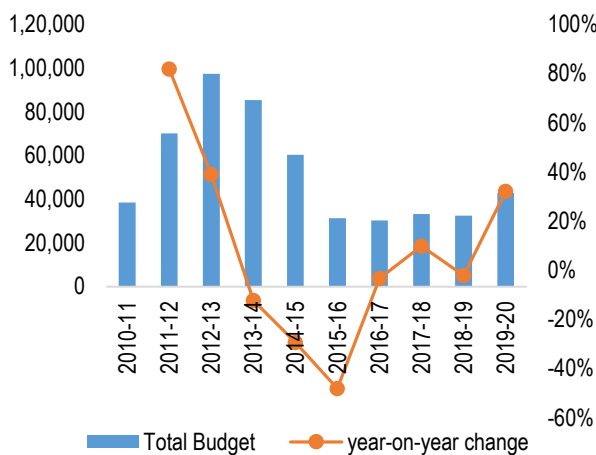


Demand for Grants 2019-20 Analysis

Petroleum and Natural Gas

The Ministry of Petroleum and Natural Gas is concerned with exploration and production of Oil and Natural Gas, refining, distribution and marketing, import and export, and conservation of petroleum products. The Ministry has been allocated Rs 42,901 crore for 2019-20, a 38% increase from the revised estimates of 2018-19.

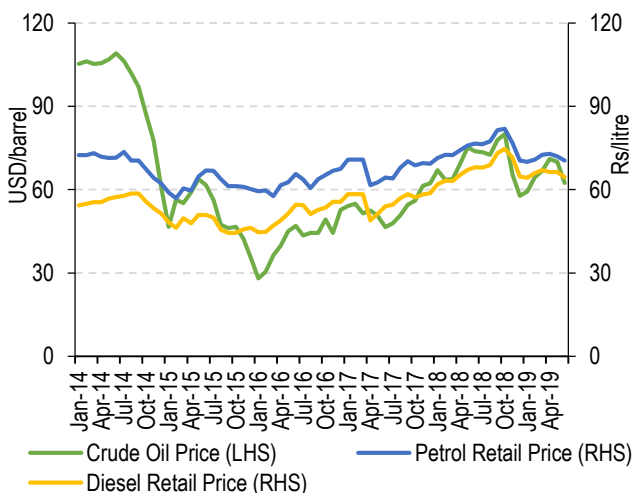
Figure 1: Expenditure of Ministry (Rs Crore)



Note: Data for 2019-20 is Budgeted Estimate.
Sources: Union Budget Documents; PRS.

The Ministry's expenditure trend, historically, has been following the trend in global crude oil prices. The crude oil prices have risen steadily from the 28.08 USD/barrel in January 2016 to 80.08 USD/barrel in October 2018, before showing a volatile trend. The global crude oil price was 62.39 USD/barrel in June 2019.

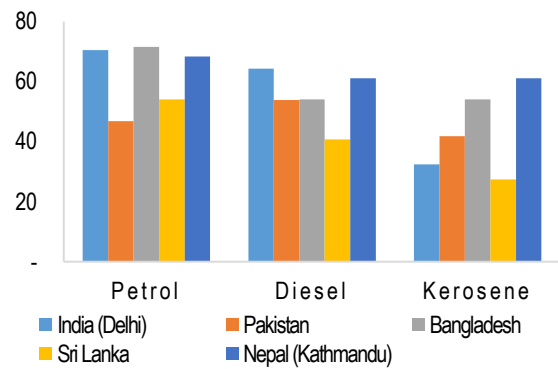
Figure 2: Trend of Global Crude Oil Price with respect to Petrol and Diesel Retail Price



Sources: Petroleum Planning and Analysis Cell; PRS.

Note that the price of petrol and diesel in India is higher compared to neighbouring nations, such as Pakistan, Sri Lanka and Nepal. On the other hand, the price of Kerosene is lower in India, compared to these nations.

