#### GOVERNMENT OF INDIA MINISTRY OF PETROLEUM & NATURAL GAS

#### LOK SABHA UNSTARRED QUESTION NO. 1911 TO BE ANSWERED ON 28<sup>th</sup> NOVEMBER, 2016

## SETTING UP OF REFINERIES

# 1911: SHRI Y.S. AVINASH REDDY: SHRIMATI RAKSHATAI KHADSE:

पैट्रोलियम और प्राकृतिक गैस मंत्री

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

(a) whether the Government/OMCs propose to set up mega/sea-shore refineries/petrochemical plants in the country and if so, the details thereof along with places identified for the purpose, OMC/State/UT-wise including Andhra Pradesh;

(b) the details of existing refineries/petrochemical units 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;

(c) 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 for minimising emissions of sulphur dioxide in view of the growing pollution by refineries in the country; and

(d) 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)?

ANSWER

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

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

(a): The refinery sector in the country is de-licensed and Oil Public Sector Undertakings (PSUs) take appropriate decisions to implement new refinery projects and also to expand and modernize the existing Refineries.

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 proposed to jointly set up in phased manner an integrated refinery-cum-petrochemical complex with a refining capacity of 60 MMTPA in Maharashtra.

(b): List of existing Refineries/Petrochemical Plants along with their installed capacity in the Country during 2015-16 is at **Annexure-I.** PSU Refineries in India have been achieving average capacity utilization of above 100%.

(c) & (d): Indian Refineries have adopted modern technologies for production of petroleum products and continuously upgrade the technologies in line with their requirements and international trends.

The major modern process technologies employed by 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.

Further, Sulphur dioxide emissions from refineries are highly regulated and monitored by pollution control Board. To meet these stringent norms for sulphur dioxide emissions, refineries use low sulphur fuels and have also upgraded Sulphur Recovery Units (SRU) and installed Tail gas treating unit for 99.99% sulphur recovery from the gases that are generated during processing in line with the international practices.

The details of capacity expansion/ modernization/upgradation plan of Oil PSU refineries are given at **Annexure-II.** 

## Annexure-I

# Annexure referred to in reply to part (b) of Lok Sabha Unstarred Question No. 1911 to be answered on 28<sup>th</sup> November, 2016. A. <u>Refineries/Petrochemical Plants functioning in the country & their installed</u>

<u>capacities</u>				
Name of the Company	Refinery Location	Installed capacity (MMTPA)	2015-16	
			Capacity utilization (%)	
Indian Oil				
Corporation Limited	Guwahati	1.000	90.4	
	Barauni	6.000	109.1	
	Gujarat	13.700	100.9	
	Haldia	7.500	103.7	
	Mathura	8.000	110.8	
	Digboi	0.650	86.4	
	Panipat	15.000	101.9	
	Bongaigaon	2.350	103.9	
	Paradip	15.000	*	
Bharat Petroleum	•			
Corporation Limited	Mumbai	12.000	111.4	
	Kochi	9.500	112.8	
Hindustan				
Petroleum				
Corporation Limited	Mumbai	6.500	123.3	
	Visakh	8.300	111.1	
Chennai Petroleum	Mara all	40.500	00.0	
Corporation Limited	Manall	10.500	86.6	
	Nagapattinam	1.000	54.4	
Mangalore Refinery				
Limited	Mangalore	15 000	103 5	
Oil & Natural Gas	Mangalore	10.000	100.0	
Corporation	Tatipaka	0.066	102.1	
Numaligarh Refinery	•			
Limited	Numaligarh	3.000	84.0	
Bharat Oman				
Refineries Limited	Bina	6.000	106.7	
Hindustan Mittal	Dhatinda	0.000	110.0	
Energy Limited	Bhatinda	9.000	119.0	
l imited	DTA-Jamnagar	33 000	97 9	
2	SE7-Jamnagar	27 000	137.5	
Essar Oil Limitad	Vadinar	27.000	05.5	
Losal OII LIITIILEU	vaullai	20.000	90.0	

Gr	and total 2	30.066		
			7 0 004 0	11.

\* Since IOCL Paradip refinery has been commissioned recently (on 7.2.2016), its capacity was not considered while calculating capacity utilization for the year 2015-16.

