



Pipeline

Enppi





Contents

Enppi at a Glance	4
Pipeline Profile	6
Offshore Pipeline Experience	8
Onshore Pipeline Experience	18
Areas of Expertise	32
Software Applications	40
QEHS Management Systems	44

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
(HSSFE)

0.14%

Egyptian Natural Gas
Holding Co.
(EGAS)

0.07%

Egyptian Petrochemicals
Holding Co.
(ECHEM)

0.07%

Egyptian Natural Gas Co.
(GASCO)

Pipeline Profile

Our depth in the field of onshore and offshore pipeline engineering is outstanding with more than 20 years of relevant experience in the industry. We provide a combination of technical expertise, promptness and dedication to innovative solutions that enable us taking over onshore and offshore pipeline EPC projects in the local and international markets.

We have been involved in all types of onshore and offshore pipeline applications and subsea production systems, including all associated facilities (pumping/compression stations, subsea Trees and equipment, SCADA systems).

Pipeline Engineering

Enppi employs qualified specialists in its Pipeline Engineering Division to be responsible for all aspects of onshore/offshore pipeline engineering.

The main pipeline engineering activities cover the following:

- Techno-Economic and Feasibility Studies
- Pipeline Route Selection
- Pipeline Hydraulics & Flow Assurance
- Mechanical design of pipelines
- Design of Subsea Production Systems

The following section gives detailed description of the above services:

Onshore Pipelines

- Pipeline Functional Specifications
- Pipeline Material Specifications
- Pipeline Coatings Specifications
- Material Selection
- Alignment Sheets & Approach Layouts
- Pipeline Design Report
- Stress Analysis
- Global Buckling Assessment
- Cathodic Protection Design
- Material Take-Off's

Subsea Pipelines

- Pipeline Functional Specifications
- Pipeline Material Specifications
- Pipeline Coatings Specifications
- Material Selection
- Subsea Field Layouts
- Alignment Sheets & Approach Layouts
- Pipeline Design Report (Stability, Free Span, Fatigue, etc)
- Global Buckling & Walking Assessment
- Cathodic Protection Design
- Material Take-Off's
- Shore Crossing Design
- Riser & Spoolpiece Design
- Offshore Pipelay Studies
- Pipeline Trenching Studies
- Tender Package for Subsea Pipeline Installation and Trenching
- Design of Subsea Production Systems (PLEM, HIPPS, etc)

A photograph of an offshore oil rig in the ocean. The rig features several large, red, rectangular storage tanks or modules stacked vertically. White pipes and structural elements run along the side of the rig. The water is a deep blue, and the sky is a pale blue. In the background, another smaller rig is visible on the horizon.

Pipelines

Offshore

Experience

International projects

Al-Khafji Field Development – Phase 1 2006 - 2010

Client

Al-Khafji Joint Operations (KJO).

Contract Type

Consortium (Enppi – Petrojet - PMS - Rawabi) LSTK.

Scope of Services

Engineering, material supply, supervision of onshore structure fabrication & offshore laying/installation, overall management, consortium leader and commissioning & start-up.

Project Description

Development of the Khafji offshore field in Saudi/Kuwaiti waters in the Arabian Gulf so as to maintain the maximum sustainable capacity of 300,000 BOPD and production of 125 MMSCFD of associated gases, as well as, 50 MMSCFD gas lift, by installation of 6 new platforms, 8500 tons total structure weight and modification of 9 existing platforms, in addition to 24" & 28" interfield sealines, and 42" & 36" subsea Trunklines to shore (110 km long in total), as well laying 59 km of subsea electrical cables.



North Safa Field Development Project 2022 - 2023

Client

Gulf Petroleum Company (GUPCO) (BP Egypt / EGPC).

Contract Type

Lumpsum (Consortium of Enppi- Petrojet - PMS)

Scope of Services

Detailed Engineering and Procurement.

Project Description

Development of North Safa offshore field in the Gulf of Suez by installing a new unmanned, minimal facility offshore platform "North Safa" in about 55 m water depth. The oil production from North Safa shall be transported to Ramadan-6 existing platform located in 20 m water depth via a new 12" subsea pipeline about 10 km long. A new 8" water injection subsea pipeline (about 11 km long) shall be installed between July-10 exiting platform located in 37 m water depth and North Safa new platform in order to boost the production from North Safa offshore field. Moreover, a new submarine cable (about 10 km long) shall be installed between Ramadan-6 existing platform and North Safa new platform and shall mostly run parallel to the new 12" subsea pipeline.



