

PYRAMID E&C



Modular, Digital & Sustainable Hydrocarbon Processing Solutions

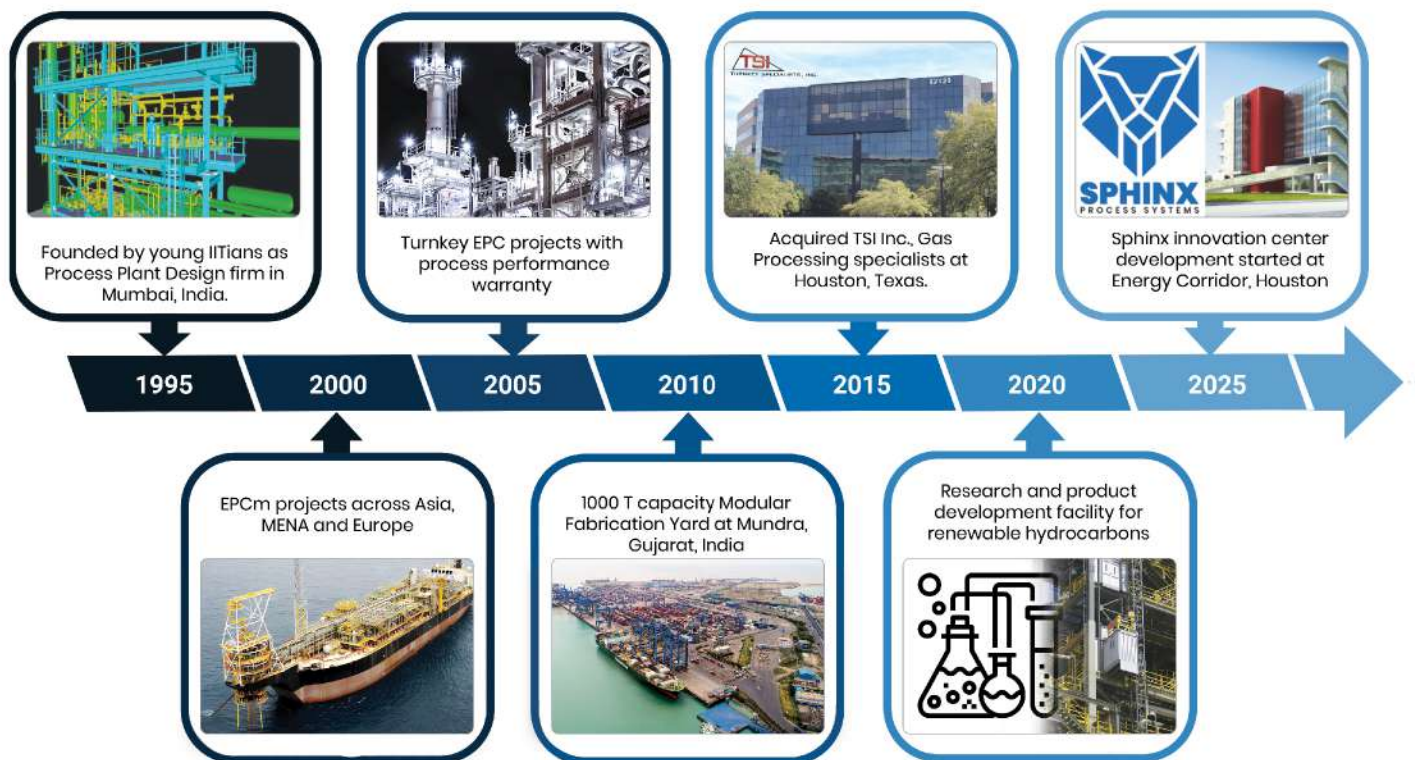
ABOUT US

Pyramid E&C group, founded in 1995, is a global hydrocarbon processing solution provider comprising of research, engineering, automation, digitalization, manufacturing and construction firms. We specialize in modular plants and have own load out facilities.

Pyramid E&C works with the developers and asset owners in all project phases, starting with conceptualization, technology, feasibility studies, FEED, EPC or EPCm services and after sales support.

The Group specializes in Oil & Gas Production, Petroleum Refining, Natural Gas Reforming and Bio Chemicals where we supply sustainable, low carbon impact, blue and green processing solutions.

HISTORY



CERTIFICATIONS





ASHISH BAJPAI
Chairman & CEO

B.S. Chemical Engineering, IIT Roorkee, 1989
M.Tech. Process Plant Design, IIT Delhi, 1991

Ashish Bajpai is a qualified Chemical Engineer with specialization in Process Plant Design from Indian Institute of Technology, Delhi. With an experience of more than 30 years in setting up the development teams, processes and execution infrastructure to enable Pyramid E&C engineer, manufacture, deliver and commission the hydrocarbon facilities in diverse geographies of Asia, Middle East, Africa, Europe and United States, his endeavors today include development of compact electric reactors and blue hydrocarbons processing technologies to reduce the carbon emissions and improve sustainability.



PUNEET SHARMA
COO

Puneet Sharma is a Chemical Engineer from Texas A&M with and MBA from University of Houston. An industry veteran with over 30 years of experience in onshore and floating oil and gas project development, Puneet spearheads the development of modular, digital and blue hydrocarbon facilities with the asset owners and investors in Americas, Europe and Australia. His personal passions include the development of Cyan Ammonia and Floating production systems. Puneet is a native Houstonian and a long-standing member of the Houston chapter of the Society of Petroleum Engineers.



Millicent Herman
GM - Sales

Millicent Herman is a seasoned professional in US construction industry. A native of Houston, she comes with an all-round experience of 25 years across various functional domains including business development, cost estimation, supply chain management, site coordination and logistics. She is currently responsible for upcoming projects Americas, Caribbean and Australia. She has a proven track record of driving efficiency, optimizing project costs, and ensuring seamless execution across diverse construction projects.

EXECUTIVES



Anant Bajpai
Director Customer Success

Anant Bajpai is a Chemical Engineering graduate from Georgia Tech, Atlanta, USA. He works closely with hydrocarbon facility owners in the Americas to understand their business and technical requirements to propose a processing solution fully meeting their objectives. He remains involved in execution and plant operation to ensure project success.



