

Demand for Grants 2022-23 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.

Overview of Finances

The Ministry has been allocated Rs 8,940 crore for 2022-23, a 1% increase over the revised estimates of 2021-22.

Table 1: Allocation for the Ministry of Petroleum and Natural Gas (in Rs crore)

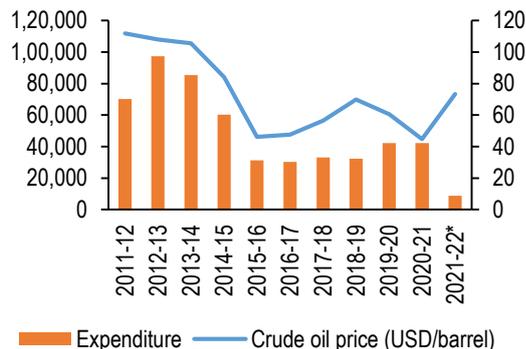
Major Heads	Actual 2020-21	Revised 2021-22	Budget 2022-23	% change
LPG subsidy	35,195	6,517	5,813	-11%
Kerosene subsidy	3,259	-	-	-
SPR	2,428	374	811	117%
Pipeline and seismic programme	971	1,537	1,798	17%
Others	337	418	518	25%
Total	42,190	8,846	8,940	1%

Note: SPR = Strategic Petroleum Reserves. Others include PM JI-VAN yojana, among others.

Sources: Union Budget Documents 2022-23; PRS.

Historically, the Ministry’s expenditure trend has followed the trend in global crude oil prices. Since 2011-12, the highest expenditure was in the year 2012-13 when the price of crude oil was more than \$100 per barrel.

Figure 1: Expenditure of Ministry (Rs Crore)



Note: Price of crude oil is the price per barrel of the Indian Basket of crude oil; Data for 2021-22 is till December 2021. Sources: Petroleum Planning and Analysis Cell; Union Budget 2022-23; PRS.

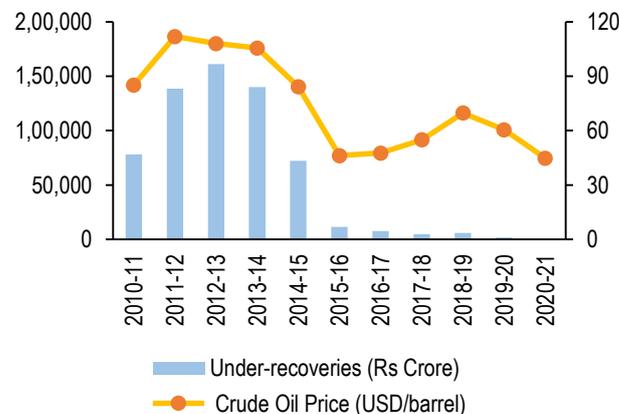
Rise in crude oil prices has in the past, led to rise in under-recoveries as the government did not want the retail prices to rise sharply. Under-

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 petroleum products. The central government compensates these oil marketing companies (OMCs) by sharing some of this incurred loss through a burden sharing mechanism.

Oil bonds were issued by the government to compensate oil marketing companies to offset losses that they suffer to shield consumers from rising crude oil prices. These bonds were issued to OMCs in lieu of cash at a time when the central government used to administer or fix petrol and diesel prices. Petrol and diesel prices were fixed by the government to cushion consumers from price shocks of costly international crude oil. The total value of the current outstanding oil bonds is Rs 92,200 crore. These bonds will be maturing between 2023-26.¹

Figure 2 shows the trend of under-recoveries with the price of global crude oil.

Figure 2: Trend in under-recoveries of oil companies and global crude oil prices



Sources: Petroleum Planning and Analysis Cell; PRS.