Offshore Production Unit with Drilling Offshore Jack Up Rig 2018 - 2019

Client

PETROSALAM

Contract Type

EPC LSTK - Consortium with Petrojet.

Scope of Services

Engineering, Procurement and Construction.

Project Description

Development of Northwest October (NWO) offshore field located in the Gulf of Suez some 22 km off the coastline by installing a new offshore platform "NWO" in about 64 m water depth, and two new 5" multiphase subsea pipelines (Coiled Tubing) about 22 km long each, which shall transport the new platform production to an onshore area located near North Amer onshore facilities.



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

Project Description

The project aims to construct two new Offshore Platforms “NAO” and “HH” in about 22 m water depth in the Gulf of Suez, with production capacity of 9,500 BPD. The oil production from the two new offshore platforms shall be gathered subsea via an In-line Tee and eventually transported to the existing Amer-8 platform via a new 6” subsea pipeline (8 km long).



Baltim South West Development Project 2018 - 2019

Client

Belayim Petroleum Company (Petrobel).

Contract Type

Lumpsum for Detailed Engineering & Procurement services.

Scope of Services

Detailed Engineering and Procurement services.

Project Description

26” gas subsea pipeline (17 km long) between the new platform BSW in the Mediterranean Sea & Abu-Madi plant.



36” Oil Subsea Pipeline at El-Hamra Terminal 2016 - 2017

Client

Western Desert Operating Petroleum Company (Wepco).

Contract Type

Lump Sum for professional services.

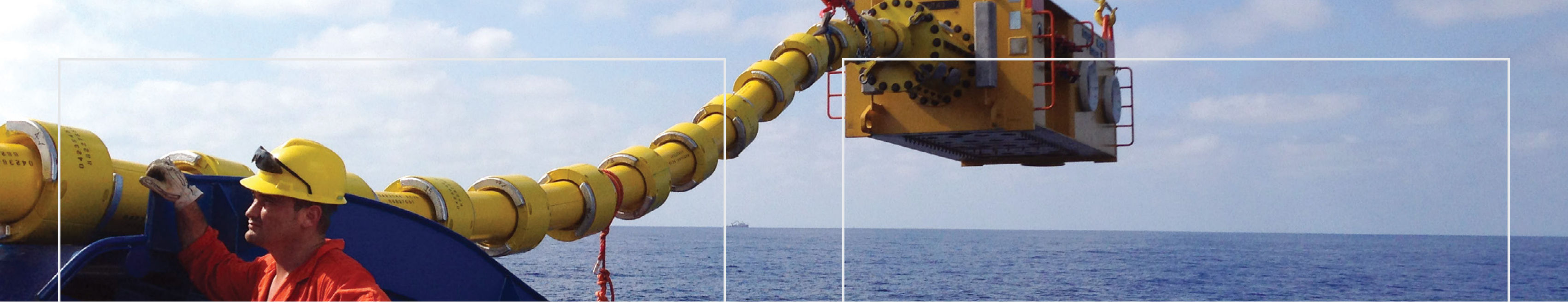
Scope of Services

Detailed engineering & procurement services.

Project Description

36” oil export subsea pipeline (9 km long) between El-Hamra import/export facilities and offshore Single Point Mooring in the Mediterranean Sea.





**DEKA Subsea Field Development Project
2012 - 2015**

Client
Belayim Petroleum Company (Petrobel).

Contract Type
Lump Sum for professional services.

Scope of Services
FEED review, Detailed engineering and procurement services.

Project Description
Development of Denise offshore field (70 km off the Egyptian coast in 100 m water depth) and Karawan offshore field (5 km to its southeast in 70 m water depth) in the Mediterranean Sea by “deepwater” tech, involving 5 Subsea Wells, HIPPS System, Gathering PLEM’s, subsea Hot-Tap Skid, in addition to 6”/10”/16” flowlines and sealines network (12 km long in total).



**WDDM Phase VII 36” Subsea Pipeline
2009 - 2010**

Client
Burullus Gas Company (BGC).

Contract Type
Lump Sum for professional services.

Scope of Services
Detailed engineering.

