

EngiMates
Resources & Energy

www.engimates.com

Company Profile

EngiMates Resources and Energy Pvt Ltd. was formed in year 2016 as a value adding consultant to provide wide range of engineering services in feasibility studies, concept engineering, process optimisation, economic analysis, Flare systems analysis to Oil & Gas and Refining industries. In addition to the special consulting services, the company executes medium scale EPC (Engineering, Procurement & Construction) projects.

EngiMates is driven with passion to bring the association with customers in India and worldwide with our values of leadership, performance, relationships and ethics.

EngiMates personnel have extensive industry experience both in Operating Companies as well as in Engineering Contractor organisations which allow us to extend our services towards specialised consulting and EPC business. Our Key people experience covers the entire asset project lifecycle from Feasibility Studies, Conceptual engineering and FEED/DD and Refinery Process Optimization and Asset Management. Personnel within EngiMates are committed & inspired towards consistent contributions for creating value to our customers business.



Vision:

- EngiMates is **our Passion**. We are **passionate to serve energy industry worldwide, achieve distinct place globally and contribute to the world** with innovative technologies.

Mission:

- To **establish as value driven organization** providing **quality solutions to our clients** in Energy Industry.
- To **build trust and honoured relationships** with our clients and employees **to endorse EngiMates** as globally recognized organization.
- To **persistently develop our employees to transcend** client's expectations.

Core Values:

- Accountability for **Quality, Safety and Client satisfaction**
- Commitments towards **Community & Environment**
- Responsibility for **Ethics & Integrity**



Business Sectors

- Onshore Oil & Gas Production Facilities
- Onshore Pipelines & Receiving Terminals
- LNG
- Refining
- Heavy Oil & Oil Sands (EOR)
- Utilities & Offsites
- Water
- Pharmaceuticals & Fine Chemicals

Services

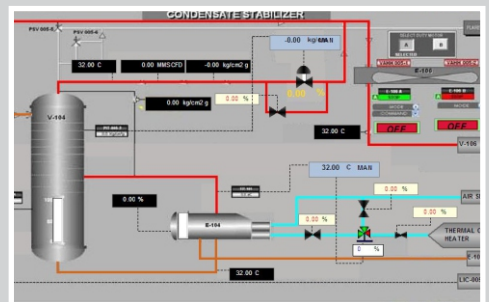
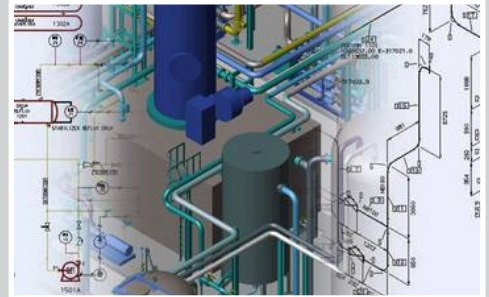
ENGINEERING

- Conceptual Engineering & Economic Evaluation
- Feasibility Studies
- Basic Engineering Package
- Front-End Engineering Design (FEED) and Detailed Engineering

