Crude Oil: April-November 2020 update

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Domestic Crude Oil production, imports and consumption during April-November 2020 i.e. 8M-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	159	150	-5.9%	-6.0%
Imports	1,099	899	-0.7%	-18.1%
Consumption	1,243	1,021	-1.2%	-17.9%

Source: PPAC, MOPNG

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

Fields operated by National Oil Companies (NOCs) have contributed around 78% of the total domestic crude oil production whilst the remaining 22% production has been undertaken by private companies during 8M-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 6% during 8M-FY21 compared with the 5.9% de-growth achieved during 8M-FY20. Technical mishaps due to COVID-19 implications, reservoir issues & shut in of wells and reduced offtake 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 from 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** 3.7 mb/d of crude oil during 8M-FY21 compared with the 4.5 mb/d imported during 8M-FY20. Cumulatively imports of crude oil have fallen due to the fall in demand of petro-products. Import dependency of crude (on the basis of consumption) has declined to 83.5% during 8M-FY21 from being 84.8% in the same period in the previous corresponding year. Value of crude oil imported has fallen by 53.4% during 8M-FY21 to USD 32.4 billion. India imported crude mainly from Iraq, Saudi Arabia, Kuwait and UAE but in retrospect, imports from OPEC countries have declined during the year.

Crude throughput or refineries processed 4.2 mb/d* during 8M-FY21 compared with the 5.1 mb/d of crude processed during 8M-FY20. Capacity utilisation during 8M-FY21 was around 83.6% compared with the 101.8% utilization achieved in the same period in the previous corresponding year. Fall in demand (which has fallen by 14.1%) 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 73.1% during 8M-FY21 compared with the 74.6% processed during 8M-FY20.

*mb/d: Million Barrels per Day

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
Production (y-o-y)	-6.4%	-7.1%	-6.0%	-4.9%	-6.3%	-3.8%	-6.2%	**-4.9%**
Imports (y-o-y)	-16.0%	-22.6%	-18.9%	-29.0%	-23.4%	-13.1%	-21.6%	**-4.7%**
Crude Throughput (y-o-y)	-28.8%	-24.2%	-13.6%	-18.8%	-26.4%	-8.8%	-16.1%	**-5.1%**
Refinery Utilisation*	71%	78%	84%	85%	78%	85%	88%	**100%**

Source: PPAC, CARE Ratings

*prorated on a monthly basis

The overall macros of crude oil have improved during November 2020 with production, imports and throughput narrowing with the economy slowly recovering. Though crude throughput in November 2020 has declined by 5.1% on a y-oy basis it has increased by 13% on an m-o-m basis. Capacity utilisation of refineries in the month of November is 100% and can be ascribed to the increase in demand for petro products with the advent of the festive and wedding season. Fall in imports is signifying that existing demand is being met by inventory from prior months.

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 4th 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 1.12.2020
PSU	161.7
Pvt Companies	88.2
Total	**249.9**

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 atleast 5.02 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 01.12.2020

		ONGC	OIL	Cairn	HMEL	IOCL	BPCL	Total
Crude Oil	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

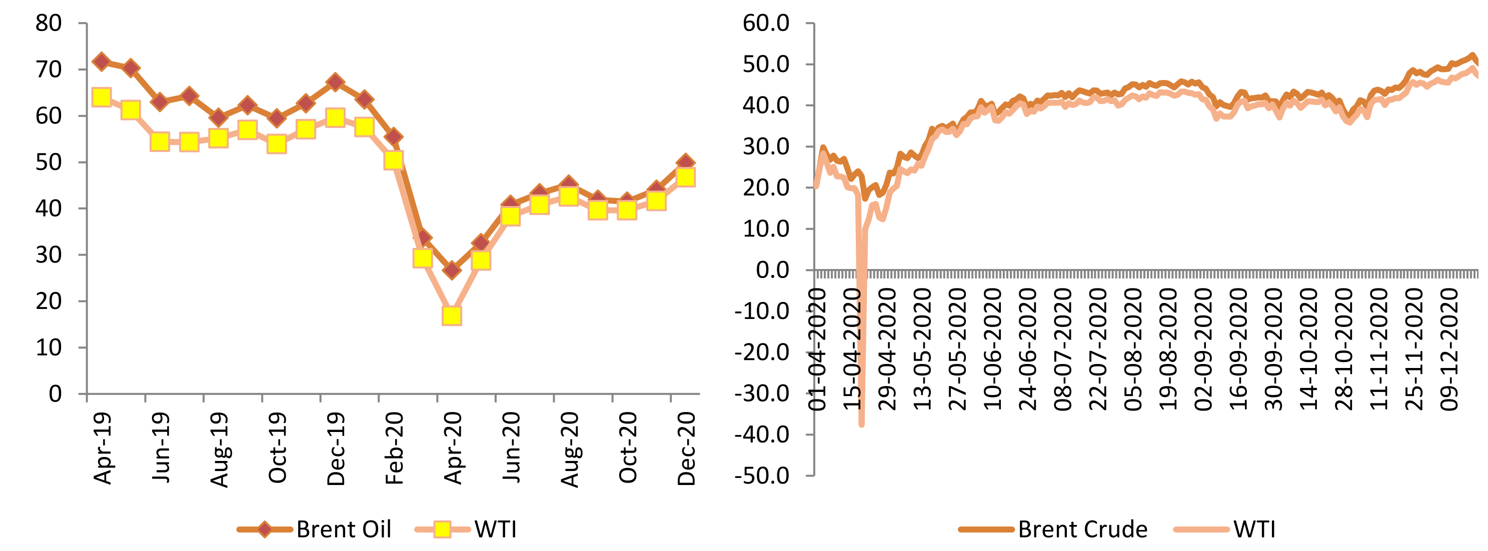
Prices

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 2/3rd 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

December monthly price is till 22nd December 2020 closing.

Price of Brent crude and WTI have fallen by 37% and 35.2% y-o-y during FY21 (April-December). 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 since mid-November and starting of December, crude oil prices have been rallying due to successful vaccine trials by various pharmaceutical companies and vaccination drive undertaken by UK and the US. Brent crude price has risen and crossed the USD 50/bbl mark after 8 months. In the previous months, oil prices were recovering on the back of oil-output cuts undertaken by OPEC+ group, fall in US oil production & inventory and the effects of the subsequent hurricanes occurring near the Gulf of Mexico. Prices of oil had also increased due to the hope of a stimulus package to be announced by the US government.

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.

Outlook for FY21

Crude oil production for FY21 is to fall by 7.3% 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 6% during 8M-FY21.

- With the ongoing COVID-19 pandemic, crude oil prices have fallen far below the breakeven price for domestic explorers which aren't lucrative for domestic upstream oil players as it will impact their realizations.

Consumption of crude oil is to fall by 10.4% 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 4.2 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.
- Indian refineries usually operate more than their listed nameplate capacity but given the current situation most of them are not operating up to their full capacity in order to contain the level of rising inventories and in order to protect their margins.
- Refiners are expected to increase their capacity in the coming months as the economy has been unlocking in a phased manner but with most of the Indian states re-imposing curfews and it could act a major detriment for demand of petroleum products.

Imports of crude oil are to fall by 12.7% 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 3.7 mb/d during 8M-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 82.4%.

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