Project Description
36” gas export subsea pipeline (69 km long) from WDDM existing offshore facilities in The Mediterranean Sea to Onshore Facilities.



Denise-B Subsea Field Development Project 2009 - 2010

Client

Belayim Petroleum Company (Petrobel).



Contract Type

Lump Sum for professional services.

Scope of Services

FEED review, Detailed engineering and procurement services.

Project Description

Development of Denise offshore field in the Mediterranean Sea (100 m water depth) by “deepwater” tech, involving 3 Subsea Wells, HIPPS System, Gathering PLEM, in addition to 16” Sealine and 6” flowlines network (7 km long in total).

Tuna Offshore Field Development Project 2008 - 2009

Client

Belayim Petroleum Company (Petrobel).



Contract Type

Lump Sum for professional services.

Scope of Services

Basic & Detailed engineering & procurement services.

Project Description

24” subsea pipeline (14 km long) tying Tuna platform to Denise subsea PLEM, in Petrobel offshore concession in the Mediterranean Sea (90 m water depth).

North Bardawil Field Development Project 2007 - 2008

Client

Belayim Petroleum Company (Petrobel).



Contract Type

Lump Sum for professional services.

Scope of Services

Basic & Detailed engineering and procurement services.

Project Description

14” gas subsea pipeline (23 km long) between Barboni Platform and subsea PLET’s/PLEM’s system at Zaraf & Assad deepwater wells in The Mediterranean Sea (330 m water depth).

Denise-A Offshore Field Development Project 2006 - 2007

Client

Belayim Petroleum Company (Petrobel).



Contract Type

Lump Sum for professional services.

Scope of Services

Basic & Detailed engineering & procurement services.

Project Description

32” gas subsea pipeline (61 km long) between T-NW2 platform in Petrobel offshore concession in the Mediterranean Sea and El-Gamil onshore facilities.

Pipelines Onshore Experience



International projects

North Jordan Gas Pipeline project 2017- 2021

Client

Jordanian Egyptian FAJR Company.



Contract Type

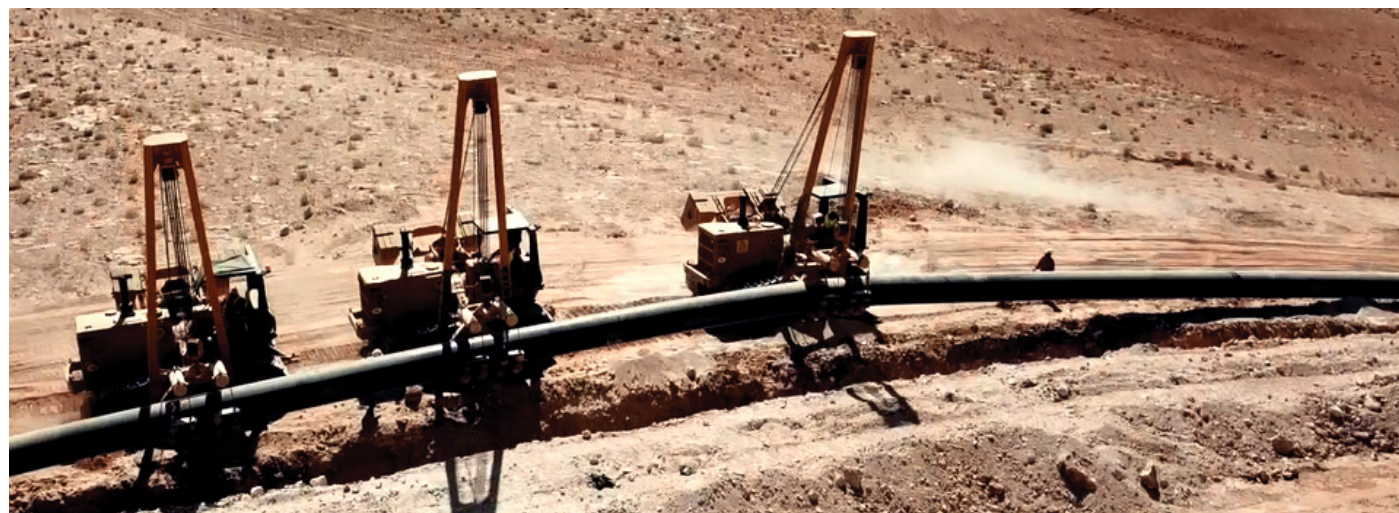
EPC Main Contractor Lump sum.

