

LOK SABHA
STARRED QUESTION NO.*116
TO BE ANSWERED ON 25th July, 2016

MODERNISATION/EXPANSION OF REFINERIES

*116. SHRI KAMAL NATH:
SHRI PONGULETI SRINIVASA REDDY:
पैट्रोलियम और प्राकृतिक गैस मंत्री

Will the Minister of PETROLEUM AND NATURAL GAS be pleased to state:

- (a) whether the Government proposes to undertake modernisation/upgradation of the oil refineries across the country and to equip them with latest technology being used at international level and if so, the details thereof including the funds earmarked, targets set for expansion of refiner capacity, State/UT/Oil Marketing Company (OMC)- wise including Bharat Oman Refinery Limited (BORL) ;
- (b) whether the Government has set up a working group to assess the country's fuel demand and prepare an action plan to scale up the refinery capacity in the light of report of World Energy Outlook and if so, the details thereof and the action taken in this regard;
- (c) the details of existing refineries/petrochemical unit including those running on Naphtha functioning in the country at present along with their installed capacity/utilisation and steps taken by the Government for their optimum utilisation, OMC and refinery and State/UT-wise; and
- (d) whether the Government/OMCs propose to set up mega refineries/petrochemical plants in the country and if so, the details thereof along with places identified for the purpose, OMC/State/UT-wise?

ANSWER

पैट्रोलियम और प्राकृतिक गैस मंत्रालय में राज्य मंत्री (स्वतंत्र प्रभार) (श्री धर्मन्द्र प्रधान)

MINISTER OF STATE (INDEPENDENT CHARGE) IN THE MINISTRY OF PETROLEUM AND NATURAL GAS (SHRI DHARMENDRA PRADHAN)

(a) to (d) A statement is laid on the Table of the House.

STATEMENT REFERRED TO IN REPLY TO PARTS (a) TO (d) OF LOK SABHA STARRED QUESTION NO.116 BY SHRI KAMAL NATH AND SHRI PONGULETI SRINIVASA REDDY TO BE ANSWERED ON 25th July, 2016 REGARDING MODERNISATION/EXPANSION OF REFINERIES

(a) Indian refineries have adopted modern technologies for production of petroleum products and have continuously upgraded the technologies in line with their requirements and international trends. Apart from primary processing technologies, viz., Crude Oil Fractionation by Atmospheric Distillation and Vacuum Distillation for initial separation, the major modern process technologies employed by Public Sector Undertaking (PSU) refineries for producing petroleum products include:-

i) Secondary/Upgradation Technologies for yield improvement:

- Thermal cracking processes, viz., Visbreaking, Delayed Coking.
- Fluidised Catalytic Cracking, INDMAX Technology.
- Hydrocracking.

ii) Quality Upgradation Technologies:

- Catalytic Reforming, Isomerisation, Alkylation, Prime G for meeting the quality specifications of Petrol w.r.t. octane number, benzene content, aromatics, olefins, sulphur, distillation etc.
- Diesel Hydro-desulphurisation (DHDS), Diesel Hydro-treating (DHDT) for diesel for reduction of sulphur & PAH (Poly Aromatic Hydrocarbons) and cetane number improvement.

Details of projects undertaken by some of the Oil PSUs are given at **Annexure-I**.

(b) Government has constituted a Working Group for preparing Approach Paper for enhancing Refining Capacity by the year 2040. The terms of reference of the Working Group are as follows:-

- (i) To assess primary energy requirement for 2040.
- (ii) To assess likely technological developments in different energy fields.
- (iii) To develop Primary Energy Mix with breakup in terms of gas, oil, coal, nuclear, solar, hydro and bio, etc.
- (iv) To assess demand for major petroleum products linking with advancements in use, substitution by other forms of energy, drive on enhancing energy efficiency and Government policies.

The first meeting of Working Group has been held on 27.06.2016.

(c) Details of existing Refineries/petrochemical Units (Public Sector) functioning in the country is given at **Annexure-II**. PSU Refineries in India have been achieving average capacity utilization of over 100% for the last three years.

(d) Government has accorded approval on 20.09.2013 to Hindustan Petroleum Corporation Ltd. (HPCL) to set up a 9 MMTPA Refinery-cum-Petrochemical Complex in Barmer, Rajasthan in collaboration with Government of Rajasthan (GoR). Further, Oil PSUs namely, Indian Oil Corporation Limited (IOCL), Bharat Petroleum Corporation Limited (BPCL) and Hindustan Petroleum Corporation Limited (HPCL) have announced a plan to jointly set up an integrated refinery-cum-petrochemical complex with a refining capacity of 60 MMTPA in phased manner in Maharashtra.

Annexure referred to in reply to parts (a) of Lok Sabha Starred Question No.116 to be answered on 25th July, 2016.