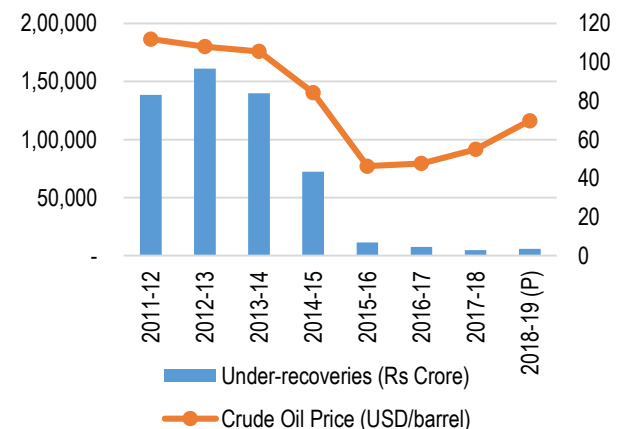
Figure 3: Price of Petrol, Diesel and Kerosene with respect to neighbouring nations (Rs/litre)



Note: Price as on July 1, 2019. Petrol, Diesel price is the price at Delhi, whereas price for Kerosene is the price at Mumbai.
Sources: Petroleum Planning and Analysis Cell; PRS.

Rise in crude oil prices usually also leads to rise in under-recoveries. Under-recovery refers to the difference in the cost of producing petroleum products, and the price at which they are delivered to consumers. It indicates the loss incurred by oil marketing companies while supplying these products. Central government compensates the oil marketing companies by sharing some of this incurred loss through a burden sharing mechanism. Figure 4 shows the trend of under-recoveries with the price of global crude oil.

Figure 4: Trend in under-recoveries of oil companies and global crude oil prices



Sources: Petroleum Planning and Analysis Cell; PRS.

Overview of Finance

Table1: Allocation for Ministry of Petroleum and Natural Gas (Rs Crore)

Head	Actual 2017-18	Revised 2018-19	Budget 2019-20	% Change
LPG Subsidy	15,656	20,283	32,989	62.64
Kerosene Subsidy	8,804	4,550	4,489	-1.34
Royalty to States	7,005	4,255	1,954	-54.08
National Seismic Programme	10	1,300	1,623	24.85
PDH Pipeline	400	1,207	1,552	28.58
Strategic Oil Reserves	1,141	781	122	-84.38
PM-JIVAN Yojana	-	-	38	0.00%
Others	176	89	134	50.56
Total	33,192	32,465	42,901	32.15

Sources: Union Budget Documents 2019-20; PRS.

LPG Subsidy: The Ministry provides subsidy on LPG cylinders to beneficiaries. Prior to 2013, this subsidy was provided in the form of subsidised cylinders. Following the launch of the PAHAL scheme in 2013, this subsidy is directly credited to the bank accounts of the beneficiary.¹ In 2019-20, the Ministry is estimated to spend Rs 32,989 crore on LPG subsidy, which is 63% higher than the revised estimates of 2018-19.

Kerosene Subsidy: The Ministry provides subsidised kerosene through the Public Distribution System (PDS). In 2019-20, the Ministry has allocated Rs 4,489 crore for the subsidy, which is 1.3% lower than the revised estimates of 2018-19.

Royalty to States: The central government grants mining leases under the Oilfields (Regulation and Development) Act, 1948 and receives royalty and licensing fee for exploration and production of petroleum. The central government has estimated to raise Rs 16,930 crore as royalty during 2019-20.² It will pay Rs 1,954 crore to the states.

PDH Pipeline: The Phulpur-Dhamra-Haldia (PDH) Pipeline is being developed by GAIL India to transport natural gas.³ The project will connect five states – Uttar Pradesh, Bihar, Jharkhand, Odisha and West Bengal – to the National Gas Grid. In 2019-20, the project has been allocated Rs 1,552 crore.

National Seismic Programme: The Ministry is conducting a seismic survey of all sedimentary basins of India, where limited data is available. The Programme was launched in October 2016 with an estimated expenditure of Rs 5,000 crore.⁴ The Programme has been allocated Rs 1,623 crore for 2019-20. This is 25% higher than the allocation of in 2018-19.

