

# Demand for Grants 2021-22 Analysis

## Petroleum and Natural Gas

The Ministry of Petroleum and Natural Gas is concerned with exploration and production of oil and natural gas, as well as refining, distribution and marketing, import and export, and conservation of petroleum products. This note analyses budgetary allocation of the Ministry, the share of expenditure on subsidies, and high import dependence for energy consumption.

### 2021-22 Budget speech highlights for Petroleum and Natural Gas<sup>1</sup>

- Pradhan Mantri Ujjwala Yojana to be extended to cover one crore more households.
- 100 more districts to be added to the City Gas Distribution network in three years.
- Gas pipeline project for Jammu and Kashmir.
- Independent Gas Transport System Operator to be set up for facilitation and coordination of open access natural gas pipelines.
- Introduction of the Agriculture Infrastructure and Development Cess of Rs 2.5 per litre on petrol and Rs 4 per litre on diesel.

### Overview of finances

The Ministry has been allocated Rs 15,944 crore in 2021-22. The allocation to the Ministry has decreased by an annual average rate of 39% over 2019-20. Given the impact due to COVID-19, in this note, the budget estimates for 2021-22 have been compared to the actual expenditure for 2019-20. Table 1 details the main heads of expenditure for the Ministry.

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

Major Heads	Actual 2019-2020	Revised 2020-21	Budget 2021-22	CAGR 2019-20 to 2021-22
LPG subsidy	34,086	36,072	14,073	-36%
Kerosene subsidy	4,443	2,982	0	-
SPR	120	2,728	396	82%
PDH pipeline	1,552	728	250	-60%
Others	2,611	390	1,224	-32%
<b>Total</b>	<b>42,812</b>	<b>42,901</b>	<b>15,944</b>	<b>-39%</b>

Notes: CAGR is compounded annual growth rate. It gives the average annual change between any two points of time. SPR = Strategic Petroleum Reserves. Others includes: (i) Indradhanush Gas Grid Limited (North-East Natural Gas Pipeline Grid), (ii) National Seismic Programme, (iii) PM JI-VAN Yojana, among others.

Sources: Union Budget Documents 2021-22; PRS.

**LPG subsidy:** The Ministry provides subsidy for (i) LPG cylinders to beneficiaries under the PAHAL scheme, and (ii) LPG connections to poor households under the Pradhan Mantri Ujjwala Yojana (PMUY), among others.<sup>2</sup>

In 2021-22, the Ministry is estimated to spend Rs 14,073 crore on LPG subsidy, which is an annualised decline of 36% than the actual expenditure in 2019-20. Of this, the allocation for the PAHAL scheme of Rs 12,480 crore is estimated to decline by 35% over 2019-20.

There is no allocation for PMUY for 2021-22. Note that in her Budget speech, Finance Minister announced expansion of the PMUY scheme to cover an additional one crore beneficiaries.<sup>1</sup>

**Kerosene subsidy:** The Ministry provides subsidised kerosene through the Public Distribution System (PDS). In 2021-22, the Ministry has not allocated any funds for the kerosene subsidy. In 2020-21, as per the revised estimates, spending on the kerosene subsidy of Rs 2,982 crore was 33% lower than 2019-20.

**Strategic Petroleum Reserves:** Strategic Petroleum Reserves (SPR) are underground caverns to store excess crude oil. SPRs are essential to energy security of the country which serves as a cushion during any supply disruptions in global crude oil.<sup>3</sup> In 2021-22, Rs 396 crore has been allocated towards SPR, an annual average increase of 82% over 2019-20, but lower than the spending of Rs 2,728 crore in 2020-21.

**PDH Pipeline:** The Phulpur-Dhamra-Haldia (PDH) Pipeline is being developed by GAIL India to transport natural gas. The project connects five states to the National Gas Grid. In 2021-22, Rs 250 crore has been allocated for the project, which is 34% lower than the revised estimate for 2020-21. The allocation for the pipeline was lower in 2020-21 than in 2019-20. The Standing Committee (2020) noted that this was due to the scheme coming to an end in 2020-21.<sup>4</sup> The expenditure allocated was for work already committed towards the pipeline.