Shashank Karnik
Director - Projects

Shashank Karnik is an Electronics Engineer from MS University, has over 45 years of Oil & Gas experience. He excels in managing large-scale EPC Hydrocarbon projects, ensuring timely execution within budgets and contracts. He also has experience in executing power plants and troubleshooting process plants. He prioritizes safety, quality, and client satisfaction, consistently exceeding industry standards.



Rajesh Sangia
VP - Decarbonization &
Energy Transition

Rajesh Sangia is a Chemical Engineer from NIT Durgapur, has over 30 years of experience in engineering management and program execution. He holds a PMP certification and specializes in delivering value-based solutions for asset owners across India. He is managing programs for Projects associated with CO2 recovery and liquefaction, LNG treatment and liquefaction, Production of Methanol from Bio Gas and Green Ammonia.



Vijay Bari
VP - Modular Fabrication

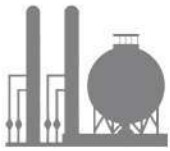
Vijay Bari is a qualified Mechanical Engineer from VJTI, Mumbai University and has advanced PMP certification in Project management and Quality assurance. He has over 25 years of experience in design, manufacturing and quality assurance of process equipment and modules for onshore and offshore Oil and Gas production, Refining and storage facilities.

OUR MARKETS



Oil & Gas

- Early Production
- Central Production Facilities
- FPSO/ MOPU Topsides
- CCUS Deployment
- Chiller Gas Plants
- Cryo Gas plants
- Mini/Micro LNG Unit



Refining & Petrochemicals

- Field Diesel units
- Topping unit
- Hydroskimming Refineries
- Full Conversion Refineries
- Carbon Black Plants



Natural gas Reforming

- Blue Hydrogen units
- Blue Methanol plants
- Blue Ammonia
- Hydrogen Peroxide plants
- CO2 Liquefaction units
- Blue Urea Plants



Bio Chemicals

- Bio-Ethanol Plants
- Bio-Methanol units
- Bio-Ammonia units
- Green Ammonia plants
- Ethylene Oxide/Glycol plants
- Ethanol To SAF Plants

SURFACE PRODUCTION



With more than 25 years of experience in developing Oil and Gas production facilities worldwide, Pyramid E&C offers a full suite of Services, Products and Solutions for development of hydrocarbon resources in the most efficient and expeditious manner.



Our capabilities range from simple early production facilities (EPF) to long term central production facilities (CPF) for Oil, Gas and Produced water treatment. The production facilities supplied by Pyramid E&C comprise of generic, pre-engineered modular units. We also take up Balance of Plant on EPCm basis if the asset owner required a single point solution.

GAS PLANTS



Pyramid E&C provides complete natural gas treatment solution comprising of Compression, Dehydration, Sweetening and Contaminant removal systems to recover liquids and deliver gas to the specification. Standard packages available in 30, 60, 120 and 200 MMSCFD sizes.

JOULE THOMSON UNITS

This unit reduces the dewpoint of natural gas, recovers valuable hydrocarbon liquids and controls the calorific value of the gas to sales specifications.

Recovery

C3 50% | C4 80% | C5+ 90%

REFRIGERATION PLANTS

The inlet gas is cooled to a low enough temperature using Freon or Propane refrigeration cycle to improve recovery of propane, butane and NGL.

Recovery

C3 80% | C4 94% | C5+ 98%

CRYO EXTRACTION PLANTS

The natural gas is cooled to even lower temperature using JT valves and turboexpander to separate ethane from methane and recover all heavier hydrocarbons.

Recovery

C2 98% | C3 99% | C4+ 100%

FLOATING AND MOBILE PRODUCTION



FPSO Jubilee – Ghana, Commissioned 2012

Pyramid E&C provides processing solutions for marginal as well as full scale offshore Oil & Gas production facilities, on floating or mobile offshore structures. Global EPCm support for integration of topsides with the carrier vessel and subsea installation is also available.



Mundra Port, Gujarat, India

We offer full EPC delivery of topside process modules with process performance warranty.

Our modular fabrication yard located at Mundra port in western India has access to all-weather deep-water jetty and can deliver single module of up to 1000 tons directly to the ship.

MODULAR REFINERIES



7500 BPD Topping unit, Fujairah, UAE, Commissioned 2020

Pyramid E&C has standard configurations up to 30000 BPD Crude oil processing capacity in modular design which can reduce project execution time and cost significantly.