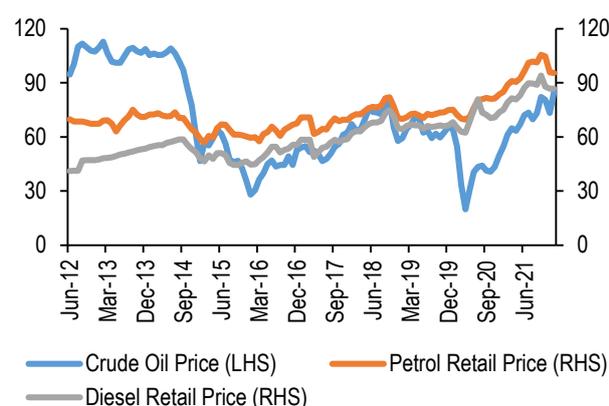
There has been a declining trend in under-recoveries since 2015-16. Since 2014, prices of petrol and diesel have been made market determined.² The Public Sector OMCs take appropriate decisions on pricing of petrol and diesel, in line with international product prices and other market conditions.

There have been no under recoveries in Petrol since 2011-12, and in Diesel since 2015-16. Similarly, since 2016-17, there have been no under recoveries in domestic LPG.³

In 2017, OMCs decided to start daily revision in the retail selling price of Petrol and Diesel in the entire country to make the retail selling prices more reflective of the current market conditions.⁴

India's dependence on imports for consumption of petroleum products has increased over the years. For instance, in 1998-99, net imports were 69% of the total consumption, which increased to around 95% in 2021-22 (till December 2022).⁵ Because of a large share of imports in the domestic consumption, any change in the global price of crude oil has a significant impact on the domestic prices of petroleum products.

Figure 3: Trend of Global Crude Oil Price with respect to Petrol and Diesel Retail Price



Sources: Petroleum Planning and Analysis Cell; PRS.

Tax, Cess and Surcharge: As crude oil prices declined in 2020, the government increased the excise duties on petrol and diesel. Much of the increase was in the form of cess and surcharge. At present, the majority of the excise duty levied on petrol (95%) and diesel (92%) is in the form of cess and surcharge, due to which it is entirely under the centre's share. This implies that over 90% of the tax collected would be earmarked for specific use (such as for building roads and infrastructure), and would not be shared with states under the 15th Finance Commission formula.

In the table below, we show the break-up of excise duty and the percentage share of each component out of the total excise duty.⁶

Table 2: Change in tax and cess (Rs/ litre)

Excise Duty (Rs per litre)	Petrol		Diesel	
	Apr 2017	Nov 2021	Apr 2017	Nov 2021
Tax	9.48	1.4	11.33	1.8
Cess	12	26.5	6	20
Total	21.48	27.9	17.33	21.8
Cess as % of Total Duty	56%	95%	35%	92%

Sources: Petroleum Planning and Analysis Cell; PRS.

LPG Subsidy

The Ministry provides subsidies on LPG cylinders to LPG consumers. 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.⁷ In 2022-23, the Ministry is estimated to spend Rs 5,813 crore on LPG subsidy, which is 11% lesser than the revised estimates of 2021-22. It constitutes 65% of the total allocation to the ministry.

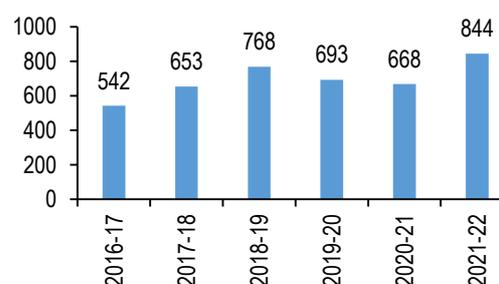
The remaining allocation under the LPG subsidy is for: (i) implementation of the Assam Gas Cracker project (for production of ethylene), and (ii) subsidy to oil companies for supply of LPG to the North East.

Direct Benefit Transfer – PAHAL

PAHAL scheme was launched in 2013 (54 districts in the first phase) and launched in the rest of the country in 2015.⁸ Under the scheme, a consumer (with annual income up to ten lakh rupees) can avail Direct Benefit Transfer (DBT) cash-subsidy for an LPG cylinder. The beneficiaries buy LPG cylinders at market rate and subsequently receive subsidies directly in their bank accounts.