### Increase in excise duty on petroleum products

In Budget 2021-22, it was announced that an Agriculture Infrastructure and Development Cess of Rs 2.5 per litre on petrol and Rs 4 per litre on diesel would be levied, with equivalent cuts made to basic excise duty and to special additional excise duty.<sup>1</sup> Table 2 below compares the change

in tax and cess levied on petrol and diesel over the last four years. The share of cess for both petrol and diesel has increased sharply in this period.

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

Excise Duty (Rs per litre)	Petrol		Diesel	
	Apr 2017	Feb 2021	Apr 2017	Feb 2021
Tax	9.48	1.4	11.33	1.8
Cess	12	31.5	6	30
Total	21.48	32.9	17.33	31.8
<b>Cess as % of Total Duty</b>	56%	96%	35%	94%

Sources: Union Budget documents (multiple years); PRS.

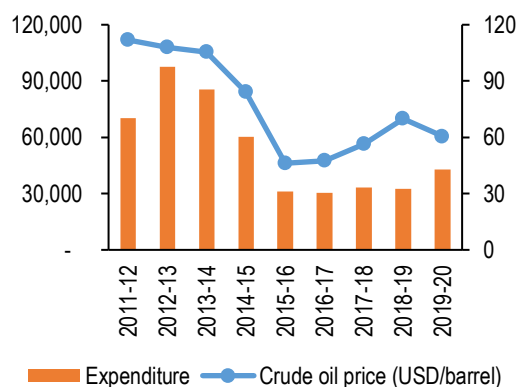
Union excise duty includes (i) tax receipts from basic excise duty, and (ii) cess receipts from special additional duty on motor spirit, the Road and Infrastructure Cess, and the Agriculture Infrastructure and Development Cess. While the central government is constitutionally required to share a part of its tax revenue with states as per the recommendations of the Finance Commission, it is not required to share with states the revenue it gets from cess and surcharge. Thus, an increase in cess with corresponding decrease in excise has the following effects: (a) there is no impact on the consumer, and (b) the centre gets higher revenue with corresponding lower amount going to states.

### Impact of crude oil price

Historically, the Ministry's expenditure has followed the trend in crude oil prices. Expenditure was highest in 2012-13 when price of crude oil was more than \$100 per barrel. Price of crude oil has declined since and remained under \$70 per barrel. Between 2011-12 and 2021-22, expenditure has declined at an annual average rate of 14%.

Figure 1 compares the trend in expenditure of the Ministry to the trend in weighted average price of crude oil for the years 2011-12 to 2019-20.

**Figure 1: Expenditure of Ministry (Rs Crore)**



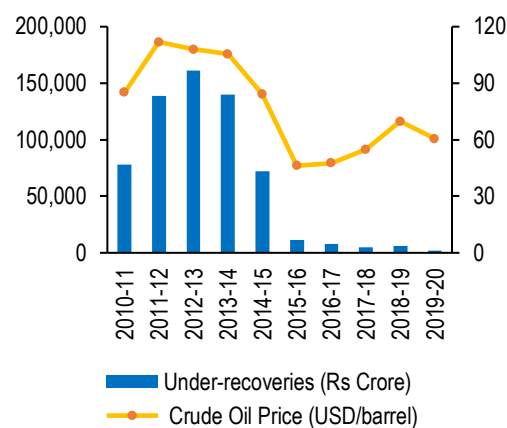
Note: Price of crude oil is the price per barrel of the Indian Basket of crude oil.

Sources: Petroleum Planning and Analysis Cell; Union Budget 2021-22; 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. The central government compensates the oil marketing companies by sharing some of this incurred loss through a burden sharing mechanism. Figure 2 shows the trend of under-recoveries with the price of global crude oil.

In 2020-21, global crude oil prices fell to \$20 per barrel in April and remained under \$50 per barrel till December 2020. In the first half of 2020-21 (April to September), under-recoveries decreased to zero.

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



Sources: Petroleum Planning and Analysis Cell; PRS.