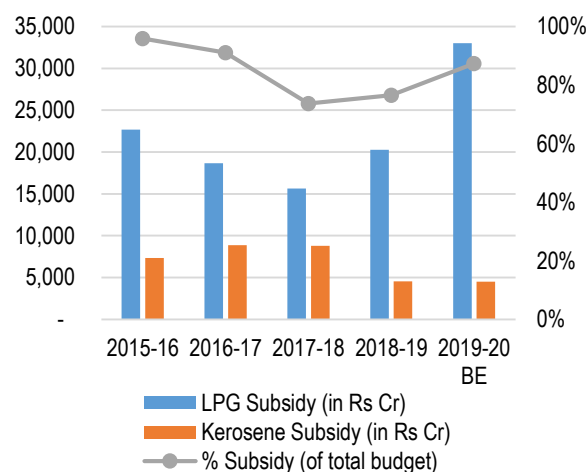
Key issues and analysis

1. Subsidy paid on Petroleum and Kerosene

The subsidy on LPG is the largest component of ministry's expenditure, with approximately 77% of the ministry's total budget allocated to it. The 2019-20 budget allocation for LPG subsidy is a 62.6% increase from the revised estimate for the same in 2018-19. Note that the LPG subsidy estimate for 2018-19 also marked a 30.2% increase from the revised estimates of 2017-18.

The total amount allocated for subsidies in 2019-20 is Rs 37,428 crore which is more than 50% increase from the revised estimates of 2018-19 and constitutes 87% of the total allocation to the ministry.

Figure 5: Trend of expenditure on subsidies

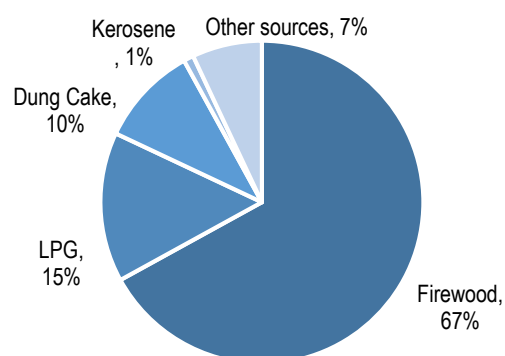


Sources: Union Budget Documents 2019-20; PRS.

Pradhan Mantri Ujjwala Yojana (PMUY):

According to the National Sample Survey (2011-12), more than 67% of the rural households in the country used firewood as the primary source of energy for cooking (see Figure).⁵ In urban areas, most of the households (68%) used LPG for cooking.

Figure 6: Primary source of energy for cooking in rural areas (2011-12)



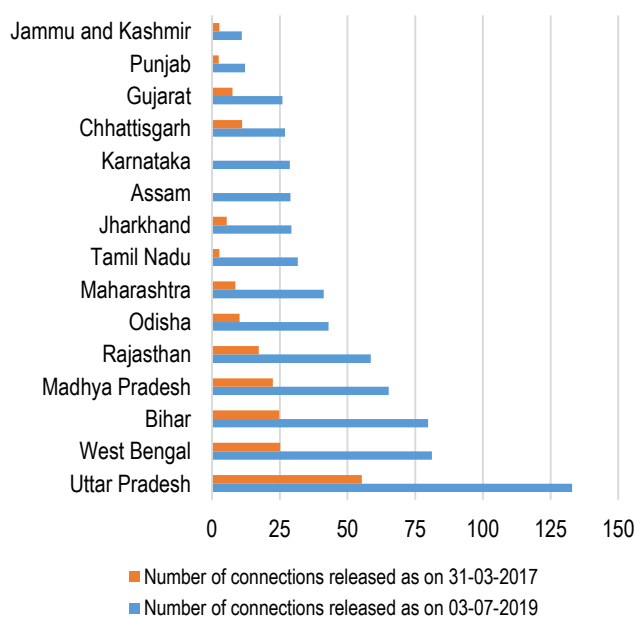
Sources: Energy Sources of Indian Households for Cooking and Lighting, 2011-12, NSS 68th Round, July 2011-June 2012; PRS.