Field Diesel

200 -1000 BPD
Diesel

Topping

2000 -30000 BPD
Naphtha, DPK,
Diesel, Fuel Oil

Hydroskimming

10000 -30000 BPD
LPG, Gasoline,
DPK, Jet A1,
Diesel, Fuel oil

Full Conversion

25000 - 30000 BPD
LPG, Gasoline, DPK,
Jet A1, Diesel,
Fuel oil, Asphalt

Bitumen

5000 -10000 BPD
Diesel, Fuel oil,
Asphalt

Carbon Black

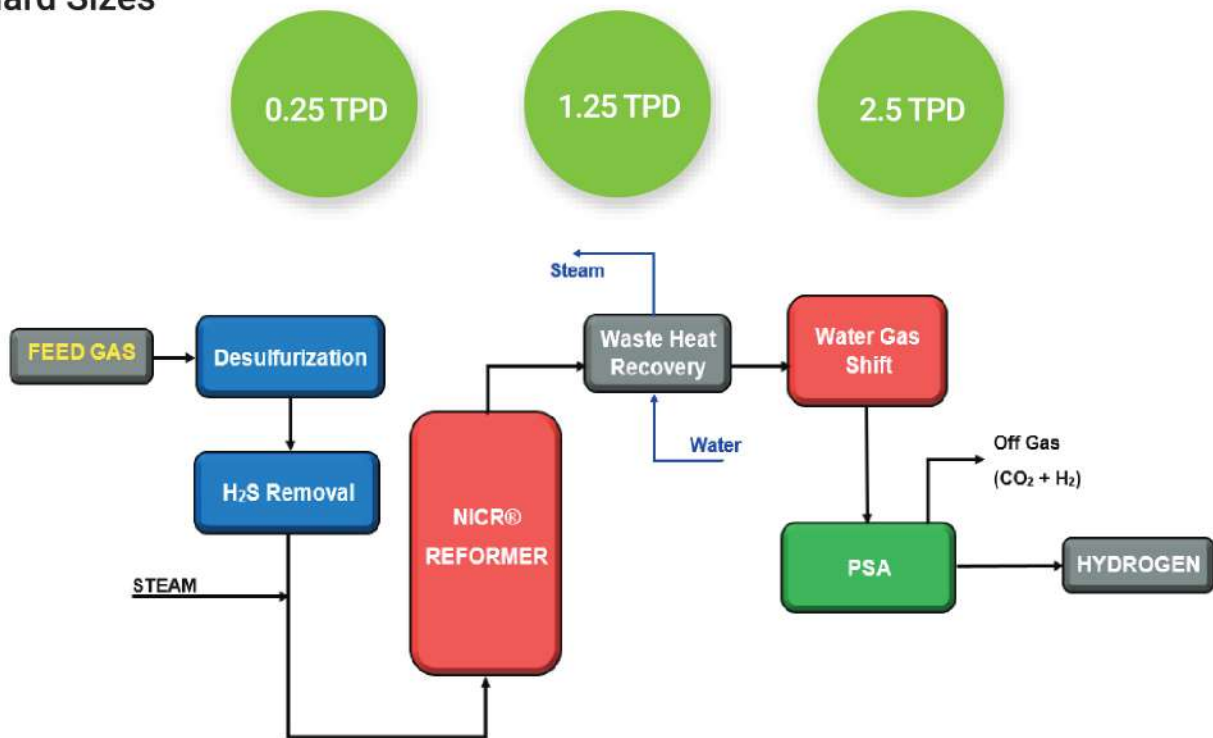
40 TPD Units
Several Grades

HYDROGEN



Cost-effective, modular plants to produce Blue or Green Hydrogen utilizing Natural, Flared, Stranded or Bio gas.

Standard Sizes



Utility & Offsite systems

Inst. Air

Nitrogen

DM Water

Effluent Treatment

Steam Generation

Power

METHANOL



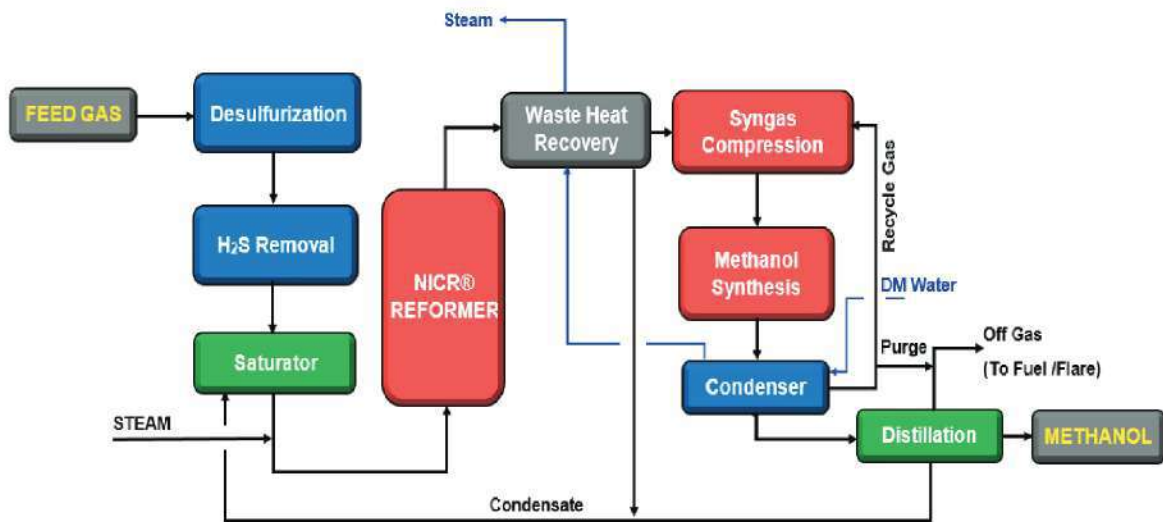
- Standard units up to 100 TPD
- Micro units for Biogas
- Most economical option to liquefy stranded gas flows.

