Energy Tidbits

Shell Working Hard Right Now/Progressing LNG Canada Phase 2 FID Hard Right Now, But Don't Think Will Come This Year

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February 19, 2023

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AMERICAN GAS ASSOCIATION
Interoffice Memorandum

TO: Distribution Date: **February 13, 2023**

FROM: Paul Pierson

SUBJECT: Weekly Heating Degree Day Data

HEATING DEGREE DAY SUMMARY

For the week ending February 11, the weather in the United States was 12.9 percent warmer than last year and 19.5 percent warmer than normal. All regions experienced warmer temperatures than last year except the Mountain and Pacific regions. All regions experienced warmer temperatures than normal except the Mountain and Pacific regions. For the month of January, the weather in the United States was 19.1 percent warmer than last year and 18.1 percent warmer than normal.

WEEKLY COMPARISON

Week Ending	2022/ 2023	2021/ 2022	Normal	% Change: 22/23 from 21/22		% Change: 22/23 from Normal	
10/01/22	41	20	36	105.0	Colder	13.9	Colder
10/08/22	50	15	48	233.3	Colder	4.2	Colder
10/15/22	56	30	61	86.7	Colder	8.2	Warmer
10/22/22	89	58	76	53.4	Colder	17.1	Colder
10/29/22	75	77	91	2.6	Warmer	17.6	Warmer
11/05/22	72	111	106	35.1	Warmer	32.1	Warmer
11/12/22	97	95	122	2.1	Colder	20.5	Warmer
11/19/22	194	127	139	52.8	Colder	39.6	Colder
11/26/22	161	152	155	5.9	Colder	3.9	Colder
12/03/22	165	137	170	20.4	Colder	2.9	Warmer
12/10/22	163	161	185	1.2	Colder	11.9	Warmer
12/17/22	188	139	197	35.3	Colder	4.6	Warmer
12/24/22	254	183	209	38.8	Colder	21.5	Colder
12/31/22	200	156	218	28.2	Colder	8.3	Warmer
01/07/23	152	214	223	29.0	Warmer	31.8	Warmer
01/14/23	179	208	226	13.9	Warmer	20.8	Warmer
01/21/23	178	229	225	22.3	Warmer	20.9	Warmer
01/28/23	202	248	222	18.5	Warmer	9.0	Warmer
02/04/23	240	231	217	3.9	Colder	10.6	Colder
02/11/23	169	194	210	12.9	Warmer	19.5	Warmer
Cumulative	**2925**	**2785**	**3136**	**5.0**	**Colder**	**6.7**	**Warmer**

MONTHLY COMPARISON

Month Ending	2022/ 2023	2021/ 2022	Normal	% Change: 22/23 from 21/22		% Change: 22/23 from Normal	
September	66	42	87	57.1	Colder	24.1	Warmer
October	299	205	310	45.9	Colder	3.5	Warmer
November	588	677	676	13.1	Warmer	13.0	Warmer
December	883	688	884	28.3	Colder	0.1	Warmer
January	811	1003	990	19.1	Warmer	18.1	Warmer

HEATING DEGREE DAYS BY CENSUS REGION FOR THE WEEK ENDING February 11, 2023

Region	2022/ 2023	2021/ 2022	Normal	% Change: 22/23 from 21/22		% Change: 22/23 from Normal	
New England	217	249	268	12.9	Warmer	19.0	Warmer
Middle Atlantic	197	242	256	18.6	Warmer	23.0	Warmer
E N Central	210	270	279	22.2	Warmer	24.7	Warmer
W N Central	233	253	287	7.9	Warmer	18.8	Warmer
South Atlantic	112	168	170	33.3	Warmer	34.1	Warmer
E S Central	111	175	169	36.6	Warmer	34.3	Warmer
W S Central	97	130	118	25.4	Warmer	17.8	Warmer
Mountain	222	196	211	13.3	Colder	5.2	Colder
Pacific	112	63	108	77.8	Colder	3.7	Colder
United States	**169**	**194**	**210**	**12.9**	**Warmer**	**19.5**	**Warmer**

CUMULATIVE HEATING DEGREE DAYS BY CENSUS REGION

Region	2022/ 2023	2021/ 2022	Normal	% Change: 22/23 from 21/22		% Change: 22/23 from Normal	
New England	3324	3528	3876	5.8	Warmer	14.2	Warmer
Middle Atlantic	3185	3254	3657	2.1	Warmer	12.9	Warmer
E N Central	3719	3676	4111	1.2	Colder	9.5	Warmer
W N Central	4243	3925	4407	8.1	Colder	3.7	Warmer
South Atlantic	2198	2139	2453	2.8	Colder	10.4	Warmer
E S Central	2229	2167	2510	2.9	Colder	11.2	Warmer
W S Central	1634	1355	1738	20.6	Colder	6.0	Warmer
Mountain	3686	3170	3554	16.3	Colder	3.7	Colder
Pacific	1901	1642	1773	15.8	Colder	7.2	Colder
United States	**2925**	**2785**	**3136**	**5.0**	**Colder**	**6.7**	**Warmer**

The regional degree day statistics stated in this memo are weighted by gas home heating customers instead of by population.
A heating degree day is a measure of the coldness of the weather experienced, based on the extent to which the daily mean temperature falls below 65 degrees Fahrenheit. A daily mean temperature represents the sum of the high and low reading, divided by two.
Source: U.S. Department of Commerce, National Oceanic and Atmospheric Administration

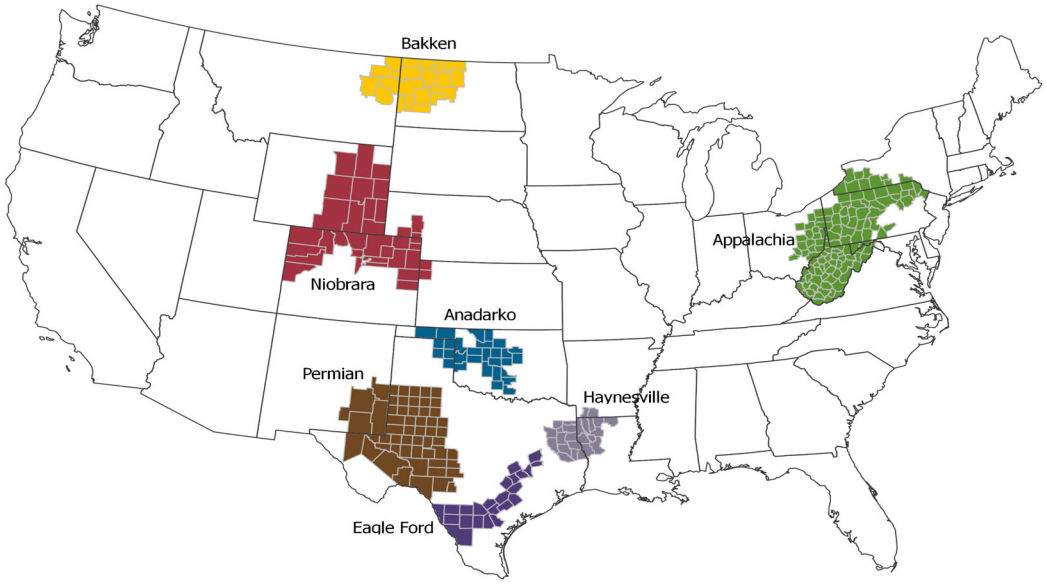
Independent Statistics & Analysis

U.S. Energy Information Administration

February 2023

Drilling Productivity Report

For key tight oil and shale gas regions



Note:

The DPR rig productivity metric *new-well oil/gas production per rig* can become unstable during periods of rapid decreases or increases in the number of active rigs and well completions. The metric uses a fixed ratio of estimated total production from new wells divided by the region's monthly rig count, lagged by two months. The metric does not represent new-well oil/natural gas production per newly completed well.

The DPR metric *legacy oil/gas production change* can become unstable during periods of rapid decreases or increases in the volume of well production curtailments or shut-ins. This effect has been observed during winter weather freeze-offs, extreme flooding events, and the 2020 global oil demand contraction. The DPR methodology involves applying smoothing techniques to most of the data series because of inherent noise in the data.

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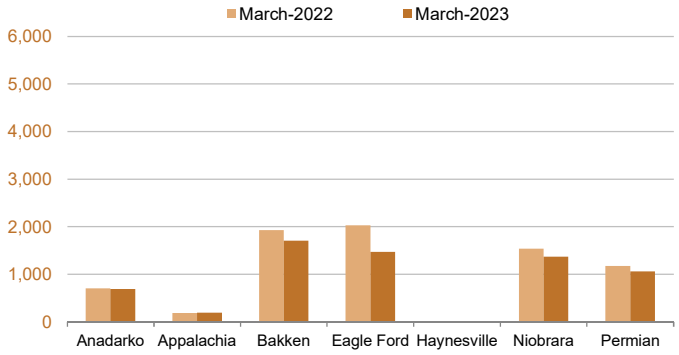
Year-over-year summary

Drilling Productivity Report

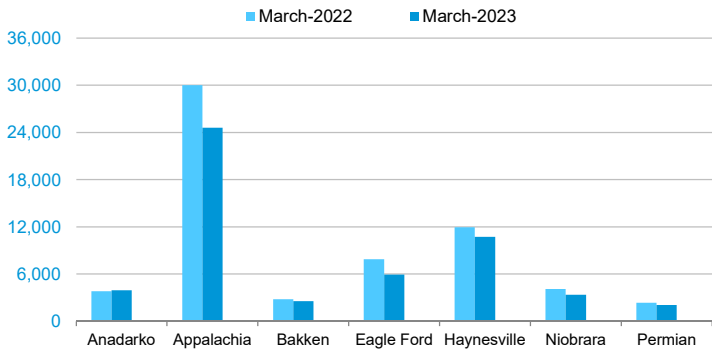
February 2023

drilling data through January
projected production through March

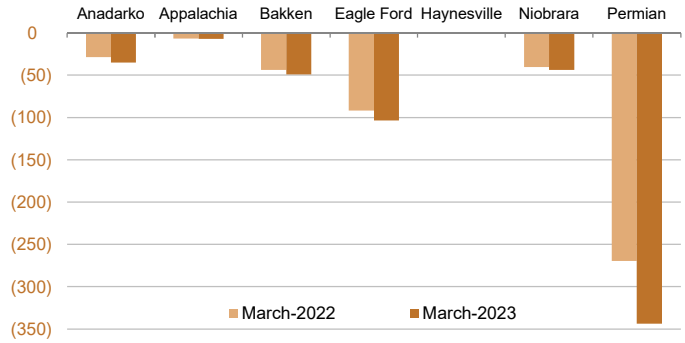
New-well oil production per rig
barrels/day



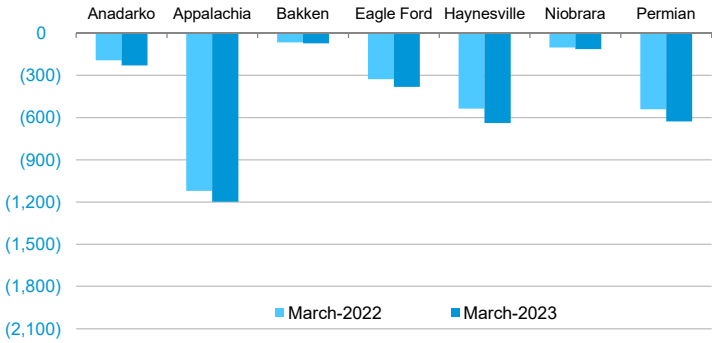
New-well gas production per rig
thousand cubic feet/day



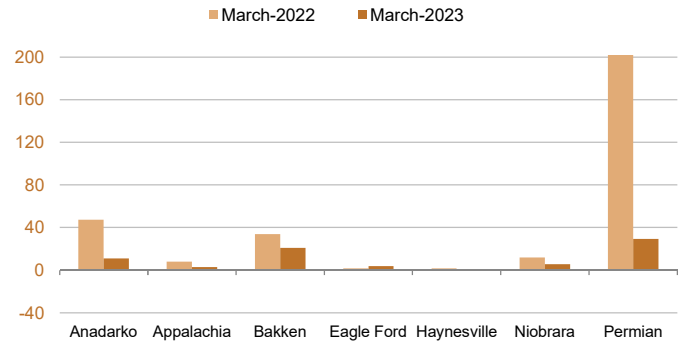
Legacy oil production change
thousand barrels/day



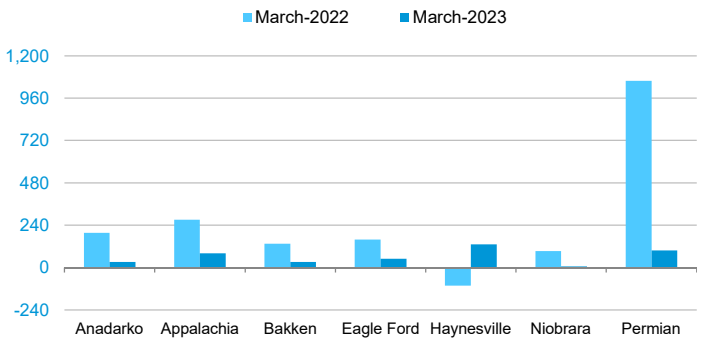
Legacy gas production change
million cubic feet/day



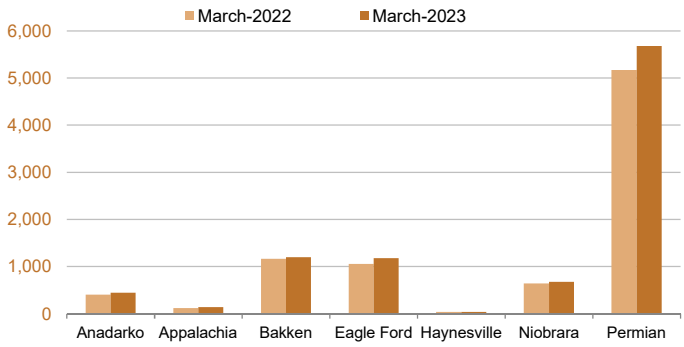
Indicated monthly change in oil production (Mar vs. Feb)
thousand barrels/day



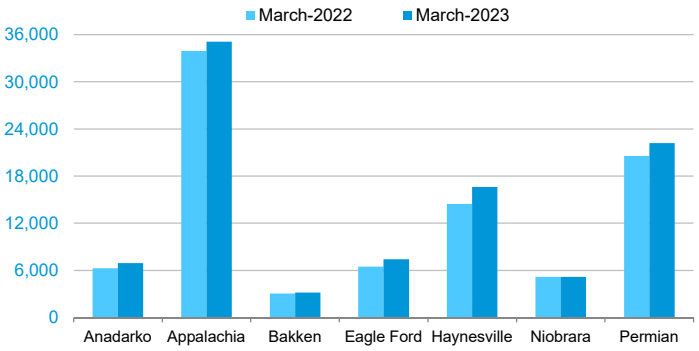
Indicated monthly change in gas production (Mar vs. Feb)
million cubic feet/day



Oil production
thousand barrels/day



Natural gas production
million cubic feet/day



Anadarko Region
Drilling Productivity Report

February 2023

drilling data through January
projected production through March

Oil +1
barrels/day
month over month

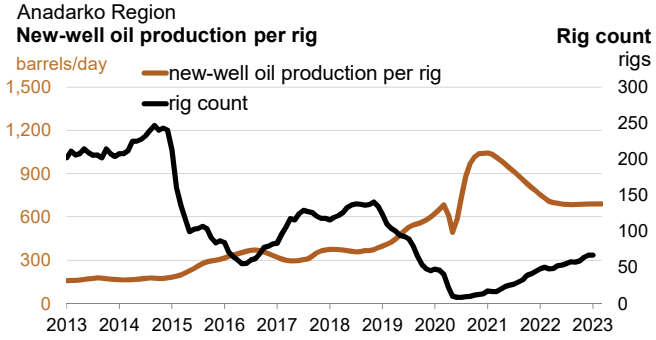
691 *March*
690 *February*
barrels/day

Monthly additions from one average rig

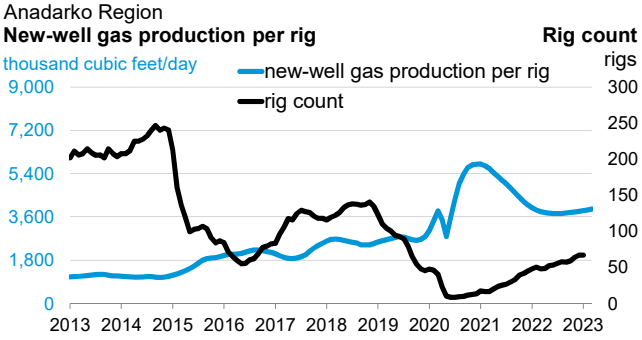
March **3,927**
February **3,892**
thousand cubic feet/day

Gas +35
thousand cubic feet/day
month over month

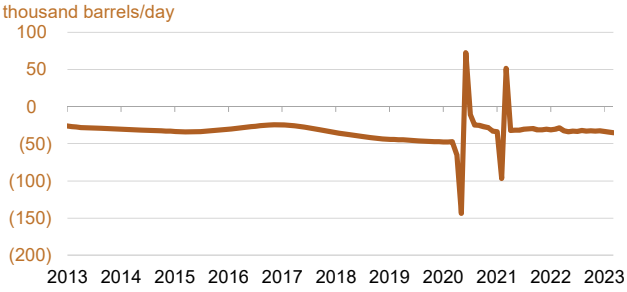
Anadarko Region
New-well oil production per rig



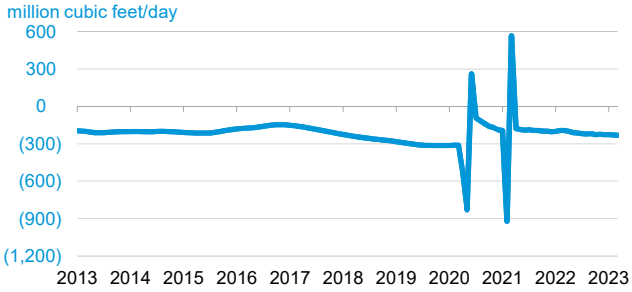
Anadarko Region
New-well gas production per rig



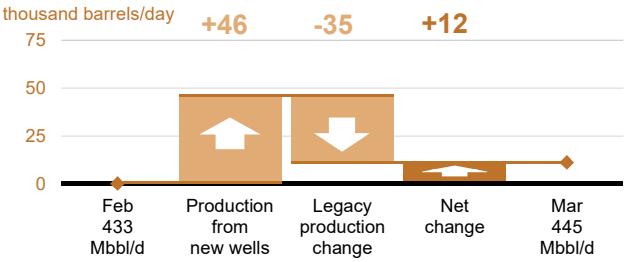
Anadarko Region
Legacy oil production change



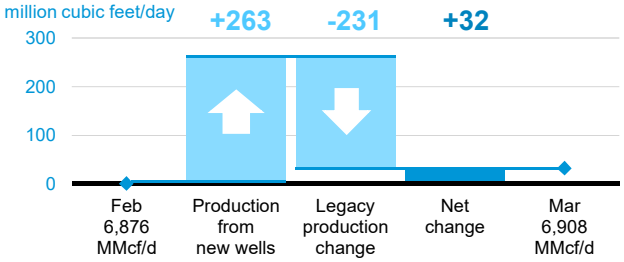
Anadarko Region
Legacy gas production change



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

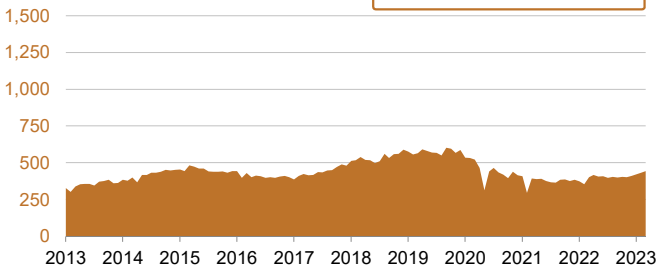


Anadarko Region
Indicated change in natural gas production (Mar vs. Feb)



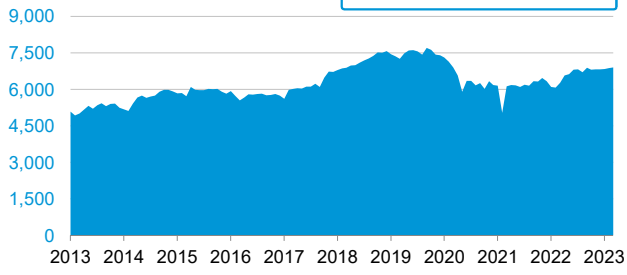
Anadarko Region
Oil production

Oil +12
thousand barrels/day
month over month



Anadarko Region
Natural gas production

Gas +32
million cubic feet/day
month over month



Appalachia Region
Drilling Productivity Report

February 2023

drilling data through January
projected production through March

Oil 0 barrels/day month over month

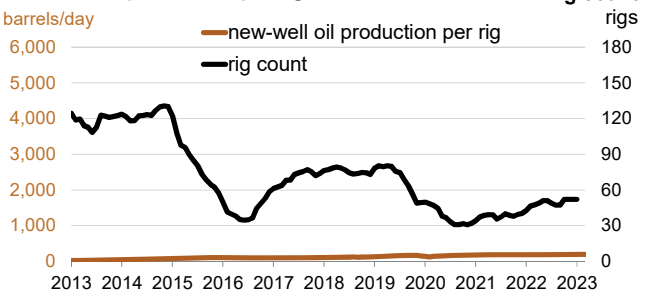
191 *March*
191 *February*
barrels/day

Monthly additions from one average rig

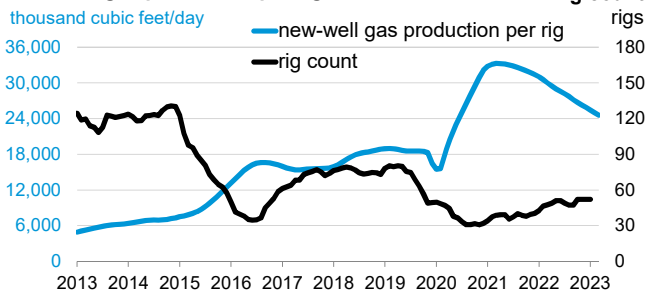
March **24,578**
February **25,004**
thousand cubic feet/day

Gas -426 thousand cubic feet/day month over month

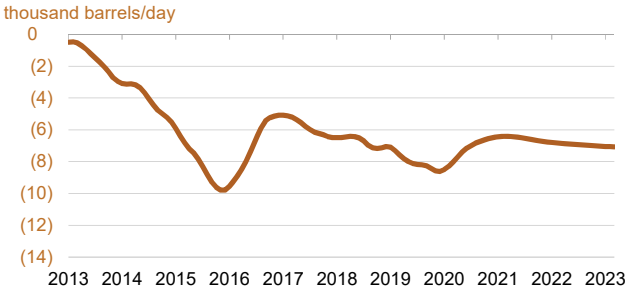
Appalachia Region
New-well oil production per rig



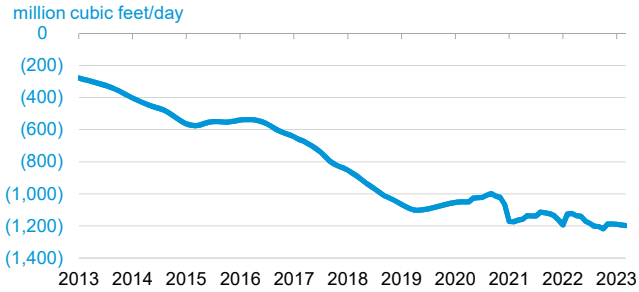
Appalachia Region
New-well gas production per rig



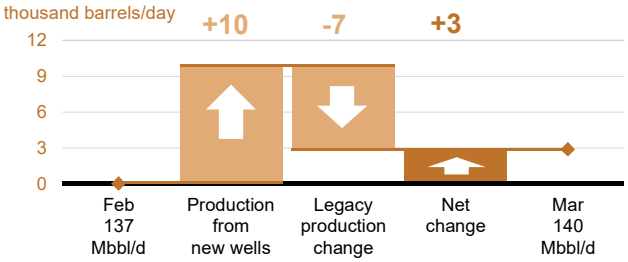
Appalachia Region
Legacy oil production change



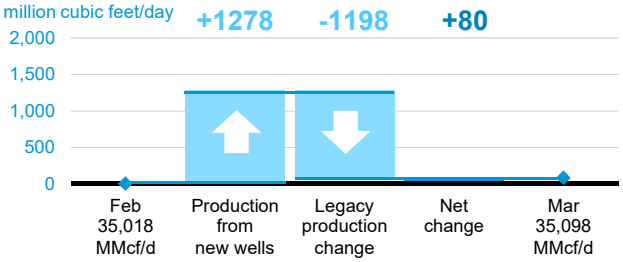
Appalachia Region
Legacy gas production change



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

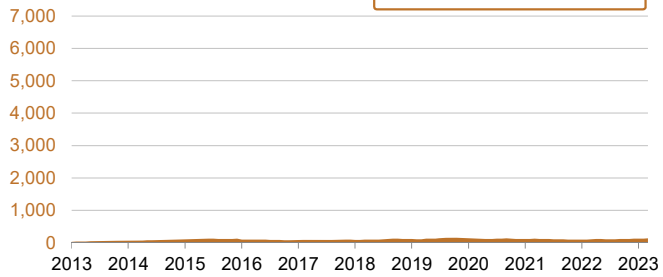


Appalachia Region
Indicated change in natural gas production (Mar vs. Feb)



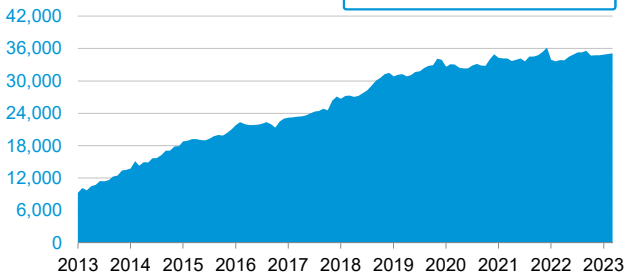
Appalachia Region
Oil production

Oil +3 thousand barrels/day month over month



Appalachia Region
Natural gas production

Gas +80 million cubic feet/day month over month



Bakken Region
Drilling Productivity Report

February 2023

drilling data through January
projected production through March

Oil +1
barrels/day
month over month

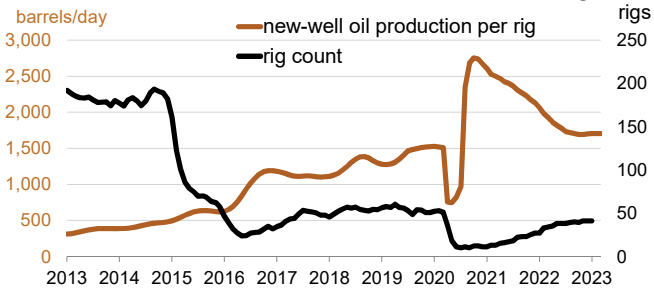
1,705 *March*
1,704 *February*
barrels/day

Monthly additions from one average rig

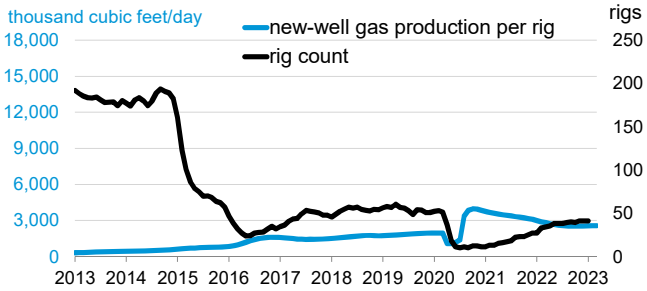
March **2,557**
February **2,550**
thousand cubic feet/day

Gas +7
thousand cubic feet/day
month over month

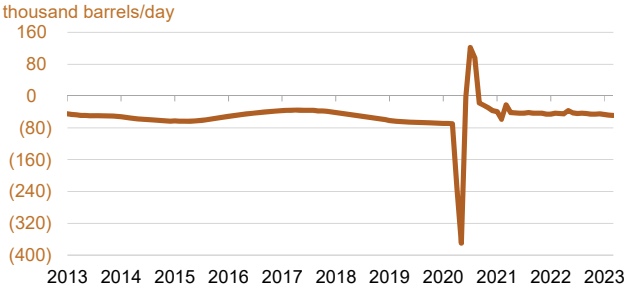
Bakken Region
New-well oil production per rig



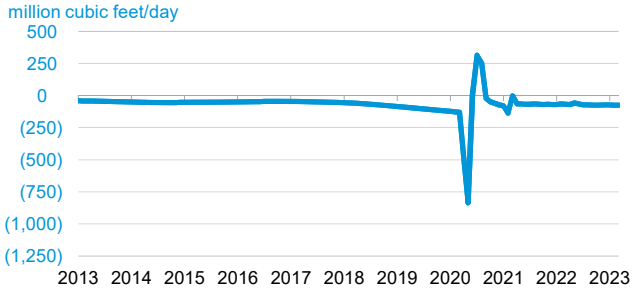
Bakken Region
New-well gas production per rig



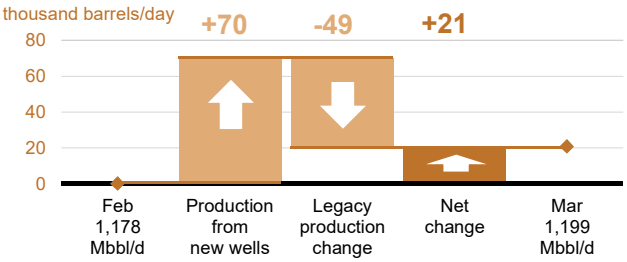
Bakken Region
Legacy oil production change



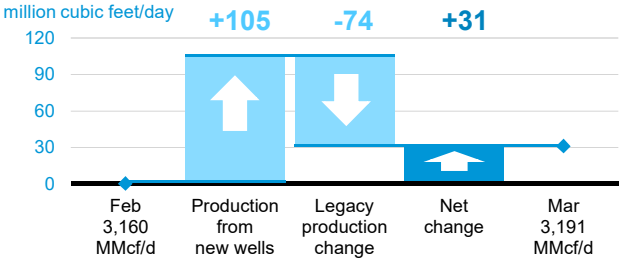
Bakken Region
Legacy gas production change



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

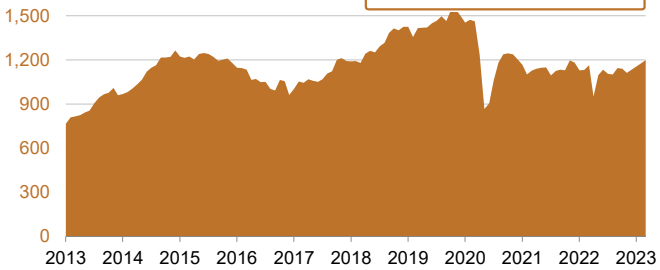


Bakken Region
Indicated change in natural gas production (Mar vs. Feb)



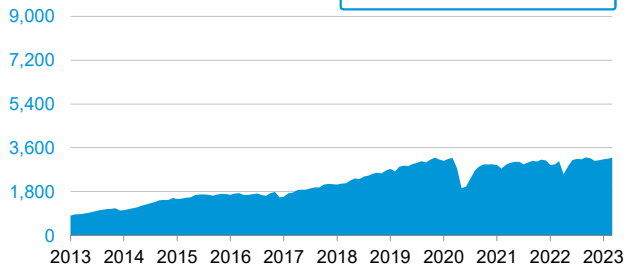
Bakken Region
Oil production

Oil +21
thousand barrels/day
month over month



Bakken Region
Natural gas production

Gas +31
million cubic feet/day
month over month



Eagle Ford Region
Drilling Productivity Report

February 2023

drilling data through January
projected production through March

Oil -17 barrels/day month over month

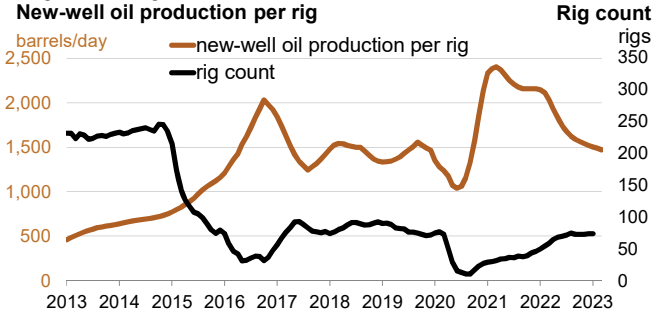
1,469 *March*
1,486 *February*
barrels/day

Monthly additions from one average rig

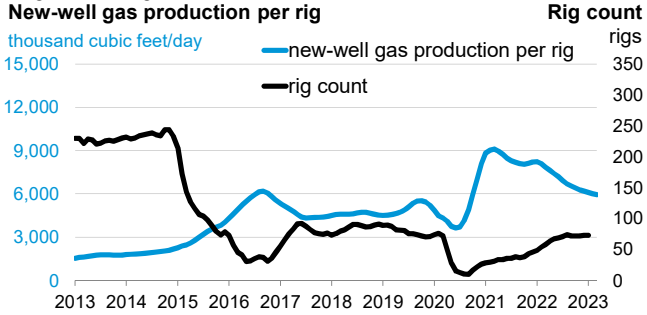
March **5,939**
February **6,017**
thousand cubic feet/day

Gas -78 thousand cubic feet/day month over month

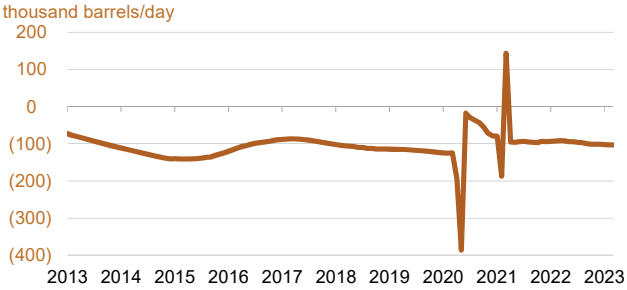
Eagle Ford Region
New-well oil production per rig



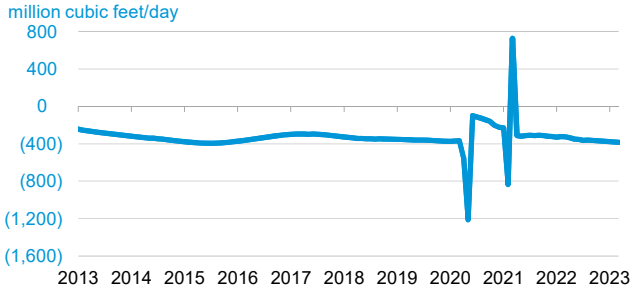
Eagle Ford Region
New-well gas production per rig



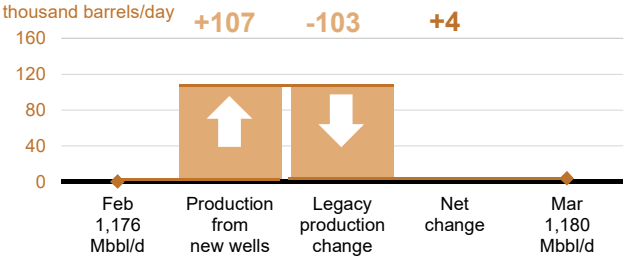
Eagle Ford Region
Legacy oil production change



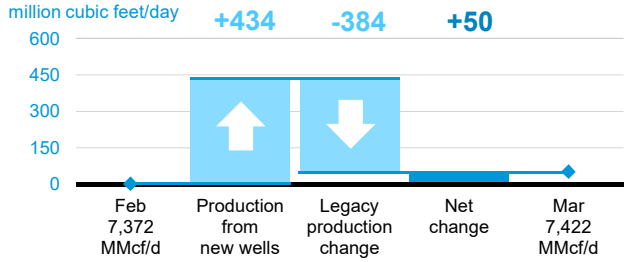
Eagle Ford Region
Legacy gas production change



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

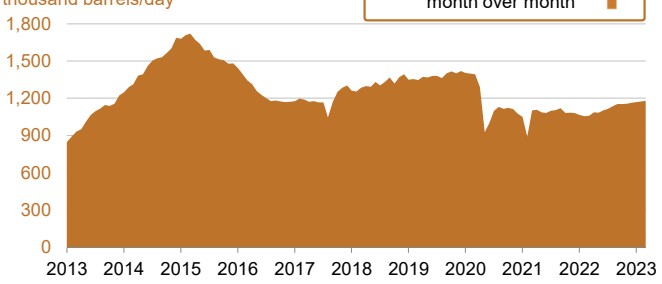


Eagle Ford Region
Indicated change in natural gas production (Mar vs. Feb)



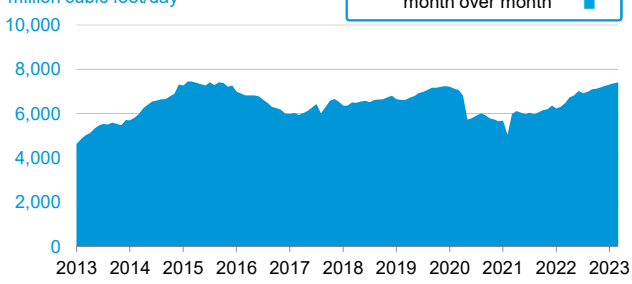
Eagle Ford Region
Oil production

Oil +4 thousand barrels/day month over month



Eagle Ford Region
Natural gas production

Gas +50 million cubic feet/day month over month



Haynesville Region
Drilling Productivity Report

February 2023

drilling data through January
projected production through March

Oil 0 barrels/day month over month

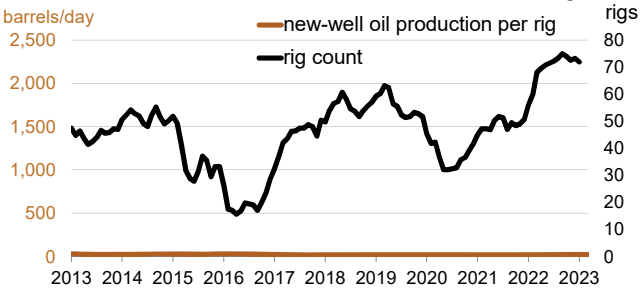
19 *March*
19 *February*
barrels/day

Monthly additions from one average rig

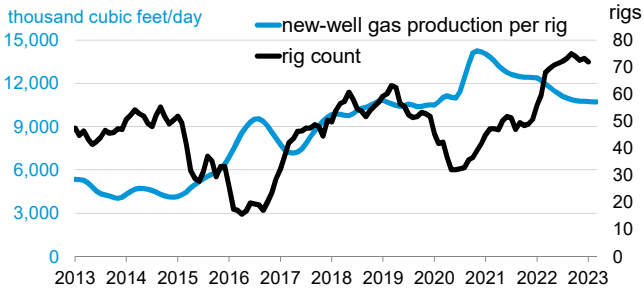
March **10,711**
February **10,722**
thousand cubic feet/day

Gas -11 thousand cubic feet/day month over month

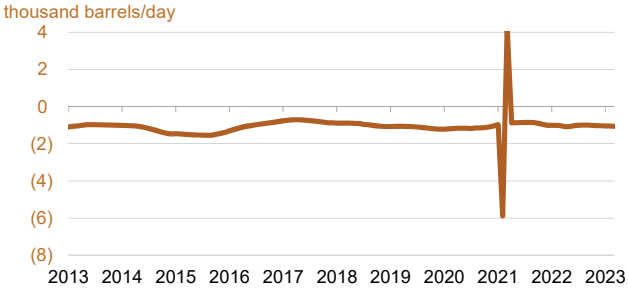
Haynesville Region
New-well oil production per rig



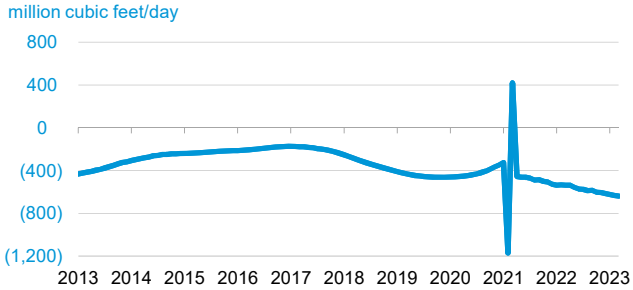
Haynesville Region
New-well gas production per rig



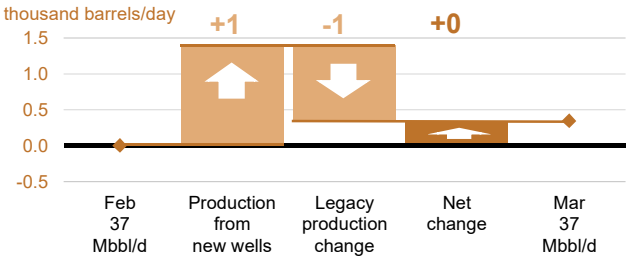
Haynesville Region
Legacy oil production change



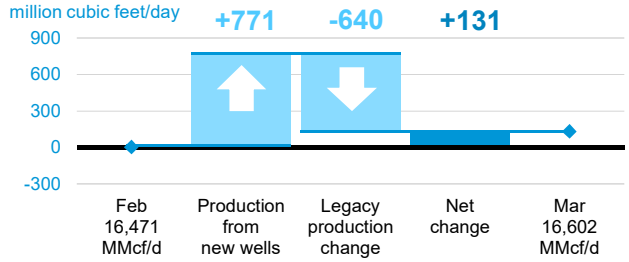
Haynesville Region
Legacy gas production change



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

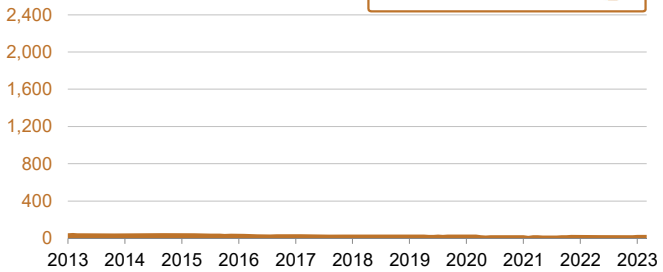


Haynesville Region
Indicated change in natural gas production (Mar vs. Feb)



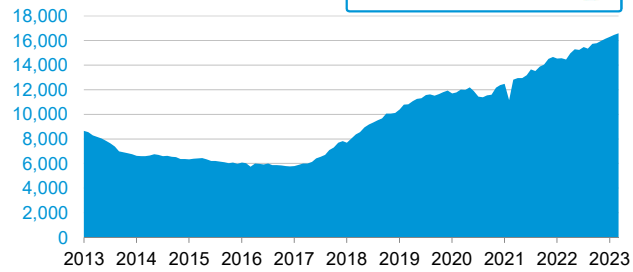
Haynesville Region
Oil production

Oil +0 thousand barrels/day month over month



Haynesville Region
Natural gas production

Gas +131 million cubic feet/day month over month



Niobrara Region
Drilling Productivity Report

February 2023

drilling data through January
projected production through March

Oil -7 barrels/day month over month

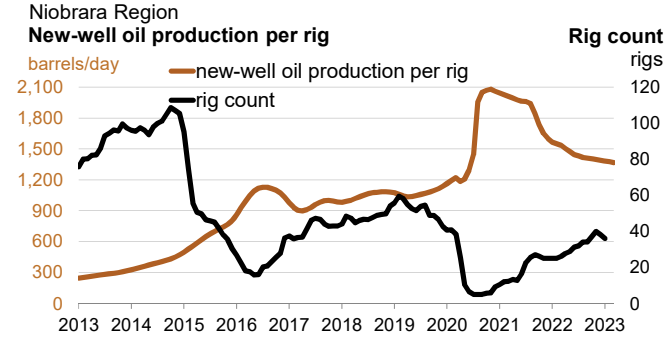
1,368 *March*
1,375 *February*
barrels/day

Monthly additions from one average rig

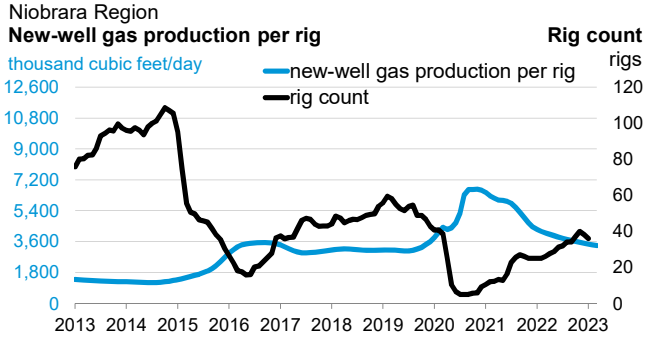
March **3,364**
February **3,408**
thousand cubic feet/day

Gas -44 thousand cubic feet/day month over month

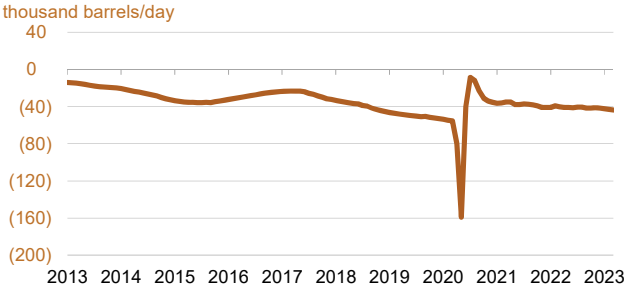
Niobrara Region
New-well oil production per rig



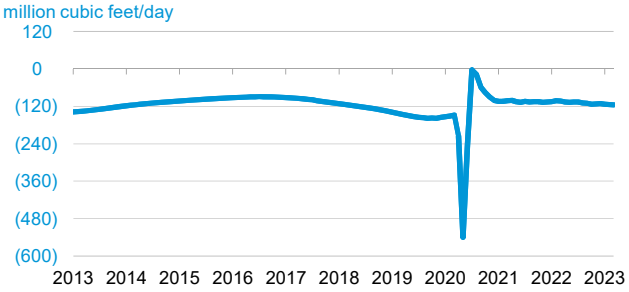
Niobrara Region
New-well gas production per rig



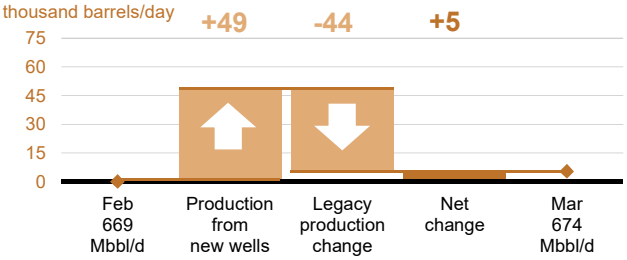
Niobrara Region
Legacy oil production change



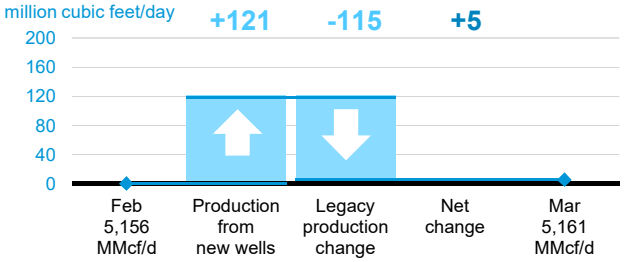
Niobrara Region
Legacy gas production change



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

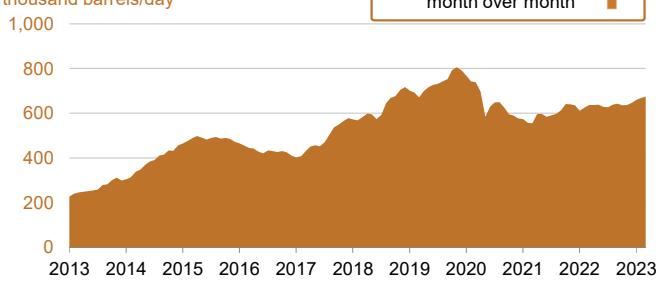


Niobrara Region
Indicated change in natural gas production (Mar vs. Feb)



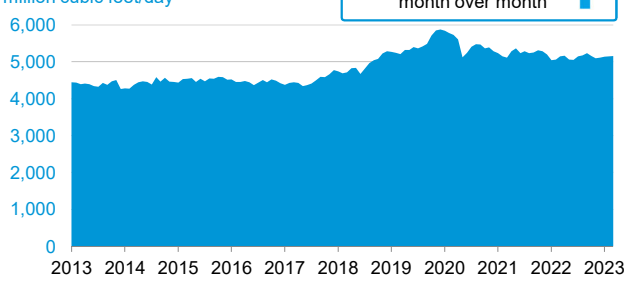
Niobrara Region
Oil production

Oil +5 thousand barrels/day month over month



Niobrara Region
Natural gas production

Gas +5 million cubic feet/day month over month



Permian Region
Drilling Productivity Report

February 2023

drilling data through January
projected production through March

Oil -1 barrels/day month over month

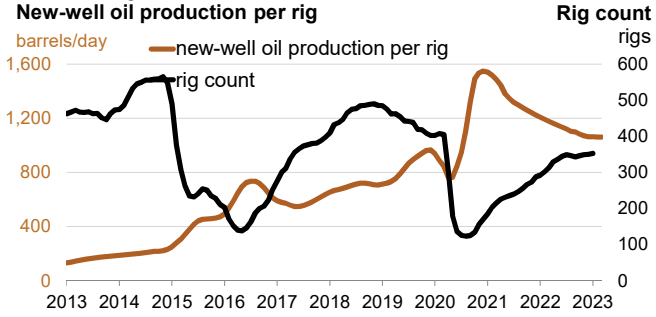
1,060 *March*
1,061 *February*
barrels/day

Monthly additions from one average rig

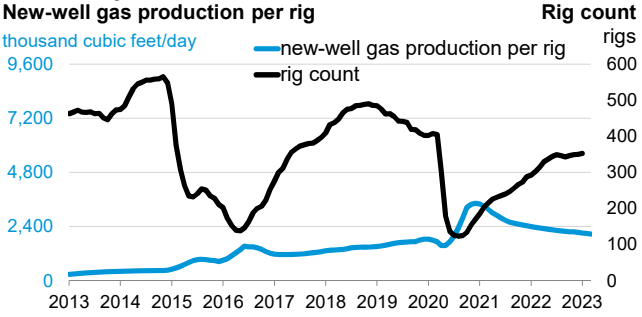
March **2,062**
February **2,083**
thousand cubic feet/day

Gas -21 thousand cubic feet/day month over month

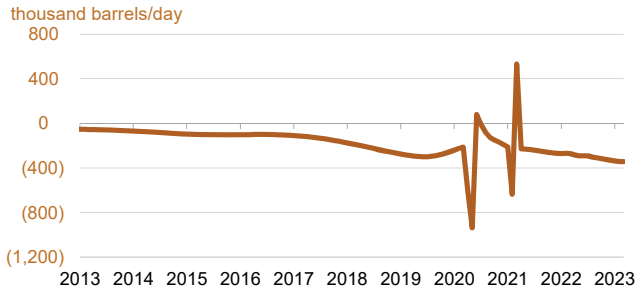
Permian Region
New-well oil production per rig



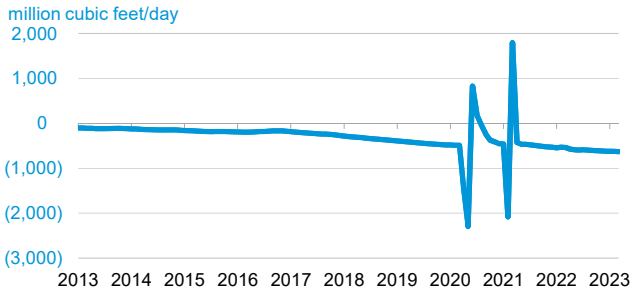
Permian Region
New-well gas production per rig



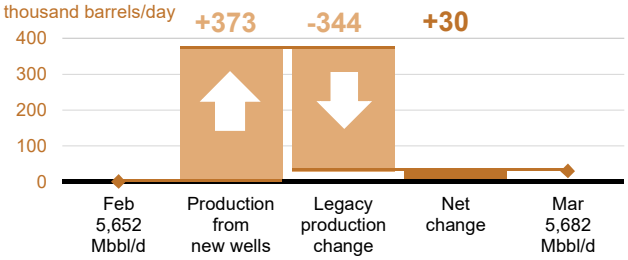
Permian Region
Legacy oil production change



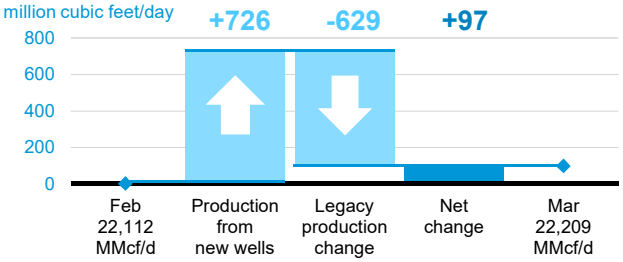
Permian Region
Legacy gas production change



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

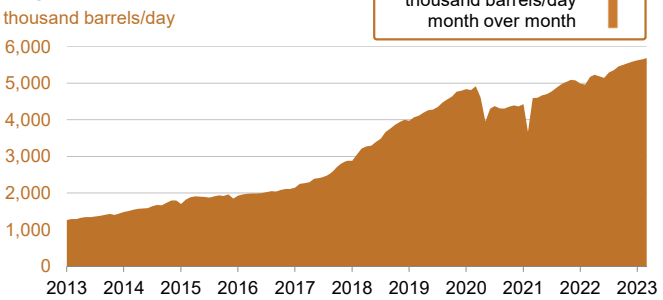


Permian Region
Indicated change in natural gas production (Mar vs. Feb)



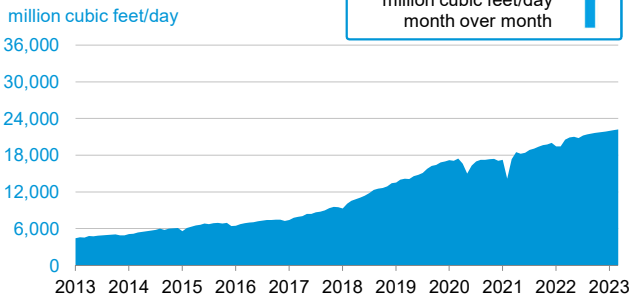
Permian Region
Oil production

Oil +30 thousand barrels/day month over month



Permian Region
Natural gas production

Gas +97 million cubic feet/day month over month



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

Monthly additions from one average rig

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

New-well oil/gas production per rig

Charts present historical estimated monthly additions from one average rig coupled with the number of total drilling rigs as reported by Baker Hughes.