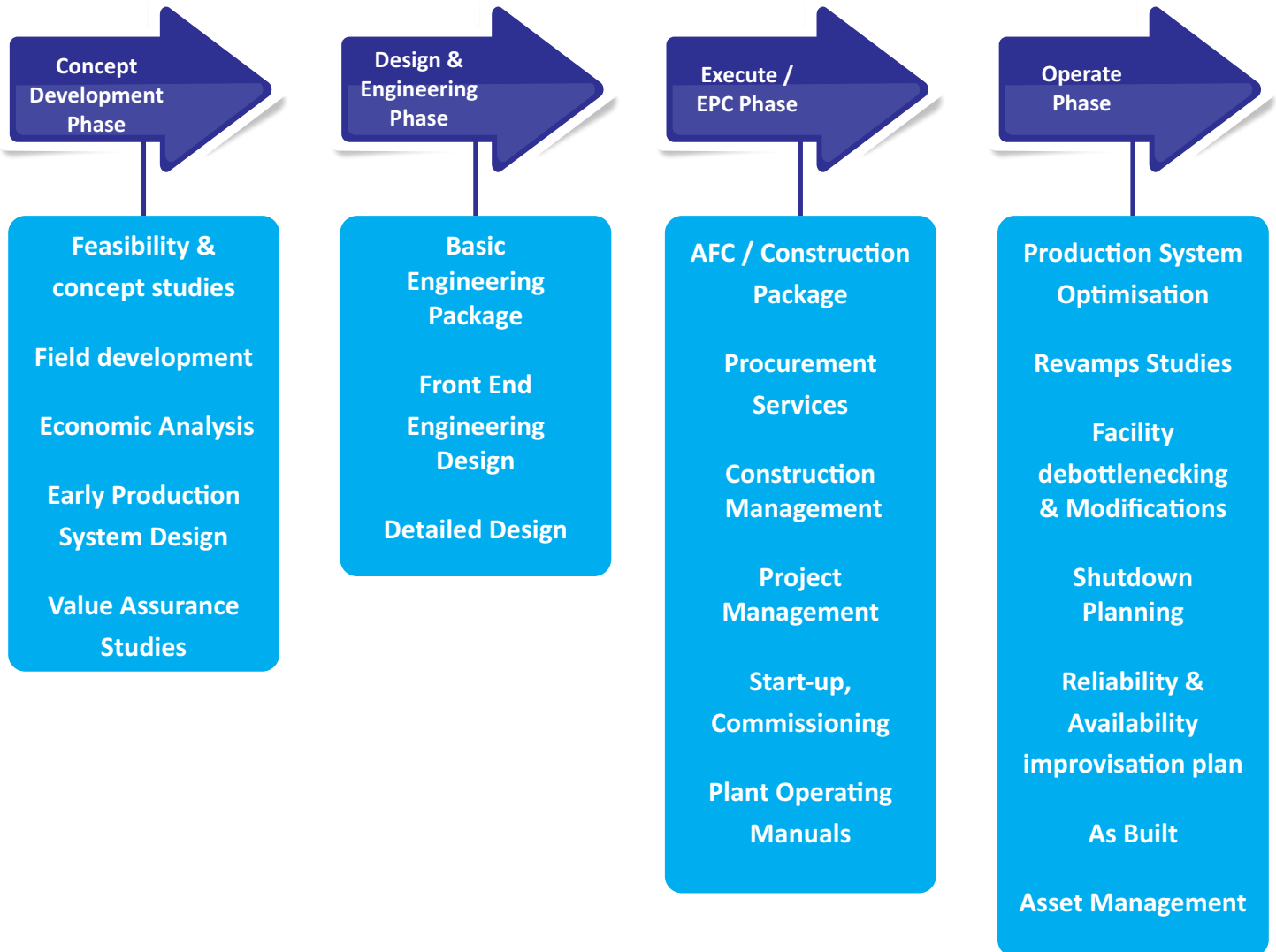
SPECIAL SERVICES

- Facilities Operations Support
- Process Simulation and Optimization
- Revamp studies
- Relief and Flare System Assessment
- Technical Safety Facilitation
- Miscellaneous Services

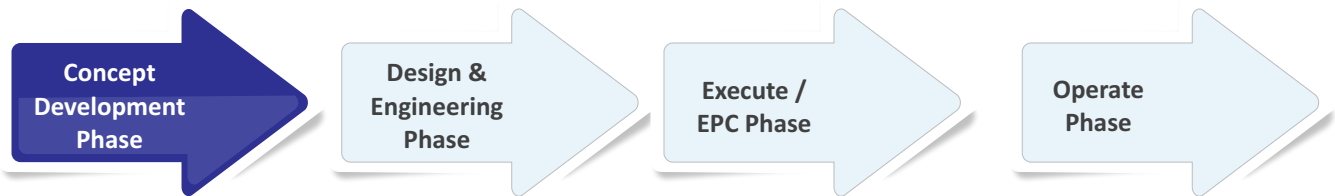
**EPC (Engineering, Procurement & Construction)
for medium scale projects.**



