

# Oil and Natural Gas data collection – an Indian perspective

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# Goalposts

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# Overview of Indian Statistical System in India

- National Statistical Organisation is the nodal agency for collection compilation of statistics in India. Has two wings:
  - ◆ **Central Statistics Office (CSO)**
  - ◆ National Sample Survey Office (NSSO)
- Ministries/ Departments of Government of India collect statistics relevant to their business allocation
- State (provincial) Governments have their own statistical set up
- Indian Statistical Service personnel man different positions in Government for advising on statistical matters

# Overview of the sector

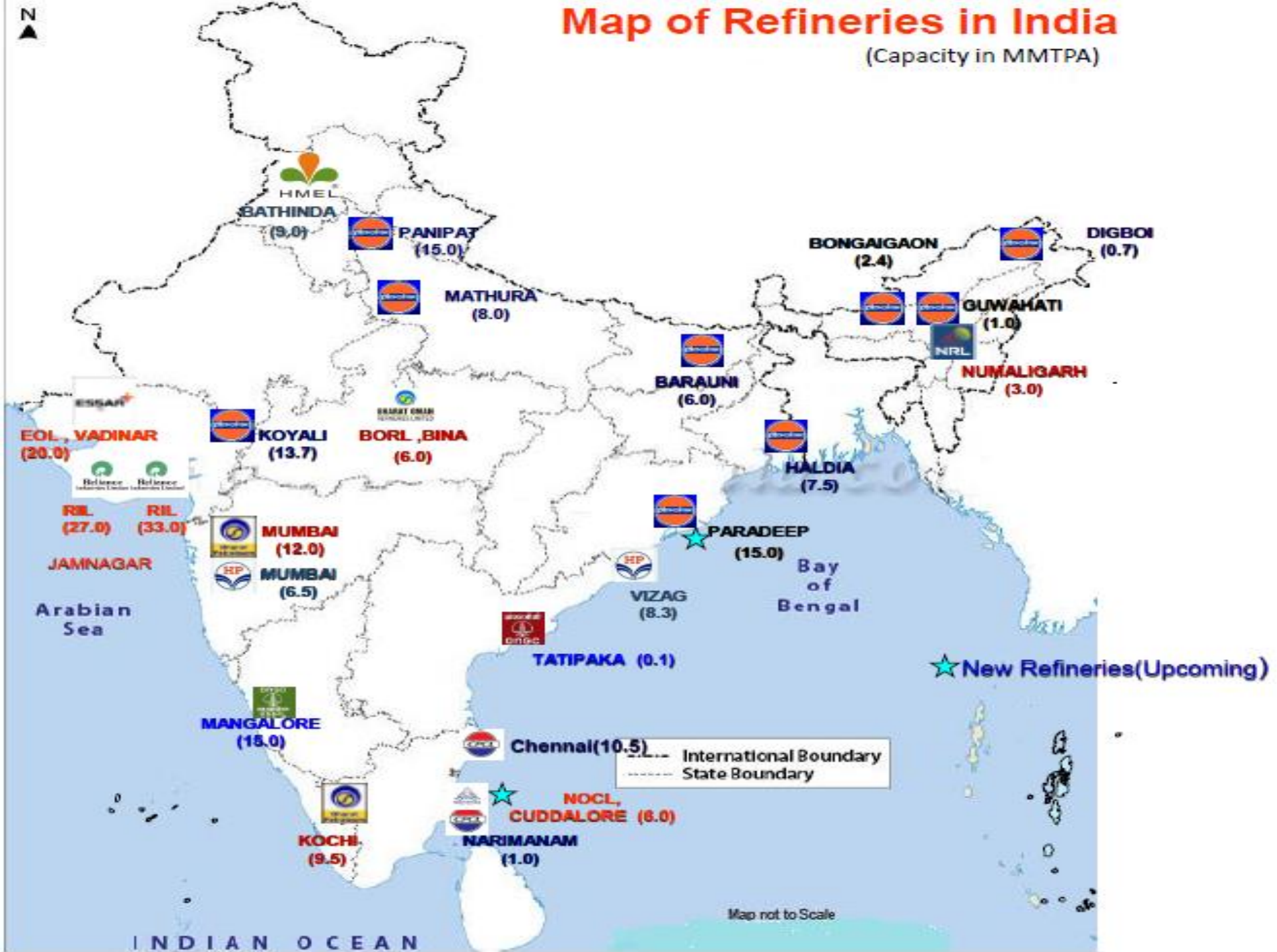
- ❑ During 2015-16
  - Crude oil production was **36.950** MMT
  - Production of Natural Gas was **32.249** BCM
  - Production of petroleum products was **231.90** MMT
  - Consumption of petroleum products was **183.496** MMT
  
