data in this report might change week-to-week.***

Product stocks: Current versus seasonal average

Neutral: Oil product stockpiles in tracked regions flat over the past week

- Chart legend are as follows: 2022, 2021 and the 2015-19 range and average. For Fujairah and tracked regions, the **2017-19 (three-year) seasonal range** is shown. Tracked regions include US, ARA, Singapore, Japan and Fujairah

**units are in million barrels*



*Source: BloombergNEF, US EIA, PJK, IE Singapore, FEDCom/Platts, PAJ. Note: As of the **week ending July 22, 2022.***

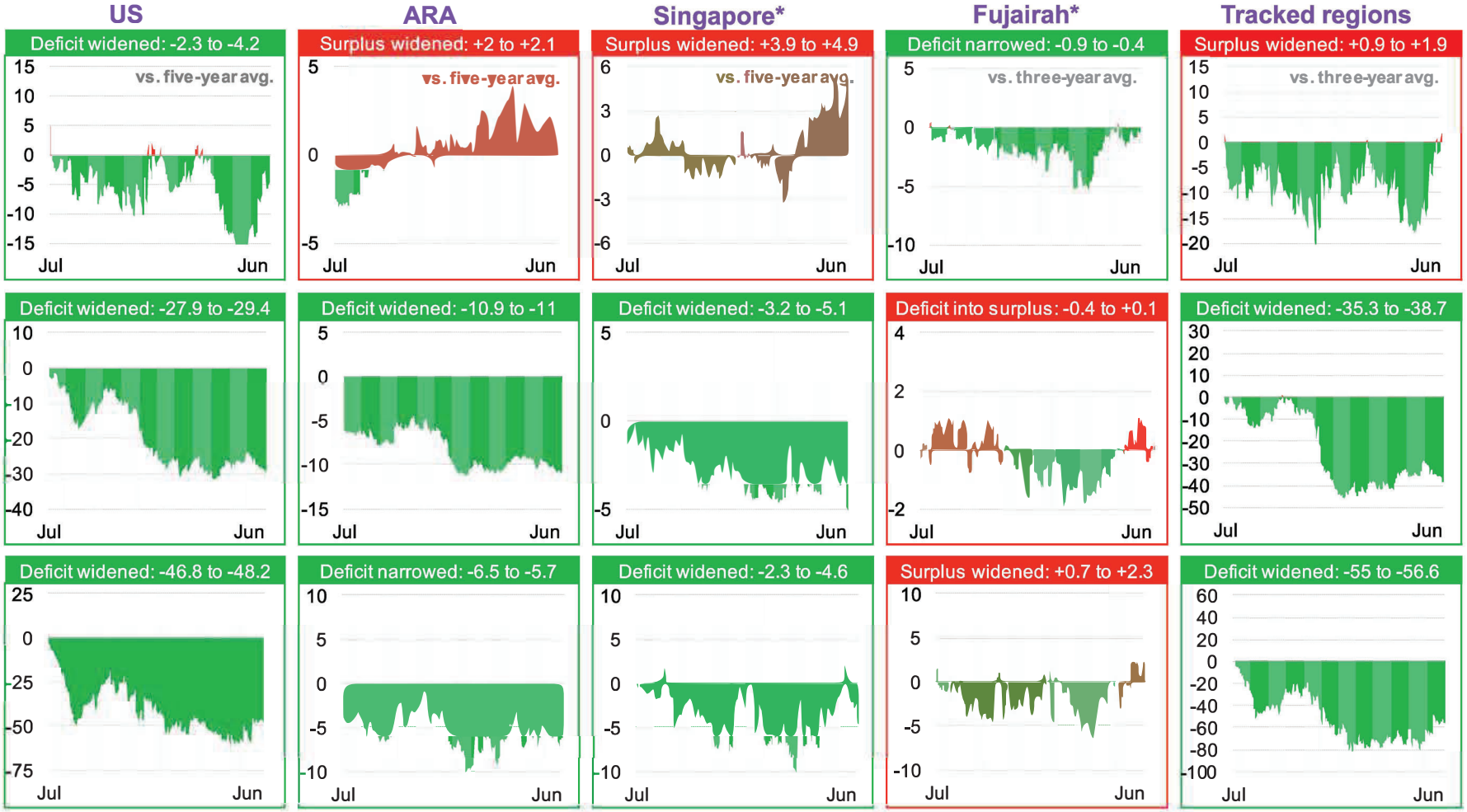
BloombergNEF

Product stocks: Current versus seasonal average

Neutral: Oil product stockpile deficit against the seasonal average widened from 55.0m bbl to 56.6m 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).

**units are in million barrels*



*Source: BloombergNEF, US EIA, PJK, IE Singapore, FEDCom/Platts, PAJ. Note: As of the **week ending July 22, 2022.***

BloombergNEF

PMI

Caixin China General Manufacturing PMI Press Release

2022.07

财新 Caixin

Embargoed until 0945 CST (0145 UTC) 1 August 2022

Caixin China General Manufacturing PMI™

Business conditions improve marginally in July

July survey data pointed to a further improvement in the health of China's manufacturing sector following the easing of COVID-19 containment measures. However, overall growth momentum softened since June amid slower upturns in output and total new work. Relatively subdued demand conditions and efforts to contain costs led to another decline in employment, while firms were able to further reduce backlogs of work. Cost pressures meanwhile eased notably on the month, with average input costs rising at the weakest rate since last December, while prices charged were cut for the third month running.

The headline seasonally adjusted *Purchasing Managers' Index™ (PMI™)* – a composite indicator designed to provide a single-figure snapshot of operating conditions in the manufacturing economy – slipped from 51.7 in June to 50.4 in July, to signal a back-to-back monthly improvement in business conditions. That said, the rate of improvement eased from June's 13-month high and was only marginal.

Weighing on the headline index was a softer rise in overall new business in July. Total new orders rose only slightly, following a mild increase in June. While a number of firms mentioned that the ongoing recovery from the latest wave of the pandemic had supported higher sales, others commented that demand conditions were relatively subdued. New export business likewise expanded only marginally in July.

In line with the trend seen for new orders, manufacturers in China signalled a softer rise in production during July. The expansion was only mild overall, having eased from June's 19-month record. The slowdown was linked to muted customer demand, lingering COVID-19 impacts and power supply disruption at some firms.

Purchasing activity rose for the second month running across China's manufacturing sector in July, albeit modestly. This supported a further rise in stocks of purchased items. Though mild, the rate at which input inventories increased was the fastest for 20 months. Stocks of finished items meanwhile fell slightly, which was linked to the delivery of goods to clients and reluctance among some firms to build up inventories amid subdued client demand.

Employment at Chinese goods producers fell for the fourth month in a row in July. The latest reduction was linked to efforts to contain costs, muted sales and the non-replacement of voluntary leavers. Furthermore, the rate of job shedding was the quickest seen since April 2020. Nonetheless, firms had sufficient capacity to reduce their backlogs of work slightly for the second month in a row.

After broadly stabilising in June, suppliers' delivery times lengthened slightly at the start of the third quarter. Firms often mentioned that stock and staff shortages, and disruption from COVID-19, had weighed on vendor performance.

July survey data signalled the slowest rise in input costs for seven months. Cost burdens rose marginally overall, with panel members indicating that lower prices for some commodities (such as metals) had helped to partially offset higher costs for other materials and transport. Softer demand conditions meanwhile led to a modest reduction in prices charged.

Manufacturers generally anticipate an expansion of output over the next year amid forecasts of a strong post-pandemic recovery and planned company expansions. However, overall optimism weakened slightly since June due to concerns over COVID-19 and relatively subdued customer demand.

China General Manufacturing PMI

sa, >50 = improvement since previous month

Sources: Caixin, S&P Global

Key findings:

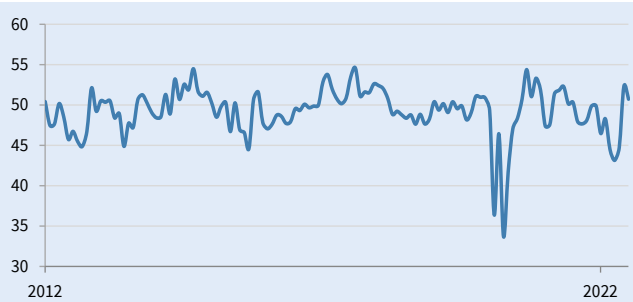
Softer increases in output and new orders

Employment falls at quicker pace

Input cost inflation slows notably, prices charged fall again

New Export Orders Index

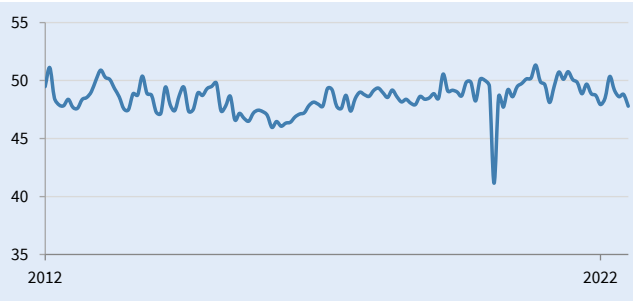
sa, >50 = growth since previous month



Sources: Caixin, S&P Global

Employment Index

sa, >50 = growth since previous month



Sources: Caixin, S&P Global

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

"The Caixin China General Manufacturing PMI in July fell 1.3 points from the previous month to 50.4, as the sector continued to recover from recent Covid outbreaks, though at a slower pace.

"Supply and demand improved. Manufacturing production grew for the second straight month. The subindexes for output and total new orders both remained in expansionary territory, but came in lower than in the previous month, indicating a slowing recovery. Electricity shortages faced by some companies and scattered Covid outbreaks in some regions were among factors that cut into market demand and confidence in July. New export orders remained stable, with the gauge slightly higher than 50.

"Employment remained weak. The recovery in supply and demand failed to spill over into the labor market for manufacturing, which continued to shrink. The gauge for employment, which has been in contractionary territory for 11 of the past 12 months, came in at the lowest reading since April 2020. Companies, strongly inclined to lower costs in the face of sluggish market demand, were cautious about expanding their staff.

"Inflationary pressures eased. The growth in costs for manufacturing companies slowed markedly thanks to drops in some bulk commodity prices. The measure for input costs in July read just slightly above 50. Limited market demand suppressed prices on the output side, with the gauge for output prices remaining below 50 for the third straight month. However, output prices for consumer goods increased.

"Overall, logistics were stable. Scattered outbreaks and a lack of raw materials and workers contributed to a slight increase in suppliers' delivery times. Backlogs of manufacturing work decreased. The quantity of purchases increased, leading to a rise in stocks of raw materials.

"Entrepreneurs remained optimistic. The measure for future output expectations slipped from the previous month and remained below the long-term average. Manufacturers were mainly concerned about the possibility of future outbreaks and contractions in demand.

"In general, the eased Covid situation and restrictions facilitated a continuous recovery in the manufacturing sector in July. Supply and demand continued to improve, with supply stronger than demand. Employment lagged, remaining in contractionary territory. Costs gradually rose, with output prices on the decline, posing challenges for company profits. The market held on to positive sentiment, along with concerns about the economic outlook.

"Major macroeconomic indicators in the second quarter showed that the adverse impact of the latest round of Covid outbreaks on the economy is fading. The third quarter will therefore be a crucial period to get the economy back on track. The manufacturing sector improved for the second straight month in July, though its foundation remained weak. As the authorities have made it clear that no ultra-massive stimulative measures would be forthcoming, effective implementation of existing policies is a more practical option. Moreover, the labor market remained under pressure and the financial situation of low-income groups deteriorated. Therefore, policies should focus on higher degrees of job market stabilization, subsidy issuance and temporary relief measures."

Survey methodology

The Caixin China General Manufacturing PMI™ is compiled by S&P Global from responses to questionnaires sent to purchasing managers in a panel of around 650 private and state-owned manufacturers. The panel is stratified by detailed sector and company workforce size, based on contributions to GDP. For the purposes of this report, China is defined as mainland China, excluding Hong Kong SAR, Macao SAR and Taiwan.

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

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

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

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

Survey dates and history

Data were collected 12-21 July2022.

Data were first collected April 2004.

About PMI

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

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

About Caixin

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

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

For more information, please visit

www.caixin.com

www.caixinglobal.com

About S&P Global

S&P Global (NYSE: SPGI) S&P Global provides essential intelligence. We enable governments, businesses and individuals with the right data, expertise and connected technology so that they can make decisions with conviction. From helping our customers assess new investments to guiding them through ESG and energy transition across supply chains, we unlock new opportunities, solve challenges and accelerate progress for the world.

We are widely sought after by many of the world's leading organizations to provide credit ratings, benchmarks, analytics and workflow solutions in the global capital, commodity and automotive markets. With every one of our offerings, we help the world's leading organizations plan for tomorrow, today.

www.spglobal.com

Disclaimer

Contact

Dr. Wang Zhe
Senior Economist
Caixin Insight Group
T: +86-10-8590-5019
zhewang@caixin.com

Ma Ling
Brand and Communications
Caixin Insight Group
T: +86-10-8590-5204
lingma@caixin.com

Annabel Fiddes
Economics Associate Director
S&P Global Market Intelligence
T: +44 1491 461 010
annabel.fiddes@spglobal.com

SungHa Park
Corporate Communications
S&P Global Market Intelligence
T: +82 2 6001 3128
sungha.park@spglobal.com

PMI™ by S&P Global

NACS - The Association for Convenience & Fuel Retailing

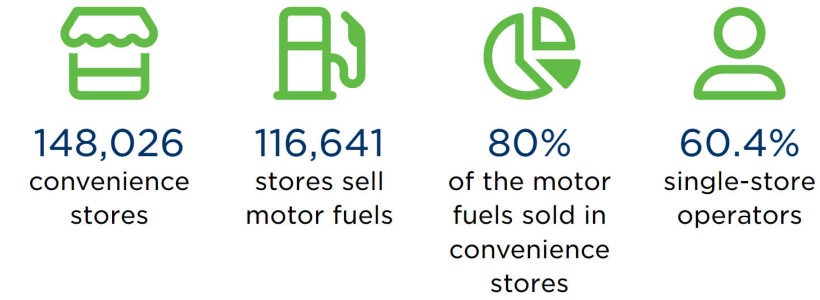
https://www.convenience.org/Research/FactSheets/IndustryStoreCount

NACS Advancing Convenience & Fuel Retailing

U.S. Convenience Store Count

Last Updated: January 19, 2022

Highlights



- There are **148,026 convenience stores operating in the United States**, a 1.5% decrease in the number of stores in operation (150,274) at the close of 2020, according to the 2022 NACS/Nielsen Convenience Industry Store Count.
- The number of convenience stores that **sell motor fuels is 116,641 stores**, which is about 78.8% of all convenience stores. Overall, convenience stores sell approximately **80% of the motor fuels** purchased in the United States.
- The industry decline was led by a 3.1% decrease in **single-store operators** (89,336 in 2021 vs. 92,196 in 2020), which account for **60.4% of all convenience stores**.The decline of single-store operators continues a multi-year trend; single-store operators made up a record 63.2% of the industry in 2017. Meanwhile, the percentage of single-store operators that sell fuel dropped to 54.6% in 2021, the lowest since the metric has been tracked in 2005.

U.S. Convenience Stores (as of December 2021)

- 2022 — 148,026 (-1.5%)
- 2021 — 150,274 (-1.6%)
- 2020 — 152,720 (-0.3%)
- 2019 — 153,237 (-1.1%)
- 2018 — 154,958 (+0.3%)
- 2017 — 154,535 (+0.2%)
- 2016 — 154,195 (+0.9%)
- 2015 — 152,794 (+0.9%)
- 2014 — 151,282 (+1.4%)
- 2013 — 149,220 (+0.7%)
- 2012 — 148,126 (+1.2%)

State Rankings

Among the states, **Texas continues to have the most convenience stores** (15,742 stores), or more than one in 10 stores in the United States. The remainder of the top 10 is the same from the year prior: California is second at 12,053 stores, followed by Florida (9,400), New York (7,848), Georgia (6,448), North Carolina (5,690), Ohio (5,537), Michigan (4,819), Pennsylvania (4,629) and Illinois (4,623). **Texas is the only state in the top 10 that added stores** (+47). Meanwhile, New York (-248), Florida (-219) and North Carolina (-200) lost the most stores. Alaska (174) has the fewest stores.

Performance vs. Other Channels

The decline in the convenience store count reflects the decline of other retail brick-and-mortar stores except for dollar stores.

Channel	2022	2021	% Change
Convenience	148,026	150,274	-1.5
Grocery	45,687	47,066	-2.9
Drug	40,402	41,000	-1.5
Dollar	35,501	34,215	+3.8

(Source: 2022 NACS/Nielsen Convenience Industry Store Count)

In addition, there are “gas station/kiosk” stores that sell fuel but not enough of an in-store product assortment to be considered convenience stores. Overall, there were 14,826 kiosks in 2021. The kiosk format continued to decline—down 5.2% the past year and 32.9% over the past six years—as more consumers sought out stores that have robust food and beverage offers.

Despite the fourth straight yearly decline in stores, the overall convenience store count is approximately the same as a decade ago (148,126 stores in 2012). With the U.S. population at 332.4 million according to the U.S. Census Bureau, there is one convenience store per every 2,245 people.

Media Inquiries

For more information, please contact:

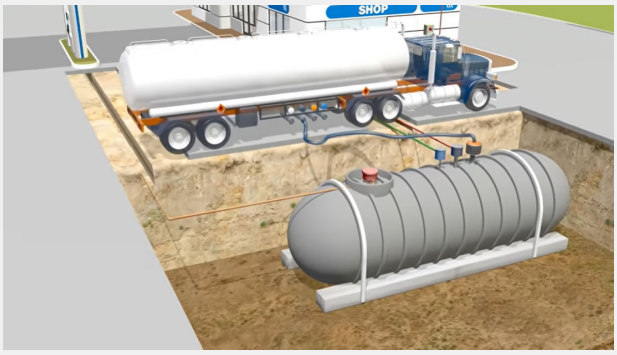
Jeff Lenard
V.P., Strategic Industry Initiatives
(703) 518-4272
jlenard@convenience.org

https://www.oilspillprevention.org/oil-spill-sources/gas-stations

OIL SPILL PREVENTION + RESPONSE

Gas Stations

A typical gasoline station has a storage capacity of 30,000 to 40,000 gallons in underground tanks. In the past, these tanks were sometimes subject to spills from overfilling and to leaks caused by corrosion. Today, station owners have taken several important steps to reduce these risks.



Overfill Protection Devices

- Sensors and alarms let the operator know when the tank is getting full, and automatic shut-off switches stop fuel from being pumped into the tank before the tank completely fills.
- An electronic alarm, triggered by a floating sensor within the tank, activates a warning light and/or sound to tell the operator when the tank reaches 90 percent capacity – the target fill level.
- As a backup, a so-called flapper valve attached to the delivery pipe uses a floating arm to trigger a shut-off valve when the petroleum product in the tank reaches a certain level, similar to the shutoff device of a toilet.
- A ball float valve consists of a ball floating on top of the petroleum product while inside of a cage, which is attached to the end of a ventilation pipe. As the product level rises, so too does the ball, until it is raised to the bottom of the vent, blocking the vent and restricting outward vapor flow before the tank is full. When closed, this valve can create enough pressure to stop the flow of product into the tank.

Cathodic Corrosion Prevention

When in contact with moisture in the air or ground, steel slowly rusts, causing corrosion of metal storage tanks and pipelines. When the moisture combines with the carbon dioxide in the air, a weak carbonic acid is formed, which dissolves the steel tanks or pipelines, appearing as rust. The application of a small positive electrical charge to the tank helps prevent this corrosion process.

New Tank Materials/Coatings

New fiberglass tanks and steel tanks coated with fiberglass or other durable casings help prevent corrosion caused by underground moisture. The same high-tech coatings and linings also protect the nation's pipelines and above-ground storage tanks.

Catchment Basins

All tanks are equipped with large "buckets" located around the fill pipe, which catch any motor fuel that may spill when the delivery hose is disconnected from the fill pipe.

Leak Detection Devices

Sensors can detect even small leaks in underground storage tanks and piping. An automatic tank gauging system monitors the volume of petroleum product within a storage tank versus the amount of product dispensed to consumers.

- Double-walled tanks provide an additional measure of spill protection – the space between the inner and outer walls is filled with brine. A float sensor can detect any increase in the brine level that results from product escaping the inner wall.
- Line leak detectors use a spring-loaded arm to test the pressure in the pipes carrying petroleum products from the tank to the dispenser. If the line pressure is low, which could possibly be due to a leak, the testing arm makes contact with the sensor pin below, triggering an alarm.

uncertainties that could cause actual results to differ materially from those described in these forward-looking statements. Forward-looking statements in the earnings release that we issued today, along with the comments on this call are made only as of today and will not be updated as actual events unfold. Please refer to today's press release, the company's annual report on Form 10-K for the fiscal year ended 31-2021, the company's quarterly report on Form 10-Q for the quarter ended July 2, 2022 to be filed with the SEC and other filings with the SEC for a detailed discussion of the risks that could cause actual results to differ materially from those expressed or implied in any forward-looking statements made today.

Please also note that on today's call, management may make reference to adjusted EBITDA, which is a non-GAAP financial measure while we believe this non-GAAP financial measure provides useful information for investors. Any reference to this information is not intended to be considered in isolation or as a substitute for the financial information presented in accordance with GAAP, please refer to today's press release for a reconciliation Of adjusted EBITDA to its most comparable GAAP measure. And with that I would now like to turn the call over to Ethan Brown.

Ethan Brown {BIO 17514914 <GO>}

Thank you, lubi, and good afternoon everyone. We have a clear view of our vast long-term opportunity and its ever-increasing global important and a strong confidence in the leadership position of our brand. In fact in Q2 2022 we recorded our second largest quarter ever of net revenues even as consumers traded down among proteins in the context of very significant inflationary pressures we simultaneously however recognize the progress for us and for the sector is taking longer than expected.

