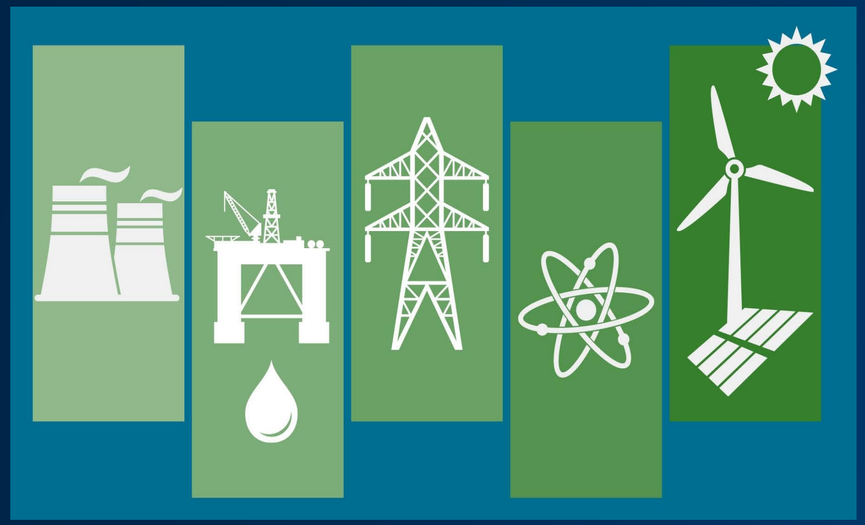
Engineering
Management
Contracting

COMPANY PRESENTATION

WHO WE ARE

Founded in the 60’s as Italian engineering and management company, DG is a worldwide provider of professional technical services in a wide range of fields, mainly focused on:



- Oil & Gas
- Power Generation
- Power transmission & distribution
- Renewable
- Environment
- Chemical
- Petrochemical



CREATING VALUE FROM EXEPERIENCE



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DG VISION

To be a TRUSTED ENGINEERING, MANAGMENT AND CONSTRUCTION COMPANY, fully committed to achieve the target shared with our CUSTOMERS

WIN IN A LONG TERM VIEW,
GAINING ADVANTAGE IN THE SHORT TERM VIEW

DG GOVERNANCE

CORPORATE

BOARD OF DIRECTORS

CEO

M. Tortorella



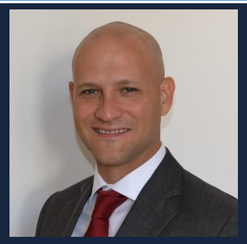
CHIEF DEVELOPMENT OFFICIER

R. Amicone



CHIEF PROJECT OFFICIER

G. Musu



CHIEF OPERATING OFFICIER

W. Palozzo



LEGAL ENTTIES

DG KAZAKSTAN

DG MEXICO

DG EGYPT

DG CONGO

DG ROMANIA

GLOBAL COVERAGE

ITALY
ROMANIA
CONGO
EGYPT
KAZAKISTAN
MEXICO
MOZAMBIQUE
UNITED ARAB EMIRATES



ENGINEERING MAN-HOURS PROVIDED:
10
MILLION

GROUP AVAILABLE OFFICES WORLDWIDE:
20

PROJECTS EXECUTED:
250

COUNTRIES WORKED:
35

PLATFORMS ENGINEERED:
150

TONS OF STEEL DESIGNED:
200,000
TONS

DG Group has a significant worldwide presence, essential to manage challenging projects maximizing local content

