

## Refining and Marketing: April- November 2020 update

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### Refining

Demand-Supply and Trade situation of Petroleum Products during April-November 2020 i.e. 8M-FY21

**Table 1: Production, Consumption, Exports and Imports of Refinery Products (Unit: Million Tonnes/ MMT)**

	Change (y-o-y)			
	2019-20	2020-21	2019-20	2020-21
Production	173	148	-1.2%	-14.9%
Consumption	142	122	2.2%	-14.1%
Exports	44	37	4.6%	-14.2%
Imports	27	28	35.6%	1.2%

Source: PPAC

**Production** of Refinery products/petro products has fallen by 14.9% during 8M-FY21. 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. Cumulative capacity utilisation has been around 83% compared with the 102% capacity utilization achieved in the same period in the previous corresponding year. With the outbreak of the COVID-19 pandemic across the world and with the nationwide lockdown imposed in the country, Indian refineries have been operating at reduced capacities. Fall in demand has led to refiners trimming their capacity utilisation in order to remain afloat and protect their margins.

Overall **consumption** of all petroleum products has fallen by 14.1% but has recovered to 85.9% of the consumption which was prevalent during the same period last year. Cumulatively except for LPG, Naphtha, Bitumen and LDO demand for all refinery products has fallen. However consumption of petroleum products has been increasing as the country has been easing restrictions and opening up. The month of November 2020 saw a surge in economic activities with the onset of festive and marriage season.

**Exports of POL products** have decreased by 14.2% during 8M-FY21 compared with the 4.6% growth achieved during 8M-FY20. Decrease in POL products exports was mainly due to decrease in exports of ATF, naphtha, LPG, motor spirit, high speed diesel, SKO, fuel oil, vacuum gas oil and bitumen. Global fall in demand of petroleum products due to COVID-19 induced lockdowns and social distancing measures adopted has resulted in the overall fall in exports.

**POL products imports** have increased by 1.2% during 8M-FY21 compared with the 35.6% growth achieved during 8M-FY20. Increase in imports was mainly due to increase in imports of fuel oil (FO), liquified petroleum gas (LPG), bitumen and petcoke.

**Table 2: Trend in monthly Production and Consumption of Petroleum Products during 2020-21 (Unit: MMT)**

	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20
Production	16.0	17.3	18.7	19.4	17.9	18.0	18.9	21.4
Change (y-o-y)	-24.2%	-21.3%	-8.9%	-13.9%	-19.1%	-9.5%	-16.7%	-4.8%
Refinery Capacity Utilisation	71%	79%	84%	85%	78%	85%	88%	100%
Consumption	9.4	15.4	16.2	15.6	14.4	15.5	17.8	17.8
(Change) y-o-y	-48.7%	-19.4%	-8.4%	-12.3%	-16.2%	-4.4%	2.9%	-3.7%

Source: PPAC, CARE Ratings

\*prorated on a monthly basis.

The month of November 2020 saw growth in consumption of LPG 4.1%, Petrol (MS) 5.1%, Naphtha 7.7%, Bitumen 18.4%, Furnace Oil & Low Sulphur Heavy Stock (FO/LSHS) 8.9%, Light Diesel Oil (LDO) 33.3% and products categorised under "Others" category 2.5% compared with November 2019, while all other products recorded de-growth as compared to same period last year. Increase in refinery utilisation during November '20 can be ascribed to the increase in demand for petroleum products as the economy is slowly reflating in a calibrated manner coupled with the ongoing festive and marriage season.