List of ongoing Projects for Modernisation and Expansion of Refineries

Name of the Project	Objective	Approved cost (Rs. in crore)
<u>Indian Oil Corporation Limited</u>		
New Bitumen Biturox Unit, Barauni Refinery, Bihar	<ul style="list-style-type: none"> ●Improving profitability ●Increase in High Sulphur Crude processing from 11 to 16% 	71
Coke chamber replacement in Coker-A, Barauni Refinery, Bihar	<ul style="list-style-type: none"> ●Improving the reliability & safety of system ●Processing High Sulphur Crude 	480
Distillate Yield Improvement Project, Haldia Refinery, West Bengal	<ul style="list-style-type: none"> ●Black Oil Upgradation ●Distillate yield improvement from 68.4 to 72.2% ●Increase in High Sulphur Crude processing from 60 to 80%(apprx). ●Increase in Refinery capacity from 7.5 to 8.0 MMTPA through revamp of CDU-I 	3,076
Indmax Unit at Bongaigaon Refinery	<ul style="list-style-type: none"> ●To help improve LPG & MS production ●Improve refinery profitability ●Capacity enhancement from 2.35 to 2.7 MMTPA 	2582
<u>Chennai Petroleum Corporation Limited</u>		
Delayed Coker Unit for Resid Upgradation Project	<ul style="list-style-type: none"> ●To increase distillate yield by 7% ●Processing capability of High Sulphur Crudes from 72% to 83%. ●Reduction of High Sulphur Fuel Oil production 	3110
<u>Bharat Petroleum Corporation Limited</u>		
Integrated Refinery Expansion Project(IREP) at Kochi Refinery, Kerala	<ul style="list-style-type: none"> ●To produce auto fuels meeting Euro IV quality norms. ●Upgrading fuels oil to value added products through bottoms upgradation. 	16504
Conversion of existing Catalytic Reforming Unit (CRU) to an Isomerisation Unit at BPCL Mumbai Refinery, Maharashtra	<ul style="list-style-type: none"> ●100% Euro IV MS 	725
Diesel Hydrotreater(DHT) at BPCL Mumbai Refinery	<ul style="list-style-type: none"> ● Production of 100% Euro-IV diesel 	2443
Installation of Gasoline Treatment Unit (GTU)	<ul style="list-style-type: none"> ● For production of BS-V MS 	554
Expansion of Bharat Oman Refineries Ltd. (BORL)	<ul style="list-style-type: none"> ● Enhance refinery crude processing capacity from 6.0 to 7.8 MMTPA to cater to the growing fuel demands of the central & northern region. 	3075
<u>Numaligarh Refinery Limited</u>		
Diesel Hydrotreater (DHT)	<ul style="list-style-type: none"> ● Installation of Diesel Hydrotreater 	1031.37

	(DHT) including a stand-by SRU with integrated TGTU.	
Mounded Bullet	<ul style="list-style-type: none"> • Installation of Mounded Bullet for storage of LPG 	122.10
<u>Mangalore Refinery and Petrochemicals Limited</u>		
Revamp of CCR	Increase in feed processing capacity of NHT/Platformer/CCR and Reformate Splitter Unit Capacity.	195

Annexure referred to in reply to parts (c) of Lok Sabha Starred Question No.116 to be answered on 25th July, 2016.

A. Details of existing Refineries along with installed capacity in the Country:

Sr. No.	Refinery Location	Name of the Company	Name Plate Capacity (MMTPA)*
PSU Refineries			
1	Digboi, Assam	Indian Oil Corporation Limited	0.650
2	Guwahati, Assam		1.000
3	Barauni, Bihar		6.000
4	Koyali, Gujarat		13.700
5	Bongaigaon, Assam		2.350
6	Haldia, West Bengal		7.500
7	Mathura, U.P		8.000
8	Panipat, Haryana		15.000
9	Paradip, Odisha		15.000
10	Mumbai, Maharashtra	Hindustan Petroleum Corporation Limited	6.500
11	Visakhapatnam, Andhra Pradesh		8.300
12	Mumbai, Maharashtra	Bharat Petroleum Corporation Limited	12.000
13	Kochi, Kerala		9.500
14	Manali, Tamil Nadu	Chennai Petroleum Corporation Limited	10.500
15	Nagapattinam, Tamil Nadu		1.000
16	Numaligarh, Assam	Numaligarh Refinery Limited	3.000
17	Mangalore, Karnataka	Mangalore Refinery and Petrochemicals Limited	15.000
18	Tatipaka, Andhra Pradesh	Oil and Natural Gas Commission	0.066
Total			135.066
JV Refineries			
19	Bina, Madhya Pradesh	Bharat Oman Refinery Ltd.	6.000
20	Bathinda, Punjab	HPCL Mittal Energy Ltd.	9.000
Total			15.000
Private Sector Refineries			
21	DTA-Jamnagar, Gujarat	Reliance Industries Limited	33.000
22	SEZ, Jamnagar, Gujarat		27.000
23	Vadinar, Gujarat	Essar Oil Limited	20.000
Total			80.000
Grand Total			230.066

*MMTPA-Million Metric Tonne Per Annum

B. List of Petrochemical Plants (Public Sector) in the Country:**Indian Oil Corporation Limited (IOCL)**

Name of the Petrochemical Plant	Capacity (KTPA*)
Linear Alkyl Benzene (LAB) unit at Gujarat Refinery	120 KTPA
Paraxylene (PX) unit at Panipat Refinery	360 KTPA
Purified Terephthalic Acid (PTA) at Panipat Refinery	553 KTPA
Naphtha Cracker (Feed) at Panipat Refinery	2345 KTPA

Mangalore Refinery & Petrochemicals Limited (MRPL)

Name of the Petrochemical Plant	Capacity
Polypropylene unit	440 KTPA
Aromatic Complex unit (Paraxylene unit in OMPL, a subsidiary of MRPL)	912 KTPA

Gas Authority of India Limited (GAIL)

Name of the Petrochemical Plant	Capacity
Polyethylene unit at Pata near Kanpur	810 KTPA
GAIL through JV with Brahmaputra Cracker & Polymer Limited in Assam to produce Polyethylene & Polypropylene	280 KTPA

*KTPA- Kilo -Tonnes Per Annum