**Strategic Petroleum Reserves:** The decline in crude oil price in 2020-21 also enabled the government to purchase for the Strategic Petroleum Reserves. In April and May 2020, 16.7 million barrels of crude oil were bought at an average cost of \$19 per barrel.<sup>5</sup> In January 2020, the price of crude oil was \$60 per barrel.

### LPG and Kerosene subsidy

Subsidies form the largest component of the Ministry's expenditure, with 88% of its total budget allocated to it. Historically, subsidies have occupied between 75% to 99% of the budget. The Ministry (usually) provides subsidies under three major heads: (i) Direct Benefit Transfer (DBT-PAHAL scheme), and (ii) Pradhan Mantri Ujjwala Yojana (PMUY) for LPG, and (iii) kerosene subsidy (see Table 3).

**Table 3: Allocation for subsidy on LPG and Kerosene (in Rs Crore)**

Major Head	Actual 2019-20	Revised 2020-21	Budget 2021-22	CAGR 2019-20 to 2021-22
DBT-PAHAL	29,628	25,521	12,480	-35%
PMUY	3,724	9,690	0	-
Kerosene subsidy	4,443	2,982	0	-
Total	37,795	38,193	12,480	-43%

Sources: Union Budget 2021-22; PRS.

### LPG subsidy

For 2021-22, the budget allocation for LPG subsidy (Rs 14,073 crore) has decreased at an annual average rate of 36% over 2019-20. In 2020-21, Rs 36,072 crore was spent on the LPG subsidy as per the revised estimate.

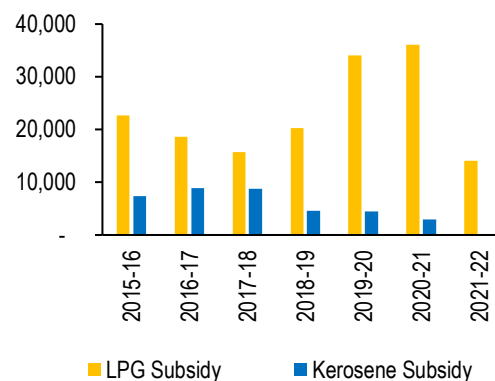
Spending on DBT-PAHAL is estimated to be Rs 12,480 crore. In 2020-21, the budget allocation for DBT-PAHAL was Rs 35,605 crore while the revised estimate for spending is Rs 25,521 crore (decline of 28%). Note that expenditure on subsidy is dependent on the difference between the subsidised and non-subsidised price for LPG. The non-subsidised price is in turn dependent on the price of crude oil, which fell in 2020 due to the impact of COVID-19.

There is no allocation for PMUY in spite of an announcement to increase coverage under the scheme.<sup>1</sup> In 2020-21 the budget allocation for PMUY was Rs 1,118 crore while the revised estimate was Rs 9,690 crore (767% higher). The scheme had met its target of providing LPG connections to 8 crore households in September 2019. The budget allocation for 2020-21 was for clearance of past dues of the government to oil marketing companies implementing the PMUY scheme.<sup>4</sup> 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.<sup>6</sup> The cost of free refills availed between April to August 2020 was Rs 9,670 crore for 13 crore refills.<sup>7</sup>

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.

### Kerosene Subsidy

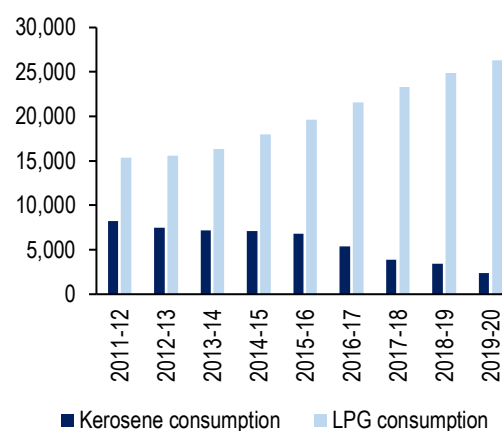
Over the last few years, the Ministry's expenditure on providing subsidy for kerosene has reduced from Rs 7,339 crore in 2015-16, to an estimated zero in 2021-22 (see Figure 3). The Standing Committee on Petroleum and Natural Gas (2017) had recommended that the Ministry should reduce the expenditure on this subsidy and work towards the eventual withdrawal of the subsidy.<sup>8</sup>

**Figure 3: Trend of expenditure on subsidies**

Sources: Union Budget Documents; PRS.