#### **Cumulative product-wise demand-supply of refinery petroleum products**

**Table 3: Production and Consumption of Refinery Products (Unit: Million Tonnes)**

	Production		Change (y-o-y)		Consumption		Change (y-o-y)	
	2019-20	2020-21	2019-20	2020-21	2019-20	2020-21	2019-20	2020-21
LPG	8.4	7.7	0.2%	-8.3%	17.1	18.1	7.4%	5.3%
Naphtha	13.0	12.3	0.4%	-5.4%	9.1	9.2	-2.5%	1.2%
MS	25.8	22.4	1.7%	-13.3%	20.4	17.4	9.1%	-14.4%
ATF	10.2	3.9	-0.7%	-61.8%	5.4	1.9	-2.3%	-64.2%
SKO	2.1	1.6	-25.4%	-23.8%	1.7	1.2	-25.8%	-29.9%
HSD	73.9	63.2	-0.6%	-14.5%	55.4	44.9	1.0%	-19.0%
LDO	0.5	0.4	-9.0%	-20.0%	0.4	0.5	12.5%	13.9%
Lubes	0.6	0.7	0.4%	11.7%	2.4	2.2	3.4%	-8.4%
FO/LSHS	6.5	5.8	-4.3%	-10.8%	4.0	3.8	-7.6%	-4.3%
Bitumen	3.0	2.6	-11.1%	-13.3%	4.0	4.0	2.0%	2.1%
Pet Coke	9.4	7.7	1.0%	-18.1%	14.2	11.9	4.4%	-16.8%
Others	19.9	19.2	-3.7%	-3.5%	7.8	6.8	1.8%	-12.9%
TOTAL	173.4	147.6	-1.2%	-14.9%	142.0	121.9	2.2%	-14.1%

Source: PPAC

\*Others include sulphur, propylene, propane, reformat, butane, MTO (Mineral Turpentine oil) etc

- **MS** consumption fell by 14.4% during 8M-FY21 but has recovered to 85.6% of its volumes which was prevalent during 8M-FY20 and has increased by 5.1% during November 2020. Personal mobility still persists as a preferred

mode of travel over public transport and the festive & marriage season celebrations has created a positive demand in consumption. Growth in sales of passenger vehicles & 2/3 wheelers at the back of fast recovering economy too is adding onto the recovery of the auto-fuel. However growth has been muted in traditionally tourism centric states/cities as discretionary travel remains affected due to precautionary measures taken in the pandemic.

- **HSD** consumption fell by 6.9% during November 2020 and by 19% during 8M- FY21 but has recovered to 81% of its volumes which was prevalent during 8M-FY20. After registering a positive growth in October, demand for diesel has fallen in November. Festive season had an adverse effect on diesel sales as the Truck/Tanker crew go on leave during the period. Even the farmer's agitation which has adversely affected rail/road movement to some extent has played a role in suppressing diesel demand. However vibrancy in rural and semi urban market has supported consumption.
- **Naphtha** consumption increased by 1.2% during 8M-FY21. Petrochemical industries remain the main consumers of naphtha in addition to minor consumers like fertilizer and power. The growth in Naphtha consumption during the month of November 2020 has been due to a major rise in consumption of Naphtha by other miscellaneous sectors and a minor rise in petrochemical sector.
- **ATF** consumption fell by 64.2% during 8M-FY21 and has only recovered to only 35.8% of its 8M-FY20 volume. The status of air travel remained unchanged during the month with both business and leisure travel being carried out cautiously under various precautionary measures to contain the spread of COVID-19 and international air travel still remains banned except for certain flights engaged in special services and those with established air bubbles. The total domestic passengers carried during 8M-FY21 were 227.7 lakh as against 957 lakh during 8M-FY20. However sequentially ATF consumption has increased by 4.8% on m-o-m basis indicating increased mobility and air traffic.
- **Bitumen** consumption increased by 2.1% during 8M-FY21 reversing the negative trend observed in the previous months as road projects, new and repair works gained momentum. MORTH has constructed 6,207 km of National Highways upto November 2020 compared with 5,958 km constructed upto November , 2019.
- **LPG** consumption continues to gain traction and increased by 5.3% during 8M-FY21. Use of LPG by households has also increased as households under lockdown have ramped up purchases for cooking.
  - o PSU LPG Packed Domestic category recorded a cumulative growth of 11.4% during 8M-FY21 compared with 7.5% growth during 8M-FY20. During April – November 2020, around 60.4 lakh new connections and 44.1 lakh DBCs were released. A total of 8.01 crore BPL households have been covered under PMUY till 30.11.2020 since inception of the scheme.
  - o PSU LPG Packed Non-Domestic category recorded a cumulative de-growth of 39.5% during 8M-FY21 compared with the 15.4% growth during 8M-FY20.
  - o PSU Bulk LPG category registered a cumulative growth of 11.1% during 8M-FY21 compared with the 12.3% de-growth witnessed during 8M-FY20.
  - o PSU Auto LPG category registered a cumulative degrowth of 42.5% during 8M-FY21 compared with the 2.7% de-growth witnessed during 8M-FY20.
- **SKO** consumption continues to fall as all UTs except the UT of J&K and Ladakh have been declared kerosene free. The states of Andhra Pradesh, Delhi, Haryana and Punjab have also been declared kerosene free and states like Gujarat, Bihar, Uttar Pradesh and Maharashtra have also voluntarily surrendered a certain quantity of PDS SKO allocation. The states of Rajasthan, Uttar Pradesh & Uttarakhand saw nil upliftment of PDS SKO during the month
- Increase in **LDO** consumption by 13.9% during 8M-FY21 can be ascribed to its usage in various types of furnaces. Power generation, civil engineering and Iron & Steel were the major sectors contributing to the total consumption.
- Consumption of **Petcoke, Lubes & Greases** and **FO/LSHS** fell by 16.8%, 8.4% and 4.3% but has recovered to 83.2%, 91.6% and 95.7% of its previous year's volumes during 8M-FY21.

