



Oil Refining & Petrochemicals

Enppi





Contents

Enppi at a Glance	4
Oil Refining & Petrochemicals Profile	6
Oil Production Experience	8
Petrochemicals, Chemicals & Fertilizers Experience	32
Areas of Expertise	46
Software Applications	54
QEHS Management Systems	58

Enppi at a Glance



Enppi established in 1978 and headquartered in Cairo, Egypt, is an engineering and EPC Main Contractor providing fully integrated engineering, procurement, construction supervision and project management services for the petroleum, petrochemicals, energy, power and other industries in Egypt, MENA region & Latin America.

Enppi engineers are known for their invaluable expertise and knowhow, and their proficient work conduct is what makes the company's name a world renowned one. At Enppi, we are committed to retaining our engineering experts and talents by providing them with the work environment and support they require to thrive.

Enppi holds a long and pride-worthy track record of success stories in engineering projects that can be mapped across the globe. Our accumulated experience in engineering solutions is the cornerstone of our global reach, and the Enppi name is now internationally recognizable as a professional, efficient and trusted partner.



Shareholders

96.61%

Egyptian General Petroleum
Corporation
(EGPC)

2.12%

Petroleum Projects &
Technical Consultations
Co. (Petrojet)

0.99%

Housing and Social Services
Fund for the Petroleum
Sector's Employees
(HSSFSE)

0.14%

Egyptian Natural Gas
Holding Co.
(EGAS)

0.07%

Egyptian Petrochemicals
Holding Co.
(ECHEM)

0.07%

Egyptian Natural Gas Co.
(GASCO)

Oil Refining & Petrochemicals Profile

Oil Production and Refining

Across a span of 40 years, Enppi has accumulated priceless expertise and knowhow that have made it an easily recognizable name across the world as an international leading provider of fully integrated engineering and EPC main contractor.

Enppi has developed an extensive experience in executing many oil refining projects across all process activities starting from process optimization, selection studies and equipment sizing up to P&ID issue for construction in addition to upgrading, expanding and revamping of existing refineries.

Enppi has been involved in different types of petroleum refinery projects covering:

- Crude Distillations Unit
- Vacuum Distillation Unit
- Vapor Recovery Unit
- Sulphur Recovery Unit
- Deasphalting Units
- Hydro cracking Units
- Hydro Treating Units
- Tail Gas Treatment
- Lube Oil Production & Blending
- Isomerization
- Reforming & CCR
- Sour Water Stripping Unit
- Amine Absorption and Regeneration Units
- Hydrogen Manufacture Units

Petrochemicals

Enppi plays an integral role in the petrochemicals industry, proving to be a reliable partner in this important sector. Enppi has an extensive knowledge & experience in the execution of several successful projects across all process activities starting from process optimization, selection studies and equipment sizing applying state of the art technology based on licensor know how in the following strategic industries:

- Ethylene
- Polyethylene
- Linear alkyl benzene (lab)
- Methanol
- Polypropylene
- Styrene
- Polystyrene

Chemicals and Fertilizers

Over all these years, Enppi has acquired knowledge & experience in the execution of chemicals and fertilizers projects applying state of the art design and licensor know-how technologies by utilizing our engineering expertise in the following industries:

- Ammonia Plant
- Urea Plant
- H₂O₂ Plant
- Sulfuric Acid Production Facilities
- Phosphoric Acid Production Plant

Oil Production & Refining Experience



Crude Oil Production Experience

Debottleneck Safaniyah Onshore Plants 2019 - 2024

Client

Saudi Aramco

Contract Type

EPC LSTK- Main Contractor

Scope of Services

Engineering, Procurement, Construction, Pre-commissioning, Commissioning & Start-up assistance.

Project Description

Sustain the future oil production rate of 1300 MBCD, while increase the capacity of the produced water treatment facilities in Safaniyah Onshore Plants from 810 MBCD to 1500 MBCD maintaining the oil in water (OIW) content below 50ppmv. The Arab Heavy crude production will also be increased from 1200 to 1300 MBCD whilst meeting the specifications as given in the Aramco standards, salt content and BS&W.

North safa development offshore platform project 2022-2024

Client

GUPCO

Contract Type

(EPC) Lump-sum Turnkey, (Consortium with Petrojet - PMS - Enppi Consortium Leader).

Scope of Services

Consortium Leader (Management), Detailed Engineering, Procurement, Pre-Commissioning.

Project Description

North SAFA Offshore Platform accommodate 9 wells (4 producers + 2 water injector + 3 future). Production fluids from NS will be exported to Ramadan 6 platform through oil sub-sea pipeline 12" with length of 10 KM & water injection shall be provided through 8" Pipeline with length of 11 KM. North SAFA platform is an unmanned and minimal facility platform.

This project will secure production of 12,000 barrels of oil per day during phase I, and 30,000 barrels per day on project completion of phase II.

Jacket Structure Weight is 470 Tons.

Deck Structure Weight including topside facilities is 340 Tons.

أرامكو السعودية
Saudi Aramco



Upgrading El Hamd Station to an Integrated Oil Treatment Facility 2020 - 2023

Client

General Petroleum Company (GPC)

Contract Type

EPC

Scope of Services

Basic & detailed engineering, procurement construction Supervision, Pre-commissioning, commissioning & start-up assistant.

Project Description

Upgrade the existing El-Hamd station to an integrated oil treatment facility that will process the feed oil/water mixture through dehydrating and desalting the separated oil to achieve the required product specifications.

The new facilities will be designed to handle total feed capacity equal to 50,000 BPD (including 20% by volume water cut). Accordingly, the new process plant shall include but not limited to the following main systems:

- Heating system (Heat Exchangers and hot water cycle).
- De-hydrator/De-salter package.
- Shipping tanks.
- Crude feed pumps and crude shipping pumps.
- Hot Water makeup system (tank and pumps).
- Required utilities



Two New Platforms at NAO And HH Fields 2015 - 2018

Client

General Petroleum Company (GPC)

Contract Type

EPC LSTK - Consortium (Enppi-Petrojet-PMS)

Scope of Services

Engineering, Procurement, Fabrication and Installation of Two new Offshore Platforms & offshore pipeline and Pre-Commissioning, Commissioning and Start Up works

Project Description

Construct two new Offshore Platforms at NAO and HH fields with production capacity of 9,500 BPD at Gulf of Suez, The production from the new (NAO & HH) Platforms will be transferred directly to existing (AMER-8) Platform via new 6" Pipeline 8 km long.



Kalabsha Development Project 2010 - 2012

Client

Khalda Petroleum Company (KPC)

Contract Type

Lump-sum for Professional Services and Cost Plus for Material Supply

Scope of Services

Basic & Detailed Engineering and Procurement Services

Project Description

Developing the facilities at Kalabsha and overcome the downstream bottlenecking till the receiving point at El Hamra facilities.

- 1st Phase: produce 20,000 BOPD.
- 2nd Phase: produce 40,000 BOPD



Re-Feed for Northwest October Field 2010 -2011

Client

PETROSALAM (J.V. with Arabian Oil Company Ltd. - AOC)

Contract Type

Lump Sum for professional services

Scope of Services

Front End Engineering Design (FEED)

Project Description

Develop of a single nine-slot platform with ESP, 10" subsea pipeline 22 km total length, and onshore receiving facilities at Gulf of Suez. Expected production rate 10,000 BOPD.

The offshore platform will be installed by using the Mobile Offshore Application Barge (MOAB) system (design concept by Overdick GMBH – Germany).



Kharir Development Project 2008 - 2010

Client

Total E&P Yemen

Contract Type

(EPC) Lump-sum Turnkey, Consortium with Petrojet and Enppi Consortium Leader.

Scope of Services

Engineering, Procurement, Construction Supervision, Project Management, Commissioning, Start-Up Assistance

Project Description

Installation of crude stabilization unit with capacity of 30,000 Barrel per day. The unit includes oil separator, water bath heater, crude storage and export pumps, as well as, supporting utilities. The Project is located in Kharir at Hadramout, 600 Kilometer from Sana'a in Yemen.



Safaniya Water Disposal System Upgrade 2006 - 2009

Client

Saudi Aramco

Contract Type

EPC LSTK (Main Contractor)

Scope of Services

Engineering, Procurement, Construction, Commissioning & Start-Up and Overall Management.

Project Description

Expanding Safaniya Arabian heavy crude and utilities plants to maintain the plants crude oil demand until 2011. New facilities was added to overcome the expected increase of water content from 17% to 35% in Safaniya crude oil by 2011; allowing to increase the maximum sustain rates & water wash from 383 to 805 MBOD:

- 3 Low Pressure Production Trap (LPPT) phase separators – 1053 MBOD separation
- 3 Formation Water Draw-off pumps – 318 MBOD
- 6 Corrugated Plate Interceptors CPI's – Total rating 364 MBOD
- Formation Water Treatment – Rated by 847 MBOD
- Additional 230 KV electric feeders, Others: Substation / Control System / Utilities.