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.<sup>4</sup> 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 three states have become kerosene free.<sup>4</sup>

Figure 4 compares the trend in consumption of kerosene and LPG.

**Figure 4: Consumption of Kerosene and LPG (in TMT)**

Note: TMT is Thousand Metric Tons.

Sources: Petroleum Planning and Analysis Cell; PRS.

## Key issues and analysis

### Pradhan Mantri Ujjwala Yojana

The PMUY scheme was launched in May 2016 with the objective of providing LPG connections to women from below poverty line households with a support of Rs1,600 per connection.<sup>9</sup> The scheme initially had a target to provide connections to five crore households, which was later revised to eight crore households by 2020.<sup>10</sup> 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).<sup>10</sup>

According to the Ministry, a total of 8.01 crore PMUY connections have been released as of January 2021.<sup>11</sup> In 2020, the government informed the Standing Committee on Petroleum and Natural Gas that the PMUY scheme would be closed since the target of 8 crore beneficiaries had been met.<sup>4</sup> The Committee recommended the scheme be extended to cover poor households among the general category in urban and semi-urban slum areas which do not have LPG access.<sup>4</sup>

According to the National Sample Survey, in 2011-12 more than 67% of the rural households in the country used firewood as the primary source of energy for cooking.<sup>12</sup> LPG was used by 15% of households. When the survey was repeated in 2018, share of rural households using firewood was 45%, while the share LPG was 48%.<sup>13</sup>

The National Family Health Survey, 2019-20 (NFHS-5) also showed improvement in access to clean fuel since NFHS-4 which was conducted in 2015-16. So far, NFHS-5 results are only available for 22 states/UTs. Table 4 compares the percentage of rural households in major states with access to clean fuel.

**Table 4: Rural households with access to clean fuel (in %)**

State	NFHS-4	NFHS-5
Andhra Pradesh	50	78
Bihar	11	30
Gujarat	27	41
Karnataka	32	69
Kerala	51	66
Maharashtra	34	65
Telangana	48	88
West Bengal	11	21

Sources: National Family Health Survey-4; National Family Health Survey-5; PRS.

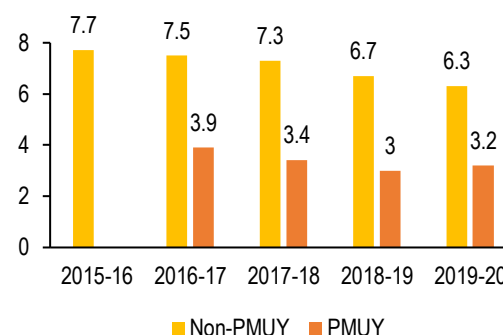
An assessment report by the Petroleum Planning and Analysis Cell (2016) pointed out the key barriers for not applying for LPG connection are: (i) high initial cost, including security deposit / price of gas stove, (ii) high recurring cost of the cylinder, and (iii) easy availability of firewood.<sup>14</sup>

**Refill of cylinders:** The Comptroller and Auditor General (CAG) submitted a performance audit report on the PMUY scheme in December 2019.<sup>15</sup> The Report raised concerns related to lack of sustained usage of cylinders released under the scheme. 75% of consumers opted for a 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 (shown in Figure 5).<sup>15</sup>

**Figure 5: 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.

The Standing Committee on Petroleum and Natural Gas (2020) also highlighted the disparity in the average refill of cylinders for regular LPG consumers (6.3 cylinders) and the average refill of cylinders by PMUY beneficiaries (3.2 cylinders).<sup>4</sup> It suggested the Ministry should take measures, including provision of additional monetary incentives, to encourage PMUY beneficiaries to use LPG cylinders on a regular basis.