Table 4: Exports and Imports of Refinery Products (Unit: MMT)

	Exports		Change (y-o-y)		Imports		Change (y-o-y)	
	2019-20	2020-21	2019-20	2020-21	2019-20	2020-21	2019-20	2020-21
LPG	0.30	0.28	14.2%	-6.4%	9.6	10.8	15.4%	11.9%
MS	8.4	7.6	-2.5%	-9.6%	1.6	0.5	397.9%	-70.4%
Naphtha	5.6	3.9	12.4%	-29.7%	1.2	0.9	-25.6%	-22.7%
ATF	4.7	2.1	-3.1%	-56.1%	0.06	0.00	-71.2%	-100.0%
SKO	0.01	0.01	11.1%	-43.3%	-	-	-	-
HSD	21.0	20.4	9.6%	-2.9%	1.2	0.3	410.2%	-72.5%
LOBS/ Lube Oil	0.005	0.013	12.5%	149.0%	1.8	1.3	16.5%	-26.0%
Fuel Oil	1.28	0.74	-6.5%	-41.8%	1.8	4.0	77.1%	123.1%
Bitumen	0.02	0.004	52.6%	-79.2%	0.8	1.1	62.9%	31.7%
Others%	2.20	2.34	-6.3%	5.9%	-	-	-	-
Others&	-	-	-	-	9.4	8.9	45.5%	-5.4%
<b>TOTAL</b>	<b>43.6</b>	<b>37.4</b>	<b>4.6%</b>	<b>-14.2%</b>	<b>27.5</b>	<b>27.8</b>	<b>35.6%</b>	<b>1.2%</b>

Source: PPAC

% Others in export include Petcoke/CBFS, Benzene, Hexane, MTO, Sulphur etc.

& Others in import include Petcoke, Paraffin wax, Petroleum Jelly, Aviation Gas, MTBE, Reformate etc.

## Marketing

The retail marketing of petroleum products in India is done mainly by the public sector Oil Marketing Companies (OMCs) i.e. Indian Oil Corporation Ltd (IOCL), Hindustan Petroleum Corporation Ltd (HPCL), Bharat Petroleum Corporation Ltd (BPCL), and private companies like Reliance, Nayara & Shell. Important processes in the marketing include storage, distribution and sales of petroleum products. The OMCs perform marketing activities through their vast network of Terminals/Depots, LPG Bottling Plants, Retail Outlets, LPG Distributorships and SKO/LDO Dealers across India.

- **Retail Infrastructure**

Vast marketing infrastructure of OMCs comprise of petrol/diesel stations, Indane (LPG) distributorships, lubricants & greases outlets, consumer pumps which are backed by bulk storage terminals and installations, inland depots, aviation fuel stations, LPG bottling plants and lube blending plants amongst others.

Table 5: Industry marketing infrastructure as on 01.12.2020 (Unit: in Numbers) (Provisional)

Particulars	Total
POL Terminal/ Depots	303
Aviation Fuel Stations	257
Retail Outlets (total)	73,333
<sup>^</sup> out of which Rural ROs	19,492
SKO/LDO agencies	6,439

Source: PPAC

**Petroleum, Oils and Lubricants (POL)** depot consists of strategic storage of crude oil refinery products in sufficient quantities. The POL depot provides bulk storage facility for various fuels to meet the stocking requirements of various oil companies.