We now expect reflecting this inflationary pressure on consumer spending and specifically how this impacts higher cost proteins in foods a delay and post COVID resumption of growth accordingly, we are taking a number of steps to reduce cash consumption to position the company for sustainable growth what we apply our near term focus on the following key drivers one executing as a planned series of high-value market initiatives for strategic and foodservice partners and to strengthening our retail business through among other measures bolstering support for the core lines we're bringing to market.Among other new products will expand our portfolio. One of our best innovations ever a delicious and convincing strip of stake.

Cost-related actions underway include one significant reduction in general. Operating expenses for this quarter, we reduced OpEx by approximately $14 million or 15% on a sequential basis. Further intensifying reduction in trucking costs to drive continued sequential progress on manufacturing costs. So as to recover healthy margins and reach pricing goals. Realigning organizational structures across North America, the EU, and China to increased regional focus efficiency and speed for continued focus on managing down inventory levels and five and an action that I will now turn to yesterday we instituted a reduction in force of approximately 40 positions.

Given the high value of our team members, and again, a tremendous opportunity that lays ahead. The reduction in force is a difficult measure beyond Meat is a team of

tremendously dedicated passionate and talented individuals who have come together and service to our mission our customers, our consumers and our shareholders.

I'm proud of what our team has built and are building and the resilience that our company has shown over the past two years, as well as now as we face like others challenging macroeconomic conditions. We are committed to treating those employees affected by the reduction in force with the utmost respect and providing assistance to help them in the transitions the second quarter of 2022 saw a sequential contraction in US household penetration a plant-based meat.

For the first time in over Four years, according to numerator data even as a number of brands and SKUs expanded by roughly 60% and 70% respectively over the past two years.

As consumers are expressly seeking value. We believe that high inflation in the premium pricing relative to animal protein is largely if not fully determining despite intense competitive pricing in the category by existing and new entrants On the one hand and rising animal protein the prices on the other, the category remains a premium one relative to animal meats as such it is subject to the same trading down behaviors that one sees during inflationary periods numerator data for the 12 weeks ended June 26 2022.

Sure. So the primary drivers of volume leakage for our own US business were indeed shifts to animal protelargeWell as to privdeterminedhis dynamic shrinking consumer buying power and grocery stores that favor lower-cost proteins and products exerted greater anticipated pressure on category growth and in turn our own growth. On into gross margin, although we made sequential progress on manufacturing conversion costs.

This was obscured by the sale of certain inventory items to th,e liquidation channel as well as increased inventory reserves for the same. The combination of which accounted for nearly 10 points of gross margin pushing our gross margin down to negative percent looking forward, though we do expect growth for the balance of the year.

We need to continue to temper expectations given the clear precedent for consumers to trade down among proteins in grocery stores when buying power shrinks inflationary periods as I noted earlier, we've indeed begun to see this trading down materialize and expect to continue for the time being. As such we are issuing revised lower guidance for the full year 2022 we're closing, I want to reiterate my enthusiasm for our brand and our long-term growth prospects. And research firm Brand Keys surveyed American consumers regarding the world's most innovative companies, Apple Tesla, and Amazon number one spot, respectively, across technology transportation and consumer goods, and Beyond Meat, took the number one spot and food, according to a report released last month I share this to note that despite the current economic environment, the long-term opportunity ahead of us remains as I began vast and substantial we are grateful for the commitment of our partners, including some of the world's most valuable QSR companies namely McDonald's and Yum Brands and one of the globe's largest CPG companies PepsiCo, with whom we share the Planet partnership joint venture, we note that the plant burger co-developed with Beyond Meat is now a core menu item at

McDonald's in the UK. And then in July. McDonald's initiated a 270 store test for the plant burger in Victoria Australia.

Austria following the nationwide limited-time offer of a second meat plant build in the plant to take house McDonald's just started a Nationwide limited-time offer of a third McPlant to build in the plant tasty which is inspired by McDonald's popular big tasty burger. Also during the quarter. The limited-time test in the plant Burger in the San Francisco Bay and Dallas-Fort Worth areas concluded as planned. Turning to Yum we have launched five beyond or t70-store beyond innovations thus far this year is Beyond Fried Chicken LTO at KFC nationwide and Beyond Italian Sausage grumbles at Pizza Hut in Canada, which is now a permanent menu place at last year's Beyond pepperoni test in the US and the permit addition of Beyond Beef grumbles and Beyond pork grumbles appear took delivery in the UK.

These ongoing tests for a natural progression of our partnership with our strategic QSR partners take time as well as iteration across product attributes pricing and other considerations. And we are encouraged by the multiple introductions that we're seeing with both McDonald's and Yum globally as we innovate together finally, we are thankful for consumers who continue to make Beyond Meat the number one brand in our retail category of refrigerated plant-based meats according to SPINS data and we are planning aggressive steps across the balance of the year to further engage the consumer in grocery.

I've said many times that I believe the rise of plant-based meats to a prominent role in the global dye is inevitable.

The benefits of such a transition driven by the unique effectiveness of plant-based meats and addressing climate and conserving natural resources a powerful as the Boston Consulting Group recently reported the climate return for plant-based meats measured in terms of carbon equivalent emissions avoided per dollar invested is unrivaled significantly investing climate returns per dollar invested in green technologies across a host of sectors including transportation and electricity in closing, it is our foundational belief that we can usher in the mainstream transition to plant-based meats by driving ever more intently toward products that are indistinguishable and taste from are clearly understood by the consumer to deliver health benefits relative to, and our price parity or below that of their animal protein equivalents.

We are focused intently on increasing efficiency and operations and production while driving execution of our highest value growth initiatives across North America, the EU, and China and we confidently expect to emerge from today's economic conditions leaner stronger, and very well poised to deliver on the promise of our brand.

With that, I will turn it over to Philp to walk us through our second quarter financial results in greater detail and our outlook for the full year of 2022.

Philip E. Hardin {BIO 16474152 <GO>}

Q - Alexia Howard {BIO 15082983 <GO>}

Good Evening Every one.

A - Ethan Brown {BIO 17514914 <GO>}

How are you.

Q - Alexia Howard {BIO 15082983 <GO>}

Thank you for the comprehensive trade. Yes. So I guess we're all sort of looking at the guide depth on the sales side. For the second half. And that does imply a slowdown. I think from right after we second quarter what do you think is going to take to reinvigorate the category particularly in the US and in Europe. I'm. I mean is this something that, it's obviously going to work in progress for some time, but what do you think are the key factors? All of our and how long it can take to actually see some sort of turnaround.

A - Ethan Brown {BIO 17514914 <GO>}

Sure. I just. Thank you again for the question and I think, to start a key data point and that point of the following that if you look at the price of our ground beef today on a retail average 12 weeks using SPINS data, we're selling it at $8.35 a pound.

If you look at the USDA ground beef data for the month of June, the price per pound was $4.90. So you have an $8.35 per pound price versus a $4.90 per pound price I can talk a lot about all the different influences and things that are going on in the economy, but that is a very difficult proposition when consumers have very high levels of inflation going on and they're buying power in grocery is declining.

So I think that there are number of confounding factors we went from a pandemic into record inflation highest in 40 years. And before a sector still gathering it feeds and is still in sort of the first set of downs. That's a very difficult set of conditions to navigate. Now the good news is our strategy has always been about three things. It's been first and foremost about getting the taste right so that we are indistinguishable from animal protein.

The second has been about making sure that consumers understand that our products have health benefits relative to animal protein the third and most relevant here is price.

So we've always known right that we need to drive our cost structure down and offer a consumer price point that is the same as animal protein. So the pullback back you're seeing against our sector. It's very consistent with our beliefs. And so in that kind of the unfortunate way it's reinforcing our strategy and it's propelling us and challenging us to try to ring cost out of our system as quickly as we can.

And while there are a lot of things that are securing the cost-down initiatives we are seeing progress, particularly on a sequential basis on manufacturing costs and logistics costs of that nature. What we need to be able to bring it into the market is a resumption of volume growth, so that we can spread out these costs among more production.

https://www.noaa.gov/news-release/noaa-still-expects-above-normal-atlantic-hurricane-season

NOAA still expects above-normal Atlantic hurricane season

Preparedness is key during the peak months of hurricane season

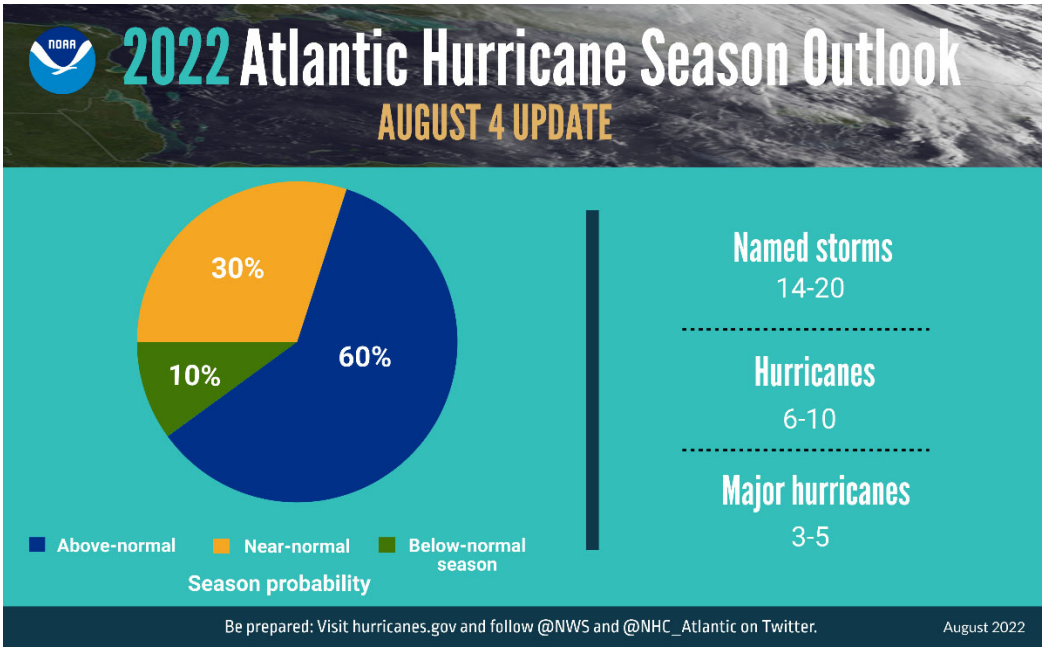
August 4, 2022

Atmospheric and oceanic conditions still favor an above-normal 2022 Atlantic hurricane season, according to NOAA's annual mid-season update issued today by the Climate Prediction Center, a division of the National Weather Service.

"I urge everyone to remain vigilant as we enter the peak months of hurricane season," said Secretary of Commerce Gina Raimondo. "The experts at NOAA will continue to provide the science, data and services needed to help communities become hurricane resilient and climate-ready for the remainder of hurricane season and beyond."

NOAA forecasters have slightly decreased the likelihood of an above-normal Atlantic hurricane season to 60% (lowered from the outlook issued in May, which predicted a 65% chance). The likelihood of near-normal activity has risen to 30% and the chances remain at 10% for a below-normal season.

"We're just getting into the peak months of August through October for hurricane development, and we anticipate that more storms are on the way," said NOAA Administrator Rick Spinrad, Ph.D. "NOAA stands ready to deliver timely and accurate forecasts and warnings to help communities prepare in advance of approaching storms."



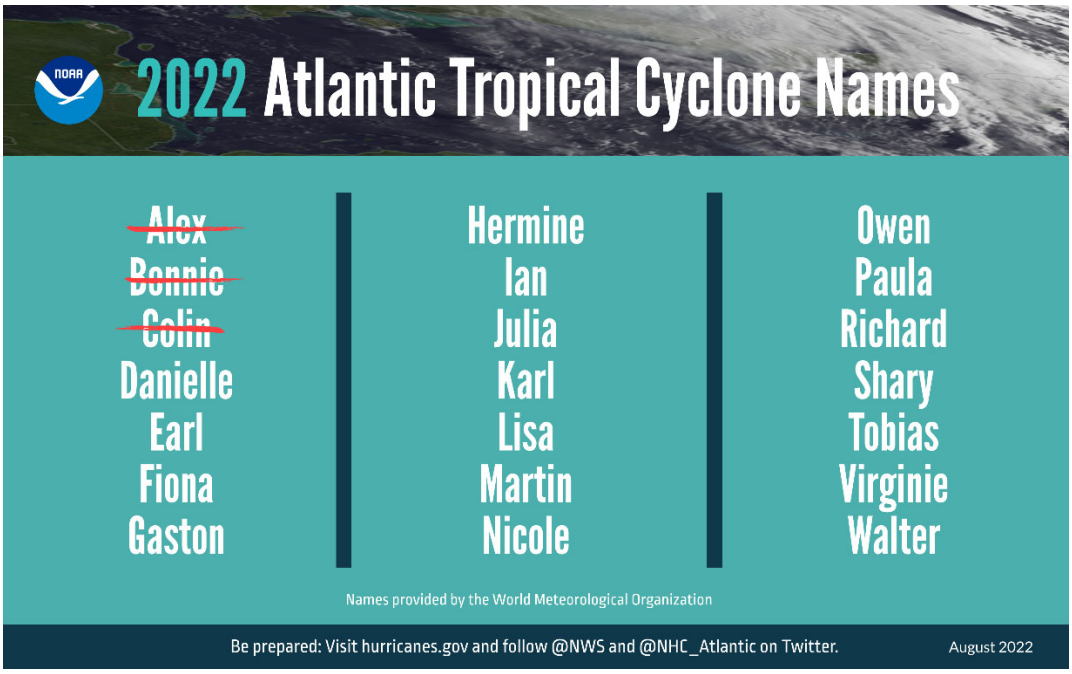
The updated 2022 Atlantic hurricane season probability and number of named storms. (NOAA)
Download Image

NOAA's update to the 2022 outlook — which covers the entire six-month hurricane season that ends on Nov. 30 — calls for 14-20 named storms (winds of 39 mph or greater), of which 6-10 could become hurricanes (winds of 74 mph or greater). Of those, 3-5 could become major hurricanes (winds of 111 mph or greater). NOAA provides these ranges with a 70% confidence.

So far, the season has seen three named storms and no hurricanes in the Atlantic Basin. An average hurricane season produces 14 named storms, of which seven become hurricanes, including three major hurricanes.

This outlook is for overall seasonal activity, and is not a landfall forecast. Landfalls are largely governed by short-term weather patterns that are currently only predictable within about one week of a storm potentially reaching a coastline.

There are several atmospheric and oceanic conditions that still favor an active hurricane season. This includes La Niña conditions, which are favored to remain in place for the rest of 2022 and could allow the ongoing high-activity era conditions to dominate, or slightly enhance hurricane activity. In addition to a continued La Niña, weaker tropical Atlantic trade winds, an active west African Monsoon and likely above-normal Atlantic sea-surface temperatures set the stage for an active hurricane season and are reflective of the ongoing high-activity era for Atlantic hurricanes.



The 2022 Atlantic tropical cyclone names selected by the World Meteorological Organization. (NOAA)
Download Image

“Communities and families should prepare now for the remainder of what is still expected to be an active hurricane season,” said Ken Graham, director of the National Weather Service. “Ensure that you are ready to take action if a hurricane threatens your area by developing an evacuation plan and gathering hurricane supplies now, before a storm is bearing down on your community.”

Learn about NOAA’s hurricane science and forecasting expertise by viewing our Hurricane Season Media Resource Guide and stay tuned to the National Hurricane Center for the latest about tropical storm and hurricane activity in the Atlantic.

“Although it has been a relatively slow start to hurricane season, with no major storms developing in the Atlantic, this is not unusual and we therefore cannot afford to let our guard down,” said FEMA Administrator Deanne Criswell. “This is especially important as we enter peak hurricane season—the next Ida or Sandy could still be lying in wait. That’s why everyone should take proactive steps to get ready by downloading the FEMA app and visiting Ready.gov or Listo.gov for preparedness tips. And most importantly, make sure you understand your local risk and follow directions from your state and local officials.”

FORECAST OF ATLANTIC SEASONAL HURRICANE ACTIVITY AND LANDFALL STRIKE PROBABILITY FOR 2022

We have decreased our forecast but continue to call for an above-average 2022 Atlantic hurricane season. Sea surface temperatures averaged across the tropical Atlantic are slightly warmer than normal, while subtropical Atlantic sea surface temperatures are cooler than normal. Vertical wind shear anomalies averaged over the past 30 days over the Caribbean and tropical Atlantic are slightly weaker than normal. Current La Niña conditions are likely to persist for the rest of the Atlantic hurricane season. We continue to anticipate an above-normal probability for major hurricanes making landfall along the continental United States coastline and in the Caribbean. As is the case with all hurricane seasons, coastal residents are reminded that it only takes one hurricane making landfall to make it an active season for them. They should prepare the same for every season, regardless of how much activity is predicted.

(as of 4 August 2022)

By Philip J. Klotzbach[1], Michael M. Bell[2] and Alexander J. DesRosiers[3]
In Memory of William M. Gray[4]

This discussion as well as past forecasts and verifications are available online at http://tropical.colostate.edu

Anne Manning, Colorado State University media representative, is coordinating media inquiries into this verification. She can be reached at 970-491-7099 or Anne.Manning@colostate.edu

Department of Atmospheric Science
Colorado State University
Fort Collins, CO 80523

Project Sponsors:

[1] Senior Research Scientist
[2] Professor
[3] Graduate Research Assistant
[4] Professor Emeritus

ATLANTIC BASIN SEASONAL HURRICANE FORECAST FOR 2022

Forecast Parameter and 1991-2020 Average (in parentheses)	Issue Date 7 April 2022	Issue Date 2 June 2022	Issue Date 7 July 2022	Issue Date 4 August 2022	Observed Thru 3 August 2022	Remainder of Season Forecast
Named Storms (NS) (14.4)	19	20	20	18*	3	15
Named Storm Days (NSD) (69.4)	90	95	95	85	3.25	81.75
Hurricanes (H) (7.2)	9	10	10	8	0	8
Hurricane Days (HD) (27.0)	35	40	40	30	0	30
Major Hurricanes (MH) (3.2)	4	5	5	4	0	4
Major Hurricane Days (MHD) (7.4)	9	11	11	8	0	8
Accumulated Cyclone Energy (ACE) (123)	160	180	180	150	3	147
Net Tropical Cyclone Activity (NTC) (135%)	170	195	195	160	6	154

*Total forecast includes Alex, Bonnie and Colin which have formed in the Atlantic as of August 3rd.

PROBABILITIES FOR AT LEAST ONE MAJOR (CATEGORY 3-4-5) HURRICANE LANDFALL ON EACH OF THE FOLLOWING COASTAL AREAS (AFTER 4 AUGUST):

1) Entire continental U.S. coastline - 68% (full-season average for last century is 52%)

2) U.S. East Coast Including Peninsula Florida - 43% (full-season average for last century is 31%)

3) Gulf Coast from the Florida Panhandle westward to Brownsville - 43% (full-season average for last century is 30%)

PROBABILITY FOR AT LEAST ONE MAJOR (CATEGORY 3-4-5) HURRICANE TRACKING INTO THE CARIBBEAN (10-20°N, 88-60°W) (AFTER 4 AUGUST):

1) 57% (full-season average for last century is 42%)

ABSTRACT

Information obtained through July 2022 indicates that the 2022 Atlantic hurricane season will have above-average activity, although less than forecast with our earlier 2022 seasonal hurricane outlooks. The Atlantic has had 3 named storms through August 3. We estimate that 2022 will have an additional 15 named storms (post-31 July average is 11.6), 8 hurricanes (post-31 July average is 6.5), and 4 major (Category 3-4-5) hurricanes (post-31 July average is 3.1). The probability of U.S. major hurricane landfall is estimated to be ~140% of the long-period full-season average. We predict Atlantic basin Accumulated Cyclone Energy (ACE) to be ~130% of its long term post-31 July average.

This forecast is based on an extended-range early August statistical prediction scheme that was developed using 40 years of past data and a new August statistical prediction model developed using 43 years of past data. We also include statistical/dynamical model forecasts from the European Centre for Medium-Range Weather Forecasts, the UK Met Office and the Japan Meteorological Agency. Analog predictors are also utilized.

Most of the tropical Atlantic and Caribbean is slightly warmer than normal, while vertical wind shear averaged across the tropical Atlantic and Caribbean over the past 30 days is slightly weaker than normal. Warmer than normal water across the tropical Atlantic provides more fuel for tropical cyclones. Vertical wind shear in July typically has strong persistence, that is, if vertical wind shear is high in July, it is likely to remain elevated for the rest of the season. All three climate models are predicting slightly weaker-than-normal vertical wind shear for August-September. Lower vertical wind shear allows hurricanes to better vertically align and inhibits entrainment of dry air into the circulation.

Sea surface temperatures averaged across the eastern and central tropical Pacific are cooler than normal, indicating continued persistence of La Niña conditions. Given observed and continued forecast strong trade winds and strong anomalous cooling in the subsurface tropical Pacific, we anticipate that La Niña is likely to persist through the remainder of the Atlantic hurricane season.

While these factors tend to point towards an above-normal season, the subtropical Atlantic has anomalously cooled. This anomalous cooling can increase the tropical/subtropical Atlantic sea surface temperature gradient, potentially favoring increased frontal intrusions into the tropics and increasing vertical wind shear.

The early August forecast has good long-term skill when evaluated in hindcast mode. The skill of CSU's forecast updates typically increases as the peak of the Atlantic hurricane season approaches.