The Price of LPG and the extent of subsidy change every month. In 2021-22, the average price of a non-subsidised LPG was Rs 843.6 between April 2021 and October 2021, while the subsidy has been zero from May 2020 onwards.⁹

Figure 4: Non-subsidised price of LPG (in Rs)



Sources: Indian Oil Corporation Limited; PRS.

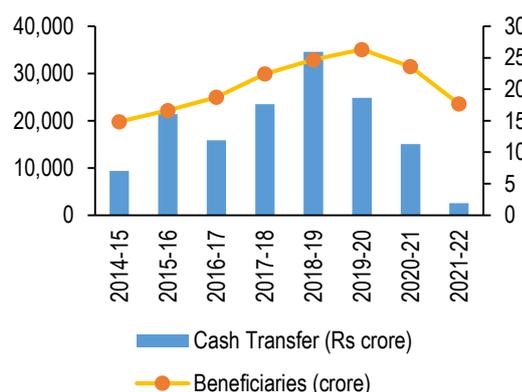
In 2022-23, Rs 4,000 crore has been allocated to DBT-PAHAL. In 2021-22, the budget allocation for DBT-PAHAL was Rs 12,480 crore while the revised estimate is Rs 3,400 crore (decline of 73%). Note that expenditure on subsidy is dependent on the difference between the subsidised and non-subsidised price for LPG. The non-subsidised price is in turn dependent on the price of crude oil, which increased in 2021, after a fall in 2020 due to the impact of COVID-19 induced lockdowns.

The Minister of State for the Ministry of Petroleum and Natural Gas, in February 2022, stated that LPG prices are based on Saudi Contract

Price (CP). Saudi CP is the benchmark for international prices of LPG. It has risen by approximately 258% from April 2020 to November 2021.¹⁰

The year-wise cash transfer under PAHAL has gone down from Rs 9,384 crore in 2014-15 to Rs 2,560 crore in 2021-22. The number of beneficiaries in the same time-frame have increased from 14.85 crore to 17.67 crore.¹¹ The overall coverage of LPG has increased from 61.9% in 2016 to 102.2% in November 2021.¹² LPG coverage is defined as the ratio of active consumers to total households.

Figure 5: Implementation of PAHAL Scheme



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

As per the central government, implementation of PAHAL scheme has resulted in an estimated savings of Rs 72,910 crore (up to March 2021).¹¹ 4.11 crore duplicate/fake/non-existent or inactive LPG connections have been eliminated under the scheme.¹¹ Further, there are 1.79 crore non-subsidised LPG consumers, including 1.08 crore people who gave up their subsidy under 'Give It Up' scheme.¹¹

The Comptroller and Auditor General (CAG) report on 'Implementation of PAHAL Scheme' (2016) noted 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.¹³

Pradhan Mantri Ujjwala Yojana (PMUY)

The Ministry also provides LPG connections to poor households under the Pradhan Mantri Ujjwala Yojana (PMUY). The PMUY scheme was launched in May 2016 to provide LPG connections to households with a support of Rs 1,600 per connection.¹⁴ The scheme initially had a target to provide connections to five crore households, which was later revised to eight crore households by 2020.¹⁵

In 2018, the ambit of the scheme was also expanded to cover all SC/ST households, beneficiaries of Pradhan Mantri Awas Yojana (Gramin), forest dwellers, backward classes, in addition to households identified under the Socio Economic and Caste Census (SECC).¹⁵ The scheme met its target of providing LPG connections to eight crore households in September 2019.¹⁶

As of January 28, 2022, a total of 8.9 crore PMUY connections have been released. Of these, 99 lakh connections have been released under the revised scheme. The maximum connections were released in Uttar Pradesh, followed by West Bengal and Bihar.¹⁷ The amount allocated for the scheme has declined from Rs 9,235 crore in 2020-21 to Rs 800 crore in 2022-23 (budgeted estimate).

