

# Crude Oil: April-February 2021 update and FY22 Outlook

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## Domestic crude oil production, imports and consumption during April-February 2021 i.e. 11M-FY21

**Table 1: Domestic Production, Consumption and Imports of Crude Oil (Unit: million barrels)**

	Change (y-o-y)			
	2019-20	2020-21	2019-20	2020-21
Production	216	205	-5.9%	-5.4%
Imports	1,520	1,305	0.04%	-14.1%
Consumption	1,709	1,472	-0.6%	-13.9%

Source: PPAC, MOPNG, CARE Ratings

Note: MOPNG and PPAC provide data in terms of thousand tonnes. We convert it into barrels for a better understanding as globally, crude oil is measured in terms of barrels.

Fields operated by National Oil Companies (NOCs) have contributed around 76% of the total domestic crude oil production whilst private companies have undertaken the remaining 24% production during 11M-FY21. Onshore fields constitute around 49% of the total crude oil production and the remaining 51% has been produced by offshore fields.

Domestic crude oil production has fallen by 5.4% during 11M-FY21 compared with the 5.9% de-growth achieved during 11M-FY20. Technical mishaps due to COVID-19 implications, reservoir issues & shut in of wells and delays in field development activities have led to the fall in production. Cumulative fall in production can also be ascribed to the loss of output from the Baghjan well blowout (the well contributed to around 10% of overall crude oil production) and fall in production of western offshore fields operated by private players. Domestic production has been falling with the ageing of existing fields and muted response from the industry to take up new projects, mainly due to lack of adequate incentives.

India imported 3.91 mb/d\* of crude oil during 11M-FY21 compared with the 4.54 mb/d imported during 11M-FY20. Cumulatively imports of crude oil have fallen due to the fall in demand of petro-products. Import dependency of crude (based on consumption) has declined to 84.3% during 11M-FY21 from being 85.2% in the same period in the previous corresponding year. Value of crude oil imported has fallen by 43.7% during 11M-FY21 to USD 53.8 billion. India imported crude mainly from Iraq, Saudi Arabia, Kuwait and UAE however, share of oil imports from OPEC has decreased to 74.4% of total imports during 11M-FY21 compared with 79.6% share in the comparable period in the previous financial year. Region wise, India has imported 61.6% from the Middle East, 14.2% from Africa, 12% from North America, 5.8% from South America, 3.9% from Eurasia, 0.3% from Europe and 0.1% from Australia during 11M-FY21.

\*mb/d: Million Barrels per Day

Crude throughput or refineries processed 4.41 mb/d during 11M-FY21 compared with the 5.10 mb/d of crude processed during 11M-FY20. Capacity utilisation during 11M-FY21 was around 87.6% compared with the 101.8% utilization achieved in the same period in the previous corresponding year. Fall in demand (which has fallen by 11.3%) has led to refiners trimming their capacity utilisation in order to remain afloat and protect their margins. In terms of type of crude oil processed by refiners, percentage share of high sulphur (HS) crude in total crude oil processing was around 72.7% during 11M-FY21 compared with the 75.5% processed during 11M-FY20.

**Table 2: Monthly trend in crude oil demand-supply and trade**

	Apr -20	May-20	Jun -20	Jul -20	Aug-20	Sep -20	Oct -20	Nov-20	Dec -20	Jan -21	Feb -21
Production	-6.4%	-7.1%	-6.0%	-4.9%	-6.3%	-3.8%	-6.2%	-4.9%	-3.6%	-4.6%	-3.2%
Imports	-16.0%	-22.6%	-18.9%	-29.0%	-23.4%	-13.1%	-21.6%	-4.7%	3.4%	-2.7%	-18.3%
Crude Throughput	-28.8%	-24.2%	-13.6%	-18.8%	-26.4%	-8.8%	-16.1%	-5.1%	1.0%	0.5%	-11.8%
Refinery Utilisation*	71%	78%	84%	85%	78%	85%	88%	100%	101%	105%	89%

Source: PPAC, CARE Ratings

\*prorated on a monthly basis

Crude oil imports and throughput have fallen sharply during February 2021 (to be noted February 2021 had 28 days compared with 29 days in February 2020 effecting the consumption to that extent) due to the fall in demand for petro-products. Subtle transition towards public transport and rise in the number of cases has led to the fall in crude throughput. Capacity utilisation too has fallen after 5 months of a continuous increase.

