

INVESTMENT OPPORTUNITIES IN REFINERIES

1.0 Indian refining industry has done exceedingly well in establishing itself as a major player globally. The last decade has seen a tremendous growth in the refining sector with emergence of India as a net exporter of petroleum products since 2001-02. India is also the largest exporter of petroleum products in Asia since August 2009.

India's refining capacity has leapfrogged from a modest 62 Million Metric Tonnes per Annum (MMTPA) in 1998 to about 215 MMTPA at present comprising 22 refineries – 17 under Public Sector, 3 under Private Sector and 2 under Joint Venture. With the commissioning of grassroots refinery of Indian Oil Corporation at Paradip, a new refinery at Cuddalore, Tamil Nadu, new grassroots refinery at Barmer, Rajasthan, and expansion of some of the existing refineries, the total capacity of Indian refineries is projected to increase to 307.366 MMTPA by end of 12th Five Year Plan (2016-17).

2.0 The refining sector in India is exposed to new issues, viz., surplus refining capacity, competitive refinery margins, stringent product specifications etc.

In the light of above projected growth, capacity expansion plans and the challenges, number of investment opportunities exist in Indian refineries in the following major areas :

- Modernising Refinery Configuration to improve overall Gross Refinery Margin
- Technologies for processing opportunity crudes –high TAN, high sulphur and heavy crudes
- Upgradation of Auto Fuels to Euro-V grades
- Refinery/Petrochemical Integration
- Hydrocarbon Value Chain Optimisation
- New/Breakthrough Process Technologies - Advances in Residue Upgradation, CTL/GTL, Non-HDS based technologies

- Minimising fuel oil, naphtha, petcoke – alternative use and conversion to high value products
- Utilisation of technologies for use of low cost coke for power& utility generation (CFBC/Gasifier)
- Catalyst and technology development
- Hydrogen Management
- Energy Efficiency Improvement
- Process Efficiency Improvement
- Steam/Power Optimisation
- Hydrocarbon Loss Control
- Advanced technologies for Environmental Management - Resource Conservation, Water Management, Zero Effluent Discharge, Wastewater Reclamation, Solid Waste/Sludge Management/Disposal, Emission Control
- Carbon Footprint reduction
- Advanced Process control, Real-time optimization and information systems
- Advanced Inspection Practices, On-line Monitoring
- Maintenance, Reliability and Asset Management
- Project Management
- Advanced Shut-down management systems

3.0 In addition to above, there will be following associated requirements related to:

- Process Design & Engineering
- Fabrication/supply/erection of specialized major equipment like reactors, columns, heaters, heat exchangers, pumps, compressors, gas turbines, instrumentation systems, effluent treatment facilities, fire fighting facilities etc.
- Supply of spares for major critical equipment
- Supply of catalysts and chemicals
- Erection and commissioning
- Performance Benchmarking studies