India – Dawn of the Oil Refining Hub of Asia

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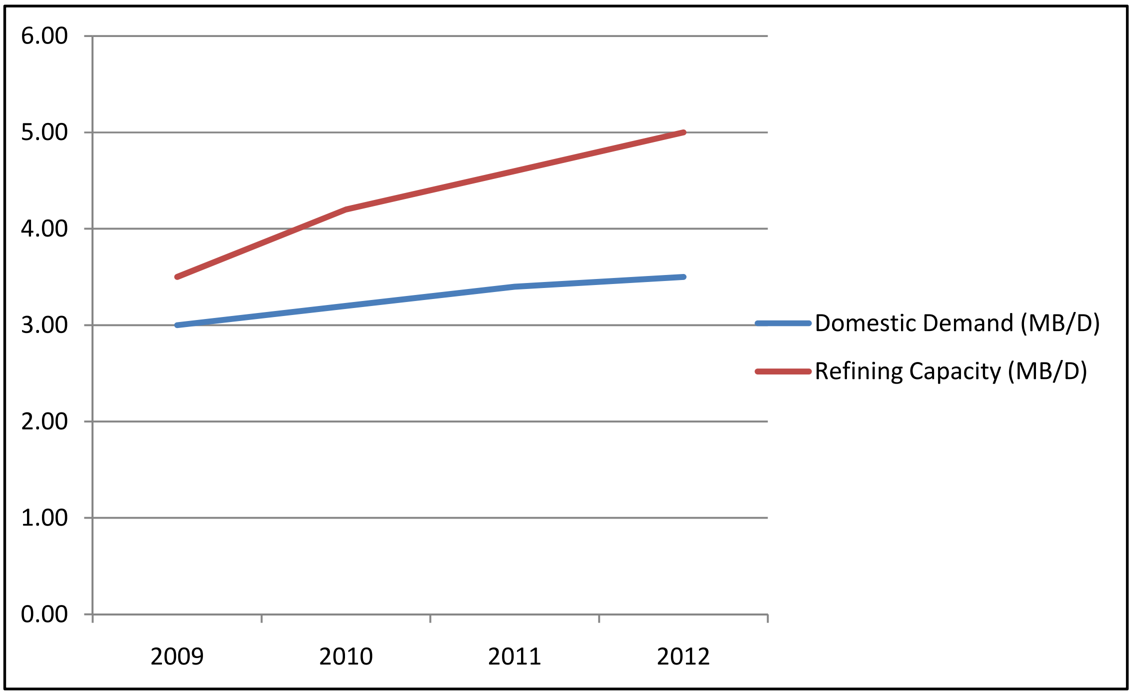
Abstract. India has come a long way since the establishment of country's first Crude Oil Refinery at Digboi, Assam in 1901 Under British rule. Today, India Operates 21 Oil Refineries with a total capacity of 193.386 MMTPA, which includes the world's largest refinery by Reliance Industries Limited (RIL) at Jamnagar, Gujarat with 33 MMTPA refining capacity, the highest in the world. The International Energy Agency (IEA), estimates that by 2013, India will emerge as the largest Refined Petroleum Product Exporter in Asia, Surpassing the former leader Singapore. This paper examines the challenges and opportunities in Indian Petroleum refining sector.

Keywords: Petroleum, Refinery, Export, Crude Oil, India, Singapore

1. Petroleum Refineries in India

India Imports 70% of its crude oil requirements, mostly from Middle East. However, the country is not only self sufficient when it comes to refining the crude oil but also is able to Export Refined Petroleum Products. To meet the growing demand of petroleum products, the refining capacity in the country has gradually increased over the last decade by setting up of new refineries in the country as well as by expanding the refining capacity of the existing refineries. As of June, 2011 there are a total of 21 refineries in the country comprising 17 in the Public Sector, 3 in the Private Sector and 1 as a joint venture of BPCL & Oman Oil Company. Besides the existing 21 refineries, 3 new refineries are proposed to be started in the near future, one by Indian Oil Corp. - 15 MMTPA, Another by Hindustan Mittal Energy Limited (HMEL) 9 MMTPA and third by Nagarjuna Oil Corporation Limited (NOCL) with 6 MMTPA refining capacity. Thus, adding a total of 30 MMTPA to India's refining capacity.



