



Engineers India Limited



**EXPERTISE & SPECIALIST SERVICES FOR
DEVELOPING PACKAGES ACROSS
THE INDUSTRY**



PROFILE

Engineers India Ltd. (EIL) is a leading global engineering consultancy and EPC company. The Company has a diverse portfolio comprising Hydrocarbon, Chemicals & Fertilizers, Mining & Metallurgy, Infrastructure, Water and Waste Management, Solar & Nuclear Power sectors.

EIL has emerged as a 'Total Solutions' engineering consultancy company providing design, engineering, procurement, construction and integrated project management services from 'Concept to Commissioning' with highest quality and safety standards. It also provides specialist services such as heat and mass transfer equipment design, environmental engineering, specialist materials and maintenance and plant operations and safety services.

EIL has successfully completed all projects, all of which are operating smoothly (in most cases at more than rated capacity), and has, hence, created an array of satisfied clients. EIL has secured many repeat businesses from its clients which is a sign of client satisfaction, confidence and trust reposed in EIL.

EIL has earned the reputation of being a veritable treasure of technical knowledge, skills and professional competence. EIL has worked with almost all process licensors and a large number of engineering/ contracting companies worldwide and our engineers are well versed with international engineering codes and standards. With a workforce of over 3000 experienced employees & a variety of specialised services available under one roof, EIL offers an unique advantage to clients like none other.

5.6 million available Technical Manhours annually

9,600 available Construction Management and Supervision Man-months annually

GLOBAL PRESENCE

Geographical Regions	Key Countries served
Middle East	UAE Bahrain Kuwait Iran Oman Saudi Arabia Qatar Iraq
Asia / Asia Pacific	Australia Malaysia Indonesia Bangladesh Vietnam
Europe	Norway Turkey
Africa	Algeria Ghana Kenya Nigeria Angola Sudan Cameroon

TRACK RECORD

- 72 Major Refinery projects, including 10 green field refineries,
- 9 Petrochemical complexes,
- 41 Oil and Gas Processing projects,
- 213 Offshore platforms including 40 process platforms,
- 46 Pipeline projects,
- 13 Ports, Storage & Terminals,
- 9 Fertilizer projects,
- 32 Mining and Metallurgy projects,
- 33 Infrastructure projects (airports, highways, bridges, water management, & energy-efficient intelligent buildings)
- 23 Turnkey/EPC projects.
- Infrastructure Projects
- Power / Captive Power Projects

Over the past five decades, EIL has executed more than 5000 projects including over 400 major projects worth USD 200 Billion in total cost.

SERVICES FOR PACKAGED EQUIPMENT

EIL carry out engineering for procurement of Mechanical Packaged Equipment and special Equipment for various projects undertaken by the Company. Major activities performed.

BASIC ENGINEERING

- Feasibility Study
- Conceptualization of Flow Scheme & Layout
- Preparation of Engineering Design Basis
- Assistance for Preparation of Plot Plan, Equipment Layout, Utility List, etc.
- Basic Engineering Inputs to Process, Piping, Structural dept. etc.

DETAILED ENGINEERING

- Preparation of Layout Drawings for Material Handling Systems like Bagging and Palletizing Plants, Coke Handling System, Metallurgical Plants, etc.
- HVAC Heat Load Calculations, Equipment Sizing & Selection, HVAC system Layout.
- Engineering for Procurement Activities for various Packages and Special Equipment including Preparation of Material Requisition, Technical Bid Evaluation/analysis, Vendor Document Review etc.
- Providing Inputs to Upstream and Downstream Engineering.
- Providing Technical support during construction and commissioning phase of the Project.



AREAS OF OPERATION SPECIALISATION & OUR STRENGTH

EIL is having specialization in evolving detailed specifications for procurement of a wide range of packages.

Our Services involve:

Basic engineering for Packages:

- Basic engineering of the packages involves review of the Process Datasheet (PDS)/ Piping & Instrumentation Diagram (P&ID) to check the correctness/ completeness of the package PDS/ PID w.r.t. functional requirements and to align equipment specification with latest international standards/ market trends.
- Review of plot plan/ development of flow scheme for certain packages also forms part of basic engineering activities to ensure adequate plot space allocation and formulation of an optimum flow schematic.
- Interaction with clients to ascertain their preferences/ requirements to formulate design basis for the job also forms part of basic engineering of packages.