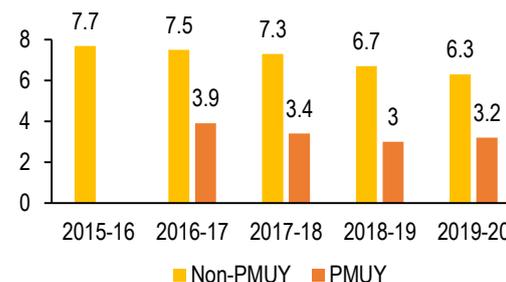
A report by the Petroleum Planning & Analysis Cell (2016) pointed out the key barriers for not applying for LPG connection are: (i) high initial cost, including security deposit/price of gas stove (86%), (ii) high recurring cost of the cylinder (83%), and (iii) easy availability of firewood.¹⁸

Refill of cylinders: The CAG submitted a performance audit report on the PMUY scheme in December 2019.¹⁹ The Report raised concerns related to lack of sustained usage of cylinders released under the scheme. 75% of consumers opted for one refill under the scheme and 57% opted for three or more refills (from date of getting the connection till December 2018).

The CAG performance audit report noted that the average annual refill rate for PMUY beneficiaries is low compared to the refill rate for non-PMUY beneficiaries (Figure 6). The Standing Committee on Petroleum and Natural Gas (2020) also highlighted the disparity in the average refill of cylinders for regular LPG consumers and the average refill of cylinders by PMUY beneficiaries.¹⁶

The Ministry noted certain efforts by oil marketing companies to improve refill consumption such as: (i) increase in LPG distributors to improve last mile connectivity, and (ii) facility to swap 14.2 kg (standard) cylinder refill with a 5 kg refill.¹⁶

Figure 6: Average annual refill consumption for PMUY and non-PMUY consumers



Sources: CAG Performance Audit, December 2019; Standing Committee on Petroleum and Natural Gas (2020); PRS.

Between April to October 2021, 84% of PMUY beneficiaries, who had got LPG connections under PMUY-I, got their connections refilled. Further, the average annual refill consumption for PMUY was 4.39 during 2020-21.²⁰

The report by the Petroleum Planning & Analysis Cell (2016) 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.¹⁸

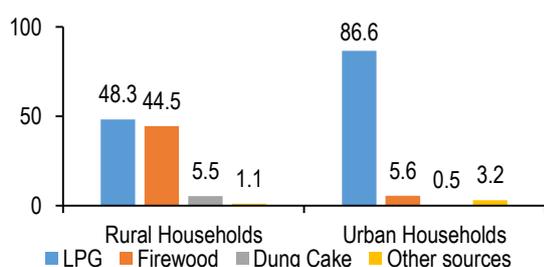
Pradhan Mantri Garib Kalyan Yojana: In 2020-21, the Ministry had estimated spending Rs 1,118 crore on PMUY at the budget stage. This amount was to clear past dues of the government to oil marketing companies implementing the PMUY scheme.¹⁶ However, in March 2020, the Finance Minister announced the provision of up to three free LPG refills for eight crore poor families under the Pradhan Mantri Garib Kalyan Yojana.²¹ The cost of free refills availed between April to August 2020 was Rs 9,670 crore for 13 crore refills.²² In 2020-21, the Ministry actually spent Rs 9,235 crore on PMUY.

Ujjwala 2.0: Note that in the 2021-22 Budget speech, the Finance Minister had announced that the PMUY scheme will be expanded to cover an additional one crore beneficiaries. Subsequently, Ujjwala 2.0 was launched in August 2021.²³ Under the revised scheme, beneficiaries are given deposit free connections along with free first refill and stove.²⁴ In January 2022, the scheme was further extended to release additional 60 lakh LPG connections on existing modalities.²⁴

Rural households continue using firewood as source of energy for cooking

According to the National Sample Survey (2018-19), around 44% of the rural households in the country used firewood as the primary source of energy for cooking (see figure below).²⁵ In urban areas, most of the households (87%) used LPG for cooking. As per NFHS-5 (2019-21), 58.6% households use clean fuel for cooking in India.²⁶

Figure 7: Primary source of energy for cooking in households (2018-19)



Sources: Drinking Water, Sanitation, Hygiene, and Housing Conditions in India, NSS 76th Round, July 2018-December 2018; PRS.