Starting today and issued every two weeks following (e.g., August 4, August 18, September 1, etc.), we will issue two-week forecasts for Atlantic TC activity during the peak of the Atlantic hurricane season from August-October.

https://www.energy.gov/articles/biden-harris-administration-announces-26-million-program-bipartisan-infrastructure-law

Biden-Harris Administration Announces $26 Million Program From Bipartisan Infrastructure Law to Demonstrate How U.S. Power Grid Can Run on 100% Clean Energy

AUGUST 2, 2022

Funds Projects Focused on Demonstrating How Solar, Wind, and Energy Storage Can Provide Steady, Reliable, Affordable Energy on America's Electricity Grid

WASHINGTON, D.C. — The Biden-Harris Administration, through the U.S. Department of Energy (DOE), today announced $26 million to fund projects that will demonstrate that America's electricity grid can reliably run with a mix of solar, wind, energy storage, and other clean distributed energy resources. Funded by **President Biden's Bipartisan Infrastructure Law, the Solar and Wind Grid Services and Reliability Demonstration Program** will show how clean energy resources can address key reliability challenges facing the grid by developing and testing tools and plant functions that allow the grid to stay online amid disturbances and restart if it goes down. The demonstration projects will provide data to underscore how President Biden's goal of 100% clean electricity by 2030 can be achieved while supporting grid reliability.

"Americans do not have to choose between a clean grid and a reliable one as we move forward towards our goals of a net-zero economy by 2050," said **U.S. Secretary of Energy Jennifer M. Granholm**. "Thanks to funding from President Biden's Bipartisan Infrastructure Law, DOE is proving that transitioning to solar, wind, and other renewable energy sources can keep the lights on without service interruptions, while creating good paying jobs."

The U.S. electricity grid was originally built to deliver power from just a few large fossil fuel power plants to homes and businesses, but today's grid has a mix of traditional and renewable energy sources. **DOE investments** have led to the development of new tools that enable grid operators to manage this increasingly complex network. Now those tools need to be demonstrated at a broader scale to increase their adoption and build trust as grid operators face a growing number of disruptions, such as cyberattacks, extreme weather events, and wildfires. To achieve a clean power sector, clean energy sources such as solar and wind generation and energy storage must prove that they are able to support the grid during normal as well as emergency situations.

The Solar and Wind Grid Services and Reliability Demonstration Program will fund up to 10 projects that demonstrate how large-scale solar, wind, and energy storage can support the power grid by automatically adjusting to changing demand and disruptions. Projects, which require testing at a plant of at least 10 megawatts in size from a mix of solar, wind, or other generation or storage technology, will also demonstrate how a clean energy grid prevents blackouts by quickly identifying and responding to faults.

Academic institutions, private companies, nonprofits, state and local governments, and tribal nations are encouraged to apply and form diverse teams that include representation from entities such as historically Black colleges and universities and minority-serving institutions, and community-based organizations.

DOE's Investments in Grid Enhancements and Modernization

Through DOE's new **Building a Better Grid Initiative**, DOE is deploying more than $20 billion in federal financing tools, including through the Bipartisan Infrastructure Law's new $2.5 billion Transmission Facilitation Program, $3 billion expansion of the Smart Grid Investment Grant Program, and more than $10 billion in grants for States, Tribes, and utilities to enhance grid resilience and prevent power outages, and through existing tools, including the more than $3 billion Western Area Power Administration Transmission Infrastructure Program, and a number of loan guarantee programs through the Loan Programs Office.

An **informational webinar** will be held on August 17 at 1 p.m. ET. Mandatory concept papers are due by September 1 at 5 p.m. ET.

Learn more about DOE's **Solar Energy Technologies Office** and **Wind Energy Technologies Office**.

CHIEF EXECUTIVE OFFICER'S REVIEW

Notwithstanding what has clearly been a very complex environment for our markets, our operations, and the world in general, we are pleased to report an exceptional financial performance for Glencore over the period.

In our markets, the year began with most commodities in deficit, with prices already having reached record or multi-year-high levels, before global macroeconomic and geopolitical events then emerged to create material market disruption and dislocation. The Russia-Ukraine war, and resulting energy crisis in Europe, lifted LNG and sea-borne thermal coal prices to unprecedented levels, with the average Newcastle high-grade index more than tripling period-on-period, as underinvestment, logistics constraints and bad weather left the supply side unable to adequately respond to the renewed demand.

The resulting cost pressures, together with Russian supply uncertainty, were initially supportive for metals markets. Aluminium and zinc were almost immediately impacted, as various smelters cut production amid soaring energy costs, while demand remained healthy. However, accelerating global inflation, prompting central bank rate rises, together with China's Covid-zero measures, ultimately weighed on sentiment and metals demand and prices through the second quarter. Copper, for example, ended the period 15% lower than the end of 2021, although the energy complex has continued to trade at elevated price and volatility levels into the third quarter.

2022 HALF-YEAR FINANCIAL SCORECARD

The energy market developments noted above were significant drivers for both our marketing and industrial businesses, lifting Group Adjusted EBITDA to $18.9 billion, from $8.7 billion in the prior period. Net income before significant items increased 238% to $10.8 billion, while gains on the acquisition of Cerrejón and disposal of Ernest Henry, were largely responsible for the $1.4 billion increase in Income for the period attributable to equity holders to $12.1 billion.

Marketing posted a record performance, with Adjusted EBIT more than doubling to $3.7 billion, driven primarily by extreme dislocations and price movements across crude oil, LNG, refined products, and logistics infrastructure. The metals Adjusted EBIT contribution was 17% below first half 2021, given the more challenging market conditions towards the end of the period, reflecting global recessionary fears and a Chinese economy still impacted by lockdown restrictions.

Industrial EBITDA surged more than $8.4 billion ($8 billion attributable to coal) to $15.0 billion for the period, benefitting primarily from record prices for our key coal benchmarks and quality categories, enhanced by the incremental contribution from the two-thirds of Cerrejón, acquired in January 2022, that Glencore did not previously own. Strong oil and gas markets also supported our oil E&P assets, with EBITDA lifting more than 200% to $558 million. Our metals industrial business was broadly in line, period over period, with increases in nickel and ferroalloys, cancelling out reductions from copper and zinc.

Our operational performance at some industrial assets was disappointing, primarily related to weather, geological and logistics challenges, as well as continuing Covid-19 impacts, particularly in relation to increased absenteeism. We are confident, however, in being able to deliver an overall improved production performance in the second half of the year.

Allied with the record EBITDA results, particularly in marketing and mostly energy related, our net working capital significantly increased during the period, in line with the materially higher oil, gas and coal prices, and their elevated market volatilities. Marketing accounted for some $5 billion of net working capital investment across 3 key categories:- a) $1.5 billion net increase in physical forward commodity related contracts (which are not margined), b) $1.5 billion net increase in trade receivables / payables, whereby we previously obtained higher than average payment terms from our Russian suppliers, with whom we have ceased doing any new business and c) $2 billion net increase in net margins calls paid, in excess of the movement in current financial assets / liabilities (our derivative commodity related contracts / hedging instruments, excluding physical forwards). The various commodity exchanges significantly increased their initial margining requirements during the period, resulting in the posting of an additional $2 billion from $1.9 billion to $3.9 billion. The additional investment in working capital should be considered in the context of a 344% increase in Energy Marketing EBIT from $672 million to $2,986 million.

Despite the working capital build, significant cash was generated during the half, which reduced Net funding and Net debt to $28.0 billion and $2.3 billion respectively from the prior period levels of $30.8 billion and $6.0 billion, allowing for "top-up" returns under our shareholder returns framework.

SHAREHOLDER RETURNS

In line with our distribution policy on "top-up" shareholder payments, I am pleased to announce additional returns of $4.5 billion, lifting total shareholder returns this year to $8.5 billion. This "top-up" payment will be affected by way of a $1.45 billion special distribution and a new $3.0 billion buyback program that will run until release of our full year results in February next year. The special distribution of $0.11 cents per share will be paid alongside the $0.13 cents per share second tranche of the Base Distribution on the 22 September.

CORPORATE GOVERNANCE AND SUSTAINABILITY

The safety and security of our workforce and communities living around our assets are a priority recognised across all our operational activities. Our ambition is to prevent fatalities, occupational diseases and injuries wherever we operate. Unfortunately, we recorded the loss of two lives at Glencore's managed operations in year to date. We continue to believe that we can and must eliminate all fatalities and will continue to drive the management of safety across the business to achieve this objective.

Glencore resolved the previously disclosed investigations by authorities in the United States, the United Kingdom and Brazil during the period. These investigations into past activities in certain Group businesses related to bribery, and separate US investigations related to market manipulation.

We acknowledge the misconduct identified in these investigations and have cooperated with the authorities. This type of behaviour has no place in the Glencore of today, and the Board, management team and I are very clear about the culture that we want and our commitment to be a responsible and ethical operator wherever we work. We have taken significant action towards building and implementing a world-class Ethics and Compliance Programme to ensure that our core controls are effective, and our culture is entrenched in every corner of our business.

The Group has bolstered its compliance structures and controls through a comprehensive programme built around risk assessment, policies, procedures, standards and guidelines based on international best practice, associated training and awareness initiatives as well as monitoring systems. We are committed to transparency and this year published our first dedicated Ethics and Compliance report, providing a detailed overview of Glencore's Ethics and Compliance Programme, including a summary of its approach, compliance structure and the various systems and processes that Glencore implements to support its programme and promote an ethical culture.

Glencore continues to cooperate with a previously disclosed and ongoing investigation by the Office of the Attorney General of Switzerland into Glencore International AG for failure to have the organisational measures in place to prevent alleged corruption and a previously disclosed investigation of similar scope by the Dutch Public Prosecution Service. The timing and outcome of these investigations remain uncertain.

We are pleased to have appointed Liz Hewitt as an Independent Non-Executive Director to the Board last month. Liz brings more than 30 years of extensive business, financial and investment experience and we look forward to benefiting from her insights and contribution as a director.

LOOKING AHEAD

It has been our strong belief that the world's decarbonisation pathways will be non-linear through time and across geographies. Europe's energy crisis, amongst others, has highlighted a growing gap between an overly accelerated decline of fossil fuel base load generating capacity and the current and nearer-term capabilities of variable renewable energy sources and associated infrastructure around the world. We remain convinced that our responsible coal decline strategy, together with our current position and further investment into key transition metals, such as copper, nickel, cobalt and related recycling, is critical to meeting the energy needs of today while helping to support an orderly energy transition as countries around the world pursue their distinctive decarbonisation strategies and pathways. We have had constructive conversations to date on our Climate Transition Action Plan and will continue to engage with shareholders so as to ensure their views are fully understood.

With few short-term solutions to rebalance global energy markets, coal and LNG prices look set to remain elevated over the second half of the year, particularly given the current challenge of securing sufficient and reliable energy supply for the Northern hemisphere winter ahead.

For the metals, the outlook is more complex, balancing supply risks, amid labour, water and energy shortages, supply chain disruptions, growing sovereign risk uncertainty and rising costs, against likely weakening end-use markets ex-China. There are some recent signs of China recovering from its Q2 trough, which could help to offset potentially weaker conditions in other key consuming markets.

The combined strength of our diversified business model across metals and energy industrial and marketing positions has proved itself adept in all market conditions, which should allow us to both successfully navigate the shorter-term challenges that may arise, as well as meet the resource needs of the future. I would like to thank all our employees for their efforts and tremendous contribution during these turbulent times and as always, we remain focused on creating sustainable long-term value for all our stakeholders.

Gary Nagle

Chief Executive Officer

MARKETING ACTIVITIES

HIGHLIGHTS

Marketing Adjusted EBIT of $3,668 million was 104% higher than in H1 2021, reflecting successful navigation of the extraordinary global challenges faced during the period, wherein Glencore was a source of continuous and reliable commodity supply to our vast customer base.

The Russian invasion of Ukraine in February 2022, with swift imposition of sanctions on many key commodities and physical and financial infrastructure, led to significant upheaval, uncertainty and ultimately realignment of global trade flows, most notably in the energy complex. Energy prices were already at elevated levels before the conflict, reflecting resurgent demand, tight supply and reducing inventories. Already challenged oil and gas markets responded accordingly, with prices (both absolute and in relation to quality and location differentials) reaching multi-year highs or records in many cases. European coal imports were materially higher during the half, reflecting substitution for gas, at the same time as supply was limited by an Indonesian export ban earlier in the year and weather disruptions in Australia, South Africa and Colombia.

Against this challenging and elevated risk backdrop, as evidenced by our Value at Risk analysis discussed on page 13, our Marketing segment's financial performance continued to be supported by periods of heightened to extreme levels of market volatility, supply disruption and tight physical market conditions, particularly relating to global energy markets. Adjusted EBIT from the Energy products business was $3.0 billion.

Adjusted EBIT from the Metals and minerals business was $200 million (17%) lower than H1 2021, reflecting more challenging market conditions towards the end of the period as noted below.

Viterra (reported within corporate and other) contributed $284 million on an attributable, after-tax basis, which was $88 million (45%) higher than in H1 2021.

The resulting H1 2022 Adjusted EBIT exceeded the top end of our long-term, through the cycle Adjusted EBIT annual guidance range of $2.2-3.2 billion per annum. We currently expect more normal market conditions to prevail in the second half of the year.

US$ million	**Metals and minerals**	**Energy products**	**Corporate and other[1]**	**H1 2022**	Metals and minerals	Energy products	Corporate and other[1]	H1 2021
Revenue◊	44,431	71,298	–	115,729	36,956	46,963	–	83,919
Adjusted EBITDA◊	1,013	3,177	(303)	3,887	1,232	875	(62)	2,045
Adjusted EBIT◊	985	2,986	(303)	3,668	1,185	672	(62)	1,795
Adjusted EBITDA margin◊	2.3%	4.5%	n.m.	3.4%	3.3%	1.9%	n.m.	2.4%

1 Corporate and other Marketing activities includes $284 million (H1 2021: $196 million) of Glencore's equity accounted share of Viterra.

Selected marketing volumes sold

	Units	**H1 2022**	H1 2021	Change %
Copper metal and concentrates[1]	mt	1.7	1.6	6
Zinc metal and concentrates[1]	mt	1.3	1.4	(7)
Lead metal and concentrates[1]	mt	0.4	0.5	(20)
Gold	toz	979	922	6
Silver	toz	35,657	34,092	5
Nickel	kt	186	93	100
Ferroalloys[2]	mt	4.6	4.9	(6)
Alumina/aluminium	mt	5.2	4.8	8
Iron ore	mt	30.7	25.7	19
Thermal coal[2]	mt	35	31	11
Metallurgical coal[2]	mt	1.7	1.8	(6)
Crude oil	mbbl	302	377	(20)
Oil products	mbbl	279	350	(20)

1 Estimated metal unit contained.
2 Includes agency volumes.

COPPER

Having started the year marginally below $10,000/t, strong demand, continued supportive financial conditions, low levels of refined stocks and limited mine supply growth, supported prices reaching a record high of $10,845/t in March. The onset of the war in Ukraine, the start of fiscal tightening measures in the U.S and Covid-19 outbreaks in China, had only limited impact on demand and metals prices until late April. As concerns developed over decelerating consumption growth in North America and Europe, and uncertainty on the outlook for China, speculative positioning moved from net-long to the largest net-short in recent years, and financial flows continued to support US dollar appreciation. Prices deteriorated rapidly through the latter part of H1 2022, ending the period at $8,258/t, having averaged $9,759/t over the half, with further declines in July.

North American and European cathode premiums reached multi-year highs during H1 2022, with generally healthy order books, although order intake growth slowed. In Europe, premiums were further supported by extensive smelter maintenance and logistics limitations, due to the war. Spot smelter treatment and refining charges moved higher during the period, as the smelting sector in China also began seasonal maintenance in April, together with the expectation of a progressive increase in mine supply during 2022. Treatment and refining charges have since tightened, with increasing competition for clean concentrates, given unplanned outages and production impacts at mines across Chile and Peru during H1 2022.

Looking forward, we continue to expect mine supply growth to be constrained by aging assets, a diminished project pipeline and geopolitical conditions, with new projects likely to experience delays. In the near term, global demand sentiment will be dependent on the outlook for fiscal tightening measures, the impact of the war and actions taken by China to control Covid-19 outbreaks. In the longer term, demand growth will be driven by population growth and rising living standards in emerging economies, supported by climate change policies and action which are expected to be a key driver for copper growth sectors, given its crucial role in accelerating the clean energy transition, from renewable power generation and distribution, to energy storage and electric vehicles (EVs).

COBALT

The cobalt metal price averaged $36.90/lb in H1 2022, significantly higher than 2021, commencing the year at $33.50/lb, before rallying 19% through Q1 to reach a high of $39.75/lb in late April. Encouragingly, several metal demand segments exhibited post-Covid recovery, most notably the important aerospace sector in key regions. However, prices progressively cooled from May, reaching $32.25/lb by end June, as weaker demand in China due to Covid lockdowns, impacted the broader cobalt complex, together with global recessionary concerns dampening sentiment.

Cobalt hydroxide payables commenced the year at 88-90%, on the back of strong lithium-ion battery demand from both EV and non-EV applications. However, the Chinese Covid lockdowns led to significant reductions in battery supply chain capacity utilisation, pressuring cobalt sulphate prices, in turn pushing hydroxide payables progressively lower through Q2. Recessionary concerns, notably within non-EV applications, exacerbated the cobalt sulphate weakness and payables reduced to 66% by the end of June.

Momentum in the EV sector remains strong, supported by the strategic mandates of major economies and vast investment by key automakers, while adoption appetite within key consuming regions continues to grow. Although the required quantity of cobalt per kWh is diminishing, this demand headwind is expected to be outstripped by the rate of EV sales growth, supporting strong cobalt demand. Long-term cobalt fundamentals remain sound. In the near-term, demand fundamentals will reflect the competing forces of growing global recessionary fears and the potential easing of Chinese lockdown restrictions.

ZINC

Despite macro headwinds, the zinc price was resilient in H1 2022, largely due to supply disruptions ex-China. The average zinc price increased by 35% from $2,832/t in H1 2021 to $3,819/t in H1 2022. Most fundamental indicators continue to point to tight market conditions, particularly in the West. Spot metal premiums reached new highs of c.$800/t in the US and c.$500/t in the EU, in part reflecting actual and prospective production cuts due to high energy prices. Zinc spreads indicate tight spot availability, also evidenced by low exchange metal inventories at approximately 6 days of global consumption.

The 2022 annual benchmark treatment terms between mines and smelters were agreed at $230/dmt (2021: $159/dmt), supported by a combination of expected greater mine supply and higher energy costs in Europe. However, global metal supply is now expected to be flat year-on-year, compared to initial forecasts of c.0.3Mt.

Key demand-side risks for the balance of 2022 are inflation, China's zero-Covid policy and the duration / outcome of the Russia-Ukraine conflict. On the supply side, the current energy supply and price environment poses a significant threat, as Europe accounts for around 30% of ex-China metal production.

The lead market displayed similar trends as zinc. Average LME price increased to $2,261/mt in H1 2022 (+9% vs H1 2021) and exchange stocks neared historical lows. Annual 2022 benchmark terms for concentrates were agreed at $130/dmt (-4% vs 2021), while spot TCs (currently at $125/dmt) and lead metal premiums stayed at elevated levels in the West, pointing to tight market conditions.

NICKEL

Following strong growth in 2021 (+9%), stainless steel production in China, which accounts for more than half of global primary nickel demand, had a more subdued start to 2022. Production was impacted by extreme volatility in the nickel price and strict lockdown measures imposed by the Chinese Government.

On 8 March, the LME temporarily suspended trading in nickel after prices spiked to unprecedented levels. The rally was driven by short covering, the backdrop of a tight class I market and supply uncertainty caused by the war in Ukraine. Trading resumed on 16 March, although liquidity remains significantly reduced.

In contrast to tight supply in the class I market, supply of class II nickel continued to increase, particularly in Indonesia where record production of Nickel Pig Iron was achieved. This oversupply resulted in increasing discounts relative to class I. Despite overall nickel supply growing faster than demand, production of high-grade units outside Indonesia remains constrained.

FERROALLOYS

Ferrochrome production in China increased by 20% year-over-year during H1, outpacing domestic demand and putting pressure on pricing towards the end of Q2. An increase in Chinese chrome ore consumption, exacerbated by logistical constraints out of South Africa, led to a 40% decrease in Chinese port stocks between June 2021 and June 2022, contributing to a 48% increase in chrome ore prices year-over-year.

Vanadium prices increased by 27% during H1 2022, due to supply and logistical constraints, coupled with concerns over potential supply disruption of vanadium from Russia. Vanadium consumption remained steady, supported by the post-pandemic recovery.

IRON ORE

Chinese domestic steel demand was weak throughout H1, primarily due to the ongoing impact of China's zero-Covid policies. Despite some Government stimulus, the real estate sector has not recovered from last year's tightening and monitoring of developers' debt levels. Ex-China, inflation, supply chain issues and broader recession fears have weighed on order books, whilst steel production remained at relatively high levels, resulting in a global surplus, with steel prices pressured accordingly. Iron ore demand was relatively strong in H1, but with pressure on steelmaking margins increasing, mills moved to lower-value / lower-utilisation feed. Toward the end of H1, iron ore supply increased at the same time as steel production decreased, and prices reduced further.

ALUMINIUM

Like some other base metals, the aluminium market experienced a turbulent H1 2022. Backed by strong demand, a deteriorating supply picture owing to high energy costs (particularly in Europe) and the threat of Russian sanctions, the LME aluminium three-month price rallied 24% in Q1, peaking at an all-time high of $4,074/t. Thereafter, a major reversal started. Metal exports from Russia were largely undisrupted, while increasing net China exports, Covid-19 China lockdowns and worldwide inflation, all contributed to a 40% decline in price, reaching a low of $2,446/t by the end of June.

Alumina prices in H1 2022 showed a similar price pattern. Uncertainty around the impacts of Chinese environmental controls, the closure of the Mykolaiv alumina plant and Rusal sanctions risk, drove prices over $500/t (FOB Australia) for the first time in over three years. As some of these key risks declined, prices reduced. The outlook is poised between severe cost pressure (especially in Europe) for refineries, versus supply overhang elsewhere and a closed China import arbitrage window.