Detailed engineering for Packages:

- Detailed engineering for the packages involves a whole lot of activities and may vary with the type of package being considered.

- Certain packages like material handling systems involve development of detailed layout drawings. HVAC systems involve calculation of heat loads, equipment sizing & selection, preparation of HVAC system layout etc. However, there are few major steps common to all packages which involve development of technical specification and preparation of Material requisition. Technical evaluation of bids, interaction with bidders to resolve outstanding issues and preparation of final technical recommendation. Preparation of Purchase requisition based on the Material requisition and clarifications from bidders. Review of vendor documents to ensure compliance with requisition requirements and to ensure functional, operational and maintenance aspects has been taken care suitably.
- During erection/ commissioning of equipment/ packages, site assistance is also provided on need basis.

Wide Range of Packages Sector wise: **REFINERY**

- Hydraulic Decoking System
- Heading/Un-heading System
- Hydro-cyclone
- Bridge Crane
- Coke Handling System
- Tertiary Separator System
- Electrostatic Precipitator
- FCCU Slide Valves, Cyclones
- Slurry Filters

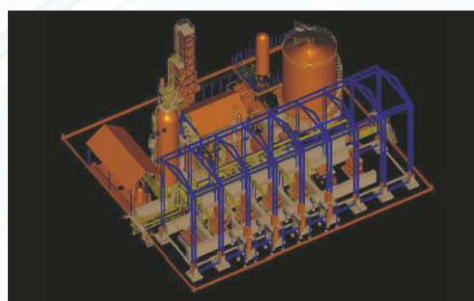


PETROCHEMICALS

- Pneumatic Conveying System
- Additive Unloading, Dosing System
- Conveying Screws
- Extruder And Pelletizing System
- Bag Filters
- Rotary/ Centrifugal Dryers
- Pellet Vibrating Screen
- Metering System
- Pellet Mass Flow Meters
- Bagging & Palletizing Lines
- Conceptualization, Engineering and Execution of complete Product Warehouse & Associated facilities

OFFSITE AND UTILITIES

- Cryogenic Nitrogen Plant
- PSA Nitrogen and Hydrogen Plants
- Membrane Nitrogen Plant
- Process Refrigeration Package
- Instrument Air Dryer
- Flare Stack Components
- Loading/Unloading Arms
- Weigh Bridge
- HVAC system
- Vapour Recovery System
- Elevator
- Maintenance Equipment (EOT/HOT Crane, Electric Hoist, Chain Pulley Block, etc.)

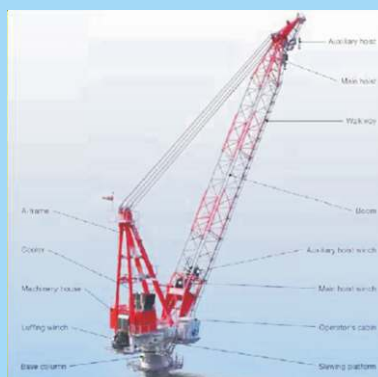


JETTY AND TERMINALS

- Marine Loading Arm
- Mooring Winches
- Mooring Hooks
- Access Gangway

OFFSHORE PACKAGES

- Chlorinator Package
- Water Maker
- Produced Water Conditioner
- Sewage Treatment Plant
- Deck Crane
- Survival Craft
- Utility Equipment etc.



MATERIAL HANDLING

- Belt, Pipe, Screw, Chain and Roller Conveyors
- Bucket Elevators
- Stacker-cum-Reclaimer
- Air Slides/ Air Lifts
- Mobile Crane
- Fork Lift
- Rail & Truck Loading System
- Maintenance Equipment (EOT/HOT Crane, Electric Hoist, Chain Pulley Block, Mobile Cranes etc.)