Kerosene Subsidy

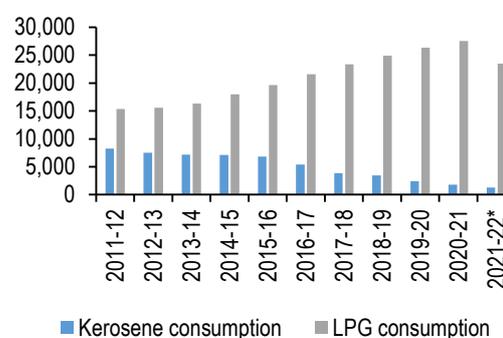
The Ministry provides subsidised kerosene through the Public Distribution System (PDS). In the last two Budgets, the Ministry has not allocated any funds for the kerosene subsidy. In 2020-21, the Ministry spent Rs 3,259 crore on the kerosene subsidy.

Over the last few years, the Ministry's expenditure on providing subsidy for kerosene has been reduced from Rs 7,339 crore in 2015-16, to an estimated zero in 2022-23. In 2018, the Ministry stated that with the increase in LPG coverage and electrification in villages, the allocation for kerosene had been rationalised.²⁷

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.²⁸ It noted that an increase in the coverage of LPG beneficiaries is necessary to reduce their dependence on kerosene.

The Standing Committee on Petroleum and Natural Gas (2020) observed that an increase in the coverage of LPG beneficiaries is necessary to reduce dependence on kerosene.¹⁶ This will result in the usage of cleaner fuel, and promote the health of users. However, large segments of the population are still dependent upon kerosene and only ten states have become kerosene free.²⁹

Figure 8: Consumption of Kerosene and LPG (in TMT)



Note: TMT is Thousand Metric Tons; Data for 2021-22 is till January 2022.

Sources: Petroleum Planning and Analysis Cell; PRS.

Dependence on imports has been increasing

India's import of crude oil has increased from 1,71,729 Thousand Metric Tons (TMT) in 2011-12 to 1,96,461 TMT in 2020-21, at an average annual growth rate of 2%.³ Crude oil is refined in oil refineries to transform oil into useful petroleum products such as high speed diesel, LPG and kerosene. These petroleum products are used as raw materials in various sectors and industries such as transport (fuel) and petrochemicals. Further, they may also be used in factories to operate machinery or fuel generator sets.

India exports petroleum products to countries such as Singapore, the Netherlands, and the United Arab Emirates.³⁰ In 2020-21, India's total export of petroleum products was 56,769 TMT.³

Further, India's production of crude oil and condensate has fallen from 38,082 TMT in 2011-12 to 30,494 TMT in 2020-21, an annual average decline of 2%.³ Production as a percentage of imports of crude oil declined from 22% to 16% during this period. The Ministry attributed the decline to the natural ageing of oil fields.³¹

Table 3 shows the total import of crude oil and petroleum products, consumption of petroleum products in the country and India's exports of petroleum products for the last 10 years. India's net import (total imports - exports) as a fraction of consumption has risen from 86% in 2011-12 to 95% in 2020-21.

Table 3: Import, export and consumption of petroleum products in the country (in TMT)

Year	Crude Oil imports	Petroleum products import	Petroleum products export	Petroleum products consumption
2011-12	1,71,729	15,849	60,837	1,48,132
2012-13	1,84,795	16,354	63,408	1,57,057
2013-14	1,89,238	16,697	67,864	1,58,407
2014-15	1,89,435	21,301	63,932	1,65,520
2015-16	2,02,850	29,456	60,539	1,84,674
2016-17	2,13,932	36,287	65,513	1,94,597
2017-18	2,20,433	35,461	66,833	2,06,166
2018-19	2,26,498	33,348	61,096	2,13,216
2019-20	2,26,955	43,788	65,685	2,14,127
2020-21	1,96,461	43,248	56,769	1,94,295
2021-22*	1,56,509	30,384	46,194	1,48,320

Note: *Data for 2021-22 is till December 2021.