**Aviation Fuel stations** are situated at airports which can refuel aircrafts. Aviation Turbine Fuel (ATF) is dispensed from specially designed re-fuellers, which are driven up to parked airplanes and helicopters. Major airports have hydrant refuelling systems that pump the fuel right up to the filling outlets on the tarmac through underground pipelines for faster refuelling. Essentially, ATF is pumped into an aircraft by two methods: Overwing and Underwing. Overwing fuelling is used on smaller planes, helicopters, and piston-engine aircraft and is similar to automobile fuelling - one or more fuel ports are opened and fuel is pumped in with a conventional pump. Underwing fuelling, also called single-point which is used on larger aircrafts.

**Retail Outlets**, commonly known as Petrol Pumps are engaged in making available automotive fuels/ lubricants and other value added services for the automobile / private transport sector. The Retail unit is so named, as it involves dispensing fuels of relatively smaller volumes to the vehicle fuel tank. Almost 99% of petrol and 90% of diesel is sold through retail pumps. There are almost 72,611 retail outlets in India and around 27% of these ROs are present in rural regions (as of 1.12.2020). PSU OMCs account for 90% of the retail outlets present in the country.

**SKO/LDO** agencies as the name suggests market/distribute kerosene and light diesel oil to its customers. In the case of Public Distribution System (PDS) Kerosene which is a subsidized product, it is distributed to the customers through the PDS network (Ration shop) of the State Governments / Union Territories (UT).

- **LPG Marketing**

LPG in India is predominantly marketed by Public Sector Oil Marketing Companies (OMC).

**Table 7: Region-wise data on LPG marketing (As on 1.12.2020)**

Particulars	North	North-East	East	West	South	Total
LPG Active Domestic Customers (in Lakh)	877	100	557	605	728	<b>2866</b>
LPG Coverage (Estimated)	113.6%	92.5%	85.6%	89.7%	106.7%	<b>99.3%</b>
PMUY Beneficiaries (in Lakh)	249	42	254	175	81	<b>801</b>
Non-domestic LPG customers (in Lakh)	6.4	0.7	3.2	8.2	14	<b>32.5</b>
LPG Distributors (Numbers)	8,119	1,059	4,977	5,287	5,430	<b>24,872</b>
Auto LPG Dispensing Stations (Numbers)	115	0	52	146	343	<b>656</b>
Bottling Plants* (Numbers)	61	12	28	45	52	<b>198</b>
LPG Bottling capacity# (MMTPA)	6.2	0.67	3.1	4.7	5.6	<b>20.3</b>

Source: PPAC

\*Includes Numaligarh BP, Duliajan BP and CPCL BP. # Bottling Capacity is based on number of shifts presently in operation at plants.

- PSU OMCs together have 28.66 crore active LPG customers in the domestic category which are being served by 24,872 LPG distributors. The LPG coverage of the country estimated on the basis of active domestic connections and estimated households as on 1<sup>st</sup> December 2020 are around 99.3%.
  - o Uttar Pradesh has the most number of LPG distributors accounting for 16.6% of the total, followed by Maharashtra and Bihar at 8.8% and 7.8% respectively.
- PSU OMCs have a total of 198 LPG bottling plants all over India with rated bottling capacity of around 20.3 million metric tonnes per annum (MMTPA).
  - o Uttar Pradesh has the most number of LPG bottling plants accounting for 13% of the total, followed by Tamil Nadu and Karnataka at 8.2% and 7.4% respectively.
- PSU OMCs have a total of 656 Auto LPG Dispensing Stations all over India for catering to LPG demand in the automotive sector.

- Karnataka has the most number of Auto LPG Dispensing Station accounting for 17% of the overall total followed by Tamil Nadu and Kerala at 13.7% and 10.4% respectively.

### • Product Pipelines

The primary transportation of POL products across the country takes place by four transportation modes viz. pipelines, rail, coastal and road. Generally pipeline represents the cheapest mode of POL transportation. Pipelines are the most cost effective, energy efficient, safe and environment friendly mode of transportation of petroleum products. They ease the overburdened rail & road infrastructure and minimise the environmental impacts arising out of rail and road transportation.