Legacy oil and natural gas production change

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

Projected change in monthly oil/gas production

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

Oil/gas production

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

Footnotes:

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

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

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

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

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

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

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

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

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

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

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

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

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

Summary

Overview of Activity for December 2022

- **Top five countries of destination, representing 60.7% of total U.S. LNG exports in December 2022**
  - United Kingdom (69.3 Bcf), Netherlands (39.9 Bcf), France (38.3 Bcf), Spain (33.8 Bcf), and South Korea (24.7 Bcf)
- **339.6 Bcf of exports in December 2022**
  - 12.3% increase from November 2022
  - 1.6% less than December 2021
- **111 cargos shipped in December 2022**
  - Sabine Pass (41), Cameron (37), Corpus Christi (20), Cove Point (10), Elba (3), and Freeport (0)
  - 95 cargos in November 2022
  - 111 cargos in December 2021

1a. Table of Exports of Domestically-Produced LNG Delivered by Region (Cumulative from February 2016 through December 2022)

Region	Number of Countries Receiving Per Region	Volume Exported (Bcf)	Percentage Receipts of Total Volume Exported (%)	Number of Cargos*
East Asia and Pacific	8	4,474.1	32.9%	1323
Europe and Central Asia	16	5,790.1	42.6%	1817
Latin America and the Caribbean**	13	2,135.9	15.7%	761
Middle East and North Africa	5	376.6	2.8%	110
South Asia	3	823.4	6.1%	245
Sub-Saharan Africa	0	0.0	0.0%	0
Total LNG Exports	**45**	**13,600.1**	**100.0%**	**4,256**

*Split cargos counted as both individual cargos and countries

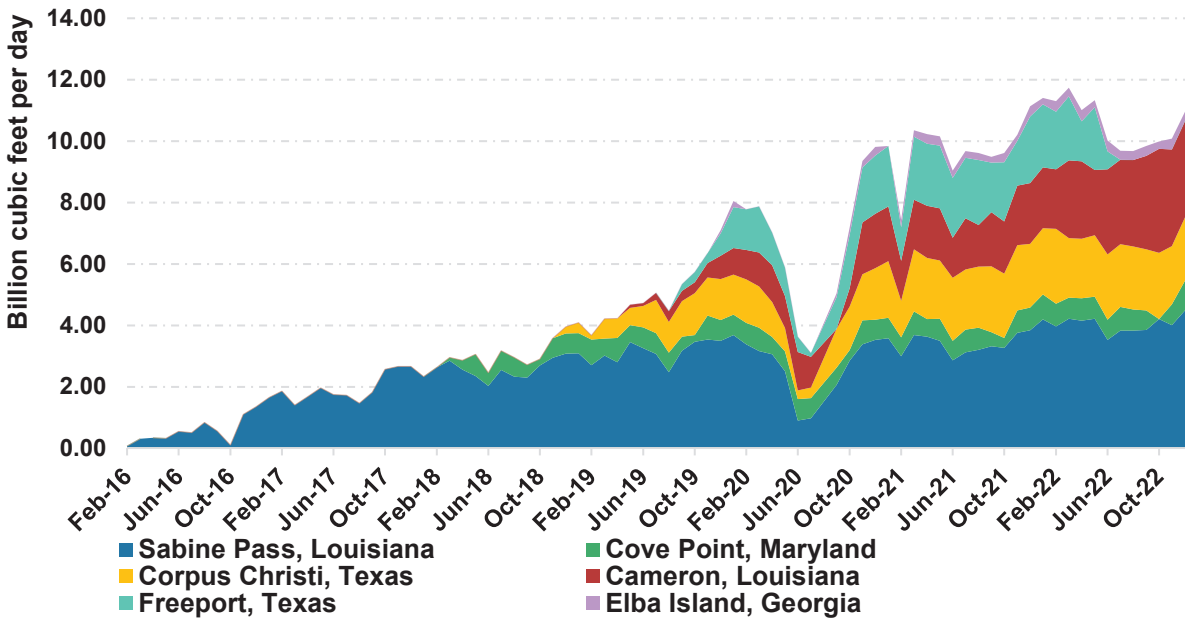
**Number of cargos does not include the shipments by ISO container

1b. Shipments of Domestically-Produced LNG Delivered – by Country
(Cumulative from February 2016 through December 2022)

	Country of Destination	Region	Number of Cargos	Volume (Bcf of Natural Gas)	Percentage of Total U.S LNG Exports (%)
1.	South Korea*	East Asia and Pacific	494	1,717.6	12.6%
2.	Japan*	East Asia and Pacific	364	1,245.8	9.2%
3.	Spain*	Europe and Central Asia	335	1,050.9	7.7%
4.	United Kingdom*	Europe and Central Asia	299	989.3	7.3%
5.	China*	East Asia and Pacific	289	983.4	7.2%
6.	France*	Europe and Central Asia	298	971.7	7.1%
7.	Netherlands*	Europe and Central Asia	220	734.8	5.4%
8.	India*	South Asia	186	630.1	4.6%
9.	Brazil*	Latin America and the Caribbean	217	608.3	4.5%
10.	Turkey*	Europe and Central Asia	186	592.3	4.4%
11.	Mexico*	Latin America and the Caribbean	164	546.8	4.0%
12.	Chile*	Latin America and the Caribbean	132	419.3	3.1%
13.	Taiwan*	East Asia and Pacific	103	323.6	2.4%
14.	Italy*	Europe and Central Asia	99	314.6	2.3%
15.	Poland*	Europe and Central Asia	80	268.8	2.0%
16.	Argentina*	Latin America and the Caribbean	110	265.2	1.9%
17.	Portugal*	Europe and Central Asia	82	261.4	1.9%
18.	Greece*	Europe and Central Asia	74	175.5	1.3%
19.	Dominican Republic*	Latin America and the Caribbean	65	157.8	1.2%
20.	Kuwait	Middle East and North Africa	45	156.4	1.1%
21.	Lithuania	Europe and Central Asia	48	147.3	1.1%
22.	Belgium*	Europe and Central Asia	44	141.7	1.0%
23.	Pakistan*	South Asia	40	128.9	0.9%
24.	Jordan*	Middle East and North Africa	36	124.2	0.9%
25.	Croatia	Europe and Central Asia	39	116.7	0.9%
26.	Singapore*	East Asia and Pacific	33	107.3	0.8%
27.	Thailand*	East Asia and Pacific	24	82.9	0.6%
28.	Bangladesh*	South Asia	19	64.5	0.5%
29.	Jamaica*	Latin America and the Caribbean	26	57.4	0.4%
30.	Panama*	Latin America and the Caribbean	29	52.0	0.4%
31.	United Arab Emirates	Middle East and North Africa	15	51.1	0.4%
32.	Israel*	Middle East and North Africa	9	28.0	0.2%
33.	Colombia*	Latin America and the Caribbean	18	24.2	0.2%
34.	Malta*	Europe and Central Asia	10	17.6	0.1%
35.	Egypt*	Middle East and North Africa	5	16.9	0.1%
36.	Indonesia*	East Asia and Pacific	15	9.8	0.1%
37.	Germany	Europe and Central Asia	2	7.1	0.1%
38.	Malaysia	East Asia and Pacific	1	3.7	0.0%
39.	Finland	Europe and Central Asia	1	0.3	0.0%
	Total Exports by Vessel		**4,256**	**13,595.2**	
	Germany	Europe and Central Asia	1	0.0	0.0%
40.	Antigua and Barbuda	Latin America and the Caribbean	34	0.0	0.0%
41.	Nicaragua	Latin America and the Caribbean	1	0.0	0.0%
42.	Haiti	Latin America and the Caribbean	129	0.4	0.0%
43.	Barbados	Latin America and the Caribbean	305	1.3	0.0%
	Jamaica	Latin America and the Caribbean	142	1.5	0.0%
44.	Bahamas	Latin America and the Caribbean	661	1.6	0.0%
	Total Exports by ISO		**1273**	**4.9**	
	Total Exports by Vessel and ISO		**5,529**	**13,600.1**	

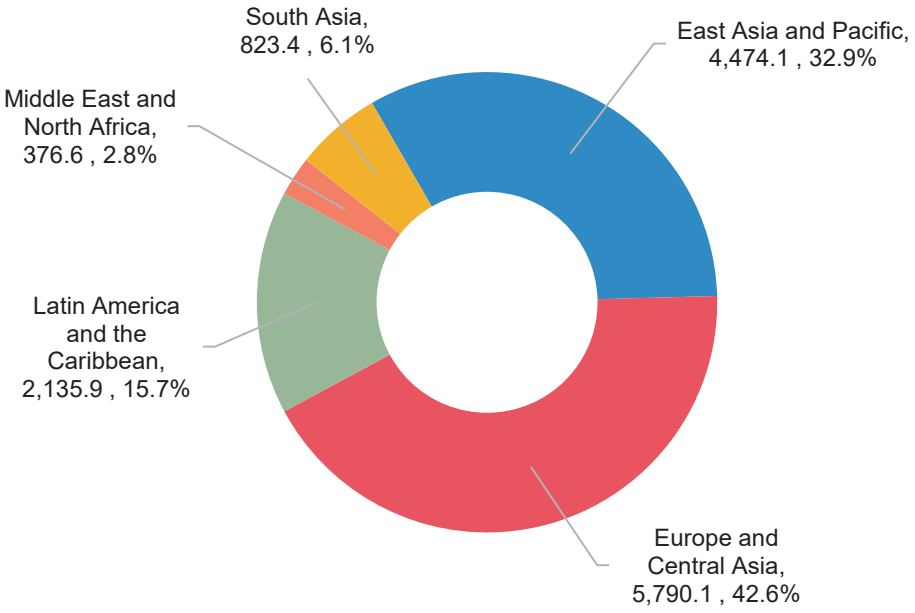
Note:
Volume and Number of Cargos are the cumulative totals of each individual Country of Destination by Region starting from February 2016.
Jamaica has received U.S. LNG exports by both vessel and ISO container. The volumes are totaled separately
* Split cargos counted as both individual cargos and countries.
Vessel = LNG Exports by Vessel and ISO container = LNG Exports by Vessel in ISO Containers.
Does not include re-exports of previously-imported LNG. See table 2c for re-exports data.
Totals may not equal sum of components because of independent rounding.

1c. Domestically-Produced LNG Exported by Point of Exit
(February 2016 through December 2022)



The Cameron, LA point of exit includes exports from Cameron LNG and Venture Global Calcasieu Pass.

1d. Domestically-Produced LNG Exported by Region
(Cumulative from February 2016 through December 2022)
(Bcf, %)



Europe benefits from LNG industry flexibility in 2022

1

Russia's invasion of Ukraine didn't just affect Europe. It impacted energy markets across the world, contributing to severe energy price volatility and deep economic and political uncertainty– impacts which may alter energy market dynamics for the foreseeable future.

To replace Russian pipeline gas imports, Europe turned to liquefied natural gas (LNG), driving prices to record levels to attract cargoes. A contraction in Chinese gas demand, a drop in South Asian imports and new US LNG supply supported Europe's need for LNG. As a result, LNG trade flows reversed in 2022 with the largest import growth seen in Europe and the biggest drop in Asia and South America.

Market volatility triggers energy security interventions – with lasting economic and emissions impacts

2

To ensure energy security, governments across the world intervened with policies to protect consumers from high energy prices. European policy makers prioritised LNG imports, resulting in quick build out of import infrastructure. Other levers that helped support Europe's energy balance were fuel switching and gas demand destruction, choices which come with tough mid and long-term consequences, particularly on emissions.

Gas will be needed in the long term to balance energy systems as the world transitions to a lower-emission future. And for that, gas needs to be decarbonised, especially for use in hard-to-electrify sectors like industry, transport and heating.

Global gas and LNG markets expected to evolve as market dynamics point to a structural change

3

2022 can go down as the year that reshaped global energy markets. The events of the year triggered some structural shifts in market dynamics that may impact the long-term trajectory of the LNG industry. These include emergence of sustained demand for LNG in Europe, displacement of Russia's lower cost gas reserve base, increased exposure to the US domestic gas market with new LNG supply concentrated among fewer exporters and a shifting policy landscape.

In the near-term, the global LNG market is expected to remain tight and exposed to supply and demand shocks, with limited new supply coming online. More investment in supply will be needed to meet future LNG demand.

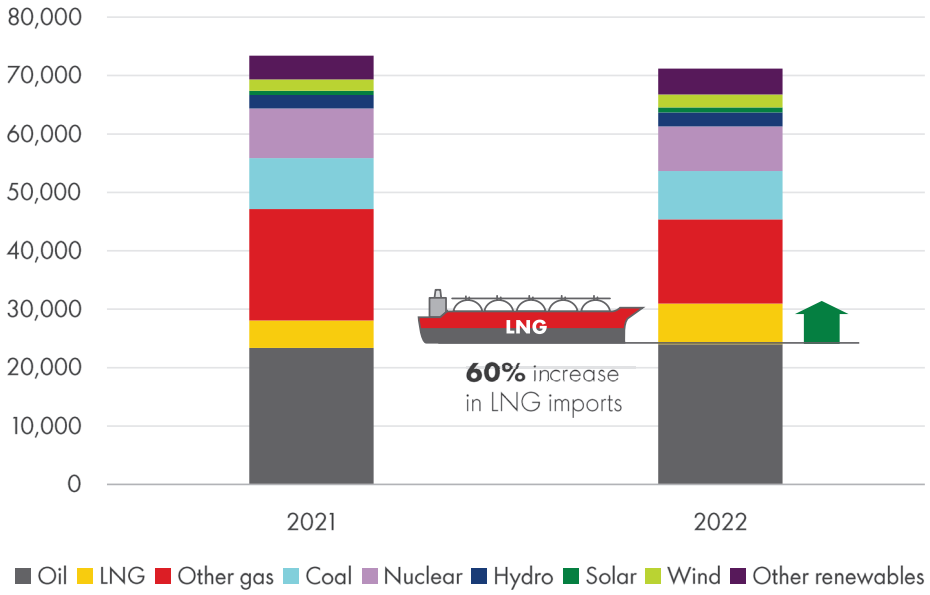
European LNG imports up by 60% to replace Russian gas

Lower Chinese imports helped balance the global LNG market

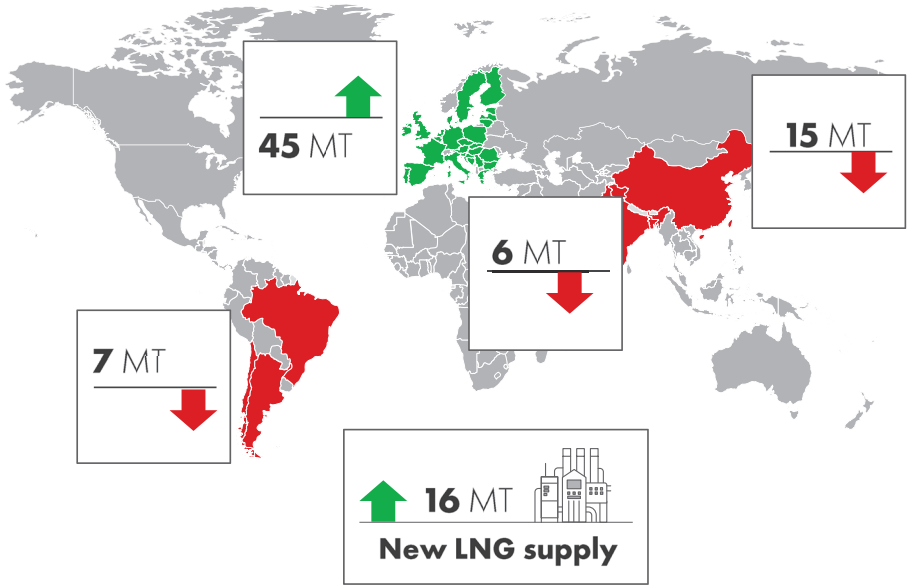
Shell LNG Outlook 2023

Total European primary energy demand

PJ



Changes in global LNG trade 2022*



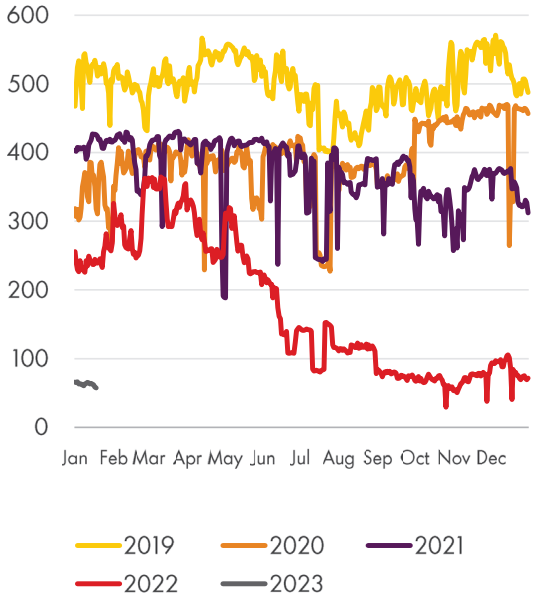
Source: Shell interpretation of Kpler, Wood Mackenzie 2022 data

Europe – EU 35 (includes Turkey & UK) * YoY year on year

Drop in Russian gas supply was offset by LNG imports and demand destruction in Europe

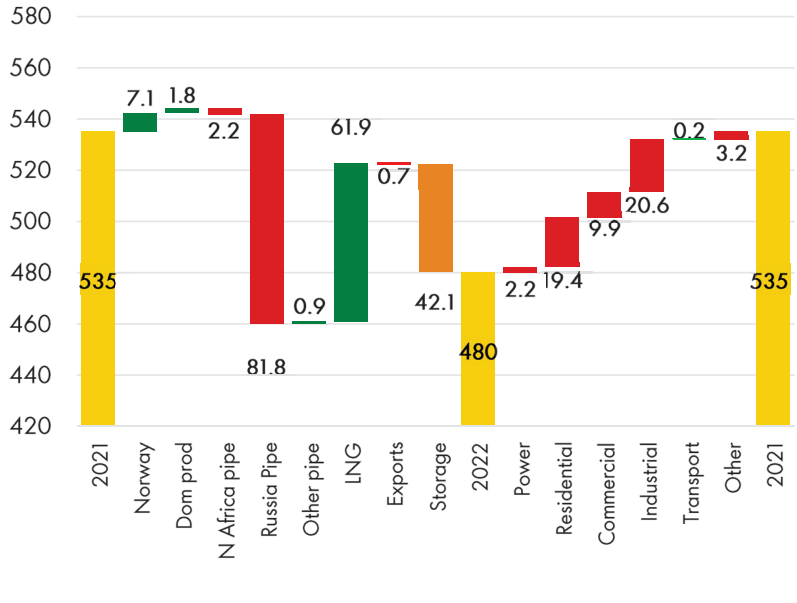
Russian pipeline imports

MMCM/d



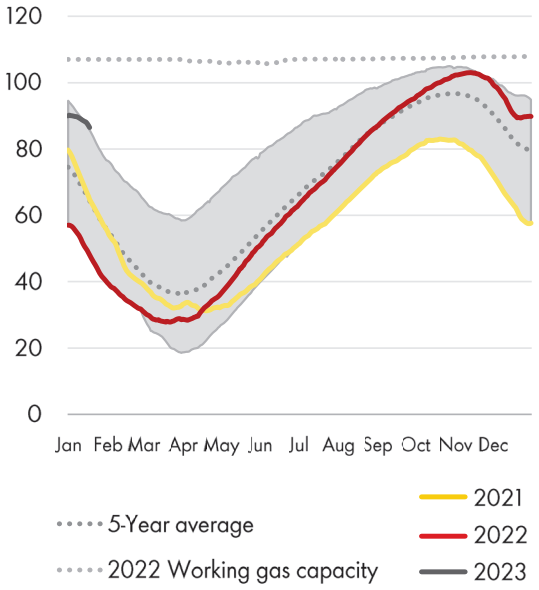
Change in European gas supply & demand

BCM



European & UK gas inventories

BCM



Source: Shell interpretation of AGSI, TSO & Wood Mackenzie 2022 & 2023 data

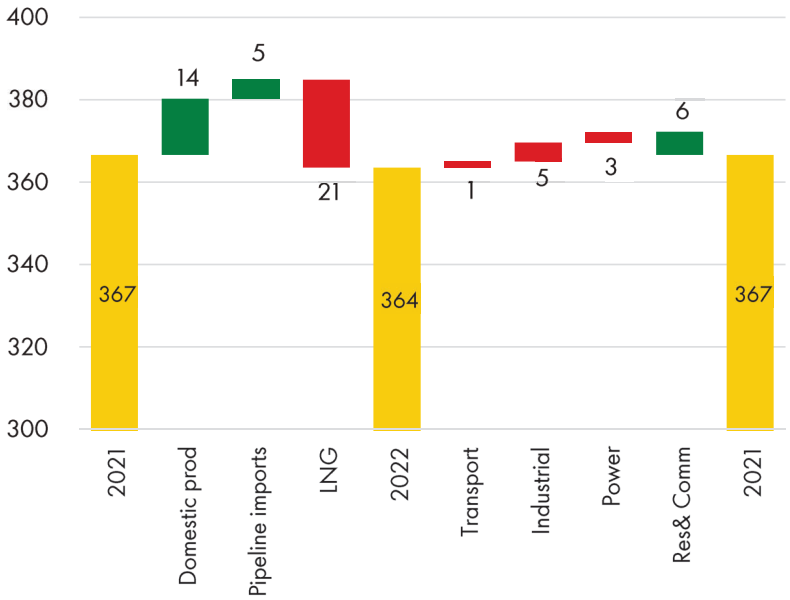
Continued lockdowns and lower economic growth led to a contraction in Chinese gas demand

Shell LNG Outlook 2023

Macroenvironment: GDP vs gas demand

Change in China gas supply & demand

BCM



China LNG imports: term vs spot

MT

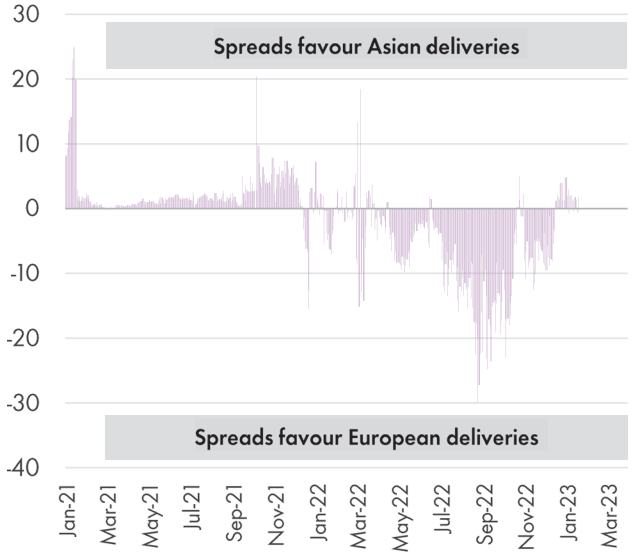
Source: Shell interpretation of China Customs, National Bureau of Statistics of China , Poten & Partners, S&P Global Commodity Insights cnd Wood Mackenzie 2022 data

US LNG exports flowed to Europe

As TTF priced at a premium

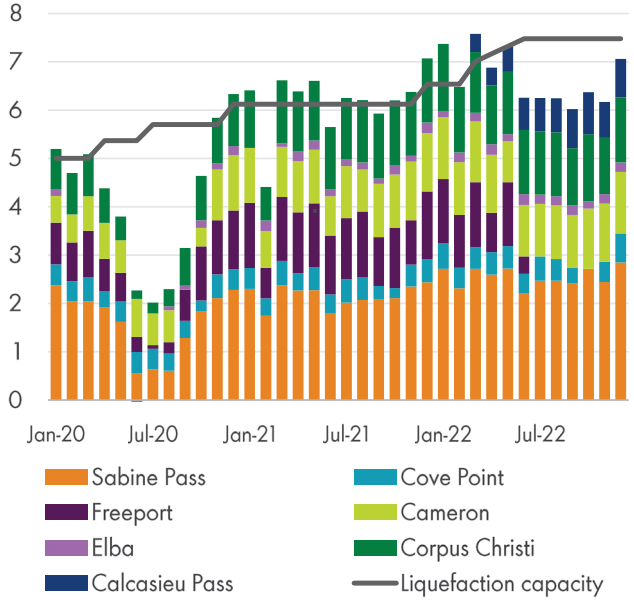
JKM/TTF spreads

$/MMBtu



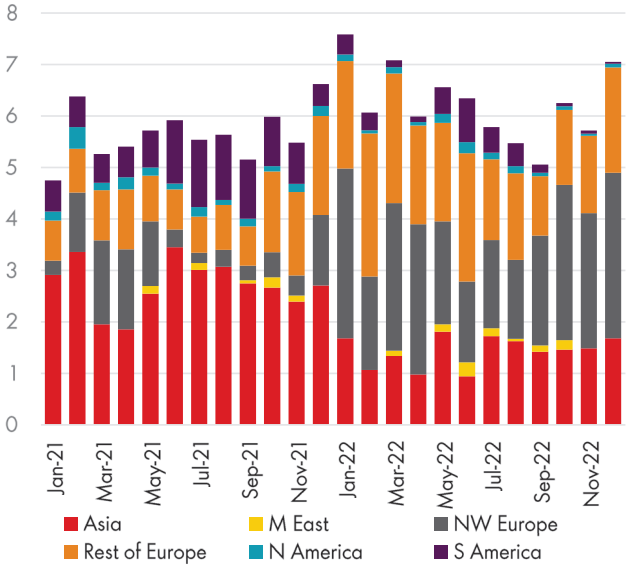
US LNG exports

MT



LNG imports from US

MT (DES)



Source: Shell interpretation of ICE, Kpler, S&P Global Commodity Insights cnd Wood Mackenzie 2022 & 2023 data

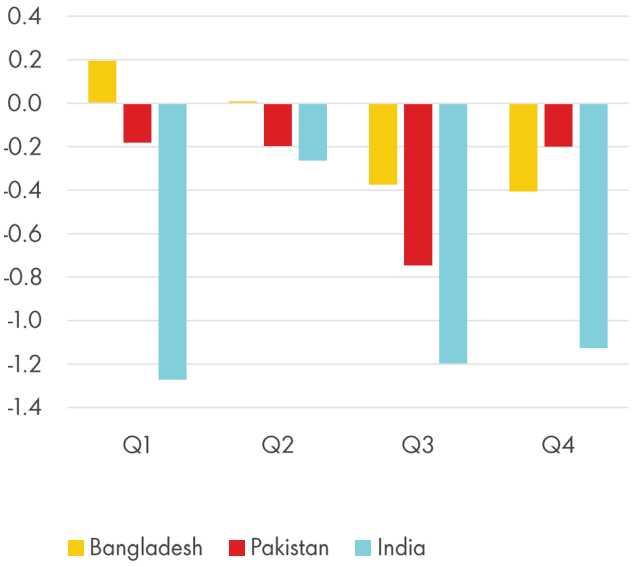
DES: Delivered ex ship

Europe's demand for LNG impacted other markets

Fuel switching in South Asia as LNG price went up

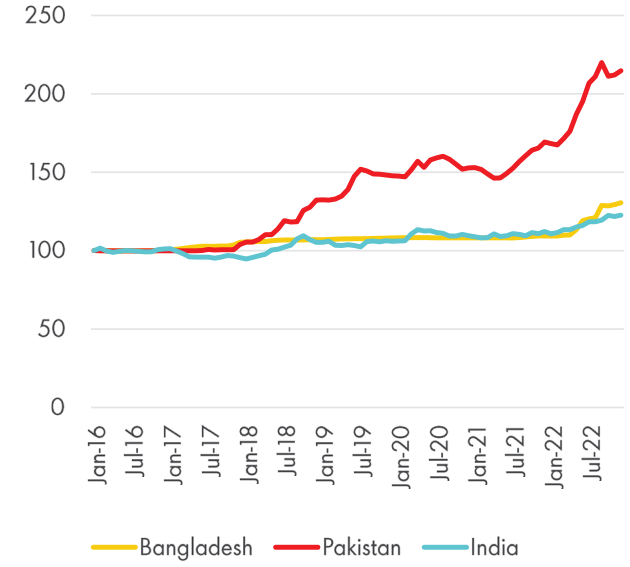
LNG imports 2022 (YoY)

MT



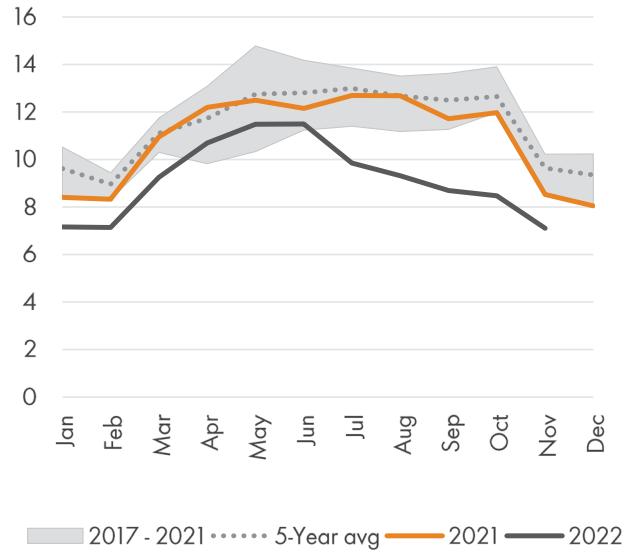
Monthly exchange rate indices

Exchange rate (per US Dollar), Jan 2016 = 100



Gas fired generation Bangladesh, India & Pakistan

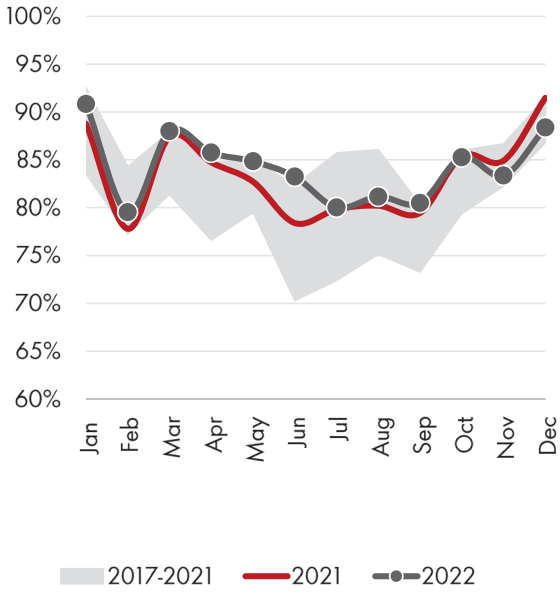
TWh



Source: Shell interpretation of Power Grid Company of Bangladesh (PGCR), Pakistan National Electric Regulatory Authority (NEPRA), Thomson Reuters, S&P Global Commodity Insights cnd Wood Mackenzie 2022 data

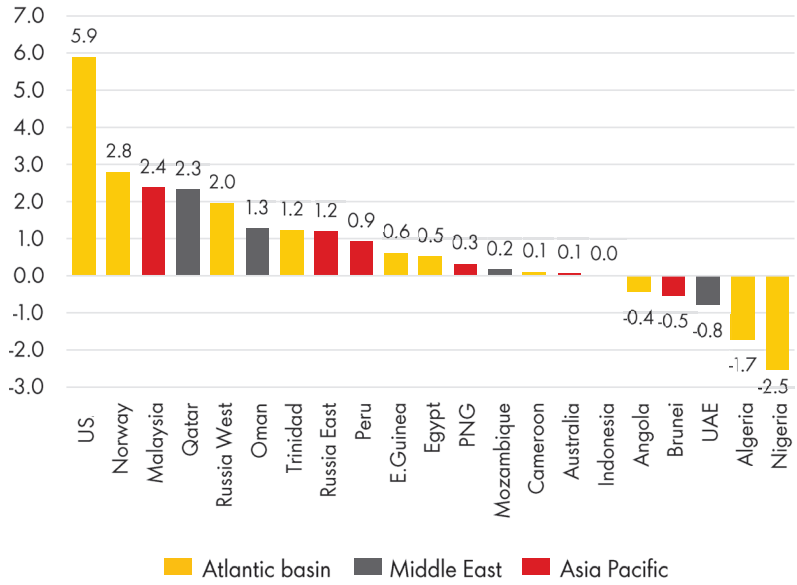
New US liquefaction helped balance global LNG supply

Global liquefaction utilisation



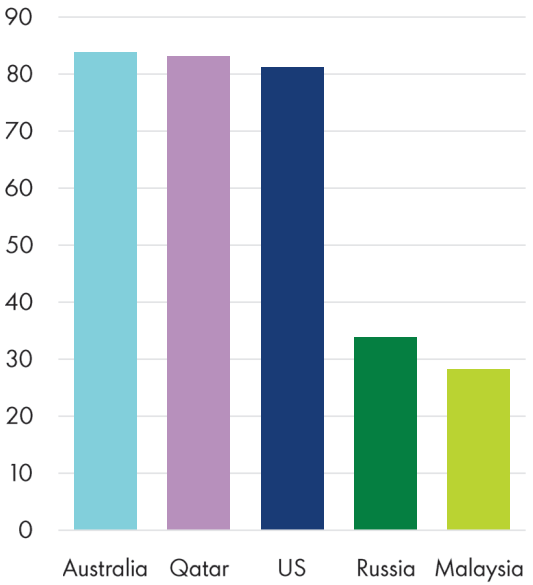
YoY change in net LNG exports

MT



Top exporting countries

MT



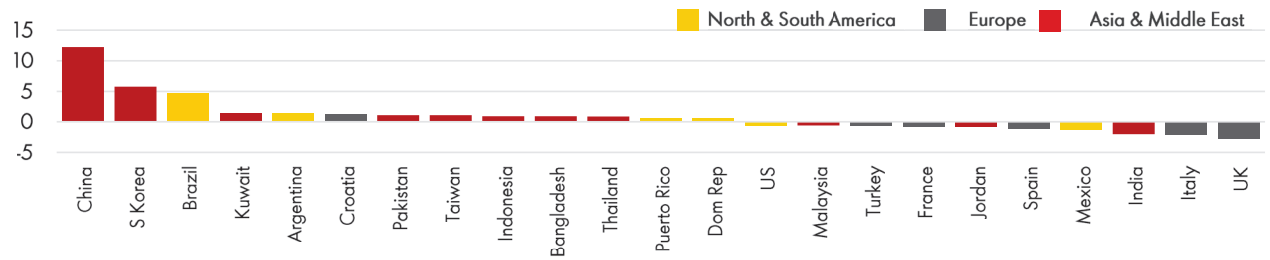
Source: Shell interpretation of S&P Global Commodity Insights and Kpler 2022 data

Global trade flows reversed in 2022

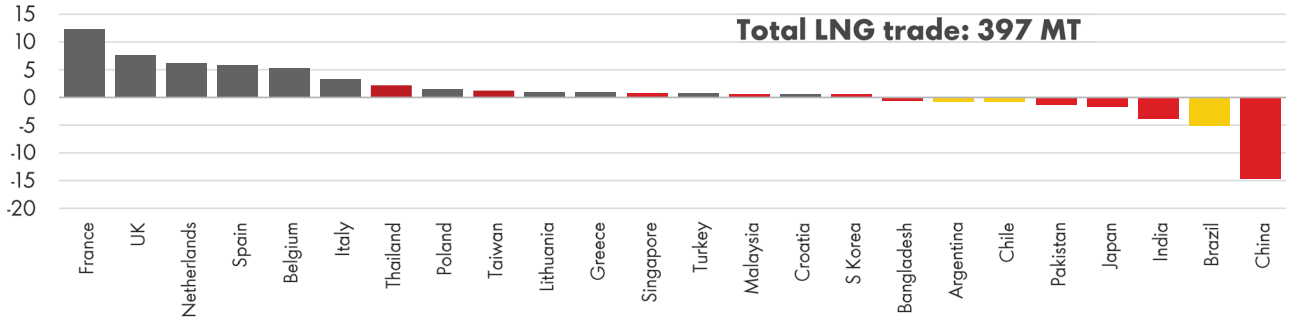
With structural demand seen emerging in Europe

Shell LNG Outlook 2023

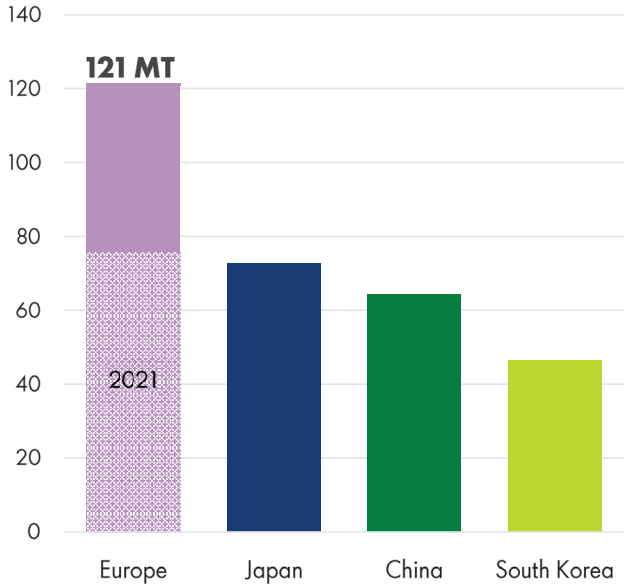
Y-o-Y change in global LNG imports in 2021 (MT)



Y-o-Y change in global LNG imports in 2022 (MT)



Top LNG importers in 2022 (MT)



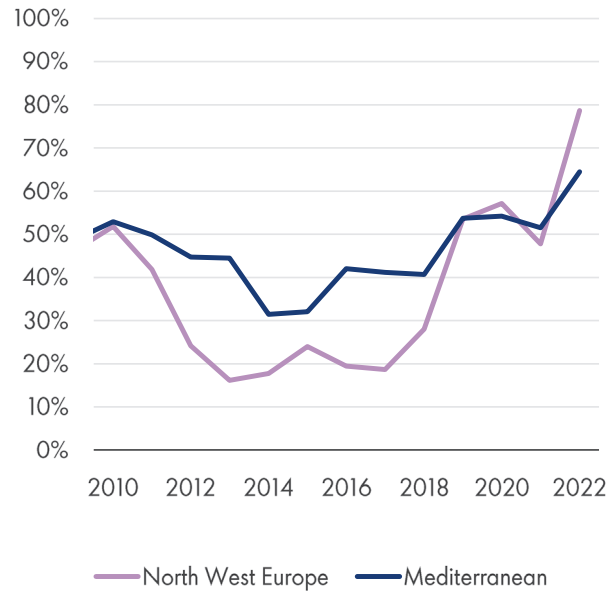
Source: Shell interpretation of Kpler and Wood Mackenzie 2022 data

The power of effective policy making

Two terminals set up in six months for importing LNG to replace Russian gas

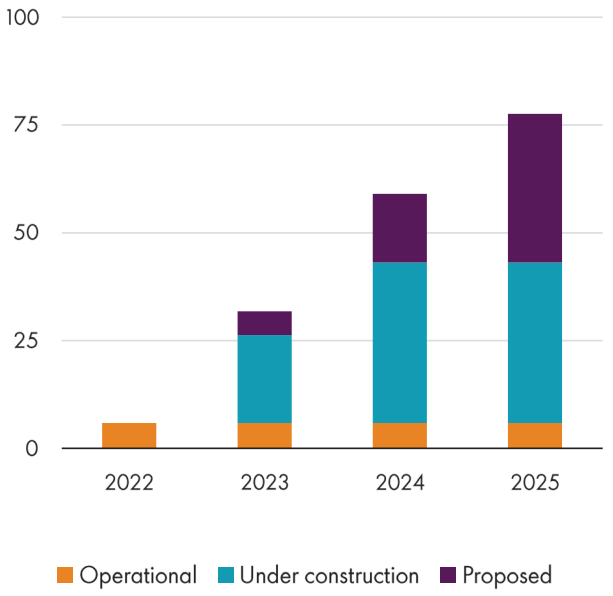
LNG capacity utilisation in Europe

Terminal use



New European regasification capacity

MT



Source: Shell interpretation of Wood Mackenzie 2022 data

Picture courtesy EemsEnergy Terminal

Germany fires up coal plants to reduce the energy gap

At a cost to near-term air quality and impact on CO_2 footprint

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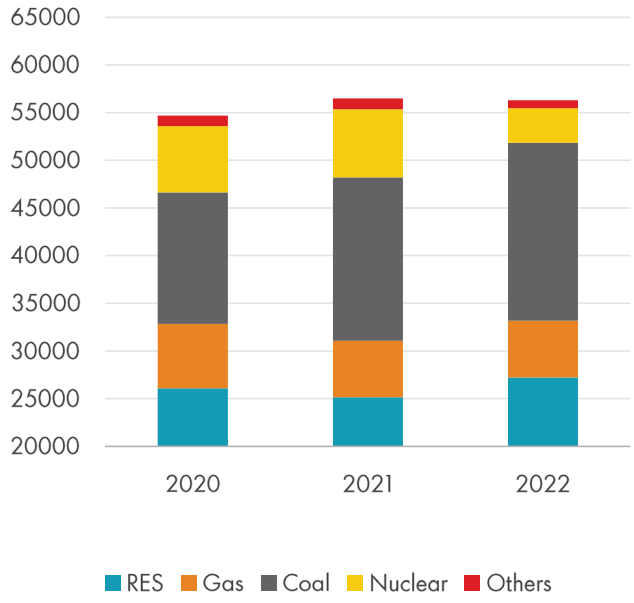
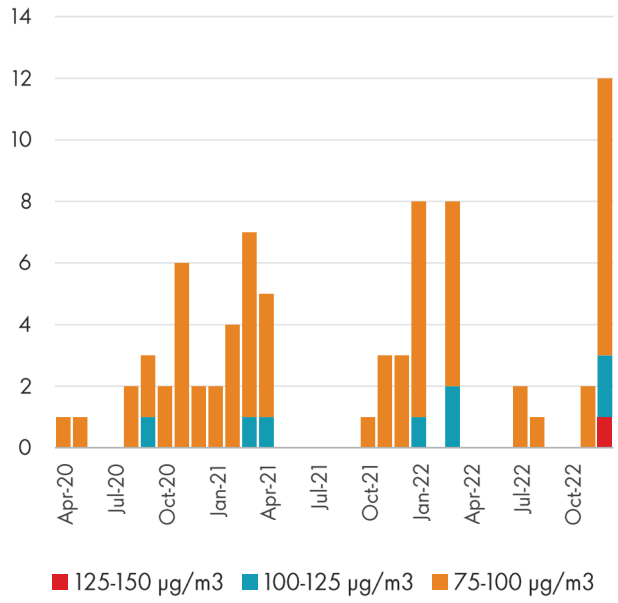
Power generation Germany