Sources: Petroleum Planning and Analysis Cell; PRS.

The Standing Committee on Petroleum and Natural Gas (2019) noted that the Middle East accounts for more than two-thirds of India's crude oil imports, and urged the government to continue its crude oil import diversification efforts.³²

Strategic Petroleum Reserves

Strategic Petroleum Reserves (SPRs) are underground caverns to store crude oil. SPRs are essential to the energy security of the country which serves as a cushion during any supply disruptions in global crude oil.³³ In 2022-23, Rs 811 crore has been allocated towards SPR, an average increase of 117% over 2021-22 revised estimates, but lower than the spending of Rs 2,428 crore, in 2020-21.

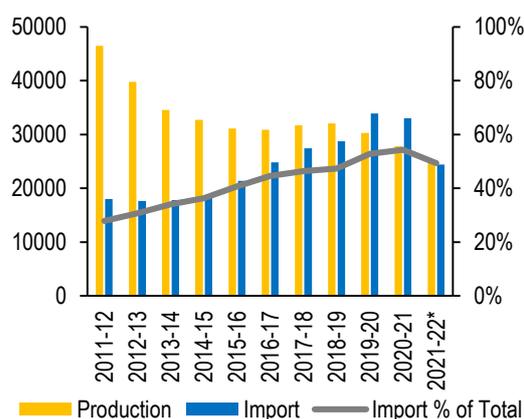
In July 2021, phase 2 of the SPR programme was approved for establishing two additional commercial-cum-strategic facilities with a total storage capacity of 6.5 MMT underground

storages at Chandikhol (4 MMT) and Padur (2.5 MMT).³⁴

Increase in share of natural gas in energy mix

Total imports of natural gas as a percentage of consumption (production plus import) has risen from 28% in 2011-12 to 54% in 2020-21.³ Figure 9 shows the total production and imports of natural gas, and the share of imports in the total.

Figure 9: Production and Imports of Natural Gas (in MMSCM)



Notes: MMSCM = Million Metric Standard Cubic Meters.

Data for 2021-22 is till December 2021.

Sources: Petroleum Planning and Analysis Cell; PRS.

Between 2011-12 and 2020-21, import of natural gas increased from 17,997 MMSCM (Million Metric Standard Cubic Meters) to 33,031 MMSCM, at an average rate of 8%. Whereas the production of natural gas has fallen from 46,453 MMSCM to 27,784 MMSCM. In 2015, the Ministry had targeted a reduction in import in the energy sector (oil, gas, and petroleum products) from 77% to 67% by 2021-22.³⁵ The Standing Committee on Petroleum and Natural Gas (2018) had noted that the Ministry has not undertaken any concrete action and not developed a clear strategy with stipulated timelines to achieve this target.³⁶

The Report of the Roadmap for Reduction in Import Dependency in the Hydrocarbon Sector by 2030 (2014) had called for an increase in the share of natural gas in the energy consumption mix from 10% to at least 20% to 25% by 2025.³⁷ A necessary precondition to achieve this is to increase the gas pipeline infrastructure. In 2012, India had 13,000 km of natural gas transmission pipeline. As of September 2021, the total authorised length of natural gas pipelines is 33,548 km of which 15,004 km is under construction.³⁸

Natural gas pipeline is a mode of bulk transportation and is a natural monopoly since it is impractical to have multiple pipelines in the same route. Common carrier arrangements allow the pipeline to be utilised by any entity on a non-discriminatory basis which leads to competition in the natural gas market. This is currently regulated

by the Petroleum and Natural Gas Regulatory Board.³⁹

IGGL: The Indradhanush Gas Grid Limited (IGGL) is a joint venture of five central public sector enterprises to develop and operate a natural gas pipeline grid in the North-East region.⁴⁰ The total length of the pipeline would be 1,656 kilometer and it will be developed in the eight north-eastern states - Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. In 2022-23, the project has been allocated Rs 1,798 crore, 112% more than revised estimate in 2021-22 (Rs 850 crore).