- ❑ India's 75% crude oil requirement is met from imports
  
- ❑ India has total reserves of **763.48** MMT of crude oil and **1488.47** BCM of Natural Gas (as on 01.04.2015)
  
- ❑ At present **23\*** refineries are working in India with total installed capacity of **230.07** MMT per annum
  - \*One refinery started operating in February 2016












# **GEOGRAPHIC SNAPSHOT**

## **OIL REFINERIES IN INDIA**

# Map of Refineries in India

(Capacity in MMTPA)



S. No.	NAME OF THE OIL COMPANY	STATE	LOCATION OF REFINERY	CAPACITY (MMTPA)
1	 <b>INDIAN OIL CORPORATION LIMITED (IOCL)</b>	BIHAR	BARAUNI	6.00
2		GUJARAT	KOYALI	13.70
3		WEST BENGAL	HALDIA	7.50
4		UTTAR PRADESH	MATHURA	8.00
5		HARYANA	PANIPAT	15.00
6		ASSAM	GUWAHATI	1.00
7		ASSAM	DIGBOI	0.65
8		ASSAM	BONGAIGAON	2.35
			<b>IOCL TOTAL</b>	
9	 <b>HINDUSTAN PETROLEUM CORPORATION LIMITED (HPCL)</b>	MAHARAstra	MUMBAI	6.50
10		ANDHRA PRADESH	VISAKH	8.30
11	 <b>HPCL-HINDUSTAN MITTAL ENERGY LIMITED (HMEL)(JV)</b>	PUNJAB	BATHINDA	9.00
		<b>HPCL-TOTAL</b>		<b>23.80</b>
12	 <b>BHARAT PETROLEUM CORPORATION LIMITED (BPCL)</b>	MAHARAstra	MUMBAI	12.00
13		KERALA	KOCHI	9.50
14	 <b>BPCL-BHARAT OMAN REFINERIES LIMITED (BORL)(JV)</b>	MADHYA PRADESH	BINA	6.00
		<b>BPCL-TOTAL</b>		<b>27.50</b>
15	 <b>CHENNAI PETROLEUM CORPORATION LIMITED (CPCL)</b>	TAMIL NADU	MANALI	10.50
16		TAMIL NADU	CAUVERY BASIN	1.00
		<b>CPCL-TOTAL</b>		<b>11.50</b>
17	 <b>NUMALIGARH REFINERIES LIMITED (NRL)</b>	ASSAM	NUMALIGARH	3.00
18	 <b>OIL &amp; NATURAL GAS CORPORATION LIMITED (ONGC)</b>	ANDHRA PRADESH	TATIPAKA	0.07
19	 <b>ONGC-MANGALORE REFINERIES &amp; PETROCHEMICALS LIMITED (MRPL)</b>	KARNATAKA	MANGALORE	15.00
		<b>ONGC TOTAL</b>		<b>15.07</b>
		<b>PSU/ JV Total</b>		<b>135.07</b>
20	 <b>RELIANCE INDUSTRIES LIMITED (RIL)</b>	GUJARAT	JAMNAGAR (DTA)	33.00
21		GUJARAT	JAMNAGAR (SEZ)	27.00
22	 <b>ESSAR OIL LIMITED (EOL)</b>	GUJARAT	VADINAR	20.00
		<b>PVT Total</b>		<b>80.00</b>
		<b>ALL INDIA</b>		<b>215.07</b>

PSU : PUBLIC SECTOR UNDERTAKING

JV :JOINT VENTURE (JV)

PVT :PRIVATE

SEZ: SPECIAL ECONOMIC ZONE

DTA: DOMESTIC TARIFF AREA

MMTPA: Million Metric Tonne Per Annum

# Organisations

## Oil and Natural Gas sector

### ❑ Ministry of Petroleum and Natural Gas (MoPNG)

- Overall monitoring, supervision and policy planning of crude oil, petroleum and natural gas sector in India

### ❑ Petroleum Planning & Analysis Cell (PPAC)

- Attached office of MoPNG.
- collects/estimates production, consumption and trade statistics for down stream sector

### ❑ Directorate General of Hydrocarbon (DGH)

- production data of Private / Joint Venture upstream companies

### ❑ Oil Companies in the public & private sector

- production of crude oil, natural gas, refinery throughput, capacity utilization, petroleum products and sales