COAL

Coal supply disruptions and gas supply shortages were the main factors driving thermal coal prices to record highs during H1 2022. At the end of June 2022, Newcastle, API4, API2 and HCC prices were 143%, 182%, 236% and 9% respectively above December 2021.

During January, Indonesia temporarily banned the export of thermal coal to review producer licences and compliance with their domestic supply obligations, reducing January Indonesian export supply year-over-year by 23.5Mt, during a period of seasonally strong demand. During February, the Australian East coast was impacted by heavy rains, disrupting production and export supply chains, resulting in the lowest first half Australian export volumes since 2013, with thermal coal 8Mt lower year-over-year.

Reduced gas supply to Europe, combined with significantly reduced European nuclear generation capacity, raised European thermal coal imports by 123% year-over-year during H1 2022.

Global coking coal supply during H1 2022 declined over 20Mt with significant reductions from Australia, Russia and Mozambique, leading initially to substantial price increases with the March Premium Low Volatility index reaching $593.6/t. Due to weaker global steel demand in Q2, the Premium Low Volatility index declined to $372.4/t by end of June.

OIL

Russia's invasion of Ukraine resulted in the biggest dislocation in global energy markets over the last number of decades. The disruption of energy supplies by one of the world's largest exporters was a critical issue for economies across the world. Oil and gas prices were already rising amidst tightening fundamentals, namely a post-pandemic demand recovery, low and depleting global inventories and supply disruptions. With little buffer against a supply shock, oil prices surged on the invasion, with Brent hitting a multi-year high of $127 per barrel in March. Gas markets were equally affected, causing extreme price volatility throughout the first half of 2022. At peak, the European TTF natural gas benchmark price was c.$70 per mmbtu (31 December 2021: $23 per mmbtu).

Post-invasion oil prices remained elevated and volatile in the $100 to $120 per barrel range for Brent, with the market seeking to price in the unprecedented structural changes in the oil and gas markets.

Finished product prices were further impacted by a surge in global refining margins. Expected supply interruption for US and European refineries' H1 maintenance season was amplified by the disruption of exports from Russia. Meanwhile, refinery run-rates in China reduced due to zero-Covid lockdown measures and lower export quotas. Global refined product balances tightened amidst sustained stock draws, resulting in historically low levels of product inventories worldwide. Refined oil product cracks, in particular transportation fuels, surged to historical highs.

In shipping, long-standing trade patterns were suddenly disrupted by the war, increasing demand for longer haul routes, sending overall freight rates significantly higher.

Google Translate of https://www.zeit.de/wirtschaft/2022-08/steinkohlekraftwerk-reserve-gaskrise-verstromung-peine

The first reserve coal-fired power plant is to be put into operation

A first coal-fired power plant is to be taken out of reserve soon. The Mehrum power plant in Lower Saxony is intended to help partially replace natural gas power generation.

Updated August 1, 2022 at 9:05 am

Source: ZEIT ONLINE, dpa, hly223 comments

As a replacement for electricity from natural gas, the first hard coal-fired power plant from the reserve is about to restart. It is the Mehrum power plant in Hohenhameln, Lower Saxony (Peine district) between Hanover and Braunschweig, which belongs to the Czech energy group EPH. At the request of the dpa news agency, the agency said it was the only "market return" of a power plant that had been reported to the Federal Network Agency.

Since July 14, an ordinance has allowed hard coal-fired power plants from the so-called grid reserve to be put back into operation in order to save natural gas. According to the Federal Network Agency, natural gas accounted for 11.2 percent of power generation in Germany in June.

Controversy over gas-fired power generation in the federal government

At the weekend, a controversy arose in the federal government about generating electricity from gas. Finance Minister Christian Lindner called for this to be stopped and the nuclear power plants to be allowed to continue running instead. "We have to work to ensure that the gas crisis is not accompanied by an electricity crisis," said the FDP chairman of the picture on Sunday. "Therefore, gas can no longer be used to produce electricity, as is still happening." In the direction of the Federal Minister of Economics, Lindner said: "Robert Habeck would have the legal authority to prevent that." There is much to be said for not shutting down the remaining nuclear power plants, "but using them until 2024 if necessary".

A spokesman for Habeck replied that a complete abandonment of gas in the electricity sector would lead to the electricity crisis and blackouts. "There are system-relevant gas-fired power plants that have to be supplied with gas. If they don't get gas, serious disruptions occur. Unfortunately, that's the reality of the electricity system, which you have to know in order to ensure security of supply." However, where gas can be replaced in power generation, it should be replaced.

Power plant produced electricity for more than 500,000 households

The Mehrum power plant has been in reserve since the beginning of December 2021, as the commercial manager of the operating company, Kathrin Voelkner, told the dpa. "We have declared the return to the electricity market. We assume that we will return to the grid in the short term." The power plant has a net output of 690 megawatts. In 2018, it generated enough electricity to theoretically supply more than half a million homes.

The federal government's ordinance allows electricity to be sold from reserve power plants that are fired with hard coal or oil until the end of April 2023. It is economically interesting for power plant operators to restart power plants for several months because wholesale electricity prices are currently high. At the same time, there is sufficient hard coal on the world market. The measure aims to replace natural gas from the electricity market.

Several energy companies had already announced that they wanted to sell more electricity from coal generation again. The Essen-based company Steag wants to bring power plants with a total output of 2,300 megawatts back onto the market, said company spokesman Markus Hennes. The Düsseldorf group Uniper is currently examining additional production of more than 2,000 megawatts. In addition to the ordinance for hard coal and oil power plants that is already

in force, the Ministry of Economic Affairs is also preparing an ordinance for the restart of lignite-fired power plants that have already been shut down.

https://www.tyreextinguishers.com/how-to-deflate-an-suv-tyre

Tyre Extinguishers

How To Deflate An SUV Tyre

Our aim is to **make it impossible to own a huge polluting 4x4 in the world's urban areas.** To do that, we need people everywhere deflating 4x4 tyres, week-in, week-out.

It's quick, easy and anyone can take part! Simply print out our leaflet and read on…

1. Locate an SUV. In towns and cities, you won't have to walk far to find one. Target posh / middle-class areas.
2. Unscrew the cap on the tire valve. This is usually very easy to find on the wheel. Usually, you turn the cap to the left to unscrew it, right to tighten it. Remember: righty-tighty, lefty-loosey.
3. To get the air out of the tyre, there must be something pushing down on the pin located in the center of the valve. Drop a small bean (we like green lentils, but you can experiment with couscous, bits of gravel, etc) inside the valve cap. Replace the cap, screwing it on with a few turns until you hear air hissing out. Even if it's only hissing out a little bit, that's enough - it will

deflate slowly. The whole process should take about 10 seconds.

4. Print this leaflet (at home, in an internet cafe, at the library, wherever) and leave it under the windscreen wipers, so that the owner is aware that the car is unusable and gets an explanation as to why this has been done.
5. When you're done, anonymously let the local press know what you've done, where you've done it and why. You can use a free secure email service like Protonmail or Tutanota.
6. Send a report to tyreextinguishers@riseup.net so we can keep track! Tell us roughly where it happened and how many SUVs you have disarmed. Join the Telegram group for updates.
7. Repeat, repeat, repeat.

Here's a video demonstration.

Other tips:

- If you like, practice on a bicycle tyre first.
- Work under cover of darkness.
- Bring some friends. Split into pairs to avoid conspicuously large groups.
- Hybrids and electric cars are fair game. We cannot electrify our way out of the climate crisis - there are not enough rare earth metals to replace everyone's car and the mining of these metals causes suffering. Plus, the danger to other road users still stands, as does the air pollution (PM 2.5 pollution is still produced from tyres and brake pads).
- **Avoid: Cars clearly used for people with disabilities, traders' cars (even if they're large), minibuses and normal-sized cars.**

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

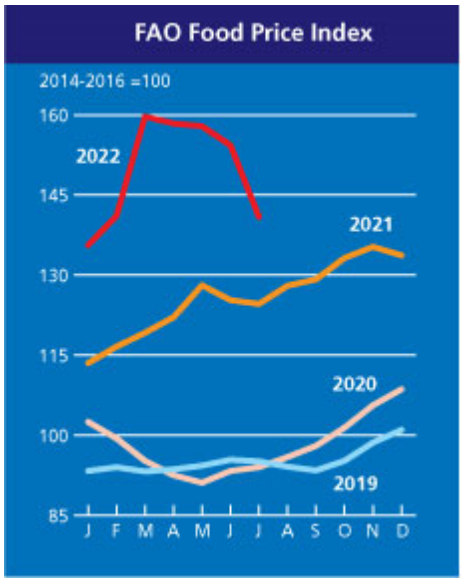
FAO Food Price Index

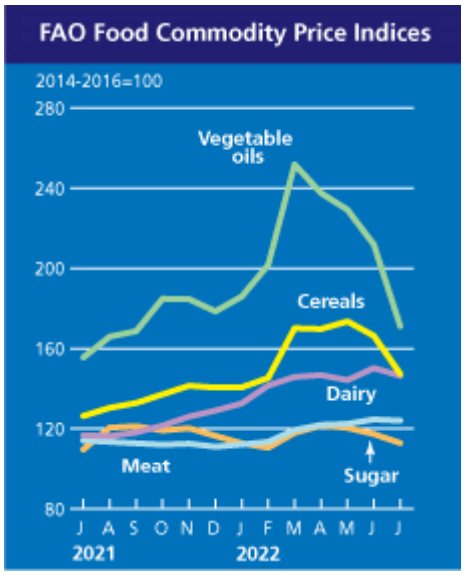
The FAO Food Price Index (FFPI) is a measure of the monthly change in international prices of a basket of food commodities. It consists of the average of five commodity group price indices weighted by the average export shares of each of the groups over 2014-2016. A feature article published in the June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

Monthly release dates for 2022: 6 January, 3 February, 4 March, 8 April, 6 May, 3 June, 8 July, 5 August, 2 September, 7 October, 4 November, 2 December.

FAO Food Price Index registered a steep drop in July

Release date: 05/08/2022





» The **FAO Food Price Index*** (FFPI) averaged 140.9 points in July 2022, down 13.3 points (8.6 percent) from June, marking the fourth consecutive monthly decline. Nevertheless, it remained 16.4 points (13.1 percent) above its value in the corresponding month last year. The July decline was the steepest monthly fall in the value of the index since October 2008, led by significant drops in vegetable oil and cereal indices, while those of sugar, dairy and meat also fell but to a lesser extent.

» The **FAO Cereal Price Index** averaged 147.3 points in July following a fall of 19.1 points (11.5 percent) from June, but remained 21.0 points (16.6 percent) above its July 2021 value. International prices of all the cereals represented in the index fell. Leading the decline, world wheat prices fell by as much as 14.5 percent in July, partly in reaction to the agreement reached between Ukraine and the Russian Federation to unblock Ukraine's main Black Sea ports, indicating the imminent resumption of grain exports from Ukraine. Seasonal availability from ongoing harvests in the northern hemisphere also weighed on prices. Nevertheless, international wheat prices were still 24.8 percent above their values in July last year. International prices of coarse grains declined for the fourth consecutive month, down 11.2 percent, but remained 12.1 percent above their values a year ago. The deal to unblock Ukraine's ports was also mostly behind a 10.7-percent fall in world maize prices. Increased seasonal availabilities in Argentina and Brazil, where maize harvests progressed ahead of their pace last year, also helped to ease the pressure on prices. Spillover from weakness in wheat and maize markets also pressured sorghum and barley prices downwards, respectively, by 12.8 percent and 12.6 percent. In July, international rice prices declined for the first time since the

onset of 2022, influenced by inconsistent demand and currency movements in major exporters.

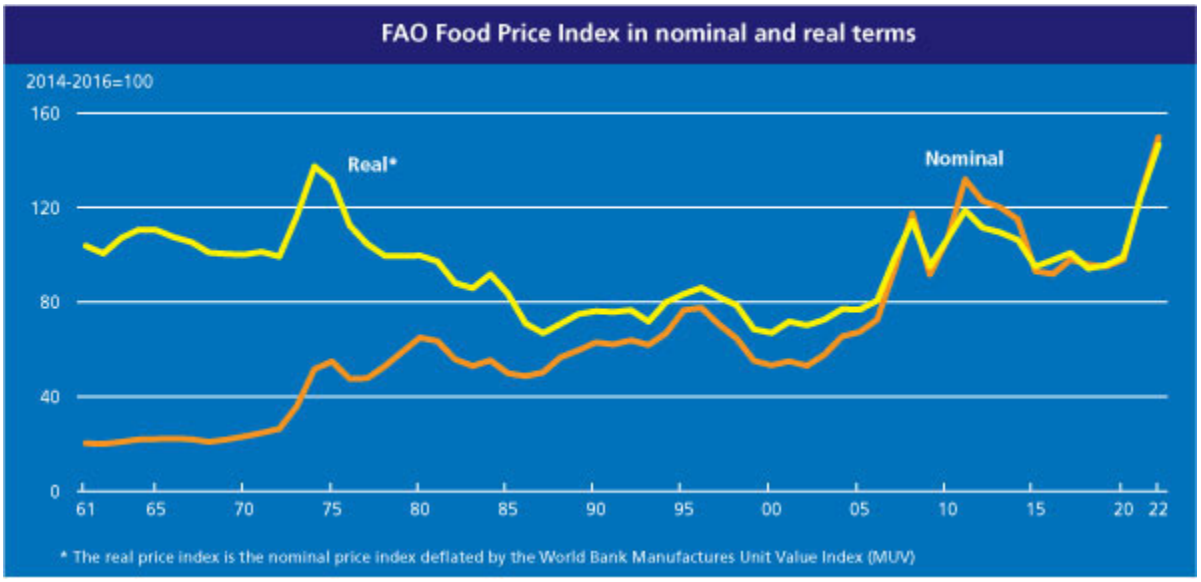
» The **FAO Vegetable Oil Price Index** averaged 171.1 points in July, down 40.7 points (19.2 percent) and marking a 10-month low. The sharp drop was driven by falling world prices across palm, soy, rapeseed and sunflower oils. International palm oil prices declined for the fourth consecutive month in July, due primarily to prospects of ample export availabilities out of Indonesia, the world's leading palm oil exporter. In the meantime, world soy and rapeseed oil quotations fell on, respectively, protracted sluggish demand and expectations of ample new crop supplies. In the case of sunflower oil, international prices dropped markedly amid subdued global import demand, despite continued logistics uncertainties in the Black Sea region. Lower crude oil prices also exerted downward pressure on vegetable oil values.

» The **FAO Dairy Price Index** averaged 146.4 points in July, down 3.8 points (2.5 percent) from June, but still 29.7 points (25.4 percent) above its value in July of last year. International quotations for skim milk powder registered the steepest decline, followed by those of butter and whole milk powder, principally reflecting lacklustre market activities in Europe due to the summer holidays. Furthermore, most buyers were well covered for their immediate needs, which, in tandem with weak demand from China and high dairy prices, led to declines in the demand for spot supplies, weighing on international quotations. Meanwhile, world cheese prices remained stable, as high internal sales in European tourist destinations compensated for weaker global import demand. Despite an overall weak trading activity, tight global supplies sustained global dairy prices at elevated levels.

» The **FAO Meat Price Index*** averaged 124.0 points in July, down 0.6 points (0.5 percent) from June, marking the first month-on-month decline following six consecutive monthly increases. In July, world quotations for ovine meat dropped steeply, due to increased export availabilities from Australia amid high slaughter and expectations of increased lamb supplies, faced by lower import demand. Meanwhile, international bovine meat prices fell, reflecting increased export availabilities from major producing regions compared to global demand, while weak overall import demand kept pig meat prices stable despite the tight supply of slaughter hogs, especially in the United States of America. By contrast, international poultry meat prices reached an all-time high, underpinned by firm global import demand and tight global supplies on Avian influenza outbreaks in the northern hemisphere, notwithstanding recent increases in exports from Ukraine.

» The **FAO Sugar Price Index** averaged 112.8 points in July, down 4.4 points (3.8 percent) from June, marking the third consecutive monthly decline and reaching a five-month low. Concerns over demand prospects due to expectations of a further slowdown of the global economy in 2022 weighed on international sugar price quotations. The decline in prices was also triggered by the weakening of the Brazilian real against the United States dollar and lower ethanol prices, which resulted in a larger than earlier-expected sugar production in Brazil in the first half of July. Indications of greater exports from India and favourable production prospects for the coming season also contributed to the decline in world sugar prices in July. By contrast, concerns over the impact of prolonged hot and dry weather conditions on yield potential in the European Union prevented more substantial price declines.

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



FAO food price index

		Food Price Index [1]	Meat [2]	Dairy [3]	Cereals [4]	Vegetables Oils [5]	Sugar [6]
2004		**65.6**	**67.6**	**69.8**	**64.0**	**69.6**	44.3
2005		**67.4**	**71.8**	**77.2**	**60.8**	**64.4**	61.2
2006		**72.6**	**70.5**	**73.1**	**71.2**	**70.5**	91.4
2007		**94.3**	**76.9**	**122.4**	**100.9**	**107.3**	62.4
2008		**117.5**	**90.2**	**132.3**	**137.6**	**141.1**	79.2
2009		**91.7**	**81.2**	**91.4**	**97.2**	**94.4**	112.2
2010		**106.7**	**91.0**	**111.9**	**107.5**	**122.0**	131.7
2011		**131.9**	**105.3**	**129.9**	**142.2**	**156.5**	160.9
2012		**122.8**	**105.0**	**111.7**	**137.4**	**138.3**	133.3
2013		**120.1**	**106.2**	**140.9**	**129.1**	**119.5**	109.5
2014		**115.0**	**112.2**	**130.2**	**115.8**	**110.6**	105.2
2015		**93.0**	**96.7**	**87.1**	**95.9**	**89.9**	83.2
2016		**91.9**	**91.0**	**82.6**	**88.3**	**99.4**	111.6
2017		**98.0**	**97.7**	**108.0**	**91.0**	**101.9**	99.1
2018		**95.9**	**94.9**	**107.3**	**100.8**	**87.8**	77.4
2019		**95.1**	**100.0**	**102.8**	**96.6**	**83.2**	78.6
2020		**98.1**	**95.5**	**101.8**	**103.1**	**99.4**	79.5
2021		**125.7**	**107.7**	**119.1**	**131.2**	**164.9**	109.3
2021	July	**124.6**	114.1	116.7	126.3	155.5	109.6
	August	**128.0**	113.4	116.2	130.4	165.9	120.5
	September	**129.2**	112.7	118.1	132.8	168.6	121.2
	October	**133.2**	112.0	121.5	137.1	184.8	119.1
	November	**135.3**	112.5	126.0	141.4	184.6	120.2
	December	**133.7**	111.0	129.0	140.5	178.5	116.4
2022	January	**135.6**	112.1	132.6	140.6	185.9	112.7
	February	**141.1**	113.4	141.5	145.3	201.7	110.5
	March	**159.7**	119.3	145.8	170.1	251.8	117.9
	April	**158.4**	121.9	146.7	169.7	237.5	121.5
	May	**157.9**	122.4	144.2	173.5	229.2	120.4
	June	**154.3**	124.6	150.2	166.3	211.8	117.3
	July	**140.9**	124.0	146.4	147.3	171.1	112.8

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

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

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

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

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

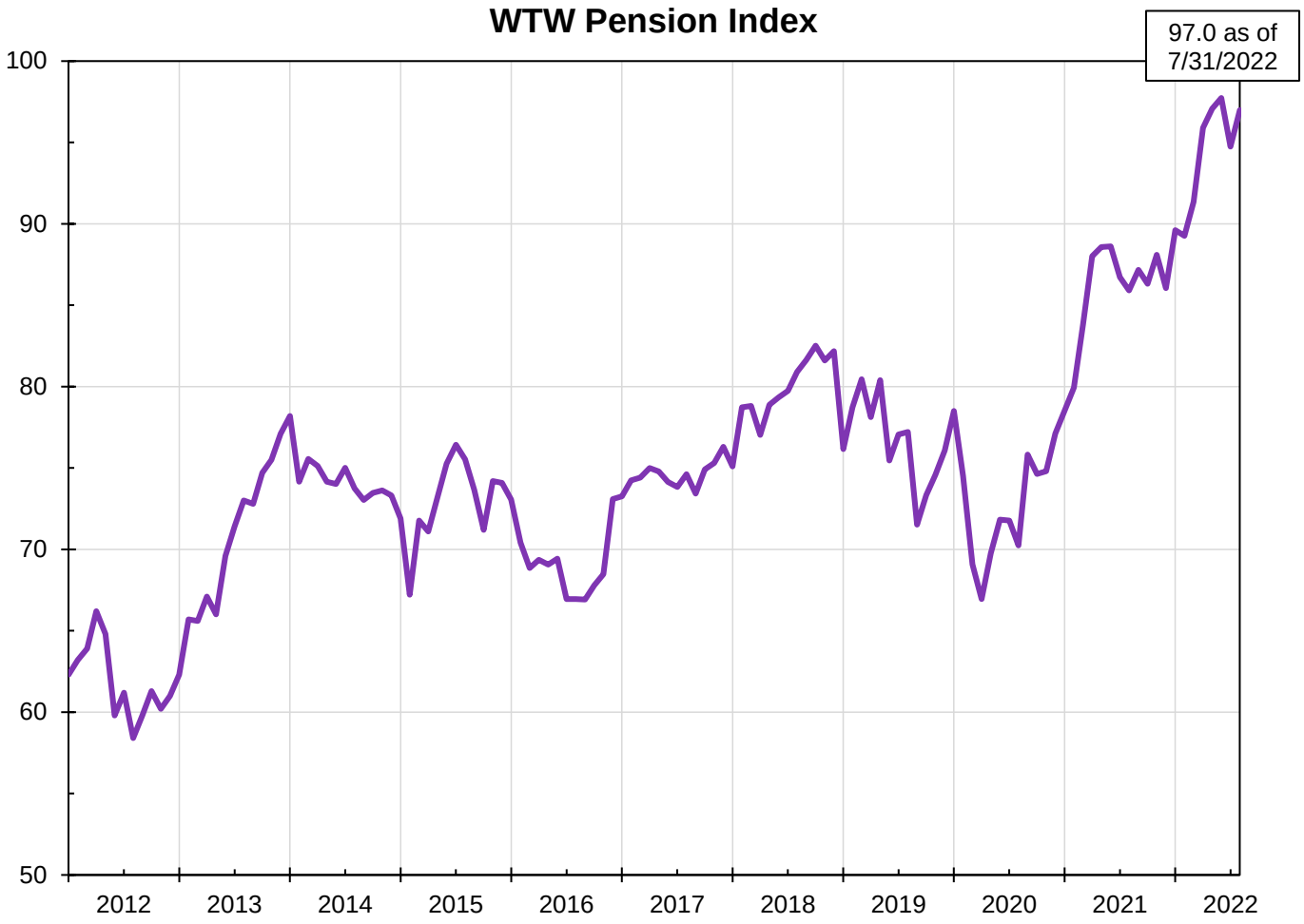
6 Sugar Price Index: Index form of the International Sugar Agreement prices with 2014-2016 as base.