Scope of Services

Engineering, Procurement, Construction, Pre-commissioning and Commissioning & startup.

Project Description

Install 36" sales gas pipeline (56 km long) from Jordanian North West borders to the interconnection point to the existing Arab Gas pipeline in order to feed power plants and other domestic users.



Downstream Pipeline Haradh Increment (HUG-2) 2017 - 2021

Client

Saudi Aramco.



Contract Type

EPC LSTK - Main Contractor.

Scope of Services

Engineering, Procurement, Construction, Pre-commissioning and Commissioning & Startup Assistance

Project Description

Transport treated rich gas from HAWIYAH to UTHMANIYAH for natural Gas liquid recovery before injection into the Master Gas System (MGS) through 56" gas pipeline (56 Km).

Provision of PMC for Missan Oil Export Pipeline (MOEP) 2013 - 2015

Client

PetroChina Company Limited.



Contract Type

PMC – Reimbursable MHRS.

Scope of Services

Project Management Consultancy services, including review Basic/Detailed Engineering, procurement and construction supervision.

Project Description

Missan 42" Oil export pipeline from Halfaya junction point in Missan Governorate (Iraq) to Bin-Umr (120 km), and from Bin-Umr to FAW (151 km), and associated SCADA system.

Safaniya 24" Water Disposal System Upgrade Project 2006 - 2007

Client

Saudi Aramco.

أرامكو السعودية
Saudi Aramco



Contract Type

Lumpsum turnkey Main Contractor.

Scope of Services

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

Project Description

24" internally lined onshore water injection pipeline (about 6 km) from the water disposal area in GOSP-1 at Safaniyah field to the wells.

Greater Neem 16" Oil Export Pipeline 2006 - 2008

Client

Greater Nile Petroleum Operating Company (GNPOC).



Contract Type

Lump Sum for professional services.

Scope of Services

Detailed engineering services.

Project Description

16" crude oil export pipeline (200 km long) from NEEM wells area to Defra oil terminal in south of Sudan .

Arab Gas Pipeline Phase II: 2nd Stage: Rehab Power Station to Jordan/ Syrian Borders P/L 2006 - 2008



Client

Jordanian Egyptian FAJR for Natural Gas Transmission (FAJR).

Contract Type

EPC Turn-key consortium .

Scope of Services

Techno-economic study, feasibility study, review Funding mechanism, set project financial scheme, Conceptual, Feed, Basic & Detailed engineering, procurement services, material supply, construction supervision, commissioning & start up assistance, overall management (as consortium leader).

Project Description

36" gas pipeline (30 km long) from Rehab power station in Jordan to the Jordanian / Syrian borders, and associated SCADA system.



Arab Gas Pipeline Phase I: 1st Stage: Aqaba to Rehab Power Station P/L 2004 - 2006

Client

Jordanian Egyptian FAJR for Natural Gas Transmission (FAJR).



Contract Type

EPC Turn-key consortium.

Scope of Services

Techno-economic study, feasibility study, review Funding mechanism, set project financial scheme, Conceptual, Feed, Basic & Detailed engineering, procurement services, material supply, construction supervision, commissioning & start up assistance, overall management (as consortium leader).

Project Description

36" Sales gas pipeline (394 km long) from Aqaba to Rehab power station across the Jordanian territories, and associated SCADA system& Compression Station.



Sharara Mellitah 30" Oil Pipeline 2004 - 2005

Client

AGIP.



Contract Type

Lump Sum for professional services.

Scope of Services

Basic & Detailed engineering services.

Project Description

30" crude oil pipeline (725 km long) from Sharara area to Melittah, across the Libyan desert and sand dunes, including SCADA system.

Tanak / Omar VRU & Pipelines 2001 - 2003

Client

Al Furat Petroleum Company.



Contract Type

Main Contractor LSTK.

Scope of Services

Detailed engineering, construction, procurement, commissioning & startup.

Project Description

Two new VRU's at Tanak & Omar areas (2.7 MMSCFD & 3.5 MMSCFD, in addition to water injection units at Tanak, and associated 10"/8"/4" pipelines (50 km total length).