# Ministry of Petroleum and Natural Gas

- ❑ Mandated to take measures for
  - Exploration and exploitation of petroleum resources including natural gas and coal bed methane
  - Distribution, marketing and pricing of petroleum products.
- ❑ Data collection, analysis and economic inputs are a mandate of Economics and Statistics Division under the Ministry

# E&S Division of MoPNG

- Provides economic inputs after detailed analysis of the plan and programmes
- Maintains exhaustive database on production and trade of crude oil, natural gas, petroleum products
- Formulates plan for public sector enterprises associated with petroleum exploration, production, refining and marketing.
- Deals with issues pertaining to foreign investment policy in petroleum sector, Double Taxation Avoidance Agreement (DTAA) on Income & Capital.

# Petroleum Pricing and Analysis Cell

- Created in 2002 after dismantling of Administered Pricing Mechanism (APM) in the petroleum Sector
- Attached office of the Ministry of Petroleum and Natural Gas
- Manpower in diversified fields from Indian public sector oil and gas company.

# Data collected

## □ Production data on monthly basis

- Crude Oil
- Petroleum Products
- Natural Gas
- LNG
- Imports/Exports of Oil & Petroleum products
- Consumption of Petroleum Products and Refinery intake

# Modalities of collection

- ❑ Under the statutory provision all oil companies furnish **monthly production statistics** to the Ministry for previous month (M-1) **within 15 days** of the following month (M)
- ❑ **Sales statistics** are furnished by the **“Industry coordinator”**, on the basis of voluntary disclosure of these figures by the oil marketing companies
- ❑ **The Import & Export statistics** are primarily collected by the **“Port coordinators”** deployed by the public sector oil companies and supplied to the Ministry after tabulation by PPAC
- ❑ Data collected through **electronic mail, FAX** as well as **hard copy by post**

# Periodicity and dissemination

- ❑ **Periodicity & Data Sources:** The data being collected on monthly, quarterly and annual basis from all Public Sector Undertakings and Private Oil Companies including oil refineries.
- ❑ **Data Dissemination Methods:** Monthly, Quarterly and Annual Progress Reports circulated and uploaded on Ministry's web site for the public user.

# Statutory provisions - Crude oil and natural gas

- **Principal Legislation:** THE OILFIELDS (REGULATION AND DEVELOPMENT) ACT, 1948(53 of 1948) (8TH SEPTEMBER, 1948)
- **Subordinate Legislation:** THE PETROLEUM AND NATURAL GAS RULES, 1959(As amended from time to time) Section 14

# Statutory provisions - Refinery output

- **Principal Legislation:** THE INDUSTRIES (DEVELOPMENT AND REGULATION) ACT, 1951 (ACT NO. 65 OF 1951)
- **Subordinate Legislation:** Scheduled Industries (Submission of Production Returns) Rules, 1979  
Section 6



# Other statutory provisions

- ❑ Petroleum Natural Gas Regulatory (PNGR)

Board Act passed by the Parliament in 2006

- ❑ Collection of Statistics Act, 2008

# Reports of MoPNG

## □ Weekly, Monthly & Quarterly Reports on Petroleum Statistics

- Weekly report on production of crude oil and natural gas
- Production of Crude Oil, Natural Gas and Petroleum Products
- Import/Export of Crude Oil and Petroleum Products
- Joint Organisations' Data Initiative – JODI Statistics
- (for United Nations Statistics Division)