Standard Sizes

25 TPD

50 TPD

100 TPD



Utility & Offsite systems

Inst. Air

Nitrogen

DM Water

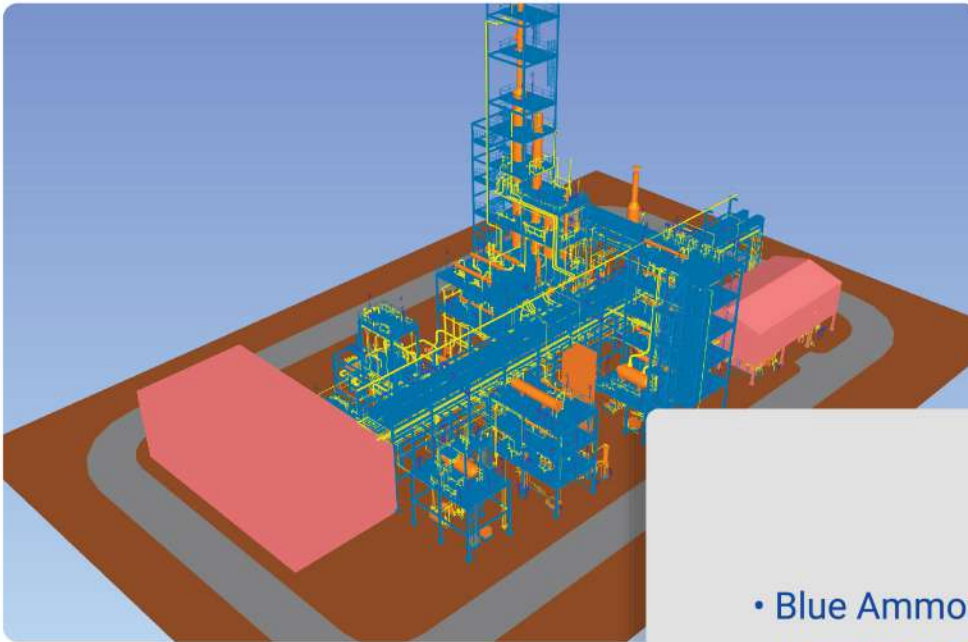
Cooling Water

Effluent Treatment

Steam Generation

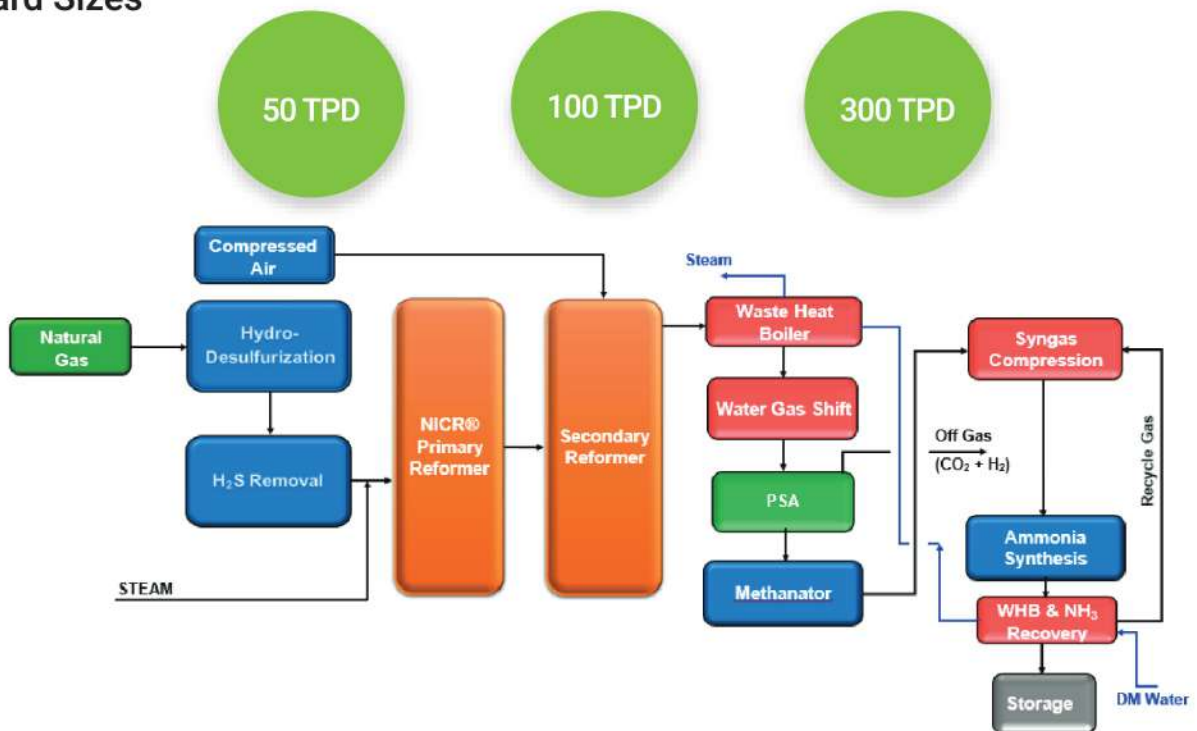
Power

AMMONIA



- Blue Ammonia from Natural Gas
- Ammonia from Green Hydrogen
- Modular, Mobile plants

Standard Sizes



Utility & Offsite systems

Inst. Air

Nitrogen

DM Water

Cooling Water

Effluent Treatment

Steam Generation

Power

BIO CHEMICALS



Pyramid E&C offers modern, efficient, and fully automated Bioethanol and Biomethanol plants with Zero Liquid Discharge (ZLD) and Zero Green House Gas (GHG) emissions.



1G Bioethanol



Bio Methanol

- Own technology for Bioethanol and Bio-methanol.
- Standard plants for 100/200 and 400 KL per day for Bio-Ethanol.
- Partner technology for Ethylene Glycol, Ethylene Oxide and SAF

SPHINX PROCESS SYSTEMS

A division of Pyramid E&C offers a range of process systems, utility packages and equipment for hydrocarbon applications. The packages are supplied with process performance warrantee and comply to API, ASME, UL or CE specifications. To maintain the packages through operating life, we have local service centers.



Oil & Gas Production

- Multiphase Separators
- Two-phase Separators
- Gas Sweetening Unit
- Gas Dehydration Unit
- Heates Treaters
- Desalters

Utility Packages

- Hot oil systems
- Chiller packages
- Steam Generators
- Demineralized water systems
- Air/ Nitrogen packages
- Fuel Gas Conditioning skids
- Chemical Injection systems

Automation System

- E-House
- Gas Fiscal Metering
- Liquid Fiscal Metering
- HIPPS
- Choke Manifold

Equipment

- Pressure Vessels
- Distillation Columns
- S&T Heat Exchangers
- Air Cooled HX
- Fired Heaters

RESEARCH & ENGINEERING

Pyramid E&C owns and operates Technology Centers in Mumbai, India and Houston, Texas. These Technology Centers are used by our experienced engineers for R&D and prototyping products developed and commercialized by the Pyramid Group of Companies.


Furthermore, our Technology Centers also provide services to clients with novel technologies who want to commercialize. Our list of contract R&D services include:

- Process Validation and Steady State Simulation
- Multi-Disciplinary Design
- Custom Manufacturing
- Pilot Plant Installation and commissioning

TECHNOLOGY COMMERCIALIZATION

After the success and validation of the results of the pilot plant, we offer our clients services to fully commercialize their technologies. These services include:

- Commercial Scale Plant Design
- Facility Front End Engineering and Design
- Emissions and Building Permitting Support
- Project Investment Support
- Detailed Engineering and Design
- Constuction Management
- Commercial Scale Plant Installation and Tie-ins



Upcoming Innovation Center at 550 Eldridge Parkway, Houston

PROJECT DEVELOPMENT

Pyramid E&C has specialist project management teams who have delivered more than 700 projects in last 30 years of operation. We are able to conceptualize, engineer and deliver projects worldwide from our Houston, London, Dubai and Mumbai regional headquarters:

CONCEPTUAL DEVELOPMENT

The initial stage of project involves conceptual studies and evaluating various development and financing options. Our experts conduct process studies (e.g., plant simulation, linear programming) to define the facility by leveraging resources from our Knowledge Management System, which contains technical and commercial data from 700 global projects, to identify the best development option quickly.