MWh/day



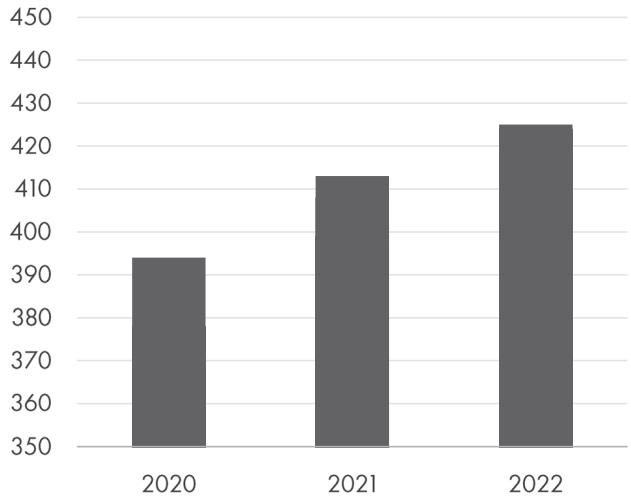
Air quality in Rhineland*

Poor air quality days $PM_{2.5}$



German electricity CO_2 emissions

Average CO_2eq/KWh



Source: Shell interpretation of ENTSO-E, AQICN, Centre for Research on Energy and Clean Air, Nowtricity 2022 & 2023 data

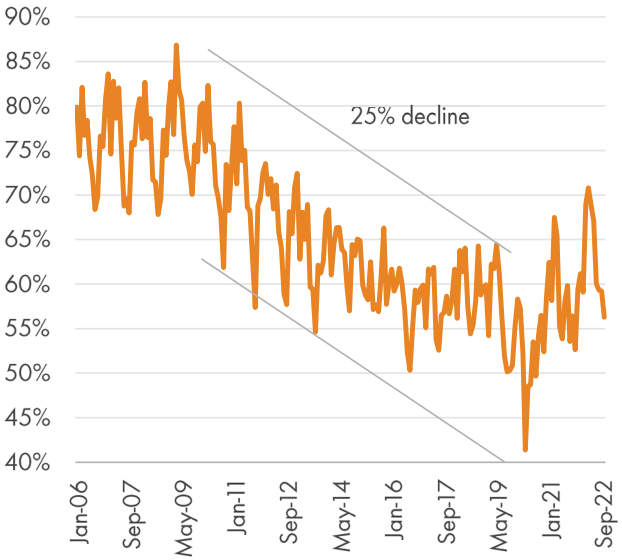
*Duisburg Bruckhausen RES: Renewables Safe WHO $PM_{2.5}$ = 15 µg/m³

Coal use rebounds in major Asian economies

With lasting impacts on global emissions

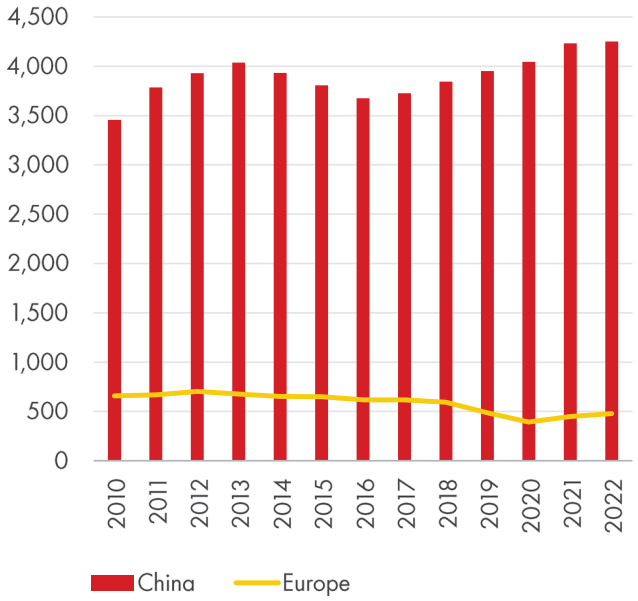
Coal utilisation in India

Monthly coal fired generation load factor



China coal use

Annualised coal use (MT)



Change in GHG emissions 2022

Source: Shell interpretation of S&P Global Commodity Insights , IEA, National Bureau of Statistics of China and Wood Mackenzie 2023 data

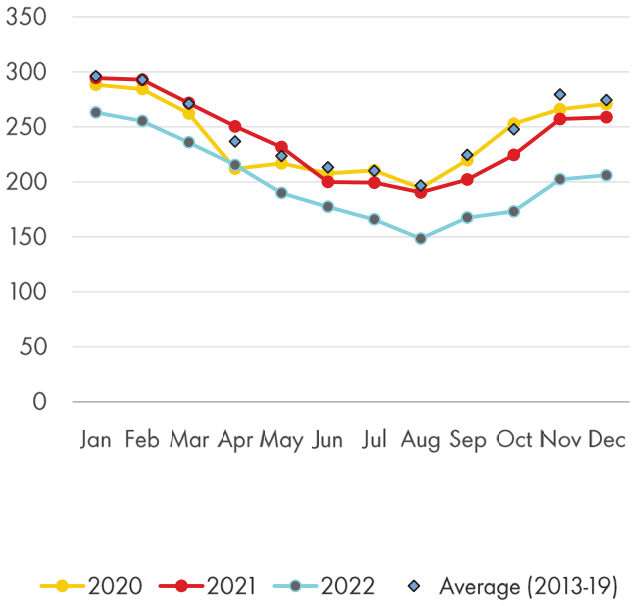
Rest of the world excluding India and China

Gas demand destruction hits European industrial sector

Limited investment in diversifying energy supply over the years takes a toll

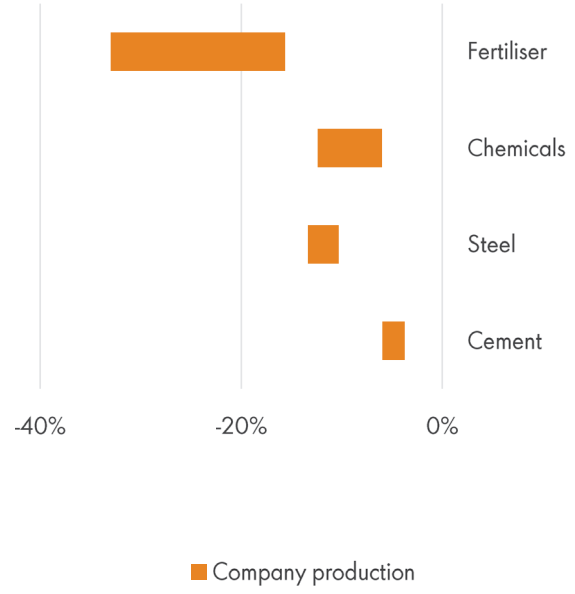
European industrial gas demand

mcm/d



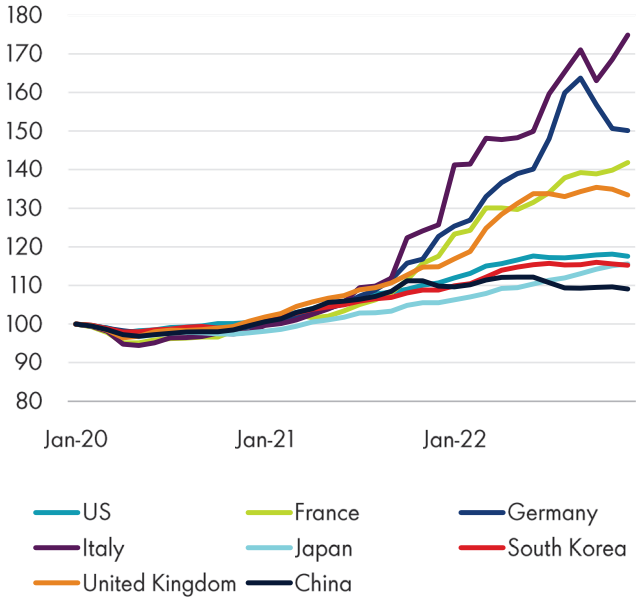
Decrease in company production*

% change 3Q 22 3Q 21



"Factory gate" price index

Jan 2020 = 100



Source: Shell's interpretation of transmission system operator data (Belgium, Germany, Netherlands, France, UK and Italy), National statistics – UK Office of National Statistics, Eurostat, Bank of Japan, Bank of Korea, China NBS and U.S. Bureau of Labor Statistics 2022 & 2023 data

*Quarterly production change taken from select large company reports (European producers)

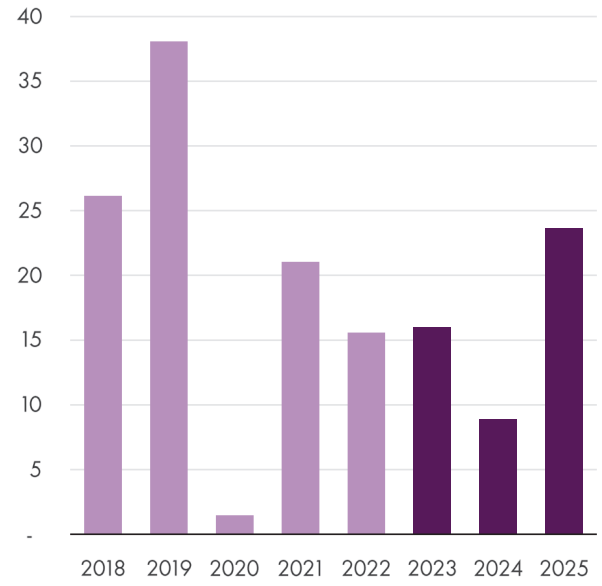
Europe and China to compete for limited LNG volumes

Continued volatility expected in the near term

Shell LNG Outlook 2023

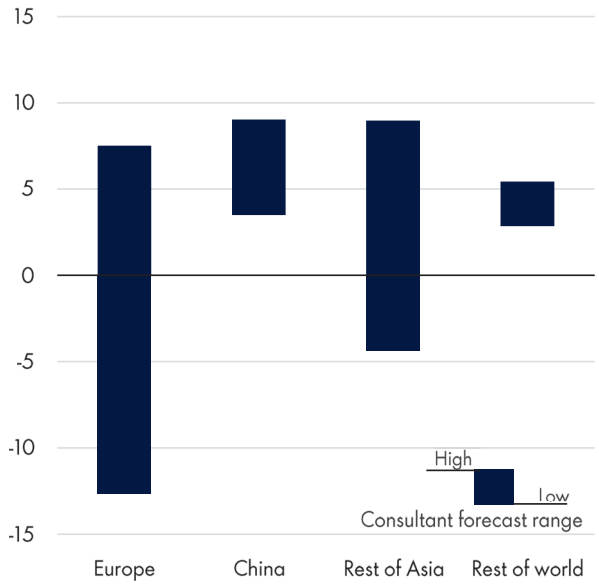
Global LNG supply growth

MTPA



2023 LNG demand growth range

MTPA



LNG market swing factors

Supply reliability

LNG production performance remains uncertain across basins

Economic growth

Uncertain macroeconomic conditions and inflationary environment

Pace of China's economic recovery from dropping its zero-COVID policy

Fuel substitutes

Material movements in price of fuel substitutes in either direction will impact gas and LNG demand, particularly in China

Weather events

Sustained above/below normal temperatures

Source: Shell interpretation of Wood Mackenzie, S&P Global Commodity Insights and Poten & Partners 2022 & 2023 data

LNG becomes a core energy supply source for Europe

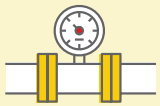
Loss of Russian piped imports have structurally altered Europe's gas market

Structural shift in Europe's gas market

Security of supply driven

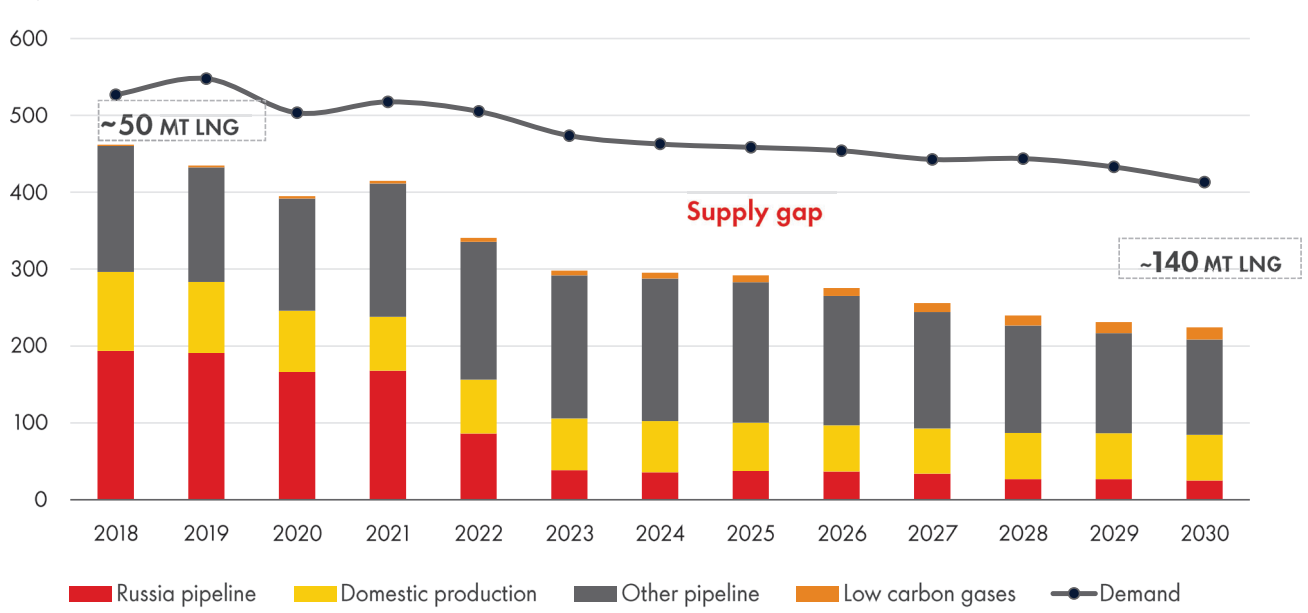
- Mandated storage targets
- New regasification terminals
- Price caps
- New price indices

Altered pipeline flows



US LNG as the marginal supplier

Europe gas balance



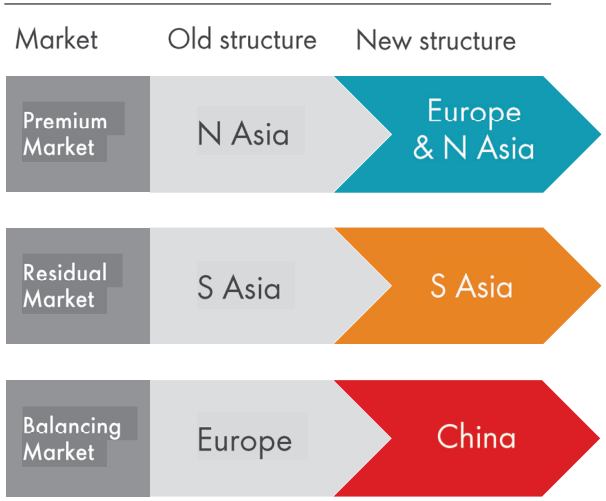
Source: Shell interpretation of Wood Mackenzie, S&P Global Commodity Insights 2022 & 2023 data

China's changing role in the global LNG market

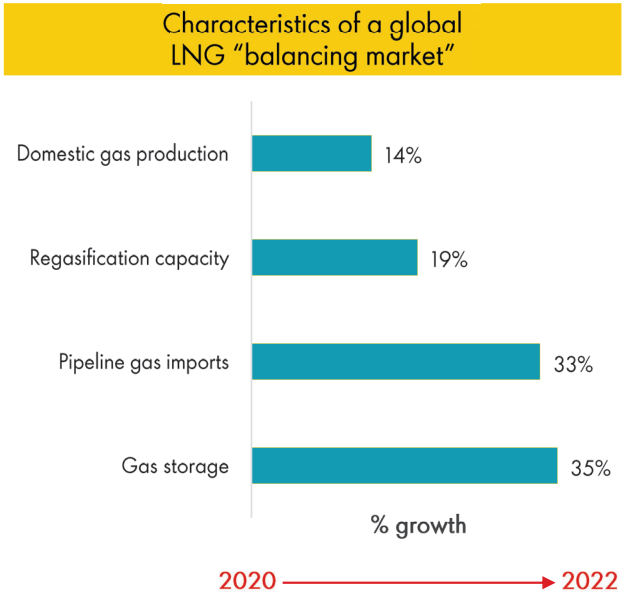
From driver of growth to providing flexibility

Shell LNG Outlook 2023

Global LNG market structures



China gas market evolution



LNG imports

Source: Shell interpretation of Wood Mackenzie, S&P Global Commodity Insights and National Bureau of Statistics of China 2022 & 2023 data

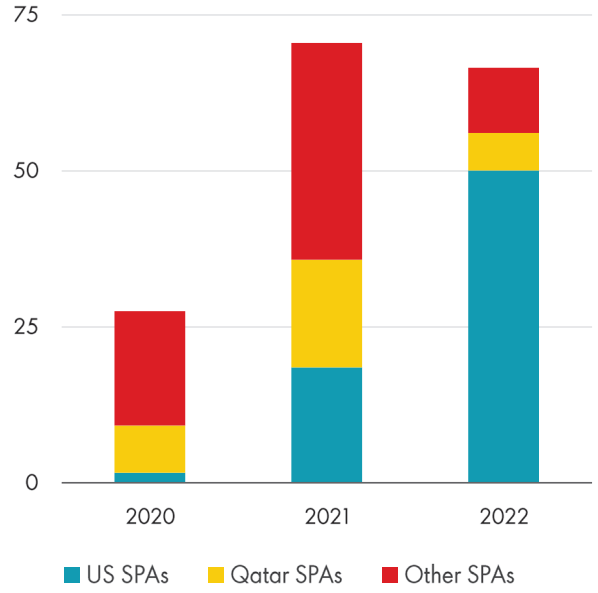
About 80% of new LNG supply by 2030 from Qatar & US

Shell LNG Outlook 2023

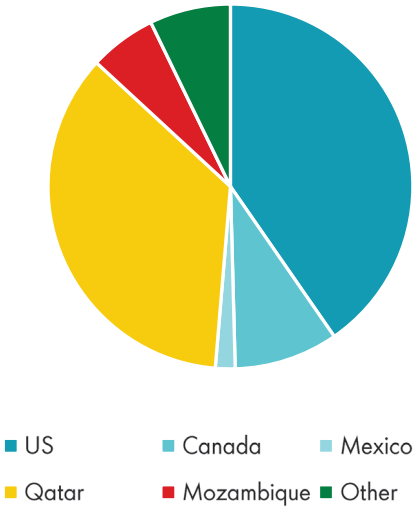
Three independent commercial structures for LNG to co-exist

Long-term LNG SPA signings

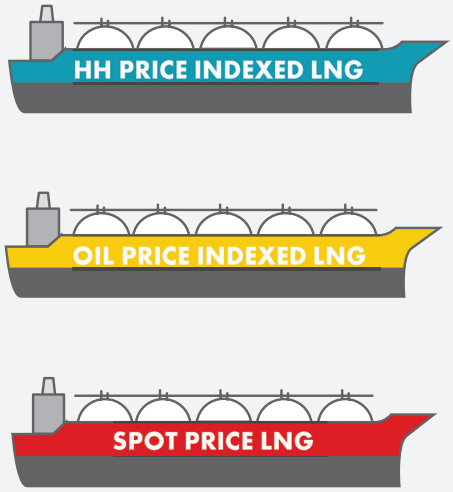
MTPA



LNG supply growth 2025 - 2030



Emerging commercial structure

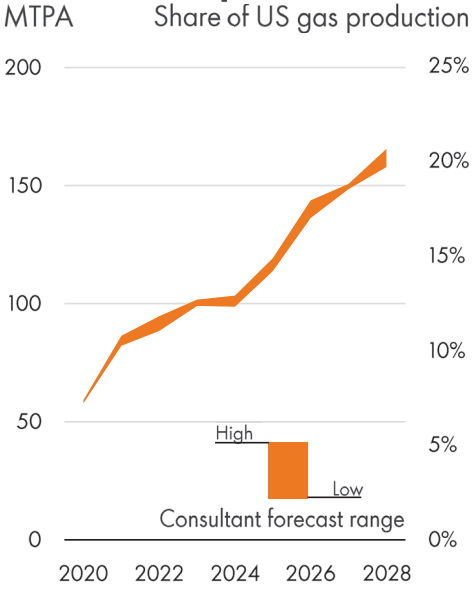


Source: Shell interpretation of Wood Mackenzie and S&P Global Commodity Insights 2022 data

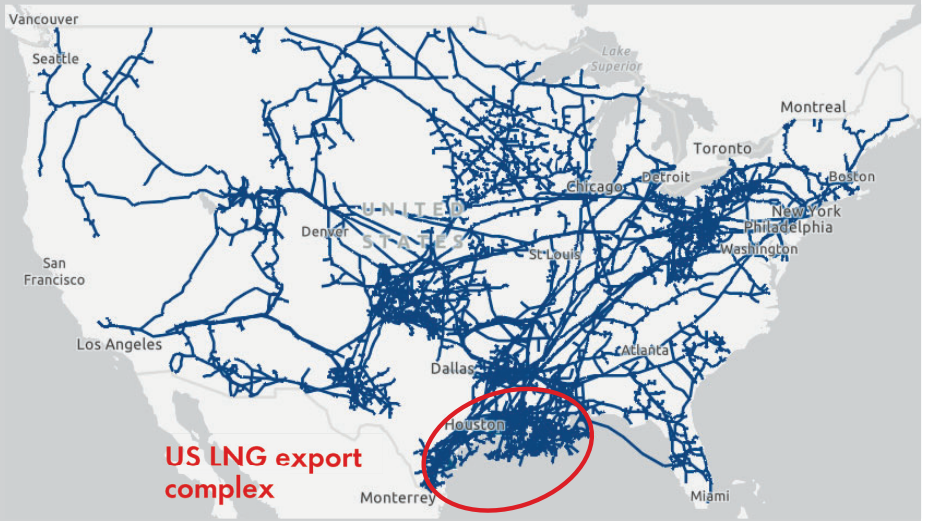
SPA: Sales and Purchase Agreement; does not include Heads of Agreement or Memoranda of Understanding

Growing role of US supply in global LNG market increases exposure to US gas market risks

US LNG exports



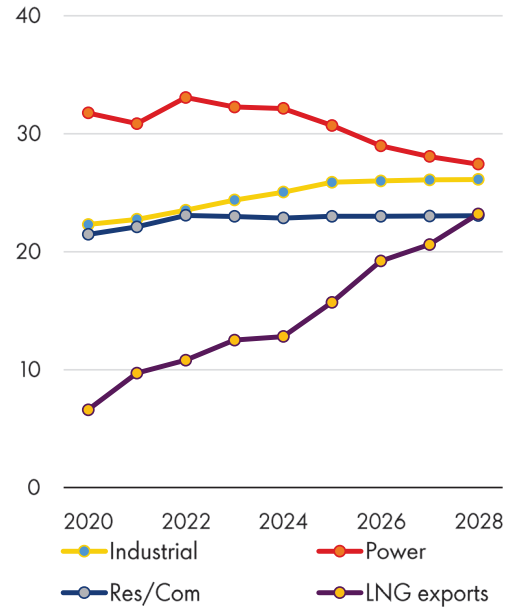
US gas pipelines*



>95% of 2030 US LNG capacity concentrated in two states

US gas demand

BCF/d



Source: Shell interpretation of Wood Mackenzie, S&P Global Commodity Insights and US Energy Information Administration 2022 data

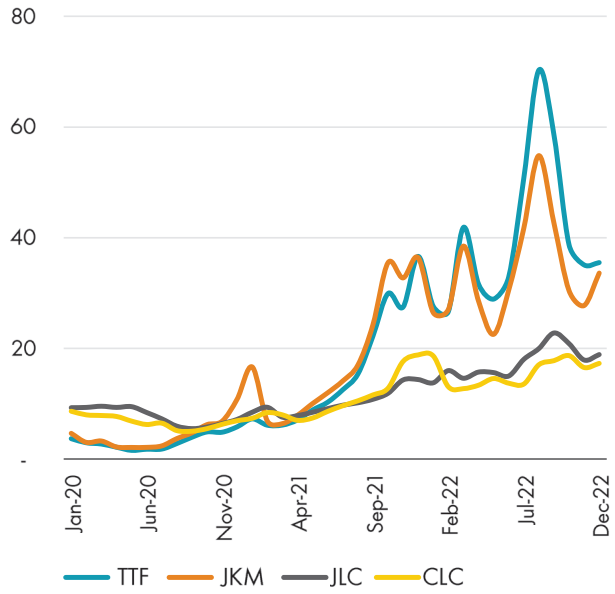
*This is a representation of the US interstate pipeline network – actual may vary

Term LNG contracts reduce exposure to price volatility

Portfolio players stepping up to secure future supply

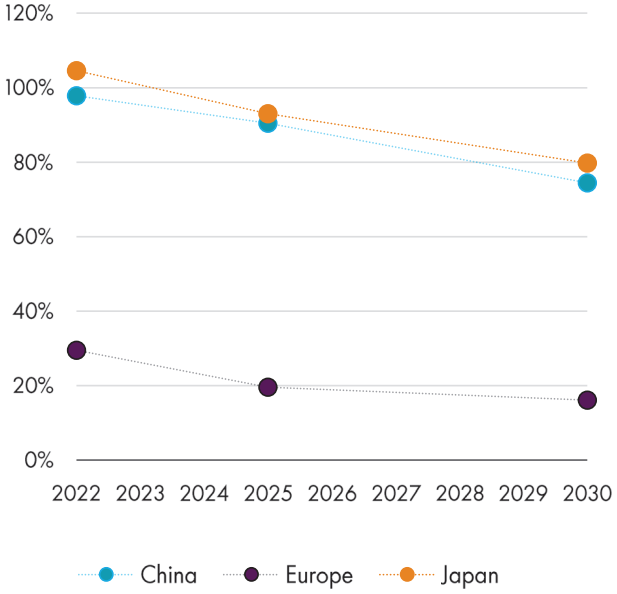
Global LNG prices

$/MMBtu



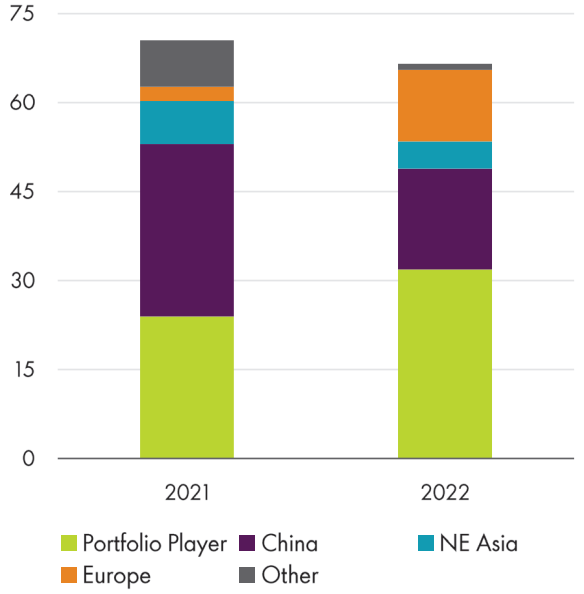
LNG term contract coverage

% of forecast LNG demand under term contract



Long-term LNG SPA signings

MTPA



Source: Shell interpretation of ICE, Wood Mackenzie, China and Japan Customs and S&P Global Commodity Insights 2023 data

JLC = Japan Landed Cost (weighted average cost of LNG imports) CLC = China Landed Cost (weighted average cost of LNG imports)

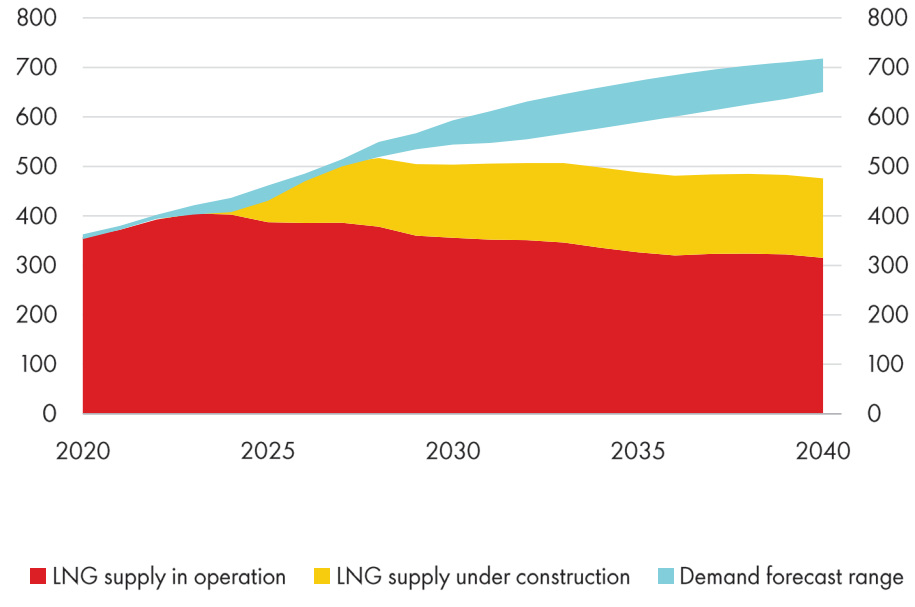
Investment needed to meet forecast LNG demand

Conflicting energy transition scenarios can deter investors & policy makers

Shell LNG Outlook 2023

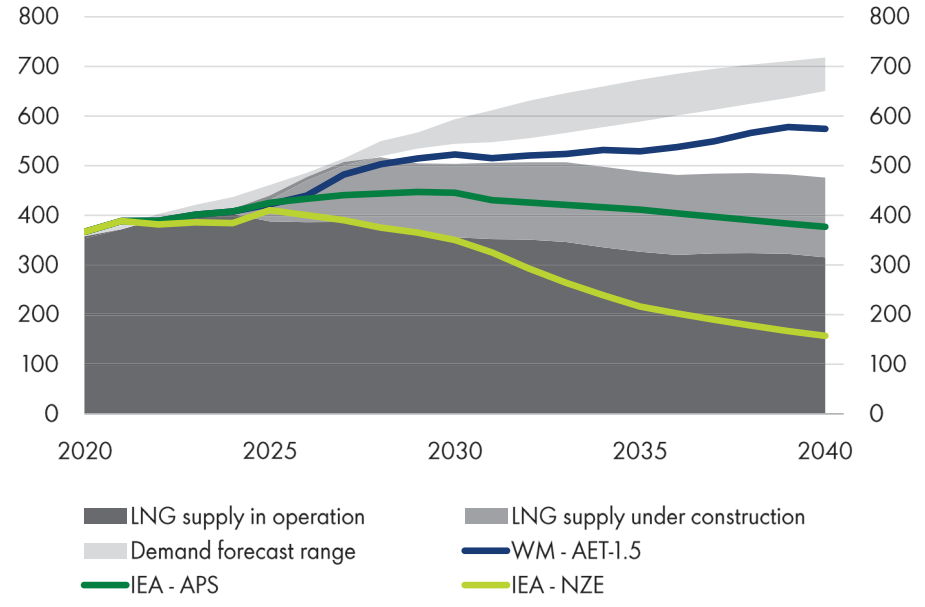
Global LNG supply vs demand forecast range

MTPA



Global LNG supply vs demand scenarios

MTPA



Source: Shell interpretation of Wood Mackenzie, Poten & Partners, IEA, S&P Global Commodity Insights cnd FGE 2022 & 2023 data.

AET-1.5 = Accelerated Energy Transition -1.5-degree; APS = Announced Pledges Scenario; NZE: Net Zero Emissions by 2050 Scenario - Note: depiction of IEA scenarios has been adjusted for format

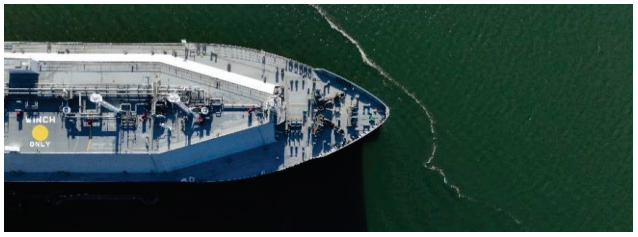
Summary

Europe benefits from LNG industry flexibility in 2022

- European LNG imports up by 60% to replace Russian gas
- Global gas and LNG prices remain volatile hitting record levels in 2022
- Drop in Russian gas supply was offset by LNG imports and demand destruction in Europe
- Continued lockdowns and lower economic growth led to a contraction in Chinese gas demand
- Europe's appetite for LNG impacted other markets
- New US liquefaction helped balance global LNG supply
- Global trade flows reversed in 2022

Market volatility triggers energy security interventions – with lasting economic and emissions impacts

- Immediate policy actions in 2022 to manage energy security and high energy prices
- The power of effective policy making - two terminals set up in six months for importing LNG to replace Russian gas
- Germany fires up coal plants to meet the energy gap
- Coal use rebounds in major Asian economies
- Gas demand destruction hits European industrial sector
- Not all energy demand can be electrified - For future energy security, gas needs to be decarbonised
- Continued uptake of gas in transport



Global gas and LNG markets expected to evolve as market dynamics point to a structural change

- Continued volatility expected in the near term
- Loss of Russian piped imports have structurally altered Europe's gas market
- Changing role of China– from an LNG growth market to flexible market
- Three independent commercial structures for LNG to co-exist
- Increasing role of US supply in global LNG market increases exposure to US gas market risks
- Term contracts reduce exposure to price volatility Portfolio players stepping up to secure future supply
- Investment needed to meet forecasted LNG demand
- Progress on developing lower emission LNG technologies

https://www.reuters.com/business/energy/pakistan-plans-quadruple-domestic-coal-fired-power-move-away-gas-2023-02-13/

3 minute readFebruary 13, 20235:48 PM MSTLast Updated 2 days ago

Exclusive: Pakistan plans to quadruple domestic coal-fired power, move away from gas

By Gibran Naiyyar Peshimam

ISLAMABAD, Feb 14 (Reuters) - Pakistan plans to quadruple its domestic coal-fired capacity to reduce power generation costs and will not build new gas-fired plants in the coming years, its energy minister told Reuters on Monday, as it seeks to ease a crippling foreign-exchange crisis.

A shortage of natural gas, which accounts for over a third of the country's power output, plunged large areas into hours of darkness last year. A surge in global prices of liquefied natural gas (LNG) after Russia's invasion of Ukraine and an onerous economic crisis had made LNG unaffordable for Pakistan.

"LNG is no longer part of the long-term plan," Pakistan Energy Minister Khurram Dastgir Khan told Reuters, adding that the country plans to increase domestic coal-fired power capacity to 10 gigawatts (GW) in the medium-term, from 2.31 GW currently.

Pakistan's plan to switch to coal to provide its citizens reliable electricity underscores challenges in drafting effective decarbonisation strategies, at a time when some developing countries are struggling to keep lights on.

Despite power demand increasing in 2022, Pakistan's annual LNG imports fell to the lowest levels in five years as European buyers elbowed out price-sensitive consumers.

"We have some of the world's most efficient regasified LNG-based power plants. But we don't have the gas to run them," Dastgir said in an interview.

The South Asian nation, which is battling a wrenching economic crisis and is in dire need of funds, is seeking to reduce the value of its fuel imports and protect itself from geopolitical shocks, he said.

Pakistan's foreign exchange reserves held by the central bank have fallen to $2.9 billion, barely enough to cover three weeks of imports.

"It's this question of not just being able to generate energy cheaply, but also with domestic sources, that is very important," Dastgir said.

The Shanghai Electric (601727.SS) Thar plant, a 1.32 GW capacity plant that runs on domestic coal and is funded under the China-Pakistan Economic Corridor (CPEC), started producing power last week. The CPEC is a part of Beijing's global Belt and Road Initiative.

In addition to the coal-fired plants, Pakistan also plans to boost its solar, hydro and nuclear power fleet, Dastgir said, without elaborating.

If the proposed plants are constructed, it could also widen the gap between Pakistan's power demand and installed power generation capacity, potentially forcing the country to idle plants.

The maximum power demand met by Pakistan during the year ended June 2022 was 28.25 GW, more than 35% lower than power generation capacity of 43.77 GW.

It was not immediately clear how Pakistan will finance the proposed coal fleet, but Dastgir said setting up new plants will depend on "investor interest," which he expects to increase when newly commissioned coal-fired plants are proved viable.

Financial institutions in China and Japan, which are among the biggest financiers of coal units in developing countries, have been backing out of funding fossil-fuel projects in recent years amid pressure from activists and Western governments.

Reporting by Gibran Naiyyar Peshimam in Islamabad Writing by Sudarshan Varadhan Editing by Matthew Lewis

https://tass.com/economy/1578515

19 FEB, 06:37

Gazprom eyes new markets, plans to launch new projects

According to Gazprom CEO Alexey Miller, the Asian market is currently the fastest growing in the globe

MOSCOW, February 19. /TASS/. Gazprom is currently researching new markets and intends to begin additional gas pipelines projects in the near future, Gazprom CEO Alexey Miller said in an interview with on Rossiya 1 TV channel.

"Diversifying routes is always beneficial because you can't put all of your eggs in one basket. Of course, we're thinking about new markets, we have a lot of resources for many years to come. It is evident that we will begin executing new big projects for the construction of major gas pipelines in the very near future," he said.

According to him, the Asian market is currently the fastest growing in the globe. "Consumption volumes are increasing, and we see very promising prospects for Russian gas in this market," Miller said.

The CEO of Gazprom noted that the company is now the global energy market leader and is one or two generations ahead of its competitors.

TAGS

Gazprom

For Immediate Release
February 16, 2023
Lynn Helms, Ph.D., Director ND Department of Mineral Resources

NORTH Dakota | Mineral Resources
Be Legendary.™

North Dakota Department of Mineral Resources February Director's Cut and December 2022 Production Numbers

Oil Production Numbers

November	32,951,684 barrels	= 1,098,389 barrels/day (final)
New Mexico	47,785,549 barrels	= 1,592,852 barrels/day **+1.6%**
December '22	29,644,931 barrels	= 956,288 barrels/day **-13%** **RF -4.4%**
	1,519,037	all-time high Nov 2019
	922,554 barrels/day	= 97% from Bakken and Three Forks
	33,734 barrels/day	= 3% from Legacy Pools

Revised Revenue Forecast **1,000,000 barrels/day**

Crude Price ($barrel)	**ND Light Sweet**	**WTI**	**ND Market**	
November	82.18	84.39	82.07	**RF+64%**
December	73.35	76.52	73.19	**RF+46%**
Today	73.15	78.59	75.87	**Est. RF+52%**
All-time high (6/2008)	125.62	134.02	126.75	
Revised Revenue Forecast			**50.00**	

Gas Production and Capture

November - Final	90,881,078 MCF	=	3,029,369 MCF/Day	
94% Capture	85,268,599 MCF	=	2,842,287 MCF/Day	
December - Prelim	81,939,235 MCF	=	2,643,201 MCF/Day	**-13%**
94% Capture	76,658,043 MCF	=	2,472,840 MCF/Day	
			3,175,779 all-time high 9/2022	
			3,021,655 all-time high 9/2022	

Wells Permitted	Drilling	Seismic
November	86	0
December	94	0
January '23	79	2
		All-time high of 370 in 10/2012

Rig Count		
November	40	
December	44	
January	46	
Today	46	All time high 218 in 5/29/2012
Federal Surface	1	
New Mexico	109	

Waiting on Completions	
November	447
December	450

Inactive	
November	2,271
December	2,613

Completed		
November	58 (Preliminary)	
December	104 (Preliminary)	
January	67 (Preliminary)	**RF+12%**
Revised Rev Forecast	30-40-50-60	

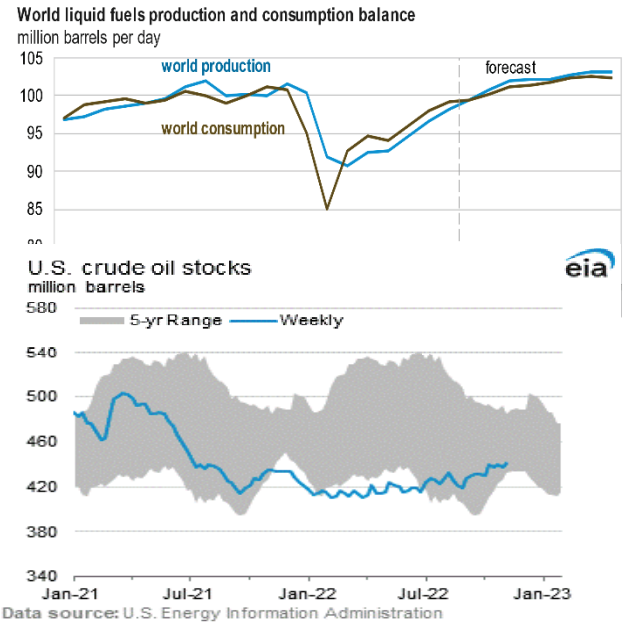
Producing		
November	17,580	
December	17,230 (Preliminary)	NEW all-time high 17,791 10/2022
	15,134 wells	88% are now unconventional Bakken/Three Forks Wells
	2,096 wells	12% produced from legacy conventional pools

Fort Berthold Reservation Activity

	Total	Fee Land	Trust Land
Oil Production (barrels/day)	140,946	55,142	85,804
Drilling Rigs	5	3	2
Active Wells	2,640	649	1,991
Waiting on Completion	20		
Approved Drilling Permits	228	33	195
Potential Future Wells	3,914	1,118	2,796

Comments:

The drilling rig count has stalled in the mid-forties, with a gradual increase expected over the next two years.



There are now 18 crews active.

OPEC+ is managing production month to month. Russia sanctions, China COVID lockdowns, and looming recessions have created significant price volatility in an already volatile market.

Crude oil transportation capacity, including rail deliveries to coastal refineries, is adequate but could be disrupted due to: US Appeals Court for the ninth circuit upholding of a lower court ruling protecting the Swinomish Indian Tribal Community's right to sue to enforce an agreement that restricts the number of trains that can cross its reservation in northwest Washington state.

DAPL Civil Action No. 16-1534 continues, but the courts have now ruled that DAPL can continue normal operations until the USACOE EIS is completed.

Potential railroad worker strike – reported that a tentative deal had been reached.

Drilling activity is expected to increase slowly, with operators maintaining a permit inventory of approximately 12 months.

A survey of operators by JPT revealed the following:

"The surge in the cost of services and supplies pushed the average oil price needed to justify drilling a new oil well in the Mid-Continent to $65/bbl., according to a survey of industry experts by the Federal Reserve Bank of Kansas City released on 8 July.

When they were asked what it would take to get them to substantially increase drilling, they put the number at $98/bbl., which was higher than the closing price for the WTI price in futures trading on 14 July."

There is 1 survey active, 1 recording, 0 NDIC reclamation projects, 0 remediating, 2 permitted, 6 suspended.

US natural gas storage is less than 1.4% below the five-year average. Both US and world crude oil inventories are approaching normal. US strategic petroleum reserve is at its lowest level since 1984.

The price of natural gas delivered to Northern Border at Watford City has decreased to $1.91/MCF today, lowest since December 2020, due to oversupply in the Midwest US even as LNG prices in Europe remain very high. Current oil to gas price ratio is 40 to 1. The state-wide gas flared volume from November to December increased 16.7 MMCFD to 170.4 MMCF per day, the statewide percent flared was unchanged at 6% while Bakken gas capture percentage remained unchanged at 94%. The historical high flared percent was 36% in 09/2011.

Gas capture details are as follows:

Statewide	94%
Statewide Bakken	94%
Non-FBIR Bakken	95%
FBIR Bakken	94%
Trust FBIR Bakken	95%
Fee FBIR	85%
Big Bend	78%
Deep Water Creek Bay	76%
Twin Buttes	59%
Charlson	84%

The Commission established the following gas capture goals:

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

BLM on 1/20/21 DOI issued order 3395 implementing a 60-day suspension of Federal Register publications; issuing, revising, or amending Resource Management Plans; granting rights of way and easements; approving or amending plans of operation; appointing, hiring, or promoting personnel; leasing; and permits to drill. On 1/27/21, President Biden issued an executive order that mandates a "pause" on new oil and gas leasing on federal lands, onshore and offshore, "to the extent consistent with applicable law," while a comprehensive review of oil and gas permitting, and leasing is conducted by the Interior Department. There is no time limit on the review, which means the president's moratorium on new leasing is indefinite. The order does not restrict energy activities on lands the government holds in trust for Native American tribes.