EngiMates provides wide range of services in project lifecycle during following phases:



Concept Development Phase



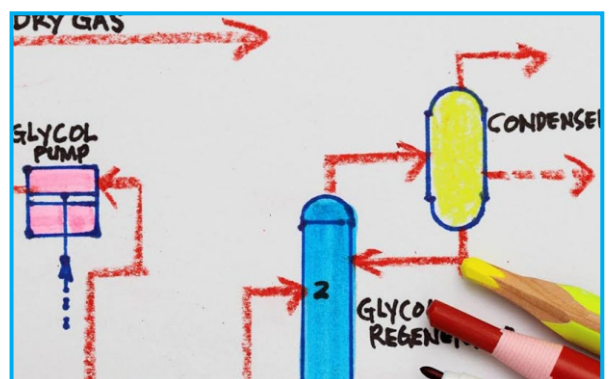
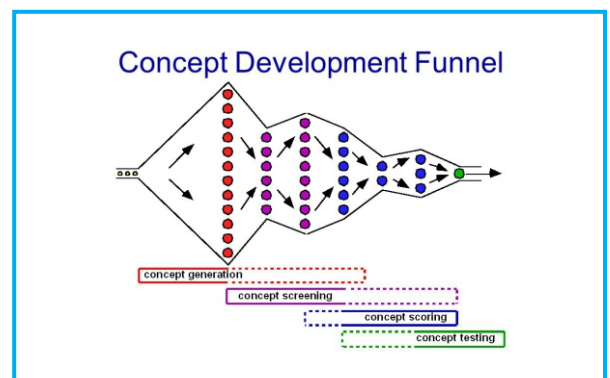
The concept phase of the project is all to do with an OPPORTUNITY which may nurture further as a project. It has been always challenging throughout the project lifecycle whether its new field development, new pilot facility, new plant, or major process expansion etc as it has more questions than answers and more assumptions than data. EngiMates works as an extended partner with our clients in identifying and selecting the concepts for projects as we very well understand the implications of these uncertainties.

EngiMates Concept Team confirms technical and economic feasibility of the opportunity proposed by client and identify the most preferred method of its implementation. We perform the study, identify the options, and rank the options based on technical merits, HSE, system reliability, economics (NPV, CAPEX - OPEX), and any other business value drivers. The team then selects the most promising solution, details out the scope of work and prepares a cost estimate.

EngiMates utilizes a unique methodology & approach in concept development phase which enable us to stand up distinctively and deliver value driven product to our clients.

EngiMates Concept Engineering Package includes deliverables as follows:

- Preliminary Process Design Basis
- Process Alternatives Evaluations Summary
- Process Simulation and Heat and Material Balance Data
- Process Flow Diagrams (PFDs)
- Equipment List
- Utility Load List
- Major Equipment Conditions of Service List
- Capital and Operating Cost Estimate (+40% /-30%)
- Summary of Raw Materials and Utility Requirements
- Project Cost Plans & Schedule
- Value Assurance Reviews.
- Project Interface Register
- Process Risk Summary.
- Project Report.