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.<sup>4</sup> However, till September 2020, only 7.15 lakh PMUY beneficiaries have swapped the 14.2 kg refill for the 5 kg refill.<sup>16</sup>

In March 2020, beneficiaries under PMUY were allowed up to three free refills to be availed up to September.<sup>17</sup> In the five months between April to August 2020, 13 crore refills were delivered to beneficiaries.<sup>7</sup> This is nearly half the total refills (28.8 crore) delivered between May 2016 and December 2018.<sup>18</sup> Note that as of March 2020 there were over 8 crore beneficiaries under PMUY, whereas as on December 2018, there were 5.9 crore beneficiaries.

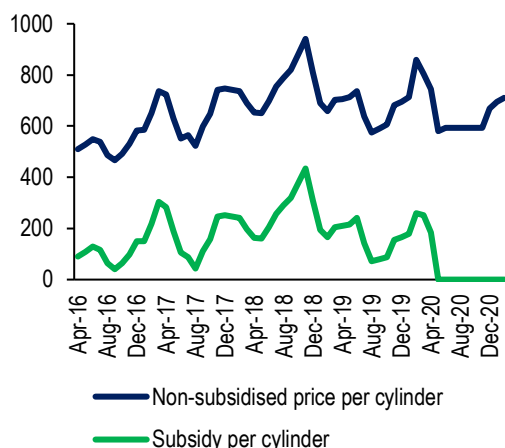
#### **Pratyaksha Hastaantarit Laabh (PAHAL)**

PAHAL scheme was launched in 2014 (54 districts in first phase) and rolled out to rest of the country in 2015.<sup>19</sup> Under the scheme, a consumer (with annual income up to Rs 10 lakh) can avail Direct Benefit Transfer (DBT) cash-subsidy for a LPG cylinder. The beneficiaries buy LPG cylinders at market rate and subsequently receive subsidy directly in their bank accounts. Price of LPG and the extent of subsidy change every month. Figure 6 provides the monthly non-subsidised price of an LPG cylinder and the

amount of subsidy per cylinder between April 2016 and February 2021.

In 2020-21, the average price of a non-subsidised LPG was Rs 636.6 between April 2020 and February 2021, while the subsidy has been zero from May 2020 onwards.<sup>20</sup>

**Figure 6: Non-subsidised price of LPG and subsidy (in Rs)**



Note: Prices are at New Delhi.

Sources: Indian Oil Corporation; Petroleum Planning and Analysis Cell; PRS.

As of September 2020, there were 26.35 crore beneficiaries under the PAHAL scheme.<sup>21</sup> The CAG (2019) noted that the coverage of LPG in the country has increased from 62% in May 2016 to 94.3% in March 2019.<sup>15</sup> As of January 2021, LPG coverage is 99.5%.<sup>11</sup> LPG coverage is defined as the ratio of active consumers to total households.<sup>15</sup>

## Dependence on imports

### Crude oil and petroleum products

India's import of crude oil has increased from 1,71,729 TMT (Thousand Metric Tons) in 2011-12 to 2,26,955 TMT in 2019-20, at an average annual growth rate of 4%.<sup>22</sup> 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.<sup>23</sup> In 2019-20, India's total export of petroleum products was 65,685 TMT.

Further, India's production of crude oil and condensate has fallen from 38,082 TMT in 2011-12 to 32,169 TMT in 2019-20, an annual average decline of 2%.<sup>22</sup> Production as a percentage of imports of crude oil declined from 22% to 14%

during this period. The Ministry attributed the decline to the natural ageing of oil fields.<sup>24</sup>

Table 5 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 5: 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*	1,43,232	32,050	42,108	1,40,617

Note: \*Data for 2020-21 is till December 2020.