The PMUY scheme was launched in May 2016 with the objective of providing LPG connections to households with a support of Rs.1600 per connection.⁶ The scheme aimed to target 5 crore households, which was later (in February 2018) revised to target 8 crore households by 2020.⁷

The ambit of the scheme was also expanded in February 2018 to cover all SC/ST households, beneficiaries of Pradhan Mantri Awas Yojana (Gramin), Antyoday Anna Yojana (AAY), Forest dwellers, Most Backward Classes (MBC), Tea and ex-Tea Garden Tribes, people residing in Islands and rivers etc. in addition to SECC identified households.⁸

As of July 3, 2019, a total of 7.31 crore PMUY connections were released across 714 districts. Of these, the maximum connections were released in Uttar Pradesh, followed by West Bengal and Bihar. Nearly all states have seen a rapid increase in connections released under PMUY.⁹

Figure 7: State-wise connections released for PMUY (in lakh)



Note: Date is for the 15 states with most connections.
Sources: State-wise PMUY connections released, PMUY Website; PRS.

An assessment report by the Petroleum Planning & Analysis Cell in 2016 titled 'Primary survey on household cooking fuel usage and willingness to convert to LPG' pointed out the key barriers for not applying for LPG connection are (i) high initial cost, including security deposit / price of gas stove (86%) and, (ii) high recurring cost of the cylinder (83%). The PMUY scheme provides the LPG connection and the first cylinder for free.¹⁰

Table 2: Refill of connections and refills under the PMUY scheme (till December 31, 2018)

	Number of consumers	% of consumers
Total connections till 2018	5,92,54,273	
No. of consumers who came for refill	4,46,64,572	75.40%
No. of consumers who took three or more refills	3,40,38,729	57.40%

Sources: Refill data, PMUY website, Ministry of Petroleum & Natural Gas; PRS.

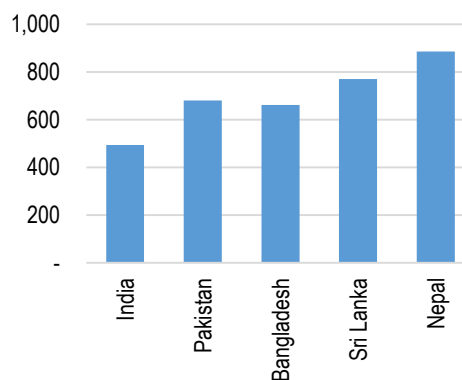
The report also identified easy availability of firewood in the vicinity of forests as another primary barrier to adoption of LPG. The top five states where over 40% of the households procure firewood for free are Gujarat, Madhya Pradesh, Jharkhand, Uttar Pradesh and Nagaland.¹¹

Pratyaksha Hastaantarit Laabh (PAHAL)

Scheme: PAHAL Scheme was launched in 2014 (54 districts in first phase) and launched in rest of the country in 2015.¹² Under the PAHAL scheme, all beneficiaries under the PMUY scheme are eligible for a Direct Benefit Transfer (DBT) cash-subsidy. The average subsidy per cylinder on domestic LPG during the year 2016-17, 2017-18 and 2018-19 (up to 1st half) was Rs 108.8, Rs 173.4 and Rs 219.1, respectively.¹³

The effective cost of an LPG cylinder in India after the DBT subsidy is lower compared to neighbouring nations. This is illustrated below.

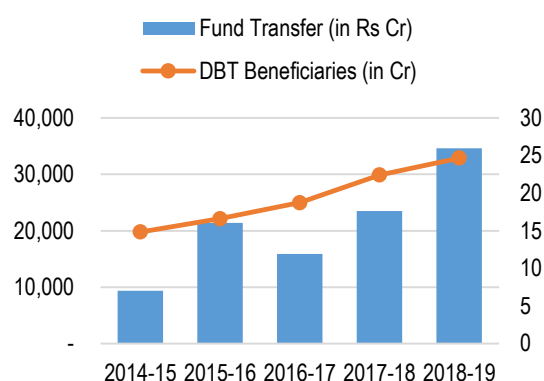
Figure 8: Retail Selling Price of LPG cylinder in India and neighbouring countries (in Rs)



Sources: Petroleum Planning and Analysis Cell; PRS.
Note: The prices are as on July 1, 2019. The price for India is the price at Delhi and the price for Nepal is price at Kathmandu.