Pension Finance Watch

See our complete library of monthly reports

Pension index increased in July

The WTW Pension Index started the third quarter on a positive note, recovering most of June's declines. The increase was primarily due to strong investment returns, partially offset by the impact of decreased discount rates. The end-of-July index level of 97.0 reflects an increase of 2.4% for the month.



About this report

Pension Finance Watch is designed to support our clients in the ongoing financial management of their U.S. retirement plans. The report tracks the value of the WTW Pension Index in a series that was initiated in 1990.

The index reflects the asset/liability performance of a hypothetical benchmark pension plan, and it provides an indicator of capital market effects on pension plan financing. Individual plan results will vary based on such factors as portfolio composition, investment management strategy, liability characteristics and contribution policy.

If you have questions or comments about this report, please contact
Christopher Kludy, FSA, MAAA, EA, CFA at chris.kludy@wtwco.com

Investment returns

The equity portion of the benchmark portfolio returned 8.7% in July, with the domestic small/mid-cap equity asset class experiencing the largest increase. The fixed income investments of the tracked benchmark portfolio also had a positive return at 2.2%, with Long Corporate Bonds experiencing the largest gains.

Asset Class Returns

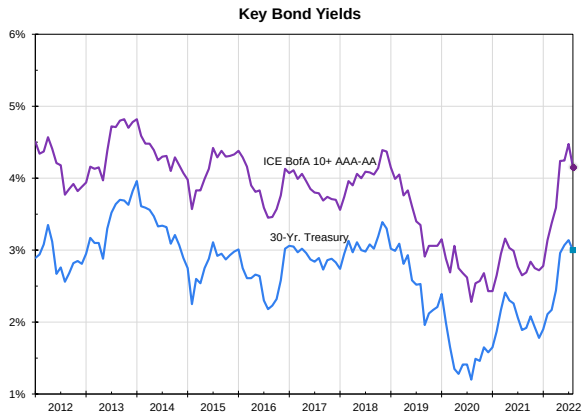
	July 2022	*YTD*	*Last 12 Months*
Stock Returns			
S&P 500 (Large Cap)	9.2%	-12.6%	-4.6%
Russell 2500 (U.S. Small/Mid-Cap)	10.3%	-13.7%	-11.3%
EAFE (International)	5.0%	-15.6%	-14.3%
Fixed Income Returns			
3-Month T-Bills	0.1%	0.3%	0.3%
Long Treasury Bonds	2.7%	-19.2%	-19.2%
Bloomberg Barclays U.S. Aggregate	2.4%	-8.2%	-9.1%
Long Corporate Bonds (AAA/AA)	5.0%	-17.8%	-18.3%

Interest rates

Yields on long high-quality corporate bond indices declined an average of 30 basis points. These were followed by decreases in long Treasury rates. Yields on 10- and 30-year Treasury bonds decreased 31 and 14 basis points, respectively.

Bond Yields

	July 2022	*Dec 2021*	*July 2021*
U.S. Treasuries			
30-Year	3.00	1.90	1.89
10-Year	2.67	1.52	1.24
3-Month	2.41	0.06	0.06
Corporate Bonds			
ICE BofA 10+ AAA-AA	4.16	2.78	2.65
Moody's Aa	4.20	2.78	2.67
BB Aggregate	3.42	1.76	1.37



Effect on pension index

The WTW Pension Index tracks the performance of a hypothetical pension plan invested in a 60% equity/40% fixed income portfolio. This portfolio recorded a 6.1% return for the month. Several alternative portfolios are also monitored. Portfolios with 20% and 60% fixed income allocations produced 7.4% and 4.8% returns, respectively. A variation of the 60% fixed income portfolio that incorporates longer-duration fixed income investments generated a 5.6% monthly return.

Discount rates used by U.S. plan sponsors to measure pension obligations are typically measured with reference to yields on high quality corporate bonds. The index relies on WTW's proprietary RATE:Link model for this purpose.

Pension obligations move in the opposite direction of the interest rates used for their valuation. The liability implicit in the index increased by 3.6% from the discount rate change and the accumulation of interest.

These factors contributed to an overall increase of 2.4% in the WTW Pension Index, which closes the month at 97.0.

Pension Index Results

	July 2022	*YTD*	*Last 12 Months*
Benchmark Portfolio Returns			
20% Fixed Income	7.4%	-11.9%	-7.3%
40% Fixed Income (benchmark)	6.1%	-10.7%	-7.3%
60% Fixed Income	4.8%	-9.4%	-7.5%
60% Fixed Income (long duration version)	5.6%	-15.2%	-13.1%
Benchmark Plan Liability Results			
Discount Rate (at valuation date) *	4.59	3.03	2.91
Liability Growth Factor	3.6%	-17.5%	-17.9%
Pension Index*	97.0	89.6	85.9
Percentage change	+2.4%	+8.2%	+12.9%

*Discount rates and pension index values in the three columns are as of 7/31/2022, 12/31/2021 and 7/31/2021, respectively.

Definition of terms

Asset Class Returns

- Total return incorporates the combined effect of price changes and interest/dividend income; this may differ from index results which are based only on price changes.
- The Russell 2500 Index tracks companies ranked 501 to 3000 ordered by market value of equity; these are considered small and mid-capitalization stocks.
- EAFE refers to the Morgan Stanley Capital International Europe, Australasia, Far East Index of equity securities; total return is reported in U.S. dollars, which includes the effect of currency changes.
- 3-Month T-Bill returns are based on the FTSE 3-Month Treasury Bill Index.
- Long Treasury Bond returns are based on the Bloomberg Barclays Long Treasury Bond Index.
- Prior to April 2022, Long Corporate Bond returns were based on the FTSE High Grade Credit Index (as described below). As the FTSE Index has been decommissioned at the end of March 2022, starting on April 2022, returns are based on the ICE BofA 10+ AAA-AA Index (as described below).

Bond Yields

- Treasury yields are constant maturity yields reported by the Federal Reserve.
- ICE BofA 10+ AAA-AA Index includes issues with 10+ years to maturity and AA or AAA ratings from the ICE Bank of America U.S. Corporate Master Index.
- Bloomberg Barclays U.S. Aggregate Bond Index covers the broad range of investment grade bonds, including government and corporate securities (minimum grade Baa) and mortgages.
- Bond yields are stated as yields to maturity, on a bond-equivalent basis (reflecting semi-annual coupons).

Benchmark Portfolio Returns

- The benchmark portfolio reflects a diversified asset allocation of 60% equity (40% large cap, 10% small/mid-cap, 10% international) and 40% fixed income (35% BB Aggregate bonds, 5% T-bills). This generally aligns with the average portfolio for the 300 large companies included in WTW's benchmarking database.
- Alternative portfolios with 20% and 60% fixed income allocations are constructed with similar asset class ratios within their equity and fixed income segments.
- The 60% fixed income-long duration portfolio includes a similarly constructed equity segment along with a fixed income segment consisting of 27.5% long corporate bonds, 27.5% long Treasury bonds and 5% T-bills.

Benchmark Discount Rate

- The discount rate is determined for our benchmark plan each month using a yield curve developed based on high-quality corporate bonds (10th-90th percentiles). This calculation uses WTW's RATE:Link methodology to develop an appropriate discount rate based on the benchmark plan's projected cash flows. Higher or lower discount rates might be appropriate for other plans.

Liability Growth Factor

- The benchmark plan is based on a traditional final-pay based formula and covers a relatively mature population. Roughly one-half of the plan's obligations are related to inactive participants. The liability growth factor measures the change in the plan's projected benefit obligation due to the accumulation of interest and changes in financial assumptions. *

WTW Pension Index

- The index is designed to capture the impact of capital market results, without influence from the costs of ongoing accruals or cash inflows/outflows related to contributions and benefit payments.
- The index reflects the PBO funded ratio (market value of assets/projected benefit obligation) for a benchmark pension plan. The asset value changes from month to month based on the investment performance of the 40% fixed income portfolio. Liability values are adjusted to reflect changes in financial assumptions.

---

* Discount rate and compensation increase assumptions are adjusted to reflect changes in market interest rates. The net sensitivity of the benchmark plan's benefit obligation to a percentage point change in interest rates is roughly 14%. These dynamics vary considerably among plans, depending on characteristics such as the benefit formula and on the demographic profile of the covered population.

https://profootballtalk.nbcsports.com/2022/08/01/nfl-training-camp-steelers-mike-tomlin-fmia-peter-king/

FMIA: Steelers Coach Mike Tomlin Welcomes Training Camp Tour To Latrobe With 3 Words—Bring It On

Thanks, Dom

20

Over the years—almost 13 of them—many of you might be aware that a man named **Dom Bonvissuto** has been the editor of my Monday column. I refer to Dom as a conscience as much as an editor, because many late Sunday nights/Monday mornings I've needed both.

I'm writing about Dom today because this is the last FMIA column he'll edit. He's taken a job with the site *Outkick* as a senior editor, and it's good for him. Dom, wife Danny and son Jude live in Nashville, and *Outkick* is based there, and in many ways it's a great fit for Dom—an expanded job role, more responsibility at a growing site, close to home, in his beloved Nashville.

Life is change. People better themselves all the time. We'll continue to get the column out, on time, at Team NBC, and we'll be good, and very good people will step in for Dom. But it's hard when the best Monday morning editor I've ever had moves on.

I've worked with Dom for two stints since 2008, sandwiching a two-year leave to edit at NFL.com. He's edited about 425 of these Monday pieces, first at Sports Illustrated and later at The MMQB and then NBC. By my count, figuring an average of 9,000 words a week, his bloodshot eyes have read/grammatically fixed/spellchecked approximately 3,816,000 of my words. Many of those edits happened at 3:08 a.m., when I'm not thinking too straight so he has to.

Football Morning In America editor Dom Bonvissuto and Peter King at Super Bowl LVI in Los Angeles. (NBC Sports)

Editing a behemoth like this column isn't often about saying, *Don't do this. It's dumb.* It's being fast and clever and knowing what picture fits and what headline is smart. It's really teamwork. I trusted

Dom's advice on what was the best news of the week, what belonged on top of the column. And other things. *Don't go napping on me now—almost finished,* for instance. Now that's important.

Editors are vital to the process of columns like this. I remember seeing Tom Brady in Montana, on deadline, one week after the 28-3 Super Bowl comeback, and racing through my writing that night/early morning, Brady dissecting every big play in the game. I was just trying to be cogent, trying to be understood, so we could have the column posted by the time people in all time zones woke up. At 3:37 a.m., with the last of 10,943 words filed, Dom sent this email: "We are good. Good night and damn proud to have worked on this." That was cool to get just before conking out.

Once I closed a column on what I felt was Philadelphia's precipitous firing of Chip Kelly. I filed this last graf: "Sad. Just very sad." He changed it to: "Sad." Period. He wrote me, "It's better as *Sad.* Not a big fan of the repeat." Dom was correct. Make words count.

I looked back over some threads of communication between us on Sunday nights. I found one that's typical, from August 2015, in a week I was traveling to training camps. We communicated 89 times between 10:24 p.m. ET Sunday and 4:26 a.m. ET Monday, many of which happened while I was on a late-Sunday flight into Seattle, making little fixes and adds via wifi, till it was finished.

The 88th communication, from me: "Thanks for your diligence."

The 89th, from Dom: "No prob. That's the job."

The perfect response.

"When we talked," Dom reflected the other day, "I always said 'we.' We're a team. When the column goes out, it's our work. Sometimes I think editors and writers can work against each other, maybe take sides and not be flexible. I thought the best way to work was to be collaborative, not combative."

Words to live by in the business of words. Miss you already, Dom.

Dan Tsubouchi @Energy_Tidbits · 1h

Typo correction. Iraq July revenue was $10.6b, not $11.1b. Other $ were correct incl YTD July 31 $71.9b vs full year 2021 $75.5b. Iraq is printing huge $$$$. #OOTT

> **Dan Tsubouchi** @Energy_Tidbits · 1h
>
> ICYMI. Here's why #OPEC+ members want to work together post Dec 31. They are printing huge $$$ at $100 oil. Iraq oil revenues: July $11.1b, June $11.5b, May $11.4b. YTD July 31 $71.9b vs Full year 2021 $75.5b. #OOTT #OOTT rudaw.net/english/busine...

Dan Tsubouchi @Energy_Tidbits · 1h

ICYMI. Here's why #OPEC+ members want to work together post Dec 31. They are printing huge $$$ at $100 oil. Iraq oil revenues: July $11.1b, June $11.5b, May $11.4b. YTD July 31 $71.9b vs Full year 2021 $75.5b. #OOTT #OOTT

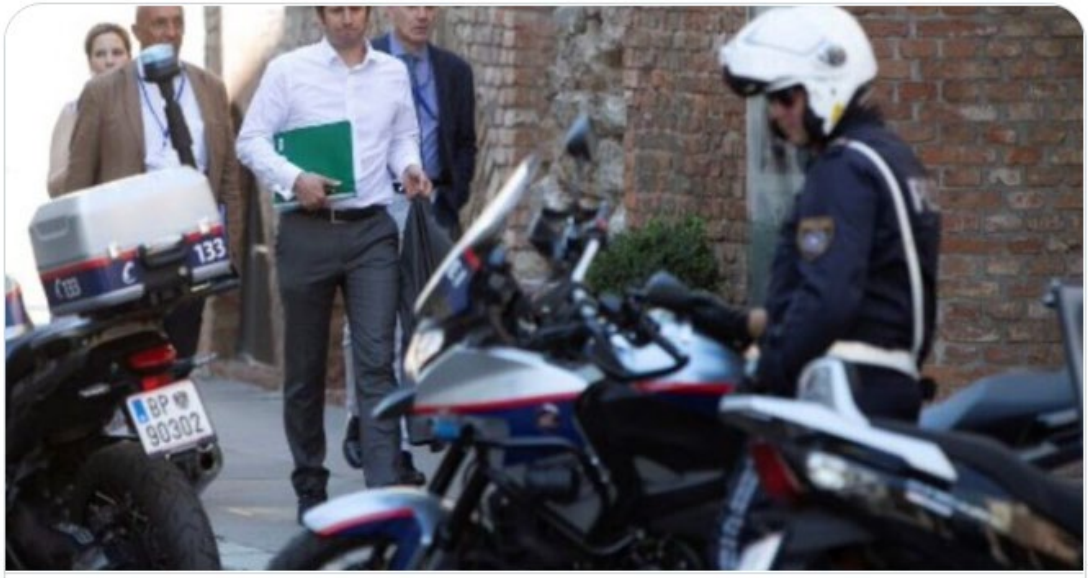
rudaw.net

Iraq pockets $10.6 billion in July oil revenue

ERBIL, Kurdistan Region - Iraq in July pocketed $10.6 billion ...

Dan Tsubouchi @Energy_Tidbits · 12h

Worth watching #JCPOA chatter. @TimesofIsrael reports progress being made on two key issues. Apparently language for Iran that US won't just walk away again, and Iran leaving IRGC as a terrorist group out of JCPOA discussions. #OOTT



timesofisrael.com

Top EU official notes progress in renewed Iran talks after securing US assurances

Top official says negotiators have secured guarantees that U...

Dan Tsubouchi @Energy_Tidbits · 21h

#Vortexa crude #Oil floating storage at 08/05 est 97.72 mmb, +1.90 mmb WoW vs hugely (+16.96) revised up 07/29 of 95.82 mmb. Most prior weeks also revised up but not huge, means floating storage more ~95 mmb vs 90 mmb over prior couple weeks data. Thx @Vortexa @business. #OOTT

Vortexa Crude Oil Floating Storage Estimate Posted Aug 6 at noon MT

Source: Bloomberg, Vortexa

Posted Aug 6, noon MT

FZWWFST VTXA Inde

08/04/2019 - 08/05/2022

1D 3D 1M 6M YTD 1Y

Date	FZWWFST VT... Last Px
Fr 08/05/2022	97720
Fr 07/29/2022	95816
Fr 07/22/2022	87022
Fr 07/15/2022	86619
Fr 07/08/2022	96039
Fr 07/01/2022	96794
Fr 06/24/2022	96394
Fr 06/17/2022	106.642k
Fr 06/10/2022	103.827k
Fr 06/03/2022	86967
Fr 05/27/2022	97566

Posted July 30, noon MT

FZWWFST VTXA Inde

07/28/2019 - 07/29/2022

1D 3D 1M 6M YTD 1Y

Date	FZWWFST VT... Last Px
Fr 07/29/2022	78861
Fr 07/22/2022	85128
Fr 07/15/2022	87534
Fr 07/08/2022	92763
Fr 07/01/2022	95352
Fr 06/24/2022	94533
Fr 06/17/2022	104.531k
Fr 06/10/2022	103.166k
Fr 06/03/2022	85334
Fr 05/27/2022	96018
Fr 05/20/2022	97847

Posted July 23, noon MT

FZWWFST VTXA Inde

07/21/2019 - 07/22/2022

1D 3D 1M 6M YTD 1Y

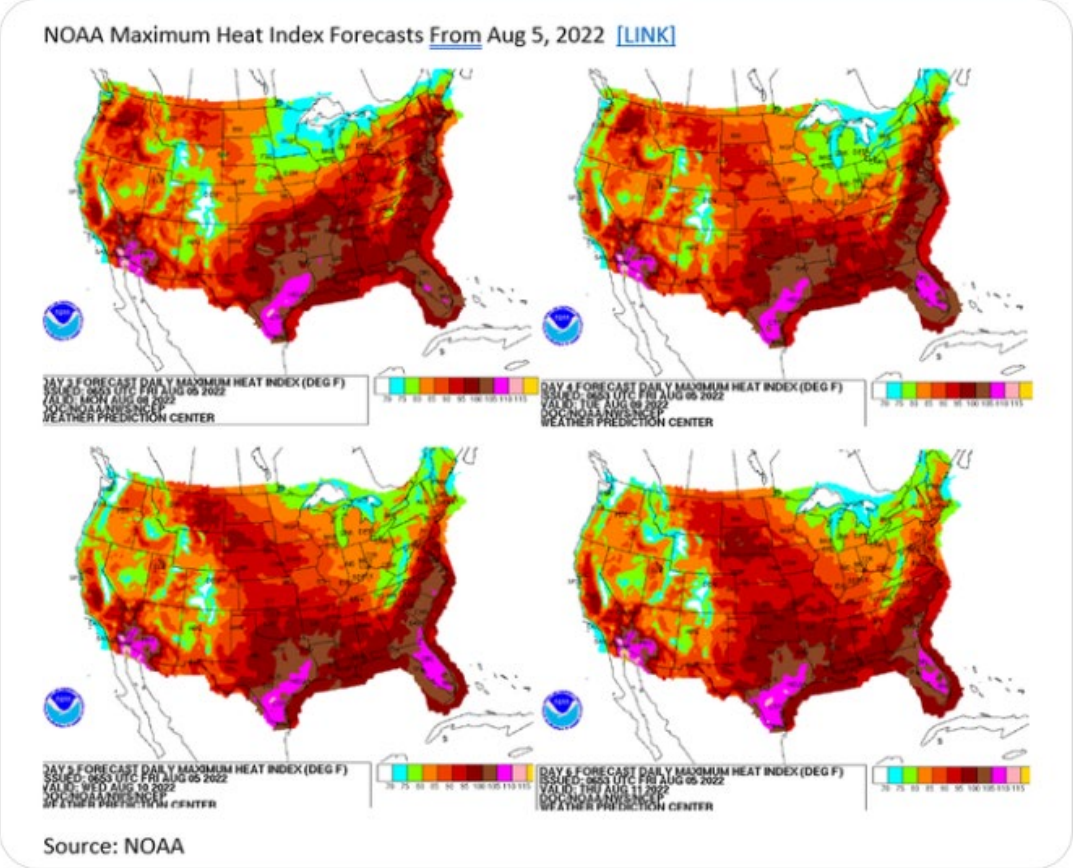
Date	FZWWFST VT... Last Px
Fr 07/22/2022	78939
Fr 07/15/2022	85254
Fr 07/08/2022	91919
Fr 07/01/2022	92209
Fr 06/24/2022	91266
Fr 06/17/2022	101.914k
Fr 06/10/2022	100.055k
Fr 06/03/2022	85570
Fr 05/27/2022	94962
Fr 05/20/2022	95161
Fr 05/13/2022	108.167k

Dan Tsubouchi @Energy_Tidbits · Aug 5

In case you are ever walking over the old coal field by the Bow River in Canmore and see people foraging on the hill up to Three Sisters Drive, the prize is little wild raspberries. There are some bushes in our backyard so Di picks enough for one good portion to share for desert.