أرامكو السعودية
Saudi Aramco



Tanak / Omar Vapor Recovery / Tanak Water Injection 2001 - 2003

Client

Al Furat Petroleum Company

Contract Type

(EPC) - Lump-sum Turnkey

Scope of Services

Basic & detailed engineering, construction, procurement, material supply, commissioning & start-up

Project Description

2 associated vapor recovery units, capacity 2.7 MMSCFD & 3.5 MMSCFD ; new Water injection unit 900 cubic meter/hour at Tanak area, related pipelines 36 Km 10", 11 Km 8", 4 Km 4" and utilities.



SABAN / JARNOF - AZRAK / MALEH 1999 - 2000

Client

Al Furat Petroleum Company

Contract Type

EPC LSTK (Main Contractor)

Scope of Services

Basic & Detailed Engineering, Procurement, Construction, Commissioning & Start-Up

Project Description

Upgrading the maximum production capacity of Saban / Jarnof field to 45,000 b/d and upgrading the production capacity of Azraq / Maleh field from 35,000 to 55,000 b/d and installation of a new 8.4 km - 10" pipeline.



Crude Treatment Plant (Ras Bakr) 1999 - 2001

Client

General Petroleum Company (GPC)

Contract Type

Lump-sum for Professional Services, Disbursable for Material Supply and Construction

Scope of Services

Basic & Detailed Engineering, Procurement, Construction, Commissioning & Start-Up and Overall Management

Project Description

Treatment for oil with a capacity of 50,000 B/D, including water separation and desalination units.



Meleiha Field Development 1997 - 1999

Client

Agiba Petroleum Company (AGIBA)

Contract Type

Lump-Sum for Professional Services, Disbursable for Material Supply and Construction

Scope of Services

Basic & Detailed Engineering, Procurement, Construction, Commissioning & Start-Up

Project Description

Upgrade the existing production facilities to accommodate the additional condensate received from El Obayied Field.



Produced Water Re-Injection for Sitra 2017 - 2020

Client

Badr Petroleum Company (BAPETCO)

Contract Type

Lumpsum for Professional Services and Cost plus for Procurement Services

Scope of Services

Detailed engineering, procurement and construction

Project Description

The BED-3 facility is currently liquids constrained. An exercise has been undertaken to identify & propose solutions for bottlenecks that will increase the plant oil capacity from 23 kbpd to 30 kbpd. In addition, the water rates are expected to rise sharply from 2016. This project will raise the water capacity for Sitra to 20 kbpd, and the overall BED-3 plant to 30 kbpd. The Phase 1 Redevelopment included an additional 15 wells by 2011, and Phase 2 followed with a further 16 wells by 2015. Recent drilling, and a renewed focus on water flood, has confined that there may be significant upside potential to the Sitra fields.

Accordingly, Bapetco intends to install a project to de bottleneck BED3 liquid processing facilities.



Oil Refining Experience

Suez canal corridor petrorefinery CDU and SGP Units Project

Client

Red Sea National Petrochemical Companies

Contract Type

Lumpsum Main Contractor through a consortium with Petrojet

Scope of Services

Detailed engineering, procurement, construction, pre-commissioning, Commissioning and start-up

Project Description

The Petro-Refinery Complex will process 4,000 KTPA which is equivalent to 500 T/hr (Based on 8,000 operating hours per year) of crude oil and will also include grass root refinery and petrochemical units. The project design is based on the following crude oils:

- Arab Extra Light Crude Oil (Base Case).
- Western Desert Crude Oil (Alternative Case).

Crude oil will be introduced to grass root Crude Distillation Unit (CDU); the expected products from the CDU are summarized as follows:

- Light Ends
- Straight Run Kerosene
- Straight Run Gas Oil
- Straight Run Atmospheric Residue

All CDU products are considered intermediate products and shall be directed to downstream RSNPC complex grass root units for further processing and treatment.

CDU light ends will be directed to Saturated Gas Plant (SGP), straight run kerosene will be directed to Steam Cracking Unit (SCU), straight run gas oil will be directed to Distillate Hydrotreating Unit (DHT) and atmospheric residue will be directed the Integrated Residue Hydroprocessing (IRH) unit. Saturated Gas Plant (SGP) outlet C3-C5 stream will be directed to Steam Cracking Unit (SCU), stabilized Naphtha will be directed to Naphtha hydrotreating unit.

CDU liquid products will be directed to intermediate storage tanks or directly to the downstream licensed units.



ANOPC Hydrocracking Complex 2020 – 2023

Client

Assiut National Oil Processing Company (ANOPC)

Contract Type

Lumpsum - Sub-Contractor for Technip Energies

Scope of Services

Engineering, Procurement, Construction, Commissioning and Startup.

- Vacuum Distillation Unit (VDU)
- Distillate Hydrotreater Unit (DHTU) (Licensor: Axens)
- Sulphur Recovery Unit (SRU) (Licensor: Sirtec Nigi)
- Sulphur Solidification Unit (SSU)

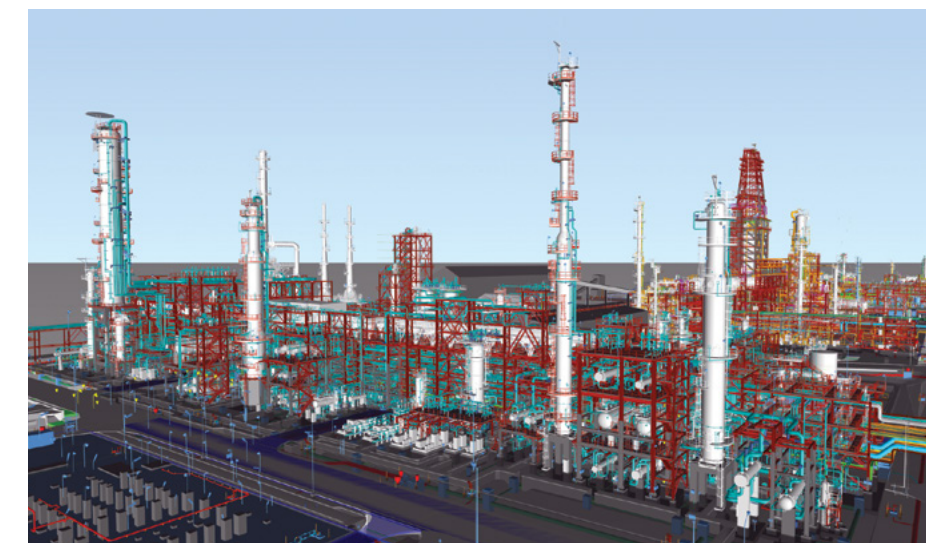
Project Description

Convert low value Fuel Oil (Mazot) into more valuable products (Diesel, Naphtha & LPG).

The Project is expected to produce 2.742.80-Million Tons per year of Diesel, 403000-442000 Tons per year of Naphtha, 114000122000-Tons per year of LPG, 357500 Tons per year of Coke & 59500 -81550 Tons year of Sulphur.

Licensor

Siirtec Nigi for the SRU & Axens for DHTU.



Midor Refinery Expansion Project 2019 - 2022

Client

Middle East Oil Refinery (MIDOR).

Contract Type

Lumpsum Turnkey Sub-contractor for Technip Energies.

Scope of Services

Detailed Engineering, Procurement Services, Construction, Pre-commissioning, Commissioning, Start-up, and performance test for the following Units:

- Unit 17: New Crude and Vacuum Distillation Units (CDU & VDU)
- Unit 19: Solvent Deasphalting Unit (SDA, UOP License)
- Unit 47: Cooling Tower
- Unit 61: New Tanks Area
- New Control Room (Unit 48), New Substation Building (Unit 49) & Dom. Waste water (Unit 55).

Project Description

Increase the Midor plant refining capacity by 60% from design capacity (100,000 BPSD in addition to 15% increase after the first phase of expansions), by adding new units such as new crude & vacuum distillation unit with capacity of 60,000 BPSD, diesel hydrotreating unit to comply with the international standards with capacity of 44,000 BPSD as well as solvent deasphalting unit with capacity of 14,000 BPSD in addition to the hydrogen production unit with capacity of 56500 m³/h.

Licensors

UOP- KIT.