The year-wise cash transfer under PAHAL has gone up from Rs 9,384 crore in 2014-15 to Rs 34,605 crore in 2018-19. The number of beneficiaries in the same time-frame have increased from 14.85 crore to 24.7 crore.¹⁴ The overall coverage of LPG has increased from 61.9% in 2016 to 94.2% in June 2019.¹⁵

Figure 9: Implementation of PAHAL Scheme



Sources: Direct Benefit Transfer website, Government of India; PRS.

Implementation of PAHAL scheme has resulted in an estimated savings of Rs 53,391 crore (upto February 2019).¹⁶ According to the Ministry, 4.09 crore duplicate/fake/ non-existent or inactive LPG connections have been eliminated under the scheme. Further, 1.03 crore consumers are now (upto December 2018) non-subsidised LPG consumers after giving up their subsidy under ‘Give It Up’ scheme.¹⁷

Table 3: Estimated Savings due to implementation of PAHAL Scheme

Year	Estimated Savings (in Rupee Crore)
2014-15	14,818
2015-16	6,443
2016-17	4,608
2017-18	16,406
2018-19 (till February 2019)	14,116
Total	53,391

Sources: Unstarred Question No. 278, Lok Sabha, Starred Question No. 284, Rajya Sabha, Direct Benefit Transfer website, Government of India; PRS.

The CAG report on ‘Implementation of PAHAL Scheme’ (2016) notes that while the scheme appears to have addressed the concern regarding diversion of subsidised LPG cylinders to commercial consumers, the risk of diversion of non-subsidised domestic LPG to commercial consumers still remains as there is a significant difference in the cost of non-subsidised domestic LPG and commercial LPG.¹⁸

There have also been complaints of supply of underweight cylinders and non-transfer of subsidy due to deseeding of Aadhaar from National Payments Corporation of India (NPCI) mapper.^{19,20} The consumer has now been given the option of receiving subsidy through bank account transfer without the use of Aadhaar.²¹

Kerosene Subsidy: Over the last few years, the Ministry’s expenditure on providing subsidy for kerosene has reduced from Rs 24,804 crore in 2014-15 to an estimated Rs 4,489 crore in 2019-20

The Ministry has stated that with the increase in LPG coverage and electrification in villages, the allocation for kerosene had been rationalised.²²

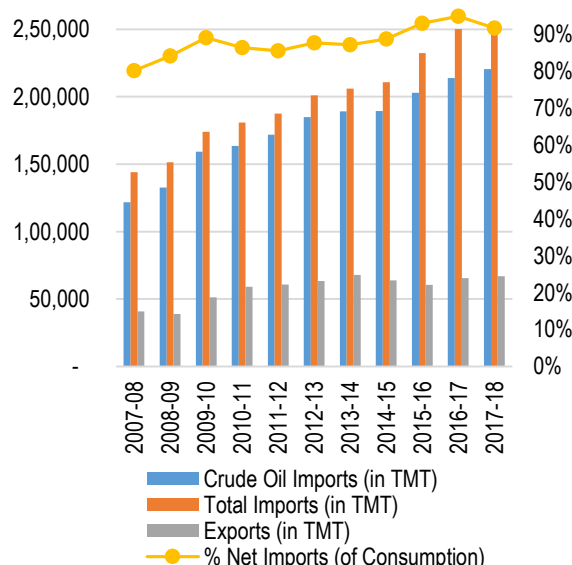
The Standing Committee on Petroleum and Natural Gas (2017) had recommended that the Ministry should reduce the expenditure on this subsidy and work towards the eventual withdrawal of the subsidy.²³ It noted that an increase in the coverage of LPG beneficiaries is necessary to reduce their dependence on kerosene. This will result in the usage of cleaner fuel, promote the health of users, and address the problem of adulteration.