FEASIBILITY STUDIES

Our specialist engineers assess the strengths and weaknesses of the proposed options and provide a bankable techno commercial Feasibility Report covering all aspects critical for investment decision. For qualified projects, Pyramid E&C assists in financial closure of the project either by equity participation or by institutional lending from USTDA or EXIM banks.

FRONT END ENGINEERING & DESIGN

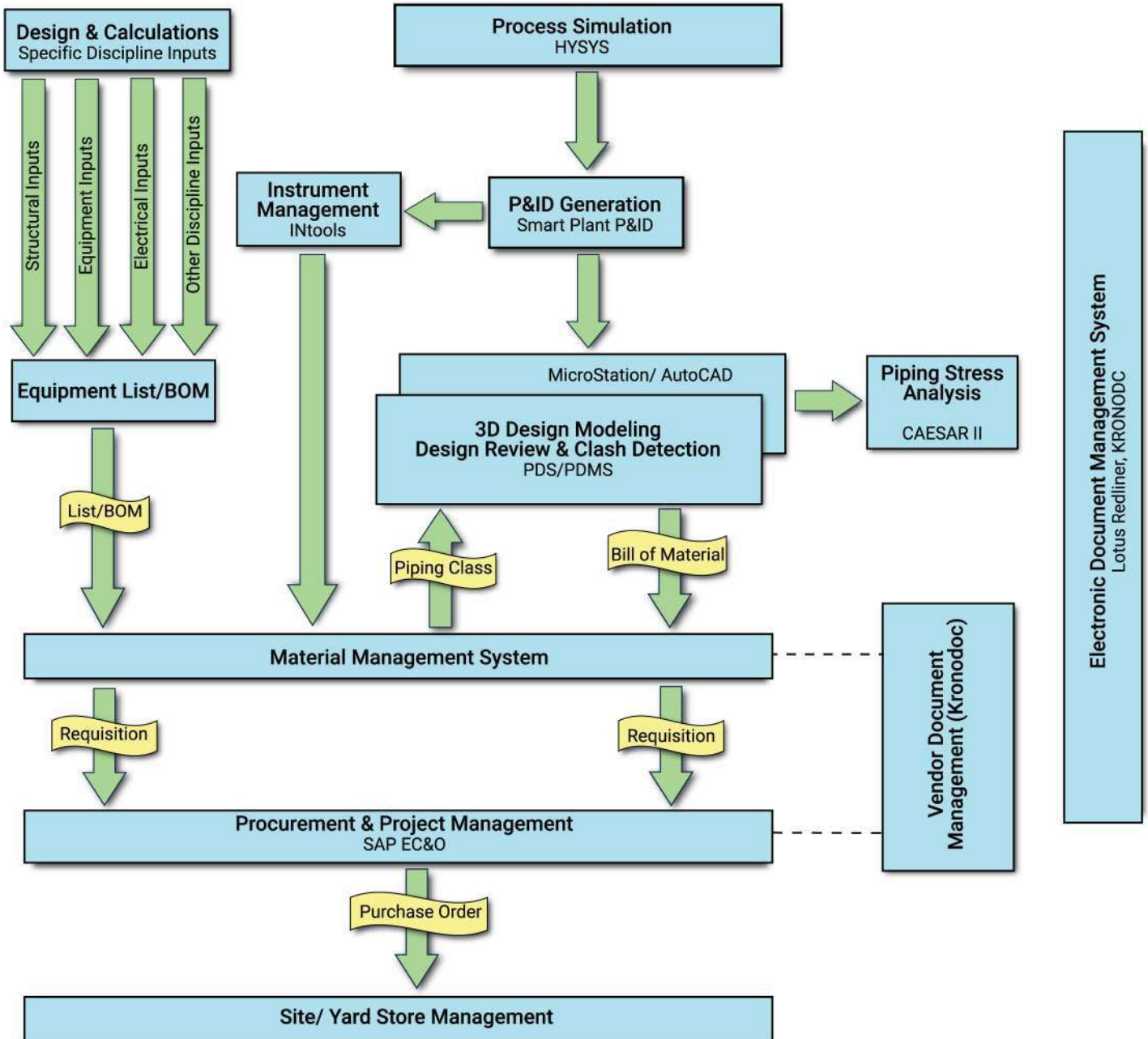
Post financial closure, it is imperative to provide accurate definition to project and conclude the contracting strategy for facility realization. Pyramid E&C conducts Front End Engineering and Design (FEED) study which provides work scope for each engineering discipline and fairly accurate cost estimate.

PROJECT MANAGEMENT

Depending on the available organization capabilities with the Owner, Pyramid E&C provides project management services ranging from Owner's engineer, EPCm or turnkey EPC delivery keeping the success of project as sole objective.

EPC SERVICES

TURNKEY, SINGLE POINT RESPONSIBILITY



EPC (Engineering, Procurement, and Construction) services provide end-to-end solutions by handling all aspects of a project, from design to construction, under a single contract. This turnkey approach ensures single-point responsibility, offering clients streamlined management, reduced risk, and seamless project execution.

EPCm SERVICES

Concept to commissioning Engineering and Project Management services



Indian Engineering Center, Mumbai



US Technology Center, Houston

- Houston & Mumbai engineering centers
- Process Engineering
- Mechanical Engineering
- Piping Engineering
- Civil & Structural Engineering
- Electrical Engineering

- Automation
- Risk Management
- Environmental Studies
- Asset Integrity Assessment
- Safety Studies

Process Engineering

HYSYS	General Simulation
Pro II	Refinery Simulation
Pro-SIM	Reactor Modelling
ProMax	Amine System Design
Pipe Net	Pipeline Network
Smart Plant	Intelligent P&ID

Mechanical Engineering

Smart Plant	CAD 3D Modelling
PDMS/ E3D	CAD 3D Modelling
SolidWorks	Component design
Caesar II	Piping Stress Analysis
ANSYS	FEA/ CFD
PV Elite	Equipment Code Design