Rehabilitation of SOPC Coker 2018 - 2023

Client

Suez Oil Processing Company (SOPC)

Contract Type

Lumpsum for professional Services - Cost Plus for procurement services

Scope of Services

Basic and detailed engineering, procurement services and construction supervision

Project Description

Rehabilitate the Coker Complex in SOPC co. to increase production to reach 5000 MTBD that includes the following units:

- Vacuum Distillation Unit "VDU" (Unit 10) - 5000 MTBD.
- Kerosene Hydro treating Unit (Unit 11) - 1500 MTBD.
- Delayed Coker Unit (Unit 12) and Vapor Recovery Unit "VRU" (Unit 14) – 3400 MTBD (both units)
- Diesel Hydro treating Unit (Unit 13) – 5250 MTBD.
- Amine "Sweetening" Unit (Unit 15) - 300 MTBD of sour off gases & 460 Nm³/hr, of lean amine circulation rate.
- Hydrogen Production Unit (Unit-16)- 4000 Nm³/hr.
- Non-phenolic SWS (Unit-25) and Phenolic SWS (Unit-26)- 60 Ton/hr. each.
- Sulphur Recovery Unit consists of two identical trains (Unit-42) and (Unit-43) to produce high purity liquid Sulphur using CLAUS process, TGTU & amine regeneration (Unit-44) & Sulfur common area (Unit-45) - 210 MTPD of Sulphur product.
- LPG Mercaptans Removal Unit-210 MTPD, Some units will be revamped & the others will be replaced.

Licensors

Axens for DHT and KHT – Bechtel for the Coker.



**Asorc Naphtha Complex (ISBL)-
(Inside Battery limit)
2017 - 2021**

Client

Assiut Oil Refining Company (ASORC)

Contract Type

Lumpsum Turnkey through a consortium with wood

Scope of Services

Detailed Engineering, Procurement, Construction, Pre-commissioning, Commissioning & Startup & Performance Test

Project Description

Maximize the utilization of ASORC infrastructure and the existing facilities to increase the domestic production of high octane Gasoline and reduce its imported amounts in addition to establish an integrated petroleum industry. The Project design capacity 660, 000 tons/year of Naphtha (FEED) to produce high Octane gasoline and increase the LPG production to 187 tons/day.

Licensors

Axens.



**New Vacuum Distillation Unit For
Asphalt Production
2017 - 2021**

Client

Suez Oil Processing Company – SOPC

Contract Type

Lump-sum: for Professional Services, Construction Supervision and Project Management Cost Plus: for Procurement Services Reimbursable Man-Hours: for Commissioning & Start-Up Assistance & Performance Tests.

Scope of Services

Basic & Detailed Engineering, Procurement, Construction Supervision, Commissioning & Start-Up Assistance and Performance Tests.

Project Description

Installation of a new Vacuum Distillation Unit (VDU) to produce 1200 ton/day of asphalt by removal of lighter fractions (Vacuum Gas Oils) from atmospheric residue that is produced from the existing atmospheric distillation units which process land Belayim crude or equivalent crude oil.



**New Continuous Catalytic
Reforming (CCR) Unit
2015 - 2018**

Client

Alexandria National Refining & Petrochemicals Co. (ANRPC)

Contract Type

Lump-sum for Engineering and Construction Cost Plus for Procurement and Commissioning & Start-Up Services

Scope of Services

Engineering, Procurement, Construction, Commissioning & Start-Up Assistance

Project Description

Increase the value added of the new Naphtha hydro treating unit to accommodate hydro-treated heavy naphtha to produce a reformat of a high octane number by processing 604,000 T/Y. In addition to the increase of LPG & Hydrogen production.

Licensors

UOP.



**Provision of Engineering Support
Services for ERC Refinery Project
2015 -2017**

Client

Egyptian Refining Company(ERC)

Contract Type

Reimbursable Manhours

Scope of Services

Provision of personnel to perform consultations work for Engineering, Procurement, Construction Supervision & project control activities related to project execution by ERC & other project contractors.

Project Description

Produce 4 million tons of different refined products per year including 2.3 million tons of diesel fuel & also to upgrade the Atmospheric Residues of Cairo Refinery by constructing three major new units; Vacuum Distillation Unit (VDU), Hydro-Cracker Unit (HCU) & Delayed Coker Unit (DCU).

Middle distillate and Naphtha produced from each unit and Cairo Refinery will be treated at newly installed Naphtha Hydro Treating Unit (NHT) & Distillate Hydro Treating Unit (DHT). This project includes Utility and Offsite facilities to fully support new units to process targeted feed and products. Also, integration with existing facilities with neighboring companies shall be developed.



New Vapor Recovery Unit 2014 - 2016

Client

Assiut Oil Refining Company (ASORC)

Contract Type

Lumpsum for Engineering, Construction Supervision and Overall Project Management Cost Plus for Procurement Services

Scope of Services

Basic & Detailed Engineering Services, Procurement Services, Construction Supervision, Commissioning & Start-Up Assistance

Project Description

Installation of a New Vapor Recovery Unit with a feed capacity of 400,000 T/Y to be working in parallel with the existing Vapor Recovery Unit and to serve one of both existing crude distillation units, to finally produce 120,000 T/Y L PG + 260,000 T/Y stabilizing Naphtha.



New Vapor Recovery Unit (CCR) Unit 2014 - 2017

Client

Suez Oil Processing Company (SOPC)

Contract Type

Lump-sum: for Professional Services, Construction Supervision and Project Management Cost Plus: For Procurement Services Reimbursable Man-Hours: for Commissioning & Start-Up Assistance and Performance Tests

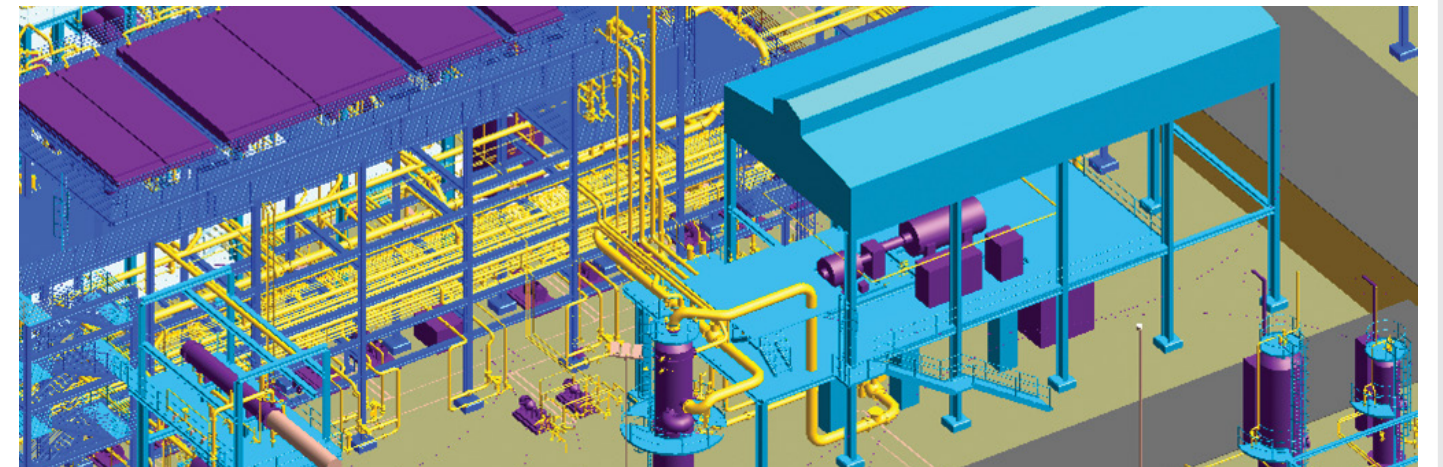
Scope of Services

Basic & Detailed Engineering, Procurement Services, Construction Supervision, Commissioning & Start-Up Assistance and Overall Management for the New Vapor Recovery Unit

Project Description

Installation of a new vapor recovery unit instead of the demolished existing unit to accommodate the off gases from various gas streams generated by processing units (mainly from coker complex) in addition to a new electrical substation and a new control room The new VRU unit design capacity is 200,000 T/Y and will produce:

- Treated LPG 50,000 T/Y
- Untreated fuel Gas (Refinery fuel) 4 MMSCFD
- Stabilized Naphtha 90,000 T/Y.



Installation of a New Naphtha Hydro Treating Unit 2009 - 2012

Client

Alexandria National Refining and Petrochemicals Company (ANRPC)

Contract Type

EPC Consortium with Petrojet

Scope of Services

Detailed Engineering, Procurement Services, Construction Supervision and Management, Commissioning and Start-Up Supervision.

Project Description

Installation of a new Naphtha Hydro Treating Unit with a capacity of 824,000 metric ton per year treated Naphtha.

Licensors

UOP.



Furfural Extraction Unit Revamp Project 2007 - 2019

Client

Alexandria Petroleum Company (APC).

Contract Type

Lumpsum for Professional Services.

Scope of Services

Detailed Engineering, Procurement Services, Construction Supervision, Commissioning & Start Up Assistance.

