

BRIEF DESCRIPTION OF THE PROJECT

1. Project Background

- a. Guwahati Refinery is the first public sector Refinery of India. It was commissioned in the year 1962 with an initial capacity of 0.75 MMTPA. Subsequently the capacity was enhanced to 1.0 MMTPA in 1986. Presently, refinery has following units: Crude Distillation unit (CDU), Delayed Coker Unit (DCU), INDMAX Unit (indigenous technology of IOCL R&D demonstrated for the first time in 2003 at Guwahati Refinery), Hydrogen Generation Unit (HGU), Hydrotreater Unit (HDT), ISOSIV Unit, and treatment units (SRU Block). MS Quality Improvement (MSQ) project was commissioned in 2010 for production of BS-III MS. Guwahati Refinery presently produces BS-III grade MS and HSD.
- b. BS-IV auto-fuel specifications will be applicable in entire country from April' 2017. Guwahati Refinery is installing an indigenous technology developed by IOCL R&D for the first time named INDAdaptG Unit, for reduction of sulphur of Indmax heavy gasoline. INDAdaptG Unit will reduce sulphur of Indmax heavy gasoline from 1000 ppm to below 50 ppm. In this process there will be a RON loss of 2 units. Project activities of INDAdaptG unit are under progress. Mechanical completion of INDAdaptG is planned by Oct' 16 and commissioning of the unit is targeted in Nov' 16. Post INDAdaptG commissioning, Guwahati Refinery would be able to produce 100 % BS-IV MS. For BS-IV HSD, Guwahati Refinery has replaced the existing HDT catalyst in Jan' 16 M&I S/D for production of BS-IV HSD.
- c. As per the declaration of GoI of 6th Jan' 16, it has been proposed to implement BS-VI grade fuel in the entire country w.e.f 1st April 2020 i.e. switching over directly from BS-IV grade fuels to BS-VI grade fuels. Thus it is imperative that the refinery up gradation should consider the production of BS-VI grade fuels by inducting suitable new units and revamp of existing units.

2. Process Description :

Guwahati Refinery has carried out an in-house study in consultation with RHQ Technical team and IOCL R&D for discussion on various options for production of BS-VI MS and HSD at Guwahati Refinery. Based on detail review, following configuration has been finalized for production of 100 % BS-VI MS and HSD at Guwahati Refinery.

Unit	Licensor	Purpose	Existing / New
New indSelectG Unit	IOCL R&D and EIL	To reduce sulphur of Indmax light gasoline and coker gasoline for making MS components to meet BS-VI MS Pool specifications	New
Revamp of INDAddeptG Unit	IOCL R&D and EIL	To increase severity of INDAddeptG unit to produce heavy gasoline meeting BS-VI MS pool specifications	Existing
Revamp of NHDT-ISOM Unit	M/s Axens	To meet aromatics content of BS-VI MS pool specifications	Existing
Revamp of HGU Unit	M/s Technip	To meet increase requirement of additional hydrogen for HDT & ISOM for production of fuels meeting BS-VI specifications	Existing
Revamp of HDT Unit	M/s UOP	To produce diesel meeting BS-VI specifications	Existing
Auto Blending Station for Gasoline	-		New

3. Unit Size

Based on revised refinery configuration to produce fuels meeting BS-VI specifications, capacity of various units is tabulated below,

Unit	Existing Capacity, KTPA	Revamp capacity, KTA
New indSelectG Unit	-	80 KTPA

Revamp of INDAddeptG Unit	35 KTPA	35 KTPA
Revamp of NHDT-ISOM Unit	45 KTPA	54 KTPA
Revamp of HGU Unit	10 KTPA	to 12 KTPA
Revamp of HDT Unit	600 KTPA	800 KTPA

4. Plant Layout

Unit	Identified Space
New indSelectG Unit	Existing available space within DCU Battery limit
Revamp of INDAddeptG Unit	Within existing Unit
Revamp of NHDT-ISOM Unit	Within existing Unit
Revamp of HGU Unit	Within existing Unit
Revamp of HDT Unit	Within existing Unit

Existing Guwahati Refinery Plot plan highlighting above units is enclosed as **Annexure-II**.

5. Basic Utilities

a) Water

The water requirement for the project shall be met from the existing facilities.

b) Fuel

Fuel requirement for the above projects shall be met from the existing facilities.

6. Environmental Aspects

Existing units: HGU, HDT, NHDT-ISOM meets all the stipulated environmental guidelines and norms. Upcoming INDAddeptG Unit and proposed indeSelectG unit also shall be designed to meet the required environmental guidelines.

7. PROJECT MANAGEMENT

Basic design package for the units shall be prepared by the Original Licensors. The Project is proposed to be executed through EPCM. The Project Company will establish Project Management Systems for close monitoring of the project for quality, schedule and environment.

8. PROJECT IMPLEMENTATION SCHEDULE

The total time period for completion of the above projects is Sep' 19 as the Refinery shall produce BS-VI specs fuels from Jan' 2020.

Project Management

The major phases of the project during its implementation are classified under the following heads:

1. Planning and contract packaging
2. Design, engineering, tendering and contract award
3. Manufacturing, inspection and expediting phase
4. Transportation/ handling of equipment
5. Construction/erection and commissioning
6. Operation and maintenance
7. Manpower training and placement.

9. Project Cost

Estimated cost for Guwahati Refinery BS-VI Projects is INR 513 Crores.