**Table 8: Major product pipeline network (as on 01.12.2020)**

	Oil India	IOCL	BPCL	HPCL	Others*	Total
Length (kms)	654	9,400	2,241	3,775	2,395	<b>18,465</b>
Capacity (MMTPA)	1.7	46	19.5	34.7	9.4	<b>111.3</b>

Source: PPAC

\* HPCL and BPCL lubes pipeline included in products pipeline data

Pipelines play a significant role in meeting the demand of petroleum products in India by ensuring product availability to consumers and the public at large from the refineries itself. Primarily products which are transported via these product pipelines are ATF, Lubes and LPG.

## CARE Ratings Views and Opinions: Outlook FY21

### Consumption

In the recent months as the economic environment has improved, India's fuel demand is on a recovery path after the lows witnessed during April-May 2020 as economic activity is picking up with the subsequent easing of lockdown restrictions. Except schools and colleges most of the economy has opened up and is operating by following social distancing norms.

The consumption of petroleum products in the country, underscores the high growth potential that the domestic market offers for refined products and India will continue to be a major demand centre over the long-term but since the virus is showing no signs of abating for the time being, demand is to be muted or subdued for the time being at least till there is a vaccine. **Overall consumption of petroleum products is to fall by 8.4% during FY21 though a recovery of 1.8% is expected during H2-FY21 and as of now till 8M-FY21 consumption has fallen by 14.1%.**

- Recovery in total consumption during H2-FY21 is to be supported by the increase in demand for auto fuels such as diesel and petrol, and industrial fuels such as bitumen, Naphtha and lubes & greases.
- Increase in consumption of LPG and LDO is to remain elevated while there will be a fall in consumption of ATF, SKO, Petcoke and FO&LSHS during H2-FY21.

The consumption of petrol which constitutes around 13%-14% of the overall fuel consumption and diesel which constitutes around 39% of the overall fuel consumption **will register a fall in consumption of 5.5% and 11% by the end of FY21.**

- Recovery in consumption of petrol is expected to be around 10.6% and 3.4% for diesel during H2-FY21.

- Demand for petrol will be more resilient than diesel due to an increased preference for using personal vehicles instead of public transport to follow distancing norms. Pent-up demand and the upcoming festival season may also support fuel sales.
- Vibrancy in the rural markets is to also further demand of diesel on the back of a favourable monsoon seasons and a good kharif cropping season.
- Night curfews and restricted movements of goods due to states being cautious of the spread of the virus might restrict the use of the auto-fuels to a certain extend.

The LPG segment is witnessing a major transformation, with a slew of reform measures. Consumption of LPG has remained elevated and has defied a broader demand slump for oil products in India as families spent more time cooking at home amid the lockdown. **Going forward, LPG demand is to increase by 5.4% during FY21.** LPG consumption had increased by 5.9% during FY20 and has increased by 5.3% during 8M-FY21 as well.

- LPG consumption is also benefitting as the government is stocking up supplies to ensure regular deliveries across the economy.

Consumption of ATF is to continue to be sub-par as airlines are yet to resume full operations. **Going forward, ATF demand is to fall by 53.2% during FY21.**

### **Production**

Indian refineries usually operate more than their listed nameplate capacity but given the current situation most of them are not operating upto their full capacity in order to contain the level of rising inventories and in order to protect their margins. **Capacity utilisation in November has been 100% due to the onset of the festive season and rebound in fuel demand but going forward with States imposing curfews there could be a dip in demand for petroleum products which could result in a fall in refinery capacity.** Currently capacity utilisation has been around 83% during 8M-FY21.

- In terms of refining activities, crude throughput is to fall by 10.4% during FY21. Consumption of crude oil is likely to come down to around 4.5 mb/d during FY21 as compared with the 5.09 mb/d consumed during FY20.

Going forward, refiners are also expected to produce diesel in lesser quantities and focus more on the production of petrol in order to respond to changing demand dynamics.

- There has been a structural shift in India's demand for diesel as slowing primarily the country's car fleet are shifting predominantly to petrol, trucks are getting more efficient and solar pumps are displacing diesel-fed units across the countryside. Some auto makers are also rejigging their portfolio by either discontinuing diesel-powered vehicles or those which have low sales volume.
- Use of hydrogen and natural gas in trucks and buses is also leading to a shift which has entangled refiners at crossroads, considering over the years diesel sales have been double of that of petrol.
- The price advantage of once diesel had is also stymied as the fuel now costs almost as much as petrol in some states.

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