Project Description

Converting the extraction method using Furfural as an extraction solvent to NMP (Normal Methyl 2-Pyrolodone) because of the following:

- NMP is environmentally better than Furfural.
- NMP chemical characteristics that prefers it as a solvent.
- Shortage in Furfural production.

Licensors

Bechtel.



Phenol Extraction Unit Upgrading to MP Refining Project

Client

Amerya Petroleum Refining Company (APRC)

Contract Type

Lumpsum for Detailed Engineering Services.

Scope of Services

Carrying out the detailed design of the MP Refining Unit Revamp, reviewing and finalizing the P&ID's with full piping, designations (including pipe specifications, insulation thickness, valve, Designations), vendor equipment data & drain points & reviewing hydraulics system & plot layout to ensure unit performance matches equipment specifications.

Project Description

Converting the extraction method using Phenol as an extraction solvent to NMP (Normal Methyl 2-Pyrolodone) because of the following:

- NMP is environmentally better than Pheno.
- NMP chemical characteristics that prefers it as a solvent.
- Shortage in Phenol production UOP

Licensors

Bechtel.



New Pre-flash Column System Production 2014 - 2016

Client

Middle East Oil Refining (MIDOR)

Contract Type

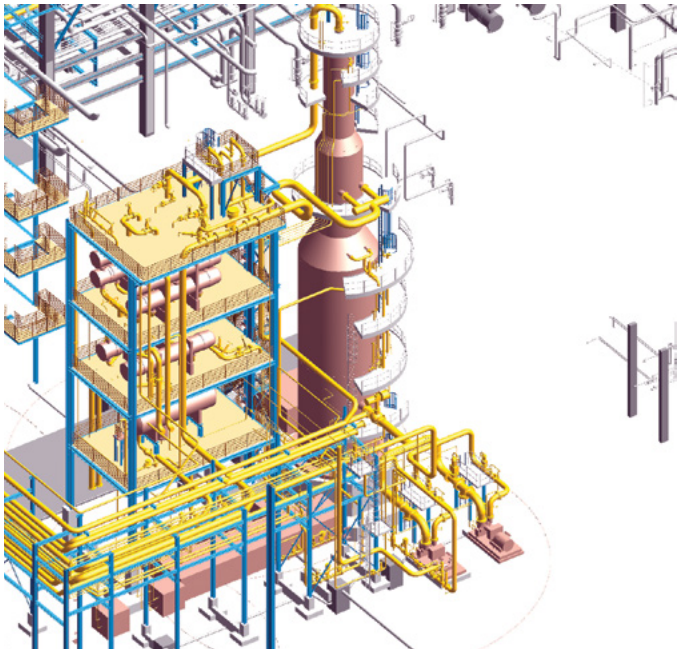
Lump-sum for Engineering Services.

Scope of Services

Basic & Detailed Engineering, Commissioning & Start-Up Assistance.

Project Description

Installation of a New Pre-Flash Column to decrease the Load on the Crude fired Heater in order to achieve design Unit throughput during processing Crude Oils with Higher API gravity and/or increase the CDU/VDU Unit-01 capacity to 115% in case of processing Crude Oil with same design API.



**Review the Licensor Documents
for New Naphtha Complex Project
2015 - 2016**

Client

Assuit Oil Refining Company
(ASORC)



Contract Type

Lump-sum for Professional Services

Scope of Services

Verify the completion of Licensor deliverables and suitability to initiate the EPC phase. Enppi provided the support services required for (ASORC), during the review / comment / approval of the technical / engineering deliverables prepared by the Licensor (Axens)

Project Description

Installation a new Naphtha Complex (capacity 660 KTA) high RON Gasoline. This Complex is fed by Naphtha from the two existing atmospheric distillation units.

The Complex will include Naphtha Hydrotreating Unit with Naphtha Splitting (capacity equal to 660 KTA), Light Naphtha Isomerization (capacity equal to 228 KTA), Heavy Naphtha Reforming with CCR units (capacity equal to 458 KTA).

Licensor

Axens.

**Assiut New Crude Distillation Unit,
2MMT/Y
1999 -2001**

Client

Assiut Oil Refining Company (ASORC)



Contract Type

Lump-Sum for Professional Services, Cost Plus for Procurement & Construction.

Scope of Services

Detailed Engineering, Procurement, Construction, Commissioning & Start-Up Assistance & Overall Project Management.

Project Description

Installation of a new crude distillation unit to increase the refining capacity by 2 MMT/Y to produce:

- 516,000 T/Y Diesel
- 189,000 T/Y Kerosene.
- 283,000 T/Y Naphtha.
- 1,000,000 T/Y Fuel Oil.

**Light Naphtha Isomerization Plant
1997 - 1999**

Client

Cairo Oil Refining Company (CORC)

Contract Type

EPC Turnkey Main Contractor - Maximum Ceil

Scope of Services

Basic & Detailed Engineering, Procurement, Construction, Commissioning & Start-Up and Overall Project Management.

Project Description

Installation of an Isomerization unit with a feed capacity of 1000 T/D to improve the Octane number of light Naphtha.

Licensor

UOP.



**Naphtha Isomerization
1997 - 1999**

Client

Amerya Petroleum Refining Company (APRC)

Contract Type

Lump-sum for Professional Services, Disbursable for Material Supply and Construction.

Scope of Services

Detailed Engineering, Procurement, Construction, Supervision, Commissioning & Start-Up Assistance & Overall Project Management.

Project Description

Installation of an Isomerization unit with a feed capacity of 500 T/D to improve the octane number of light Naphtha.

Licensor

UOP.



Spent Lube Oil Re-Refining Project 1994 - 1996

Client

Alexandria Petroleum Company (APC)

Contract Type

Lumpsum for Professional Services, Disbursable for Material Supply and Construction

Scope of Services

Detailed Engineering, Procurement, Construction Supervision, Commissioning & Start-Up Assistance and Overall Project Management.

Project Description

Spent lube oil re-refining plant 30,000 tons/year feed of spent oil based on KTI Licensor technology, by installation of the following units: gas oil remover, high vacuum distillation, lube hydro-finishing & fractionation.



Gas Oil & Lube Oil Dewaxing 1994 - 1995

Client

Amerya Petroleum Refining Company (APRC)

Contract Type

Reimbursable Man-hours with Maximum Ceil

Scope of Services

Completion of MOBIL process package up to Basic & Detailed Engineering & Assistance in Commissioning & Start-Up.

Project Description

Installation of gas oil dewaxing unit by MDDW / MLDW to process 250,000 T/Y.

Licensor

MOBIL research & development.



Lube Oil Blending Plant 1993 - 1995

Client

Misr Petroleum Company (MISR)

Contract Type

Lump-sum for Professional Services, Disbursable for Material Supply & Construction.

Scope of Services

Detailed Engineering, Procurement, Construction Supervision

Project Description

Installation of a Lube oil blending plant with capacity of 150,000 tons-year (one shift).



Assiut Grass Root Refinery, 2.5 MM T/Y 1985- 1987

Client

Assiut Oil Refining Company (ASORC)

Contract Type

Lumpsum for professional services & guaranteed maximum for materials .

Scope of Services

FEED, Basic & Detailed Engineering, Procurement, Construction, Pre-Commissioning & Commissioning & Start- up. project finance from Lloyd's bank, ECGD & SAE.

Project Description

A grass root refinery 2.5 MM Tons/Year crude distillation unit, vapor recovery unit and LPG, Naphtha caustic wash units and related utilities & offsites.





Petrochemicals & Fertilizers Experience



Petrochemicals, Chemicals and Fertilizers Experience

Tri-Generation Plant 2021 - 2022

Client
El Nasr Company for Intermediate Chemicals (NCIC)

Contract Type
Lump Sum for Professional Services

Scope of Services
Project Management Consultant (PMC)

Project Description
BOT contract to KORRA ENERGI to build a plant that generates electrical power of 27.9 MWe, Saturated Steam of 16 TPH and Cooling capacity of 430 USRT.

Waphco Phosphoric Acid Production Plant 2017 - 2019

Client
El Wady for Phosphate Industries & Fertilizers (WAPHCO)

Contract Type
Lumpsum for FEED.

Scope of Services
FEED Technical Engineering Deliverables Execution for Utilities / Offsites. PMC for bidding & technical evaluation process of the EPC & finance offers. Review the pilot plant studies & process design package of licensors (Prayon/K-Tech).

Project Description
Develop a grass root Phosphoric Plant to be constructed in Abu Tartour, Egypt to construct a 500,000 MTPY (P2 O5) Phosphoric Acid facility along with the associated sulfuric Acid Plant/Co-Generation system. The project is splitted into three main packages:

- Package 1: Site Establishment
- Package 2: Phosphoric Acid Production Plant to include Phosphoric Acid Plant, Co-Generation Plant, Sulfuric Acid Plant&all Utilities, Storage &MGA export line.
- Package 3: Insurance Coverage.