The Standing Committee also recommended that states should be encouraged to move towards the direct cash transfer of kerosene subsidy to reduce inefficiencies in the delivery.²² Jharkhand has implemented direct cash transfer in kerosene in 24 districts. The Ministry stated that other states had been requested to join the scheme.²²

2. Dependence on imports

India’s net import of petroleum products for 2017-18 was 1,89,061 TMT. The total imports as a fraction of consumption has risen from 80.2% in 2007-08 to 91.7% in 2017-18. Figure 10 shows the variation of net imports of petroleum products as a percentage of total consumption in the country.

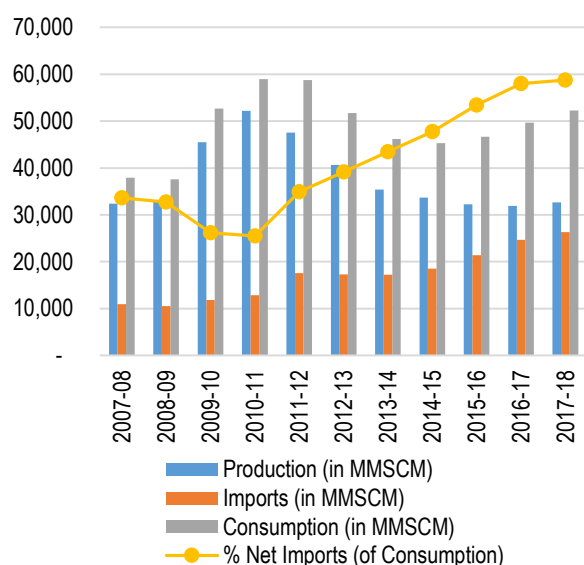
Figure 10: Net imports of Petroleum Products as percentage of total consumption



Sources: Petroleum Planning and Analysis Cell; PRS

For Natural Gas, the total imports as a fraction of consumption has risen from 29% in 2007-08 to 50% in 2017-18. Figure 11 shows the variation of net imports of Natural Gas as a percentage of total consumption of Natural Gas.

Figure 11: Net imports of Natural Gas as percentage of total consumption



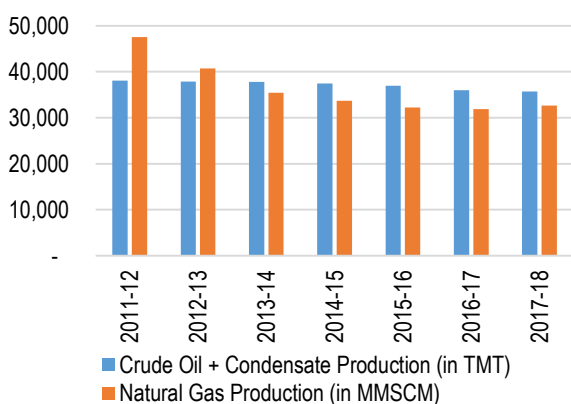
Sources: Petroleum Planning and Analysis Cell; PRS

The Standing Committee on Petroleum and Natural Gas in its 25th Report (2018) noted that it does not find any concrete action taken by the Ministry and a clear strategy with stipulated timelines to achieve the target of reduction in import dependence by 10 per cent by 2022.²⁴

3. Production and Exploration

India's Crude Oil and Condensate production has fallen from 38,090 TMT in 2011-12 to 35,684 TMT in 2017-18. Similarly, the production of Natural Gas has fallen from 47,555 MMSCM in 2011-12 to 32,649 MMSCM in 2017-18. The Standing Committee on Petroleum and Natural Gas in its 25th Report (2018) had also noted that crude oil production has been stagnant for the last few years, which is a matter of serious concern.²⁵

Figure 12: Crude Oil and Natural Gas production in India



Sources: ONGC, Oil India Ltd. and DGH; PRS.