MONTHLY UPDATE

FEBRUARY 2023 PRODUCTION & TRANSPORTATION

Published: February 16, 2023

Justin J. Kringstad, Director
North Dakota Pipeline Authority
Office: 701.220.6227
www.northdakotapipelines.com

MONTHLY UPDATE

FEBRUARY 2023 PRODUCTION & TRANSPORTATION

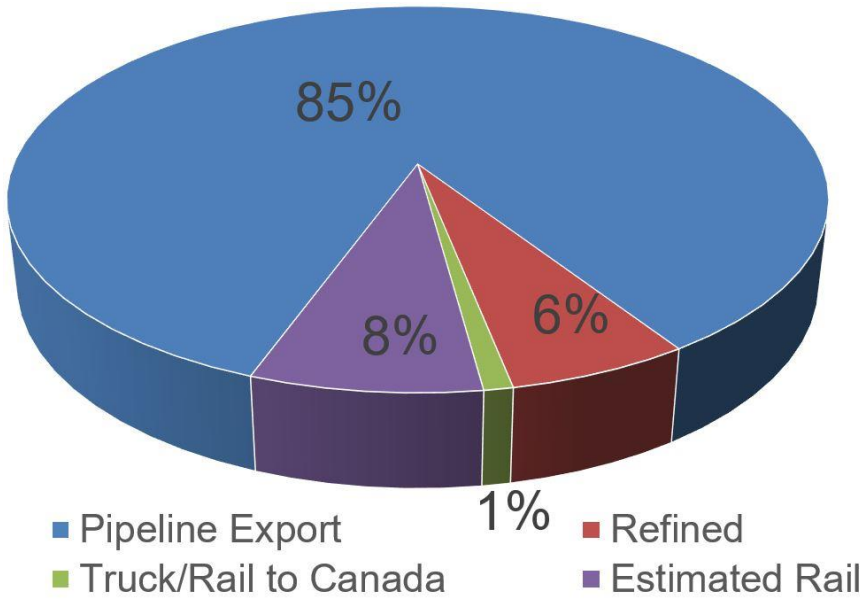
North Dakota Oil Production

Month	Monthly Total, BBL	Average, BOPD
Nov. 2022 - Final	32,951,684	1,098,389
Dec. 2022 - Prelim.	29,644,931	956,288

North Dakota Natural Gas Production

Month	Monthly Total, MCF	Average, MCFD
Nov. 2022 - Final	90,881,078	3,029,369
Dec. 2022 - Prelim.	81,939,235	2,643,201

Estimated Williston Basin Oil Transportation, Dec. 2022



CURRENT DRILLING ACTIVITY:

NORTH DAKOTA[1]

46 Rigs

EASTERN MONTANA[2]

1 Rigs

SOUTH DAKOTA[2]

0 Rigs

SOURCE (FEB 16, 2023):

1. ND Oil & Gas Division
2. Baker Hughes

PRICES:

Crude (WTI): $78.71

Crude (Brent): $85.47

NYMEX Gas: $2.46

SOURCE: BLOOMBERG (FEB 16 2023 11AM CST)

GAS STATS*

94% CAPTURED & SOLD

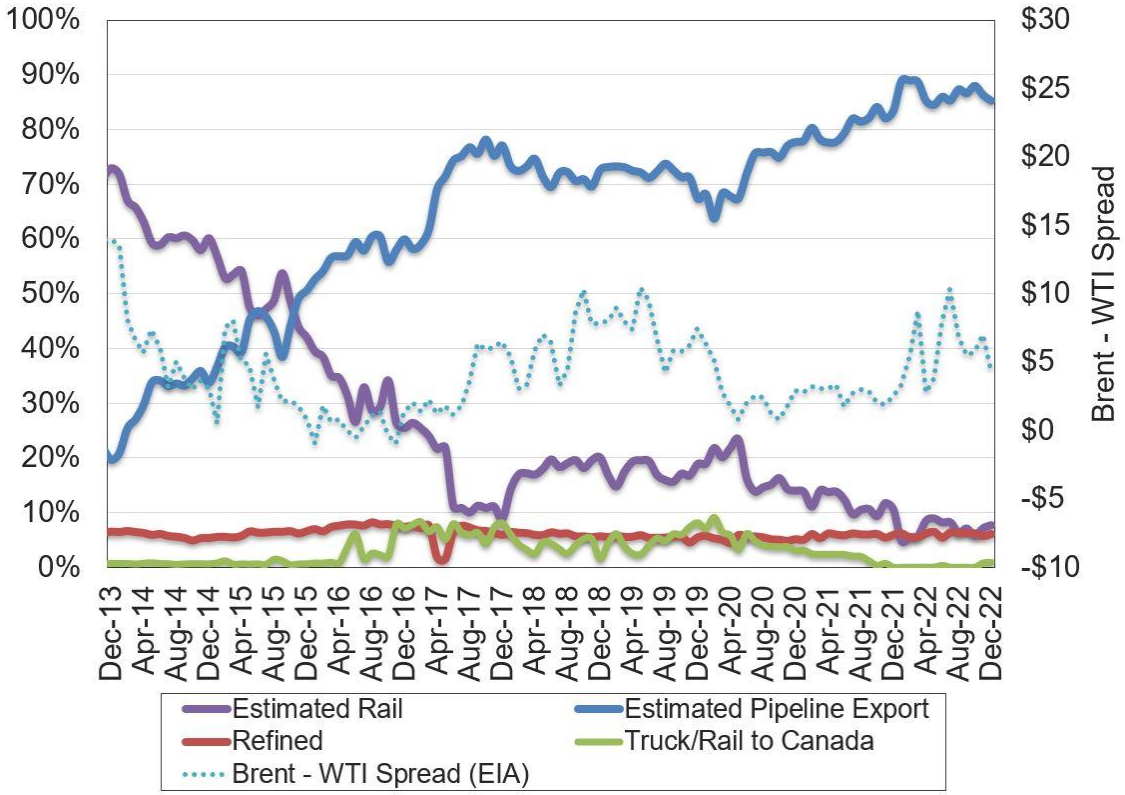
5% FLARED DUE TO CHALLENGES OR CONSTRAINTS ON EXISTING GATHERING SYSTEMS

1% FLARED FROM WELL WITH ZERO SALES

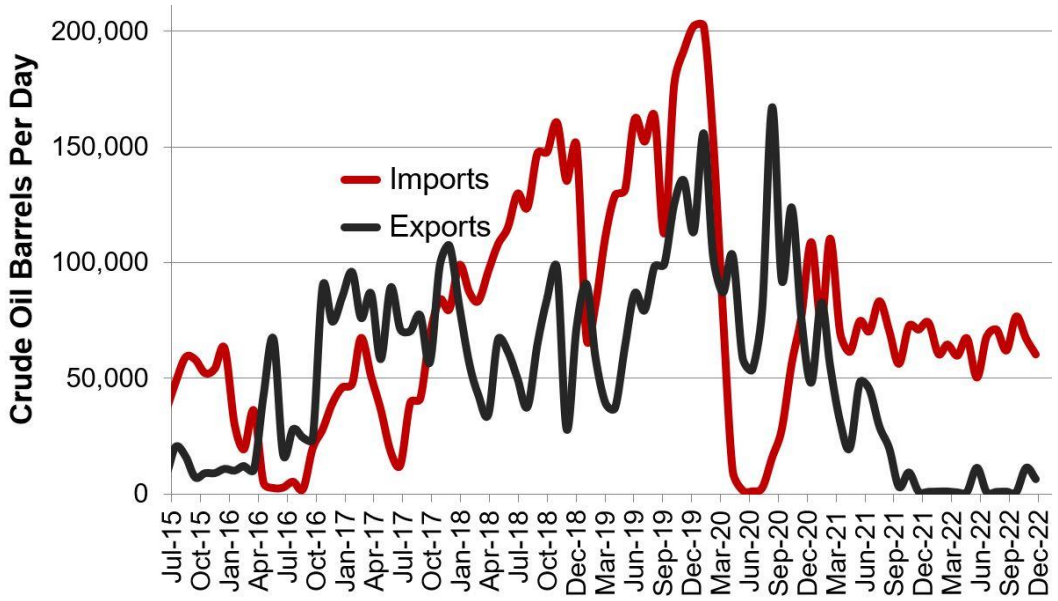
DEC. 2022 NON-CONF DATA

Estimated North Dakota Rail Export Volumes

Estimated Williston Basin Oil Transportation

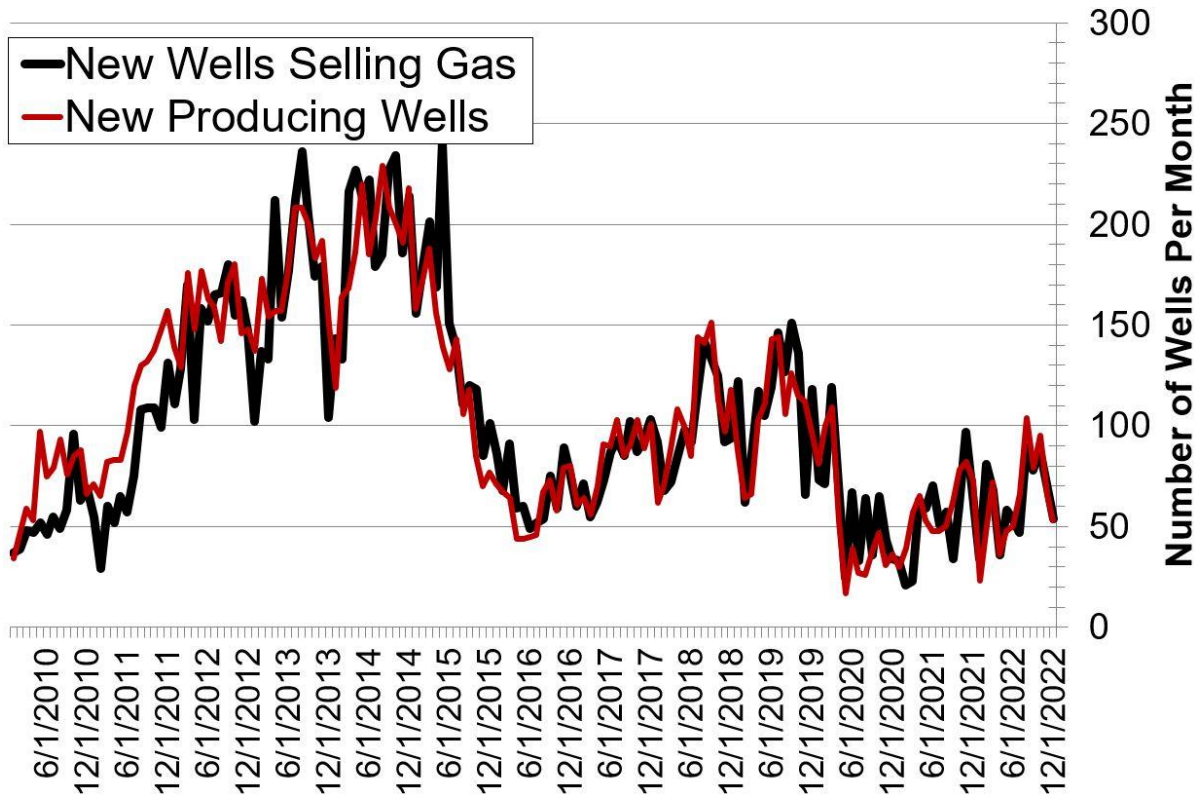


Williston Basin Truck/Rail Imports and Exports with Canada



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

New Gas Sales Wells per Month



US Williston Basin Oil Production, BOPD

2021

MONTH	ND	EASTERN MT*	SD	TOTAL
January	1,147,724	54,357	2,874	1,204,955
February	1,083,820	51,816	2,828	1,138,465
March	1,109,005	53,442	2,744	1,165,191
April	1,121,776	52,561	2,644	1,176,981
May	1,129,785	51,351	2,640	1,183,777
June	1,134,758	48,310	3,103	1,186,171
July	1,078,883	47,982	2,884	1,129,749
August	1,108,084	51,482	2,892	1,162,458
September	1,113,963	54,529	2,847	1,171,339
October	1,110,828	53,215	2,853	1,166,896
November	1,158,553	52,734	2,780	1,214,067
December	1,144,999	51,942	2,717	1,199,658

2022

MONTH	ND	EASTERN MT*	SD	TOTAL
January	1,091,932	51,859	2,709	1,146,500
February	1,095,458	51,161	2,742	1,149,361
March	1,129,880	54,555	2,709	1,187,144
April	908,339	54,099	2,338	964,776
May	1,062,157	52,483	2,648	1,117,288
June	1,099,408	63,258	2,764	1,165,430
July	1,073,610	60,568	2,774	1,136,952
August	1,075,289	60,395	2,756	1,138,440
September	1,121,063	57,637	2,679	1,181,379
October	1,121,754		2,621	
November	1,098,389		2,682	
December	956,288			

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

https://www.libyaherald.com/2023/02/libya-will-produce-more-than-1-5-million-barrels-of-oil-per-day-in-2023-agoco-chairman/

Libya will produce more than 1.5 million barrels of oil per day in 2023: AGOCO chairman

Provision of budget, continued and fast development, stability in Libya and oil sector - all contributing factors

by**Ibrahim Senusi** February 14, 2023

AGOCO chairman Gatrani said Libya can increase production to 1.5 million bpd this year (Photo: AGOCO).

The continuation of the Arabian Gulf Oil Company's (AGOCO) development operations at this pace will inevitably lead to Libya reaching a production rate of more than 1.5 million barrels of oil per day in 2023, AGOCO chairman Salah Gatrani said in an exclusive statement to *Libya Herald*.
He said this was because of the stability witnessed by the country in general, and by the oil sector in particular. Therefore, he continued, the Gulf Company has developed its own plan within the efforts of the National Oil Corporation (NOC). Libya has been unable to maintain production beyond 1.2 million bpd.

Gatrani was commenting to *Libya Herald* following Sunday's AGOCO's meeting on developing reserves and increasing oil production in the sector companies, attended by relevant AGOCO and NOC management.
The AGOCO chairman said that his company has already begun to implement the plan prepared by the NOC to raise production and increase reserves.

Training, localising and developing new techniques
He said AGOCO had actually delayed several projects to raise the efficiency of the employees in the company, including a cooperation project with KAMCO Oil Services Company to raise the efficiency

of employees, localize and develop technology in the company, and keep pace with global updates in the fields of drilling oil wells and extracting crude oil.

Gatrani referred to the conclusion of a training course for workers in the Nafoura field in the field of production engineering on the use of new techniques of electrical narratives and their applications to evaluate rock layers in oil-producing wells as well as water injection wells.

NOC is providing finance after securing it from government

He commended the NOC for supporting its oil companies financially, especially after allocating a good budget to the sector from the Abd Alhamid Aldabaiba government, which positively affected the entire oil sector, as several oil wells have returned to production and the completion of preparations in several new wells.

At the meeting Gatrani referred to the speech by NOC chairman Farhat Bengdara at a previous expanded meeting on the NOC's strategic plan to raise production and develop reserves. He pointed to the importance of this plan, which he said requires concerted efforts to achieve it and provide the necessary capabilities that would ensure access to the target smoothly. The most important of these capabilities, he said, is the steady cash flow as well as overcoming and developing all the problems that hinder the productive process.

AGOCO expected to increase most production

Speaking at the meeting, Khalifa Abdul Sadig, NOC board member, said that this meeting is very important and strategic to increase production and develop reserves in AGOCO, which, he said, constitutes the largest percentage of this plan. He said the NOC is counting on AGOCO to Increase production, develop reserves, and counting on it for the success of the NOC's increased production plan. He admitted that the challenges are great, but with a strong will and wise management, Libya will be able to achieve the goals and results.

Tags: AGOCO Arabian Gulf Oil Company

https://tass.ru/ekonomika/12290253
SEP 2, 17:44

Ministry of Energy: production of half of oil reserves in Russia is unprofitable at a price of $ 50 per barrel

Deputy head of the department Pavel Sorokin considers the range of $ 55-60 per barrel as a balanced oil price for 2022

MOSCOW, September 3. / TASS /. The production of about half of the oil reserves in the Russian Federation at a price of $ 50 per barrel is unprofitable. It is worth focusing on working with the current resource base, Deputy Energy Minister Pavel Sorokin said in an interview with the Izvestia newspaper published on Friday.

“Even in our current structure of reserves, a significant part of it is unprofitable at a price of $ 50 - about half there. There is a very large layer of opportunities for working with the current resource base: with small fields, with depleted, with tailing assets, with deeper and more difficult layers. what you need to concentrate on, "Sorokin said.

The Deputy Minister considers the range of $ 55-60 per barrel to be a balanced oil price for next year, but only after the completion of the recovery in the world of production under the OPEC + deal, which under the current terms of the agreement should take place in May 2022.

"In general, after everyone has restored their production to the pre-pandemic level, all other things being equal (and if there are no shocks), the equilibrium price, we think, is in the range of $ 55-60," he said.

Google Translate of TASS Russian story “В Минэнерго сообщили, что рентабельными в России являются только 36% запасов нефти” https://tass.ru/ekonomika/10559021

27 JAN, 04:40

The Ministry of Energy said that only 36% of oil reserves in Russia are profitable

Deputy head of the department Pavel Sorokin noted that the development of deep horizons of Western Siberia will require investments comparable to the cost of drilling in the Arctic

MOSCOW, January 27. / TASS /. Only 36% of 30 billion tons of oil reserves in Russia are profitable, which is associated with the deterioration of development conditions and a drop in the quality of reserves, writes the Deputy Minister of Energy of the Russian Federation Pavel Sorokin in an article for the Energy Policy magazine.

"According to the data of the inventory of the economics of field development, carried out on behalf of the Russian government, out of 30 billion tons of recoverable oil reserves in Russia, only 36% is profitable in the current macroeconomic conditions. This is due to the deterioration of development opportunities: an increase in water cut, the need to permeability and compartmentalization of reservoirs, withdrawal into marginal zones and strata with small thicknesses, and so on, "Sorokin explained.

"All this not only increases the cost of production, but also increases the risks of not confirming the planned development indicators due to the complexity of modeling processes and errors during drilling, for example, the exit from the productive formation during horizontal drilling. As a result, for some assets, the actual profitability of drilling may differ significantly from plans, and reserves are not confirmed, "the deputy minister stressed.

According to him, the quality of reproduction of the resource base is also deteriorating. The average size of new field discoveries in 2015-2019 amounted to 9-14 million tons (excluding several large ones on the shelf and the Payakhskoye field). The increase in reserves in recent years is provided by additional exploration in the operating regions of production, as well as by revaluation of reserves. Basically, in traditional regions, the growth is due to the search for missed deposits or drilling into deep horizons. At the same time, the technological complexity of geological exploration increases significantly.

"It is important to understand that the omission of promising formations when using traditional methods of data interpretation is associated with their small size and complexity. Therefore, it is necessary to apply completely new technologies for exploration and modeling of assets," Sorokin said.

Thus, the question of the future of the Russian oil industry is associated with advanced technological development and increased efficiency. "Only this will allow maintaining the position of one of the lowest producers in terms of cost on the world oil supply curve," the deputy minister sums up.

Investments in the further development of Western Siberia

The development of the deep horizons of Western Siberia will require investments comparable to the costs of drilling in the Arctic, which are traditionally very high, Sorokin also noted.

"The development of deep horizons requires increased investment. For example, for the pre-Jurassic complex of Western Siberia, capital expenditures for exploratory drilling are comparable to the Arctic - from 500 million rubles or more per well. In terms of major discoveries, the most promising region is the Arctic and the shelf. Here Several major discoveries have already been made in recent years - Neptune, Triton, Payakha with total reserves of more than 1.3 billion tons of oil However, these basins are poorly studied and, given the high cost of exploratory drilling, it is necessary to use completely new modeling technologies for effective localization hydrocarbon deposits, "Sorokin noted.

“Thus, the question of the future of the Russian oil industry is associated with advanced technological development and efficiency gains. Only this will allow us to maintain the position of one of the lowest producers in terms of cost on the world oil supply curve,” the deputy minister added.

According to him, the oil and gas industry is currently facing a number of problems that reduce its competitiveness in the world market.

A common problem is the gradual depletion of reserves in developed fields and a drop in oil production in traditional oil-producing regions. The highest rates are observed in the key oil-producing region of Russia - Western Siberia, where production has decreased by 10% over the past ten years - to 288 million tons, Sorokin concludes.

TASS English Posted Story https://tass.com/economy/1249505
27 JAN, 04:26

Only 36% of oil reserves profitable in Russia, energy minister says

This is related to worsening of development opportunities, according to the minister

MOSCOW, January 27. /TASS/. Just 36% of 30 bln tonnes of oil reserves are profitable, Deputy Energy Minister of Russia Pavel Sorokin wrote in his article for the Energy Policy magazine.

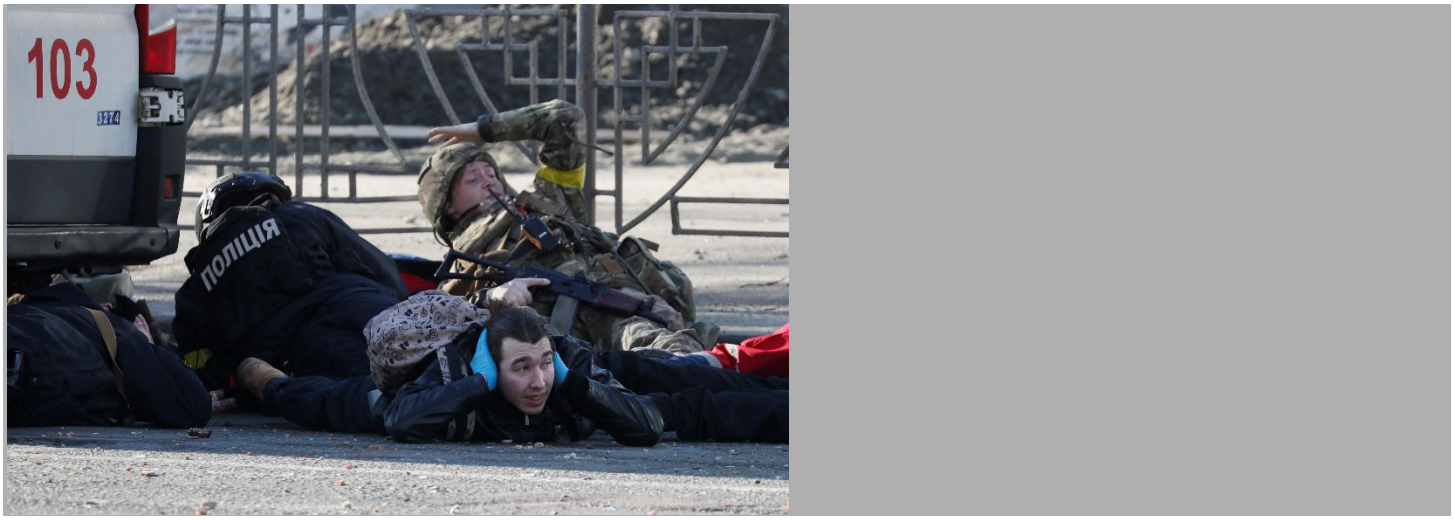
"According to data of fields' development economics inventory completed on the instruction of the Russian government, just 36% out of 30 bln tonnes of recoverable reserves of Russian oil are profitable in current macroeconomic environment. This is related to worsening of development opportunities: growing water cut, the need to build costly wells of complex design, low permeability and compartmentalization of reservoirs, the move to marginal areas and beds with low thickness, and so on," the official said.

"All that does not merely increase the lifting costs but also moves upward risks of failure to confirm target development figures because of the complexity of processes modeling and drilling errors, for example, leaving the pay bed in horizontal drilling. The result is the actual profitability of drilling may considerably differ from plans for certain assets and reserves will not be confirmed," Sorokin said.

3 minute readMarch 1, 20222:03 AM MSTLast Updated a year ago

Timeline: The events leading up to Russia's invasion of Ukraine

Reuters



People take cover as an air-raid siren sounds, near an apartment building damaged by recent shelling in Kyiv, Ukraine February 26, 2022. REUTERS/Gleb Garanich/File Photo

Feb 28 (Reuters) - Russia launched a large-scale invasion of Ukraine on Feb. 24. Here is a timeline of Ukraine's fraught relationship with Moscow since it won independence in 1991 and the events that led to the current conflict.

1991: Shortly after the fall of the Soviet Union, Ukraine declares independence from Moscow.

2004: Pro-Russian candidate Viktor Yanukovich is declared president but allegations of vote-rigging trigger protests, known as the Orange Revolution, forcing a re-run of the vote. Pro-Western former prime minister, Viktor Yushchenko, is elected president.

2005: Yushchenko takes power with promises to lead Ukraine out of the Kremlin's orbit, towards NATO and the EU.

2008: NATO promises Ukraine it will one day join the alliance.

2010: Yanukovich wins a presidential election.

2013: Yanukovich's government suspends trade and association talks with the EU and opts to revive economic ties with Moscow, triggering months of mass rallies in Kyiv.

February 2014: Parliament votes to remove Yanukovich after bloodshed in the protests. Within days, armed men seize parliament in the Ukrainian region of Crimea and raise the Russian flag. Moscow later annexes the territory.

April 2014: Pro-Russian separatists in the eastern region of Donbass declare independence. Some 15,000 people have been killed since 2014 in fighting between the separatists and the Ukrainian army, according to the Kyiv government.

2017: An association agreement between Ukraine and the EU opens markets for free trade of goods and services, and visa-free travel to the EU for Ukrainians.

2019: Former comic actor Volodymyr Zelenskiy is elected president.

Jan. 2021: Zelenskiy appeals to U.S. president Joe Biden to let Ukraine join NATO. In February, his government freezes the assets of opposition leader Viktor Medvedchuk, the Kremlin's most prominent ally in Ukraine.

Spring 2021: Russia begins massing troops near Ukraine's borders in what it says are training exercises.

Nov. 2021: Satellite images taken by Maxar Technologies show ongoing buildup of Russian forces near Ukraine with estimates soon surpassing 100,000 troops deployed.

Dec. 17 2021: Russia presents security demands including that NATO pull back troops and weapons from eastern Europe and bar Ukraine from ever joining.

Jan. 24 2022: NATO puts forces on standby and reinforces eastern Europe with more ships and fighter jets.

Jan. 26: Washington responds to Russia's security demands, repeating a commitment to NATO's "open-door" policy while offering a "pragmatic evaluation" of Moscow's concerns. Two days later Russia says its demands not addressed.

Feb. 2022: Amid growing Western fears Russia could attack Ukraine, the United States says it will send 3,000 extra troops to NATO members Poland and Romania. Washington and allies say they will not send troops to Ukraine, but warn of severe economic sanctions if Russian President Vladimir Putin takes military action.

Feb. 21: In a TV address, Putin says Ukraine is an integral part of Russian history and has a puppet regime managed by foreign powers. Putin orders what he called peacekeeping forces into two breakaway regions in eastern Ukraine, after recognising them as independent.

Feb. 22: The U.S., Britain and their allies sanction Russian parliament members, banks and other assets in response to Putin's troop order. Germany halts the Nord Stream 2 gas pipeline project.

Feb. 23: Russian-backed separatist leaders ask Russia for help repelling aggression from the Ukrainian army.

Feb. 24: Putin authorizes "special military operations" in Ukraine. Russian forces begin missile and artillery attacks, striking major Ukrainian cities including Kiev.

Feb. 26: Western allies announce new sanctions, including restrictions on Russia's central bank and expelling key banks off the main global payments system.

Editing by Silvia Aloisi; Editing by Frank Jack Daniel

Oil Market Highlights

Crude Oil Price Movements

The OPEC Reference Basket (ORB) crude rose $1.94, or 2.4%, m-o-m in January to average $81.62/b. The ICE Brent front-month increased by $2.57, or 3.2%, to average $83.91/b, and NYMEX WTI rose by $1.64, or 2.1%, to average $78.16/b. The Brent/WTI futures spread widened m-o-m, rising by 93¢ to average $5.75/b. The market structure of ICE Brent strengthened in January, and the first-to-third month spread flipped into backwardation. However, the forward curve of NYMEX WTI weakened further, and the first-to-third month spread moved into deeper contango. Hedge funds and other money managers raised their combined futures and options net long positions in January in both ICE Brent and NYMEX WTI, compared to December's low levels.

World Economy

The world economic growth forecast for 2022 is revised up slightly to 3.1%, given the better-than-anticipated 2H22 economic performance in various key economies. The 2023 global economic growth forecast is also revised up slightly to 2.6% with some of the 2H22 momentum carrying over into 2023. For the US, the economic growth forecast is revised up to 2.1% for 2022 and 1.2% for 2023. Similarly, the Euro-zone's economic growth is revised up to 3.5% for 2022 and 0.8% for 2023. Japan's economic growth forecast remains at 1.2% for 2022, but is revised up to 1.2% for 2023. China's economic growth forecast for 2022 is revised down to 3%, but is revised up to 5.2% for 2023. India's economic growth forecast remains unchanged at 6.8% for 2022 and 5.6% for 2023. Brazil's economic growth forecast remains at 2.8% for 2022 and is also unchanged at 1% for 2023. The 2022 economic growth forecast for Russia is revised up to a contraction of 3.5%, followed by a small contraction of 0.5% in 2023, unchanged from last month. While principally the current economic momentum provides a good base for this year's growth, a slowing dynamic for the year is still likely with inflation remaining high and further lifts in key interest rates, particularly in the Euro-zone. The world economy will continue to navigate through numerous challenges including high sovereign debt levels in many regions and geopolitical developments.

World Oil Demand

The world oil demand growth forecast for 2022 remains unchanged from last month's assessment at 2.5 mb/d. The OECD demand in 4Q22 was adjusted downward to reflect the latest data but non-OECD demand in 4Q22 was revised higher due to improvements in economic activity in some countries and a slight recovery in oil demand in China after the lifting of its zero-COVID-19 policy. For 2023, world oil demand growth is adjusted slightly upwards by 0.1 mb/d to stand at 2.3 mb/d. The OECD is projected to grow by around 0.4 mb/d and non-OECD at about 2.0 mb/d.

World Oil Supply

Non-OPEC liquids supply is estimated to have grown by 1.9 mb/d in 2022, broadly unchanged from the previous assessment. Downward revisions to Other Eurasia, OECD Europe and Other Asia were largely offset by upward revisions to liquids production in Russia. The main drivers of liquids supply growth for 2022 are seen to be the US, Russia, Canada, Guyana, China and Brazil, while the largest declines are expected from Norway and Thailand. For 2023, non-OPEC liquids production growth is revised slightly down by 0.1 mb/d from last month and is forecast to grow by 1.4 mb/d. The main drivers of liquids supply growth are expected to be the US, Norway, Brazil, Canada, Kazakhstan and Guyana, while declines are forecast in Russia and Mexico. Nevertheless, large uncertainties remain over the impact of ongoing geopolitical developments, as well as US shale output in 2023. OPEC NGLs and non-conventional liquids are forecast to grow by 0.1 mb/d in 2022 to average 5.39 mb/d and by 50 tb/d to average 5.44 mb/d in 2023. OPEC-13 crude oil production in January decreased by 49 tb/d m-o-m to average 28.88 mb/d, according to available secondary sources.

Product Markets and Refining Operations

Refinery margins reversed trends in January and strengthened substantially in all main trading hubs, with sizeable margin gains registered, particularly in the Atlantic Basin, backed by a firm recovery in gasoline's performance. In the US, a drop in jet/kerosene inventories drove up that products' crack spread, to become the largest margin contributor across the barrel, followed by gasoline. In Europe, robust gasoline exports to the US, amid stronger product buying interest within the region ahead of the 5th of February sanctions on Russian products, supported the products market, particularly at the top section of the barrel. In Asia, the recent lifting of COVID-19 restrictions in China, the boost in transport activity around the Chinese Lunar New Year holidays, the improvement in petrochemical activities and unplanned refinery outages in the country have all contributed to significant support for Asian naphtha and gasoline markets despite losses at the bottom of the barrel.

Tanker Market

Dirty freight rates continued the previous month's decline in January, with m-o-m losses across all monitored routes. Rates slipped from elevated levels, after having been being pushed higher in previous months amid concerns about potential disruptions due to sanctions on Russian crude. However, the upward pressure eased as crude trade flows have largely adjusted ahead of the implementation of sanctions and as Russian crude was seen trading below price cap levels. VLCCs rates on the Middle East-to-East route declined 36% m-o-m in January, while Suezmax rates on the US Gulf-to-Europe route dropped 37% over the same period. Aframax rates on the Indonesia-to-East route gave up the gains seen in the previous month, declining 19%. Clean rates fell for the first time since October, down 42% East of Suez and 52% West of Suez. Some of the downward pressure was due to many ship owners choosing to forego carrying Russian cargos ahead of sanctions, limiting demand for their tankers.

Crude and Refined Products Trade

Preliminary data shows US crude imports hitting a three-year high in January, averaging 6.6 mb/d. US crude exports fell back to 3.6 mb/d in January, after remaining around 4 mb/d over the previous three months. Japan's crude imports hit a five-month high in December, averaging just under 3.0 mb/d. Japan's product imports, including LPG, recorded an 11-month high in December, driven by inflows of heating fuel. China's crude imports were steady in December, averaging 11.4 mb/d. China's import of Russian crude remained broadly unchanged, while strong m-o-m increases were seen from Malaysia, the United Arab Emirates (UAE) and Iraq. Product exports from China strengthened further in December to reach the highest since April 2020, with gasoline, gasoil and jet fuel outflows increasing sharply. India's crude imports were broadly stable m-o-m in December, averaging 4.6 mb/d. India's product imports continued to edge higher in December to stand at a 22-month high of 1.2 mb/d, as a jump in fuel oil inflows outweighed declines in gasoline and LPG. India's product exports surged 31% m-o-m to a nine-month high, with gains seen across the barrel. Estimates show OECD crude imports broadly stable y-o-y in January, despite a sharp drop in pipeline flows, while refined product exports were higher over the same period.

Commercial Stock Movements

Preliminary December data sees total OECD commercial oil stocks down 10.9 mb from the previous month. At 2,768 mb, inventories were 117 mb higher than the same month a year ago, 95 mb lower than the latest five-year average and 158 mb below the 2015–2019 average. Within the components, crude stocks rose by 5.2 mb, while product stocks fell m-o-m by 16.2 mb. At 1,344 mb, OECD crude stocks were 72 mb higher than the same time a year ago, but 36 mb lower than the latest five-year average and 83 mb lower than the 2015–2019 average. OECD product stocks stood at 1,424 mb, representing a surplus of 45 mb from the same time in the previous year, but 59 mb lower than the latest five-year average and 75 mb below the 2015–2019 average. In terms of days of forward cover, OECD commercial stocks rose m-o-m by 0.3 day in December to stand at 60.1 days. This is 2.2 days above levels seen in the same month last year, but 2.5 days less than the latest five-year average and 2.3 days lower than the 2015–2019 average.

Balance of Supply and Demand

Demand for OPEC crude in 2022 remains unchanged from the previous month's assessment to stand at 28.6 mb/d. This is around 0.5 mb/d higher than in 2021. Demand for OPEC crude in 2023 is revised up by 0.2 mb/d from the previous assessment to stand at 29.4 mb/d, which is 0.8 mb/d higher than in 2022.

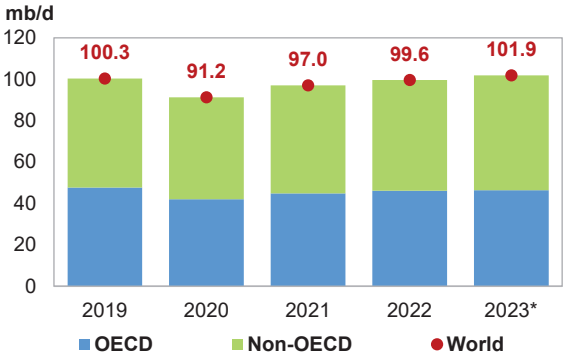
Feature Article

Review of global oil demand trend

Global oil demand in 2022 is estimated to have grown by 2.5 mb/d, y-o-y, supported by solid economic activity from OECD and non-OECD countries other than China which saw a decline in its yearly oil requirements. However, the lifting of China's zero-COVID-19 policy in December 2022 is expected to support its oil demand in 2023. Meanwhile, the OECD is forecast to see somewhat slower oil demand increases this year, leading to forecast global oil demand growth in **2023** at 2.3 mb/d, y-o-y.

In **2022**, **OECD** oil demand increased by about 1.3 mb/d, y-o-y, led by OECD Americas, which increased by about 0.7 mb/d, y-o-y. In OECD Europe, oil demand grew by 0.5 mb/d, y-o-y, while OECD Asia Pacific saw minor growth of 0.1 mb/d, y-o-y. With regard to oil products in the OECD, jet/kerosene led demand growth, due to a recovery in airline activities, although overall demand remained 17% below pre-pandemic levels in 2019. This was followed by LPG, which surpassed the pre-pandemic level by 8%, due to a strong petrochemical sector. Gasoil/diesel and gasoline also grew, almost reaching the pre-pandemic level, due to an improvement in economic activities and the transportation sector.

Graph 1: Global oil demand by region, 2019–2023



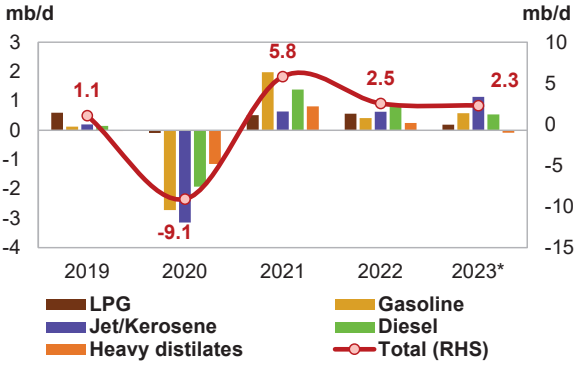
*Note: * 2023 = Forecast. Source: OPEC.*

Oil demand in the **non-OECD** region grew by 1.3 mb/d, y-o-y, with the Middle East contributing 0.5 mb/d, and India and Other Asia each rising by close to 0.4 mb/d, y-o-y (*see **Graph 1***). In terms of products, non-OECD demand growth was led by increases in gasoil/diesel, followed by gasoline and residual fuels. At the same time, jet kerosene declined slightly y-o-y. All product categories in the non-OECD region, except for jet kerosene, surpassed pre-pandemic levels.

Looking ahead, global oil demand is forecast to rise by 2.3 mb/d in **2023**, y-o-y. The **OECD** region's demand is projected to rise by around 0.4 mb/d in 2023, still just below pre-pandemic levels in absolute volumes. OECD Americas is forecast to drive growth, while oil demand in OECD Europe and OECD Asia Pacific is projected to remain broadly unchanged, y-o-y. In the **non-OECD**, oil demand is forecast to grow by around 2.0 mb/d, y-o-y, surpassing pre-pandemic levels for the second consecutive year. Demand is projected to be driven by China, Other Asia and the Middle East.

Globally, in terms of products, transportation fuels are expected to be the main drivers for oil demand. Consumption of both gasoline and diesel is forecast to increase by around 1.1 mb/d y-o-y, well above pre-pandemic levels and supported by expected continued growth in mobility amid an ongoing rebound in the services sector. Jet fuel demand is projected to continue its rebound, increasing by around 1.1 mb/d y-o-y, as air travel continues to recover, both nationally and internationally, though it is forecast to remain 9% below pre-pandemic levels. LPG growth is expected to slow, particularly in the OECD, up by 0.2 mb/d y-o-y globally (*see **Graph 2***).

Graph 2: Global oil demand growth by product, y-o-y



*Note: * 2023 = Forecast. Source: OPEC.*

Key to oil demand growth in 2023 will be the return of China from its mandated mobility restrictions and the effect this will have on the country, the region and the world. Concern hovers around the depth and pace of the country's economic recovery and the consequent impact on oil demand. Much will depend on how the government plans to manoeuvre the delicate balance of curbing COVID-19 infections versus opening up for business. Moreover, a number of global economic concerns – including the inflation levels, monetary tightening measures, sovereign debt levels, as well as geopolitical tensions – will weigh on global oil demand prospects. Amid this considerable challenge, it is important for the countries of the Declaration of Cooperation (DoC) to continue coordinating efforts to support a balanced and stable oil market to help navigate these uncertainties.

World Oil Demand

2022 world oil demand growth is estimated to remain broadly unchanged from last month at 2.5 mb/d. However, in 3Q22 and 4Q22, oil demand was adjusted slightly lower to incorporate revisions to OECD data. By contrast, oil demand in non-OECD countries is revised higher, due to improvements in economic activity in some countries and a recovery in oil demand in China after the zero-COVID-19 policy was abandoned. Total world oil demand is estimated to have averaged 99.6 mb/d in 2022.

For 2023, the world oil demand growth forecast is slightly adjusted upwards from the last MOMR, to stand at 2.3 mb/d. Oil demand in the OECD is projected to grow by around 0.4 mb/d and in the non-OECD region by around 2.0 mb/d. Minor upward adjustments were made to OECD Asia Pacific in 1Q23 and 2Q23, to reflect the expected positive spillover from the opening of the Chinese economy on the region's petrochemical sector. In the non-OECD, minor upward revisions were applied to consider an acceleration of oil demand growth in China, on the back of a stronger perceived performance of the country's economy following the abandonment of COVID-19 restrictions. Accordingly, world oil demand in 1Q23 is forecast to rise by 1.9 mb/d y-o-y and to grow even more in the following quarters. For 2023, oil demand is projected to average 101.9 mb/d. However, this forecast is subject to many uncertainties, including global economic activity, a possible shift in China's COVID-19 policy, and ongoing geopolitical developments.

Table 4 - 1: World oil demand in 2022*, mb/d

							Change 2022/21	
World oil demand	**2021**	**1Q22**	**2Q22**	**3Q22**	**4Q22**	**2022**	**Growth**	**%**
Americas	24.32	24.77	24.98	25.33	25.16	25.06	0.75	3.08
of which US	*20.03*	*20.38*	*20.41*	*20.62*	*20.68*	*20.52*	*0.49*	*2.44*
Europe	13.13	13.19	13.42	14.09	13.73	13.61	0.48	3.68
Asia Pacific	7.38	7.85	6.99	7.22	7.71	7.44	0.06	0.81
Total OECD	**44.83**	**45.81**	**45.39**	**46.65**	**46.61**	**46.12**	**1.29**	**2.88**
China	14.97	14.74	14.42	14.64	15.44	14.81	-0.16	-1.06
India	4.77	5.18	5.16	4.95	5.26	5.14	0.37	7.66
Other Asia	8.63	9.09	9.27	8.73	8.85	8.98	0.36	4.12
Latin America	6.23	6.32	6.36	6.55	6.49	6.43	0.20	3.27
Middle East	7.79	8.06	8.13	8.50	8.32	8.25	0.46	5.93
Africa	4.22	4.51	4.15	4.25	4.61	4.38	0.16	3.72
Russia	3.61	3.67	3.42	3.45	3.59	3.53	-0.08	-2.32
Other Eurasia	1.21	1.22	1.16	1.00	1.21	1.15	-0.06	-5.07
Other Europe	0.75	0.79	0.75	0.73	0.80	0.77	0.01	1.62
Total Non-OECD	**52.18**	**53.58**	**52.81**	**52.79**	**54.56**	**53.44**	**1.25**	**2.40**
Total World	**97.01**	**99.38**	**98.20**	**99.44**	**101.17**	**99.55**	**2.54**	**2.62**
Previous Estimate	97.01	99.38	98.20	99.43	101.18	99.55	2.54	2.62
Revision	0.00	0.00	0.00	0.01	-0.01	0.00	0.00	0.00

*Note: * 2022 = Estimate. Totals may not add up due to independent rounding. Source: OPEC.*

Table 4 - 2: World oil demand in 2023*, mb/d

World oil demand	2022	1Q23	2Q23	3Q23	4Q23	2023	Change 2023/22 Growth	Change 2023/22 %
Americas	25.06	24.96	25.27	25.68	25.42	25.33	0.27	1.08
of which US	*20.52*	*20.46*	*20.54*	*20.88*	*20.81*	*20.67*	*0.15*	*0.74*
Europe	13.61	13.22	13.46	14.13	13.78	13.65	0.04	0.29
Asia Pacific	7.44	7.89	7.05	7.27	7.73	7.48	0.04	0.55
Total OECD	**46.12**	**46.08**	**45.77**	**47.08**	**46.93**	**46.47**	**0.35**	**0.76**
China	14.81	15.10	15.22	15.25	16.03	15.40	0.59	4.01
India	5.14	5.41	5.44	5.21	5.50	5.39	0.25	4.96
Other Asia	8.98	9.42	9.61	9.10	9.20	9.33	0.35	3.85
Latin America	6.43	6.44	6.49	6.71	6.65	6.58	0.15	2.29
Middle East	8.25	8.45	8.46	8.84	8.61	8.59	0.33	4.04
Africa	4.38	4.71	4.34	4.43	4.80	4.57	0.19	4.34
Russia	3.53	3.63	3.45	3.59	3.75	3.61	0.08	2.17
Other Eurasia	1.15	1.21	1.16	1.02	1.22	1.15	0.01	0.51
Other Europe	0.77	0.80	0.76	0.75	0.82	0.78	0.02	2.32
Total Non-OECD	**53.44**	**55.18**	**54.92**	**54.91**	**56.58**	**55.40**	**1.96**	**3.68**
Total World	**99.55**	**101.26**	**100.70**	**101.99**	**103.51**	**101.87**	**2.32**	**2.33**
Previous Estimate	99.55	101.04	100.65	101.90	103.47	101.77	2.22	2.23
Revision	0.00	0.22	0.05	0.09	0.04	0.10	0.10	0.10

*Note: * 2022 = Estimate and 2023 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

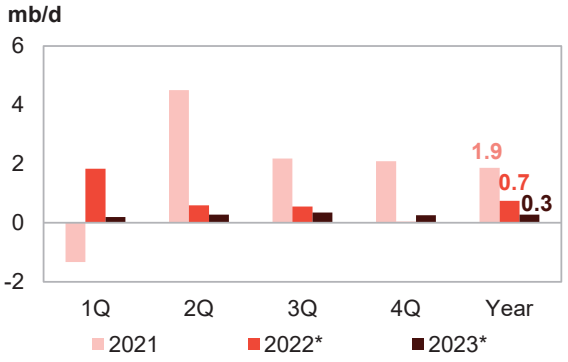
OECD

OECD Americas

Update on the latest developments

Oil demand in the US grew by a minor 20 tb/d y-o-y in **November**, down from 40 tb/d y-o-y growth in October, on signs of slowing economic activity. The US economy has been facing headwinds from rising inflation and other macroeconomic challenges weighing on oil demand. US core inflation declined somewhat, but remained high, standing at 6.5% y-o-y in November. This compared with 7.1% reported in October. The manufacturing PMI was at 49.0 points, below the 50 point threshold, according to ISM, while the services PMI was at 56.5 points, up from 54.4 points in October. Further, data from the US Federal Highway Administration shows that November traffic volume trends remained below pre-pandemic levels and declined by 1.3% y-o-y. Compared to October 2022, traffic also dropped by 1.1% m-o-m.

Graph 4 - 1: OECD Americas oil demand, y-o-y change



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

However, the IATA Air Passenger Market Analysis reported that US airline activity rebounded further in November 2022, to stand merely 1% below the November 2019 level.

The “other products” category led November oil demand growth at 0.3 mb/d y-o-y, up from a 30 tb/d y-o-y decline in October. Jet fuel increased by 0.1 mb/d y-o-y in November, from y-o-y growth of 51 tb/d in October. The uptick in jet fuel demand was due to the continued air travel recovery. LPG saw y-o-y growth of 60 tb/d, down from y-o-y growth of 0.2 mb/d seen in October. With Americans making fewer car journeys, gasoline again declined by 0.2 mb/d y-o-y in November. Residual fuels also recorded a y-o-y decline of 60 tb/d in November, and naphtha remained weak for 11 consecutive months, due to low demand from the petrochemical sector, posting a 44 tb/d y-o-y decline.

Table 4 - 3: US oil demand, mb/d

By product	Nov 21	Nov 22	Change Growth	Nov 22/Nov 21 %
LPG	3.54	3.60	0.06	1.7
Naphtha	0.19	0.14	-0.04	-23.4
Gasoline	9.02	8.85	-0.17	-1.9
Jet/kerosene	1.51	1.61	0.10	6.3
Diesel	4.19	4.06	-0.13	-3.1
Fuel oil	0.41	0.35	-0.06	-14.6
Other products	2.00	2.27	0.27	13.5
Total	**20.86**	**20.88**	**0.02**	**0.1**

Note: Totals may not add up due to independent rounding. Sources: EIA and OPEC.

Near-term expectations

In **1Q23**, solid US GDP growth momentum is forecast to partially carry over from 2022. However, the risk of renewed inflationary pressures and the seasonal weakening of mobility during the winter is expected to reduce demand for transportation fuels. Accordingly, in 1Q23, US oil demand is projected to grow y-o-y by 80 tb/d. Jet fuel is expected to be the major driver of oil demand growth, as air travel in the US was just 1% below pre-pandemic levels in November. Furthermore, diesel and petrochemical feedstock requirements are also expected to support demand growth in the quarter, while gasoline demand is anticipated to remain relatively weak.

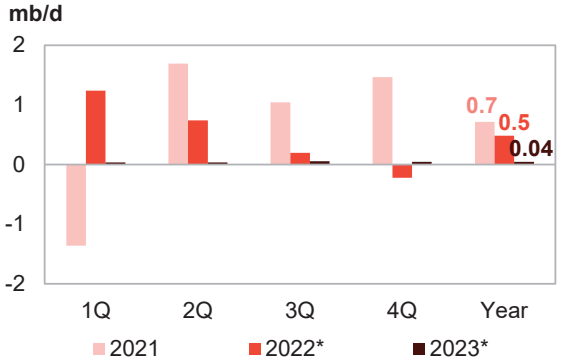
In **2Q23**, the US GDP is projected to improve slightly, with inflation expected to continue to decline. Furthermore, the expected further recovery in mobility, combined with robust airline activity and improving petrochemical demand for feedstock, will likely support oil demand to grow y-o-y by 0.13 mb/d in the quarter. However, risks remain skewed downside, with a focus on developments in the US economy.

OECD Europe

Update on the latest developments

Oil demand in OECD Europe showed y-o-y declines for three consecutive months. In **November**, the region posted a y-o-y decline of 0.3 mb/d, though this was an improvement from an annual decline of 0.9 mb/d in October. The region has been facing daunting challenges, partly due to ongoing geopolitical developments, coupled with inflation and slowing economic activity, which continue to weigh on oil demand in the region. On a positive note, jet/kerosene increased y-o-y by 0.2 mb/d in November as airline activity continued to improve. Residual fuels also grew, rising by 90 tb/d y-o-y in November. Gasoline posted y-o-y growth of 60 tb/d in November following two months of annual decline.