Hydrogen Peroxide Plant 2017 - 2019

Client
El Nasr Company for Intermediate Chemicals (NCIC)

Contract Type
Fixed Percentage of EP contract + Percentage of Construction Contractor (for Mechanical & Electrical work) contract

Scope of Services
Construction Supervision works for Mechanical works (equipment and Tanks Fabrication and erection, Piping Fabrication and erection, Steel Structure fabrication and erection) as well (Electrical work supervision)

Project Description
Produce about 23,000 Ton per year 70 MTPD of hydrogen peroxide which shall be used for Chemical purposes (Medicine, Cosmetics industries) & Industrial purposes (water Treatment process). The Plant consists of 9 major Areas: H2O2 Building Area/Utility Area/Product Dispatch Shed Area/ Storage Tank Area / MCC Room / H2 Compressor Area/Chemical Storage Area/PA Compressor Area/ Cooling Tower The Main equipment for the project are: Oxidizer/Hydrogenator/Extractor/Distillation Column which will be fabricated at Vendor premises at India & will be dispatched to site as segments & to be assembled at site by Construction contractor.



Phosphatic & Compound Fertilizers Complex Project 2016 - 2020

Client

El Nasr Company for Intermediate Chemicals (NCIC)

Contract Type

Fixed percentage from the project total EPC Lumpsum contract

Scope of Services

Project Management consultant (PMC) covering the review of the engineering design; follow up of each of procurement, construction supervision & commissioning / start- up to ensure that EPC contractor fulfills all the contractual obligations

Project Description

Establish a Complex to Produce Phosphatic & Compound Fertilizers in the Industrial Zone at Ain Sokhna to achieve the self-sufficiency from Phosphatic Fertilizers needed for agricultural development Projects and to export the Surplus. The Complex consists of 9 Factories distributed over 5 Sectors as follows:

- Sector-1: Two plants for Concentrated Sulphuric Acid of capacity 2 X 1900 MTPD and producing 2 X 23 MW Electricity.
- Sector-2: Two Plant for Phosphoric Acid with commercial grades of capacity 2 x 600 MTPD & purified Phosphoric Acid of capacity 2 x 150 MTPD.
- Sector-3: One Plant for Water Soluble Crystalline Mono-Ammonium Phosphate (MAP)/ Daio-Ammonium Phosphate (DAP) of capacity 300 MTPD.
- Sector-4: Two Plant for Granulated Daio-Ammonium Phosphate G-DAP of capacity 1200 MTPD & Granulated Triple Super Phosphate G-TSP of capacity 750 MTPD.
- Sector-5: Utilities & Common Services for the Complex and Off-Site Water channel.
 - Fertilizers Storage & Port Facilities at Sokhna Port & Auxiliary Administrative & Living Facilities



New Ammonia/Urea Plant 2011 - 2019

Client

Egyptian Chemical Industries (KIMA)

Contract Type

Fixed percentage from the project total EPC Lumpsum contract

Scope of Services

Project Management consultant (PMC) covering the review of the engineering design; follow up of each of procurement, construction supervision & commissioning / start- up to ensure that EPC contractor fulfills all the contractual obligations. The EPC main contractor is Maire Tecnimont.

Project Description

Build a new Ammonia /Urea complex with Ammonia production capacity of 1200 MTPD. 300 Tons of the produced Ammonia will be utilized in industrial used gas by KIMA & 900 Tons will be utilized in producing UREA.



KIMA

Ethylene Cracker Project 2011 - 2015

Client

The Egyptian Ethylene and Derivatives Company (ETHYDCO)

Contract Type

EPC Lumpsum turnkey- JV with TOYO Engineering Corporation

Scope of Services

Detailed Engineering, Procurement, Construction, Pre-Commissioning, Commissioning, Start-up and Performance Testing and Overall Management

Project Description

Installation of 460 KTA Ethylene and 20 KTA Butadiene project at Ameriya in Alexandria, Egypt.

Licenser

LUMMUS Technology.



New Polyethylene Plant 2011 - 2015

Client

Egyptian Ethylene and Derivatives Company (ETHYDCO)

Contract Type

EPC Lumpsum turnkey - JV with TOYO Engineering Corporation

Scope of Services

Detailed Engineering, Procurement, Construction, Pre-Commissioning, Commissioning, Start-Up & Performance Testing and Overall Management

Project Description

Constructing a new Polyethylene Plant with a production capacity of 400 KTA at ETHYDCO's Petrochemical Complex in Alexandria. The new Polyethylene Plant utilizes gas phase polymerization technology based on Univation's license UNIPOL™ PE process technology and comprises two trains of equal capacity designed to produce both Linear Low-Density polyethylene (LLDPE) and High Density Polyethylene (HDPE) as well as Bimodal HDPE

Licensors

UNIPOL™ PE.



Polystyrene Plant (EPC Phase) 2008 - 2012

Client

Egyptian Styrene & Polystyrene Production Company (E-Styrenics)

Contract Type

EPC Lumpsum turnkey Consortium with Petrojet (Enppi Consortium Leader)

Scope of Services

Licensors Selection, Review of Basic Engineering, Detailed Engineering, Material Supply, Commissioning, Construction Supervision, pre-commissioning, commissioning Start-Up & Overall Management

Project Description

Installation of a new polystyrene plant with a capacity of 200,000 tons/year based on INEOS License in addition to supporting utilities, feed & product storage and handling facilities. The plant produces GPPS (general purpose polystyrene) and HIPS (high impact polystyrene)

Licensors

INEOS



Early Works For 300,000 MTA Ethyl-Benzene / Styrene Monomer (EBSM) Plant

Client

Egyptian Styrene & Polystyrene Production Company (E-STYRENICS)

Contract Type

Lumpsum covering all Professional Services provided by Enppi and its subcontractor (Technip Italy)

Scope of Services

This project is considered the early works for the EPC project, where Enppi scope of works is as follows:

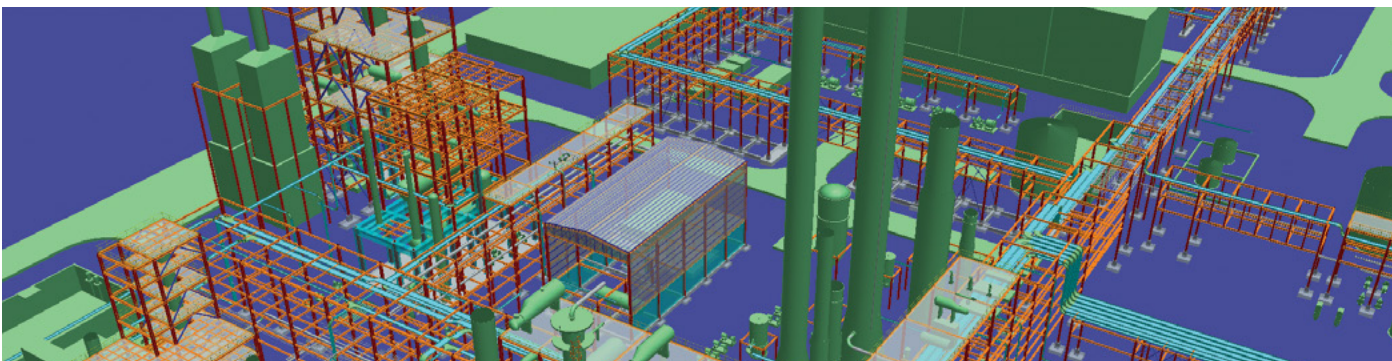
- The preparation and the issuance of the basic engineering for the ISBL & OSBL Utilities and off-site facilities
- All Off fence activities including Ethylene pipeline, Benzene unloading pipeline and Benzene unloading facilities
- Technical requisitioning for the critical long lead items (LLI)
- Class 2 Cost Estimate
- Assisting E-STYRENICS to facilitate its contacts with international banks and Export Credit Agencies for the structuring activities related to the financing of the EPC Project

Project Description

Installation of a 300,000 MTA of Styrene Monomer (SM) plant within the El-Dekhella port site in Alexandria, Egypt. This project shall produce Styrene Monomer based on a technology provided by BADGER.

Licensor

BADGER.



E-Methanex Damietta Methanol Project 2007 - 2009

Client

Methanex

Contract Type

Lumpsum for professional services

Scope of Services

Detailed Engineering Services as Subcontractor – Techint

Project Description

Execution of Methanol plant with production capacity of 1.3 Million tonnes per year at Damietta-Egypt free zone.