Dan Tsubouchi @Energy_Tidbits · Aug 5

Not as hot as this week, but still looks like warm temps for a good portion of the US to start next week. Today's @NOAA daily max heat index forecasts for Mon Aug 8 thru Thru Aug 11 shows continued support for US #NatGas consumption, HH currently ~$8.10. #OOTT



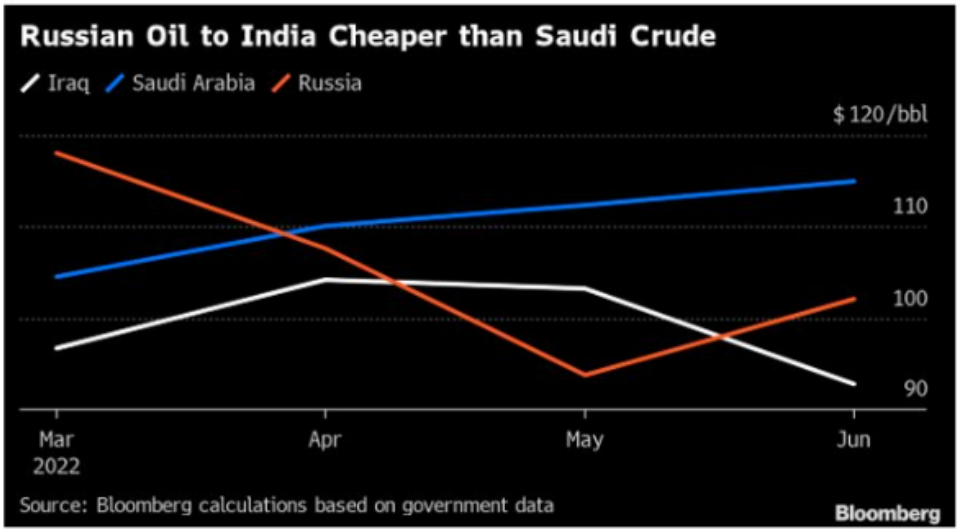
Dan Tsubouchi @Energy_Tidbits · Aug 5

always a great morning when you look up at the Three Sisters Mountains in Canmore and see some our elk neighbours, including some rapidly growing 2022 calves, out for their morning feed. would be better if WTI wasn't $89

Dan Tsubouchi @Energy_Tidbits · Aug 5

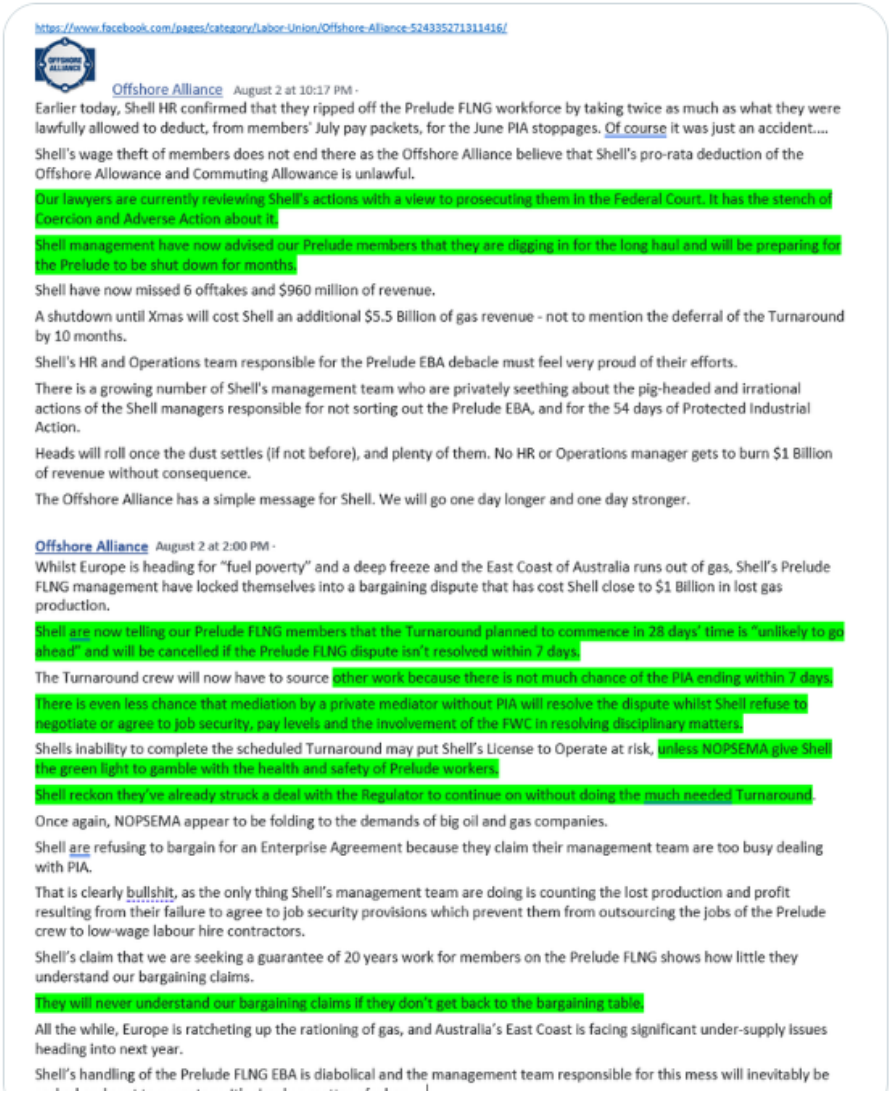
India & China are the big winners and takingg advantage of big price discount on RUS #Oil as US/EU try to shut down RUS #Oil exports. RUS discount to Saudi oil was $19/b in May, still $13/b in June. Thx @business @JournoDebjit for great graphs. #OOTT

Graphs from Bloomberg report
Russia Undercuts Saudi Oil in India as Competition Heats Up
2022-08-04 21:00:00.3 GMT
By Debjit Chakraborty



Dan Tsubouchi @Energy_Tidbits · Aug 5

Hmmm! How long will #Shell's 0.47 bcfd #PreludeFLNG be shut down by labor dispute? 1st time Offshore Alliance messaging mentions risk for a potential shutdown for months? Last #LNG cargo July 6. No analyst questions on 07/28 Q2 call. #OOTT #NatGas



https://www.facebook.com/pages/category/Labor-Union/Offshore-Alliance-524335271311416/

Offshore Alliance August 2 at 10:17 PM ·

Earlier today, Shell HR confirmed that they ripped off the Prelude FLNG workforce by taking twice as much as what they were lawfully allowed to deduct, from members' July pay packets, for the June PIA stoppages. Of course it was just an accident....

Shell's wage theft of members does not end there as the Offshore Alliance believe that Shell's pro-rata deduction of the Offshore Allowance and Commuting Allowance is unlawful.

Our lawyers are currently reviewing Shell's actions with a view to prosecuting them in the Federal Court. It has the stench of Coercion and Adverse Action about it.

Shell management have now advised our Prelude members that they are digging in for the long haul and will be preparing for the Prelude to be shut down for months.

Shell have now missed 6 offtakes and $960 million of revenue.

A shutdown until Xmas will cost Shell an additional $5.5 Billion of gas revenue - not to mention the deferral of the Turnaround by 10 months.

Shell's HR and Operations team responsible for the Prelude EBA debacle must feel very proud of their efforts.

There is a growing number of Shell's management team who are privately seething about the pig-headed and irrational actions of the Shell managers responsible for not sorting out the Prelude EBA, and for the 54 days of Protected Industrial Action.

Heads will roll once the dust settles (if not before), and plenty of them. No HR or Operations manager gets to burn $1 Billion of revenue without consequence.

The Offshore Alliance has a simple message for Shell. We will go one day longer and one day stronger.

Offshore Alliance August 2 at 2:00 PM ·

Whilst Europe is heading for "fuel poverty" and a deep freeze and the East Coast of Australia runs out of gas, Shell's Prelude FLNG management have locked themselves into a bargaining dispute that has cost Shell close to $1 Billion in lost gas production.

Shell are now telling our Prelude FLNG members that the Turnaround planned to commence in 28 days' time is "unlikely to go ahead" and will be cancelled if the Prelude FLNG dispute isn't resolved within 7 days.

The Turnaround crew will now have to source other work because there is not much chance of the PIA ending within 7 days.

There is even less chance that mediation by a private mediator without PIA will resolve the dispute whilst Shell refuse to negotiate or agree to job security, pay levels and the involvement of the FWC in resolving disciplinary matters.

Shells inability to complete the scheduled Turnaround may put Shell's License to Operate at risk, unless NOPSEMA give Shell the green light to gamble with the health and safety of Prelude workers.

Shell reckon they've already struck a deal with the Regulator to continue on without doing the much needed Turnaround.

Once again, NOPSEMA appear to be folding to the demands of big oil and gas companies.

Shell are refusing to bargain for an Enterprise Agreement because they claim their management team are too busy dealing with PIA.

That is clearly bullshit, as the only thing Shell's management team are doing is counting the lost production and profit resulting from their failure to agree to job security provisions which prevent them from outsourcing the jobs of the Prelude crew to low-wage labour hire contractors.

Shell's claim that we are seeking a guarantee of 20 years work for members on the Prelude FLNG shows how little they understand our bargaining claims.

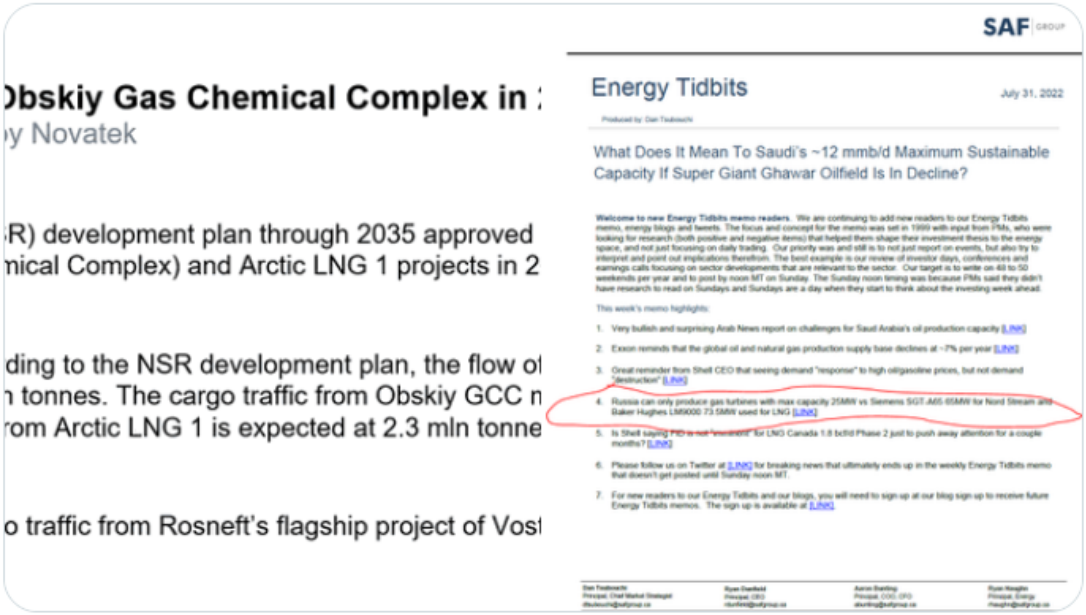
They will never understand our bargaining claims if they don't get back to the bargaining table.

All the while, Europe is ratcheting up the rationing of gas, and Australia's East Coast is facing significant under-supply issues heading into next year.

Shell's handling of the Prelude FLNG EBA is diabolical and the management team responsible for this mess will inevitably be

Dan Tsubouchi @Energy_Tidbits · Aug 4

Game changer for #LNG. Big delays in under construction RUS Arctic LNG-2, was 0.87 bcfd in 23, 0.87 in 24 & 0.87 in 25 for 2.6 bcfd by 26. TASS says now 0.47 bcfd in 23 & "may soar" to 2.76 by 30. See 👇 06/16 thread, 07/31 Energy Tidbits at safgroup.ca/news-insights/. #NatGas #OOTT



Dan Tsubouchi @Energy_Tidbits · Jun 16

1/2. Game Changer for #LNG. 6.2 bcfd RUS LNG is now at risk incl operating 1.3 bcfd Sakhalin-2 LNG & 2.3 bcfd Yamal LNG, and under construction 2.6 bcfd Arctic LNG-2 w/ phase 1 0.87 planned 2023 in service. #OOTT #NatGas

Show this thread

Dan Tsubouchi @Energy_Tidbits · Aug 4

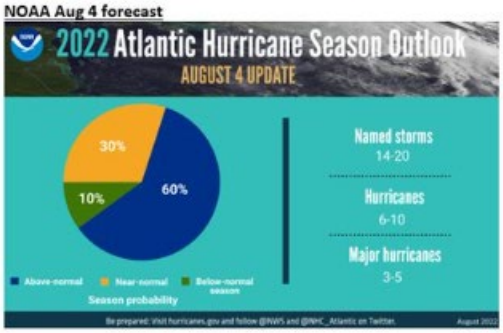
talk about a photo op for the wedding picture. must signal great things for this couple with a double rainbow right by the Bow River in #Canmore. there is probably a pot of gold only a km away for them.

Dan Tsubouchi @Energy_Tidbits · Aug 4

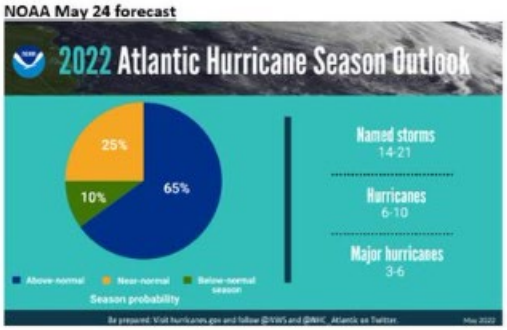
Reminder, just now moving into the Aug 15 thru Oct 15 normal peak season for Atlantic hurricane activity. Updated @NOAA hurricane forecast still calls for above normal hurricane activity, essentially unchanged vs May 24 forecast. #OOTT #NatGas #Oil #LNG

"NOAA still expects above-normal Atlantic hurricane season" https://www.noaa.gov/news-release/noaa-still-expects-above-normal-atlantic-hurricane-season August 4, 2022

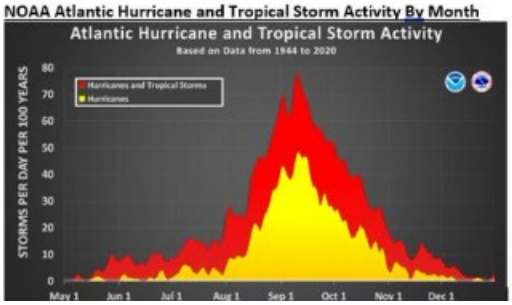
NOAA Aug 4 forecast



NOAA May 24 forecast



NOAA Atlantic Hurricane and Tropical Storm Activity By Month



Dan Tsubouchi @Energy_Tidbits · Aug 4

#Aramco increases differentials to its primary customer market - Asia. Thx @Amena__Bakr. #OOTT

Amena Bakr @Amena__Bakr · Aug 4

Aramco's Sept OSPs #OOTT

Crude Oil (FOB) Differentials (in US$) - SEPTEMBER 2022

UNITED STATES (versus ASCI)

	AUGUST	SEPTEMBER	Change	VS. Light
Extra Light	+7.00	+7.50	+0.50	+1.35
Light	+5.65	+6.15	+0.50	0.00
Medium	+4.95	+5.45	+0.50	-0.70
Heavy	+4.50	+5.00	+0.50	-1.15

North West Europe (versus ICE Brent)

	AUGUST	SEPTEMBER	Change	VS. Light
Extra Light	+8.00	+6.50	-1.50	+1.80
Light	+5.30	+4.70	-0.60	0.00
Medium	+1.80	+2.20	+0.40	-2.50
Heavy	-2.60	-2.20	+0.40	-6.90

FAR EAST (versus Oman/Dubai)

	AUGUST	SEPTEMBER	Change	VS. Light
Super Light	+11.35	+12.15	+0.80	+2.35
Extra Light	+10.65	+10.95	+0.30	+1.15
Light	+9.30	+9.80	+0.50	0.00
Medium	+7.15	+7.75	+0.60	-2.05
Heavy	+5.30	+6.00	+0.70	-3.80

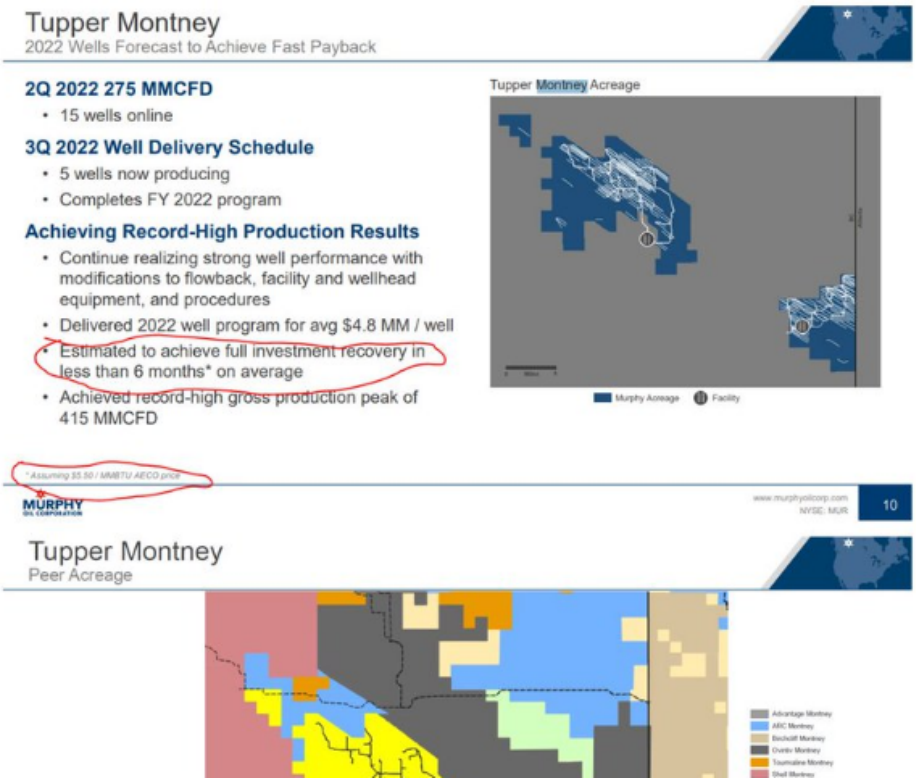
Mediterranean (versus ICE Brent)

	AUGUST	SEPTEMBER	Change	VS. Light
Extra Light	+8.00	+6.50	-1.50	+1.80
Light	+5.10	+4.70	-0.40	0.00
Medium	+1.80	+2.30	+0.50	-2.40

Dan Tsubouchi @Energy_Tidbits · Aug 4

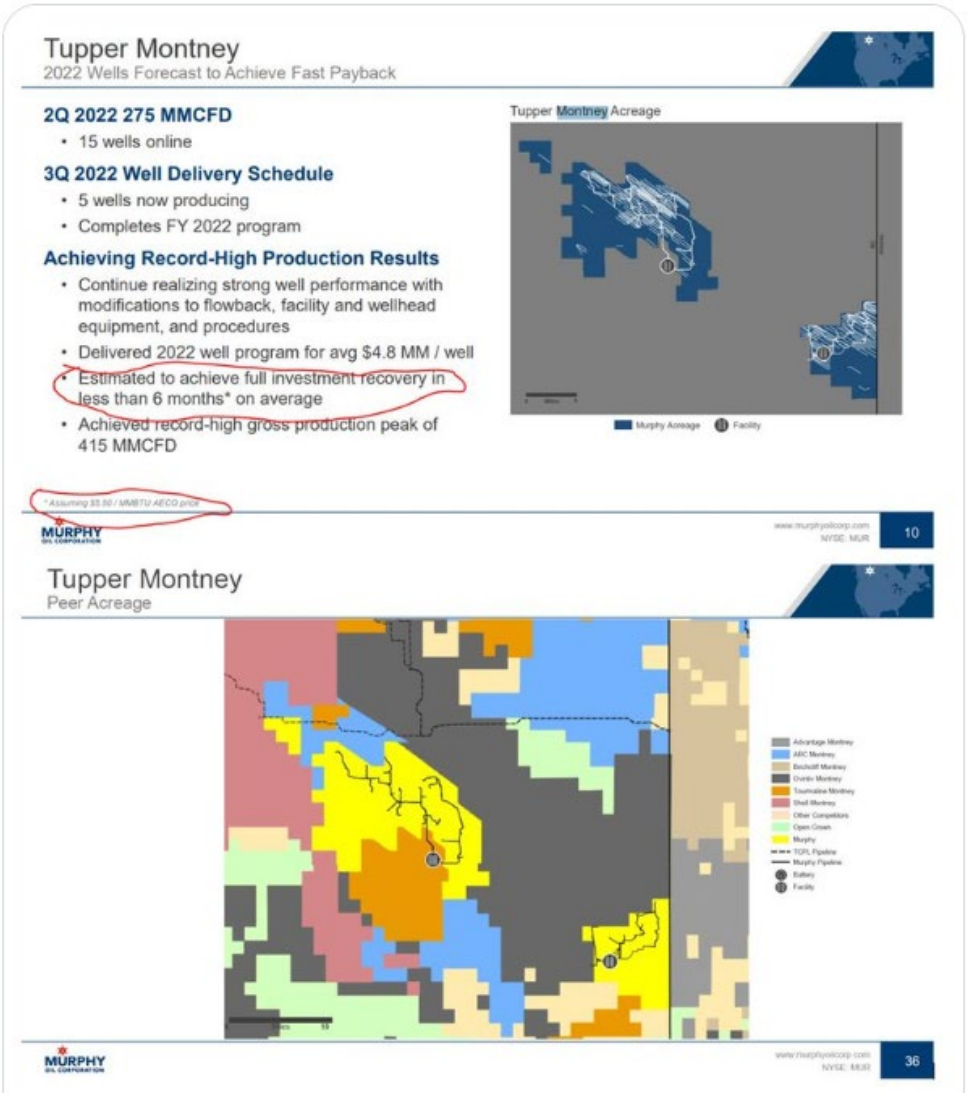
Also this is not just #MurphyOil. Seeing excellent returns from others in #NatGas in BC and Alberta. Also why we are seeing more oil focused companies add #NatGas weighted assets. Great for the Cdn #Oil #NatGas sector. #OOTT