Graph 4 - 2: OECD Europe's oil demand, y-o-y change



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

Diesel sustained a three-month y-o-y decline in November, contracting by 0.3 mb/d, y-o-y, mostly due to weaker manufacturing and trucking activity. Industrial production decelerated slightly, increasing by 1.9% y-o-y, compared with 2.8% y-o-y growth in October. At the same time, the Manufacturing and Services PMI stood at 47.1 and 48.5 in November, respectively, which is below the 50 threshold of expansion, and the services PMI stood at 48.5. Lower demand from the European petrochemical industry has been affecting feedstock in the region. Accordingly, naphtha and LPG declined by 0.25 mb/d and 20 tb/d, y-o-y, respectively. Finally, the "other products" category also declined by 80 tb/d, y-o-y.

Table 4 - 4: Europe's Big 4* oil demand, mb/d

By product	Nov 21	Nov 22	Change Growth	Nov 22/Nov 21 %
LPG	0.41	0.32	-0.09	-21.9
Naphtha	0.59	0.47	-0.12	-20.7
Gasoline	1.18	1.22	0.04	3.5
Jet/kerosene	0.57	0.67	0.10	17.8
Diesel	3.33	3.14	-0.19	-5.6
Fuel oil	0.17	0.20	0.03	18.2
Other products	0.49	0.42	-0.07	-14.7
Total	**6.72**	**6.43**	**-0.30**	**-4.4**

*Note: * Germany, France, Italy and the UK. Totals may not add up due to independent rounding.*

Sources: JODI, UK Department for Business, Energy & Industrial Strategy, Unione Petrolifera and OPEC.

Near-term expectations

Despite still high inflation, the region's GDP is projected to remain positive y-o-y in **1Q23**. However, the ongoing supply chain bottlenecks, exacerbated by the geopolitical developments in the region, will likely continue to affect the manufacturing and petrochemical sectors of the region. Nevertheless, sustained growth in air travel activity is expected to support overall oil demand in 1Q23, which is projected to grow slightly y-o-y by 30 tb/d on the back of jet fuel demand.

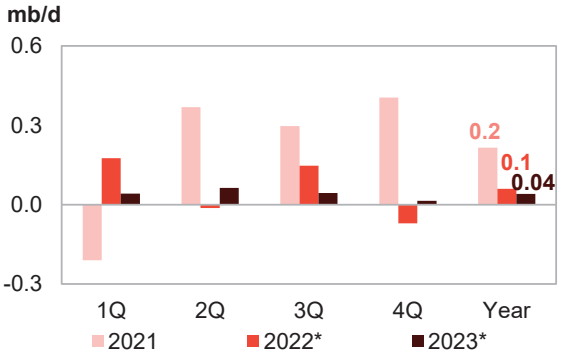
In **2Q23**, GDP growth in the region is projected to weaken further y-o-y, but is forecast to remain positive. Oil demand growth in the quarter is expected to be supported by rising demand for air travel, as well as an expected uptick in road mobility. Accordingly, jet fuel and gasoline are set to be the main oil demand drivers in 2Q23, with overall oil demand forecast to grow 30 tb/d, y-o-y. Risks, however, remain skewed to the downside, hinging on geopolitical and economic developments in the region.

OECD Asia Pacific

Update on the latest developments

Oil demand in OECD Asia Pacific posted slight y-o-y growth of 30 tb/d in **November**, up from a y-o-y decline of 60 tb/d in October. Oil demand increased mostly in Australia, while both Japan and South Korea's oil demand has remained in contraction since September. The two largest oil consuming countries in the region are facing some economic headwinds; Japan's Manufacturing and Services PMIs dropped respectively to 49 and 50.3 m-o-m in November. South Korea also faced some challenges in the month emanating from a truckers' strike. Nonetheless, the country saw a slight improvement in its manufacturing PMI for the month.

Graph 4 - 3: OECD Asia Pacific oil demand, y-o-y change



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

From the perspective of products, jet kerosene was the driver of oil demand growth in the month, increasing y-o-y by 80 tb/d. Airlines based in the Asia Pacific continued to see y-o-y activity improvements, which supported jet/kerosene demand in the region. Rising natural gas prices also led to oil-to-gas switching, enabling the "other products" category to expand by 56 tb/d y-o-y. Other gas oil also benefitted from gas-to-oil switching to grow by 30 tb/d y-o-y. Gasoline demand grew marginally by 10 tb/d, y-o-y.

Naphtha posted an annual decline for the third consecutive month, down by 0.1 mb/d y-o-y, albeit showing an improvement from an annual decline of 0.3 mb/d in October. The region's naphtha market has faced challenges from weak margins to produce plastic derivatives. Naphtha demand was also subdued due to China's zero-COVID-19 policy that impacted the petrochemical industry in Japan and South Korea. Residual fuels saw a y-o-y decline of 3 tb/d. Finally, diesel demand declined by 42 tb/d, y-o-y.

Table 4 - 5: Japan's oil demand, mb/d

By product	Dec 21	Dec 22	Change Growth	Dec 22/Dec 21 %
LPG	0.50	0.67	0.18	35.5
Naphtha	0.80	0.66	-0.15	-18.4
Gasoline	0.78	0.77	-0.01	-0.8
Jet/kerosene	0.64	0.67	0.03	5.1
Diesel	0.85	0.83	-0.02	-2.7
Fuel oil	0.29	0.26	-0.02	-8.4
Other products	0.28	0.07	-0.20	-73.7
Total	**4.13**	**3.93**	**-0.19**	**-4.7**

Note: Totals may not add up due to independent rounding. Sources: JODI, METI and OPEC.

Near-term expectations

The region's GDP is projected to remain positive in 2023, albeit slightly lower than what was seen in 2022. The economies of the region's two major oil-consuming countries, Japan and South Korea, have witnessed slowing momentum and inflation rates in both countries are elevated . At the same time, air travel activity continues to recover. Japan is considering downgrading COVID-19 from a pandemic to a seasonal influenza. Furthermore, the opening of the Chinese economy will also boost the region's petrochemical industry going forward. The region's oil demand is projected to grow by 40 tb/d y-o-y in **1Q23**.

By **2Q23**, oil demand growth is projected to improve slightly at 60 tb/d y-o-y, mainly supported by jet and other transportation fuels, as well as petrochemical feedstock. However, risks remain high and tilted to the downside, mainly dependent on developments in the economies of Japan and South Korea.

Non-OECD

China

Update on the latest developments

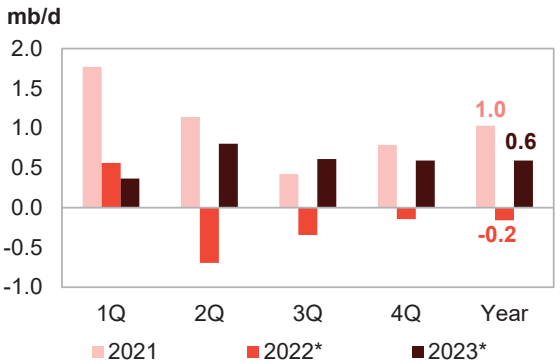
Economic and social activity have started recovering in **China** after the abandonment of the zero-COVID-19 policy in **December**. On the back of this new development, oil demand posted y-o-y growth of 0.2 mb/d in December. This follows y-o-y declines, after weakening from April to November, with only September showing an exception. The oil demand recovery was led by naphtha, which increased by 0.2 mb/d, followed by diesel, which saw a y-o-y growth of 0.1 mb/d.

Despite seven months of overall declining oil demand, diesel demand has been on a positive trajectory since May, partly supported by agricultural activity and a gradual recovery of industrial activities since June, when lockdowns in major cities such as Shanghai and Beijing eased. Furthermore, China's petrochemical industry requirements have been ongoing, as the industry remained in operation despite lockdowns.

Demand for petrochemical feedstock has been relatively resilient in supporting China's oil demand growth. As China continues to build new petrochemical capacities, consumption of naphtha (including naphtha internally produced and used in refinery-integrated plants) and LPG has been stable. China Petroleum & Chemical has continued to operate at around full capacity in December, while Hengli Petrochemical (Dalian) has been operating at around 94% capacity.

In addition, the reopening of the Chinese economy has resulted in a pick-up of industrial and manufacturing activities, also supporting demand for petrochemicals in the country. In December, naphtha posted y-o-y growth of 0.2 mb/d. LPG recorded y-o-y growth of 82 tb/d, and residual fuels saw y-o-y growth of 64 tb/d, y-o-y, in December.

Graph 4 - 4: China's oil demand, y-o-y change



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

On the back of rising travel demand in China, jet/kerosene also saw an increase y-o-y by 70 tb/d, y-o-y, in December. However, gasoline demand is still contracting, albeit it improved from a 0.73 mb/d y-o-y decline in November to a contraction of 0.24 mb/d in December, amid increased internal mobility. Similarly, the "other products" category declined in December by 0.12 mb/d, y-o-y, an improvement from a 0.23 mb/d, y-o-y, decline seen in November.

Table 4 - 6: China's oil demand*, mb/d

By product	Dec 21	Dec 22	Change Growth	Dec 22/Dec 21 %
LPG	2.39	2.47	0.08	3.4
Naphtha	2.15	2.36	0.21	9.6
Gasoline	3.20	2.96	-0.24	-7.6
Jet/kerosene	0.82	0.89	0.07	8.5
Diesel	3.20	3.31	0.11	3.4
Fuel oil	0.39	0.45	0.06	16.4
Other products	2.30	2.18	-0.12	-5.0
Total	**14.45**	**14.63**	**0.18**	**1.2**

*Note: * Apparent oil demand. Totals may not add up due to independent rounding.*
Sources: Argus Global Markets, China OGP (Xinhua News Agency), Facts Global Energy, JODI, National Bureau of Statistics China and OPEC.

Near-term expectations

The abandonment of the zero COVID-19 policy is expected to improve economic and social activity in China. Reports suggest that both mobility and air travel rebounded during the new year festival last month. China's Ministry of Transport expected a 99.5% y-o-y increase in passenger trips during the 2023 Lunar Year Festival, boosting gasoline demand. Similarly, according to Chinese aviation data company VariFlight, domestic flight activity jumped to around 65% of pre-pandemic levels in December, from just 22% in November.

China's GDP is forecast to grow by 5.2% in 2023. In addition, China's plans to expand fiscal spending to aid the economic recovery are likely to support oil demand in manufacturing, construction and mobility. The manufacturing sector is expected to recover relatively quickly, and the aviation sector is expected so see significant increases in both local and international travel, given pent-up demand. Furthermore, the performance of the resilient petrochemical sector is also projected to improve further.

China's **1Q23** oil demand is forecast to see y-o-y growth of 0.4 mb/d, with transportation fuels the main driver of the recovery. Domestic air travel in China has already recovered to around 70% of pre-pandemic levels and international travel is accelerating, supporting demand for jet fuel in the country. Similarly, diesel demand is forecast to grow on the back of increasing manufacturing, construction, agricultural sector-related activity, and feedstock consumption from independent refineries in China's Shandong region may provide some support.

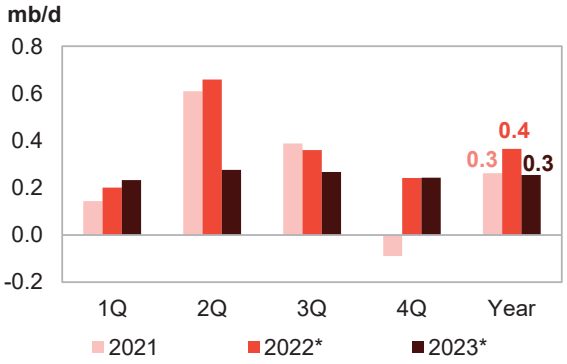
In **2Q23**, manufacturing and construction activity are expected to accelerate further, along with expanding requirements for the petrochemical industry. This would boost demand and output for middle and light distillate products. Furthermore, air travel is expected to continue to rebound. Accordingly, China's oil demand is projected to grow by 0.8 mb/d y-o-y. However, risks are skewed to the downside, depending on the development of COVID-19 infections and a possible reaction by the Chinese government.

India

Update on the latest developments

India's oil demand grew by 0.2 mb/d in **December**. The oil demand increase was led by diesel, which posted y-o-y growth of 0.1 mb/d. Diesel is the leading product in India, accounting for around 35% of total oil demand. Demand for diesel was supported by strong manufacturing activity as indicated by the rise in industrial output, which increased by 6.2%, y-o-y in November. Furthermore, December's manufacturing and Services PMIs increased to 57.8 and 58.5 m-o-m in December. Rising demand for agriculture and transportation activities in the farming sector, combined with progress in construction activity, also aided demand growth for diesel in December. India's inflation rate has also declined, dropping to 5.7% in December from 5.9% in November and is now trending toward the pre-pandemic level of 5.4%.

Graph 4 - 5: India's oil demand, y-o-y change



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

On the back of increased economic activity as well as travel during seasonal festivities, gasoline posted growth of 46 tb/d, or 6%, y-o-y. In addition, residual fuels saw y-o-y growth of 11 tb/d. Indian airline activity continues to steadily recover from the pandemic. IATA's Air Passenger Market Analysis reports that November's domestic revenue passenger kilometres (RPKs) are now only 12.2% short of the 2019 level. Demand for jet/kerosene in December increased only marginally. Naphtha has marginally increased y-o-y in December, from a y-o-y decline of 63 tb/d in November. In India, naphtha is mostly used for gasoline blending and its by-products are channelled into the domestic petrochemical sector as feedstock for naphtha-fed steam crackers.

Table 4 - 7: India's oil demand, mb/d

By product	Dec 21	Dec 22	Change Growth	Dec 22/Dec 21 %
LPG	0.93	0.97	0.04	3.9
Naphtha	0.30	0.30	0.00	0.5
Gasoline	0.77	0.82	0.05	5.9
Jet/kerosene	0.17	0.18	0.01	4.1
Diesel	1.72	1.83	0.10	6.1
Fuel oil	0.12	0.13	0.01	9.5
Other products	0.79	0.76	-0.02	-2.9
Total	**4.81**	**4.99**	**0.18**	**3.8**

Note: Totals may not add up due to independent rounding.
Sources: JODI, Petroleum Planning and Analysis Cell of India and OPEC.

Near-term expectations

Looking forward, India's GDP growth is projected to remain firm at 5.6% in 2023. The country's manufacturing and service sectors are expected to continue to provide support. India's oil demand is projected to rise by 0.2 mb/d y-o-y in **1Q23**, with increasing mobility expected to support gasoline and jet fuel demand.

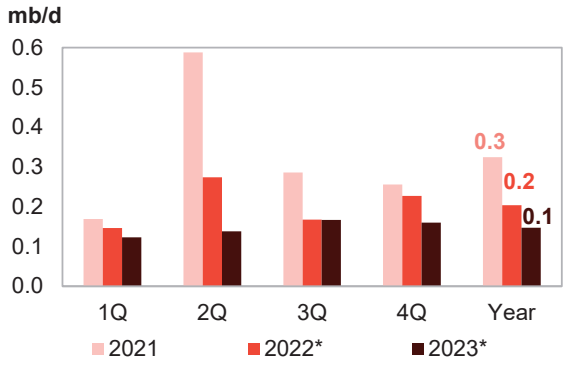
In **2Q23**, India's oil demand is projected to increase further y-o-y by 0.3 mb/d. The Indian government has announced a proposal to increase capital spending by $122.3 billion to support infrastructure development in the coming fiscal year, around March and April. The government is also planning to reduce the income tax rate. These factors – combined with steady agricultural, manufacturing and construction activity – will support a healthy demand for diesel and gasoline in 2Q23.

Latin America

Update on the latest developments

In **November**, **oil demand in Latin America** increased by 0.3 mb/d, y-o-y, largely driven by demand from Brazil and Venezuela. Economic activity in the region was steady over 2022, albeit showing some signs of slowing towards the end of the year. The services PMI in Brazil stood at 51.6, down from October levels. Airline activity in the region continued improving in November, increasing to 84.9% of pre-pandemic levels.

Graph 4 - 6: Latin America's oil demand, y-o-y change



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

In terms of products, oil demand in Latin America was driven by y-o-y growth of 90 tb/d of "other products" in November. Gasoline saw y-o-y growth of 67 tb/d on the back of the gradual improvement of mobility and the service sector as COVID-19 wanes in some countries in the region. Diesel showed a y-o-y increase of around 40 tb/d, up from no growth in the previous month. Jet fuel also posted y-o-y growth of 40 tb/d, on continued recovery of the aviation sector. Similarly, residual fuels posted a gain of 40 tb/d, y-o-y. However, weak petrochemical activity weighed on naphtha, which fell by 10 tb/d, y-o-y, the 11th consecutive decline.

Near-term expectations

Looking forward, GDP growth in the region is projected to slow, albeit remaining positive at 1.5% in 2023. Oil demand is also projected to slow, growing by 0.1 mb/d, y-o-y in **1Q23**. Mobility and manufacturing activity should continue to support demand for gasoline and distillates. Similarly, the ongoing air travel recovery is expected to positively impact jet/ kerosene demand in the region.

In **2Q23**, oil demand is projected to remain at 0.1 mb/d, y-o-y, growth. The outlook sees Brazil projected to lead oil demand growth in the region. In terms of fuels, demand for transportation fuels is expected to grow the most, supported by the continued recovery in mobility and air travel as COVID-19 wanes.

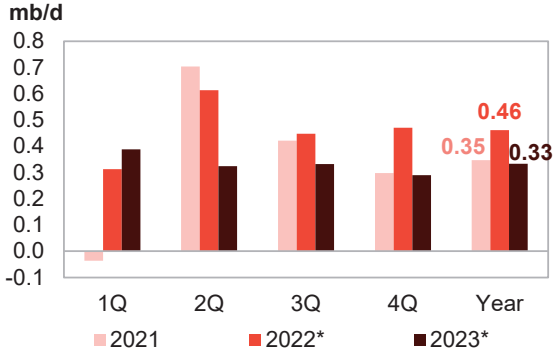
Middle East

Update on the latest developments

Oil demand in the Middle East remained strong at 0.5 mb/d growth y-o-y in November, the same y-o-y growth as a month earlier. The economies of Middle East countries maintained healthy growth supportive of oil demand. Saudi Arabia posted a composite PMI of 58.5 in November and the UAE recorded a composite PMI of 54.4 points.

The "other products" category increased by 0.3 mb/d y-o-y, driven by requirements for electricity generation, and has been the major driver of oil demand in the region accounting for over 45% of the total oil demand since May 2022. Similarly, diesel grew by 0.2 mb/d, y-o-y, for the second consecutive month.

Graph 4 - 7: Middle East's oil demand, y-o-y change



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

Gasoline remained broadly unchanged y-o-y, down from 50 tb/d growth in October. The petrochemical industry and households boosted requirements for LPG, which expanded by 20 tb/d y-o-y.

Increasing airline activity supported jet/kerosene demand, which grew y-o-y by 80 tb/d, up from 30 tb/d y-o-y growth in October; due to rising regional and international traffic. Airline activity in the region reportedly reached 84% of pre-pandemic levels in November. However, residual fuels saw a y-o-y decline of 74 tb/d.

Table 4 - 8: Saudi Arabia's oil demand, mb/d

By product	Dec 21	Dec 22	Change Growth	Dec 22/Dec 21 %
LPG	0.05	0.06	0.01	20.2
Gasoline	0.50	0.51	0.01	1.1
Jet/kerosene	0.06	0.08	0.02	36.0
Diesel	0.51	0.59	0.08	15.3
Fuel oil	0.53	0.61	0.08	15.2
Other products	0.40	0.56	0.16	39.0
Total	**2.05**	**2.40**	**0.35**	**17.2**

Note: Totals may not add up due to independent rounding.

Sources: JODI and OPEC.

Near-term expectations

Robust economic activity in the Middle East is set to continue to support oil demand in 2023. Infrastructure project developments and an uptick in power generation requirements are expected to drive oil demand growth in **1Q23**. Hence, demand for residual and fuel oil is expected to continue to increase. Furthermore, rising air and road travel is expected to boost demand for jet fuel and gasoline. Accordingly, oil demand in the region is projected to grow 0.4 mb/d, y-o-y, in 1Q23.

In **2Q23**, oil demand growth is anticipated to slow slightly, growing by 0.3 mb/d y-o-y. Gasoline, diesel and jet/kerosene are expected to lead oil demand growth.

World Oil Supply

Non-OPEC liquids supply in 2022 (including processing gains) is estimated to have grown by 1.9 mb/d to average 65.6 mb/d, broadly unchanged from the previous month's assessment. Downward revisions to Other Eurasia, OECD Europe and Other Asia were largely offset by upward revisions to liquids production in Russia.

In the US upstream sector, in addition to high cost inflation and supply chain issues, operators have been challenged in recent months by freezing weather-related outages in major basins such as the Permian and Bakken. In November, US liquids production dropped mainly due to lower NGLs and conventional crude outputs. A further decline is also expected for December owing to severe disruptions from Winter Storm Elliot. Notwithstanding, the US liquids supply growth forecast for 2022 remains unchanged at an average 1.2 mb/d, with the outages already considered.

Due to historical adjustments and lower output in December, the production forecast for Other Eurasia was revised down. Lower-than-expected output in the North Sea region was observed in December due to extended maintenance and natural declines on UK offshore platforms, along with output underperformance in Norway. A positive for supply was Russian liquids production in December that is estimated at its highest level since April 2022, although it is expected to drop in January 2023. The main drivers of liquids supply growth for 2022 are estimated to be the US, Russia, Canada, Guyana, China and Brazil, while production is expected to see the largest declines in Norway and Thailand.

Non-OPEC liquids production growth in 2023 is forecast to grow by 1.4 mb/d to average 67.0 mb/d, revised down by 0.1 mb/d from last month, due to lower output expectation for Russia and the US. Liquids supply in OECD countries is forecast to increase by 1.6 mb/d, while the non-OECD region is expected to show a decline of 0.2 mb/d. The main growth drivers are anticipated to be the US, Norway, Brazil, Canada, Kazakhstan and Guyana, whereas oil production is forecast to decline in Russia and Mexico. Nevertheless, there are significant uncertainties related to the impact of ongoing geopolitical developments in Eastern Europe and US shale output prospects in 2023.

OPEC NGLs and non-conventional liquids production in 2022 is forecast to grow by 0.1 mb/d to average 5.4 mb/d and increase by 50 tb/d to average 5.4 mb/d in 2023. OPEC-13 crude oil production in January decreased by 49 tb/d m-o-m to average 28.88 mb/d, according to available secondary sources.

Non-OPEC liquids production in January, including OPEC NGLs, is estimated to have increased m-o-m by 0.7 mb/d to average 72.8 mb/d, up by 2.5 mb/d y-o-y. As a result, preliminary data indicates that January's global oil supply increased by 0.6 mb/d m-o-m to average 101.7 mb/d, up by 3.3 mb/d y-o-y.

The **non-OPEC liquids supply estimation for 2022** was revised down slightly by 48 tb/d to average 65.6 mb/d. Y-o-y growth averaged 1.9 mb/d, revised down slightly by 43 tb/d compared with the previous month.

The overall OECD supply growth estimate for 2022 has dropped marginally. While OECD Europe and OECD Asia Pacific saw minor downward revisions, OECD Americas was broadly unchanged from the previous month's assessment.

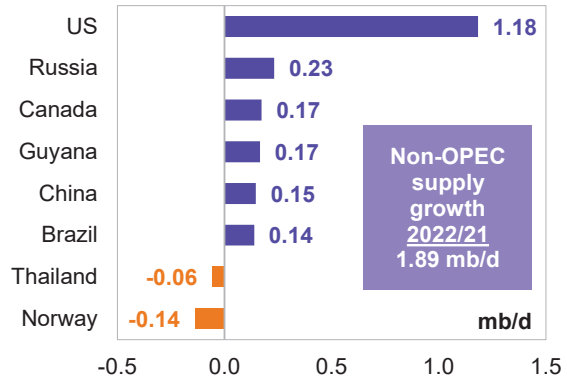
The non-OECD supply growth assessment for 2022 was revised down by 29 tb/d. Minor downward revisions to Other Eurasia and Other Asia were partially offset by upward revisions to Russia.

Non-OPEC liquids production growth in 2023 is forecast to grow by 1.4 mb/d, down by 0.1 mb/d, compared with the previous month's assessment. The US and Russia were the main sources of this decline in the OECD and non-OECD regions, respectively.

Key drivers of growth and decline

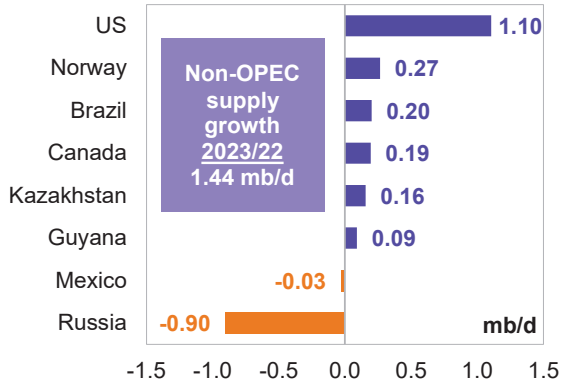
The **key drivers of non-OPEC liquids supply growth in 2022** are estimated to be the US, Russia, Canada, Guyana, China and Brazil, while oil production is expected to see the largest declines in Norway and Thailand.

Graph 5 - 1: Annual liquids production changes for selected countries in 2022*



*Note: * 2022 = Estimate. Source: OPEC.*

Graph 5 - 2: Annual liquids production changes for selected countries in 2023*



*Note: * 2023 = Forecast. Source: OPEC.*

For **2023**, the key drivers of non-OPEC supply growth are forecast to be the US, Norway, Brazil, Canada, Kazakhstan and Guyana, while oil production is projected to see the largest declines in Russia and Mexico.

Non-OPEC liquids production in 2022 and 2023

Table 5 - 1: Non-OPEC liquids production in 2022*, mb/d

							Change 2022/21	
Non-OPEC liquids production	**2021**	**1Q22**	**2Q22**	**3Q22**	**4Q22**	**2022**	**Growth**	**%**
Americas	25.25	25.86	26.27	27.02	27.48	26.66	1.41	5.59
of which US	*17.85*	*18.27*	*18.83*	*19.33*	*19.68*	*19.03*	*1.18*	*6.63*
Europe	3.76	3.73	3.43	3.49	3.61	3.57	-0.19	-5.04
Asia Pacific	0.51	0.49	0.51	0.43	0.48	0.48	-0.03	-6.47
Total OECD	**29.52**	**30.08**	**30.22**	**30.94**	**31.57**	**30.71**	**1.19**	**4.03**
China	4.31	4.51	4.52	4.38	4.41	4.46	0.15	3.41
India	0.78	0.78	0.77	0.76	0.76	0.77	-0.01	-1.57
Other Asia	2.41	2.35	2.30	2.22	2.30	2.29	-0.12	-4.79
Latin America	5.95	6.11	6.18	6.46	6.58	6.33	0.38	6.46
Middle East	3.24	3.29	3.33	3.36	3.34	3.33	0.09	2.80
Africa	1.35	1.33	1.31	1.32	1.30	1.32	-0.03	-2.34
Russia	10.80	11.33	10.63	11.01	11.17	11.03	0.23	2.15
Other Eurasia	2.93	3.04	2.76	2.59	2.91	2.83	-0.10	-3.40
Other Europe	0.11	0.11	0.11	0.10	0.10	0.11	-0.01	-6.36
Total Non-OECD	**31.87**	**32.84**	**31.91**	**32.20**	**32.87**	**32.46**	**0.59**	**1.85**
Total Non-OPEC production	61.39	62.93	62.13	63.15	64.44	63.17	1.78	2.90
Processing gains	2.29	2.40	2.40	2.40	2.40	2.40	0.11	4.90
Total Non-OPEC liquids production	**63.68**	**65.33**	**64.53**	**65.55**	**66.84**	**65.57**	**1.89**	**2.97**
Previous estimate	63.68	65.33	64.54	65.57	67.00	65.61	1.93	3.04
Revision	0.00	-0.01	-0.01	-0.02	-0.16	-0.05	-0.04	-0.07

*Note: * 2022 = Estimate. Totals may not add up due to independent rounding. Source: OPEC.*

Table 5 - 2: Non-OPEC liquids production in 2023*, mb/d

Non-OPEC liquids production	2022	1Q23	2Q23	3Q23	4Q23	2023	Change 2023/22 Growth	Change 2023/22 %
Americas	26.66	27.59	27.68	28.04	28.41	27.93	1.27	4.76
of which US	*19.03*	*19.75*	*20.05*	*20.25*	*20.48*	*20.14*	*1.10*	*5.80*
Europe	3.57	3.92	3.90	3.79	3.92	3.89	0.32	8.92
Asia Pacific	0.48	0.50	0.47	0.49	0.48	0.48	0.00	1.01
Total OECD	**30.71**	**32.01**	**32.05**	**32.32**	**32.81**	**32.30**	**1.59**	**5.18**
China	4.46	4.50	4.50	4.47	4.47	4.48	0.03	0.65
India	0.77	0.79	0.78	0.77	0.76	0.78	0.01	1.15
Other Asia	2.29	2.36	2.35	2.32	2.35	2.34	0.05	2.37
Latin America	6.33	6.48	6.66	6.70	6.78	6.66	0.32	5.08
Middle East	3.33	3.34	3.35	3.38	3.38	3.37	0.04	1.09
Africa	1.32	1.32	1.33	1.35	1.34	1.33	0.02	1.42
Russia	11.03	10.28	10.00	10.10	10.15	10.13	-0.90	-8.17
Other Eurasia	2.83	3.07	3.04	3.00	3.05	3.04	0.21	7.51
Other Europe	0.11	0.10	0.10	0.10	0.10	0.10	0.00	-2.83
Total Non-OECD	**32.46**	**32.25**	**32.12**	**32.20**	**32.37**	**32.23**	**-0.22**	**-0.69**
Total Non-OPEC production	63.17	64.25	64.17	64.52	65.18	64.54	1.37	2.17
Processing gains	2.40	2.47	2.47	2.47	2.47	2.47	0.07	2.96
Total Non-OPEC liquids production	**65.57**	**66.72**	**66.64**	**66.99**	**67.65**	**67.01**	**1.44**	**2.20**
Previous estimate	65.61	66.75	66.83	67.18	67.84	67.16	1.54	2.35
Revision	-0.05	-0.03	-0.19	-0.19	-0.19	-0.15	-0.10	-0.15

*Note: * 2022 = Estimate and 2023 = Forecast. Totals may not add up due to independent rounding. Source: OPEC.*

OECD

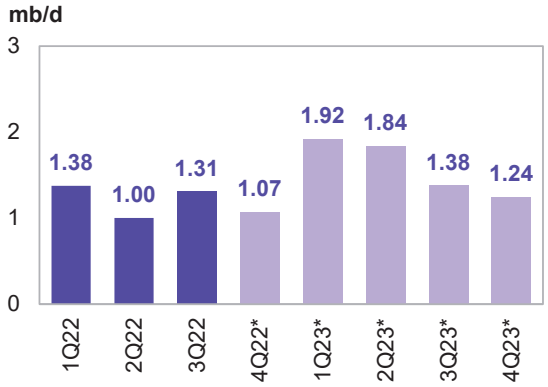
OECD liquids production in 2022 is estimated to have increased y-o-y by 1.2 mb/d to average 30.7 mb/d. This is revised down slightly by 14 tb/d compared with a month earlier, with some downward revisions for OECD Europe and OECD Asia Pacific.

OECD Americas remained unchanged compared with last month's assessment. It is expected to grow by 1.4 mb/d to average 26.7 mb/d.

OECD Europe is anticipated to decline y-o-y by 0.2 mb/d to average 3.6 mb/d.

OECD Asia Pacific is forecast to drop by 33 tb/d y-o-y to average 0.5 mb/d.

Graph 5 - 3: OECD quarterly liquids supply, y-o-y changes



*Note: * 4Q22-4Q23 = Forecast. Source: OPEC.*

For **2023**, oil production in the OECD is forecast to grow by 1.6 mb/d to average 32.3 mb/d. Growth is led by OECD Americas with 1.3 mb/d to average 27.9 mb/d. Yearly liquids production in OECD Europe is anticipated to grow by 0.3 mb/d to average 3.9 mb/d, while OECD Asia Pacific is expected to remain broadly unchanged to average 0.5 mb/d.

OECD Americas

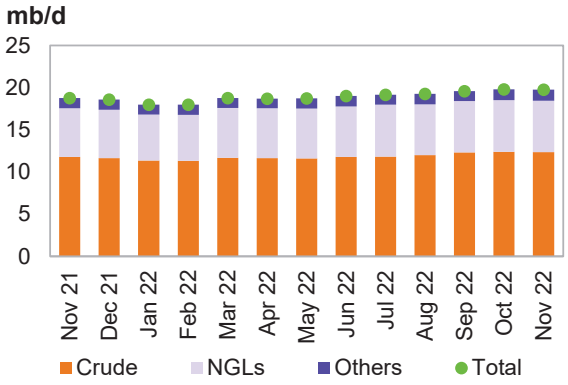
US

US liquids production fell m-o-m by 45 tb/d in **November 2022** to average 19.8 mb/d. This was up by 1.0 mb/d compared with November 2021.

Crude oil and condensate production fell m-o-m by 35 tb/d in **November 2022** to average 12.4 mb/d, up by 0.6 mb/d y-o-y.

In terms of **crude and condensate production breakdown by region (PADDs)**, production decreased mainly in the US Gulf Coast (USGC), where it was down by 48 tb/d to average 8.9 mb/d. Production in the Rocky Mountain and West Coast regions rose by a minor 6 tb/d, while the Midwest and East Coast remained broadly unchanged m-o-m. Production declines in the main regions were primarily driven by weather-related issues, with lower production in the Gulf of Mexico (GoM), Texas and North Dakota fields.

Graph 5 - 4: US monthly liquids output by key component



Sources: EIA and OPEC.

NGLs production was down by 52 tb/d m-o-m to average 6.1 mb/d in November. This was higher y-o-y by 0.3 mb/d. Production of **non-conventional liquids** (mainly ethanol) jumped by 42 tb/d m-o-m to average 1.3 mb/d, according to the US Department of Energy (DoE). Preliminary estimates see non-conventional liquids averaging around 1.3 mb/d in December 2022, down by 35 tb/d compared with the previous month.

GoM production declined marginally m-o-m by 23 tb/d in November to average 1.8 mb/d, with a quite stable production seen on Gulf Coast offshore platforms. In the **onshore Lower 48**, crude and condensate production fell m-o-m by 22 tb/d to average 10.1 mb/d in November.

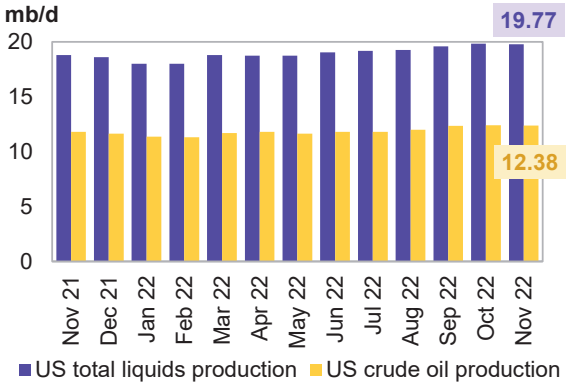
Looking at **individual states**, New Mexico's oil production remained stable at average 1.7 mb/d, which is 303 tb/d higher than a year ago. Texas production was down by 21 tb/d to average 5.2 mb/d, which is 216 tb/d higher than a year ago. In the Midwest, North Dakota's production fell m-o-m by 23 tb/d to average 1.1 mb/d, down by 69 tb/d y-o-y, while Oklahoma's production was up m-o-m by 19 tb/d to average of 0.4 mb/d. Alaska's output was up by a minor 10 tb/d m-o-m, and in Colorado, production rose slightly by 8 tb/d.

Table 5 - 3: US crude oil production by selected state and region, tb/d

				Change	
State	Nov 21	Oct 22	Nov 22	m-o-m	y-o-y
Texas	4,994	5,231	5,210	*-21*	*216*
Gulf of Mexico (GOM)	1,772	1,824	1,801	*-23*	*29*
New Mexico	1,420	1,724	1,723	*-1*	*303*
North Dakota	1,151	1,105	1,082	*-23*	*-69*
Colorado	455	436	444	*8*	*-11*
Alaska	446	435	445	*10*	*-1*
Oklahoma	399	423	442	*19*	*43*
Total	**11,790**	**12,410**	**12,375**	***-35***	***585***

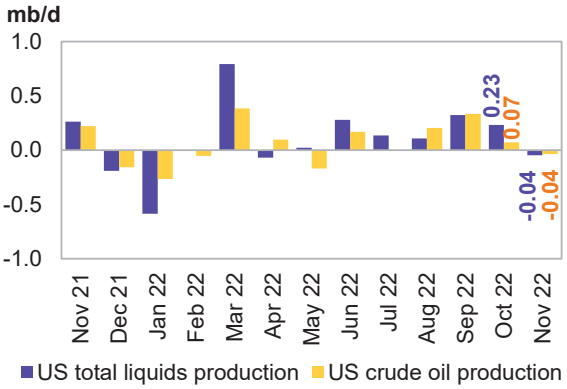
Sources: EIA and OPEC.

Graph 5 - 5: US monthly crude oil and total liquids supply



Sources: EIA and OPEC.

Graph 5 - 6: US monthly crude oil and total liquids supply, m-o-m changes



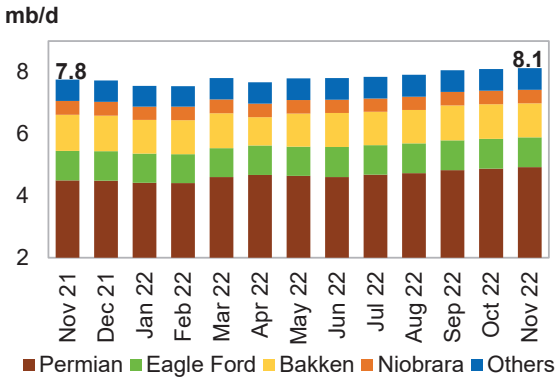
Sources: EIA and OPEC.

US tight crude output in **November 2022** is estimated to have risen by 35 tb/d m-o-m to average 8.1 mb/d, according to the latest estimation by the US Energy Information Administration (EIA). This was 0.4 mb/d higher than in the same month last year.

The m-o-m increase from shale and tight formations using horizontal wells came mainly from the Permian, which increased output by 48 tb/d to average 4.9 mb/d. This was up by 0.4 mb/d y-o-y.

In the Williston Basin, Bakken shale production dropped by 24 tb/d, averaging 1.1 mb/d. This is down by 65 tb/d y-o-y. Tight crude output at Eagle Ford in Texas rose by a minor 7 tb/d to average 1.0 mb/d. This is up by 9 tb/d y-o-y. Production in Niobrara-Codell in Colorado and Wyoming was unchanged at an average of 0.4 mb/d.

Graph 5 - 7: US tight crude output breakdown



Sources: EIA and OPEC.

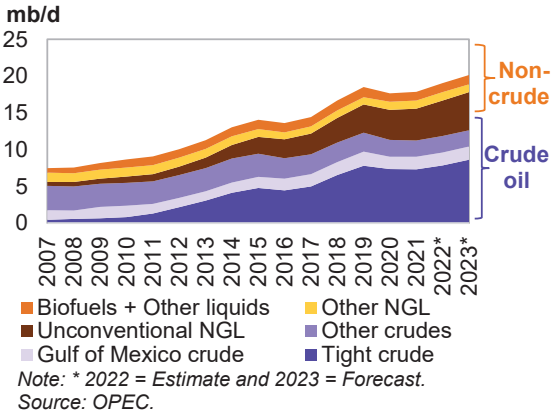
US liquids production in 2022, excluding processing gains, is estimated to expand y-o-y by 1.2 mb/d to average 19.0 mb/d. This is broadly unchanged compared with the previous assessment. Tight crude is assessed to grow by 0.5 mb/d in 2022 to average 7.9 mb/d. In addition, NGLs (mainly from unconventional basins) are estimated to grow by 0.5 mb/d to average 5.9 mb/d, and production in the GoM is anticipated to increase by a minor 30 tb/d. Non-conventional liquids and the crude from conventional reservoirs are assessed to expand by 40 tb/d to average 1.2 mb/d and by 70 tb/d to average 2.3 mb/d, respectively.

Given the current pace of oil field drilling and well completions, **crude oil and condensate production** is estimated to grow by 0.6 mb/d y-o-y to average 11.9 mb/d in 2022.

US liquids production in 2023, excluding processing gains, is forecast to expand y-o-y by 1.1 mb/d to average 20.1 mb/d, revised down by 50 tb/d from the previous assessment. This was due to lower US upstream activities in recent weeks. Greater drilling activity and fewer supply chain/logistical issues in the prolific Permian, Eagle Ford and Bakken shale sites are still assumed for 2023. Crude oil output is anticipated to increase by 0.7 mb/d y-o-y to average 12.6 mb/d. Average tight crude output in 2023 is forecast at 8.6 mb/d, up by 0.8 mb/d y-o-y.

At the same time, NGLs production and non-conventional liquids, particularly ethanol, are forecast to increase y-o-y by 0.31 mb/d and 40 tb/d, to average 6.3 mb/d and 1.3 mb/d, respectively.

Graph 5 - 8: US liquids supply developments by component



*Note: * 2022 = Estimate and 2023 = Forecast.*
Source: OPEC.

The 2023 forecast assumes continuing capital discipline, lower inflation rate pressure, as well as moderate supply chain issues and oil field service constraints (labour and equipment). Tightness in the hydraulic fracking market has been one of the biggest issues for US producers in recent months, and this is expected to remain a challenge.

Table 5 - 4: US liquids production breakdown, mb/d

US liquids	2021	Change 2021/20	2022*	Change 2022/21	2023*	Change 2023/22
Tight crude	7.33	-0.02	7.86	0.52	8.61	0.75
Gulf of Mexico crude	1.71	0.04	1.74	0.03	1.82	0.09
Conventional crude oil	2.21	-0.08	2.28	0.07	2.19	-0.09
Total crude	**11.25**	**-0.06**	**11.87**	**0.62**	**12.62**	**0.75**
Unconventional NGLs	4.31	0.23	4.81	0.50	5.18	0.37
Conventional NGLs	1.12	0.02	1.15	0.03	1.09	-0.06
Total NGLs	**5.42**	**0.25**	**5.95**	**0.53**	**6.27**	**0.31**
Biofuels + Other liquids	1.17	0.02	1.21	0.04	1.25	0.04
US total supply	**17.85**	**0.21**	**19.03**	**1.18**	**20.14**	**1.10**

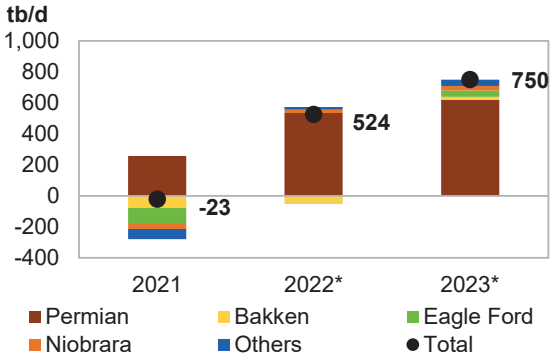
*Note: * 2022 = Estimate and 2023 = Forecast. Sources: EIA, OPEC and Rystad Energy.*

US tight crude production in the **Permian** in 2022 is estimated to increase y-o-y by 0.5 mb/d to 4.7 mb/d. It is then forecast to grow by 0.6 mb/d y-o-y to average 5.3 mb/d in 2023.

The **Bakken** shale production decline that occurred in 2020 and 2021 is set to continue in 2022. Tight crude production in the Bakken is estimated to drop by 45 tb/d in 2022 to average 1.1 mb/d. This is much lower than the pre-pandemic average output of 1.4 mb/d. Drilling activity in North Dakota and available DUC wells are lower than the levels required to revive output. In 2023, growth is forecast to resume at 21 tb/d to average 1.1 mb/d.

The **Eagle Ford** in Texas saw an output of 1.2 mb/d in 2019, which declined in 2020 and 2021. It is estimated to remain broadly unchanged in 2022 to average 0.96 mb/d. Growth of 40 tb/d is then forecast for 2023, to average just under 1.0 mb/d.

Graph 5 - 9: US tight crude output by shale play, y-o-y changes



*Note: * 2022 = Estimate and 2023 = Forecast. Sources: EIA and OPEC.*

Niobrara production is estimated to grow y-o-y by 22 tb/d in 2022 and then forecast to increase by 30 tb/d in 2023 to average 435 tb/d and 465 tb/d, respectively. Other shale plays are expected to show marginal increases of 18 tb/d and 40 tb/d in 2022 and 2023, respectively, given current drilling and completion activities.

Table 5 - 5: US tight oil production growth, mb/d

US tight oil	2021	Change 2021/20	2022*	Change 2022/21	2023*	Change 2023/22
Permian tight	4.17	0.26	4.70	0.53	5.32	0.62
Bakken shale	1.12	-0.08	1.08	-0.04	1.10	0.02
Eagle Ford shale	0.96	-0.10	0.96	0.00	1.00	0.04
Niobrara shale	0.41	-0.04	0.43	0.02	0.46	0.03
Other tight plays	0.67	-0.07	0.69	0.02	0.73	0.04
Total	**7.33**	**-0.02**	**7.86**	**0.52**	**8.61**	**0.75**

*Note: * 2022 = Estimate and 2023 = Forecast. Source: OPEC.*

US rig count, spudded, completed, DUC wells and fracking activity

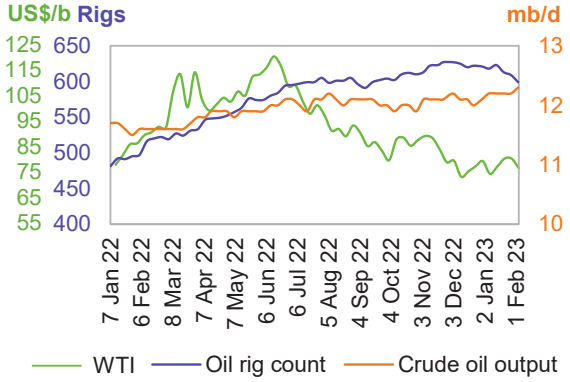
Total **active US drilling rigs** fell by twelve to 759 in the week ending February 3, 2023. This was up by 146 rigs compared with a year ago. The number of active offshore rigs fell w-o-w to 12, a decrease of one. This is lower by four compared with the same month a year earlier. Onshore oil and gas rigs were lower by 11 w-o-w to stand at 745 rigs, up by 150 rigs y-o-y, with two rigs in inland waters.

The **US horizontal rig count** fell by five w-o-w to 700, compared with 555 horizontal rigs a year ago. The number of drilling rigs for oil fell by ten w-o-w to 599. At the same time, gas-drilling rig counts were down by two to 158.

The Permian's rig count fell by three w-o-w to 354 rigs. At the same time, rig counts remained steady in Eagle Ford, Williston and DJ-Niobrara at 72, 42 and 16, respectively. The rig count also stayed unaffected w-o-w in Cana Woodford at 25.

Two operating oil rigs remained in the Barnett basin, unchanged w-o-w, but down from three last month.

Graph 5 - 10: US weekly rig count vs. US crude oil output and WTI price



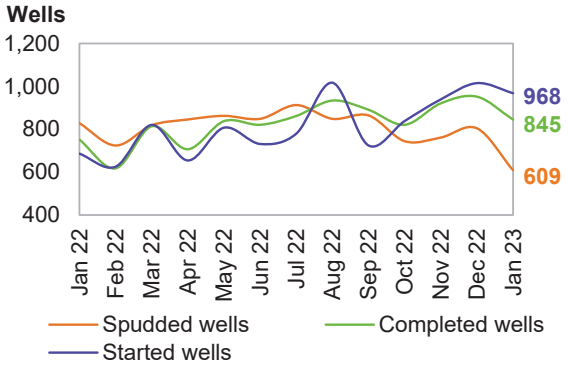
Sources: Baker Hughes, EIA and OPEC.

Drilling and completion (D&C) activities for spudded, completed and started oil-producing wells in all US shale plays, based on EIA-DPR regions, included 804 horizontal wells spudded in December 2022 (as per preliminary data). This is up by 43 m-o-m, and 8% higher than in December 2021.