Local projects

Nouras El-Gamil Gas Pipeline Project
2017 - 2020

Client
Belayim Petroleum Company (Petrobel).

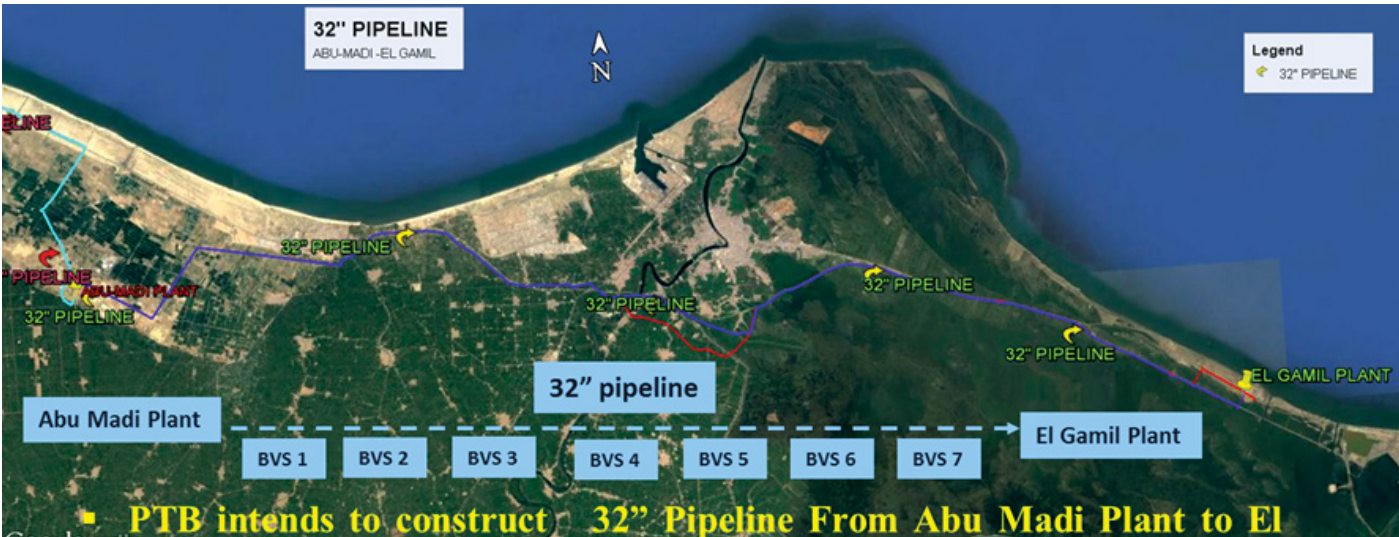


Contract Type
Lumpsum for Detailed engineering and procurement services.

Scope of Services
Detailed engineering and procurement services.

Project Description

- 24” gas pipeline (31 km long) from NIDOCO Well Head to Abu Madi plant passing through station NIDOCO 6, NIDOCO 11 and QARAA. Process optimization and selection.
- 32” gas pipeline (92 km long) from Abu Madi Plant to El-Gamil in Portsaid.
- 26” subsea pipeline (27 km long) from West Baltim offshore platform to Abu Madi plant.



Water Disposal Pipelines Network Project
2016 - 2017

Client
Belayim Petroleum Company (Petrobel).



Contract Type
Main Contractor LSTK.

Scope of Services
Detailed engineering, construction, procurement, commissioning & startup.

Project Description
New water disposal pipeline network (24” to 8” internally lines) in Abu-Rudeis onshore oil concession area in Sinai peninsula to service existing disposal wells (total length of 8 km).

Assil/Karam Gas Fields Development Project
2012 - 2013

Client
Badr El-Din Petroleum Company (BAPETCO).



Contract Type
Main Contractor LSTK.

Scope of Services
Basic & Detailed engineering, procurement, construction & start-up assistance, Lump sum, including material supply and construction works.

Project Description
Gas Gathering Onshore Trunklines & Flowlines to be tied to Bed-3 existing gas plant in the Egyptian western desert via 6 Flowlines 8”(about 9 km long in total) & 3 Trunklines 12” (about 40 km long in total)



Nubaria / Dahshour Gas Transmission 36"/42" Pipeline 2010 - 2012

Client
The Egyptian Natural Gas Company (GASCO).