> **Dan Tsubouchi** @Energy_Tidbits · Aug 4
>
> #Montney keeps looking better. New #MurphyOil Q2 slide deck. It's Tupper Montney wells have full investment recovery in <6 mths at $5.50 AECO. Plus Tupper is fairly dry so no big added economic boost from liquids. #OOTT



Dan Tsubouchi @Energy_Tidbits · Aug 4

#Montney keeps looking better. New #MurphyOil Q2 slide deck. It's Tupper Montney wells have full investment recovery in <6 mths at $5.50 AECO. Plus Tupper is fairly dry so no big added economic boost from liquids. #OOTT



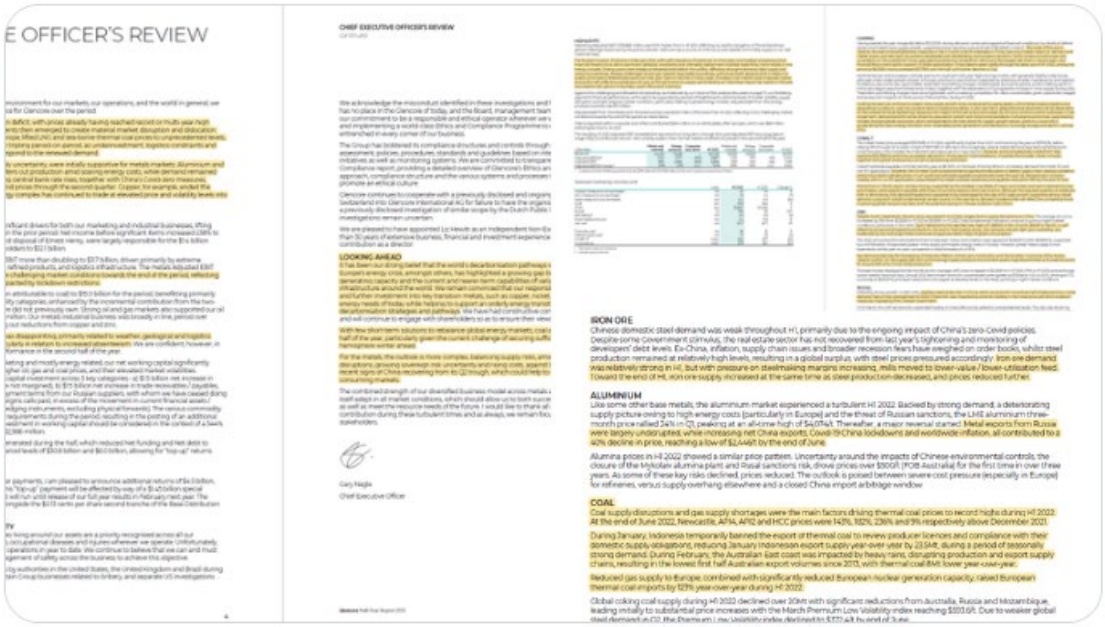
Dan Tsubouchi @Energy_Tidbits · Aug 4

Buckle Up! #Glencore H1. Bullish for #Coal #LNG for H2/22, Also, pre RUS #NatGas #LNG #Oil fundamentals were already strong for 2020s "Energy prices were already at elevated levels before the conflict, reflecting resurgent demand, tight supply and reducing inventories" .. #OOTT

1 2 7

Dan Tsubouchi @Energy_Tidbits · Aug 4

Very bullish post RUS with "growing gap between an overly accelerated decline of fossil fuel base load generating capacity & the current & nearer-term capabilities of variable #RenewableEnergy sources and associated infrastructure around the world" #OOTT #NatGas #LNG #Coal



E OFFICER'S REVIEW

CHIEF EXECUTIVE OFFICER'S REVIEW

LOOKING AHEAD

IRON ORE

ALUMINIUM

COAL

Dan Tsubouchi @Energy_Tidbits · Aug 3

Positive for HH #NatGas price and for EU urgency for #LNG to replace RUS gas supply. #FreeportLNG consent agreement with @PHMSA_DOT. Freeport believes can resume initial operations in early Oct, importantly with delivery ~2 bcf/d, basically at normal volumes! #OOTT

http://www.newsrouter.com/NewsRouter_Uploads/77/Freeport%20LNG%20and%20PHMSA%20Enter%20into%20Consent%20Agreement.pdf

FREEPORT LNG

FREEPORT LNG AND PIPELINE HAZARDOUS MATERIALS SAFETY ADMINISTRATION ENTER INTO CONSENT AGREEMENT

Houston, TX, August 3, 2022 – Freeport LNG Development, L.P. (Freeport LNG) and the Pipeline Hazardous Materials Safety Administration (PHMSA) have entered into a Consent Agreement related to the June 8 incident at Freeport LNG's liquefaction facility. Freeport LNG has a long history of commitment to safety and safe operation and overall, the obligations under the Consent Agreement are intended to ensure that Freeport LNG can safely and confidently resume initial LNG production and thereafter ultimately return to full operation of all liquefaction facilities.

In the near term, the Consent Agreement includes certain corrective measures, many of which are currently underway, that Freeport LNG is to take to obtain PHMSA approval for an initial resumption of LNG production from its liquefaction facility. Freeport LNG continues to believe that it can complete the necessary corrective measures, along with the applicable repair and restoration activities, in order to resume initial operations in early October. Those initial operations are expected to consist of three liquefaction trains, two LNG storage tanks and one LNG loading dock, which the company believes will enable delivery of approximately 2 BCF per day of LNG, enough to support its existing long-term customer agreements. In addition to the repair and replacement of Freeport LNG's physical infrastructure that was damaged in the incident, and as part of the corrective measures under the Consent Agreement, the company is evaluating and advancing initiatives related to training, process safety management, operations and maintenance procedure improvements, and facility inspections.

ABOUT FREEPORT LNG

Freeport LNG is an LNG export company headquartered in Houston, Texas. The company's three train, 15 MTPA liquefaction facility is the seventh largest in the world and second largest in the U.S. Freeport LNG's liquefaction facility is the largest all-electric drive motor plant of its kind in the world, making it the most environmentally sustainable site of its kind. The facility's electric drive motors reduce carbon emissions by over 90% relative to gas turbine-driven liquefaction facilities. Freeport plans to expand by adding a fourth liquefaction train, which has received all regulatory approvals for construction. Freeport was formed in 2002 to develop, own and operate an LNG terminal on Quintana Island, near Freeport, Texas. The terminal started LNG import operations in June 2008 and began LNG export operations in 2019. Further information can be found on Freeport's website at www.freeportlng.com.

Dan Tsubouchi @Energy_Tidbits · Aug 3

Who doesn't love a great map! @EIA shows ~2.9 mmb/d of 2022/23 refinery additions by refinery. China 1.120 mmb/d, Kuwait 0.615 mmb/d, Saudi 0.400 mmb/d, Malyasia 0.300 mmb/d, Oman 0.230 mmb/d, Iraq 0.140 mmb/d & India 0.135 mmb/d. #OOTT

https://www.eia.gov/todayinenergy/detail.php?id=53279
AUGUST 2, 2022

Several refining projects are scheduled in Asia and the Middle East

In Asia and the Middle East, at least nine refinery projects are beginning operations or are scheduled to come online before the end of 2023. At their current planned capacities, they will add 2.9 million barrels per day (b/d) of global refinery capacity once fully operational. In the International Energy Agency's (IEA) June 2022 *Oil Market Report*, the IEA expects net global refining capacity to expand by 1.0 million b/d in 2022 and by an additional 1.6 million b/d in 2023. Net capacity additions reflect total new capacity minus capacity that has closed.

The scheduled expansions follow a period of reduced global refining capacity. Net global capacity declined in 2021 for the first time in 30 years, according to the IEA. The new refinery projects would increase production of refined products, such as gasoline and diesel, and in turn, they might reduce the current high prices for these products.

China's refinery capacity is scheduled to increase significantly this year. The Shenghong Petrochemical facility in Lianyungang has an estimated capacity of 320,000 b/d, and they report that trial crude oil-processing operations began in May 2022. In addition, PetroChina's 400,000 b/d Jieyang refinery is expected to come online in the third quarter of 2022. A planned 400,000 b/d Phase II capacity expansion also began operations earlier this year at Zhejiang Petrochemical Corporation's (ZPC) Rongsheng facility. More information on these expansions is available in our *Country Analysis Executive Summary: China*.

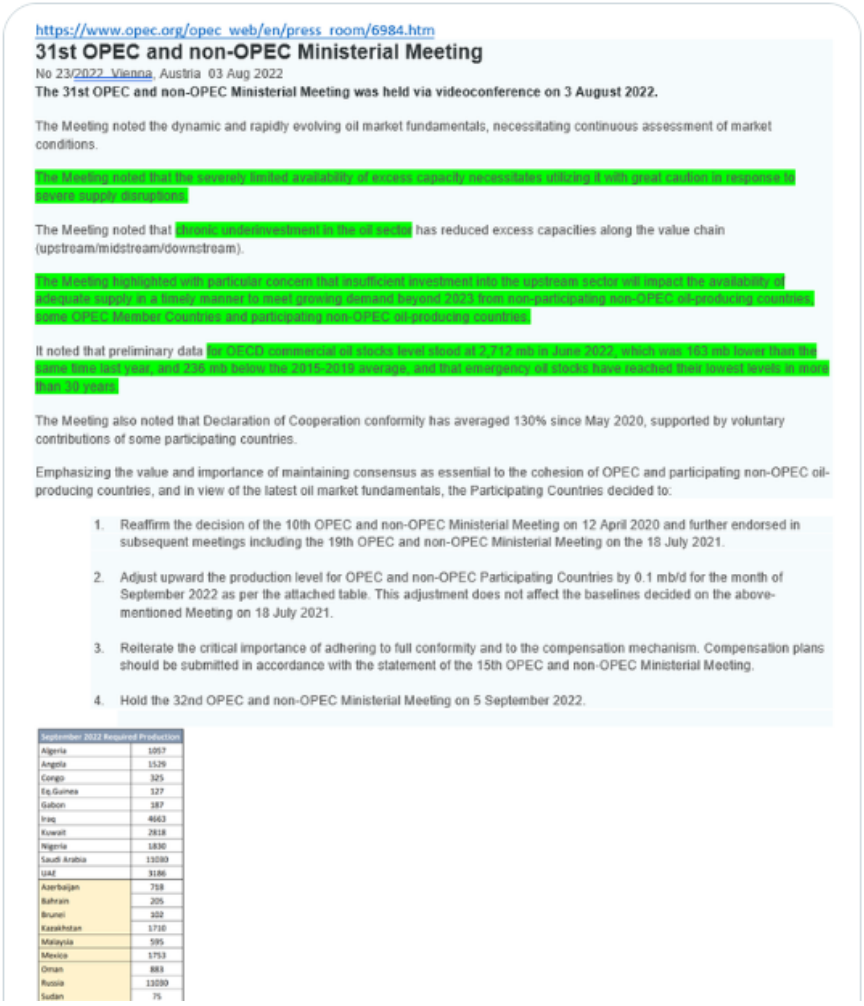
Outside of China, the 300,000 b/d Malaysian Pengerang refinery (also known as the RAPID refinery) restarted in May 2022 after a fire forced the refinery to shut down in March 2020. In India, the Visakha Refinery is undergoing a major expansion, scheduled to add 135,000 b/d by 2023.

New projects in the Middle East are also likely to be an important source of new refining capacity. The 400,000 b/d Jizan refinery in Saudi Arabia reportedly came online in late 2021 and began exporting petroleum products earlier this year. More recently, the 615,000 b/d Al Zour refinery in Kuwait—the largest in the country when it becomes fully operational—began initial operations earlier this year. A new 140,000 b/d refinery is scheduled to come online in Karbala, Iraq, this September, targeting fully operational status by 2023. A new 230,000 b/d refinery is set to come online in Duqm, Oman, likely in early 2023.

These estimates do not necessarily include all ongoing refinery capacity expansions. Moreover, many of these projects have already been subject to major delays, and the possibility of partial starts or continued delays related to logistics, construction, labor, finances, political complications, or other factors may cause these projects to come online later than estimated. Although the potential for project complications and cancellations is always a significant risk, these projects could otherwise account for an increase of nearly 3.0 million

Dan Tsubouchi @Energy_Tidbits · Aug 3

Buckle Up! Must read #OPEC+ warns on #Oil supply. "severely limited availability of excess capacity", insufficient investment will impact adequate supply post 2023 from "some OPEC Member Countries & participating non-OPEC oil-producing countries" & other non-OPEC+ countries #OOTT



https://www.opec.org/opec_web/en/press_room/6984.htm

31st OPEC and non-OPEC Ministerial Meeting

No 23/2022, Vienna, Austria 03 Aug 2022

The 31st OPEC and non-OPEC Ministerial Meeting was held via videoconference on 3 August 2022.

The Meeting noted the dynamic and rapidly evolving oil market fundamentals, necessitating continuous assessment of market conditions.

The Meeting noted that the severely limited availability of excess capacity necessitates utilizing it with great caution in response to severe supply disruptions.

The Meeting noted that chronic underinvestment in the oil sector has reduced excess capacities along the value chain (upstream/midstream/downstream).

The Meeting highlighted with particular concern that insufficient investment into the upstream sector will impact the availability of adequate supply in a timely manner to meet growing demand beyond 2023 from non-participating non-OPEC oil-producing countries, some OPEC Member Countries and participating non-OPEC oil-producing countries.

It noted that preliminary data for OECD commercial oil stocks level stood at 2,712 mb in June 2022, which was 183 mb lower than the same time last year, and 236 mb below the 2015-2019 average, and that emergency oil stocks have reached their lowest levels in more than 30 years.

The Meeting also noted that Declaration of Cooperation conformity has averaged 130% since May 2020, supported by voluntary contributions of some participating countries.

Emphasizing the value and importance of maintaining consensus as essential to the cohesion of OPEC and participating non-OPEC oil-producing countries, and in view of the latest oil market fundamentals, the Participating Countries decided to:

1. Reaffirm the decision of the 10th OPEC and non-OPEC Ministerial Meeting on 12 April 2020 and further endorsed in subsequent meetings including the 19th OPEC and non-OPEC Ministerial Meeting on the 18 July 2021.
2. Adjust upward the production level for OPEC and non-OPEC Participating Countries by 0.1 mb/d for the month of September 2022 as per the attached table. This adjustment does not affect the baselines decided on the above-mentioned Meeting on 18 July 2021.
3. Reiterate the critical importance of adhering to full conformity and to the compensation mechanism. Compensation plans should be submitted in accordance with the statement of the 15th OPEC and non-OPEC Ministerial Meeting.
4. Hold the 32nd OPEC and non-OPEC Ministerial Meeting on 5 September 2022.

September 2022 Required Production	
Algeria	1057
Angola	1529
Congo	325
Eq.Guinea	127
Gabon	187
Iraq	4663
Kuwait	2818
Nigeria	1830
Saudi Arabia	11030
UAE	3186
Azerbaijan	718
Bahrain	205
Brunei	102
Kazakhstan	1710
Malaysia	595
Mexico	1753
Oman	883
Russia	11030
Sudan	75

Dan Tsubouchi @Energy_Tidbits · Aug 2

Hmmm! Would seem to point to some sort of modest #Oil supply increase by #OPEC+ tomorrow? Likely why Saudi has been holding back a little bit from producing at quota. UAE & Saudi are the only members with any real spare capacity. #OOTT

> **Al Arabiya English** @AlArabiya_Eng · Aug 2
>
> The #US State Department approves the sale of 300 Patriot missiles to #SaudiArabia in a deal worth $3.05 billion and another deal worth $2.25 billion to the #UAE for 96 THAAD missile rounds.
>
> english.alarabiya.net/News/gulf/2022...
>
> Show this thread
>
> 
>
>
> GIF

Dan Tsubouchi @Energy_Tidbits · Aug 2

No surprise, crazy high ~$60/mmbtu Dutch TTF #NatGas prices continue to attract any available #LNG cargo to Europe. LNG imports to NW EU & Italy: 7.89 bcfd for week of July 25-31, 8.75 bcfd for July, 9.62 bcfd for YTD July 31. Thx @BloombergNEF team. #OOTT

Excerpt BloombergNEF "LNG Trade Weekly: Spot LNG Volumes To Asia Continue to Dip". Week of July 25-31
Analysts: Daniela Li, Lujia Cao, Kornelija Dauksaite

Weekly performance dashboard

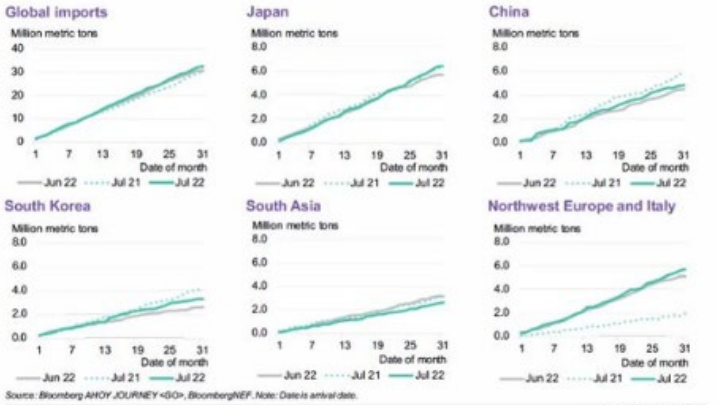
Million metric tons			Week of July 18	Week of July 25	Week-on-week change	Cumulative month July	Year-to-date 2022
Exports		Total Exports	7.25	7.51	0.26	32.16	233.35
	Region	Pacific Basin	2.64	2.65	0.01	11.43	85.84
		Atlantic Basin	2.48	2.67	0.19	11.08	80.38
		Middle East	2.13	2.30	0.17	9.65	67.13
	Market	Qatar	1.45	1.75	0.30	7.27	47.06
		Australia	1.42	1.38	-0.05	6.00	45.95
		US	1.38	1.52	0.14	6.37	48.17
		Russia	0.56	0.56	0.01	2.33	18.92
		Malaysia	0.50	0.48	-0.02	2.27	15.80
		Re-export supply	0.12	0.26	0.14	0.49	2.51
Imports		Total Imports	7.37	6.74	-0.63	32.48	229.32
	Region	JKCT	3.75	3.48	-0.27	16.41	115.32
		South Asia	0.52	0.66	0.14	2.57	19.64
		Southeast Asia	0.42	0.14	-0.28	1.59	10.97
		NW Europe + Italy	1.52	1.15	-0.37	5.65	42.48
		Other Europe	0.58	0.71	0.13	3.42	28.43
		Middle East	0.22	0.19	-0.03	1.01	4.31
		Americas	0.35	0.41	0.06	1.83	8.10
	Market	Japan	1.48	1.67	0.19	6.41	43.00
		South Korea	0.66	0.56	-0.10	3.27	25.68
		China	1.17	0.89	-0.28	4.81	35.17
		Taiwan	0.45	0.37	-0.09	1.91	11.47
		India	0.34	0.45	0.11	1.76	12.34
		Spain	0.23	0.40	0.17	1.64	12.56
		UK	0.20	0.00	-0.20	0.64	10.87
		Belgium	0.20	0.16	-0.04	0.80	4.89
		Kuwait	0.22	0.13	-0.09	0.86	3.78

Source: Bloomberg AHOY JOURNEY <GO>, BloombergNEF. Note: Imports based on arrival dates, exports on departure dates. JKCT is Japan, Korea, Mainland China, Taiwan. Figures are revised on occasion from previous publication.

3 August 2, 2022 BloombergNEF

Cumulative LNG imports

(As of July 31, 2022)



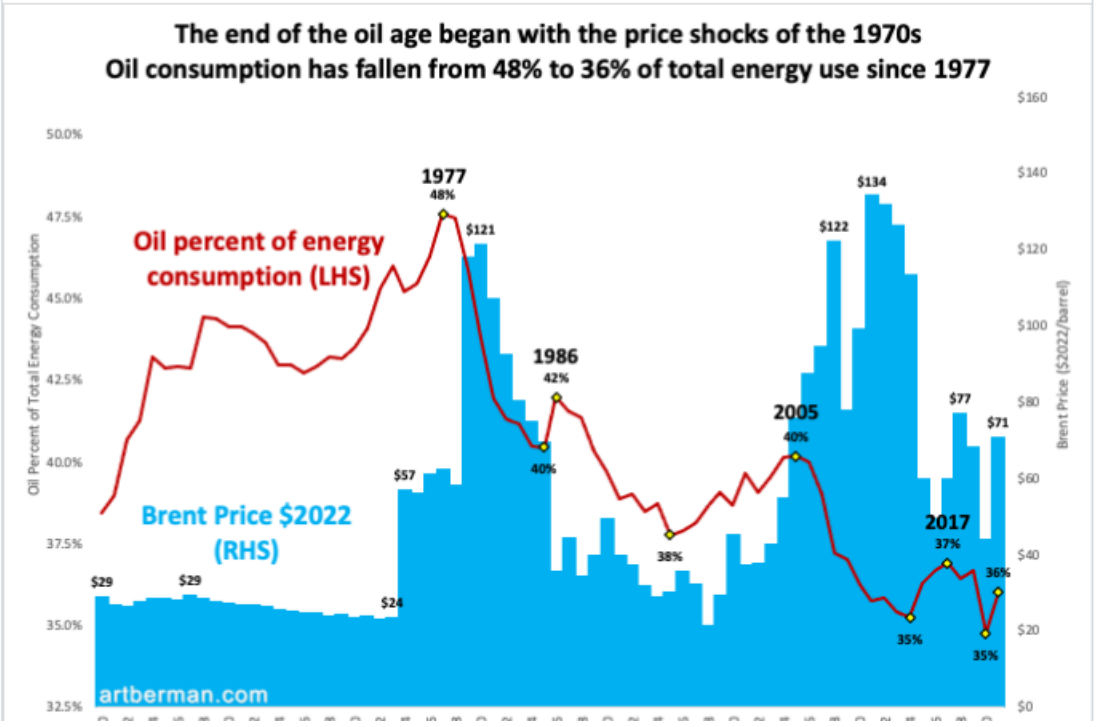
Source: Bloomberg AHOY JOURNEY <GO>, BloombergNEF. Note: Date is arrival date.