December 2022 preliminary data indicates a higher number of completed wells at 952, which is up 47% y-o-y. Moreover, the number of started wells was estimated at 1,015, which is 60% higher than a year earlier.

Preliminary data for January 2023 estimates 609 spudded, 845 completed and 968 started wells, according to Rystad Energy.

Graph 5 - 11: Spudded, completed and started wells in US shale plays

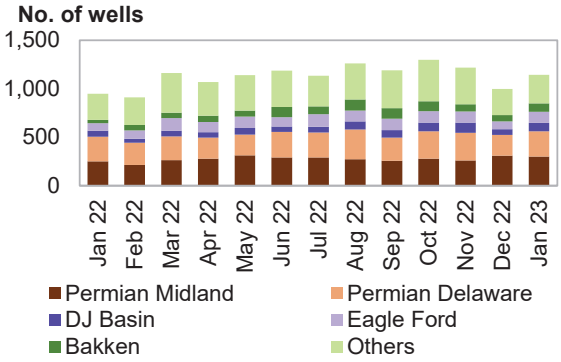


Note: Dec 22-Jan 23 = Preliminary data.
Sources: Rystad Energy and OPEC.

In terms of identified **US oil and gas fracking operations by region**, Rystad Energy reported that 1,218 wells were fracked in November 2022. In December 2022 and January 2023, it stated that 999 and 1,143 wells began fracking, respectively. Preliminary numbers are based on analysis of high-frequency satellite data.

Preliminary December data showed that 309 and 214 wells were fracked in the Permian Midland and Permian Delaware, respectively. Compared with November, there was a jump of 47 in the Midland and a decline of 69 in the Delaware. Data also indicated that 61 wells were fracked in the DJ Basin, 79 in Eagle Ford and 64 in Bakken during December.

Graph 5 - 12: Fracked wells count per month



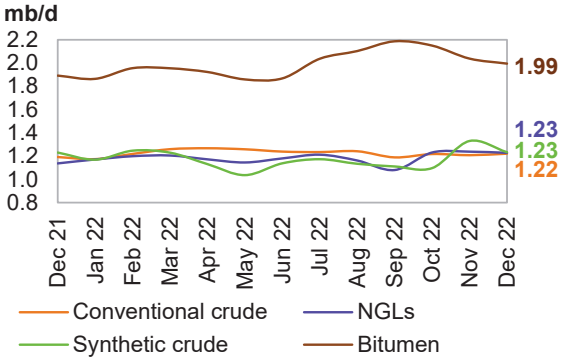
Note: Dec 22-Jan 23 = Preliminary data.
Sources: Rystad Energy Shale Well Cube and OPEC.

Canada

Canada's liquids production in **December** is estimated to have dropped m-o-m by 136 tb/d to average 5.7 mb/d, falling back from the highest production on record in November, largely due to weather-related impacts on mining activities.

Conventional crude production increased m-o-m by 13 tb/d to average 1.2 mb/d, while NGLs output declined m-o-m by 10 tb/d to average 1.2 mb/d. Crude bitumen production output fell m-o-m by 43 tb/d in December, and synthetic crude dropped by 96 tb/d. Taken together, crude bitumen and synthetic crude production decreased by 139 tb/d to 3.2 mb/d.

Graph 5 - 13: Canada's monthly liquids production development by type



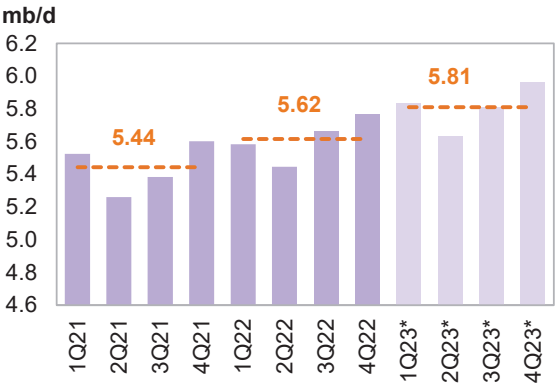
Sources: Statistics Canada, Alberta Energy Regulator and OPEC.

Canada's liquids supply in **2022** is estimated to expand by 0.2 mb/d to average 5.6 mb/d, broadly unchanged from the previous assessment. Oil sands output, mainly from Alberta, saw an average of 3.2 mb/d from January to December 2022.

Canada's production grew in 4Q22 by 0.1 mb/d q-o-q, due to turnaround recoveries and project ramp-ups. However, disruptions related to a short closure of the Canada-to-US Keystone crude pipeline and weather-related issues imposed some reductions on December output.

For **2023**, Canada's liquids production is forecast to increase at a pace similar to 2022, rising by 0.2 mb/d to average 5.8 mb/d. Incremental production will come through oil sand project ramp-ups and debottlenecks alongside conventional growth.

Graph 5 - 14: Canada's quarterly liquids production and forecast



*Note: * 1Q23-4Q23 = Forecast. Source: OPEC.*

Moreover, the Terra Nova Floating Production Storage and Offloading (FPSO) platform is expected to resume production in 1Q23 on Newfoundland's coast, reaching 30 tb/d at peak by mid-2023.

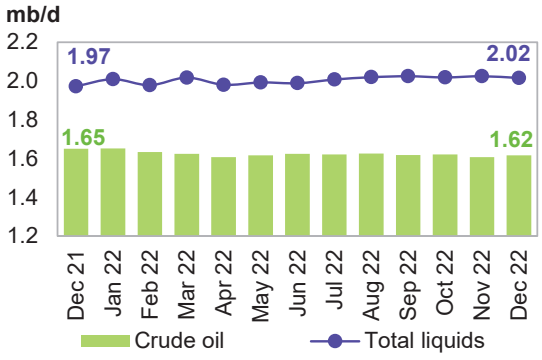
Mexico

Mexico's crude output increased by 10 tb/d m-o-m in **December** to average 1.6 mb/d driven by the ramp-up of the light Tupilco Profundo, while NGLs output fell by 19 tb/d. This saw Mexico's total December liquids output drop m-o-m by a minor 9 tb/d to average 2.0 mb/d, according to Pemex.

For **2022**, Mexico's liquids production is estimated to average 2.0 mb/d, broadly unchanged from the previous month's assessment. Growth of 50 tb/d in 2022 is estimated to be mainly driven by foreign-operated fields rather than Pemex-operated assets. Persistent declines in Pemex's heavy mature oil fields were set to mostly offset its other grades.

For **2023**, liquids production is forecast to decline by 29 tb/d to average 1.98 mb/d, which is similar to the previous assessment.

Graph 5 - 15: Mexico's monthly liquids and crude production development



Sources: Mexico Comision Nacional de Hidrocarburos (CNH) and OPEC

The total crude production decline in Pemex's mature fields is projected to outweigh production ramp-ups, mainly from Mexico's foreign-operated fields.

OECD Europe

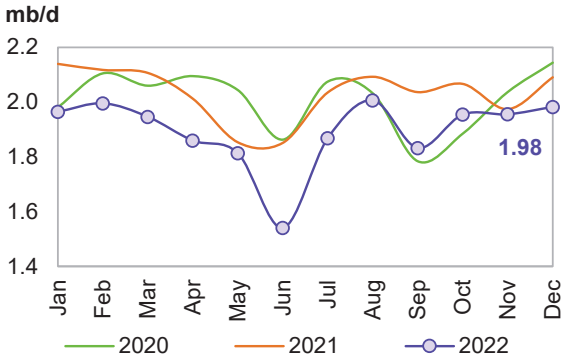
Norway

Norwegian liquids production in **December** increased by just 27 tb/d m-o-m to average 2.0 mb/d, which was lower than expectations and reflects ongoing underperformance in Norwegian fields.

Norway's crude production rose by 23 tb/d m-o-m in December to average 1.7 mb/d, down by 80 tb/d y-o-y. Monthly oil production was 9.7% lower than the Norwegian Petroleum Directorate's (NPD) forecast.

At the same time, the production of NGLs and condensates remained broadly unchanged m-o-m, averaging 0.2 mb/d, according to NPD data.

Graph 5 - 16: Norway's monthly liquids production development



Sources: The Norwegian Petroleum Directorate (NPD) and OPEC.

For **2022**, production growth has been revised down a minor 5 tb/d y-o-y to average 1.9 mb/d. This is mainly due to downward revisions in 4Q22 output on the back of lower-than-anticipated December production.

The start-up of giant Johan Sverdrup's Phase 2 took place on December 15. According to Equinor, however, production at Norway's flagship Johan Sverdrup project was at a reduced rate as an equipment fault in mid-January hampered the recovery from a power failure at recently commissioned facilities. Electricity to the field has been restored, with production resumed at the end of January. The two phases now account for around one-third of the country's oil production and add a heavier, sour crude to the North Sea's predominantly light sweet flows.

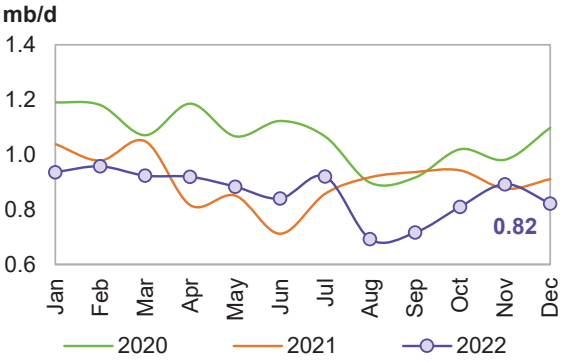
For **2023**, Norwegian liquids production is forecast to expand by 0.3 mb/d, broadly unchanged compared with the previous month, to average 2.2 mb/d. A number of small-to-large projects are scheduled to ramp up in 2023. The continuing Johan Sverdrup Phase 2 ramp-up is projected to be the main source of growth.

UK

UK liquids production fell m-o-m in **December** by 70 tb/d to average 0.8 mb/d. Crude oil output decreased by 66 tb/d m-o-m to average 0.7 mb/d, according to official data, which was lower by 0.1 mb/d y-o-y. NGLs output remained broadly unchanged at an average of 90 tb/d. UK liquids output in December was down by 9.7% from the same month a year earlier, mainly due to extended maintenance and natural declines.

For **2022**, UK liquids production is estimated to drop by 47 tb/d to average 0.9 mb/d. This is unchanged from the previous assessment, as higher production in November offset the December decline.

Graph 5 - 17: UK monthly liquids production development

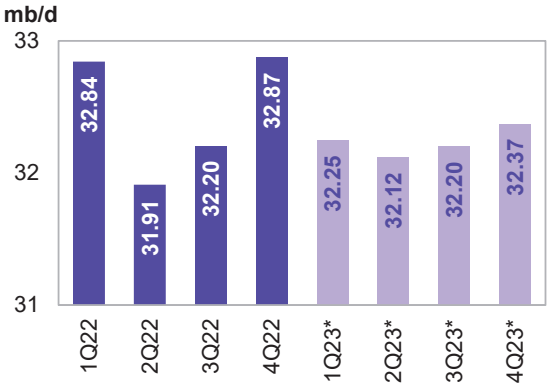


Sources: UK Department for Business, Energy and Industrial Strategy and OPEC.

For **2023**, UK liquids production is forecast to increase by 48 tb/d to average 0.9 mb/d. A number of new fields, including Seagull, the Penguins Redevelopment, and Captain EOR, will help offset base declines. Project sanctioning will be essential to maintain future oil and gas output, as UK production has been in long-term decline. It should be noted that the UK government in November last year approved an increase to the windfall tax. This jumped by 10% to 35% starting in January 2023 and lasting through 2028, bringing the total tax rate to 75%. Some operators have objected to the high taxes, indicating that they will reconsider some of their future offshore investments or may plan to cut jobs.

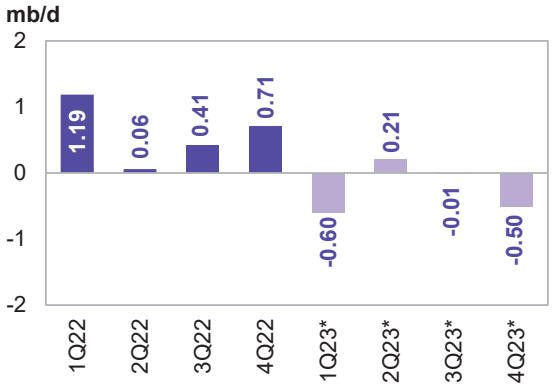
Non-OECD

Graph 5 - 18: Non-OECD quarterly liquids production and forecast



*Note: * 1Q23-4Q23 = Forecast. Source: OPEC.*

Graph 5 - 19: Non-OECD quarterly liquids supply, y-o-y changes

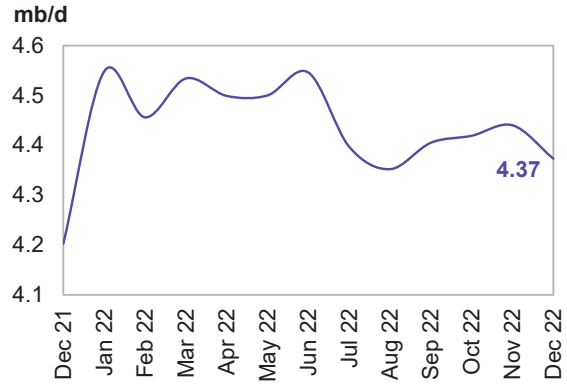


*Note: * 1Q23-4Q23 = Forecast. Source: OPEC.*

China

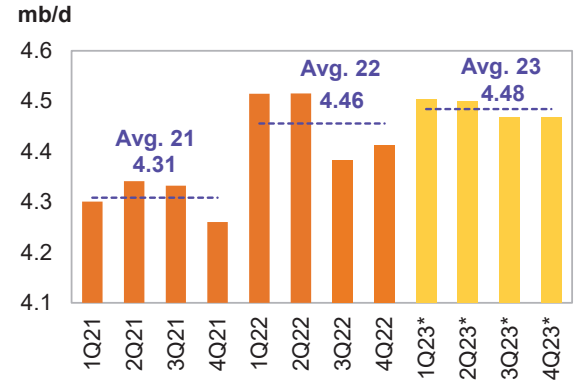
China's liquids production fell m-o-m in **December** by 67 tb/d to average 4.4 mb/d, which is a rise of 171 tb/d y-o-y, according to official data. Crude oil output in December averaged 4.0 mb/d, down by 67 tb/d compared with the previous month but higher y-o-y by 138 tb/d. Crude oil production over January–December 2022 averaged 4.1 mb/d, higher by 2.7% compared with the same period the previous year.

Graph 5 - 20: China's monthly liquids production development



Sources: CNPC and OPEC.

Graph 5 - 21: China's quarterly liquids production and forecast



*Note: * 1Q23-4Q23 = Forecast. Sources: CNPC and OPEC.*

For **2022**, a growth of 147 tb/d is estimated for an average of 4.5 mb/d. This is broadly unchanged from the previous assessment. Natural decline rates are expected to be offset by additional growth through more infill wells and enhanced oil recovery (EOR) projects amid efforts by state-owned oil companies to ensure energy supply security.

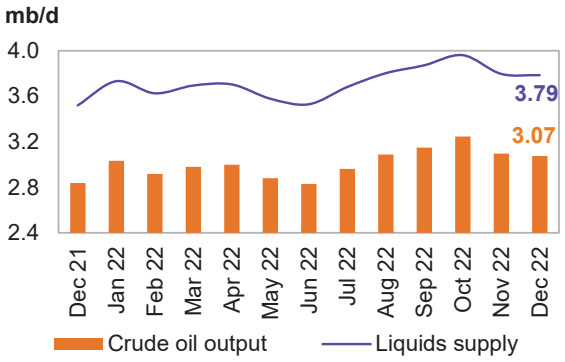
For **2023**, y-o-y growth of 30 tb/d is forecast for an average of 4.5 m/d, unchanged from last month's assessment. New offshore discoveries, the development of remote onshore basins and more investment in advanced EOR projects are expected to offset the declining output of mature fields. China National Offshore Oil Corporation (CNOOC), which has been the main contributor to growth in China's oil and gas output in recent years, has raised its 2023 production target by around 8%. CNOOC is stepping up the development of large domestic fields like Baodao 21-1 in the Qiongdongnan basin of the South China Sea.

Latin America

Brazil

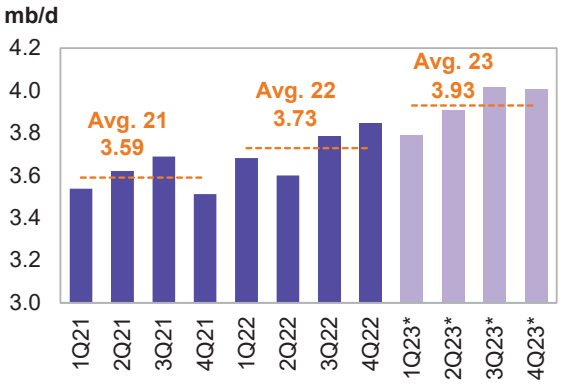
Brazil's crude output in **December** fell m-o-m by 21 tb/d to average 3.1 mb/d. NGLs production was up by a minor 10 tb/d to average 93 tb/d and this is expected to remain flat in January 2023. Biofuels output (mainly ethanol) was flat in December at an average of 618 tb/d, with preliminary data also showing a 24 tb/d increase in January. Total liquids production decreased by a minor 11 tb/d in December to average 3.8 mb/d, a drop from the record production rate of 4.0 mb/d witnessed in October. The output reduction was mainly due to some issues at Tupi field installations that started last month. However, the December level is a rise of 0.3 mb/d y-o-y.

Graph 5 - 22: Brazil's monthly liquids production development by type



Sources: Brazilian National Agency of Petroleum, Natural Gas and Biofuels (ANP) and OPEC.

Graph 5 - 23: Brazil's quarterly liquids production



*Note: * 1Q23-4Q23 = Forecast. Sources: ANP and OPEC.*

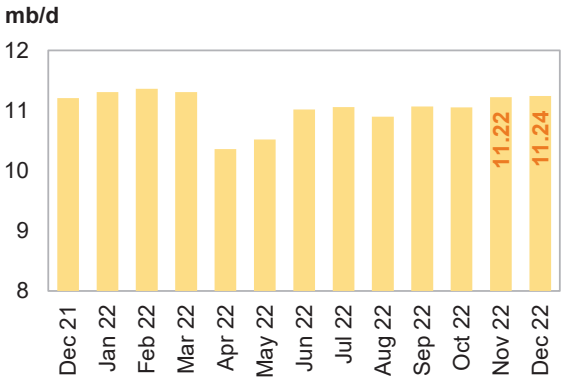
For **2022,** Brazil's liquids supply, including biofuels, is estimated to increase by 0.1 mb/d y-o-y to average 3.7 mb/d. This is chiefly unchanged from the previous month's assessment. Growth in 2022 is being driven by the continued ramp-up of the Sepia field and the start-up of Mero 1 in the pre-salt Santos basin, as well as Peregrino (Phases 1 and 2) in the Campos basin. In addition, Petrobras advanced its Campos basin renovation plan, starting up ten new production wells and four injector wells to expand output from this basin.

For **2023**, Brazil's liquids supply, including biofuels, is forecast to increase by 0.2 mb/d y-o-y to average 3.9 mb/d, broadly unchanged from the previous forecast. Crude oil output is set to increase through production ramp-ups in the Mero (Libra NW), Buzios (Franco), Tupi (Lula), Peregrino, Sepia, Marlim and Itapu (Florim) fields. However, offshore maintenance is expected to cause some interruptions in major fields.

Russia

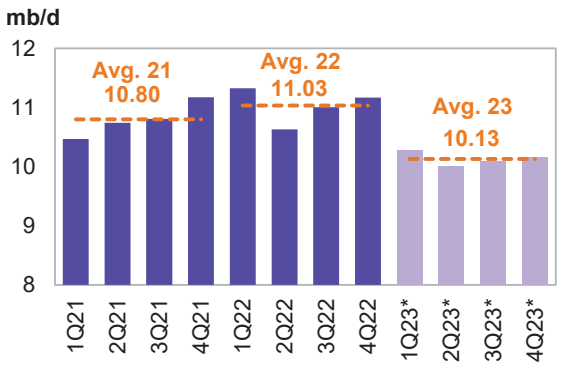
Russia's liquids production in December rose m-o-m by 21 tb/d to average 11.2 mb/d. This includes 9.8 mb/d of crude oil and 1.4 mb/d of NGLs and condensate. A preliminary estimate of Russia's crude production in January 2023 shows a m-o-m drop of 88 tb/d to average 9.7 mb/d, while NGLs and condensate were relatively stable.

Graph 5 - 24: Russia's monthly liquids production



Sources: Nefte Compass and OPEC.

Graph 5 - 25: Russia's quarterly liquids production



*Note: * 1Q23-4Q23 = Forecast.*
Sources: Nefte Compass and OPEC.

Russian liquids output in **2022** is estimated to have increased y-o-y by 0.2 mb/d to average 11.0 mb/d. This is broadly unchanged from the previous month's assessment.

For **2023**, Russian liquids production is forecast to drop by 0.9 mb/d to average 10.1 mb/d. Annual growth is revised down by around 50 tb/d from the previous assessment. It should be noted that Russia's oil forecast remains subject to high uncertainty.

Caspian

Kazakhstan & Azerbaijan

Liquids output in Kazakhstan remained broadly unchanged to average 2.0 mb/d in **December**. Crude production was up by a minor 7 tb/d m-o-m to average 1.6 mb/d, while NGLs remained steady at 0.4 mb/d. Total liquids output was the highest monthly level in 2022. This was mainly due to the ramp-up of the Kashagan oil field, as well as full production from the Karachaganak gas condensate field.

Kazakhstan's liquids supply for **2022** is now forecast to decline by 44 tb/d y-o-y to average 1.8 mb/d. This is down by a minor 8 tb/d compared with the previous month's assessment due to some small downward revisions from 1Q22 to 3Q22.

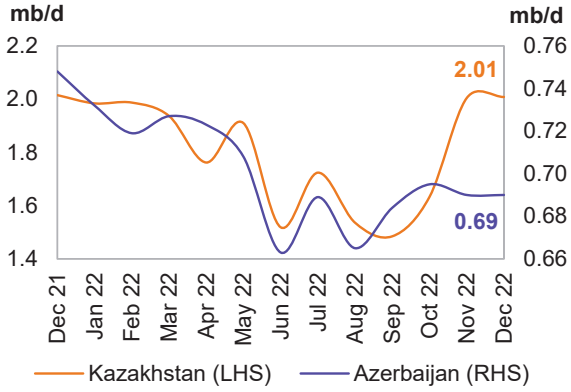
For **2023**, liquids supply is forecast to increase by 157 tb/d, unchanged compared with the previous forecast. In addition to the Kashagan oil field ramp-up, oil output in the Tengiz field and gas condensate production in the Karachaganak field are expected to rise marginally.

Azerbaijan's liquids production in December remained unchanged m-o-m, averaging 0.7 mb/d, although this is a drop of 8 tb/d y-o-y. Crude production averaged 550 tb/d, with NGLs output at 140 tb/d, according to official sources.

For **2022**, liquids supply in Azerbaijan is estimated to decline y-o-y by 42 tb/d to average 0.7 mb/d. This is a downward revision of a minor 8 tb/d, due to lower-than-expected production in major oil fields in December. The main declines in legacy fields are estimated to be offset by ramp-ups in other fields, such as the BP-led consortium's Shah Deniz gas condensate field.

Azerbaijan's liquids supply for **2023** is forecast to rise by 60 tb/d to average 0.8 mb/d. Growth is forecast to come from the Shah Deniz and Absheron condensate projects. Production could rise further after crude output starts up at the Azeri Central East flank project in 2023.

Graph 5 - 26: Caspian monthly liquids production development by selected country



Sources: Nefte Compass, JODI and OPEC.

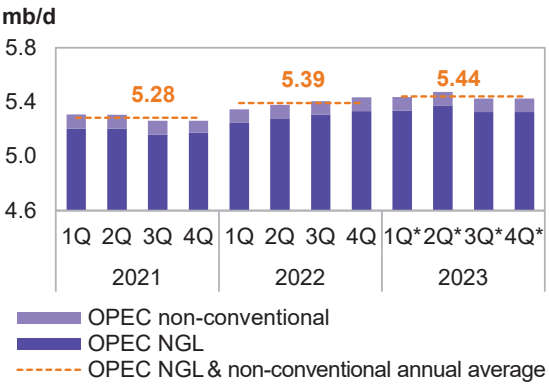
OPEC NGLs and non-conventional oils

OPEC NGLs and non-conventional liquids in 2022 are estimated to grow by 0.1 mb/d to average 5.4 mb/d, unchanged from the previous assessment.

NGLs output in 4Q22 is estimated to have averaged 5.33 mb/d, while OPEC non-conventional output remained steady at 0.1 mb/d. Taken together, 5.4 mb/d is expected for December, according to preliminary data.

OPEC NGLs and non-conventional liquids are forecast to expand by around 50 tb/d in **2023** to average 5.4 mb/d. NGLs production is projected to grow by 50 tb/d to average 5.3 mb/d, while non-conventional liquids are projected to remain unchanged at 0.1 mb/d.

Graph 5 - 27: OPEC NGLs and non-conventional liquids quarterly production and forecast



*Note: * 1Q23-4Q23 = Forecast. Source: OPEC.*

Table 5 - 6: OPEC NGL + non-conventional oils, mb/d

OPEC NGL and non-coventional oils	2021	Change 21/20	2022	Change 22/21	1Q23	2Q23	3Q23	4Q23	2023	Change 23/22
OPEC NGL	**5.18**	*0.12*	**5.29**	*0.11*	5.34	5.37	5.33	5.33	**5.34**	*0.05*
OPEC non-conventional	**0.10**	*0.00*	**0.10**	*0.00*	0.10	0.10	0.10	0.10	**0.10**	*0.00*
Total	**5.28**	***0.12***	**5.39**	***0.11***	**5.44**	**5.47**	**5.43**	**5.43**	**5.44**	***0.05***

Note: 2022 = Estimate and 2023 = Forecast. Source: OPEC.

OPEC crude oil production

According to secondary sources, total **OPEC-13 crude oil production** averaged 28.88 mb/d in January 2023, lower by 49 tb/d m-o-m. Crude oil output increased mainly in Nigeria, Angola and Kuwait, while production in Saudi Arabia, Iraq and IR Iran declined.

Table 5 - 7: OPEC crude oil production based on *secondary sources*, tb/d

Secondary sources	2021	2022	2Q22	3Q22	4Q22	Nov 22	Dec 22	Jan 23	Change Jan/Dec
Algeria	913	1,017	1,015	1,040	1,030	1,025	1,015	1,015	*0*
Angola	1,122	1,141	1,173	1,154	1,085	1,093	1,108	1,155	*47*
Congo	265	263	268	266	256	261	244	262	*19*
Equatorial Guinea	97	83	90	89	62	63	55	53	*-3*
Gabon	182	197	190	201	199	199	193	183	*-10*
IR Iran	2,392	2,554	2,555	2,565	2,567	2,566	2,579	2,557	*-22*
Iraq	4,046	4,439	4,440	4,522	4,505	4,461	4,470	4,424	*-46*
Kuwait	2,419	2,705	2,690	2,801	2,713	2,684	2,648	2,693	*45*
Libya	1,143	981	743	976	1,153	1,142	1,159	1,148	*-10*
Nigeria	1,372	1,204	1,209	1,063	1,171	1,175	1,271	1,336	*65*
Saudi Arabia	9,114	10,531	10,450	10,894	10,606	10,474	10,475	10,319	*-156*
UAE	2,727	3,066	3,045	3,168	3,094	3,052	3,042	3,045	*2*
Venezuela	553	684	714	667	672	666	666	686	*20*
Total OPEC	**26,345**	**28,865**	**28,583**	**29,406**	**29,113**	**28,861**	**28,926**	**28,876**	***-49***

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

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

Direct communication	2021	2022	2Q22	3Q22	4Q22	Nov 22	Dec 22	Jan 23	Change Jan/Dec
Algeria	911	1,020	1,016	1,050	1,030	1,021	1,009	1,012	*3*
Angola	1,124	1,140	1,173	1,151	1,076	1,088	1,088	1,105	*17*
Congo	267	262	258	261	261	260	257	275	*19*
Equatorial Guinea	93	81	91	83	56	56	54	55	*1*
Gabon	181	191	184	198	183	191	189	..	..
IR Iran	..	..	..	..	..	..	..	..	..
Iraq	3,971	4,450	4,472	4,632	4,505	4,430	4,431	4,331	*-100*
Kuwait	2,415	2,707	2,694	2,799	2,721	2,676	2,676	2,676	*0*
Libya	1,207	..	..	..	..	..	..	..	..
Nigeria	1,323	1,143	1,133	999	1,145	1,186	1,235	1,258	*23*
Saudi Arabia	9,125	10,591	10,542	10,968	10,622	10,468	10,435	10,453	*17*
UAE	2,718	3,064	3,042	3,170	3,093	3,047	3,043	3,038	*-5*
Venezuela	636	716	745	673	693	693	669	732	*63*
Total OPEC	**..**	**..**	**..**	**..**	**..**	**..**	**..**	**..**	***..***

Notes: .. Not available. Totals may not add up due to independent rounding. Source: OPEC.

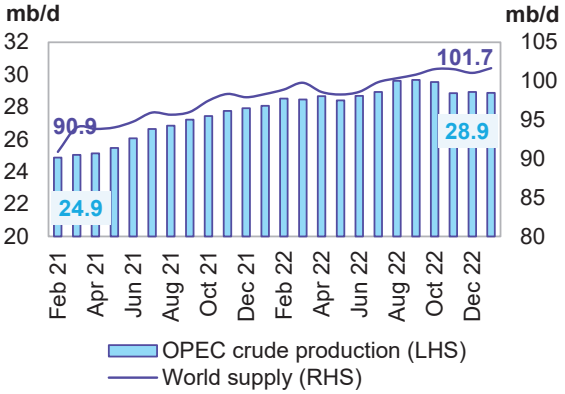
World oil supply

Preliminary data indicates that **global liquids production in January** increased by 0.6 mb/d to average 101.7 mb/d compared with the previous month.

Non-OPEC liquids production (including OPEC NGLs) is estimated to have increased m-o-m in January 2023 by 0.7 mb/d to average 72.8 mb/d. This was higher by 2.5 mb/d y-o-y. Preliminary estimated production increases in January were mainly driven by OECD Americas, OECD Europe and Latin America, which partially offset declines in Russia.

The **share of OPEC crude oil in total global production** decreased by 0.2 pp to at 28.4% in January, compared with the previous month. Estimates are based on preliminary data for non-OPEC supply, OPEC NGLs and non-conventional oil, while assessments for OPEC crude production are based on secondary sources.

Graph 5 - 28: OPEC crude production and world oil supply development



Source: OPEC.

Product Markets and Refinery Operations

In January, refinery margins reversed trend and strengthened substantially in all main trading hubs, with sizeable margin gains registered, particularly in the Atlantic Basin, vastly backed by a solid recovery in gasoline performance. Moreover, in the US, a drop in jet/kerosene inventories drove the product crack spread on a hike to become the largest margin contributor across the barrel, followed by gasoline. In Europe, firm gasoline exports to the US, amid stronger product buying interest in Europe ahead of the 5 February sanctions on Russian products, led to a stronger product market, particularly for those linked to the top section of the barrel. Meanwhile, in Asia, the recent lifting of COVID-19 restrictions in China and an improvement in transport activity around the Chinese Lunar New Year holidays, boosted petrochemical activities and unplanned refinery outages in the country, contributing significant support to Asian naphtha and gasoline markets, despite recorded losses at the bottom of the barrel.

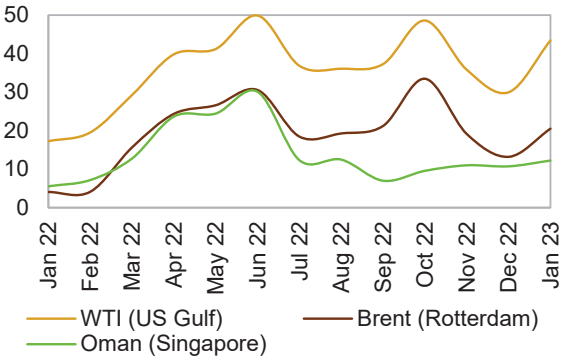
Over the month, global refinery processing rates declined, losing nearly 0.73 mb/d, m-o-m. In the coming month, refinery intakes are expected to drop much further as offline capacity is likely to pick up with the start of spring peak maintenance season.

Refinery margins

USGC refining margins against WTI showed a strong rebound from the nine-month low registered the previous month. The support for this upturn came from across the barrel, with jet/kerosene fuel leading sharply. This is a reflection of a decline in refinery output, as several refineries underwent unplanned shutdowns due to a severe cold front, which led to product supply disruptions.

According to preliminary estimates, refinery intake in the US declined by 726 tb/d m-o-m to average 15.89 mb/d in January. Going forward, intake is expected to decline further, as maintenance interventions intensify with the start of the spring peak maintenance season. USGC margins against WTI averaged $43.46/b in January, up by $13.46 m-o-m and $26.15 y-o-y.

Graph 6 - 1: Refining margins



Sources: Argus and OPEC.

Refinery margins in Rotterdam against Brent ended the downward trend seen the previous month to exhibit a solid gain, as product markets performed positively on stronger fundamentals, particularly those at the top of the barrel. Rising maintenance work amid refinery worker strikes in France over unsatisfactory pension reforms led to product output cuts and tightened product availability within the region. In addition, strong product buying in the region in order to build stocks ahead of the 5 February sanctions on Russian products further solidified bullish product market sentiment, which drove product crack spreads up and European refining economics higher.

Refinery throughput in Europe decreased by 500 tb/d to average 9.31 mb/d according to preliminary data. Refinery margins against Brent in Europe averaged $20.51/b in January, up by $7.32/b compared with a month earlier and higher by $16.46 y-o-y.

Singapore refining margins against Oman, saw limited gains compared with their western counterparts, with all of the support deriving from cleaner products, while gasoil and fuel oil weakened. Gasoline and jet fuel tightness in the West incentivized flows from Asia, allowing strength in markets for those products to filter through Asia. In addition, the relaxation of stringent COVID-19-related quarantine requirements and mandatory testing contributed to stronger mobility activities over the month and more positive product market sentiment.

Reported unplanned refinery shut-downs in China and subsequent pressure on the country's product balance in the month of January further contributed to positive performance in the Asian product markets.

In contrast to what was observed in other regions, refinery run rates in Asia increased in January, albeit only by a slim 30 tb/d relative to the previous month, as intakes remained rather high, despite reported unplanned outages, averaging 26.96 mb/d, according to preliminary data. Refinery margins against Oman in Asia gained $1.50/b m-o-m to average $12.21/b, higher by $6.69 y-o-y.

Commercial Stock Movements

Preliminary December data sees total OECD commercial oil stocks down by 10.9 mb from the previous month. At 2,768 mb, inventories were 117 mb higher than the same month a year ago; 95 mb lower than the latest five-year average and 158 mb below the 2015–2019 average. Within the components, crude stocks rose by 5.2 mb, while product stocks fell by 16.2 mb, m-o-m.

At 1,344 mb, OECD crude stocks were 72 mb higher than the same time a year ago, but 36 mb lower than the latest five-year average and 83 mb lower than the 2015–2019 average.

OECD product stocks stood at 1,424 mb, representing a surplus of 45 mb from the same time a year ago, but 59 mb lower than the latest five-year average and 75 mb below the 2015–2019 average.

In terms of days of forward cover, OECD commercial stocks rose m-o-m by 0.3 days in December to stand at 60.1 days. This is 2.2 days above levels seen in the same month last year, but 2.5 days less than the latest five-year average and 2.3 days lower than the 2015–2019 average.

Preliminary data for January 2023 showed that total US commercial oil stocks rose by 30.4 mb m-o-m to stand at 1,235.6 mb. This is 45.6 mb, or 3.8%, higher than the same month in 2021; but 25.8 mb, or 2.0%, below the latest five-year average. Crude stocks rose by 32.0 mb, while product stocks fell by 1.7 mb, m-o-m.

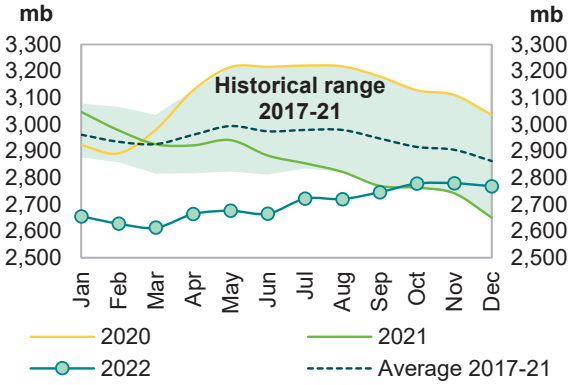
OECD

Preliminary **December** data sees **total OECD commercial oil stocks** down m-o-m by 10.9 mb. At 2,768 mb, they were 117 mb higher than the same time one year ago, but 95 mb lower than the latest five-year average and 158 mb below the 2015–2019 average.

Within the components, crude stocks rose by 5.2 mb, while product stocks fell by 16.2 mb, m-o-m. Total commercial oil stocks in December fell in all OECD regions.

OECD commercial **crude stocks** stood at 1,344 mb in December. This is 72 mb higher than the same time a year ago, but 36 mb lower than the latest five-year average and 83 mb lower than the 2015–2019 average.

Graph 9 - 1: OECD commercial oil stocks



Sources: Argus, EIA, Euroilstock, IEA, METI and OPEC.

Compared with the previous month, OECD Americas saw a crude stock build of 4.3 mb, OECD Asia Pacific stocks rose by 4.2 mb, while stocks in OECD Europe dropped by 3.2 mb.

Total product inventories stood at 1,424 mb in December. This is 45 mb above the same time a year ago; 59 mb lower than the latest five-year average and 75 mb below the 2015–2019 average. Product stocks fell in all OECD regions.

Table 9 - 1: OECD's commercial stocks, mb

OECD stocks	Dec 21	Oct 22	Nov 22	Dec 22	Change Dec 22/Nov 22
Crude oil	1,273	1,362	1,339	1,344	*5.2*
Products	1,378	1,416	1,440	1,424	*-16.2*
Total	**2,651**	**2,778**	**2,779**	**2,768**	***-10.9***
Days of forward cover	**57.9**	**59.6**	**59.8**	**60.1**	***0.3***

Note: Totals may not add up due to independent rounding.
Sources: Argus, EIA, Euroilstock, IEA, METI and OPEC.

In terms of **days of forward cover**, OECD commercial stocks rose m-o-m by 0.3 days in December to stand at 60.1 days. This is 2.2 days above December 2021 level, but 2.5 days less than the latest five-year average and 2.3 days lower than the 2015–2019 average.

All three OECD regions were below the latest five-year average: the Americas by 3.0 days at 59.7 days; Asia Pacific by 1.3 days at 46.1 days; and Europe by 2.5 days at 69.3 days.

OECD Americas

OECD Americas total commercial stocks fell by 1.3 mb m-o-m in December to settle at 1,489 mb. This is 19 mb higher than the same month in 2021, but 40 mb lower than the latest five-year average.

Commercial **crude oil stocks** in OECD Americas rose m-o-m by 4.3 mb in December to stand at 741 mb, which is 2.1 mb higher than in December 2021 and 13.6 mb less than the latest five-year average. The monthly build in crude oil stocks can be attributed to lower crude runs, which dropped by around 300 tb/d m-o-m to 16.62 mb/d.

By contrast, **total product stocks** in OECD Americas fell m-o-m by 5.6 mb in December to stand at 748 mb. Nevertheless, this was 17 mb higher than the same month in 2021, but 27 mb below the latest five-year average. Higher consumption in the region was behind the product stock draw.

OECD Europe

OECD Europe total commercial stocks fell m-o-m by 7.2 mb in December to settle at 916 mb. This is 58.5 mb higher than the same month in 2021, but 35.5 mb below the latest five-year average.

OECD Europe's **commercial crude stocks** fell by 3.2 mb m-o-m to end the month of December at 418 mb, which is 45.4 mb higher than one year ago and 4.1 mb above the latest five-year average. The drop in crude oil inventories came despite refinery throughput in the EU-14, plus the UK and Norway remaining unchanged from the previous month.

Europe's **product stocks** also fell m-o-m by 4.0 mb to end December at 498 mb. This is 13.1 mb higher than a year ago, but 39.6 mb below the latest five-year average.

OECD Asia Pacific

OECD Asia Pacific's total commercial oil stocks fell m-o-m by 2.5 mb in December to stand at 363 mb. This is 39.7 mb higher than a year ago, but 19.5 mb below the latest five-year average.

OECD Asia Pacific's **crude inventories** rose by 4.2 mb m-o-m to end December at 185 mb, which is 24.4 mb higher than one year ago, but 26.4 mb below the latest five-year average.

OECD Asia Pacific's **total product inventories** also fell m-o-m by 6.6 mb to end December at 178 mb. This is 15.4 mb higher than the same time a year ago and 7.0 mb higher than the latest five-year average.

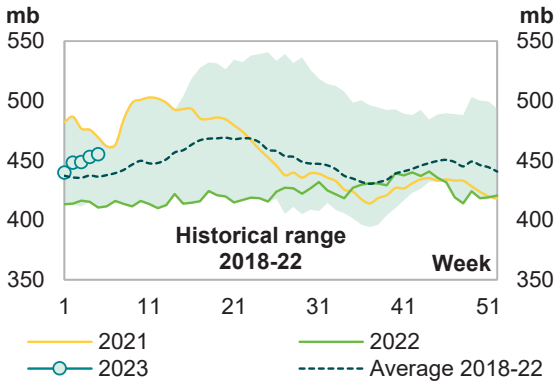
US

Preliminary data for **January 2023** showed that **total US commercial oil stocks** rose by 30.4 mb m-o-m to stand at 1,235.6 mb. This is 45.6 mb, or 3.8%, higher than the same month in 2021; but 25.8 mb, or 2.0%, below the latest five-year average. Crude stocks rose by 32.0 mb, while product stocks fell by 1.7 mb, m-o-m.

US commercial **crude stocks** in January 2023 stood at 452.7 mb. This is 38.4 mb, or 9.3%, higher the same month of the previous year, and 12.6 mb, or 2.9%, above the latest five-year average. The monthly build in crude oil stocks can be attributed to lower crude runs, which dropped by around 730 tb/d to 15.89 mb/d.

In contrast, **total product stocks** fell in January 2023 to stand at 782.9 mb. This is 7.2 mb, or 0.9%, higher than January 2022 levels; but 38.4 mb, or 4.7%, lower than the latest five-year average. The stock drop could be attributed to higher product consumption.

Graph 9 - 2: US weekly commercial crude oil inventories



Sources: EIA and OPEC.

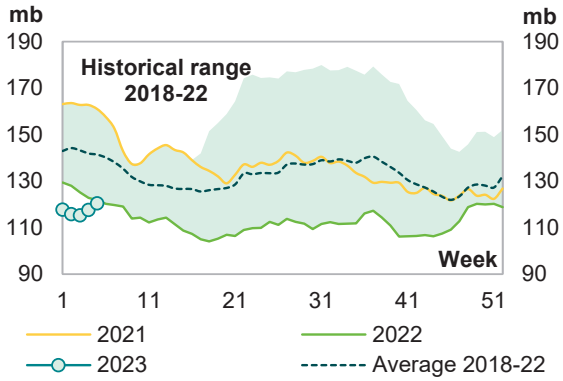
Gasoline stocks rose m-o-m by 11.9 mb in January 2023 to settle at 234.6 mb. This is 17.2 mb, or 6.8% lower than in the same month in 2022; and 22.2 mb, or 8.7%, lower than the latest five-year average.

Residual fuel oil stocks rose by 1.3 mb m-o-m in January 2023. At 31.3 mb, this was 4.6 mb, or 17.1%, higher than a year earlier, and 1.0 mb, or 3.4%, above the latest five-year average.

Jet fuel stocks also rose m-o-m by 1.3 mb, ending January 2023 at 35.5 mb. This is 3.1 mb, or 8.1%, lower than the same month in 2022, and 6.3 mb, or 15.0%, below the latest five-year average.

By contrast, **distillate stocks** fell m-o-m by 1.2 mb in January 2023 to stand at 117.6 mb. This is 7.4 mb, or 5.9%, lower than the same month of the previous year; and 25.2 mb, or 17.6%, below the latest five-year average.

Graph 9 - 3: US weekly distillate inventories



Sources: EIA and OPEC.

Table 9 - 2: US commercial petroleum stocks, mb

US stocks	Jan 22	Nov 22	Dec 22	Jan 23	Change Jan 23/Dec 22
Crude oil	**414.3**	**416.3**	**420.6**	**452.7**	***32.0***
Gasoline	251.8	221.3	222.7	234.6	*11.9*
Distillate fuel	125.0	120.5	118.8	117.6	*-1.2*
Residual fuel oil	26.7	29.1	30.0	31.3	*1.3*
Jet fuel	38.6	37.8	34.1	35.5	*1.3*
Total products	**775.7**	**809.7**	**784.6**	**782.9**	***-1.7***
Total	**1,190.0**	**1,226.1**	**1,205.2**	**1,235.6**	***30.4***
SPR	**588.3**	**388.4**	**372.4**	**371.6**	***-0.8***

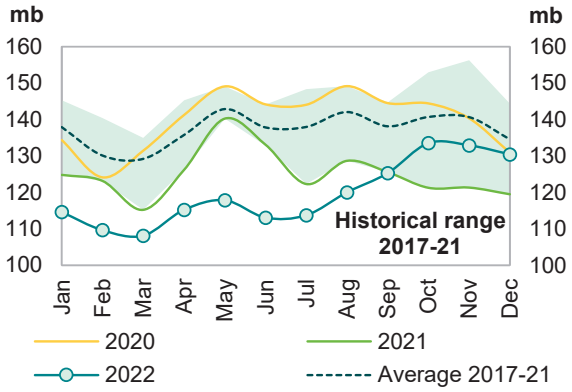
Sources: EIA and OPEC.

Japan

In **Japan**, **total commercial oil stocks** in **December** fell m-o-m by 2.5 mb to settle at 130.5 mb. This is 10.9 mb, or 9.2%, higher than the same month in 2021; but 4.1 mb, or 3.0%, below the latest five-year average. Crude stocks rose by 4.2 mb, while product stocks fell by 6.6 mb, m-o-m.

Japanese **commercial crude oil stocks** rose m-o-m by 4.2 mb in December to stand at 71.3 mb. This is 11.0 mb, or 18.2% higher than the same month of the previous year; but 2.2 mb, or 3.0%, lower than the latest five-year average. This stock build came on the back of higher crude imports, which rose m-o-m by 378 tb/d, or 14.7%, to stand at 2.96 mb/d.

Graph 9 - 4: Japan's commercial oil stocks



Sources: METI and OPEC.

In contrast, Japan's **total product inventories** fell m-o-m by 6.6 mb to end December at 59.2 mb. This is in line with the same month in 2021; but 1.9 mb, or 3.1%, below the latest five-year average.

Gasoline stocks fell m-o-m by 0.9 mb to stand at 10.2 mb in December. This was 0.3 mb, or 2.9% below a year earlier at the same time; and 0.4 mb, or 3.8%, lower than the latest five-year average. The fall came on higher gasoline consumption, amounting to 15.2% m-o-m. Lower imports, which declined by 14.4%, also supported the drop in gasoline stocks.

Distillate stocks also fell m-o-m by 5.0 mb to end December at 27.1 mb. This is 1.1 mb or 4.1% below the same month in 2021 and 1.5 mb, or 5.3%, below the latest five-year average. Within distillate components, kerosene, jet fuel and gasoil stocks went down by 21.9%, 15.4% and 3.9%, respectively.

Total residual fuel oil stocks fell m-o-m by 0.8 mb to end December at 11.8 mb. This is 0.6 mb, or 4.8%, lower than in the same month of the previous year; and 0.8 mb, or 6.4%, below the latest five-year average. Within the components, fuel oil A and fuel oil B.C stocks fell by 12.3% and 2.3%, m-o-m, respectively.