## Review of the Oil and Gas Infrastructure

Crude oil infrastructure mainly consists of (1) refineries used to produce petroleum products and (2) crude oil pipelines.

## Refineries

India ranks 4<sup>th</sup> in terms of refining capacity in the world right after US, China and Russia and hosts 23 refineries: 20 belonging to the public sector and 3 in the private sector. It also has the world's largest refinery with an installed capacity of 68.2 MMTPA.

**Table 3: Refining capacity in India (Unit: Million Tonnes)**

	As on 1.03.2021
PSU	162.0
Pvt Companies	88.2
<b>Total</b>	<b>250.2</b>

Source: PPAC

The public sector accounts for 65% the total refining capacity whereas the private sector accounts for the remaining 35%. Domestic refineries can process at least 5.03 mb/d.

## Pipelines

Pipeline transportation offers a safe, economic and environmentally sound alternative to most other modes of energy transport. These pipelines are used to transport crude oil to the refineries.

**Table 4: Major crude oil pipeline network as on 01.03.2021**

	ONGC	OIL	Cairn	HMEL	IOCL	BPCL	Total
Length (KM)	1,283	1,193	688	1,017	5,301	937	10,419
Capacity (MMTPA)	60.6	9	10.7	11.3	48.6	7.8	147.9

Source: PPAC

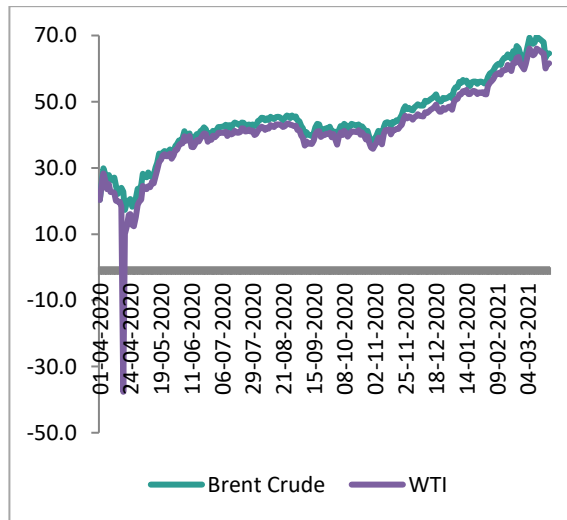
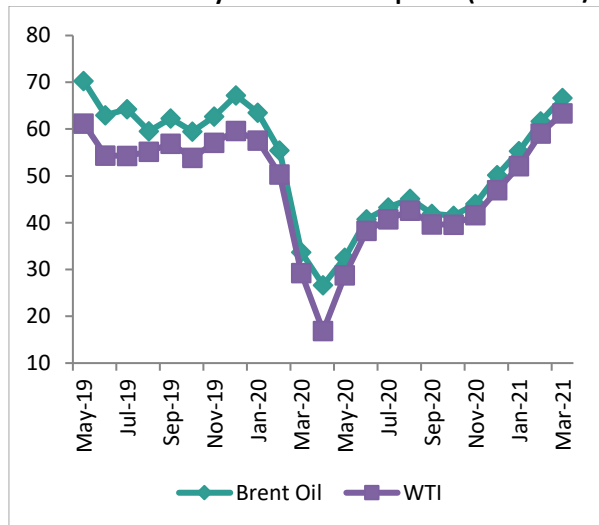
## Prices

When it comes to crude oil, there are different grades. The most popular traded grades are Brent North Sea Crude and West Texas Intermediate (WTI). WTI is usually extracted from US oil fields in Texas, Louisiana and North Dakota, and delivered in Oklahoma, while Brent crude is extracted from the North Sea, and delivery locations vary by country. Both of them have lower Sulphur content and are considered "sweet", and relatively light in density (WTI again is sweeter than Brent).