Union Cabinet approved a policy framework for reforms in the exploration and licensing policy for

oil and gas fields in February 2019.²⁶ The reforms seek to enhance domestic exploration and production of oil and gas. Previously, Cabinet had approved policy framework for exploration and exploitation of unconventional hydrocarbons such as shale oil and gas, and coal bed methane (CBM). It is to be noted that CBM production in India has shown an upward trend. (Figures in Table 4)

Table 4: Coal Bed Methane (CBM) Production in India

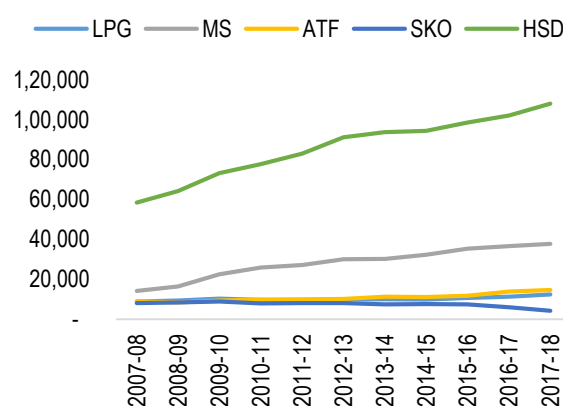
Year	Production (in MMSCM)
2015-16	1.07
2016-17	1.54
2017-18	2.23
2018-19	4.93
2019-20 (P*)	6.24
2020-21 (P*)	7.29

Sources: Standing Committee on Petroleum and Natural Gas, Lok Sabha, Twenty-fifth Report, August 2018; PRS. P* = Provisional

Petroleum Products: Petroleum products are used as raw materials in various sectors and industries such as transport and petrochemicals. Further, they may also be used in factories to operate machinery or fuel generator sets. Petroleum products include High Speed Diesel, LPG, Motor Spirit, Kerosene (SKO), Lube oil, Bitumen.

India's production of petroleum products has increased from 150,412 Thousand Metric Ton (TMT) in 2007-08 to 254,289 TMT in 2017-18. Its consumption of petroleum products has increased from 128,946 TMT in 2007-08 to 211,030 TMT in 2018-19. High Speed Diesel (HSD) and Motor Spirit (MS) are the two most produced and consumed petroleum products in India. In 2017-18, the production of Motor Spirit, Aviation Turbine Fuel, Kerosene oil and High Speed Diesel was higher than their consumption. However, for LPG, the production was 13,869 MT lesser than the consumption.

Figure 13: Production of petroleum products (in TMT)



Sources: Petroleum Planning and Analysis Cell; PRS.

¹ About the Scheme, PAHAL – Direct Benefits Transfer for LPG, Ministry of Petroleum and Natural Gas, <http://petroleum.nic.in/dbt/whatisdbtl.html>.

² Receipt Budget, Union Budget 2019-20, <https://www.indiabudget.gov.in/doc/rec/ntr.pdf>.

³ Brief Report on Jagdishpur- Haldia & Bokaro- Dhamra Pipeline (JHBDPL Phase-II) Project, Environment Clearance, http://environmentclearance.nic.in/writereaddata/Online/TOR/1_1_Jan_2017_125110330F858KUXWProjectSummaryJHBDPLPhaseII.pdf.

⁴ Annual Report 2016-17, Ministry of Petroleum and Natural Gas, <http://petroleum.nic.in/sites/default/files/AR16-17.pdf>.

⁵ Energy Sources of Indian Households for Cooking and Lighting, 2011-12, NSS 68th Round, July 2011-June 2012, Ministry of Statistics and Programme Implementation, http://mospi.nic.in/sites/default/files/publication_reports/nss_report_567.pdf.

⁶ About PMUY, Pradhan Mantri Ujjwala Yojana, Ministry of Petroleum and Natural Gas, <https://www.pmuujwalayojana.com>.

⁷ ‘Cabinet approves enhancement of target under Pradhan Mantri Ujjwala Yojana’, Press Information Bureau, Cabinet Committee on Economic Affairs, February 7, 2018.

⁸ ‘Cabinet approves enhancement of target under Pradhan Mantri Ujjwala Yojana’, Press Information Bureau, Cabinet Committee on Economic Affairs, February 7, 2018.