#### 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	800 (Ethylene) 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

#### Annexure-II

# Annexure referred to in reply to parts (c) & (d) of Lok Sabha Unstarred Question No.1911 to be answered on 28<sup>th</sup> November, 2016.

#### List of ongoing Projects for Modernisation and Expansion of Refineries

Name of the Project	Objective	Approved cost	Target
		(Rs. in crore)	
Indian Oil Corporation	Limited		
New Bitumen Biturox Unit, Barauni Refinery, Bihar	<ul> <li>Improving profitability</li> <li>Increase in High Sulphur Crude processing from 11 to 16%</li> </ul>	71	December, 2016
Coke chamber replacement in Coker- A, Barauni Refinery, Bihar	<ul> <li>Improving the reliability &amp; safety of system</li> <li>Processing High Sulphur Crude</li> </ul>	480	December, 2016
Distillate Yield Improvement Project, Haldia Refinery, West Bengal	<ul> <li>Black Oil Upgradation</li> <li>Distillate yield improvement from 68.4 to 72.2%</li> <li>Increase in High Sulphur Crude processing from 60 to 80%(apprx).</li> <li>Increase in Refinery capacity from 7.5 to 8.0 MMTPA through revamp of CDU-I</li> </ul>	3,076	March, 2018
Indmax Unit at Bongaigaon Refinery	<ul> <li>To help improve LPG &amp; MS production</li> <li>Improve refinery profitability</li> <li>Capacity enhancement from 2.35 to 2.7 MMTPA</li> </ul>	2582	November, 2019
New ATF production unit based on IOCL R&D technology indjet,	<ul> <li>To produce 250 KTPA of ATF for meeting the product demand</li> </ul>	144	October, 2019

Barauni Reifnery	• The IOCL R&D's indigenous technology used hydro desulfurization route for ATF production			
Octomax Unit, Mathura Refinery	<ul> <li>Installation of 55 MMTPA demonstration unit for increasing MS production.</li> </ul>	43.65	July, 2018	
Bitumen Unit, Digboi Refinery	<ul> <li>To augment the demand of bitumen for North-East Region of India from Digboi refinery based on IOCL (R&amp;D) indigenous technology</li> </ul>	10.40	May, 2017	
Hindustan Petroleum C	orporation Limited			
Expansion of HPCL Visakh Refinery	• Enhance refinery crude processing capacity from 8.3 to 15.0 MMTPA to cater to the growing fuel demands.	18400	December, 2020	
Chennai Petroleum Cor	poration Limited			
Delayed Coker Unit for Resid Upgradation Project	<ul> <li>To increase distillate yield by 7%</li> <li>Processing capability of High Sulphur Crudes from 72% to 83%.</li> <li>Reduction of High Sulphur Fuel Oil production</li> </ul>	3110	June, 2017	
Bharat Petroleum Corp	Bharat Petroleum Corporation Limited			
Integrated Refinery Expansion Project(IREP) at Kochi Refinery, Kerala	<ul> <li>To produce auto fuels meeting Euro IV quality norms.</li> <li>Upgrading fuels oil to value added products through bottoms upgradation.</li> </ul>	16504	March, 2017	
Conversion of existing Catalytic Reforming Unit (CRU) to an Isomerisation Unit at BPCL Mumbai Refinery, Maharashtra	●100% Euro IV MS	725	December, 2016	
Diesel Hydrotreater(DHT) at BPCL Mumbai Refinery	Production of 100% Euro-IV diesel	2443	December, 2017	
Installation of Gasoline Treatment Unit (GTU)	For production of BS-V MS	554	October, 2019	
Expansion of Bharat Oman Refineries Ltd.	• Enhance refinery crude processing capacity from 6.0 to	3072	2018-19	

(BORL)	7.8 MMTPA to cater to the growing fuel demands of the central & northern region.		
Numaligarh Refinery Li			
Diesel Hydrotreater (DHT)	<ul> <li>Installation of Diesel Hydrotreater (DHT) including a stand-by SRU with integrated TGTU.</li> </ul>	1031.37	January, 2018
Mounded Bullet	<ul> <li>Installation of Mounded Bullet for storage of LPG</li> </ul>	122.10	September, 2017
Mangalore Refinery and			
Revamp of CCR	Increase in feed processing capacity of NHT/Platformer/CCR and Reformate Splitter Unit Capacity.	195	August, 2019

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