Instrumentation

IN Tools	Instrument Specs
InstruCalc	Instrument Sizing

Electrical Engineering

ETAP	Electrical Systems Design
Cab-Sys	Electrical Systems Detailing

Structural Engineering

SACS	Offshore structural Analysis
STAAD	Structural Analysis
Tekla	Structural Detailing
SDS2	Structural Detailing

Project Management

Primavera	Project Planning & Control
Kronodoc	Document Management
Redliner	Inhouse Squad Check
Bluebeam	Review Collaboration

MODULAR FABRICATION

Pyramid E&C manufactures and delivers the process plant modules from its Modular Fabrication Yards in Mundra, Mumbai, and Houston. The yard capabilities and specialties are as below:



MUNDRA SEZ, INDIA

- Total area: 200,000 ft²
- Facility for Pipe & steel work
- Factory Acceptance Test
- LOLO Loadout Capacity: 1,000 MT
- RORO facility also available
- Mundra Port Access (18m Draft)

MUMBAI, INDIA

- U-Stamp & CE Certified Vessel Shop
- Pipe & Structural Fabrication Shops
- E & I Integration
- Functional Demonstration
- Factory Acceptance Tests

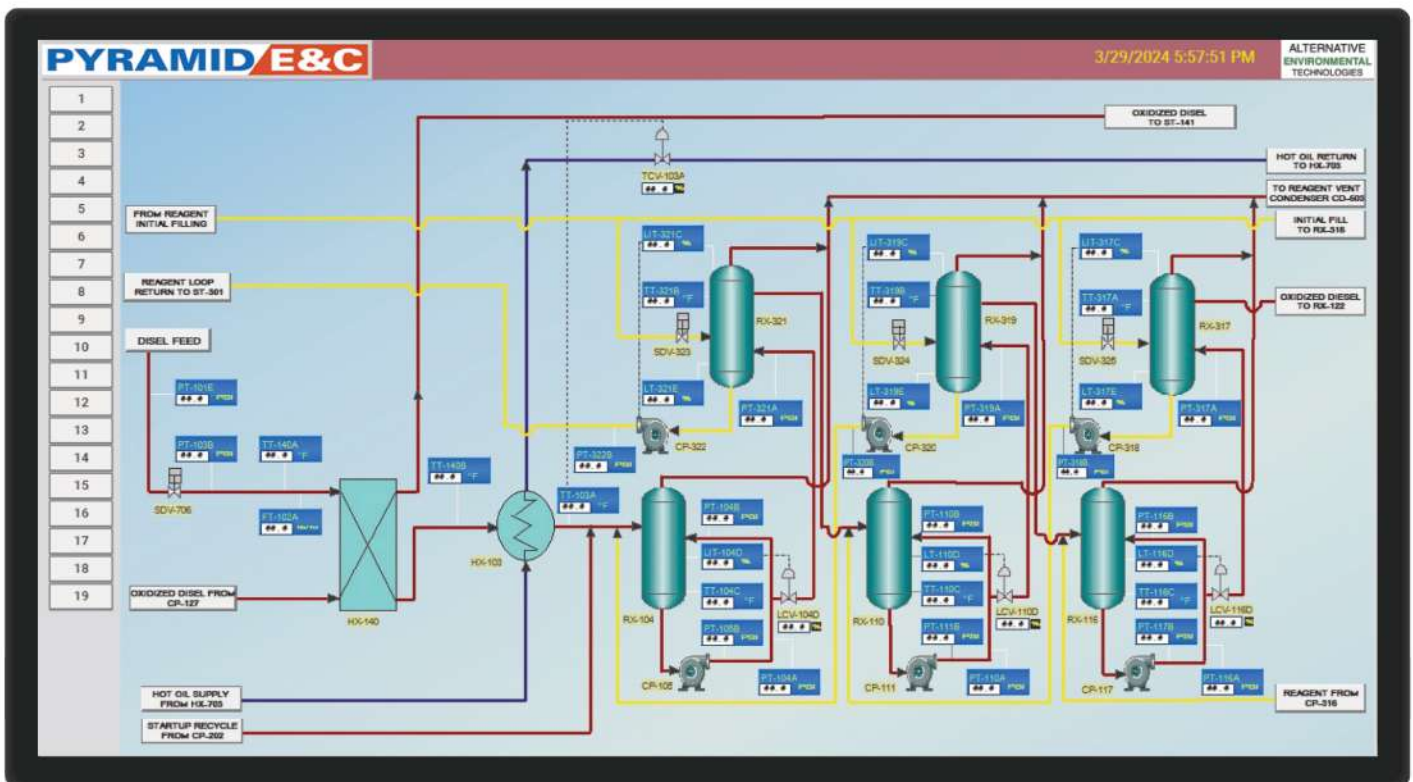
HOUSTON, USA

- 25,000 ft² with Inventory Storage
- E & I Integration
- Functional Demonstration
- Factory Acceptance Test
- After-Sales Support



AUTOMATION

Pyramid E&C's Modular E-HOUSE solution acts as a packaged substation with integrated power storage, facility monitoring, process control, and SCADA. The utilization of the E-House reduces the delivery time and on-site costs for E&I installation and commissioning.