⁹ State-wise PMUY connections released, Pradhan Mantri Ujjwala Yojana, Ministry of Petroleum and Natural Gas, <http://www.pmuujwalayojana.com/released-connections.html>.

¹⁰ Assessment report: Primary survey on household cooking fuel usage and willingness to convert to LPG, Petroleum Planning & Analysis Cell, Ministry of Petroleum and Natural Gas, June 2016, <http://ppac.org.in/WriteReadData/Reports/201710310449342512219PrimarySurveyReportPPAC.pdf>.

¹¹ Assessment report: Primary survey on household cooking fuel usage and willingness to convert to LPG, Petroleum Planning & Analysis Cell, Ministry of Petroleum and Natural Gas, June 2016, <http://ppac.org.in/WriteReadData/Reports/201710310449342512219PrimarySurveyReportPPAC.pdf>.

¹² PAHAL-Direct Benefits Transfer for LPG(DBTL) Consumers Scheme, Ministry of Petroleum and Natural Gas, <http://petroleum.nic.in/dbt/whatisdbtl.html>.

¹³ ‘1.03 crore LPG Consumers have voluntarily Surrendered LPG Subsidy’, Press Information Bureau, Ministry of Petroleum and Natural Gas, December 17, 2018.

¹⁴ Direct Benefit Transfer, Government of India, <https://dbtbharat.gov.in>.

¹⁵ Unstarred Question No. 1475, Ministry of Petroleum and Natural Gas, Lok Sabha, answered on July 1, 2019.

¹⁶ Unstarred Question No. 278, Ministry of Petroleum and Natural Gas, Lok Sabha, answered on February 5, 2018.

¹⁷ ‘1.03 crore LPG Consumers have voluntarily surrendered LPG Subsidy’, Press Information Bureau, Ministry of Petroleum and Natural Gas, December 17, 2018.

¹⁸ CAG Report on Implementation of PAHAL (DBTL) Scheme, Report No. 25 of 2016, Ministry of Petroleum and Natural Gas, https://cag.gov.in/sites/default/files/audit_report_files/Union_Commercial_Compliance_Full_Report_25_2016_English.pdf.

¹⁹ ‘DBTL under Implementation in 715 Districts’, Press Information Bureau, Ministry of Petroleum and Natural Gas, December 31, 2018.

²⁰ ‘23.24 Crore Consumers joined Direct Benefit Transfer of LPG subsidies’, Press Information Bureau, Ministry of Petroleum and Natural Gas, January 2, 2019.

²¹ ‘23.24 Crore Consumers joined Direct Benefit Transfer of LPG subsidies’, Press Information Bureau, Ministry of Petroleum and Natural Gas, January 2, 2019.

²² Unstarred Question No. 2295, Lok Sabha, Ministry of Petroleum and Natural Gas, Answered on January 1, 2018, <http://164.100.47.190/loksabhaquestions/annex/13/AU2295.pdf>

²³ 18th Report of the Standing Committee on Petroleum and Natural Gas on the Demands for Grants of the Ministry of Petroleum and Natural Gas (2017-18), March 2017, http://164.100.47.193/isscommittee/Petroleum%20&%20Natural%20Gas/16_Petroleum_And_Natural_Gas_18.pdf.

²⁴ Standing Committee on Petroleum and Natural Gas, Lok Sabha, Twenty-fifth Report, August 2018, http://164.100.47.193/isscommittee/Petroleum%20&%20Natural%20Gas/16_Petroleum_And_Natural_Gas_25.pdf.

²⁵ Standing Committee on Petroleum and Natural Gas, Lok Sabha, Twenty-fifth Report, August 2018, http://164.100.47.193/isscommittee/Petroleum%20&%20Natural%20Gas/16_Petroleum_And_Natural_Gas_25.pdf.

²⁶ ‘Exploration and Licensing Policy for Enhancing Domestic Exploration and Production of Oil and Gas’, Press Information Bureau, Ministry of Petroleum and Natural Gas, February 21, 2019.

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