## □ Annual Reports

- Annual Indian Petroleum & Natural Gas Statistics

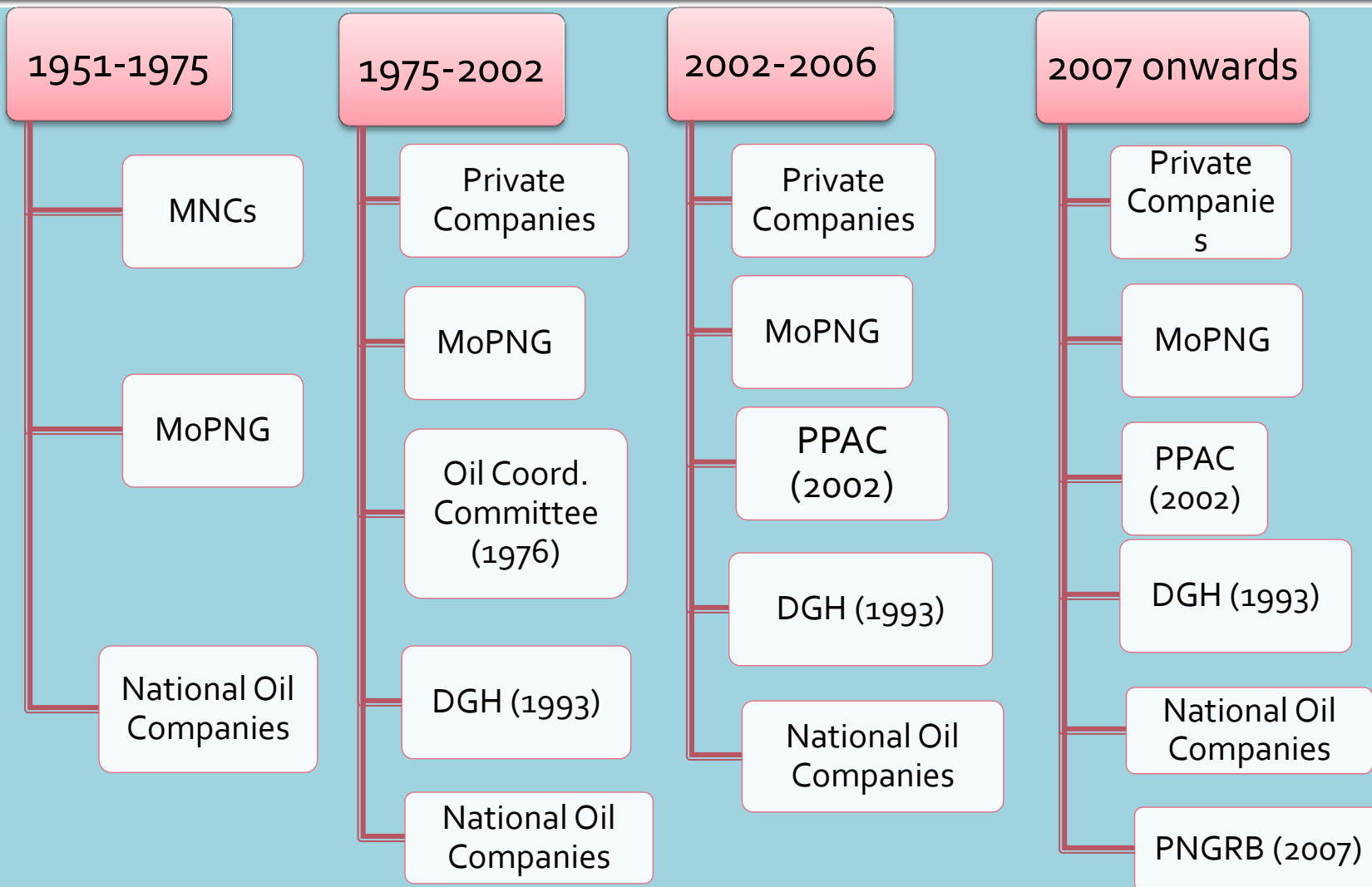
# Role of the Central Statistics Office (CSO)

- ❑ Annual publication titled “Energy Statistics”
  - The latest data on reserves, installed capacity, potential for generation, production, consumption, import, export and wholesale price of different energy commodities
  - Includes analytical indicators viz. Growth Rates, Compound Annual Growth Rates (CAGR) & Percentage Distributions
  - Data sourced from the concerned Ministries (including MoPNG) of the Government of India, in respect of different energy sources as per their mandate.
  - Energy Balance is calculated on experimental basis
  - Detailed indicator-wise metadata is provided
  - International Recommendations on Energy Statistics (IRES) adopted

# Methodology used for Energy Balance

- Energy Balance (in ktoe) = Quantity of Commodity \* Conversion factor
- 1 toe = 41868 MJ
- Conversion factor = Net Calorific Value (NCV)/mega joules per tonne of oil equivalent
- where NCV is in kj per kg & Net Calorific Value (NCV) = Gross calorific value (GCV) - (% Moisture Content)

# Evolution of data collection system



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- ❑ Shri Gyanendra Singh, Assistant Director, M/o Petroleum and Natural Gas, Government of India for his crucial inputs
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(available at:  
[http://mospi.nic.in/Mospi\\_New/upload/Energy\\_stats\\_2015\\_26mar15.pdf?status=1&menu\\_id=243](http://mospi.nic.in/Mospi_New/upload/Energy_stats_2015_26mar15.pdf?status=1&menu_id=243))

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FOR YOUR KIND ATTENTION