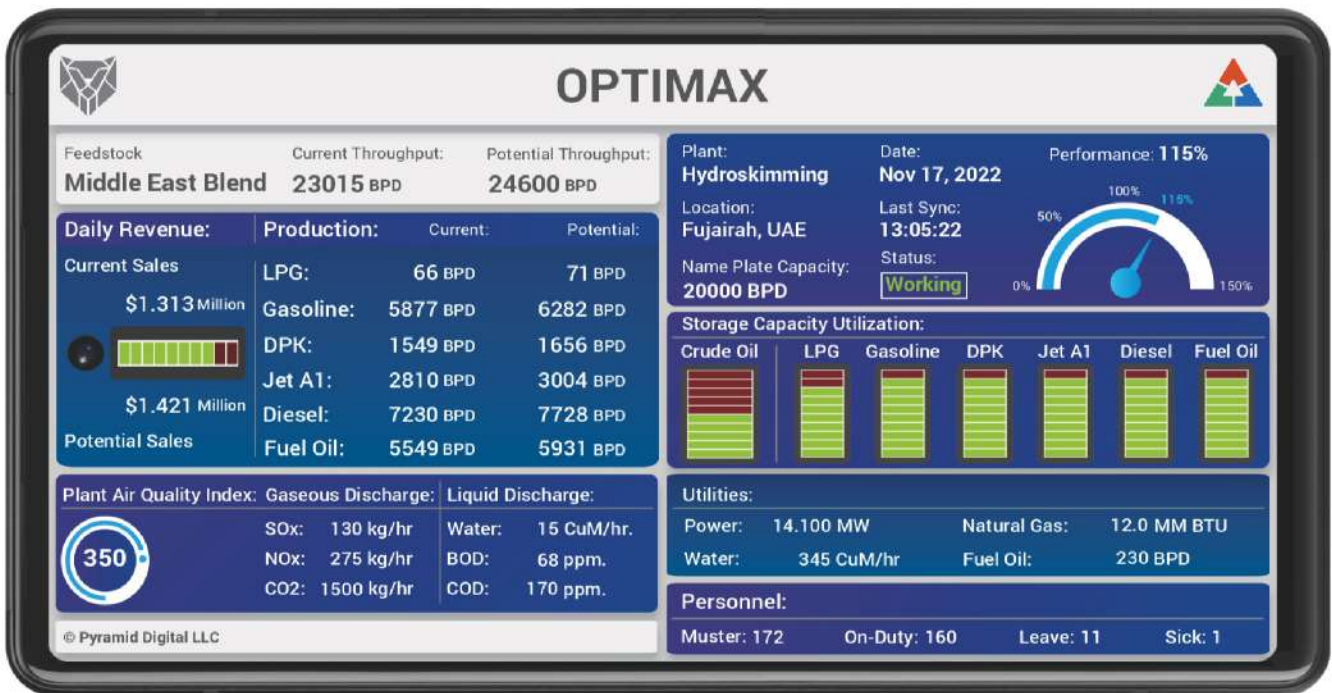


Standard E-Houses have ratings starting from 630 kVA up to 2,500 kVA, connection voltage between 400-480 V, and IP 54 protection. The system is certified to US or European standards. We also build E-houses for offshore services conforming to SOLAS standard. The Modular E-House is designed to be transported in multiple 40' container segments, thus reducing the costs and difficulties associated with oversized transport.

DIGITALIZATION

Pyramid E&C supplies plants that are truly Digital by design. The advanced features such as real-time process optimization and remote performance management by handheld devices provide complete controls to the stakeholders.

To maximize the plant performance, Pyramid E&C offers comprehensive Digitalization solutions for hydrocarbon asset owners across the globe with 24/7 help desk and advisory services.



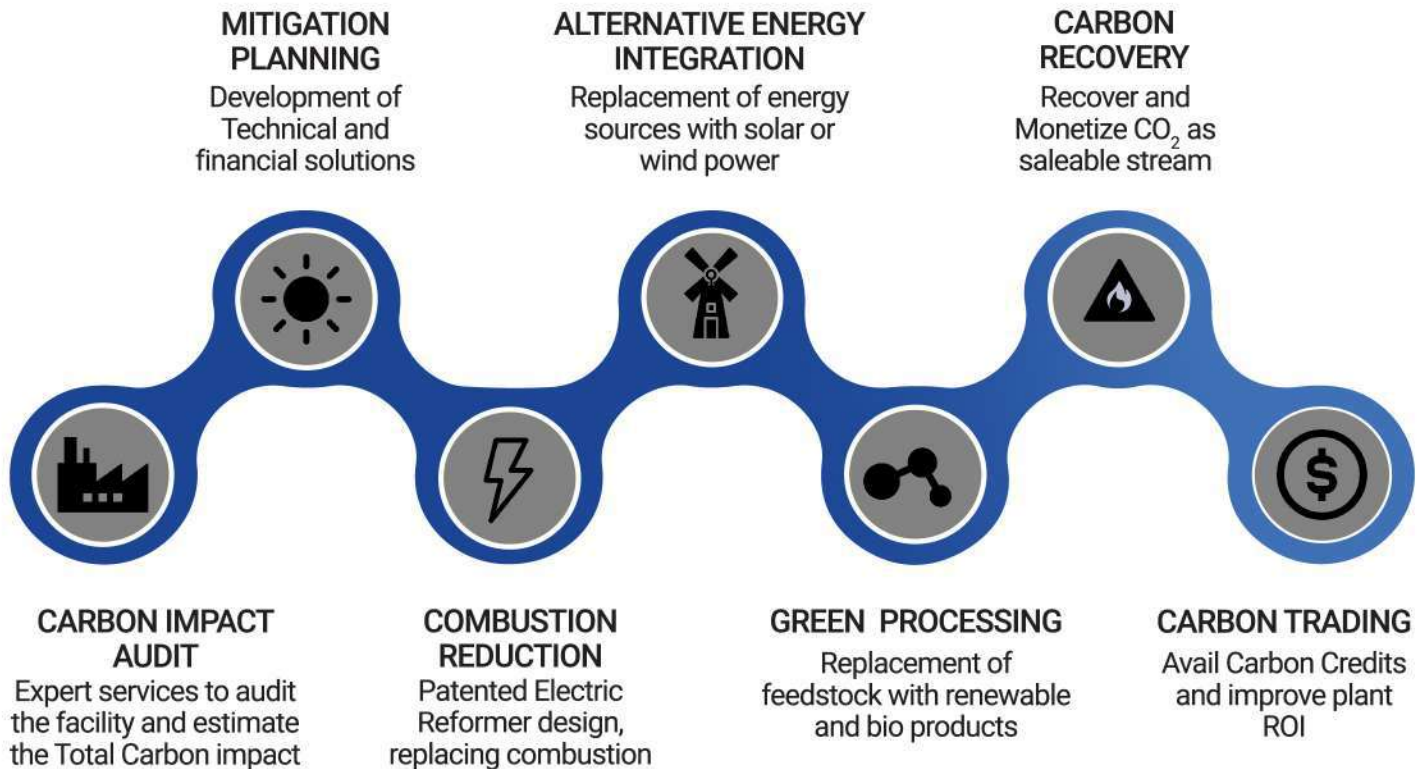
OPTIMAX FEATURES

- Data Linkage of Twin with Plant Control System
- Real Time Performance Simulations
- AI techniques to predict plant performance
- Performance dashboard for top management
- Physical operation support on a visit basis
- Operator Training Simulator
- Process Digital Twin
- Mechanical Digital Twin
- Performance-based revenue model

The advanced features such as real-time process optimization and remote performance management by handheld devices allow stakeholders to access and manage the plants while on the move.