Promotion of alternate fuels

PM JI-VAN: The strategy of import reduction includes increasing production of domestic petroleum and natural gas, and promoting alternate fuels.¹⁶ The Pradhan Mantri Jaiv Indhan-Vatavaran Anukul Fasal Awashesh Nivaran (PM JI-VAN) Yojana was launched in 2019 to provide financial support for setting up bio-ethanol projects using biomass and other renewable feedstock.⁴¹ The scheme has been allocated Rs 314 crore for 2022-23, which is a 66% increase over the revised estimates of 2021-22. Note that in 2020-21, the government did not spend any part of the budgeted allocation of Rs 53 crore on the scheme, due to COVID-19 related reasons.

PM JI-VAN aims to provide viability gap funding to provide initial thrust to create second generation (2G) ethanol capacity in the country and attract investment in this sector.⁴² 2G ethanol utilises surplus biomass and agricultural waste to produce bioethanol while first generation ethanol utilises sugarcane juice and molasses, byproducts in the production of sugar, as raw material. Under the scheme, financial support will be provided to 12 Integrated Bio-ethanol Projects using lignocellulosic biomass and other renewable feedstock, along with support to ten demo projects for 2G technology. The total financial outlay is Rs 1,970 crore for the period 2018-19 to 2023-24. Four 2G bio-ethanol plants have been supported with Rs 150 crore financial assistance as of December 2021.⁴³

The Standing Committee (2020) observed that this scheme could help reduce import dependence by substituting fossil fuels with bio-fuels.¹⁶ The Standing Committee (2021) recommended the Ministry to properly utilise the budgetary allocation for the scheme.⁴²

Ethanol blended petrol: The government has been promoting the usage of biofuels with the twin objective of reducing the country's import bill and contributing to lower carbon emissions. In this regard, the National Policy on Bio-Fuels, 2018 was formulated to increase biofuel usage in the

energy and transportation sectors. The Policy envisaged an indicative target of 20% blending of ethanol in petrol by 2030 and 5% blending of biodiesel in diesel by 2030.⁴⁴

The Standing Committee (2021) recommended the Ministry to advance the target of 20% blending of ethanol in petrol from 2030 to 2025.⁴⁵ Subsequently, in June 2021, the target was revised to achieve 20% blending of ethanol by 2025.⁴⁶ Further, the Ministry released a notification stating that OMCs shall sell ethanol blended petrol with a percentage of ethanol up to 20% as per BIS Specifications in the whole of India and Union Territories. This will come into effect from April 1, 2023.⁴⁶ The Committee also observed that majority of the ethanol produced for blending is coming from the sugar sector. Sugarcane is a water-intensive crop with adverse effects on the environment and thus not sustainable in the long run for producing ethanol. The Committee observed that more than 60% of the ethanol in the world is produced using maize, whereas India primarily uses sugarcane. It recommended the government to study the policies followed in countries using other feedstocks and suitably adopt them. Further, it recommended the government to diversify the feedstocks used for producing ethanol to include maize and other food grains and motivate farmers to increase their production accordingly.

The government has set a target of 5% blending of bio-diesel with diesel for 2030.⁴⁶ Presently, the blending level is less than 0.1%, with 10.56 crore litre of bio-diesel supply in 2019-20. The Committee observed that bio-diesel blending has not kept pace with ethanol blending. It noted that bio-diesel has not been accorded due importance, even though diesel is the most consumed fuel, used mostly in commercial and public transport vehicles. Further, it noted that higher biodiesel blending will have a greater impact in reducing crude oil imports.