ALUMINA REFINERY

- Mobile Crushing Plant
- Long distance conveyor system
- Bauxite handling and processing system
- Bauxite Grinding system
- Lime Slaker Package
- Calcination Package
- Alumina Handling Package
- Security Filter
- Seed And Product Filter
- Solid Processing Items (Crusher, Ball Mill, Vibrating Screen)



SMELTER PACKAGES

- Gas Treatment Centre
- Green Anode Plant
- Anode Roding Shop
- Anode Handling And Storage System
- Pot Tending Machine
- Fume Treatment Centre
- Alumina Handling Package
- Bath Handling Plant
- Casting Machine
- Special Transport Vehicles

NUCLEAR

- Establishment of complete facilities for manufacture of Fuel bundles for Pressurized Heavy Water Reactor (PHWR).
- Engineering and procurement of packages such as Extrusion package, Forging facilities, Vacuum Annealing furnace, sheet/wire drawing packages etc.



FERTILIZERS

- Urea Prilling tower and associated equipment
- Urea Storage silo reclaiming, Urea handling, conveying and bagging system
- Rail and Wagon Loading facilities
- Ammonia Refrigeration system
- Associated Offsite and Utilities



INFRASTRUCTURE AND GREEN BUILDING

- Energy Efficient HVAC systems

Some of the packages as above are tailor made for each project. The department is also geared up to handle any type of special package assigned to the department.

MANPOWER BASE

- EIL has strong human capital having cumulative experience more than 50 years



INTERFACE WITH OTHER DISCIPLINES

PROCESS DESIGN

- Basic Process Design input and review viz. PDS, PID and BEDP
- Review of Vendor Documents related to Process Deptt.





PIPING

- Equipment Layout
- PMS & VMS
- Battery limit interfaces for Packages
- Piping requirement for Packages

INSTRUMENTATION

- Instrumentation & Control System Requirement of Packages
- DCS / PLC Interface
- Heat dissipation load for HVAC design



ELECTRICAL

- Electric System requirement of Packages
- Power supply interface
- Package Electrical specifications
- Heat dissipation load for HVAC design

CIVIL & STRUCTURAL / ARCHITECTURAL

- Plot Plan for Bulk Material Handling & other Packages
- Dust suppression system input
- Technological Structure design
- Building design and layout



STATIC EQUIPMENT

- Specification for Design of Vessels, Exchangers, Silos of Packages
- Vendor Document Review of Packages



HIGHLIGHTS OF RECENTLY EXECUTED KEYPROJECTS

- 1 Conceptualization, design, engineering for the first time with in house capability of largestProduct Ware house of 88000 MT capacity for OPaL, Dahej Petrochemical Complex.



- 2 Engineering for procurement of Sulphur forming and handling system comprising of SS silos (6 nos. each of 550 MT capacity) conveying system and truck loading system with a Sulphur production capacity of 800 MT/day, largest ever handled in sulphur forming unit of IREP-BPCL-Kochi Refinery.



- 3 Design, Engineering and Procurement for the first time of a Warehouse Inventory system comprising of Drive-in steel storage racks and material handling equipment for inventory storage of Wax slab cartons for Wax Plant of NRL.
- 4 Design and engineering of Truck loading gantry, which can take care of wide variation of tanker sizes from 33 kl to 60 kl, for the first time, Dangote Oil Refinery & Petrochemical Plant.
- 5 Basic design and engineering of Non-Conventional Coke Dispatch scheme for the Aishwarya Project of M/s IOCL to accomplish complete rake loading in a constraint space i.e. approx. 3 times lesser space, as required in conventional scheme. This has been done for the first time in EIL.
- 6 Engineering for Procurement of major packaged equipment for the first time in Russian design buildings for 2 X 1000 MW-Unit 3 & 4 of Kudankulam Nuclear Power Project of NPCIL.
- 7 Development of equipment layouts, material handling and automation schemes for Fuel fabrication facility (500 TPY capacity), for the first time, for pressurized Heavy Water Reactors being set up at Kota (Rajasthan) by Nuclear Fuel Complex.
- 8 Engineering for procurement of Coke Handling System (approx. 3.0 km length) of IREP, including pipe conveyors (approx. 1.7 km length).





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