

BRIEF SUMMARY – WEST COAST REFINERY & PETROCHEMICAL PROJECT

1.1 Introduction

M/s Indian Oil Corporation Limited (IOCL), M/s Hindustan Petroleum Corporation Limited (HPCL) and M/s Bharat Petroleum Corporation Limited (BPCL) intend to jointly set up a 60 MMTPA integrated refinery-cum-petrochemical complex on the West Coast, primarily to cater to the growing fuels and petrochemical requirements of the country-besides addressing the additional objective of selective export of the produce.

1.2 Crude Mix

The complex shall be designed to process heavy high sulphur crude mix with an API of 27 °

1.3 Product Specifications

The Refinery Fuel products produced from the complex shall comply with BS-VI specifications while the Aromatics/Petrochemical products shall be industrial/polymer grade.

1.4 Refinery-cum-Petrochemical Complex Configuration

The complex shall have three main blocks as defined below

1.4.1 Refinery Block

The Refinery block primarily comprises of processing facilities for production of fuel products conforming to BS-VI quality specifications. The major process facilities of the Refinery Block shall comprise of the following:

Primary Processing facilities comprising of three parallel trains of Crude & Vacuum Distillation units

Secondary Processing facilities comprising of Feed Hydrotreating coupled with Petro FCC units/Hydrocracker unit.

Bottoms Upgradation facility comprises of Delayed Coking/ Resid Hydrotreatment units.

Product Treatment facilities comprise of the treatment facilities for LPG, MS, ATF, Diesel besides treatment units for Fuel gas.

1.4.2 Aromatics Block

The aromatics complex includes a combination of process units for the production of *para*-xylene, primarily. Para-xylene is used in the production of polyethylene terephthalate (PET), which is used as polyester fiber, film, and resin for a variety of applications.

This block shall also produce additional aromatic products like benzene and Toluene.

1.4.3 Petrochemical Block

The proposed complex shall consist of dual feed Cracker to produce petrochemical feedstock for various downstream Polymer units. The Dual feed cracker primarily uses C4- Gases and Refinery naphtha as feedstock. Ethylene, Propylene, mixed C4 stream, Raw Pyrolysis Gasoline (RPG), Carbon Black Feed Stock (CBFS), Hydrogen gas and Fuel gas are produced as a result of cracking.

- Generated Ethylene from the cracker will be used within the complex in the separate downstream Butene-1 and polymer units to produce Linear Low Density Polyethylene (LLDPE), High Density Polyethylene (HDPE)
- Ethylene shall also be used to produce ethylene derivatives like LDPE and MEG/DEG
- Generated Propylene from the cracker will be used in the separate downstream polymer units to produce Polypropylene (PP)
- Propylene shall also be used to produce propylene derivative Phenol & Acetone.
- Generated Pyrolysis Gasoline stream from the cracker will be hydrogenated in Pyrolysis Gasoline Hydrogenation unit (PGHU) to produce C6 stream, heavy aromatic C9 stream and Hydrogenated Pyrolysis Gasoline. This Generated Hydrogenated Pyrolysis Gasoline (HPG) and C9 stream will be sold to market for further end uses and generated C6 stream will be sent to the Benzene Extraction Unit (BzEU) for recovery of Benzene. Fully hydrogenated C5 cut is recycled back to the cracker.

- Generated C6 stream from the PGHU will be charged into the Benzene Extraction Unit from where C6 raffinate is recycled back to the cracker

Petrochemical complex product profile is primarily based on production of bulk polymers & select derivatives. The product profile shall be further fine-tuned.

1.4.5 Utilities & Offsite Block

The complex will have associated utility and offsite facilities.

The major utilities facilities include:

- Desalination Plant.
- Steam and Power Plant.
- Compressed Air & Nitrogen system
- Cooling Water System
- FO/FG System

Offsite Storage capacity provided for feed, intermediate products & finished products shall be based on the following:

- Crude storage : 15 days equiv.
- Intermediate Products : 7 days equiv.
- Finished Products : 15 days equiv.

Crude Receipt facilities comprise of crude receipt through VLCC tankers.

Product Evacuation facilities envisaged for liquid products comprise of all four modes of product evacuation namely :

- i) Rail
- ii) Road
- iii) Pipeline
- iv) Coastal movement