Early Works For 300,000 MTA Ethyl-Benzene / Styrene Monomer (EBSM) Plant

Client

Egyptian Styrene & Polystyrene Production Company (E-STYRENICS)

Contract Type

Lumpsum covering all Professional Services provided by Enppi and its subcontractor (Technip Italy)

Scope of Services

This project is considered the early works for the EPC project, where Enppi scope of works is as follows:

- The preparation and the issuance of the basic engineering for the ISBL & OSBL Utilities and off-site facilities
- All Off fence activities including Ethylene pipeline, Benzene unloading pipeline and Benzene unloading facilities
- Technical requisitioning for the critical long lead items (LLI)
- Class 2 Cost Estimate
- Assisting E-STYRENICS to facilitate its contacts with international banks and Export Credit Agencies for the structuring activities related to the financing of the EPC Project

Project Description

Installation of a 300,000 MTA of Styrene Monomer (SM) plant within the El-Dekhella port site in Alexandria, Egypt. This project shall produce Styrene Monomer based on a technology provided by BADGER.

Licensors

BADGER.



Egyptian Linear Alkyl Benzene Project (ELAB) 2007 - 2009

Client

Egyptian Linear Alkyl Benzene Company (ELAB).



Contract Type

EPC Lumpsum turnkey Consortium with GS E&C and Petrojet (GS E&C Consortium Leader).

Scope of Services

(PHASE I) Professional Services - License Selection, Basic Engineering based on UOP license

(PHASE II) Professional Services - Detailed Engineering Through Consortium GS E&C Leader / Enppi / Petrojet.

Project Description

Installation of Linear Alkyl Benzene (LAB) plant with capacity of 100,000 ton per year of linear Alkyl Benzene. The main feeds for the complex are Kerosene / Jet A-1 fuel from Alexandria Petroleum Company (APC) & Ameriya Petroleum Refining Company (APRC), as well as, reformat and Hydrogen from Alexandria National & Petrochemicals Company (ANRPC).

Licensors

UOP.



**UHDE Granulation Plant
2003 - 2005**

Client
UHDE
Contract Type
Lumpsum for Professional Services

Scope of Services
Detailed Engineering & Procurement Services

Project Description
Fulfilling the granulation process requirements of both Suez Fertilizer Company & Alexandria Fertilizer Company. The granulation process aims to produce 1,200 T/D Ammonia and 1,925 T/D Urea including utilities and off-site facilities.



**Ethylene Plant
1995 - 1996**

Client
Sidi Kerir Petrochemicals Company (SIDPEC)
Contract Type
Professional Services Reimbursable MHR's

Scope of Services
Preparation of Invitation to Bid and Licensor Selection and Basic Engineering Review.

Project Description
An ethylene production plant of capacity 150,000 Mt/Y of polymer grade ethylene at the initial stage, expandable to a production capacity of 300,000 Mt/Y at the final stage. Feed stock is C2 / C3 gas mix.



**Polyethylene Plant
1995 - 1996**

Client
Sidi Kerir Petrochemicals Company (SIDPEC)
Contract Type
Professional Services Reimbursable MHR's

Scope of Services
Tender Package Preparation and Licensor Selection

Project Description
Polyethylene plant with a production capacity of 100,000 Mt/Y polyethylene, of which 80,000 Mt/Y linear low-density polyethylene. Another alternative will be to produce 50,000 Mt/Y HDPE and 50,000 Mt/Y LLDPE.
The plant is expandable to a production capacity of 200,000 Mt/Y at the final stage. The plant design is based on polymer grade ethylene as a feed stock.



Areas of Expertise

As an Engineering and EPC Main Contractor, Enppi areas of expertise lies in the value chain of its role as an Engineering, Procurement, Project Management & Construction Supervision Contractor.

Engineering Process Technology

Enppi has considerable experience in the design of oil & gas, onshore/offshore, gas processing, oil refining, and petrochemicals facilities covering:

- Process optimization and selection
- Studies (techno-economic and technical)
- Flow assurance engineering (steady state & dynamic)
- Debottlenecking and revamps
- License evaluation and selection
- Review of basic engineering for others
- Oil & Gas separation
- FEED, conceptual, basic & detailed engineering
- HAZOP, HAZID, QRA, SIL and other safety studies
- Performance analysis and guarantees
- Operating manuals development
- Commissioning and start-up procedures
- Field assistance for construction and start-up

Mechanical Engineering

Enppi has qualified specialists in all aspects of mechanical engineering. The following services are offered to support FEED and detailed design activities or independently as specialized services.

Static equipment design, covering:

- Pressure vessels, heat exchangers, columns, reactors, heating and power boilers and tank design.

Rotating equipment design, covering:

- Compressors, gas and steam turbines, pumps, turbo expanders, HVAC, etc..

Material selection, covering:

- Material selection guides
- Cathodic protection
- Painting

Field assistance for construction and start-up Solid handling designs, covering:

- Solids Conveying, Transport, Storage and Processing Systems in the fields of Chemical, Petrochemical, Mining and Mineral Processing Industries
- Cranes

HVAC systems design and engineering works, covering:

- Industrial Applications such as control, switch-gear, battery, laboratory, warehouses and workshop buildings.
- Administration buildings.

Electrical Engineering

Enppi has a fully experienced team in electrical system design, with wide experience in both onshore & offshore applications; covering :

- Power generation and distribution
- Electrical systems analytical studies
- Relay coordination studies
- Overhead transmission lines design
- UPS systems
- Solar power units
- Plant power distribution & cabling systems
- Lighting systems
- Lightning protection facilities
- Navigational aid systems
- Grounding systems
- Heat tracing systems
- Hazardous Area Classification, Plans & Elevations and Electrical enclosure selection criteria
- Field assistance for construction and start-up.



Instruments & Control & Telecommunications Engineering

The company's competencies in Instrument & Control and Telecommunication Engineering cover:

- Field instruments & Process Measurements.
- Final Control Elements: Control Valve Sizing & Selection, On-Off Valves, Shut Down & Blow Down Valves.
- Process Control Applications (Burner Management System, Boiler Control, Compressor Control, etc..).
- Process Control Systems (DCS, PLC)
- Pneumatic, Hydraulic Controls
- Safety Instrumented System (SIS)
- High Integrity Pressure Protection System (HIPPS)
- SCADA & Communication Systems
- Pipeline Management System
- Fiscal Metering Systems
- Automatic Tank Gauging
- Oil & Gas Wellhead Control System.
- Tele-communication Systems such as:
 - Private Automatic Branch Exchange (PABX), VoIP
 - Public Address & Alarm System (PA&A)
 - Fiber Optic Cables / System
 - Wireless Systems (Satellite, Microwave, VHF UHF)
 - Security Systems (Closed Circuit Television (CCTV),
 - Access Control System & Intrusion Detection System)
 - Video Conference.
- Field Assistance for Construction and Start-up



Civil / Structural / Architectural Engineering

Enppi possesses considerable design experience in different phases of Civil / Structural / Architectural Engineering design, covering the following activities for plant facilities and other onshore structures:

- General site preparation drawings
- Road and paving drawings
- Building design (architectural / structural detailed drawings)
- Detailed drawings (steel / concrete) and MTO preparation
- Tanks and basins drawings
- Foundation drawings
- General specifications, MRQs & MRPs preparation
- Field assistance for construction and start-up

Offshore Structures Engineering

Enppi offshore structural design capabilities cover the following areas:

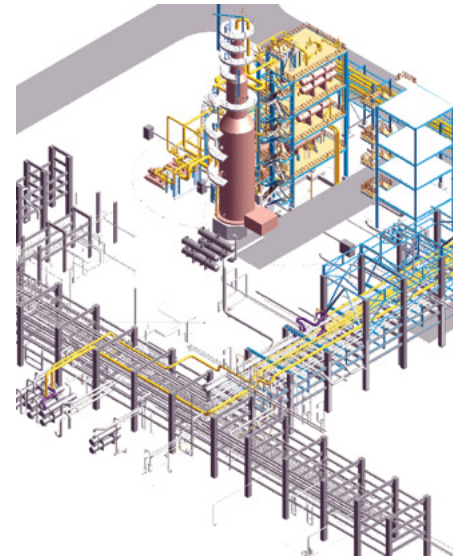
- Offshore fixed platforms analysis and design
- Deep & shallow foundation engineering
- Dynamic & fatigue assessments
- Earthquake Analysis
- Nonlinear Analysis
- Finite element Analysis
- Construction support engineering
- Transportation & Installation engineering
- Weight & COG engineering
- Structural Integrity Management
- Ports & Terminals engineering
- Subsea structural engineering
- Specification & Fabrication drawings
- Field assistance for construction and start-up



Piping Engineering

Enppi piping engineering design covers:

- Plot plans and equipment location plans
- Piping general arrangement drawings for the above ground piping
- Orientation drawings of tower, vessel, tank, etc...
- Piping isometrics drawings
- Stress analysis reports for critical lines using Caesar II program
- Piping supports distribution and design
- Piping material specification and supply specification for packages
- MRQs and MRPs preparation for piping bulk and valves
- Underground Composite Drawing
- Detailed design of underground piping systems
- Update of drawings and 3D CADD model to “AS-BUILT” status
- Detailed and block plastic model building
- Field assistance for construction and start-up