Cost of shipping for Brent crude is lower, since it is produced near the sea and can be delivered anywhere, while of WTI it is higher since it is produced in landlocked areas like Cushing, Oklahoma with limited storage facilities. Brent is the benchmark price used by Europe and the OPEC, while WTI crude price are a benchmark for US oil prices. Most of the oil produced in Europe, Africa and the Middle East is priced according to the cost of Brent crude.

Essentially, Brent is the reference for about 2/3<sup>rd</sup> of the oil traded globally. Since India imports primarily from OPEC countries, Brent is the right benchmark for oil prices in India.

**Chart 1: Trend in key benchmark oil prices (Unit: USD/bbl)**



Source: Bloomberg

\*March monthly price is till 22<sup>nd</sup> March closing.

The price of Brent crude oil and WTI have fallen by 25% and 22% y-o-y during FY21. The continued spread of the coronavirus pandemic and resurgence of cases in Europe and the US, has led to a sharp fall in consumption of petro-products thus affecting the demand prospects of oil.

However the price of crude oil has been recovering since November 2020 ever since there have been successful vaccination trials followed by the start of the inoculation drive undertaken by economies globally indicating oil price-recovery backed by the hopes of normalcy returning. The increase in crude oil price can also be ascribed to the voluntary production cuts undertaken by OPEC and its allies and the fall in US oil production. Oil prices were also impacted and have increased due to the winter storm in Texas (the largest oil producing state in the US) which led to US crude production to drop by more than 10% (or by 1 mb/d), while refining activities too suffered because of the freeze. Operations and facilities in the state have now resumed but not fully.

Nevertheless we remain cautious about the pace of oil-demand recovery with UK now reporting a new strain of coronavirus which has caused most of these countries to announce a stricter lockdown in order to control its spread and with the resurgence of COVID-19 cases across the US.

#### Outlook for FY21

Crude oil production for FY21 is to fall by 4.7% given the sharp fall in oil prices, crude oil explorers are dissuaded to carry on with exploration. Domestic production has fallen by 5.9% during FY20 and by 5.4% during 11M-FY21.

- With the ongoing COVID-19 pandemic, crude oil prices have fallen far below the breakeven price in most of the fields which is not lucrative for domestic upstream oil players as it will impact their realizations.

Consumption of crude oil is to fall by 12.1% during FY21 as processing of crude oil undertaken by refiners isn't robust given demand for petro-products is still subdued in the domestic and global economy. Consumption/Crude Throughput is likely to come down to around 4.5 mb/d during FY21 compared with the 5.09 mb/d consumed during FY20. Currently India has consumed 4.41 mb/d.

- With the spread of the contagion in the Indian economy and in the world, Indians have become awry to travel which is impacting the incremental need for transportation fuels.

Imports of crude oil are to fall by 13.2% during FY21 (3.97 mb/d) given the subdued demand of crude oil by Indian refiners. India had imported 4.5 mb/d during FY20 and is currently importing around 3.91 mb/d during 11M-FY21.

- Refiners have almost stocked up on cheap crude oil as directed by the government and are utilizing inventory of the previous months.
- Due to the fall in demand and import dependency based on consumption is also likely to fall from the previous 85%. Currently import dependency based on consumption is 84%.

#### Outlook for FY22

	Y-o-Y growth (Production)	Y-o-Y growth (Consumption)	Y-o-Y growth (Imports)
FY22 (E)	-4.5%	12.1%	13.2%

The rate at which business and economic activities have been opening up and operating in the Indian economy, crude **imports and throughput** is expected to rise sharply albeit on the back of a very low base. With the rollout of the vaccine and subsequent inoculation drives undertaken by the government the need for fuel is to rise thereby leading to an increase in crude oil demand.

Overall **crude oil production** is to continue to fall due to aging and maturing of oil fields however production is to rise to a certain extent as once a floating oil production unit, called an FPSO, is mobilized in the KG basin.

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