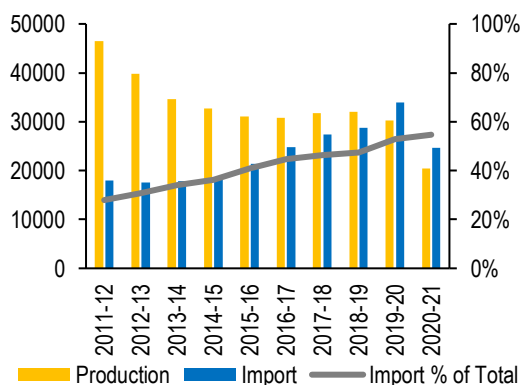
Sources: Petroleum Planning and Analysis Cell; PRS.

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.<sup>25</sup>

### Natural Gas

Total imports of natural gas as a percentage of consumption (production plus import) has risen from 28% in 2011-12 to 53% in 2019-20. Figure 7 shows the total production and imports of natural gas, and the share of imports in the total.

**Figure 7: Production and Imports of Natural Gas (in MMSCM)**



Notes: MMSCM = Million Metric Standard Cubic Meters. Data for 2020-21 is till December 2020.

Sources: Petroleum Planning and Analysis Cell; PRS.

Between 2011-12 and 2019-20, import of natural gas increased from 17,997 MMSCM (Million Metric Standard Cubic Meters) to 33,867 MMSCM, at an average rate of 8%. Whereas the production of natural gas has fallen from 46,453 MMSCM to 30,257 MMSCM.

In 2015, the Prime Minister had envisioned reduction in import in the energy sector (oil, gas, and petroleum products) from 77% to 67% by 2021-22.<sup>26</sup> The Standing Committee on Petroleum and Natural Gas (2018) had noted that it does not find any concrete action taken by the ministry and a clear strategy with stipulated timelines to achieve this target.<sup>27</sup>

### ***Increase in share of natural gas in energy mix***

The Report of the Roadmap for Reduction in Import Dependency in the Hydrocarbon Sector by 2030 (2014) had called for an increase in share of natural gas in the energy consumption mix from 10% to at least 20% to 25% by 2025.<sup>28</sup> 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 2020, the total authorised length of natural gas pipelines is 32,559 km of which 15,543 km is under construction.<sup>29</sup>

Budget 2020-21 and 2021-22 contained announcements to increase the use of natural gas including: (i) expansion of the national gas grid from 16,200 km to 27,000 km (Budget 2020-21),

(ii) addition of 100 districts to the city gas distribution network, and (iii) setting up an independent gas transport system operator to facilitate booking of common carrier capacity in natural gas pipelines.<sup>30,1</sup>

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.<sup>31</sup>

### **Promotion of alternate fuels**

The strategy of import reduction includes increasing production of domestic petroleum and natural gas, and promoting alternate fuels.<sup>4</sup> 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.<sup>32</sup> The scheme has been allocated Rs 233 crore for 2021-22. Note that in 2019-20, the government did not spend any part of the budgeted allocation of Rs 38 crore, and in 2020-21, Rs 32 crore was spent (60% of the budget allocation). The Standing Committee (2020) observed that this scheme could help reduce import dependence by substituting fossil fuels with bio-fuels.<sup>4</sup>

<sup>1</sup> Budget speech, Budget 2021-22,

[https://www.indiabudget.gov.in/doc/Budget\\_Speech.pdf](https://www.indiabudget.gov.in/doc/Budget_Speech.pdf).

<sup>2</sup> About the Scheme, PAHAL – Direct Benefits Transfer for LPG, Ministry of Petroleum and Natural Gas, <http://petroleum.nic.in/dbt/whatisdbtl.html>.

<sup>3</sup> About ISPRL, Indian Strategic Petroleum Reserves Limited, <http://www.isprlindia.com/aboutus.asp>.

<sup>4</sup> 2<sup>nd</sup> 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](http://164.100.47.193/isscommittee/Petroleum%20&%20Natural%20Gas/17_Petroleum_And_Natural_Gas_2.pdf).

<sup>5</sup> Unstarred Question No. 180, Lok Sabha, Ministry of Petroleum and Natural Gas, Answered on September 14, 2020, <http://164.100.24.220/loksabhaquestions/annex/174/AU180.pdf>.