Pipeline Engineering

Enppi Pipeline Engineering design is responsible for onshore/offshore pipelines covers:

- Pipeline design basis
- Pipeline mechanical design
- Route selection
- Planimetry and profile
- Riser/Spools Layout
- Crossing details
- Field assistance for construction and start-up
- Subsea Equipment
- Analysis reports
- Standard details
- Material requisitions and Specifications
- Bidders evaluations



The following section gives detailed description of the various deliverables:

For onshore & offshore pipelines:

- Pipeline specifications
- Material selection and wall thickness calculations
- Stress analysis studies
- P/L alignment sheets
- Pipeline approach drawings
- Thermal expansion calculations
- Buckling calculations
- Coating and wrapping
- Cathodic protection
- Material take-off
- Material requisitions and purchase orders

For Offshore Pipelines:

- Stability analysis
- P/L Alignment drawings
- Field Layouts
- Deepwater technology
- Free span analysis
- Seabed irregularities analysis
- Upheaval buckling analysis
- Latest buckling analysis
- Installation analysis
- Trenching study
- Pipeline survey, installation and trenching bid packages
- Riser and spool piece design
- Cathodic protection

Procurement

Enppi's strategy in procurement is to provide quality goods and services, at the right time, at the lowest cost, produced and delivered safely. We have the experience, the tools, and the know-how for procurement services by providing integrated, reliable, and cost-efficient supply chain management services to ensure the success of projects.

We have capabilities in:

- Procurement Management
- Purchasing and contracting services
- Purchase orders expediting & subcontracts administrations
- Supplier quality surveillance
- Material Logistics
- Material control on site



Enppi's supply management services leverage today's technologies & logistics' methods to make efficient decisions which streamline the supply management process.

We have a global track record of ensuring timely and accurate material receipt through innovative expedition and quality assurance with vendors to minimize receiving delays and errors. We optimize transportation networks, operating hand-in-hand with global freight forwarders with dedicated assets. We offer the expertise, processes and tool utilization needed to facilitate frequent status updates on all material control information including material quantities required.

Project Management and Control

The design and execution of large scale onshore and offshore projects necessitates the strict adherence to sound management and control practices. In such projects, Enppi provides specialized management, control and quality assurance services covering:

- Contracts/subcontracts preparation and administration
- Overall project management and control
- Front-end planning and detailed project scheduling
- Engineering coordination and control
- Cost control and budget monitoring
- Change management
- Identifying and solving problems hindering project execution
- Technical and economic studies
- Risk management

Construction Management

Enppi provides construction management services as part of the overall project management function covering:

- Construction management and quality assurance/control
- Construction safety management
- Construction planning and control
- Onshore fabrication, installation and load-out supervision
- Offshore installation supervision
- Commissioning and start-up assistance



Software Applications

The latest software programs have been widely used in Enppi to optimize the efficiency of the different disciplines' processes.

Process Technology Programs

Dnv Phast	Pipeline Studio
Smart plant P & ID "Intergraph"	Olga
Flare Net	Pipenet
Flare Sim	Pipephase
Fri	Pipesim
Hextran	Process Eng. Suite (Pes)
HTRI	Sil Core
Hysys	Smart Plant P & Id
Network Inplant	Primatech
Petro-Sim	

Mechanical Engineering Program

Cadna	Pv Elite
Compress	Signal Ffs
E-Tank / ITS	Solid Works Simulation

Civil / Structural / Architectural Engineering Programs

Afes	Pds 3d (Frameworks Plus)
Arch	Safe
Autodesk Revit	sap 2000 V15.0.1
Etabs	Staad Pro

Electrical Engineering Programs

ETAP 12.0.0 Electrical Transient Analyzer Program	Smartplant® 3D Cable Management Interface
PLS-CADD and PLS-Pole	Micro-Station
DIALUX	AutoCAD
PDS	Electrical Load Analysis (ELA)
PDMS	Oracle & Electrical Cable Sizing

Instrumentation, Control & Telecommunication Engineering

Aveva Instrumentation	Smart Plant 3D
Aveva (PDMS)	PDS 3D Model
Aveva Cable Design	CONVAL
Smart Plant Instrumentation (Intools)	INSTRUCALC

Projects Control Programs

Planning Division	Cost Division
Primavera P6 Team member / Collaborator	The Decision Tools Suite Professional @ Risk
Primavera Project Management	Comfar Iii Expert
Primavera Risk Analysis	
Risky Project Professional	

Procurement Programs

Site Material Management System	Vendor E-registration
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Pipeline Programs

OFFPIPE (Ver. 2.07), Non-linear finite element method for offshore installation analysis for Pipelines, Risers and Cables	AUTOPIPE-PLUS (Ver 8.06), stress analysis software
SAGE PROFILE (Ver 6.4)	AGA/PRCI (Ver 3.0)

Subsea Software Programs

FLEXCOM	USFOS
AUTOPIPE PLUS	SACS
SAGE PROFILE	TEKLA
AGA-PRCI	E3D
OFFPIPE	GRLWEAP
CS8	OLGA
PLAXIS	PIPEPHASE
SMART 3D	PIPESIM
SESAM MARINE	

Plant Design & Piping Programs

Aga, Prci	Offpipe
Autodesk Navisworks Simulats	Orthogen
Autopip	PDMS
Aveva Area Based Automatic Drawing Production	PDS 3D
Aveva Final Designer	Sage Profile
Aveva Laser Model Interface	Sewer Cad
Aveva Multi Discipline Supports	Smart Plant 3D
Aveva Pdms	Smart Plant Review -Api
Aveva Review	Smart Plant Review-Photo Realism
Caesar II	Smart Plant Review- Simulation &Visual Effects
Isogen	Smart Plant Sketch
Lmi	Smart, Plant Review
Microstation / J	Vpe Workbench

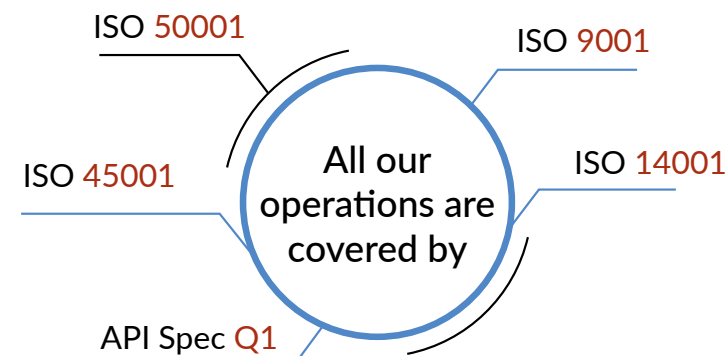
QEHS Management System



In line with our commitment to continuous growth and sustainable development for the future, Enppi works in the best possible manner to balance Quality, Environment, Energy and Health & Safety (QEHS) considerations into our daily business decisions and operations.

Enppi achieved certification to the revised standard ISO 9001:2015, ISO 14001:2015, ISO 45001: 2018, ISO 50001:2018 for QEHS management systems and also implements API Spec Q1 for quality management system in petroleum, petrochemicals and natural gas industries.

All our operations are covered by ISO 9001:2015, ISO 14001:2015, ISO 45001: 2018, ISO 50001:2018, API **Spec Q1**.



Quality Management System (QMS)

In compliance with the needs defined by the international codes and standards and in order to achieve a competitive edge in the global oil and gas sector, Enppi moves towards expanding alliances with its customers to continually boost productivity and keep our projects on-schedule and within budget aiming to achieve customer satisfaction.

Our applied Quality Management Systems provide strict controls, monitor work, track projects and streamline procurement and materials management activity.

The acquisition of globally acknowledged certification/accreditation is a crucial step toward continual improvement for achieving customer satisfaction through providing high quality services with time commitment and at competitive cost.



It is worth mentioning that Enppi has established a quality management system certified to ISO 9001 since 1995. In 2014, Enppi has implemented API spec Q1 of the American Petroleum Institute as sector specific certification for Quality Management System for oil and gas companies to become one of the leading companies in the world to implement these international standards.