When suggesting a roadmap for ethanol blending in India, the NITI Aayog suggested that an annual roadmap be prepared for the: (i) production and supply of ethanol till 2025-26, and (ii) systems for country wide marketing of ethanol.⁴⁷ To enable roll out across India, ethanol may be supplied from surplus to deficit states based on the requirements. This will ensure uniform availability of ethanol blends in the country. Further, a single window system may be formulated by Department for Promotion of Industry and Internal Trade to facilitate speedy clearances for new projects and expansion of current projects for ethanol production. In December 2021, the Ministry lowered the Goods and Services Tax (GST) rate to 5% from 18% on ethanol meant for blending under the Ethanol Blended Petrol Programme.⁴⁸

- ¹ Lok Sabha Unstarred Question No. 300, Ministry of Petroleum and Natural Gas, February 3, 2022, <http://164.100.24.220/loksabhaquestions/annex/178/AU300.pdf>.
- ² Prices of Petrol/Diesel, Ministry of Petroleum and Natural Gas, Press Information Bureau, September 19, 2020.
- ³ Petroleum, Planning and Analysis Cell, <https://www.ppac.gov.in/>.
- ⁴ Daily Revisions in Retail selling prices of petrol and diesel across the country, Press Information Bureau, June 8, 2017.
- ⁵ “Export/ Import”, Petroleum Planning and Analysis Cell, Ministry of Petroleum and Natural Gas, February 2022, [Petroleum: Petroleum Planning & Analysis Cell \(ppac.gov.in\)](https://www.ppac.gov.in/).
- ⁶ Central Excise and Customs Tariff table, Petroleum Planning and Analysis Cell, Ministry of Petroleum and Natural Gas, February 2022, [Petroleum: Petroleum Planning & Analysis Cell \(ppac.gov.in\)](https://www.ppac.gov.in/).
- ⁷ About the Scheme, PAHAL – Direct Benefits Transfer for LPG, Ministry of Petroleum and Natural Gas, <http://petroleum.nic.in/dbt/whatisdbtl.html>.
- ⁸ PAHAL-Direct Benefits Transfer for LPG(DBTL) Consumers Scheme, Ministry of Petroleum and Natural Gas, <http://petroleum.nic.in/dbt/whatisdbtl.html>.
- ⁹ Price of non-subsidized LPG, Indian Oil Corporation Limited, <https://iocl.com/indane-14Kg-nonsubsid-previous-price>.
- ¹⁰ Lok Sabha Unstarred Question No. 373, Ministry of Petroleum and Natural Gas, February 3, 2022, <http://164.100.24.220/loksabhaquestions/annex/178/AU373.pdf>.
- ¹¹ Direct Benefit Transfer, Government of India, <https://dbtbarat.gov.in>.
- ¹² Lok Sabha Unstarred Question No. 703, Ministry of Petroleum and Natural Gas, Lok Sabha, answered on December 2, 2021, <http://164.100.24.220/loksabhaquestions/annex/177/AU703.pdf>.
- ¹³ 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_C Commercial Compliance Full Report 25 2016 English.pdf.
- ¹⁴ About PMUY, Pradhan Mantri Ujjwala Yojana, Ministry of Petroleum and Natural Gas, <https://www.pmuujwalayojana.com>.
- ¹⁵ ‘Cabinet approves enhancement of target under Pradhan Mantri Ujjwala Yojana’, Press Information Bureau, Cabinet Committee on Economic Affairs, February 7, 2018.
- ¹⁶ 2nd Report of the Standing Committee on Petroleum and Natural Gas on the Demands for Grants (2020-21), March 2020, http://164.100.47.193/Isscommittee/Petroleum%20&%20Natural%20Gas/17_Petroleum_And_Natural_Gas_2.pdf.
- ¹⁷ Pradhan Mantri Ujjwala Yojana 2.0 website, Ministry of Petroleum and Natural Gas, <https://www.pmuuy.gov.in/index.aspx>.
- ¹⁸ 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>.
- ¹⁹ Report of the Comptroller and Auditor General of India on Pradhan Mantri Ujjwala Yojana, Performance Audit, No. 14 of 2019, Ministry of Petroleum and Natural Gas, December 11, 2019, https://cag.gov.in/sites/default/files/audit_report_files/Report_No_14_of_2019_Performance_Audit_of_Pradhan_Mantri_Ujjwala_Yojana_Ministry_of_Petroleum_and_Natural_Gas_0.pdf.
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