Crude Oil H1-FY21 update

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Domestic Crude Oil production, imports and consumption during H1-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	120	113	-5.8%	-6.1%
Imports	817	649	0.0%	-20.5%
Consumption	921	734	-2.3%	-20.3%

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 76% of the total domestic crude oil production whilst the remaining 24% production has been undertaken by private companies during H1-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 fallen by 6.1% during H1-FY21 compared with the 5.8% de-growth achieved during H1-FY20. Technical mishaps due to COVID-19 implications such as unavailability of drilling equipment or installation of new platforms have led to the fall in production. Cumulative fall in production can also be ascribed to the environmental issues related to the Baghjan well blowout. 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** 3.5 mb/d during H1-FY21 compared with 4.5 mb/d during H1-FY20. Imports of crude oil have fallen due to the fall in demand of petro-products as refiners have curtailed their refinery capacity utilisation. Import dependency of crude (on consumption basis) has declined to 82.4% during H1-FY21 from it being 84.7% in the same period in the previous corresponding year. Value of crude oil imported has fallen by 41.8% during H1-FY21 to USD 22 billion. India imported crude mainly from Iraq, Saudi Arabia, Kuwait and UAE. OPEC's share of exports during H1-FY21 was around 74%, its' lowest due to the mega production cuts undertaken by the cartel.

Crude throughput or refineries processed 4.0 mb/d during H1-FY21 compared with 5.0 mb/d during H1-FY20. Capacity utilisation was around 80% compared with the 101% capacity utilization achieved in the same

period in the previous corresponding year. Fall in demand has led to refiners trimming their capacity utilisation. A few state-owned refiners have also gone for maintenance shutdown in order to remain afloat and protect margins. Percentage share of HS crude in total crude oil processing was around 72.7% during H1-FY21 as compared with the 74% processed during H1-FY20.

mb/d: Million Barrels per Day

Table 2: Monthly trend in Crude Oil Demand-Supply and Trade (Unit: Percentage Change (y-o-y))

	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Production	-6.4%	-7.1%	-6.0%	-4.9%	-6.3%	-3.8%
Imports	-16.0%	-22.6%	-18.9%	-29.0%	-23.4%	-13.1%
Crude Throughput	-28.8%	-24.2%	-13.6%	-18.8%	-26.4%	-8.8%
Refinery Utilisation*	71%	78%	84%	85%	78%	85%

Source: PPAC, CARE Ratings

*prorated on a monthly basis

The overall macros of crude oil have not reached its pre-covid levels but the demand-supply and trade situation seems to be narrowing with every passing month as the economy is opening up /unlocking in a phased out manner. Capacity utilisation of refineries is improving as with every subsequent unlock of the economy the demand for petroleum products is also increasing.

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 1.10.2020
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 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 01.10.2020

		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

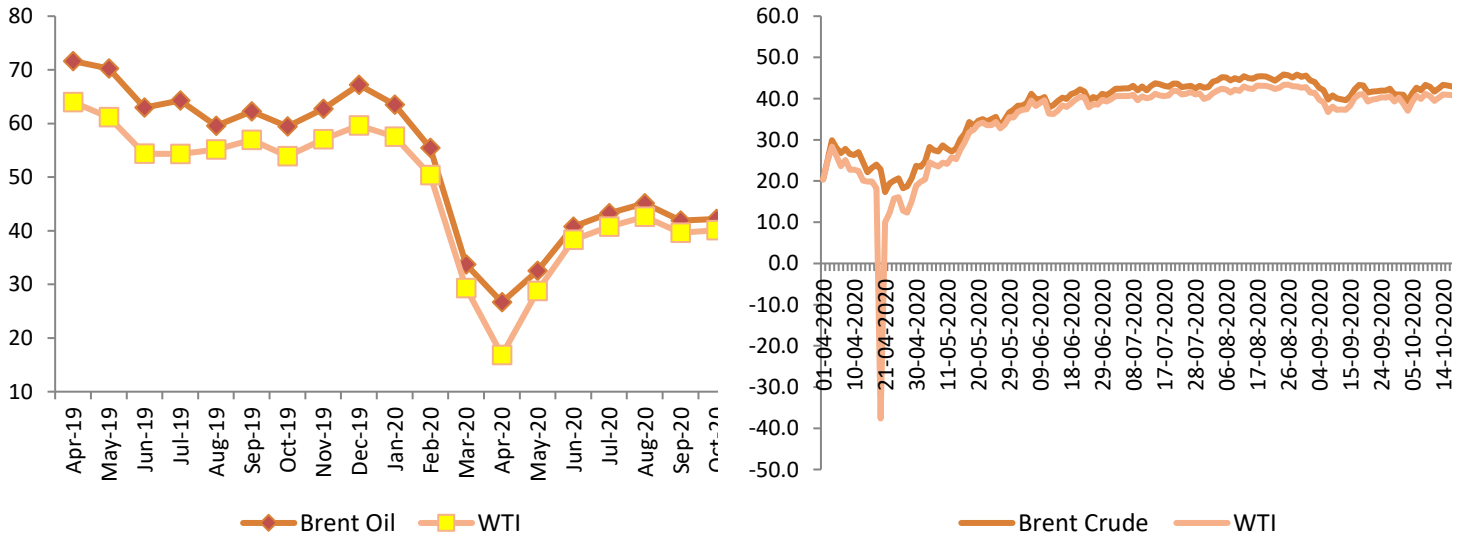
Prices

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

October monthly price is till 21st October 2020 closing

Price of Brent crude and WTI have fallen by 39.5% and 38.2% y-o-y during FY21 (April-October). 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.

Oil-output cuts across the world (by OPEC+ group and due to the fall in US oil production) and fall in inventory data has helped push the Brent price above USD 40/bbl and remain steady for the time being. Prices of oil have also increased due to

the hope of a stimulus package to be announced by the US government and because of the effects of Hurricane Laura and Tropical Strom Beta which has occurred near the Gulf of Mexico.

We remain cautious about the pace of oil-demand recovery, especially with a resurgence of coronavirus in many European countries and also the fact that most of these countries are considering to go under a second lockdown in order to control the spread of the virus.

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 4.2% during FY19, 5.9% during FY20 and by 6.1% during H1-FY21.

- With the ongoing COVID-19 pandemic, crude oil prices have fallen sharply which is far below the breakeven price for domestic explorers.
- Oil prices have been range bound between USD40-USD44/bbl which isn't lucrative for domestic upstream oil players as it will impact their realizations.

Consumption of crude oil is to fall by 7.3% during FY21 as processing of crude oil undertaken by refiners has fallen light of subdued demand for consumption of petro-products given the sharp fall in demand in the domestic and global economy. **Consumption of crude oil is likely to come down to around 4.73 mb/d during FY21** as compared with the 5.09 mb/d consumed during FY20. Currently India has consumed 4.0 mb/d.

- With the spread of the contagion in the Indian economy, 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 which is also coinciding with the upcoming major Indian festivals, a potential demand driver for the need of petroleum products.

Imports of crude oil are to fall by 8.9% during FY21 (4.14 mb/d) given the lack of demand of crude oil by Indian refiners. India had imported 4.5 mb/d during FY20 and is importing around 4.0 mb/d currently.

- Refiners have almost stocked up on cheap crude oil as directed by the government but even as the country is in its unlock phase there won't be an incremental demand for oil products anytime soon.
- 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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