<sup>6</sup> “Finance Minister announces Rs 1.70 Lakh Crore relief package under Pradhan Mantri Garib Kalyan Yojana for the poor to help them fight the battle against Corona Virus”, Press Information Bureau, Ministry of Finance, March 26, 2020.

<sup>7</sup> Unstarred Question No. 459, Rajya Sabha, Ministry of Petroleum and Natural Gas, Answered on September 16, 2020, <https://pqars.nic.in/annex/252/AU459.pdf>.

<sup>8</sup> 18<sup>th</sup> Report of the Standing Committee on Petroleum and Natural Gas on the Demands for Grants (2017-18), March 2017, [http://164.100.47.193/isscommittee/Petroleum%20&%20Natural%20Gas/16\\_Petroleum\\_And\\_Natural\\_Gas\\_18.pdf](http://164.100.47.193/isscommittee/Petroleum%20&%20Natural%20Gas/16_Petroleum_And_Natural_Gas_18.pdf).

<sup>9</sup> About PMUY, Pradhan Mantri Ujjwala Yojana, Ministry of Petroleum and Natural Gas, <https://www.pmuujwalayojana.com>.

<sup>10</sup> ‘Cabinet approves enhancement of target under Pradhan Mantri Ujjwala Yojana’, Press Information Bureau, Cabinet Committee on Economic Affairs, February 7, 2018.

<sup>11</sup> Unstarred Question No. 936, Lok Sabha, Ministry of Petroleum and Natural Gas, Answered on February 8, 2021, <http://164.100.24.220/loksabhaquestions/annex/175/AU936.pdf>.

<sup>12</sup> Energy Sources of Indian Households for Cooking and Lighting, 2011-12, NSS 68<sup>th</sup> Round, July 2011-June 2012, Ministry of Statistics and Programme Implementation, [http://mospi.nic.in/sites/default/files/publication\\_reports/nss\\_report\\_567.pdf](http://mospi.nic.in/sites/default/files/publication_reports/nss_report_567.pdf).

<sup>13</sup> Drinking Water Sanitation, Hygiene and Housing Condition in India, NSS 76<sup>th</sup> Round, July 2018-December 2018, Ministry of Statistics and Programme Implementation, [http://mospi.nic.in/sites/default/files/NSS7612dws/Report\\_584\\_final.pdf](http://mospi.nic.in/sites/default/files/NSS7612dws/Report_584_final.pdf).

<sup>14</sup> 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>.

<sup>15</sup> 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](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).

<sup>16</sup> Unstarred Question No. 1248, Rajya Sabha, Ministry of Petroleum and Natural Gas, Answered on September 21, 2020, <https://pqars.nic.in/annex/252/AU1248.pdf>.

<sup>17</sup> 'Cabinet approves extension of time limit for availing the benefits of "Pradhan Mantri Garib Kalyan Yojana" for Ujjwala beneficiaries by three months w.e.f. 01.07.2020', Press Information Bureau, Ministry of Petroleum and Natural Gas, July 8, 2020.

<sup>18</sup> Refill Data, Pradhan Mantri Ujjwala Yojana, accessed on February 6, 2020, <https://pmuy.gov.in/registereduser.html>.

<sup>19</sup> PAHAL-Direct Benefits Transfer for LPG(DBTL) Consumers Scheme, Ministry of Petroleum and Natural Gas, <http://petroleum.nic.in/dbt/whatisdbtl.html>.

<sup>20</sup> Petroleum Price and Under-Recoveries, Petroleum Planning and Analysis Cell, [https://www.ppac.gov.in/WriteReadData/userfiles/file/PP\\_7\\_b\\_PS\\_oil\\_prices\(H\).pdf](https://www.ppac.gov.in/WriteReadData/userfiles/file/PP_7_b_PS_oil_prices(H).pdf).

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<sup>23</sup> Export Import Data Bank, Ministry of Commerce and Industry.

<sup>24</sup> Unstarred Question No. 1140, Lok Sabha, Ministry of Petroleum and Natural Gas, Answered on February 8, 2021, <http://164.100.24.220/loksabhaquestions/annex/175/AU1140.pdf>.

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