Contract Type
Lump Sum for Professional Services, Material Supply & Cost Plus for Subcontracts.

Scope of Services
Engineering & Procurement services, and overall project management.

Project Description

- 32" gas transmission pipeline between Nubaria and Sadat city (70 km long).
- 42" gas transmission pipeline between Sadat city and Dahshour (75 km long).

Assiut / Aswan Gas Transmission Pipeline Project 2008 - 2012

Client
Egyptian Natural Gas Holding Company (EGAS).



Contract Type
Lump Sum for professional services, Material Supply Disbursable.

Scope of Services
Engineering & procurement Services, and overall project management.

Project Description

- PHASE I: Assiut / Gerga 32" pipeline 120 km.
- PHASE II: Gerga / Aswan 30" pipeline 380 km.
- Compression Station at Dahshour area.

Sapphire Condensate Export Pipeline 2004 - 2005

Client

Burullus Gas Company (Burullus).



Contract Type

Main Contractor LSTK.

Scope of Services

Basic & Detailed engineering, procurement, construction & start-up assistance, Lump sum, including material supply and construction works.

Project Description

10" Condensate pipeline from Idku pumping station to Damanhur and a new 12" pipeline from Damanhur to Tanta (total 100 km).

Arish-Taba 36" Gas Pipeline 2001 - 2003

Client

East Gas Company (EGC).



Contract Type

Lump Sum for professional services, Material supply disbursable.

Scope of Services

Basic & Detailed Engineering & procurement services.

Project Description

36" gas pipeline (250 km long) from Arish to export the Egyptian sales gas across the Gulf of Aqaba to Taba and associated SCADA system.

Arab Gas Pipeline Phase I Inter Sinai Gas Pipeline Project 1999 - 2001

Client

Belayim Petroleum Company (Petrobel).



Contract Type

Lump Sum for professional services.

Scope of Services

Basic engineering review, Detailed engineering, procurement services, and project management.

Project Description

36" gas pipeline (193 km long) from the eastern bank of Suez Canal to terminal area further eastward at Arish, and associated SCADA system.



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:

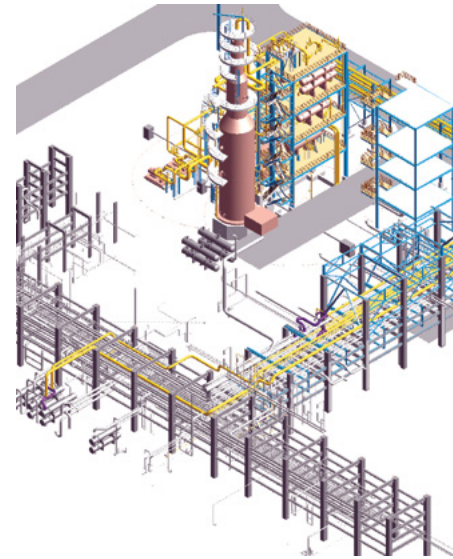
- Offshore fixed platforms analysis and design
- Deep & shallow foundation engineering
- Dynamic & fatigue assessments
- Earthquake Analysis
- Nonlinear Analysis
- Finite element Analysis
- Construction support engineering
- Transportation & Installation engineering
- Weight & COG engineering
- Structural 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.

Onshore / Offshore Pipeline Design

OFFPIPE (Ver. 2.07), Non-linear finite element method for offshore installation analysis for Pipelines,

AUTOPIPE-PLUS (Ver 8.06), stress analysis software

SAGE PROFILE (Ver 6.4)

AGA/PRCI (Ver 3.0) Abaqus/CAE

Subsea Field Design

FLEXCOM

USFOS

AUTOPIPE PLUS

SACS

SAGE PROFILE

TEKLA

AGA-PRCI

E3D

OFFPIPE

GRLWEAP

CS8

OLGA

PLAXIS

PIPEPHASE

SMART 3D

PIPESIM

SESAM MARINE

Abaqus/CAE

Plant Design & Piping

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

Process Technology

Dnv Phast	Pipeline Stodio
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

Mechanical Engineering

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

Civil / Structural / Architectural Engineering

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

Electrical Engineering

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 and Electrical Cable Sizing

Instrumentation, Control & Telecommunication

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

Projects Control

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

Site Material Management System	Vendor E-registration
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QEHHS 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 "PHA/ST 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

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