Engineering Services (FEED, DD & EPC)



Concept & Process

- Process & System Design
- Process Simulations & Modelling
- Heat & Mass Balance
- PFD, P&ID, MSD, PSD
- Equipment sizing & datasheets.
- Equipment & Instruments Specs
- Hydraulic Designs
- HAZID, HAZOP, SIL
- Control & Safeguarding philosophy & narratives
- Flare & relief system analysis
- Process Drafting

Mechanical (Static & Piping)

- Pressure Vessel Design, Modification, And Rerate
- Tank Design and Modification
- Exchanger Thermal Design
- Packaging Units Design and Equipment Specification
- Equipment Selection and Specification
- Contractor And Vendor Document And Bid Review
- Plot Plan & Piping Layout
- Piping Specifications
- Stress Analysis
- 3D Modelling (PDM/PDS)
- Mechanical Drafting

Electrical

- Power System Engineering and Design
- Short Circuit And Load Flow Studies
- Motor Starting Studies
- Arc Flash
- Single Line Development
- Electrical Equipment And Substation Layouts
- Substation Design
- Switchgear & MCC
- Protection System
- Cathodic Protection
- Grounding And Lightning Protection Systems
- Electrical Drafting

Instrumentation & Controls

- Loop & Logic Diagrams
- Instrument Location Plans & Field Wiring
- Installation & Mounting Details
- I/O And Instrument Listing
- Cable Schedule
- Cabinet Wiring And Layouts
- Control Schematics
- PLC/DCS Specifications
- Functional Control Descriptions
- Factory Acceptance Tests
- Control System Architectures
- I&C Drafting

Civil

- Site Preparation
- Concrete & Steel Structure design
- Evaluation Of Existing Structures
- Design For Explosion Control
- Design For Spill Containment
- Building Safety Analysis
- Drainage Plans And Structures
- Road Layouts & Paving Design, Parking Facilities
- Civil Drafting

Project, Procurement & Construction Management

- Bid Tabulation & Evaluation
- Expediting
- Procurement Package Preparation
- Project Procurement Strategy & Management
- Constructability Reviews
- Reliability/Operability Reviews
- Contractor Pre-Qualifications
- Turnarounds
- Construction Management
- Start-Up & Commissioning



Process Simulations & Modelling

- Development of Process Simulation Models with world class recognized simulation softwares.
- Modeling facilities/operating plants with the current operating conditions & accurate components characterization methods via process simulation models to determine bottlenecks, operating envelopes & troubleshoot the operating plant problems.
- Steady state & Transient analysis for complex system hydraulics to determine the adequacies, capacities & constraints, surge & slug analysis in the pipelines.
- Design/Rating/Evaluation of Heat Exchangers via renowned exchanger suite application programs.
- Development of Flare Network & Flare header sizing through Flare sizing softwares.
- Process Simulation Training to Operating & Engineering companies.

Relief and Flare System Assessment

- Relief load calculations via modelling relief cases in simulator for Fractionators, distillation columns, heat exchangers, vessels etc.
- Relief valve sizing via validated programs.
- Flare network & flare header sizing.
- Adequacy check of PSVs & Flare of existing facilities.
- Mitigation of existing inadequacies in the system.
- Flare dispersion and radiation analysis.



The field / facility operate phase has always been challenging as the engineering project lifecycle does not foresee operational issues and asset management plans in details. EngiMates personnel wide experience in operation & asset management bridge these gaps between engineering & operation project lifecycle. We provide detailed attention to client's specific requirements with pragmatic approach to deliver improved long term solutions.

EngiMates provides following special services during Operate Phase:

Asset Management Services

- Complete Plant data evaluation and process optimization of operating facilities.
- Process Simulation modeling of facility to evaluate facility up-gradation requirement, bottlenecks determination & capacity evaluation.
- Operation Troubleshooting & mitigations of complete facilities.
- Drafting of Red Line Mark ups.
- As Building of existing facilities.

Technical Safety Services

- Facility Design Review Support
- Retrospective HAZOP / SIL Facilitation.
- Fire Explosion, radiation, dispersion studies.
- Physical effects modeling

Gas Processing Studies

- Amine Unit Solvent Selection Studies.
- Sour Gas Sweetening Technology Selection Studies.
- Amine and TEG unit process optimization studies using ProMax.
- Dynamic Simulation Engineering studies to validate the control and safeguarding set points in Fuel gas PRT station to Power Plant.



Feel free to Call Us



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