Table 9 - 3: Japan's commercial oil stocks*, mb

Japan's stocks	Dec 21	Oct 22	Nov 22	Dec 22	Change Dec 22/Nov 22
Crude oil	**60.3**	**71.6**	**67.1**	**71.3**	***4.2***
Gasoline	10.5	9.8	11.1	10.2	*-0.9*
Naphtha	8.1	9.9	10.0	10.1	*0.1*
Middle distillates	28.3	29.8	32.1	27.1	*-5.0*
Residual fuel oil	12.4	12.4	12.6	11.8	*-0.8*
Total products	**59.2**	**61.9**	**65.8**	**59.2**	***-6.6***
Total**	**119.5**	**133.5**	**132.9**	**130.5**	***-2.5***

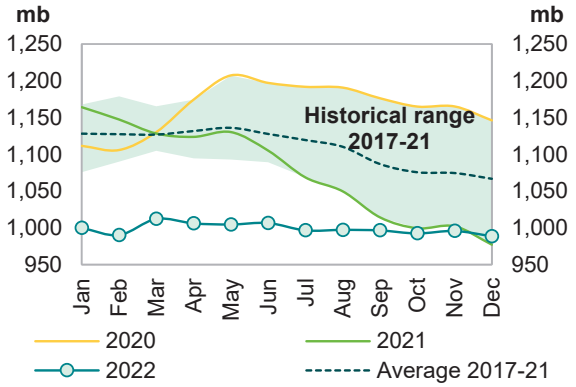
*Note: * At the end of the month. ** Includes crude oil and main products only.*
Sources: METI and OPEC.

EU-14 plus UK and Norway

Preliminary data for **December** showed that **total European commercial oil stocks** fell m-o-m by 7.2 mb to stand at 988.7 mb. At this level, they were 11.5 mb, or 1.2%, above the same month a year earlier; but 77.9 mb, or 7.3%, lower than the latest five-year average. Crude and product stocks fell m-o-m by 3.2 mb and 4.0 mb, respectively.

European **crude inventories** fell in December to stand at 432.7 mb. This is 18.8 mb, or 4.5%, higher than the same month in 2021, but 25.5 mb, or 5.6%, below the latest five-year average. The drop in crude oil inventories came despite refinery throughput in the EU-14, plus the UK and Norway remaining unchanged from the previous month.

Graph 9 - 5: EU-14 plus UK and Norway's total oil stocks



Sources: Argus, Euroilstock and OPEC.

Total European product stocks also fell m-o-m by 4.0 mb to end December at 556.0 mb. This is 7.3 mb, or 1.3%, lower than the same month of the previous year; and 52.4 mb, or 8.6%, below the latest five-year average.

Gasoline stocks fell m-o-m by 2.1 mb in December to stand at 102.9 mb. At this level, they were 3.8 mb, or 3.5%, lower than the same time a year earlier; and 12.0 mb, or 10.5%, below the latest five-year average.

Residual fuel stocks also fell m-o-m by 2.7 mb in December to stand at 59.2 mb. This is 2.6 mb, or 4.7%, higher than the same month in 2021; but 1.6 mb, or 2.6%, below the latest five-year average.

By contrast, **distillate stocks** rose m-o-m by 0.8 mb in December to stand at 362.7 mb. This is 14.1 mb, or 3.7%, below the same month in 2021; and 42.5 mb, or 10.5%, less than the latest five-year average.

Meanwhile, **naphtha stocks** remained unchanged m-o-m in December, ending the month at 31.2 mb. This is 7.9 mb, or 33.8%, higher than the December 2021 level; and 3.8 mb, or 13.7%, higher than the latest five-year average.

Table 9 - 4: EU-14 plus UK and Norway's total oil stocks, mb

EU stocks	Dec 21	Oct 22	Nov 22	Dec 22	Change Dec 22/Nov 22
Crude oil	**413.9**	**435.5**	**435.9**	**432.7**	***-3.2***
Gasoline	106.6	105.1	105.0	102.9	*-2.1*
Naphtha	23.3	30.8	31.2	31.2	*0.0*
Middle distillates	376.8	359.5	361.9	362.7	*0.8*
Fuel oils	56.6	61.6	61.9	59.2	-2.7
Total products	**563.3**	**557.0**	**560.0**	**556.0**	***-4.0***
Total	**977.2**	**992.5**	**995.9**	**988.7**	***-7.2***

Sources: Argus, Euroilstock and OPEC.

Singapore, Amsterdam-Rotterdam-Antwerp (ARA) and Fujairah

Singapore

In **December**, **total product stocks in Singapore** rose m-o-m by 1.8 mb to 44.1 mb. This is 4.1 mb, or 10.4%, higher than the same month in 2021; but 1.5 mb, or 3.2%, below the latest five-year average.

Light distillate stocks rose m-o-m by 0.3 mb in December to stand at 15.0 mb. This is 3.0 mb, or 25.3%, higher than the same month of the previous year; and 1.6 mb, or 12.0%, above the latest five-year average.

Middle distillate stocks also rose m-o-m by 0.2 mb in December, to stand at 8.0 mb. This is in line with a year earlier at the same time; and 2.9 mb, or 26.9%, lower than the latest five-year average.

Residual fuel oil stocks also rose m-o-m by 1.2 mb, ending December at 21.1 mb. This is 1.1 mb, or 5.6%, higher than December 2021; but 0.2 mb, or 0.7%, below the latest five-year average.

ARA

Total product stocks in ARA rose m-o-m in **December** by 1.9 mb. At 42.6 mb, they were 4.8 mb, or 12.8%, higher than the same month in 2021; and 0.7 mb or 1.6% higher than the latest five-year average.

Gasoline stocks in December fell by 0.1 mb m-o-m to stand at 11.4 mb, which is 2.7 mb, or 31.4%, higher than the same month of the previous year; and 2.0 mb, or 21.0%, above the latest five-year average.

Jet oil stocks also fell by 0.1 mb m-o-m to stand at 6.8 mb. This is 0.2 mb, or 3.5%, lower than levels seen in December 2021; but 0.8 mb, or 14.2%, above the latest five-year average.

In contrast, **gasoil stocks** rose by 1.8 mb m-o-m, ending December at 14.6 mb. This is 1.6 mb, or 12.6%, higher than December 2021; but 1.9 mb, or 11.7%, below the latest five-year average.

Fuel oil stocks also rose by 0.6 mb m-o-m in December to stand at 7.2 mb, which is 0.3 mb, or 4.6%, less than in December 2021; and 0.1 mb, or 1.3%, below the latest five-year average.

Fujairah

During the week ending 30 January 2023, **total oil product stocks in Fujairah** fell w-o-w by 0.97 mb to stand at 19.02 mb, according to data from Fed Com and S&P Global Platts. At this level, total oil stocks were 0.58 mb lower than at the same time a year ago.

Light distillate stocks fell by 0.11 mb to stand at 6.98 mb, which is 0.61 mb higher than a year ago. **Middle distillate stocks** also fell w-o-w by 0.65 mb to stand at 2.33 mb, which is 0.47 mb higher than the same time last year. **Heavy distillate stocks** also dropped by 0.20 mb w-o-w to stand at 9.71 mb in the week to 30 January 2023, which is 1.67 mb below the same period a year ago.

Table 11 - 1: World oil demand and supply balance, mb/d

World oil demand and supply balance	2019	2020	2021	1Q22	2Q22	3Q22	4Q22	2022	1Q23	2Q23	3Q23	4Q23	2023
World demand													
Americas	25.40	22.45	24.32	24.77	24.98	25.33	25.16	25.06	24.96	25.27	25.68	25.42	25.33
of which US	*20.58*	*18.35*	*20.03*	*20.38*	*20.41*	*20.62*	*20.68*	*20.52*	*20.46*	*20.54*	*20.88*	*20.81*	*20.67*
Europe	14.31	12.41	13.13	13.19	13.42	14.09	13.73	13.61	13.22	13.46	14.13	13.78	13.65
Asia Pacific	7.95	7.17	7.38	7.85	6.99	7.22	7.71	7.44	7.89	7.05	7.27	7.73	7.48
Total OECD	**47.66**	**42.03**	**44.83**	**45.81**	**45.39**	**46.65**	**46.61**	**46.12**	**46.08**	**45.77**	**47.08**	**46.93**	**46.47**
China	13.81	13.94	14.97	14.74	14.42	14.64	15.44	14.81	15.10	15.22	15.25	16.03	15.40
India	4.99	4.51	4.77	5.18	5.16	4.95	5.26	5.14	5.41	5.44	5.21	5.50	5.39
Other Asia	9.06	8.13	8.63	9.09	9.27	8.73	8.85	8.98	9.42	9.61	9.10	9.20	9.33
Latin America	6.59	5.90	6.23	6.32	6.36	6.55	6.49	6.43	6.44	6.49	6.71	6.65	6.58
Middle East	8.20	7.45	7.79	8.06	8.13	8.50	8.32	8.25	8.45	8.46	8.84	8.61	8.59
Africa	4.44	4.08	4.22	4.51	4.15	4.25	4.61	4.38	4.71	4.34	4.43	4.80	4.57
Russia	3.57	3.39	3.61	3.67	3.42	3.45	3.59	3.53	3.63	3.45	3.59	3.75	3.61
Other Eurasia	1.19	1.07	1.21	1.22	1.16	1.00	1.21	1.15	1.21	1.16	1.02	1.22	1.15
Other Europe	0.76	0.70	0.75	0.79	0.75	0.73	0.80	0.77	0.80	0.76	0.75	0.82	0.78
Total Non-OECD	**52.62**	**49.16**	**52.18**	**53.58**	**52.81**	**52.79**	**54.56**	**53.44**	**55.18**	**54.92**	**54.91**	**56.58**	**55.40**
(a) Total world demand	**100.27**	**91.19**	**97.01**	**99.38**	**98.20**	**99.44**	**101.17**	**99.55**	**101.26**	**100.70**	**101.99**	**103.51**	**101.87**
Y-o-y change	***1.08***	***-9.09***	***5.82***	***5.18***	***2.55***	***1.78***	***0.73***	***2.54***	***1.88***	***2.49***	***2.55***	***2.34***	***2.32***
Non-OPEC liquids production													
Americas	25.84	24.75	25.25	25.86	26.27	27.02	27.48	26.66	27.59	27.68	28.04	28.41	27.93
of which US	*18.49*	*17.64*	*17.85*	*18.27*	*18.83*	*19.33*	*19.68*	*19.03*	*19.75*	*20.05*	*20.25*	*20.48*	*20.14*
Europe	3.70	3.90	3.76	3.73	3.43	3.49	3.61	3.57	3.92	3.90	3.79	3.92	3.89
Asia Pacific	0.52	0.52	0.51	0.49	0.51	0.43	0.48	0.48	0.50	0.47	0.49	0.48	0.48
Total OECD	**30.07**	**29.17**	**29.52**	**30.08**	**30.22**	**30.94**	**31.57**	**30.71**	**32.01**	**32.05**	**32.32**	**32.81**	**32.30**
China	4.05	4.15	4.31	4.51	4.52	4.38	4.41	4.46	4.50	4.50	4.47	4.47	4.48
India	0.83	0.78	0.78	0.78	0.77	0.76	0.76	0.77	0.79	0.78	0.77	0.76	0.78
Other Asia	2.72	2.51	2.41	2.35	2.30	2.22	2.30	2.29	2.36	2.35	2.32	2.35	2.34
Latin America	6.08	6.03	5.95	6.11	6.18	6.46	6.58	6.33	6.48	6.66	6.70	6.78	6.66
Middle East	3.19	3.19	3.24	3.29	3.33	3.36	3.34	3.33	3.34	3.35	3.38	3.38	3.37
Africa	1.51	1.41	1.35	1.33	1.31	1.32	1.30	1.32	1.32	1.33	1.35	1.34	1.33
Russia	11.51	10.54	10.80	11.33	10.63	11.01	11.17	11.03	10.28	10.00	10.10	10.15	10.13
Other Eurasia	3.07	2.91	2.93	3.04	2.76	2.59	2.91	2.83	3.07	3.04	3.00	3.05	3.04
Other Europe	0.12	0.12	0.11	0.11	0.11	0.10	0.10	0.11	0.10	0.10	0.10	0.10	0.10
Total Non-OECD	**33.09**	**31.67**	**31.87**	**32.84**	**31.91**	**32.20**	**32.87**	**32.46**	**32.25**	**32.12**	**32.20**	**32.37**	**32.23**
Total Non-OPEC production	63.16	60.83	61.39	62.93	62.13	63.15	64.44	63.17	64.25	64.17	64.52	65.18	64.54
Processing gains	2.37	2.16	2.29	2.40	2.40	2.40	2.40	2.40	2.47	2.47	2.47	2.47	2.47
Total Non-OPEC liquids production	**65.53**	**62.99**	**63.68**	**65.33**	**64.53**	**65.55**	**66.84**	**65.57**	**66.72**	**66.64**	**66.99**	**67.65**	**67.01**
OPEC NGL + non-conventional oils	5.21	5.17	5.28	5.35	5.38	5.41	5.43	5.39	5.44	5.47	5.43	5.43	5.44
(b) Total non-OPEC liquids production and OPEC NGLs	**70.74**	**68.16**	**68.96**	**70.67**	**69.91**	**70.95**	**72.28**	**70.96**	**72.16**	**72.12**	**72.42**	**73.08**	**72.45**
Y-o-y change	***2.18***	***-2.59***	***0.80***	***2.71***	***1.25***	***1.97***	***2.06***	***2.00***	***1.49***	***2.21***	***1.46***	***0.80***	***1.49***
OPEC crude oil production (secondary sources)	29.36	25.72	26.35	28.35	28.58	29.41	29.11	28.87					
Total liquids production	100.11	93.88	95.30	99.02	98.49	100.36	101.39	99.82					
Balance (stock change and miscellaneous)	-0.17	2.69	-1.70	-0.37	0.29	0.92	0.22	0.27					
OECD closing stock levels, *mb*													
Commercial	2,894	3,037	2,651	2,613	2,666	2,746	2,768	2,768					
SPR	1,535	1,541	1,484	1,442	1,343	1,245	1,200	1,200					
Total	**4,429**	**4,578**	**4,134**	**4,055**	**4,009**	**3,991**	**3,968**	**3,968**					
Oil-on-water	1,033	1,148	1,202	1,231	1,304	1,407	1,401	1,401					
Days of forward consumption in OECD, *days*													
Commercial onland stocks	69	68	57	58	57	59	60	60					
SPR	37	34	32	32	29	27	26	26					
Total	**105**	**102**	**90**	**89**	**86**	**86**	**86**	**85**					
Memo items													
(a) - (b)	**29.53**	**23.03**	**28.05**	**28.71**	**28.29**	**28.49**	**28.89**	**28.60**	**29.10**	**28.58**	**29.57**	**30.43**	**29.42**

Note: Totals may not add up due to independent rounding.
Source: OPEC.

https://www.iea.org/topics/oil-market-report

Oil Market Report - February 2023

February 2023

About this report

The IEA Oil Market Report (OMR) is one of the world's most authoritative and timely sources of data, forecasts and analysis on the global oil market – including detailed statistics and commentary on oil supply, demand, inventories, prices and refining activity, as well as oil trade for IEA and selected non-IEA countries.

Highlights

- Following a modest year-on-year contraction in 4Q22, global oil demand is set to rise by 2 mb/d in 2023 to 101.9 mb/d. The Asia-Pacific region (+1.6 mb/d), fuelled by a resurgent China (+900 kb/d), dominates the growth outlook. The reopening of borders will boost air traffic. Jet/kerosene demand is expected to increase by 1.1 mb/d to 7.2 mb/d, 90% of 2019 levels.

- World oil supply held largely steady in January, at around 100.8 mb/d. The pause comes after a sharp 1.2 mb/d decline at the end of 2022 led by the US and Saudi Arabia. We expect global output to grow 1.2 mb/d in 2023, driven by non-OPEC+. Supply from OPEC+ is projected to contract with Russia pressured by sanctions.

- Global refinery throughputs fell 730 kb/d in January, with US activity still recovering from the outages during the Arctic freeze. A further decline is expected in February on scheduled maintenance. Despite mild weather in Europe and a seasonal slowdown in road demand, product cracks rallied on supply concerns in the US and ahead of the EU embargo on Russian products coming into force.

- Russian oil exports rose to 8.2 mb/d in January ahead of the EU embargo and G7 price cap on refined products taking effect. Crude oil exports increased by nearly 300 kb/d m-o-m, despite a further 450 kb/d decline in shipments to the EU. Product loadings held steady at around 3.1 mb/d. Export revenues are estimated at $13 bn, marginally higher than in December but down 36% on a year ago.

- Global observed oil inventories tumbled by 69.8 mb m-o-m in December, but were 40.5 mb higher than a year ago and 126 mb above the low reached in March 2022. OECD industry stocks fell by 18.1 mb in December to 2 767 mb, 95.7 mb below the five-year average. Preliminary data for the US, Europe and Japan show a build of 28 mb in January, led by US crude and gasoline stocks.

- North Sea Dated rose by $2.50/bbl m-o-m to $82.86/bbl in January, its first monthly increase since October, as economic sentiment marginally improved following China's reopening. Forward curves and physical differentials were largely stable, except for in the US where refinery outages propelled gasoline margins higher, while at the same time weighing on WTI prices. Freight rates fell across the board.

One year on

Nearly a year on from Russia's invasion of Ukraine, global oil markets are trading in relative calm. Oil prices are back to pre-war levels with the exception of diesel, though even these have drifted

much lower from last summer's historical highs. World oil supply looks set to exceed demand through the first half of 2023, but the balance could quickly shift to deficit as demand recovers and some Russian output is shut in.

Russian oil production and exports have held up relatively well despite sanctions. The country has managed to reroute shipments of crude to Asia and the G7 price cap on crude appears to be helping to keep the barrels flowing. In January, output was down only 160 kb/d from pre-war levels, with a lofty 8.2 mb/d of oil shipped to markets. But in a sign that Moscow may be struggling to place all of its barrels, Deputy Prime Minister Alexander Novak said in early February that Russia would curb output by 500 kb/d in March rather than sell to countries that comply with the G7 price caps.

The cut may be an attempt to shore up oil prices. In January, Moscow was forced to sell exports at a large discount. Their 2023 budget is based on a Urals price of $70.10/bbl, but the grade's export price averaged just $49.48/bbl in January versus $82/bbl for North Sea Dated. As a result, Russia's fiscal revenues from oil operations plunged 48% y-o-y in January to 310 billion roubles (or $4.2 bn), while export revenues dropped 36% to $13 billion.

With Russian oil production in decline and limited gains expected from the rest of the OPEC+ bloc, non-OPEC+ producers will lead world supply growth in 2023. For the year as a whole, global oil supply is forecast to expand by 1.2 mb/d, led by the United States, Brazil, Norway, Canada and Guyana – all set to pump at record rates. OPEC kingpin Saudi Arabia, along with the UAE, will also produce near all-time highs, leaving a thin spare capacity cushion of roughly 3.4 mb/d.

At the same time, world oil demand growth is picking up after a marked slowdown in the second half of 2022 and a year-on-year contraction in the fourth quarter. China accounts for nearly half the 2 mb/d projected increase this year, with neighbouring countries also set to benefit after Beijing ditched its zero-Covid policies. A pronounced uptick in air traffic in recent weeks emphasises the central role of jet fuel deliveries in 2023 growth – expected to soar by 1.1 mb/d to reach 7.2 mb/d, around 90% of 2019 levels. Total demand will hit a record 101.9 mb/d, 1.4 mb/d more than the 2019 average.

The impact on Russia's product exports following the EU embargo and price cap that came into effect on 5 February will be a key factor when it comes to meeting that demand growth. So will Beijing's stance on domestic refinery activity and product exports amid its reopening. New refineries in Africa and the Middle East as well as China are expected to step in to cater for the growth in refined product demand. If the price cap on products is half as successful as the crude cap, product markets may well weather the storm – but more crude supplies would be required to prevent renewed stock draws later in the year.

OPEC+ crude oil production[1]

million barrels per day

	Dec 2022 Supply	Jan 2023 Supply	Jan Prod vs Target	Jan-2023 Target	Sustainable Capacity[2]	Eff Spare Cap vs Jan[3]
Algeria	1.01	1.01	0.0	1.01	1.02	0.01
Angola	1.09	1.11	-0.34	1.46	1.17	0.06
Congo	0.26	0.26	-0.05	0.31	0.28	0.02
Equatorial Guinea	0.05	0.05	-0.07	0.12	0.09	0.04
Gabon	0.19	0.19	0.01	0.18	0.2	0.01
Iraq	4.45	4.42	-0.01	4.43	4.7	0.28
Kuwait	2.66	2.68	0.0	2.68	2.8	0.12
Nigeria	1.23	1.25	-0.49	1.74	1.37	0.12
Saudi Arabia	10.44	10.39	-0.09	10.48	12.22	1.83
UAE	3.23	3.23	0.21	3.02	4.12	0.89
Total OPEC-10	**24.61**	**24.59**	**-0.83**	**25.42**	**27.98**	**3.39**
Iran[4]	2.66	2.63			3.8	
Libya[4]	1.17	1.14			1.2	0.06
Venezuela[4]	0.66	0.7			0.76	0.06
Total OPEC	**29.1**	**29.06**			**33.75**	**3.52**
Azerbaijan	0.55	0.53	-0.15	0.68	0.58	0.05
Kazakhstan	1.68	1.66	0.04	1.63	1.65	-0.01
Mexico[5]	1.62	1.64		1.75	1.66	0.02
Oman	0.84	0.84	0	0.84	0.86	0.02
Russia	9.81	9.77	-0.71	10.48	10.2	
Others [6]	0.86	0.78	-0.28	1.06	0.93	0.15
Total Non-OPEC	**15.35**	**15.23**	**-1.1**	**16.44**	**15.88**	**0.24**
OPEC+ 19 in cut deal[4]	**38.34**	**38.18**	**-1.93**	**40.1**	**42.2**	**3.61**
Total OPEC+	**44.45**	**44.29**			**49.63**	**3.75**

1. Excludes condensates. 2. Capacity levels can be reached within 90 days and sustained for an extended period. 3. Excludes shut in Iranian, Russian crude. 4. Iran, Libya, Venezuela exempt from cuts. 5. Mexico excluded from OPEC+ compliance. Only cut in May, June 2020. 6. Bahrain, Brunei, Malaysia, Sudan and South Sudan.

IEA World Oil Supply and Demand Forecasts: Summary (Table)
2023-02-15 09:00:00.6 GMT
By Kristian Siedenburg
(Bloomberg) -- Following is a summary of world oil supply and demand forecasts from the International Energy Agency in Paris:

	4Q 2023	3Q 2023	2Q 2023	1Q 2023	4Q 2022	3Q 2022	2Q 2022	1Q 2022	2023	2022
	Demand									
Total Demand	103.5	102.9	101.1	100.1	100.8	100.7	98.7	99.5	101.9	100.0
Total OECD	46.7	46.9	45.9	46.1	46.2	46.6	45.4	45.8	46.4	46.0
Americas	25.2	25.5	25.2	24.9	25.1	25.3	25.0	24.8	25.2	25.1
Europe	13.6	14.0	13.6	13.1	13.4	14.1	13.4	13.2	13.6	13.5
Asia Oceania	7.9	7.4	7.1	8.0	7.6	7.2	7.0	7.9	7.6	7.4
Non-OECD countries	56.8	56.0	55.3	54.0	54.6	54.1	53.3	53.7	55.5	54.0
FSU	4.9	4.9	4.7	4.6	5.1	5.1	4.7	4.7	4.8	4.9
Europe	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
China	16.7	16.0	15.7	15.2	15.4	14.8	14.4	15.4	15.9	15.0
Other Asia	14.7	14.0	14.4	14.4	13.9	13.4	14.0	14.1	14.4	13.9
Americas	6.3	6.3	6.2	6.0	6.2	6.3	6.1	5.9	6.2	6.1
Middle East	9.1	9.7	9.3	8.8	9.0	9.6	9.2	8.6	9.2	9.1
Africa	4.3	4.2	4.2	4.3	4.3	4.1	4.1	4.2	4.3	4.2
	Supply									
Total Supply	n/a	n/a	n/a	n/a	101.4	101.2	98.8	98.8	n/a	100.1
Non-OPEC	66.9	66.8	66.5	66.4	66.7	66.2	64.8	65.0	66.6	65.7
Total OECD	31.1	30.8	30.5	30.2	30.1	29.7	28.9	28.8	30.7	29.4
Americas	27.3	27.1	26.8	26.4	26.4	26.2	25.4	25.0	26.9	25.8
Europe	3.3	3.2	3.2	3.3	3.2	3.1	3.0	3.3	3.3	3.2
Asia Oceania	0.5	0.5	0.5	0.5	0.5	0.4	0.5	0.5	0.5	0.5
Non-OECD	30.3	30.2	30.4	31.2	31.4	30.9	30.5	31.4	30.5	31.0
FSU	12.7	12.6	12.8	13.8	14.1	13.7	13.4	14.4	13.0	13.9
Europe	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
China	4.2	4.2	4.2	4.3	4.1	4.1	4.2	4.2	4.2	4.2
Other Asia	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.8	2.6	2.7
Americas	6.2	6.1	6.1	6.0	5.9	5.8	5.5	5.4	6.1	5.6
Middle East	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.1	3.2	3.2
Africa	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Processing Gains	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3	2.4	2.3
Total OPEC	n/a	n/a	n/a	n/a	34.7	34.9	34.1	33.8	n/a	34.4
Crude	n/a	n/a	n/a	n/a	29.4	29.6	28.7	28.5	n/a	29.0
Natural gas liquids NGLs	5.4	5.4	5.4	5.4	5.3	5.4	5.4	5.3	5.4	5.3
Call on OPEC crude and stock change *	31.2	30.6	29.3	28.4	28.7	29.1	28.6	29.2	29.9	28.9

NOTE: Figures are in million of barrels per day. (*) equals total demand minus non-OPEC supply and OPEC natural gas liquids.
IEA changed the way it measures OPEC supply, adopting the industry-standard approach of counting most of Venezuela's Orinoco heavy oil as "crude oil."
SOURCE: International Energy Agency

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IEA: January Crude Oil Production in OPEC Countries (Table)
2023-02-15 09:00:00.4 GMT
By Kristian Siedenburg
(Bloomberg) -- Following is a summary of oil production in OPEC countries from the International Energy Agency in Paris:

	Jan. 2023	Dec. 2022	Jan. MoM
Total OPEC	29.06	29.10	-0.04
Total OPEC10	24.59	24.61	-0.02
Algeria	1.01	1.01	0.00
Angola	1.11	1.09	0.02
Congo	0.26	0.26	0.00
Equatorial Guinea	0.05	0.05	0.00
Gabon	0.19	0.19	0.00
Iraq	4.42	4.45	-0.03
Kuwait	2.68	2.66	0.02
Nigeria	1.25	1.23	0.02
Saudi Arabia	10.39	10.44	-0.05
UAE	3.23	3.23	0.00
Iran	2.63	2.66	-0.03
Libya	1.14	1.17	-0.03
Venezuela	0.70	0.66	0.04

NOTE: Figures are in million of barrels per day. Monthly level change calculated by Bloomberg. Production data excludes condensates.
OPEC10 excludes Iran, Libya and Venezuela.
SOURCE: International Energy Agency

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IEA REPORT WRAP: China Could Push Oil Market Into Deficit in 2H
2023-02-15 09:53:32.839 GMT
By Rachel Graham
(Bloomberg) -- Summary of stories from IEA's monthly Oil Market Report on Wednesday:
* IEA Boosts Global Oil Demand Forecast as China's Economy Reopens
** Oil demand to rise by 2m b/d in 2023 to 101.9m b/d
** Oil market could be in deficit in 2H on China demand

** OPEC+ oil supply set to shrink due to sanctions on Russia
** Global oil output to rise by 1.2m b/d this year
** US, Brazil and Norway to pump oil at record in 2023
* Russia Oil Revenues Stagnate Despite Record Exports
** Russia Faces Lower Runs in Struggle to Export Oil Products
** Russian Refiners Will Need to Meet Domestic Gasoline Demand
* See summary of key IEA world oil supply/demand forecasts
** Click here for detailed quarterly forecast table
* OPEC Crude Output Slipped 40k B/D in January on Saudi Cuts
** Click here for table
* Other stories include:
** India Can Buy 10M Bbl of Russian Oil for Strategic Storage
** Crude Oil Draws in Late 2023 Could Curb Refining Runs
** Growth in Oil Demand to Be Driven by China This Year
** West Africa Oil Prices Firm on Better Margins, China Buying
* NOTE: OPEC released its monthly report Tuesday, saying it sees a slightly tighter global oil market than previously forecast

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IEA Boosts Global Oil Demand Forecast as China's Economy Reopens
2023-02-15 09:00:00.33 GMT
By Grant Smith
(Bloomberg) -- The International Energy Agency boosted forecasts for global oil demand as China reopens its economy following years of anti-Covid lockdowns.
The agency raised global demand estimates by a hefty 500,000 barrels a day for the first quarter, and by just under half as much for the year as a whole. As a result, world consumption will climb by 2 million barrels a day this year to average 101.9 million a day, it said in a monthly report.
"China's reopening will give a welcome boost to the listless world economy," the Paris-based adviser to major economies said. "The country is set to resume its established role as the primary engine of world oil demand growth."
Read more: China's Oil Buying Spree a Boost for Global Demand Outlook
Nonetheless, the IEA said global oil markets will likely remain in surplus in the first half of the year amid surprisingly robust output from Russia.
While the country announced last week that it will cut

production in response to Western sanctions, the IEA sharply downgraded its expectations for the extent of the Russian supply slump. Output will be down 1 million barrels a day by the end of the first quarter, versus prewar levels, rather than the 1.6 million estimated last month.

Oil has had a shaky start to the year, trading near $85 a barrel in London as traders assess whether China can successfully resume economic activity without triggering a wave of virus cases, and as the uptick in demand is clouded by tighter monetary policy and lingering fears of a recession. Still, global markets are set to tighten in the second half of the year as sanctions take a toll on Russia and China's recovery gains momentum, according to the IEA.

Flip to Deficit

"World oil supply looks set to exceed demand through the first half of 2023, but the balance could quickly shift to deficit as demand recovers and some Russian output is shut in," the agency said.

Chinese demand will climb by 900,000 barrels a day this year after a record contraction in 2022, reaching 15.9 million barrels a day, the IEA said.

Domestic flights soared 80% over the Lunar New Year holiday, national aviation data show, and oil trader Unipec — a division of refining giant Sinopec — has led a buying spree among Chinese companies, snapping up millions of barrels from the Middle East.

"Prompt indicators for January suggest a sharp uptick in Chinese activity and mobility," the IEA said. "Following Beijing's late-2022 about-turn on its stringent anti-Covid restrictions, we expect Chinese oil demand to quickly pick up steam and comfortably exceed 2021 levels by the end of the year."

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Russia Oil Revenues Stagnate Despite Record Exports, IEA Says

2023-02-15 09:00:00.36 GMT

By Bloomberg News

(Bloomberg) -- Russia's oil exports neared an all-time high last month, but Western sanctions squeezed revenues as the nation's crude was sold at steep discounts, the International

Energy Agency said.

Russia shipped a total of 8.2 million barrels a day of crude and fuel in January, according to the IEA. That's close to the record set in February 2020 "as measures have been put in place to facilitate the re-routing of crude oil exports to new destinations, mostly in Asia," the agency said in its monthly report published Wednesday.

Yet the Kremlin's January revenues from the exports fell by more than a third to $13 billion from a year ago, as sanctions imposed by Western nations and their allies led to deep discounts on Russian barrels, the IEA said. The money generated was only slightly higher than December's $12.8 billion, it said.

The oil industry is the single largest source of revenue for the Russian budget, which is strained by massive military spending following the invasion in Ukraine. Concern over declining energy revenues prompted President Vladimir Putin to last month order his government to re-jig Russia's oil levies in a bid to offset the impact of sanctions.

The nation faced its largest budget deficit for the first month of the year since at least 1998 as the European Union and the Group of Seven industrialized countries imposed price caps on Russian oil. The caps, which came on top of an EU ban on almost all Russian oil imports, led to deep discounts on the nation's key Urals export blend.

Deep Discounts

Urals price discounts for Baltic delivery versus North Sea Dated Brent last month widened to a $40.05 per barrel, a record low, the IEA said in its report, citing calculations based on data from ArgusMedia.

While Russia currently uses Argus's Urals price assessments in northwestern Europe for taxing its oil producers, the government has expressed concerns that this approach doesn't reflect the actual price of Urals because most of its exports have been redirected to other markets, mainly in Asia.

The government has proposed a switch to Brent-based price assessment from April, with the discount to the European benchmark to be narrowed gradually until it reaches $25 per barrel starting July. This proposal, as well as a number of other energy-tax changes, requires amendments to the Russian tax code and has yet to be considered by parliament.

If adopted, the tax changes could generate over 600 billion rubles ($8.1 billion) in additional budget revenue this year alone, according to the Finance Ministry.

Output Cut

Last week, Russia's Deputy Prime Minister Alexander Novak said the nation will cut its production by 500,000 barrels per

day in March in response to Western sanctions. The move "may be an attempt to shore up oil prices," giving another boost to the energy revenues, the IEA said.
The agency forecasts that by the end of March, Russia will shut-in around 1 million barrels per day of oil production compared with pre-invasion levels, less than the 1.6 million estimated by the IEA last month. That will reduce the nation's average 2023 output to 10 million barrels per day, it said.
Russia pumped 535.2 million tons of crude oil and condensate last year, Novak said earlier this week. That's the equivalent to around 10.75 million barrels per day.

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Russia Faces Lower Runs in Struggle to Export Oil Products: IEA
2023-02-15 09:00:00.31 GMT
By Jack Wittels
(Bloomberg) -- The International Energy Agency assumes that Russia will struggle to keep exporting typical volumes of refined products from Feb. 5.
* This leads to lower refining runs, the IEA said in its monthly Oil Market Report
** Russian crude runs contract by 0.6m b/d in 2023
** World throughputs to rise by 1.8m b/d, following a 2.2m b/d increase in 2022
* READ: As Europe Bans Russian Diesel, Traders Plot Ways Around It
* Despite Russia's anticipated struggle to place diesel exports and the subsequent need to cut runs and yields, the resulting ~25% y/y fall in production to 1.5m b/d is offset by higher output in China, where runs and yields soar
* Russian gasoil flows fall from ~0.9m b/d in January to ~0.6m b/d in 1Q and to ~0.4m b/d in 2H
** "The resulting world balance still limits a rebuild of OECD stocks in 2023, and supply can't match demand if the remaining Russian gasoil exports are lost"
* Since December, some 250k b/d of Russian gasoil exports to Western Europe have shifted to:
** North Africa: ~130k b/d
** Middle East: ~70k b/d
** West Africa ~30k b/d

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Russian Refiners Will Need to Meet Domestic Gasoline Demand: IEA
2023-02-15 09:00:00.25 GMT
By Rachel Graham
(Bloomberg) -- Russian refiners will need to run hard enough to meet domestic gasoline demand, the IEA said in its monthly Oil Market Report.
* "A possible floor for Russian refining activity is the need to supply the domestic gasoline market, where demand is expected to remain flat y/y"
** "We think this constraint is manageable as Russia is a net gasoline exporter and has room for diverting naphtha molecules to the gasoline pool"
* Total January throughput was 5.7m b/d, down 170k b/d y/y
** The IEA sees a cumulative 740k b/d drop in refinery throughput in February and March
** Runs to then stabilize between 4.6m b/d and 4.9m b/d
** 2023 figure forecast to fall 550k b/d, after a 175k b/d drop in 2022
* In 2022, gasoline yields averaged at just 18%, up 1 percentage point from 2021
** Naphtha yield was 11%, down 1 percentage point from the previous year
* In 2022, Russia exported about 10% of its gasoline production and 75% of naphtha

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IEA World Oil Supply/Demand Key Forecasts
2023-02-15 09:00:00.7 GMT
By Kristian Siedenburg
(Bloomberg) -- World oil demand 2023 forecast was revised to 101.9m b/d from 101.7m b/d in Paris-based Intl Energy Agency's latest monthly report.
* 2022 world demand was revised to 100.0 from 99.9m b/d
* Demand change in 2023 est. 2% y/y or 2m b/d
* Non-OPEC supply 2023 was revised to 66.6m b/d from 66.4m b/d
* Call on OPEC crude 2023 was unrevised at 29.9m b/d
* Call on OPEC crude 2022 was revised to 28.9 m b/d from 28.8m b/d
** OPEC crude production in Jan. fell by 40k b/d on the month to 29.06m b/d
* Detailed table: FIFW NSN RQ44AZGFLIIO <GO>
* NOTE: Fcasts based off IEA's table providing one decimal point

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OPEC Crude Output Slipped 40k B/D in January on Saudi Cuts: IEA
2023-02-15 09:00:00.2 GMT
By Amanda Jordan
(Bloomberg) -- OPEC's January crude output slid 40k b/d from a month earlier to 29.06m b/d as Saudi Arabia cut back, the IEA said in its monthly market report.
* Saudi output fell 50k b/d to 10.39m b/d, 90k b/d below its OPEC+ quota
* UAE supply was unchanged at 3.23m b/d
* Kuwaiti production inched up to 2.68m b/d
* Iraqi production edged down 30k b/d to 4.42m b/d
* Output in Iran, exempt from OPEC+ quotas, slipped to 2.63m b/d
* Among African members, Nigerian production rose 20k b/d to 1.25m b/d, the highest level since last March
* Angolan supply also rose 20k b/d, reaching 1.11m b/d
* Libyan volumes eased 30k b/d to 1.14m b/d
* Output in Venezuela increased by 40k b/d to 700k b/d
* NOTE: On Tuesday, OPEC released its own production figures for January, estimating its 13 members pumped 28.88m b/d

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India Can Buy 10M Bbls of Russian Oil for Strategic Storage: IEA
2023-02-15 09:00:00.24 GMT
By Rakesh Sharma
(Bloomberg) -- India's $610 million allocation to boost its strategic petroleum reserves could cover purchases of ~10m barrels of Russian crude, the IEA said in its monthly market report on Wednesday.
* That takes into account recent levels of reported discounts and associated freight rates
** Alternatively, India could purchase ~7m barrels of non-sanctioned crude
* NOTE: India has established strategic reserves at three locations with a total capacity of 5.33 million tons, or 39 million barrels
* READ: Major Indian Refiner Eyeing Russian Oil for the Long Term

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Crude Oil Draws in Late 2023 Could Curb Refining Runs, IEA Says
2023-02-15 09:00:00.27 GMT
By Rachel Graham
(Bloomberg) -- Crude oil supply is set to fall below refinery demand in the second half of the year, potentially resulting in lower supply of oil products, the IEA said in its monthly oil market report.
* "Large crude oil stock draws in 3Q-4Q could put downward pressure on margins and refinery activity, resulting in significant product deficits, particularly in the last quarter of the year"
* Crude runs are forecast to increase by 1.8m b/d this year to

82.1m b/d, buoyed by new capacity coming online
** Most of the net increase is from East of Suez as Russian run-cuts offset gains elsewhere in the Atlantic Basin
* "If all refinery startups materialize as expected, there should be sufficient capacity to meet refined product demand this year, even with the expectations of lower Russian product exports"

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Growth in Oil Demand to Be Driven by China This Year, IEA Says
2023-02-15 09:00:00.3 GMT
By Rachel Graham
(Bloomberg) -- China will account for about 45% of global growth in oil demand this year, the IEA said in its monthly Oil Market report.
* The nation's consumption this year will increase by 1.3m b/d from 2022, when there was an exceptional drop in demand
** Demand will increase by 920k b/d from 2021 levels
* "The country is set to resume its established role as the primary engine of world oil demand growth"
* Substantial ongoing expansions in China's olefins and aromatics capacity indicate a structural increase of 740k b/d in naphtha and LPG/ethane use in 2023 compared with 2021 levels
** IEA also expects jet/kerosene demand to move 60k b/d ahead of 2021 to reach 90% of 2019 levels
* Still, increase in demand will be tempered by China's rapid EV uptake and more fuel-efficient vehicles
* See OIL DEMAND MONITOR: China Covid Exit Is Key to Fuels Outlook

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West Africa Oil Prices Firm on Better Margins, China Buying: IEA
2023-02-15 09:00:00.34 GMT
By Bill Lehane
(Bloomberg) -- Differentials firmed for West African crude grades last month thanks to lower freight costs, more buying from China and stronger margins, the IEA said in its oil market report.
* These factors combined with a flatter price structure "sent plentiful supplies of sweet crude to Europe," IEA says
** Nigeria's Bonny Light crude differential to North Sea Dated rose $1.62/bbl to $1.33/bbl; Forcados +94c to $2.19/bbl, Qua Iboe +46c to $1.49/bbl
* Angolan crudes became more resilient by the end of last month as "increased Chinese spot buying pushed prices markedly higher"
** Girassol climbed to +$1.50/bbl vs North Sea Dated in early February from -81c in late January
** Cabinda shifted from a -$1.41/bbl average discount in January to an 85c premium as of end-January
* READ (Feb. 3): Angola's Crude Sales Pick Up as European, Asian Buyers Take More

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https://investors.ta-petro.com/investors/press-releases/press-release-details/2023/TravelCenters-of-America-to-be-Acquired-by-BP-for-86.00-Per-Share-or-Approximately-1.3-Billion/default.aspx

TravelCenters of America to be Acquired by BP for $86.00 Per Share, or Approximately $1.3 Billion

Feb 16 2023

Transaction Provides Shareholders with an 84% Premium to Average Share Price of Last 30 Trading Days

WESTLAKE, Ohio--(BUSINESS WIRE)-- TravelCenters of America Inc. (Nasdaq: TA), the nationwide operator and franchisor of the TA, Petro Stopping Centers and TA Express travel center brands, today announced that it has entered into a merger agreement with BP p.l.c. (NYSE: BP), pursuant to which BP will acquire all of the outstanding shares of TA common stock for $86.00 per share in cash. The sale price represents an 84% premium to the average trading price of the 30 days ended February 15, 2023 of $46.68. The total equity value is approximately $1.3 billion.

Jonathan M. Pertchik, TA's Chief Executive Officer, made the following statement:

> "Today's announcement that BP is acquiring TA for $86 per share is a result of the successful implementation of our turnaround and strategic plans. We have improved our core travel center business, expanded our network, launched eTA to prepare for the future of alternative fuels and improved our operating and financial results, none of which we could have accomplished without the hard work and dedication of our employees at every level."

Today's announcement is the culmination of a comprehensive process by TA's Board. Following the implementation of TA's turnaround plan and several quarters of improved operating performance, TA received unsolicited interest to acquire the Company. In response, TA's Board hired financial and legal advisors as part of a formal process to consider a potential sale of the Company. This process ultimately included competitive rounds of bidding from potential buyers that resulted in the transaction announced today.

A condition of the sale is the approval by shareholders who own a majority of TA's shares outstanding. Service Properties Trust (Nasdaq: SVC), which owns 7.8% of TA's shares outstanding, and The RMR Group (Nasdaq: RMR), which owns 4.1% of TA's shares outstanding, both have agreed to vote their shares in favor of the sale. At the closing of the transaction, TA will terminate its management agreement with RMR pursuant to the terms of the agreement and pay a termination fee to RMR that is currently estimated to be approximately $44 million. Subject to shareholder and regulatory approval, the parties are targeting closing the acquisition by mid-year 2023.

The transaction was unanimously approved by the TA Board of Directors. Citigroup acted as exclusive financial advisor to TA and Ropes & Gray as TA's legal advisor in connection with the transaction.

About TravelCenters of America

TravelCenters of America Inc. (Nasdaq: TA) is the nation's largest publicly traded full-service travel center network. Founded in 1972 and headquartered in Westlake, Ohio, its over 18,000 team members serve guests in 281 locations in 44 states, principally under the TA®, Petro Stopping Centers® and TA Express® brands. Offerings include diesel and gasoline fuel, truck maintenance and repair, full-service and quick-service restaurants, travel stores, car and truck parking and other services dedicated to providing great experiences for its guests. TA is committed to sustainability, with its specialized business unit, eTA, focused on sustainable energy options for professional drivers and motorists.TA operates over 600 full-service and quick-service restaurants and nine proprietary brands, including Iron Skillet® and Country Pride®. For more information, visit www.ta-petro.com.

Additional Information and Where to Find It

This communication may be deemed solicitation material in respect of the proposed acquisition of TravelCenters of America Inc. ("TravelCenters") by BP Products North America Inc. ("Parent"). This communication does not

constitute a solicitation of any vote or approval. In connection with the proposed transaction, TravelCenters plans to file with the U.S. Securities and Exchange Commission (the "SEC") and mail or otherwise provide to its stockholders a proxy statement regarding the proposed transaction. TravelCenters may also file other documents with the SEC regarding the proposed transaction. This document is not a substitute for the proxy statement or any other document that may be filed by TravelCenters with the SEC.

BEFORE MAKING ANY VOTING DECISION, TRAVELCENTERS' STOCKHOLDERS ARE URGED TO READ THE PROXY STATEMENT IN ITS ENTIRETY WHEN IT BECOMES AVAILABLE AND ANY OTHER DOCUMENTS FILED BY TRAVELCENTERS WITH THE SEC IN CONNECTION WITH THE PROPOSED TRANSACTION OR INCORPORATED BY REFERENCE THEREIN BEFORE MAKING ANY VOTING OR INVESTMENT DECISION WITH RESPECT TO THE PROPOSED TRANSACTION BECAUSE THEY CONTAIN IMPORTANT INFORMATION ABOUT THE PROPOSED TRANSACTION AND THE PARTIES TO THE PROPOSED TRANSACTION.

Any vote in respect of resolutions to be proposed at a TravelCenters stockholder meeting to approve the proposed transaction or related matters, or other responses in relation to the proposed transaction, should be made only on the basis of the information contained in TravelCenters' proxy statement. Stockholders may obtain a free copy of the proxy statement and other documents TravelCenters files with the SEC (when available) through the website maintained by the SEC at www.sec.gov. TravelCenters makes available free of charge on its investor relations website at investors.ta-petro.com/investors copies of materials it files with, or furnishes to, the SEC.

The proposed transaction will be implemented solely pursuant to the Agreement and Plan of Merger, by and among TravelCenters, Bluestar RTM Inc. and Parent, dated as of February 14, 2023 (the "Merger Agreement"), which contains the full terms and conditions of the proposed transaction.

Participants in the Solicitation

TravelCenters and certain of its directors, executive officers and certain employees and other persons may be deemed to be participants in the solicitation of proxies from TravelCenters' stockholders in connection with the proposed transaction. Security holders may obtain information regarding the names, affiliations and interests of TravelCenters' directors and executive officers in TravelCenters' Annual Report on Form 10-K for the fiscal year ended December 31, 2021, which was filed with the SEC on February 23, 2022, and its definitive proxy statement for the 2022 annual general meeting of stockholders, which was filed with the SEC on April 7, 2022. To the extent the holdings of TravelCenters' securities by TravelCenters' directors and executive officers have changed since the amounts set forth in TravelCenters' proxy statement for its 2022 annual general meeting of stockholders, such changes have been or will be reflected on Statements of Change in Ownership on Form 4 filed with the SEC. Investors may obtain additional information regarding the interests of participants in the solicitation of proxies from TravelCenters' stockholders in connection with in the proposed transaction, which may, in some cases, be different than those of TravelCenters' stockholders generally, by reading the proxy statement relating to the proposed transaction when it is filed with the SEC and other materials that may be filed with the SEC in connection with the proposed transaction when they become available. These documents (when available) may be obtained free of charge from the SEC's website at www.sec.gov and the investor relations page of the TravelCenters' website at https://investors.ta-petro.com/.

Warning Regarding Forward Looking Statem

https://www.caranddriver.com/news/a42893211/ford-f-150-lightning-stop-build-stop-ship-order/\

Ford Has Found Cause of F-150 Lightning Battery

Inspectors noticed a 'potential battery issue' and have halted production of the electric pickup until at least Feb. 24. In a statement Wednesday, Ford said it has identified the problem but didn't say what it was.