4 August 2, 2022 BloombergNEF

Dan Tsubouchi @Energy_Tidbits · Aug 2

No question, #Oil share of #EnergyMix will keep going lower. The question will be how much higher will demand go before peak demand hits? #BP oil consumption 1977 was 59.97 mmbd, Covid 2020 88.75, partial recovery 2021 94.08 mmbd. @IEA WEO stated policies 103 mmbd in 2030. #OOTT

> **Art Berman** @aeberman12 · Aug 2
>
> The end of the oil age began with the price shocks of the 1970s.
>
> Oil consumption has fallen from 48% to 36% of total energy use since 1977.
> #OOTT #oilandgas #WTI #CrudeOil #fintwit #OPEC #Commodities #ClimateActionNow #NetZero #renewables



Dan Tsubouchi @Energy_Tidbits · Aug 2

#OPEC. Nigeria, Angola & Iraq make up 1.131 mmb/d of shortfall vs quota of total OPEC 1.156 mmb/d shortfall. Who else besides Saudi, Kuwait & UAE likely has much in reserve to increase #Oil production in near term? See 👇@business survey for OPEC July production vs quota. #OOTT

Bloomberg Survey For OPEC July Production Vs Quota

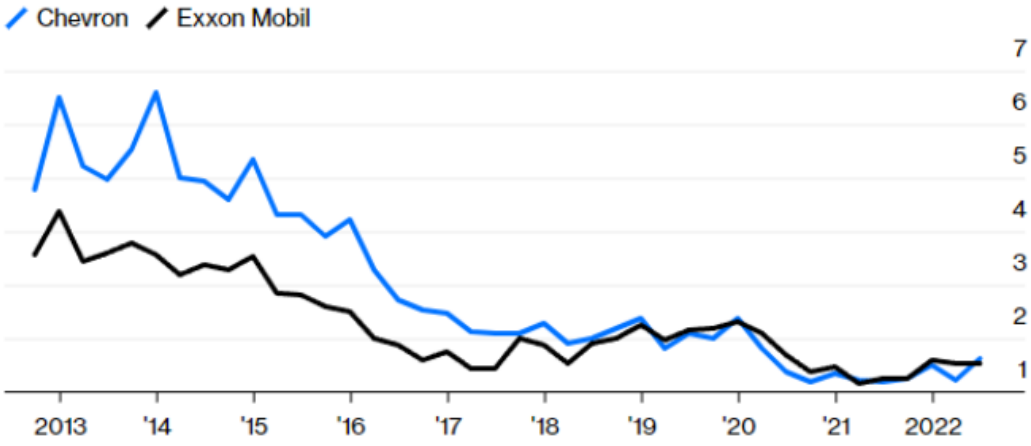
		Bloomberg Survey For July Producion, As of Aug 1, 2022			
OPEC (mmb/d)	July 2022 Quota	July	June	July - Quota	July - June
Algeria	1,039	1,020	1,020	-19	0
Angola	1,502	1,130	1,200	-372	-70
Congo	320	260	270	-60	-10
Equatorial G.	125	100	90	-25	10
Gabon	183	200	190	17	10
Iran	n.a.	2,520	2,550	n.a	-30
Iraq	4,580	4,420	4,420	-160	0
Kuwait	2,768	2,770	2,640	2	130
Libya	n.a.	700	670	n.a	30
Nigeria	1,799	1,200	1,230	-599	-30
Saudi Arabia*	10,833	10,780	10,600	-53	180
UAE	3,127	3,240	3,190	113	50
Venezuela	n.a.	710	710	n.a	0
Total OPEC	26,276	29,050	28,780	-1,156	270

Source: Bloomberg, OPEC

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

Dan Tsubouchi @Energy_Tidbits · Aug 2

Buckle up! Reminds why #Oil #NatGas look good thru 2020s. Blame Russia, blame whatever.Big ramp in #Wind #Solar, but not eliminating #FossilFuels as quickly (at all yet?) as #EnergyTransition plans. Yrs of underinvestment can't be fixed quickly. Thx @liamdenning @NatBullard #OOTT

> **Nat Bullard** @NatBullard · Aug 1
>
> This is a pretty extraordinary chart from @liamdenning: Chevron and Exxon Mobil now reinvest about the same amount of money as they return shareholders - last time oil was $100+ a barrel, it was $4-5 reinvested per $1 dividends bloomberg.com/opinion/articl...
>
> **Chart of the day**
>
> **Big Oil's Changed Call On Cash**
>
> Chevron and Exxon now reinvest only about a dollar for every dollar they pay out in dividends, far below what they used to spend
>
> 
>
>
> Source: Bloomberg, Chevron, Exxon
> Note: Ratio of capital expenditure to dividends paid, quarterly.

Dan Tsubouchi @Energy_Tidbits · Aug 2

Shouldn't look to @bp_plc to drive any big increase in overall US #Oil #NatGas production. #BP Q2 Lower 48. Liquids +21,000 b/d YoY to 127,000 b/d. #NatGas +0.174 bcf/d YoY to 1.145 bcf/d. Rigs +1 YoY to 9 rigs (3 Haynesville, 4, Eagle Ford, 2 Permian). #OOTT

bpx energy

The bpx energy business comprises bp's onshore oil and gas operations in the 'Lower 48' states of the US. The business has significant activities producing hydrocarbons with primary focus on developing unconventional resources in Texas.

	Second quarter 2022	First quarter 2022	Second quarter 2021	First half 2022	First half 2021
Production (net of royalties)[a]					
Liquids[b] (mb/d)	**127**	120	106	**124**	104
Natural gas (mmcf/d)	**1,145**	1,101	971	**1,123**	948
Total hydrocarbons[c] (mboe/d)	**324**	310	273	**317**	268
Average realizations					
Total liquids ($/bbl)	**77.93**	65.75	44.84	**72.03**	42.35
Natural gas ($/mcf)	**6.25**	3.90	3.16	**5.10**	3.37
Total hydrocarbons ($/boe)	**52.57**	39.35	28.66	**46.15**	28.49
Production costs per boe (excluding rationalization costs)[d] ($/boe)	**8.59**	9.35	8.15	**8.96**	9.03
Capital expenditure on a cash basis ($ million)	**471**	303	270	**775**	438
Average number of bpx energy-operated rigs per basin for the period					
Haynesville	**3**	3	2	**3**	3
Eagle Ford	**4**	4	4	**4**	4
Permian	**2**	2	2	**2**	2
Average number of rigs for the period	**9**	9	8	**9**	9

	Estimated net proved reserves[e] at 31 December 2021		
	Developed	Undeveloped	**Total**
Crude oil[f] (million barrels)	113	244	**356**
Natural gas liquids (million barrels)	93	176	**269**
Natural gas (billion cubic feet)	2,011	3,292	**5,303**
Total net proved reserves on an oil equivalent basis (million barrels of oil equivalent)	552	987	**1,539**

(a) Reflects impacts of divestments.
(b) Liquids comprise crude oil, condensate and natural gas liquids.
(c) Hydrocarbons comprise liquids and natural gas. Natural gas is converted to oil equivalent at 5.8 billion cubic feet = 1 million barrels.
(d) Production costs do not include depreciation, depletion and amortisation, ad valorem and severance taxes and certain other costs.
(e) Because of rounding, some totals may not agree exactly with the sum of their component parts.
(f) Crude oil includes condensate.

Dan Tsubouchi @Energy_Tidbits · Aug 2

ICYMI, here is the "Joint Communiqué on the Establishment of Diplomatic Relations between the People's Republic of China and the United States of America (December 16, 1978)". One China policy, US to maintain "unofficial relations" with Taiwan. #OOTT

https://www.mfa.gov.cn/ce/ceus/eng/zmgx/zywj/t36256.htm

Joint Communiqué on the Establishment of Diplomatic Relations between the People's Republic of China and the United States of America (December 16, 1978)

December 16, 1978

The People's Republic of China and the United States of America have agreed to recognize each other and to establish diplomatic relations as of January 1, 1979.

The United States of America recognizes the Government of the People's Republic of China as the sole legal Government of China. Within this context, the people of the United States will maintain cultural, commercial, and other unofficial relations with the people of Taiwan.

The People's Republic of China and the United States of America reaffirm the principles agreed on by the two sides in the Shanghai Communique and emphasize once again that:

--Both wish to reduce the danger of international military conflict.

--Neither should seek hegemony in the Asia-Pacific region or in any other region of the world and each is opposed to efforts by any other country or group of countries to establish such hegemony.

Neither is prepared to negotiate on behalf of any third party or to enter into agreements or understandings with the other directed at other states.

--The Government of the United States of America acknowledges the Chinese position that there is but one China and Taiwan is part of China.

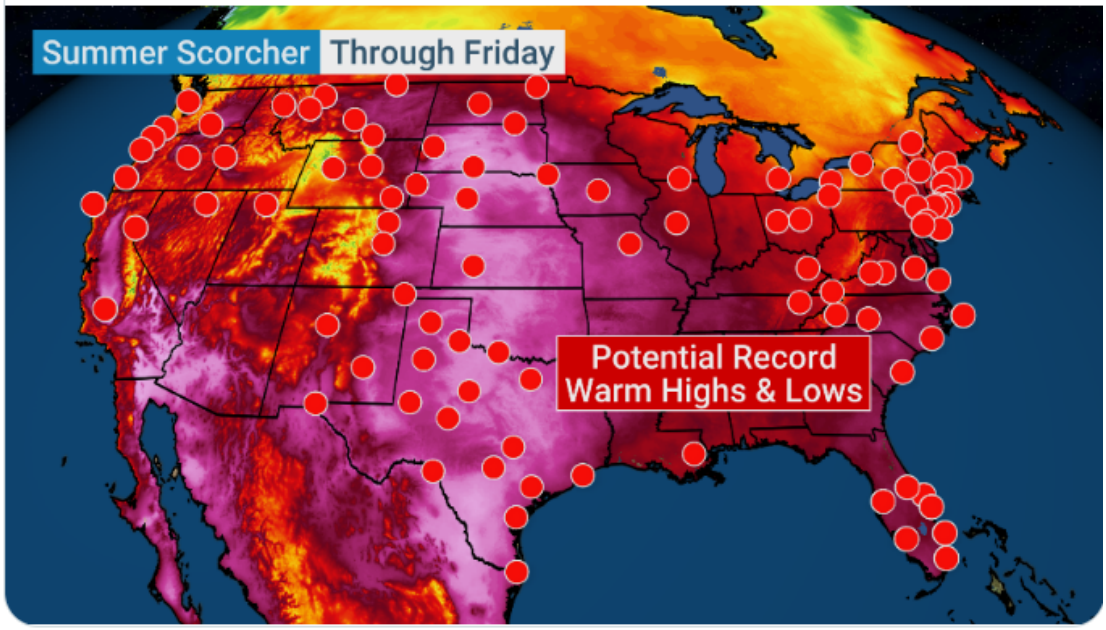
--Both believe that normalization of Sino-American relations is not only in the interest of the Chinese and American peoples but also contributes to the cause of peace in Asia and the world.

The People's Republic of China and the United States of America will exchange Ambassadors and establish Embassies on March 1, 1979 .

Dan Tsubouchi @Energy_Tidbits · Aug 1

US continues its hot summer. Continued weather support for #NatGas demand. HH is $8.20/mmbtu. Map doesn't show Canada, but Calgary hit 32c and is still 31c at 6:10pm MT. #OOTT

> **The Weather Channel** @weatherchannel · Aug 1
>
> Happy first week of August... 🥵
>
> 32 million of you will have highs in the triple digits tomorrow, and record temps are possible in cities across the country this week. Catch TWC for your summer forecast!

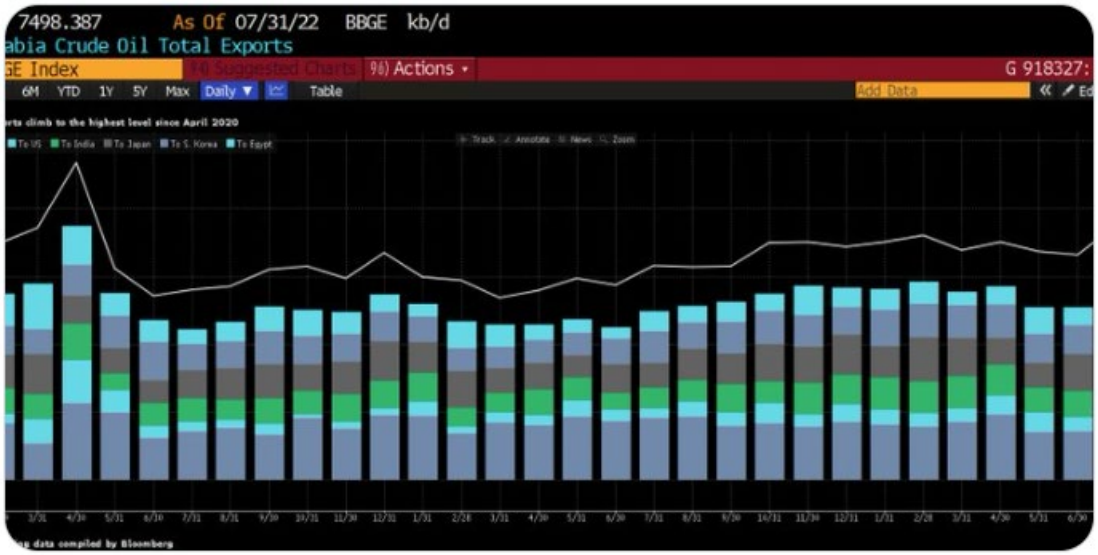


Dan Tsubouchi @Energy_Tidbits · Aug 1

great holiday monday in #Calgary. sunny and 28c. Slow moving Elbow River. saw these people stopped for a bit and had to look to see if they were friends of ours wanting a cold drink. it's a busy rafting day

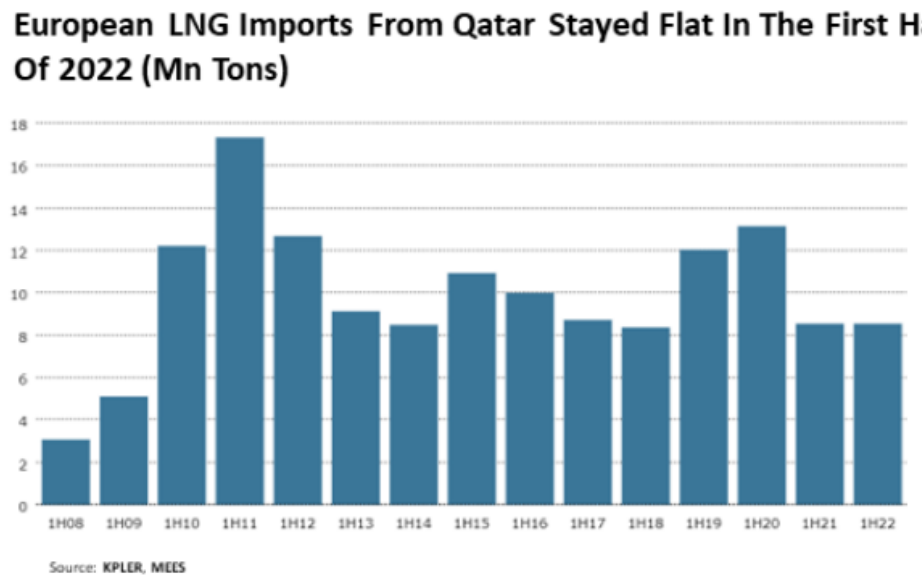
Dan Tsubouchi @Energy_Tidbits · Aug 1

Negative to #Oil. Tanker-tracking data compiled by @business saw observed seaborne shipments from Saudi Arabia were ~7.5 mmb/d in July vs a revised ~6.6 mmb/d in June. Thx @bwingfield. #OOTT



Dan Tsubouchi @Energy_Tidbits · Aug 1

Good reminder if Germany/EU wants reliable #LNG supply from @qatarenergy, it will need to do long term contracts with destination clauses (ie. cargos can't be redirected) especially with LNG supply crunch for 2020s. Thx @Jamie_Ingram @MeesEnergy. #OOTT #NatGas

> **Jamie Ingram** @Jamie_Ingram · Aug 1
>
> Amid Europe's gas crunch governments have to realise that there's no outside help coming. US LNG can't replace Russian gas, flows from Qatar to Europe have remained flat, and Algeria gas exports have dropped. #OOTT #ONGT
> @MeesEnergy: bit.ly/3BxKoxh
>
> 
>

Dan Tsubouchi @Energy_Tidbits · Jul 31

China Caixin PMI for July 50.4 vs Est 51.5 & June 51.7. "However, overall growth momentum softened since June amid slower upturns in output and total new work." Thx @IHSMarkitPMI. #OOTT

PMI

Caixin China General Manufacturing PMI™

Business conditions improve marginally in July

China General Manufacturing PMI

Key findings

Softer increases in output and new orders

Employment falls at quicker pace

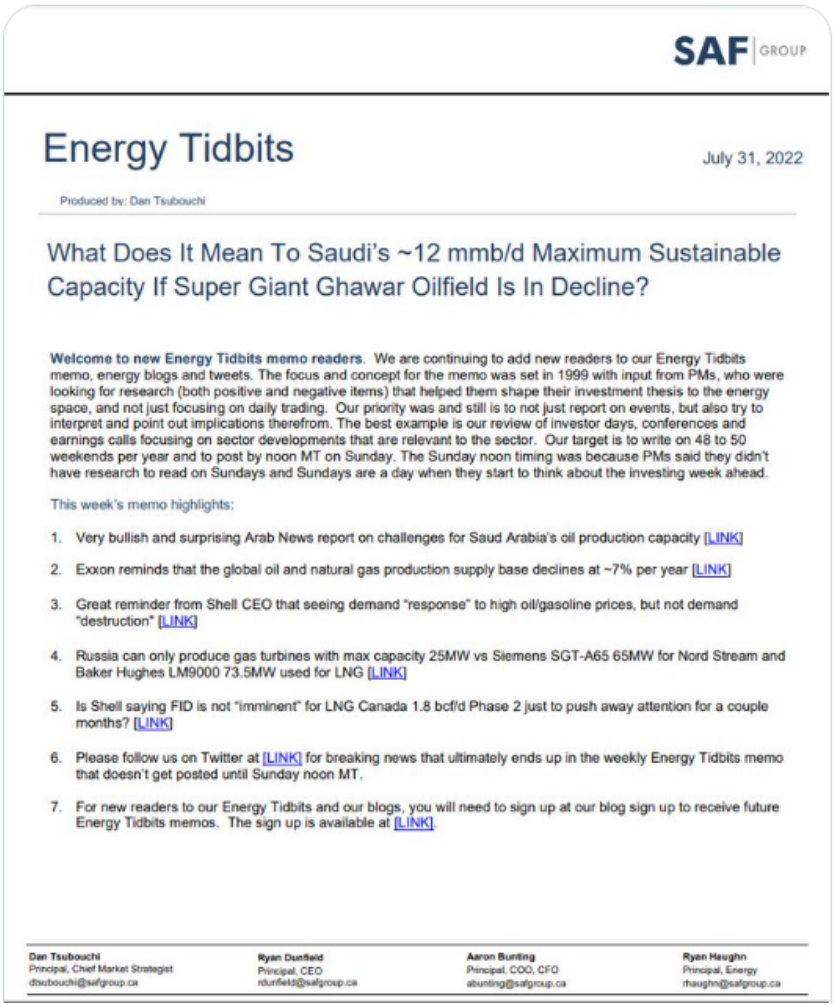
Input cost inflation slows notably, prices charged fall again

New Export Orders Index

Employment Index

Dan Tsubouchi @Energy_Tidbits · Jul 31

Our weekly SAF July 31, 2022 Energy Tidbits memo is posted on SAF Group website. this 61-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

July 31, 2022

Produced by: Dan Tsubouchi

What Does It Mean To Saudi's ~12 mmb/d Maximum Sustainable Capacity If Super Giant Ghawar Oilfield Is In Decline?

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. Our target is to write on 48 to 50 weekends per year and to post by noon MT on Sunday. The Sunday noon timing was because PMs said they didn't have research to read on Sundays and Sundays are a day when they start to think about the investing week ahead.

This week's memo highlights:

1. Very bullish and surprising Arab News report on challenges for Saud Arabia's oil production capacity [LINK]
2. Exxon reminds that the global oil and natural gas production supply base declines at ~7% per year [LINK]
3. Great reminder from Shell CEO that seeing demand "response" to high oil/gasoline prices, but not demand "destruction" [LINK]
4. Russia can only produce gas turbines with max capacity 25MW vs Siemens SGT-A65 65MW for Nord Stream and Baker Hughes LM9000 73.5MW used for LNG [LINK]
5. Is Shell saying FID is not "imminent" for LNG Canada 1.8 bcf/d Phase 2 just to push away attention for a couple months? [LINK]
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].

Dan Tsubouchi
Principal, Chief Market Strategist
dtsubouchi@safgroup.ca

Ryan Dunfield
Principal, CEO
rdunfield@safgroup.ca

Aaron Bunting
Principal, COO, CFO
abunting@safgroup.ca

Ryan Haughn
Principal, Energy
rhaughn@safgroup.ca