- For every project the company executes, QMS covers the following:
- Issuing Project Quality Plan
- Developing Project KPIs
- QMS auditing

Enppi takes an additional responsibility in encouraging customers, suppliers and contractors to consider the QMS requirements in their activities. Also, Enppi offers a wide range of QMS consultation and training services related to:

- ISO 9001 requirements
- Quality management system auditing
- API spec. Q1 requirements
- Self-assessment
- Documentation management



Environmental Management System (EMS)

As a part of Enppi's contribution towards sustainable development, Enppi has established, implemented and maintained an environmental management system as per ISO 14001. The system objectives are compliance with all applicable environmental legal and other requirements, minimizing pollution and conservation of resources. For every project the company executes, the EMS covers the following:

- Establishment and implementation of environmental - policy and objectives
- Aspects/impacts analysis
- Identification of legal and other requirements
- Development and implementation of environmental - management plans
- Emergency preparedness and response
- Environmental management system auditing

Enppi encourages customers, suppliers and contractors to consider the environmental impacts of their activities, mainly through one or more of the following actions:

- Organizing and conducting awareness sessions / courses
- Requesting suppliers and contractors to declare their environmental policies & commitment to environmental protection
- Following up supplier/contractor implementation of environmental management systems
- Working with customers to design environmentally friendly projects

Enppi also has wide experience in EMS related services as awareness and training, environmental management systems auditing and environmental performance evaluation.

Health & Safety Management System (HSMS)

Enppi recognizes the importance of protecting the health and safety of its employees, customers, suppliers and contractors personnel within work premises over which it has control. Enppi implements and continually improves a health and safety management system in accordance with ISO 45001 to achieve improvement in the overall company health and safety performance, including prevention of injury and ill health. For every project the company executes, HSMS covers the following:

- Establishment and implementation of Health & Safety policy and objectives
 - Provision of safe working environment
 - Hazards identification
 - Risk assessment
 - Implementation of necessary control measures to ensure that risks are reduced as low as reasonably practicable
 - Identification and compliance with applicable Health & Safety legal and other requirements
 - Development and implementation of Health & Safety management plans
 - Emergency preparedness and response
 - Encouragement of customers, suppliers and contractors to consider Health & Safety requirement in their activities
 - HSMS auditing
- FMEA technique
- Perform safety audits
 - Provide training courses related to health and safety:
 - ISO 45001 requirements
 - Loss prevention
 - HAZOP (basic and advanced)
 - Risk analysis techniques
 - Fire protection systems
 - Hazardous area classification
 - Detection and alarm systems
 - Preparation of Safety case studies

Related services provided by Enppi can be summarized as follows:

- Design of fire protection systems
- Review plot plans (layout with respect to safety distance and prevailing wind)
- Quantitative risk analysis using "PHASt Software / Fault Tree Analysis and Event Tree Analysis"
- Qualitative risk analysis by HAZOP review,





Energy Management System (EnMS)

In terms of Enppi role as a leader in the field of projects in the region and in order to keep pace with global and national trends for energy efficiency improvement, Enppi has developed, implemented and maintained EnMS as per the international standard ISO 50001 since 2012 and became the first company in the sector acquiring an accredited ISO 50001 certificate.

Enppi EnMS services includes

- 1- Establishing energy management systems.
- 2- Conducting Energy Reviews.
- 3- Determining:
 - Energy baseline, Energy targets and action plans.
 - Energy performance indicator.
- 4- Energy studies including definition/prioritization of opportunities for energy efficiency improvement.
- 5- Designing and procurement of energy efficient products and energy management system solutions.
- 6- Conducting training energy courses and workshops.
- 7- Conducting Energy Audits.

CERTIFICATES

Enppi Headquarters



CERTIFICATES

Enppi / KSA

LRQA

Certificate of Approval

This is to certify that the Management System of:
Engineering for the Petroleum & Process Industries (ENPPI)

At Khobar - Sabay Towers - El Khobar - Saudi Arabia (SAG) Regional Branch, El Khobar, Saudi Arabia

has been approved by LRQA to the following standards:
ISO 14001:2015

Approval number(s): ISO 14001 - 0006423-001

This certificate forms part of the approval identified by approval number: 0006423

The scope of this approval is applicable to:
Project Management, Engineering, Procurement and Construction Management Services for the Petroleum, Process and General Industries

Luis Cunha
Luis Cunha
Area Operations Manager - North Asia & SAGSA
Signed by: LRQA Limited

Page 1 of 1



المملكة العربية السعودية
Kingdom of Saudi Arabia

LRQA

Certificate of Approval

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At Khobar - Sabay Towers - El Khobar - Saudi Arabia (SAG) Regional Branch, El Khobar, Saudi Arabia

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Project Management, Engineering, Procurement and Construction Management Services for the Petroleum, Process and General Industries

Luis Cunha
Luis Cunha
Area Operations Manager - North Asia & SAGSA
Signed by: LRQA Limited

Page 1 of 1

LRQA

Certificate of Approval

This is to certify that the Management System of:
Engineering for the Petroleum & Process Industries (ENPPI)

At Khobar - Sabay Towers - El Khobar - Saudi Arabia (SAG) Regional Branch, El Khobar, Saudi Arabia

has been approved by LRQA to the following standards:
ISO 45001:2018

Approval number(s): ISO 45001 - 0006424-001

This certificate forms part of the approval identified by approval number: 0006424

The scope of this approval is applicable to:
Project Management, Engineering, Procurement and Construction Management Services for the Petroleum, Process and General Industries

Luis Cunha
Luis Cunha
Area Operations Manager - North Asia & SAGSA
Signed by: LRQA Limited

Page 1 of 1

LRQA

Certificate of Approval

This is to certify that the Management System of:
Engineering for the Petroleum & Process Industries (ENPPI)

At Khobar - Sabay Towers - El Khobar - Saudi Arabia (SAG) Regional Branch, El Khobar, Saudi Arabia

has been approved by LRQA to the following standards:
ISO 50001:2018

Approval number(s): ISO 50001 - 0006425-001

This certificate forms part of the approval identified by approval number: 0006425

The scope of this approval is applicable to:
Project Management, Engineering, Procurement and Construction Management Services for the Petroleum, Process and General Industries

Luis Cunha
Luis Cunha
Area Operations Manager - North Asia & SAGSA
Signed by: LRQA Limited

Page 1 of 1

CERTIFICATES

Enppi / UAE

LRQA

Certificate of Approval

This is to certify that the Management System of:
Engineering for the Petroleum & Process Industries (ENPPI)

ADNOC Building - Tenth Floor - Tenth Unit QID Khaila Street - Abu Dhabi - Abu Dhabi, United Arab Emirates
License Numbers (CIN-4700001) and (CIN-1002000)

has been approved by LRQA to the following standards:
ISO 14001:2015

Approval number(s): ISO 14001 - 0006423-003

This certificate forms part of the approval identified by approval number: 0006423

The scope of this approval is applicable to:
Project Management, Engineering, Procurement and Construction Management Services for the Petroleum, Process and General Industries

Luis Cunha
Luis Cunha
Area Operations Manager - North Asia & SAGSA
Signed by: LRQA Limited

Page 1 of 1



الإمارات العربية المتحدة
United Arab Emirates

LRQA

Certificate of Approval

This is to certify that the Management System of:
Engineering for the Petroleum & Process Industries (ENPPI)

ADNOC Building - Tenth Floor - Tenth Unit QID Khaila Street - Abu Dhabi - Abu Dhabi, United Arab Emirates
License Numbers (CIN-4700001) and (CIN-1002000)

has been approved by LRQA to the following standards:
ISO 45001:2018

Approval number(s): ISO 45001 - 0006424-003

This certificate forms part of the approval identified by approval number: 0006423

The scope of this approval is applicable to:
Project Management, Engineering, Procurement and Construction Management Services for the Petroleum, Process and General Industries

Luis Cunha
Luis Cunha
Area Operations Manager - North Asia & SAGSA
Signed by: LRQA Limited

Page 1 of 1

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Certificate of Approval

This is to certify that the Management System of:
Engineering for the Petroleum & Process Industries (ENPPI)

ADNOC Building - Tenth Floor - Tenth Unit QID Khaila Street - Abu Dhabi - Abu Dhabi, United Arab Emirates
License Numbers (CIN-4700001) and (CIN-1002000)

has been approved by LRQA to the following standards:
ISO 50001:2018

Approval number(s): ISO 50001 - 0006425-003

This certificate forms part of the approval identified by approval number: 0006425

The scope of this approval is applicable to:
Project Management, Engineering, Procurement and Construction Management Services for the Petroleum, Process and General Industries

Luis Cunha
Luis Cunha
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Certificate of Approval

This is to certify that the Management System of:
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ADNOC Building - Tenth Floor - Tenth Unit QID Khaila Street - Abu Dhabi - Abu Dhabi, United Arab Emirates
License Numbers (CIN-4700001) and (CIN-1002000)

has been approved by LRQA to the following standards:
ISO 9001:2015

Approval number(s): ISO 9001 - 0006423-003

This certificate forms part of the approval identified by approval number: 0006423

The scope of this approval is applicable to:
Project Management, Engineering, Procurement and Construction Management Services for the Petroleum, Process and General Industries

Luis Cunha
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