BY LAURA SKY BROWNPUBLISHED: FEB 15, 2023

FORD

- **Ford has shut down production and shipping of the F-150 Lightning electric truck, citing a battery issue.**
- **The automaker is currently investigating a potential problem with the battery, although it said there have been no accidents or injuries associated with it in customer use.**
- **There is no timeline for when production of the highly popular EV will resume, Ford said on Tuesday.**

UPDATE 2/15/23: *Ford issued a fresh statement on Wednesday afternoon stating that it has figured out what the problem is with the F-150 Lightning's battery. The automaker is now saying production at the Rouge Electric Vehicle Center will be suspended "through at least the end of next week," which will be February 24 or later. "During a standard Lightning pre-delivery quality inspection, one vehicle displayed a battery issue. We believe we have identified the root cause of this issue. By the end of next week, we expect to conclude our investigation and apply what we learn to the truck's battery production process; this could take a few weeks. We will continue holding already-produced vehicles while we work through engineering and process updates.*

"We are not aware of any incidents of this issue in the field and do not believe F-150 Lightnings already in customers' hands are affected by this issue," the Ford statement said.

We will continue to update this story as more information becomes available.

Ford's F-150 Lightning pickup truck has proved wildly popular in its first year of production, but customers already standing by to get one may have to wait a little longer. The automaker said today that it has detected a potential problem with the EV's battery and has shut down both production of the trucks and shipping of those already built but not yet delivered to dealers. No date has been given for resumption of production.

The Lightning is built at Ford's Rouge Electric Vehicle Center in Dearborn, Michigan, where production started in late April 2022. A Ford spokesperson told *Car and Driver* that the truck is under a "Stop Build and In-Transit Stop Ship" and explained, "As part of our pre-delivery quality inspections, a vehicle displayed a potential battery issue and we are holding vehicles while we investigate. We are not aware of any incidences of this issue in the field." Motor Authority reported earlier today that F-150 Lightning pickups **already at dealerships** will be delivered to customers and are not affected by the order.

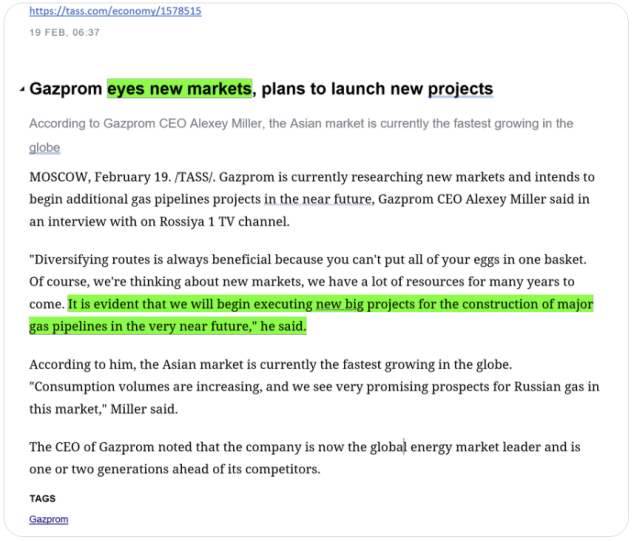
Dan Tsubouchi @Energy_Tidbits · 2h

Positive for #NatGas #LNG for 2020s

"Gazprom eyes new markets" "diversifying markets is always beneficial"

TASS forgot "being forced to" because Gazprom will have some level of permanent hit to volumes from loss of EU market until can build new major export pipelines.

#OOTT



https://tass.com/economy/1578515

19 FEB, 06:37

Gazprom eyes new markets, plans to launch new projects

According to Gazprom CEO Alexey Miller, the Asian market is currently the fastest growing in the globe

MOSCOW, February 19. /TASS/. Gazprom is currently researching new markets and intends to begin additional gas pipelines projects in the near future, Gazprom CEO Alexey Miller said in an interview with on Rossiya 1 TV channel.

"Diversifying routes is always beneficial because you can't put all of your eggs in one basket. Of course, we're thinking about new markets, we have a lot of resources for many years to come. It is evident that we will begin executing new big projects for the construction of major gas pipelines in the very near future," he said.

According to him, the Asian market is currently the fastest growing in the globe. "Consumption volumes are increasing, and we see very promising prospects for Russian gas in this market," Miller said.

The CEO of Gazprom noted that the company is now the global energy market leader and is one or two generations ahead of its competitors.

TAGS

Gazprom

2 6 1,372

Dan Tsubouchi @Energy_Tidbits · 17h

US #NatGas supply response.

Note @business transcript & @AnteroResources slide.

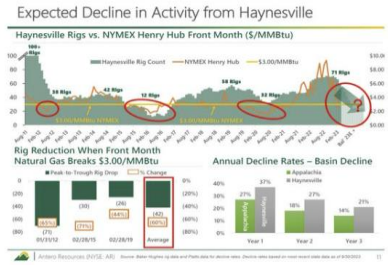
"With this being the first downward price cycle in which the Haynesville is the marginal supplier. This would suggest a more rapid supply response following and expected decline and rigs.

#OOTT

Excerpts from Antero Resources Q4 call Bloomberg transcript and company slide deck on Feb 16, 2023

Management's prepared comments per Bloomberg transcript.

"As illustrated on this page, as a result of higher maintenance capital costs, limited liquids revenue uplift, and widening basis differentials on natural gas, we estimate that most Haynesville companies that are not able to generate free cash flow in today's pricing environment. Why is this important? With Appalachian pipelines near maximum capacity and Permian associated gas being dictated by oil prices. The Haynesville is now the marginal natural gas producing region." "Further dive into the macro story on gas, let's turn to Slide number 11 titled Expected Decline in Activity from the Haynesville. The chart on the top of the slide illustrates the relationship between natural gas prices and the Basin's drilling activity. Since 2011, every time NYMEX Henry Hub prices fell below $3. Rig counts and activity in the Haynesville noticeably declined. While we have kept the line at $3 on this chart, this fair to say in today's inflationary environment, the old $3 level is likely now closer to $3.50 to $4. The chart on the bottom left highlights the change in recount each time natural gas drop below $3. On average, rigs decline 60% or 42 rigs through the last three cycles. But the hand some [ph] now as the marginal supplier of natural gas and activity expected to fall significantly in the months ahead is important to review the decline profile of the Haynesville. As displayed on the chart on the lower right hand side of this page. The estimated annual base decline rates of the Haynesville are materially higher than that of Appalachia. With this being the first downward price cycle in which the Haynesville is the marginal supplier. This would suggest a more rapid supply response following and expected decline and rigs."

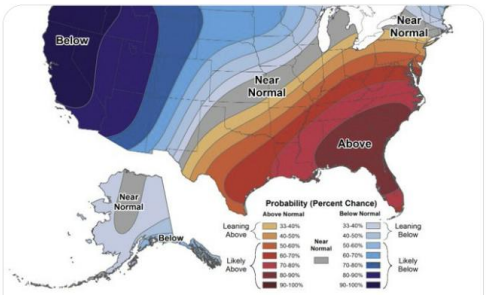


2 11 36 6,241

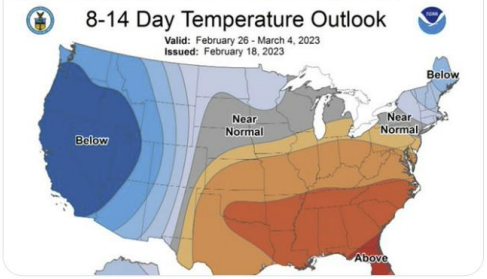
Dan Tsubouchi @Energy_Tidbits · 19h

unfortunately for #NatGas, updated @NOAA 6-10, 8-14 day temperature probability forecasts thru March 4 still don't show colder than normal temps across all the US.

#OOTT



https://www.cpc.ncep.noaa.gov/products/predictions/814day/index.php

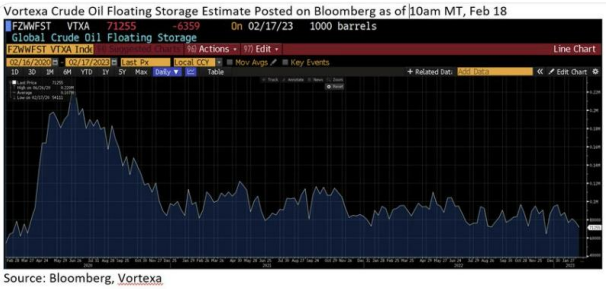


2 4 7 8,394

Dan Tsubouchi @Energy_Tidbits · 23h

#Vortexa crude #Oil floating storage at 02/17 est 71.26 mmb, -6.35 mmb WoW vs revised up by +14.58 mmb of Feb 10 of 77.61 mmb. Last several weeks average 82.10 mmb (was 81.92 mmbmb). Thx @Vortexa @business. #OOTT

Vortexa Crude Oil Floating Storage Estimate Posted on Bloomberg as of 10am MT, Feb 18



Source: Bloomberg, Vortexa

Posted Feb 18, 10am MT

Date	FZWWFST VT... Last Px
Fr 02/17/2023	71255
Fr 02/10/2023	77614
Fr 02/03/2023	81021
Fr 01/27/2023	76527
Fr 01/20/2023	87680
Fr 01/13/2023	84266
Fr 01/06/2023	96303
Fr 12/30/2022	93975
Fr 12/23/2022	85571
Fr 12/16/2022	64145
Fr 12/09/2022	90452

Feb 11, 10am MT

Date	FZWWFST VT... Last Px
Fr 02/10/2023	63033
Fr 02/03/2023	77612
Fr 01/27/2023	74132
Fr 01/20/2023	85401
Fr 01/13/2023	84489
Fr 01/06/2023	94882
Fr 12/30/2022	93898
Fr 12/23/2022	85366
Fr 12/16/2022	64357
Fr 12/09/2022	90159
Fr 12/02/2022	85958

Feb 4, 10am MT

Date	FZWWFST VT... Last Px
Fr 02/03/2023	71785
Fr 01/27/2023	73124
Fr 01/20/2023	86316
Fr 01/13/2023	85695
Fr 01/06/2023	94987
Fr 12/30/2022	96385
Fr 12/23/2022	87745
Fr 12/16/2022	66030
Fr 12/09/2022	92413
Fr 12/02/2022	88377
Fr 11/25/2022	96924

Source: Bloomberg, Vortexa

Dan Tsubouchi @Energy_Tidbits · Feb 17

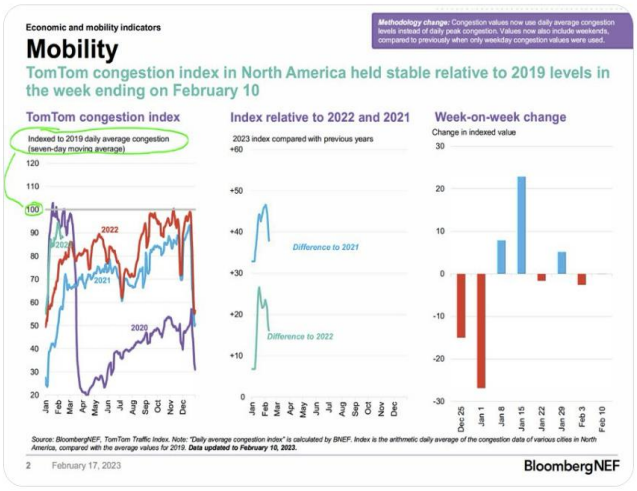
US TomTom congestion index for week ended Feb 10 is closer than a year ago, but still below 2019 levels.

Probably not surprising given continued uncertainty on economy & rates.

But still trending the right way!

Thx @BloombergNEF Danny Adkins.

#OOTT



2 2 1,263

Dan Tsubouchi @Energy_Tidbits · Feb 17

as einstein said “smart people simplify things”! great reminder @Amena_Bakr.
#OOTT #LNG

> **Amena Bakr** @Amena_Bakr · Feb 16
> To western states that want to avoid signing long term contracts with oil and gas exporters: if you don’t give them security of demand, you won’t get security of supply. #OOTT #opec
> Show this thread

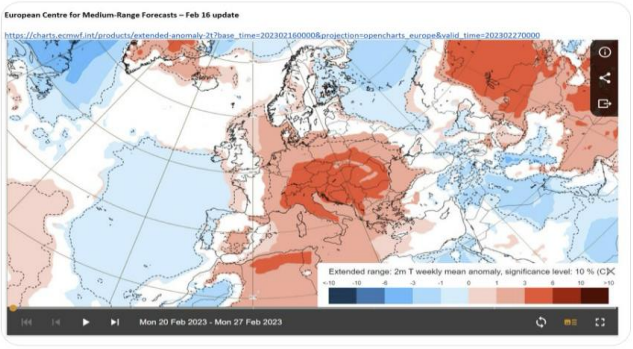
5 1,826

Dan Tsubouchi @Energy_Tidbits · Feb 17

Forecasts for warm temps to end Feb and the main part of winter in Europe.

Red on a winter temperature map is never good for #NatGas.

#OOTT



2 4 9 4,186

Dan Tsubouchi @Energy_Tidbits · Feb 16

Seems #LNGCanada 1.8 bcfd Phase 2 is assumed in 2025-2030 #LNG supply growth, BUT no FID this year. On LNG Canada Phase 2, @Shell "It's something that we're working on hard right now, but I don't think, Anish, that we will be seeing that come to an FID this year."

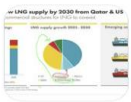
#LNG #OOTT

Excerpts Bloomberg Transcript Shell LNG Outlook 2023, Feb 16, 2023

From Q&A,

A - Cederic Cremers
sanctioned, but if you want a long-term contract starting up in the very near term, then you have to reflect the current high spot prices in that contract, and that makes that discussion much more complicated for buyers.
(BIO 22372202 <GO>)
Yeah. Thanks, Steve, and thanks, Christopher. I think in terms of our forward investments from our supply portfolio, I'd say primarily we're still steering at the left-hand side of that chart, whilst also balancing against the various scenarios that you see on the right-hand side, but I think particularly out to 2030, you will see that there is quite a confidence in terms of that tightness still and looking to expand our supply portfolio there. Doing that through a number of things, I think primarily, first of all, in terms of ensuring that we fully utilize the infrastructure that we already have in terms of working on additional gas supply and backfill into those across our different assets. We're also building out, of course, with LNG Canada coming on stream in the middle of this decade and additional train in Nigeria. Our participation in two invitation in to the two new projects in Qatar, recently had an agreement around extension of Oman LNG.
So all of these and including also through Steve's organization looking to secure additional supply also from third parties, particularly in the US Gulf Coast. So I think that takes us well through the end of this decade and replenishing our supply portfolio there. I think at the same time, we do continue to develop projects going out further than that. For example, the second phase of LNG Canada or other projects, but I think for all of those, it's just critical that we continue to ensure that they will be extremely competitive in terms of the cost at which they will bring it to the market as well as balancing, having the lowest carbon footprint that we can for these future projects and through that, I believe they will remain competitive in terms of being the projects that will secure that market even if it declines as you saw on the right-hand side chart -- of that chart.

A - Cederic Cremers
That probably makes sense. Yeah. So let me start with Canada, perhaps, we are working with the joint venture on progressing the second stage of that and showing [ph] an additional third and fourth train. I think the critical thing is getting it to the right level of competitiveness in terms of also the capital returns that we'll then achieve from that project as well as finding the right balance in terms of its carbon footprint also with the local stakeholders and the government of BC and their requirements. It's something that we're working on hard right now, but I don't think, Anish, that we will be seeing that come to an FID this year.
So we're continuing to progress that. But in terms of your specific question about this year, I think that will take a little bit longer than that. I think equally if you -- of course, in Qatar, we have the North Field East project, which has already taken FID and also Qatar Energy along with its other partners, including us is progressing, I think rapidly on the North Field South. And we are exploring other projects, potentially in the Middle East in the months ahead.

> **Dan Tsubouchi** @Energy_Tidbits · Feb 16
>
> 
>
> Does Shell 2025-30 LNG adds assume FID #LNGCanada 1.8 bcfd Phase 2?
>
> What else could make CAN LNG adds 25-30 that much larger than MZ that must incl at least ...

1 3 4 3,655

Dan Tsubouchi @Energy_Tidbits · Feb 16

"Traffic in China continues to spike above 2022 highs"

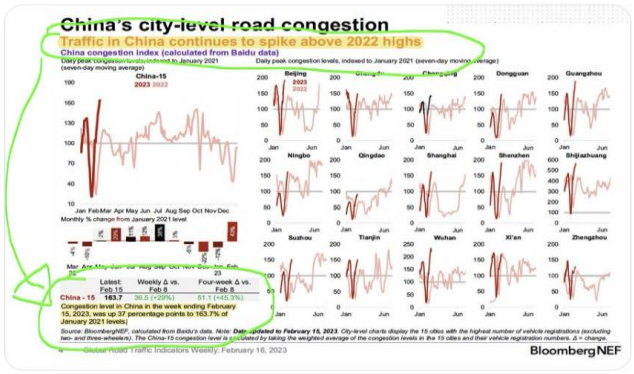
China city-level road congestion (Baidu data)

+37% for wk ending Feb 15 to 163.7% of Jan 2021 levels.

China reopening!

Thx @BloombergNEF

#OOTT



> **Dan Tsubouchi** @Energy_Tidbits · Feb 9
>
> 
>
> China reopening.
>
> China city-level road congestions (Baidu data) up big post Lunar New Year holiday
> ...

1 1 7 2,394

Dan Tsubouchi @Energy_Tidbits · Feb 16

Here's why @bp_plc is buying Travel Centers of America.

See 👇 its updated strategy focus transition growth on its two high return >15% transition growth areas: (i) bioenergy. (ii) convenience & EV charging that expects >15% return.

vs renewables & power 6-8% unlevered

#OOTT

> **Dan Tsubouchi** @Energy_Tidbits · Feb 7
>
> #BP strategy "UPDATE" ie. wasn't working
>
> increasing #Oil #NatGas to add $2b EBITDA in 25, $3-4b in 30
>
> investing more in higher return bioenergy & convenience & EV charging has visible EBITDA growth to add $1b in 25, $2b in 30.
>
> lowest return wind is "longer term" build
>
> #OOTT

2 5 3,455

Dan Tsubouchi @Energy_Tidbits · Feb 16

Shell's still bullish 2023 outlook for #LNG supply gap isn't as superbullish as 2022 that was done a few days before RUS invaded Ukraine and subsequent EU demand destruction, adding back coal, etc.

Still "more investment in supply will be neeeded to meet future demand"

#OOTT

1 8 11 3,660

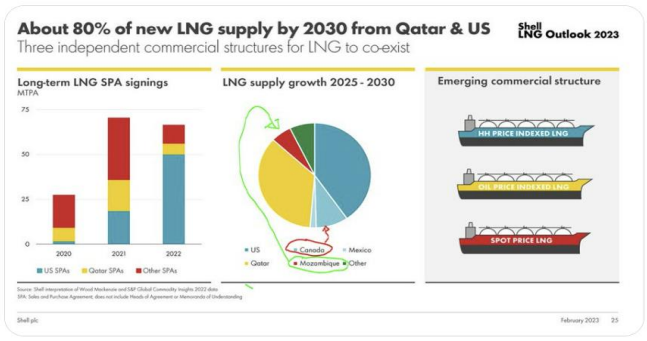
Dan Tsubouchi @Energy_Tidbits · Feb 16

Does Shell 2025-30 LNG adds assume FID #LNGCanada 1.8 bcfd Phase 2?

What else could make CAN LNG adds 25-30 that much larger than MZ that must incl at least @TotalEnergies 1.7 bcfd Phase 1?

Reminder #LNGCanada Phase 1 is 1.8 bcfd is already material to Cdn #NatGas.

#OOTT



> **Dan Tsubouchi** @Energy_Tidbits · Feb 14
>
> 
>
> Breaking!
>
> See 👇 transcript.
>
> @TCEnergy just said #LNGCanada "they've asked u...

4 7 6,738

Dan Tsubouchi @Energy_Tidbits · Feb 15

US #LNG exports Dec/22 were 11.0 bcfd, -1.6% YoY, +12.3% MoM

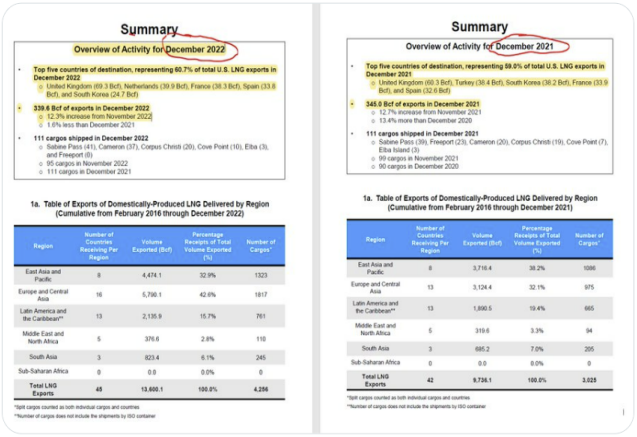
Still impact #FreeportLNG 2.2 bcfd 06/08/22 shut.

Dec/22 top 5 export markets: UK, Dutch, France, Spain, Korea

Dec/21 top 5 export markets: UK, Turkey, Korea, France, Spain

@ENERGY data 2 wks before @EIAgov

#OOTT



Summary

Overview of Activity for December 2022

- **Top five countries of destination, representing 60.7% of total U.S. LNG exports in December 2022**
  - United Kingdom (69.3 Bcf), Netherlands (39.9 Bcf), France (38.3 Bcf), Spain (33.8 Bcf), and South Korea (24.7 Bcf)
- **339.6 Bcf of exports in December 2022**
  - 12.3% increase from November 2022
  - 1.6% less than December 2021
- **111 cargos shipped in December 2022**
  - Sabine Pass (41), Cameron (37), Corpus Christi (20), Cove Point (10), Elba (3), and Freeport (0)
  - 95 cargos in November 2022
  - 111 cargos in December 2021

1a. Table of Exports of Domestically-Produced LNG Delivered by Region (Cumulative from February 2016 through December 2022)

Region	Number of Countries Receiving Per Region	Volume Exported (Bcf)	Percentage Receipts of Total Volume Exported (%)	Number of Cargos*
East Asia and Pacific	8	4,474.1	32.9%	1323
Europe and Central Asia	16	5,790.1	42.6%	1817
Latin America and the Caribbean**	13	2,135.9	15.7%	761
Middle East and North Africa	5	376.6	2.8%	110
South Asia	3	823.4	6.1%	245
Sub-Saharan Africa	0	0.0	0.0%	0
Total LNG Exports	**45**	**13,600.1**	**100.0%**	**4,256**

*Split cargos counted as both individual cargos and countries

**Number of cargos does not include the shipments by ISO container

Summary

Overview of Activity for December 2021

- **Top five countries of destination, representing 59.0% of total U.S. LNG exports in December 2021**
  - United Kingdom (60.3 Bcf), Turkey (38.4 Bcf), South Korea (36.2 Bcf), France (33.9 Bcf), and Spain (32.6 Bcf)
- **345.0 Bcf of exports in December 2021**
  - 12.7% increase from November 2021
  - 13.4% more than December 2020
- **111 cargos shipped in December 2021**
  - Sabine Pass (39), Freeport (23), Cameron (20), Corpus Christi (19), Cove Point (7), Elba Island (3)
  - 99 cargos in November 2021
  - 90 cargos in December 2020

1a. Table of Exports of Domestically-Produced LNG Delivered by Region (Cumulative from February 2016 through December 2021)

Region	Number of Countries Receiving Per Region	Volume Exported (Bcf)	Percentage Receipts of Total Volume Exported (%)	Number of Cargos*
East Asia and Pacific	8	3,716.4	38.2%	1086
Europe and Central Asia	13	3,124.4	32.1%	975
Latin America and the Caribbean**	13	1,890.5	19.4%	665
Middle East and North Africa	5	319.6	3.3%	94
South Asia	3	685.2	7.0%	205
Sub-Saharan Africa	0	0.0	0.0%	0
Total LNG Exports	**42**	**9,736.1**	**100.0%**	**3,025**

*Split cargos counted as both individual cargos and countries

**Number of cargos does not include the shipments by ISO container

Dan Tsubouchi @Energy_Tidbits · Feb 15

see 👇thread how two years ago russia acknowledged, at least in russian media, half of their oil reserves weren't profitable at $50. no one should be surprised they are shutting in 500,000 bpd given price discounts etc #OOTT

> **Dan Tsubouchi** @Energy_Tidbits · Feb 10
>
> Voluntary = non-profitable?
>
> Russia's "voluntary" reduction of 500,000 b/d.
>
> Makes sense, See 👇09/02/21 & 01/27/21 tweets, admitted had a lot of marginal #Oil.
>
> Then add forced price discount & higher shipping, insurance costs from sanctions.
>
> #OOTT twitter.com/Energy_Tidbits...

2 5 9 3,628

Dan Tsubouchi @Energy_Tidbits · Feb 15

Huge build!

For those not near their laptop, @EIAgov just posted #Oil #Gasoline #Distillates inventory as of Feb 10. Table below compares EIA data vs @business expectations and vs @APIenergy yesterday. Prior to release, WTI was $78.35. #OOTT

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

s Inventory Feb 10: EIA, Bloomberg Survey Expectations, API			
ls)	EIA	Expectations	
	16.28	2.00	1(
	2,32	1.50	(
	-1.29	1.00	
	14.99	4.50	1:
ommercial so builds in no change to SPR for the Feb 10 week			
ed in the oil data, Cushing had a build of 1.04 mmb for Feb 10 week			
Bloomberg			
SAF Group https://safgroup.ca/news-insights/			

1 3 4,320

Dan Tsubouchi @Energy_Tidbits · Feb 15

"Total [#Oil] demand will hit a RECORD 101.9 mb/d [2023], 1.4 mb/d more than the 2019 average" @IEA OMR Feb.

Vs OMR Jan "Global oil demand is set to rise by 1.9 mb/d in 2023, to a record 101.7 mb/d"

See 👇 02/05 tweet, @fbirol signaled a demand increase.

#OOTT

Excerpt https://www.iea.org/topics/oil-market-report

Oil Market Report - February 2023

February 2023

At the same time, world oil demand growth is picking up after a marked slowdown in the second half of 2022 and a year-on-year contraction in the fourth quarter. China accounts for nearly half the 2 mb/d projected increase this year, with neighbouring countries also set to benefit after Beijing ditched its zero-Covid policies. A pronounced uptick in air traffic in recent weeks emphasises the central role of jet fuel deliveries in 2023 growth – expected to soar by 1.1 mb/d to reach 7.2 mb/d, around 90% of 2019 levels. Total demand will hit a record 101.9 mb/d, 1.4 mb/d more than the 2019 average.

Excerpt https://www.iea.org/reports/oil-market-report-january-2023

Oil Market Report - January 2023

Two wild cards dominate the 2023 oil market outlook: Russia and China. This year could see oil demand rise by 1.9 mb/d to reach 101.7 mb/d, the highest ever, tightening the balances as Russian supply slows under the full impact of sanctions. China will drive nearly half this global demand growth even as the shape and speed of its reopening remains uncertain.

Dan Tsubouchi @Energy_Tidbits · Feb 5

Hmmm!

Maybe an increase to @IEA 2023 #Oil demand in Feb OMR?

...

1 4 13 4,509

Dan Tsubouchi @Energy_Tidbits · Feb 14

Sounds like #Keystone #Oil pipeline moving ~585 kbd.

@TCEnergy did not give volume, but said "we're limited in our ability at this time to move uncommitted or spot volumes", represent 6% of capacity.

11/29/22 investor day, capacity increased to 622 kbd.

94% of 622 = 585

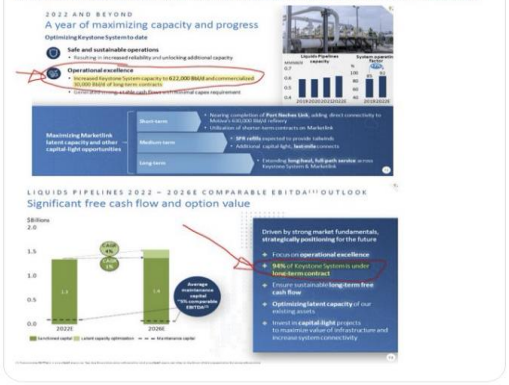
#OOTT

Excerpt of TC Energy mgmt. response in Q&A from Bloomberg Transcript TC Energy Q4/22 call on Feb 14, 2023

Re Keystone pipeline, mgmt. replied *"Commercially, we're able to deliver all of our contracted volume requirements, but we're limited in our ability at this time to move uncommitted or spot volumes. And just to give you some perspective on that, Keystone is 94% contracted. We're required to leave 6% of our space for uncommitted or spot capacity by the regulator, and it's -- that's 6% of the volume at this time, we're not able to move. So we're working through these remedial actions. It is going to take some time for the root cause investigation to play out and for us to determine not just what caused the failure, but why those circumstances were in place at the time. And once we work through that, at that time, we'll be getting with PHMSA on a path towards how we return the system back to baseline operations. And at this point in time, I don't have a time frame that I can communicate on that. But we'll continue to be transparent as we've been up to date"*

Excerpts TC Energy's 2022 Investor Day slides Nov 29, 2022

https://www.tcenergy.com/siteassets/pdfs/investors/events/2022/investor-day/tce-ir-day-presentation-112922.pdf



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Dan Tsubouchi @Energy_Tidbits · Feb 14

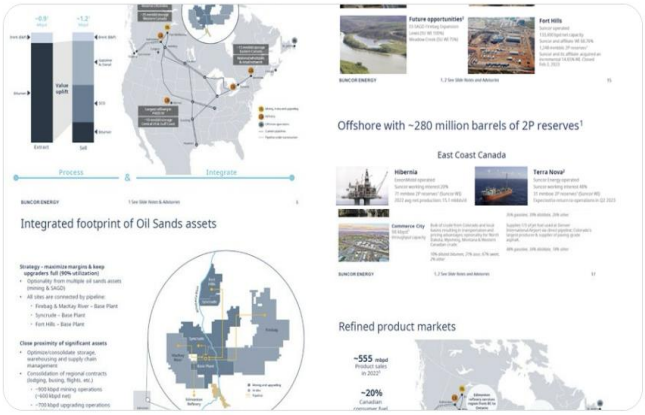
Kudos to @Suncor for good reference data of all key assets in today's slide deck.

ie. oil sands 942 kbd net to $SU: Base plant 350 kbd, Firebag 215 kbd, Syncrude 205.6 kbd Fort Hills 133.4 kbd, Mackay River 38 kbd

Wish all companies did this!

#OOTT

sustainability-prd-cdn.suncor.com/-/media/projec...



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Dan Tsubouchi @Energy_Tidbits · Feb 14

Never good for #NatGas when it's this warm in Feb, which is the 2nd most important winter month for temperature driven #NatGas consumption.

See 👇 excerpt Jan 8/23 Energy Tidbits memo. Feb res/com10-yr ave 43.4 bcf/d or 22% of winter season. Jan is 46.7 bcf/d, & 23%.
#OOTT

Excerpt SAF Group's 54-pg Energy Tidbits January 8, 2022 memo, available at https://safgroup.ca/news-insights/

Energy Tidbits

January 8, 2023

Produced by: Dan Tsubouchi

1st China Spring Festival Without Covid Restrictions is Set Up for Q1 Herd Immunity Then Sustained Demand Recovery in 2023

Natural Gas – A hot vs cold month can be a swing of ~500 bcf of consumption
Yesterday, we tweeted [LINK] on the below data on why temperature is key for winter natural gas demand and prices. The reason why HH natural gas prices have crashed with the very warm end to Dec and start to Jan is that Jan is the normally the winter month with the highest natural gas consumption for homes. It's why warm weather in the winter, especially in Jan, is never a positive for natural gas prices. There can be huge swings in residential/commercial natural gas demand depending if it's hot, normal, or cold. The different between a hot and cold month can be almost 500 bcf in a month. Below is a table we have previously posted that shows these swings. It shows AGA heating degree days vs US total natural gas consumption and US residential/commercial natural gas consumption. (i) Residential/commercial demand is normally >40% of total US natural gas consumption in DJF. (ii) For the last 10 year average, Jan was 46.7 bcf/d, Feb 43.4 bcf/d, and Dec 38.0 bcf/d. (iii) The high to low swings for Dec can be up to 12.6 bcf/d, Jan can be up to 9.8 bcf/d, and Feb can be up to 17.2 bcf/d. (iv) The biggest months over the past 10 winters were Jan 2014 at 51.9 bcf/d, Feb 2015 at 50.9 bcf/d, and then Dec 2017 at 49.5 bcf/d.

Figure 5: US Winter Natural Gas Consumption vs Heating Degree Days

US Winter Natural Gas Consumption vs Heating Degree Days

Heating Degree Days By Month

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	10 Year Average	
	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	HDDs	%
Oct	308	303	266	267	200	219	306	307	308	205	332	280	7%
Nov	572	623	658	464	469	542	660	636	469	539	597	569	14%
Dec	763	820	763	649	666	873	789	779	804	696	876	807	20%
Jan	918	1,019	967	936	843	963	941	808	899	1005		921	23%
Feb	796	903	966	718	697	699	810	760	896	790		793	20%
Mar	827	831	736	511	618	660	804	555	572	638		680	17%
Oct 1 - Mar 31	4,183	4,599	4,346	3,554	3,573	3,965	4,300	3,844	3,948	3,873	1,806	4,050	100%

Note: Oct includes Sept if applicable. March includes Apr if applicable.
Source: AGA, SAF

Total US Consumption

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	10 Year Average	
	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	%
Oct	61.3	60.2	61.7	64.3	62.1	66.5	73.7	75.1	74.9	73.0	76.4	67.2	13%
Nov	72.3	77.2	78.6	76.2	72.1	78.6	90.5	92.6	81.3	89.8		80.8	15%
Dec	80.8	94.0	86.4	83.6	92.5	99.5	96.8	101.6	101.9	97.0		93.4	18%
Jan	92.8	103.4	100.5	100.0	93.3	107.8	110.0	106.3	106.0	115.9		103.6	20%
Feb	91.6	97.9	104.5	91.8	82.9	96.8	107.5	108.3	108.5	109.3		99.9	19%
Mar	81.3	82.5	83.6	76.3	81.1	90.2	93.8	87.4	84.1	89.8		85.0	16%
Average	**80.0**	**85.9**	**85.9**	**81.9**	**80.7**	[illegible]	[illegible]	[illegible]	**92.8**	**95.8**	**76.4**	**88.3**	100%

Source: EIA, SAF

US Residential & Commercial Demand

	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	10 Year Average	
	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	bcf/d	%
Oct	14.6	13.9	13.4	12.8	12.2	13.1	15.9	14.4	14.4	12.6	15.1	13.7	7%
Nov	26.3	28.8	30.2	23.0	22.0	26.3	32.8	32.6	24.4	27.3		27.4	14%
Dec	34.2	43.0	36.9	30.4	40.6	42.2	39.5	39.0	40.1	34.5		38.0	19%
Jan	47.0	51.9	47.4	45.0	42.4	49.5	48.6	42.2	44.1	48.8		46.7	23%
Feb	42.3	48.0	50.9	38.4	33.7	39.8	45.7	42.0	48.2	45.1		43.4	22%
Mar	34.3	36.2	33.1	24.4	30.8	34.8	36.9	27.8	29.7	31.5		31.8	16%
Average	**33.1**	**37.0**	**35.3**	**29.0**	**30.3**	**34.3**	**36.4**	**33.0**	**33.5**	**33.3**	**15.1**	**33.5**	100%

Source: EIA, SAF
Data source EIA Natural Gas Monthly
Source: EIA, AGA, SAF

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

The Weather Channel ✅ @weatherchannel · Feb 14

🙂 or 🙃?

Tomorrow, 226 MILLION of you are forecast to have highs above average, and record temps are possible for many through Thursday. We've got your weather …

💬 3 🔁 2 ♡ 12 📊 4,095

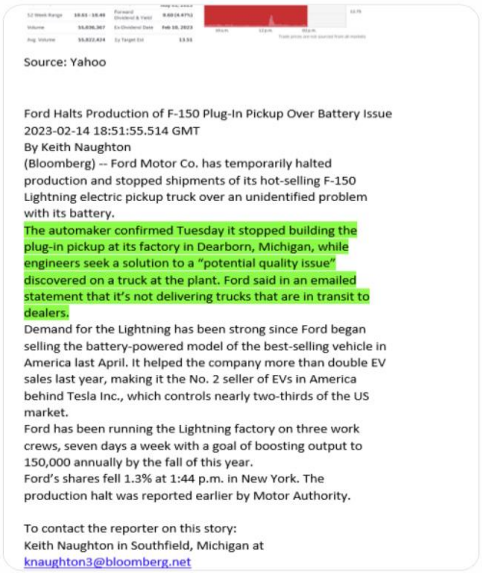
Dan Tsubouchi @Energy_Tidbits · Feb 14

Ford down $1.57 today

"has temporarily halted production & stopped shipments of its hot-selling F-150 Lightning electric pickup truck over an unidentified problem with its battery" reports @KeithNaughton

#EV markets waiting on what caused the problem

#EnergyTransition #OOTT



Source: Yahoo

Ford Halts Production of F-150 Plug-In Pickup Over Battery Issue
2023-02-14 18:51:55.514 GMT
By Keith Naughton
(Bloomberg) -- Ford Motor Co. has temporarily halted production and stopped shipments of its hot-selling F-150 Lightning electric pickup truck over an unidentified problem with its battery.
The automaker confirmed Tuesday it stopped building the plug-in pickup at its factory in Dearborn, Michigan, while engineers seek a solution to a "potential quality issue" discovered on a truck at the plant. Ford said in an emailed statement that it's not delivering trucks that are in transit to dealers.
Demand for the Lightning has been strong since Ford began selling the battery-powered model of the best-selling vehicle in America last April. It helped the company more than double EV sales last year, making it the No. 2 seller of EVs in America behind Tesla Inc., which controls nearly two-thirds of the US market.
Ford has been running the Lightning factory on three work crews, seven days a week with a goal of boosting output to 150,000 annually by the fall of this year.
Ford's shares fell 1.3% at 1:44 p.m. in New York. The production halt was reported earlier by Motor Authority.

To contact the reporter on this story:
Keith Naughton in Southfield, Michigan at
knaughton3@bloomberg.net

1 2 5 2,105

Dan Tsubouchi @Energy_Tidbits · Feb 14

Breaking!

See 👇 transcript.

@TCEnergy just said #LNGCanada "they've asked us to begin the evaluation of Phase 2"

Phase 2 adds another 1.8 bcf/d, would take total LNG Canada to 3.6 bcf/d

Positive for Cdn #natgas
#OOTT

> ıp created transcript of TC Energy mgmt. comments in the Q4 call Q&A on Feb 14, 2023
>
> "*italics*" are SAF Group created transcript
>
> m MT, mgmt. replied "*Coastal GasLink is basically Canada's LNG corridor and we're working with ou*
> *ada, who is developing not only their first trains, but they've asked us to begin the evaluation of Pha*
> *we're very excited to be contemplating the expansion of our system. This would not be a linear devel*
> *ddition of six compressor stations sites, which we've demonstrated at Wilde Lake that we just broug*
> *cally complete that we can deliver those on schedule and on time. The project economics, those are*
> *tial, but we're encouraged by the possibility of advancing to a FID stag that as you say would bring t*
> *nt in that LNG corridor to returns that are more commensurate with what our expectations would b*
>
> l by SAF Group https://safgroup.ca/news-insights/

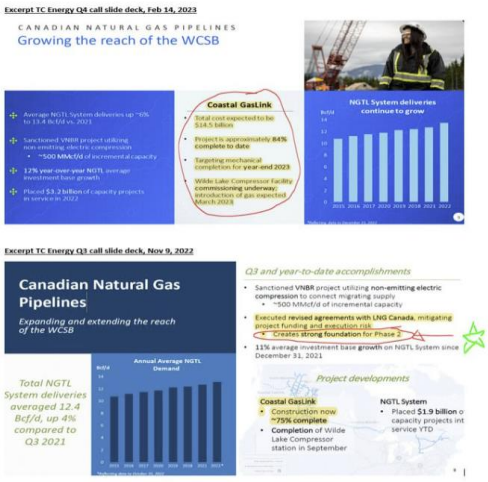
> **Dan Tsubouchi** @Energy_Tidbits · Feb 14
>
> 
>
> Sloppy drafting or is @TCEnergy pointing to #LNGCanada 1.8 bcfd Phase 2 FID not coming as quickly as they previously thought?
>
> @TCEnergy Q4 slides today don't include key ...

17 49 15.6K

Dan Tsubouchi @Energy_Tidbits · Feb 14

Sounds more like sloppy drafting. Mgmt just gave a more positive comment on #LNGCanada Phase 2 in Q&A right now. will do a transcript right away

> **Dan Tsubouchi** @Energy_Tidbits · Feb 14
>
> Sloppy drafting or is @TCEnergy pointing to #LNGCanada 1.8 bcfd Phase 2 FID not coming as quickly as they previously thought?
>
> @TCEnergy Q4 slides today don't include key @CoastalGasLink highlight from Q3 slides "creates strong foundation for Phase 2".
>
> #OOTT #NatGas



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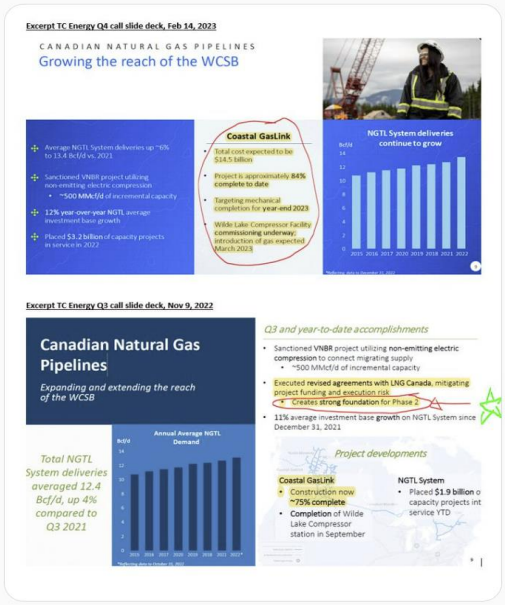
Dan Tsubouchi @Energy_Tidbits · Feb 14

Sloppy drafting or is @TCEnergy pointing to #LNGCanada 1.8 bcfd Phase 2 FID not coming as quickly as they previously thought?

@TCEnergy Q4 slides today don't include key @CoastalGasLink highlight from Q3 slides "creates strong foundation for Phase 2".

#OOTT #NatGas



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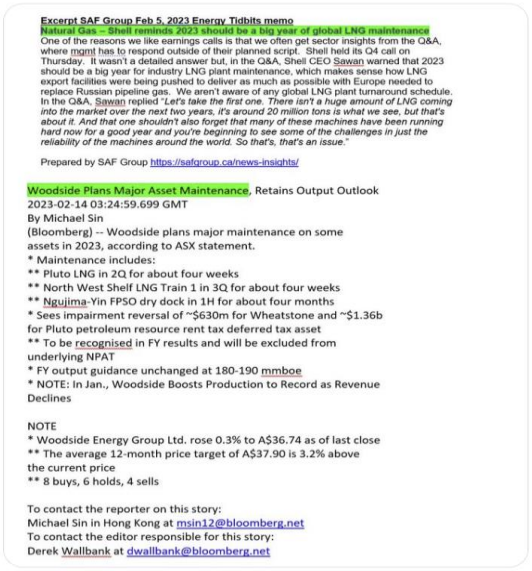
Dan Tsubouchi @Energy_Tidbits · Feb 14

Big #LNG maintenance/turnaround year!

"Woodside Plans Major [#LNG] Asset Maintenance" reports @ByMichaelSin

See 👇 Fits @Shell CEO Wael Sawan reminder #LNG plants ran hard in 2022 to offset EU cutting out RUS #NatGas.

#OOTT



Excerpt SAF Group Feb 5, 2023 Energy Tidbits memo

Natural Gas – Shell reminds 2023 should be a big year of global LNG maintenance

One of the reasons we like earnings calls is that we often get sector insights from the Q&A, where mgmt has to respond outside of their planned script. Shell held its Q4 call on Thursday. It wasn't a detailed answer but, in the Q&A, Shell CEO Sawan warned that 2023 should be a big year for industry LNG plant maintenance, which makes sense how LNG export facilities were being pushed to deliver as much as possible with Europe needed to replace Russian pipeline gas. We aren't aware of any global LNG plant turnaround schedule. In the Q&A, Sawan replied "*Let's take the first one. There isn't a huge amount of LNG coming into the market over the next two years, it's around 20 million tons is what we see, but that's about it. And that one shouldn't also forget that many of these machines have been running hard now for a good year and you're beginning to see some of the challenges in just the reliability of the machines around the world. So that's, that's an issue.*"

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

Woodside Plans Major Asset Maintenance, Retains Output Outlook
2023-02-14 03:24:59.699 GMT
By Michael Sin
(Bloomberg) -- Woodside plans major maintenance on some assets in 2023, according to ASX statement.
* Maintenance includes:
** Pluto LNG in 2Q for about four weeks
** North West Shelf LNG Train 1 in 3Q for about four weeks
** Ngujima-Yin FPSO dry dock in 1H for about four months
* Sees impairment reversal of ~$630m for Wheatstone and ~$1.36b for Pluto petroleum resource rent tax deferred tax asset
** To be recognised in FY results and will be excluded from underlying NPAT
* FY output guidance unchanged at 180-190 mmboe
* NOTE: In Jan., Woodside Boosts Production to Record as Revenue Declines

NOTE
* Woodside Energy Group Ltd. rose 0.3% to A$36.74 as of last close
** The average 12-month price target of A$37.90 is 3.2% above the current price
** 8 buys, 6 holds, 4 sells

To contact the reporter on this story:
Michael Sin in Hong Kong at msin12@bloomberg.net
To contact the editor responsible for this story:
Derek Wallbank at dwallbank@bloomberg.net

5 10 2,254

Dan Tsubouchi @Energy_Tidbits · Feb 13

China domestic flights post Covid restrictions lift & Lunar New Year period.
Feb 7-13: -0.7% WoW
Jan 31-Feb 6: +10.9% WoW
Jan 24-30: -9% WoW
Jan 17-23: +7% WoW
Jan 10-16: +20% WOW

China international flights continue to ramp up.

Thx @BloombergNEF Claudio Lubis.

#OOTT

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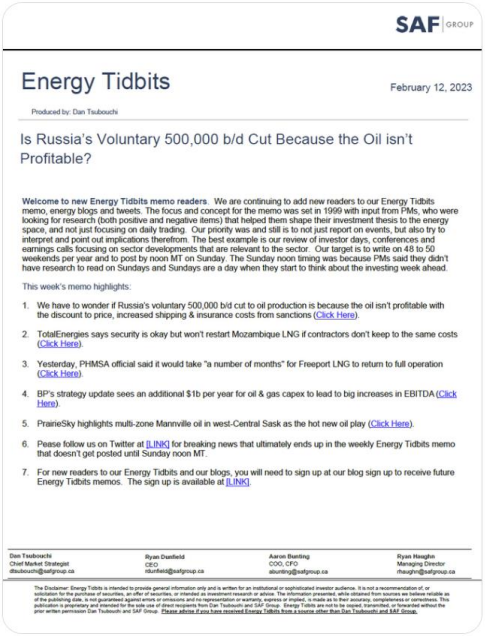
Dan Tsubouchi @Energy_Tidbits · Feb 12

SAF Group Feb 12, 2023 Energy Tidbits memo is posted on SAF Group website. this 59-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

February 12, 2023

Produced by: Dan Tsubouchi

Is Russia's Voluntary 500,000 b/d Cut Because the Oil isn't Profitable?

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. We have to wonder if Russia's voluntary 500,000 b/d cut to oil production is because the oil isn't profitable with the discount to price, increased shipping & insurance costs from sanctions (Click Here).
2. TotalEnergies says security is okay but won't restart Mozambique LNG if contractors don't keep to the same costs (Click Here).
3. Yesterday, PHMSA official said it would take "a number of months" for Freeport LNG to return to full operation (Click Here).
4. BP's strategy update sees an additional $1b per year for oil & gas capex to lead to big increases in EBITDA (Click Here).
5. PrairieSky highlights multi-zone Mannville oil in west-Central Sask as the hot new oil play (Click Here).
6. Pease follow us on Twitter at [LINK] for breaking news that ultimately ends up in the weekly Energy Tidbits memo that doesn't get posted until Sunday noon MT.
7. For new readers to our Energy Tidbits and our blogs, you will need to sign up at our blog sign up to receive future Energy Tidbits memos. The sign up is available at [LINK].

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