DECARBONIZATION & ENERGY TRANSITION

Pyramid E&C offers several solutions to reduce Carbon impact of Hydrocarbon processing as below:



- **Electric Reforming:** Novel NICR® Reactor and Reformer designs for temperature up to 1100°C replacing combustion of Natural gas by alternative energy.
- **CO₂ Liquefaction:** As combustion is eliminated, the concentrated CO₂ available in the process stream can be efficiently liquefied or converted into dry ice.
- **Flare Mitigation:** Modularized solutions to liquefy the flared hydrocarbons into Blue Ammonia or Methanol, thus creating value from the wasted resources.
- **Carbon Sequestration:** Standard compression and reinjection system to store CO₂ in subsurface reservoirs.
- **Fuel Ethanol:** Produce anhydrous Bio-Ethanol by fermentation of grains, sugar cane or cellulosic feedstock for blending into Gasoline.
- **Green Petrochemicals:** The Bio-Ethanol thus produced from the feedstock for several downstream petrochemicals, plastics and Hydrogen.
- **Alternative Energy Integration:** Energy audit and replacement of conventional power applications with Solar, Wind or other forms of alternative energy.

OPERATION SUPPORT

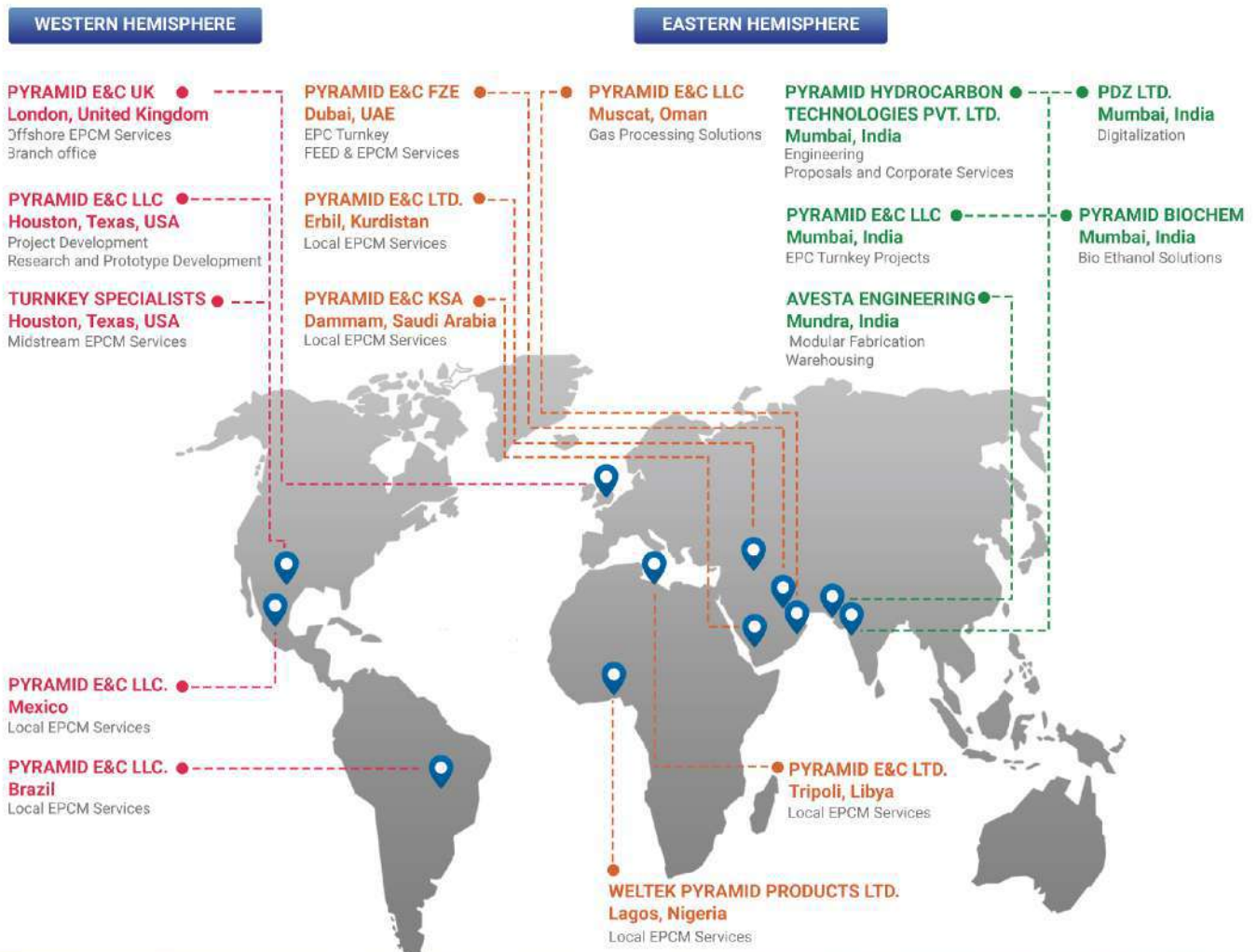
Pyramid E&C offers a variety of development options for Oil & Gas Production and Refining facilities to enable Hydrocarbon asset owners maximize the return on investment as below:

- Build-Own-Operate
- Build-Own-Operate-Transfer
- Build-Operate-Maintain

Besides, Pyramid E&C continues to support plant owners during operation of the plant to ensure following:

- Minimal manpower employment
- Efficient plant operation and energy consumption
- Critical spare parts availability

We achieve it by creating a “Digital Twin” of the facility and monitor it from our Plant Operation Support Centers covering all time zones. A large variety of plants supplied by us are either unmanned or need only routine visits of technical staff. We also have the remote operation versions available for several of plants offered by us.



URL : www.pyramidenc.com
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