Source: International Energy Agency: India's Downstream Petroleum Sector

Figure 1: India's Refining Capacity V/S Domestic Demand (2009-12)

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Table 1: The company-wise location and capacity of the refineries in India as on 1.6.2011

S.N	Name of The Refinery	Location	Capacity MMTPA*
1	Indian Oil Corporation Limited (IOCL)	Guwahati, Assam	1.00
2	Indian Oil Corporation Limited (IOCL)	Barauni, Bihar	6.00
3	Indian Oil Corporation Limited (IOCL)	Vadodara, Gujarat	13.70
4	Indian Oil Corporation Limited (IOCL)	Haldia, West Bengal	7.50
5	Indian Oil Corporation Limited (IOCL)	Mathura, Uttar Pradesh	8.00
6	Indian Oil Corporation Limited (IOCL)	Digboi, Assam	0.65
7	Indian Oil Corporation Limited (IOCL)	Panipat, Haryana	15.00
8	Indian Oil Corporation Limited (IOCL)	Bongaigaon,, Assam	2.35
9	Hindustan Petroleum Limited (HPCL)	Mumbai, Maharashtra	6.50
10	Hindustan Petroleum Limited (HPCL)	Visakhapatnam, A.P.	8.30
11	Bharat Petroleum Limited (BPCL)	Mumbai, Maharashtra	12.00
12	Bharat Petroleum Limited (BPCL)	Kochi, Kerala	9.50
13	Chennai Petroleum Limited (CPCL)	Manali, Tamil Nadu	10.50
14	Chennai Petroleum Limited(CPCL)	Nagapattnam,Tamilnadu	1.00
15	Numaligarh Refinery Ltd.(NRL)	Numaligarh, Assam	3.00
16	Mangalore Refinery & Petrochemicals Ltd.	Mangalore, Karnataka	11.82
17	Tatipaka Refinery (ONGC)	Tatipaka, Andhra Pradesh	0.066
18	Bharat Petroleum Limited & Oman Oil Co.	Bina, Madhya Pradesh	6.00
19	Reliance Industries Ltd. (RIL)	Jamnagar, Gujarat	33.00
20	Reliance Petroleum Limited (SEZ)	Jamnagar, Gujarat	27.00
21	Essar Oil Limited (EOL)	Jamnagar, Gujarat	10.50
		TOTAL	**193.386**

Source: Ministry of Petroleum and Natural Gas, Govt. of India (2011)

2. India's Refining Challenges

India's refining capacity will rise by 15 per cent to 214 MPTA by the end of 2012. This is set to increase by a further ten per cent in 2013 to 238 MPTA. Domestic demand for petroleum derived products is expected to grow by 16.7% over the next five years, whereas the refining capacity of facilities across India is expected to grow by 22.2% over the same period. This leaves the nation with a large surfeit of both capacity and product to sell onto the global markets. In order to sustain this growth by Indian Refineries, India Must Take the Following Measures.

2.2 Securing Strategic Import Partners

Although a exporter of refined petroleum product, India still depend Heavily on Imports of Crude oil. This is due to high rise in petroleum product consumption in India's Domestic market and relatively flat domestic crude oil production. In 2010, India was the world's fifth largest net importer of Crude oil, importing more than 2.2 million bbl/d.A majority of India's crude oil imports come from the Middle East, with Saudi Arabia and Iran supplying the largest shares. For India to sustain the number one position of Refined Petroleum Product Exporter, Constant and Secure Supply of Crude Oil through Imports is Essential.

2.3 Increasing Capacity of Strategic Petroleum Reserves

The Global strategic petroleum reserves ("GSPR") are inventories of crude oil held by the governments or private companies, for the purpose of providing economic and national security during an event of high Crude oil price or energy crisis. These Petroleum Reserves Plays a Key role in insulating the customers against high crude oil prices in the international market. The Government of India Has Setup up 'The Indian Strategic Petroleum Reserves Ltd (ISPRL)', to serve as the controlling government agency for the strategic reserve. As on 2011, India has Strategic Petroleum Reserves of 5.33 MMT. In Order to Further Secure Availability of Crude Oil at Low cost, India Must Increase its Strategic Petroleum Reserves Capacity.

3. Advantage India

India's Emergence as a Refinery Hub in Asia can be credited to the following:

3.2 Cost Competiveness

India's key advantages for developing itself as an export refining hub, includes cost competitiveness, arising mainly out of lower labour costs as compared to developed markets. Indian production, construction and unit labour costs are far lower than in the developed world, while skilled labour and high-quality capital are relatively abundant. For Instance, Mukesh Ambani, Chairman of RIL, famously boasted that Jamnagar, the Largest Oil Refinery in the world, was built "with double the men, at half the cost and in half the time". Jamnagar II Refinery was completed in 36 months from concept to commissioning – a global benchmark for a petroleum industry.

3.3 Strategic Location

Geographically, India is strategically located in the major maritime route from Middle East to Far East. India has a vast coast line in the west in Arabian Sea, Indian Ocean to the south and Bay of Bengal to the east. Through this, India is able to supply western and eastern markets. Beside, India has a huge domestic demand for Petroleum products, which serves as an effective edge against fluctuations in petroleum exports.

3.4 Government Policies

The Government of India has taken several significant steps in shaping India's Petroleum industry.

3.3.1 Foreign Investment Policies

The Government of India's foreign investment regime has been liberalized significantly since the late-1990s. Today, The GoI allows 100% Foreign Direct Investment in Private Sector Refineries. This Move has attracted several private players like Reliance Industries Ltd., Essar, Carin, etc to invest in the India's Petroleum Sector.

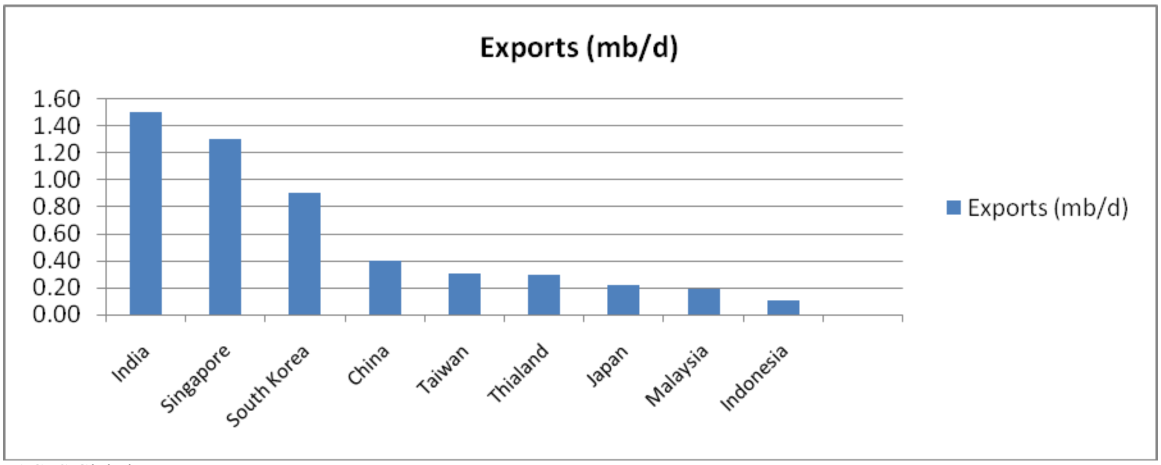
3.3.2 Special Economic Zones (SEZ)

Indian SEZs are legally deemed foreign territory in order to skirt India's multiplicity of domestic duties and tariffs and its numerous controls and authorizations. The key incentives and facilities offered to investors within SEZs are:

- "Single window" clearance of investments and projects.
- Duty free import of goods for development, operation and maintenance of SEZ units.
- 100% income tax exemption on companies' export income for first five years.
- Exemption from central government sales tax and service tax.

3.3.3 Export Oriented Units (EOU)

A corporation exporting over 75% of production is entitled to apply to become an EOU. EOUs receive many of the same benefits as corporations located in SEZs, such as "single-window" investment and project clearance and income tax exemption. Many EOUs operate in SEZs. However the EOU designation is intended largely for corporations whose operations are geographically spread, and not concentrated in a small area. Under the EOU scheme, corporations are allowed to purchase all goods required to produce exports free of all duties – excise, customs duties, states levies, etc. RIL's massive 33 MMTPA Jamnagar refinery was established as an EOU.



Source: FACTS Global Energy.

Figure 2: Forecast Asia Pacific Refined Product Export – 2012

4. Conclusion

As forecasted by the International energy agency (IEA), India will emerge as Asia's largest refined product exporter. India's emerging refined product export industry – led by RIL's Jamnagar facility but also supported by government owned refineries – is characterized by extremely large-scale, low-cost and modern plants capable of processing heavy crudes and producing complex, clean Products.

India's refining success, besides its strategic geographical advantage is also credited to the Government of India's Liberal Petroleum policies, through tax holidays, SEZs, EUO. In Future, how these policies are retained and / or change will also greatly influence India's petroleum industry. For Now, The Government policies has succeeded in fostering a dynamic combination of private and public investment in refining capacity which has transformed the face of India's petroleum refinery sector.

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