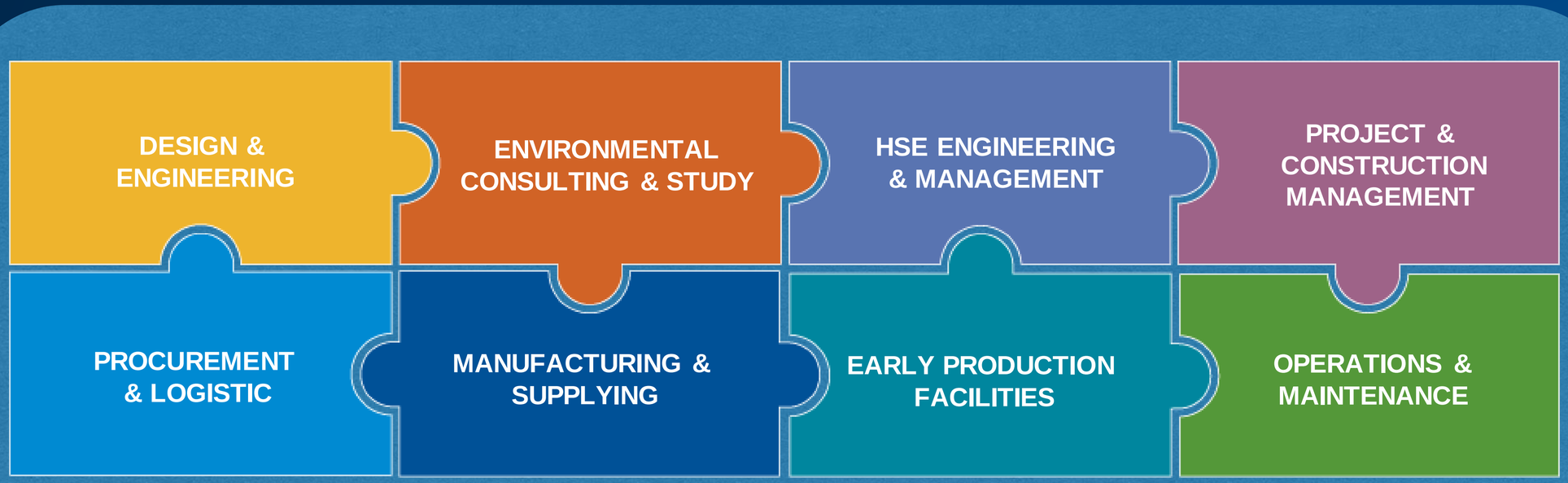
DG AS SOLUTION INTEGRATOR

SEVERAL ISSUE - ONE BRAIN – ONE SOLUTION



MAIN INTEGRATED SERVICES

DG provide outstanding know-how and 50-years experience in a wide range of services, offering tailor-made solutions to meet Client's specific needs.



MAIN CONTRACTING

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DESIGN & ENGINEERING

ENVIRONMENTAL CONSULTING & STUDY

HSE ENGINEERING & MANAGEMENT

PROJECT & CONSTRUCTION MANAGEMENT

PROCUREMENT & LOGISTIC

MANUFACTRING & SUPPLYING

EARLY PRODUCTION FACILITIES

OPERATIONS & MAINTENANCE

MAIN INTEGRATED SERVICES

- Conceptual/Feasibility Design
- Basic & Front End Engineering Design
- Detailed Engineering
- Simulations & Modeling
- Stress Analysis
- Technical Due Diligence
- Decommissioning / Abandonment assessment
- Plant\Project Optimization & Troubleshooting Logistic study

Engineering
Management
Contracting

DESIGN & ENGINEERING

ENVIRONMENTAL CONSULTING & STUDY

HSE ENGINEERING & MANAGEMENT

PROJECT & CONSTRUCTION MANAGEMENT

PROCUREMENT & LOGISTIC

MANUFACTRING & SUPPLYING

EARLY PRODUCTION FACILITIES

OPERATIONS & MAINTENANCE

MAIN INTEGRATED SERVICES

- **Environmental Studies:** *Environmental / Social Impact Assessment; Ecologic, Geologic, Geotechnical & Hydrogeologic Studies*
- **Site investigation & Remediation:** *Site Assessment, Site Surveys, Risk Analysis, Underground modeling, Remediation Study, Post Closure Monitoring*
- **Environmental Services:** *Land survey & monitoring, Environmental Management System studies, Air Emission Assessment and accounting, IPPC & Emission Trading Directives, Air & Water pollution modeling, Acoustics Modeling, Waste Management*
- **Regulatory Services:** *support to clients during the overall permitting phases*

DESIGN & ENGINEERING

ENVIRONMENTAL CONSULTING & STUDY

HSE ENGINEERING & MANAGEMENT

PROJECT & CONSTRUCTION MANAGEMENT

PROCUREMENT & LOGISTIC

MANUFACTRING & SUPPLYING

EARLY PRODUCTION FACILITIES

OPERATIONS & MAINTENANCE

MAIN INTEGRATED SERVICES

- HSE risk assessment
- Health & safety training
- Emergency action plan
- Fire Fighting engineering
- HazOp, HazId, EnvId and FMEA
- SIL analysis
- CONOPs
- SIMOPs
- FERA (Fire and Explosion Risk Analysis)
- Hazardous Area Classification
- QRA (Quantitative Risk Assessment)
- Dispersion and Radiation:
- Escape, Evacuation and Rescue
- Human Factor Engineering
- Boat Impact Study
- Dropped Object Study

DESIGN & ENGINEERING

ENVIRONMENTAL CONSULTING & STUDY

HSE ENGINEERING & MANAGEMENT

PROJECT & CONSTRUCTION MANAGEMENT

PROCUREMENT & LOGISTIC

MANUFACTRING & SUPPLYING

EARLY PRODUCTION FACILITIES

OPERATIONS & MAINTENANCE

MAIN INTEGRATED SERVICES

- Project Management
- Scheduling and Planning
- Cost Estimating
- Document control
- QA/QC management
- Constructibility study
- Safety Control Plans
- As-built engineering
- Contract Administration
- On-site Inspection & material management
- Material Receipt and Warehousing
- Mobilization Plans and facilities layout
- Construction supervision & Management
- Construction Performance Monitoring
- Field engineering
- Mechanical completion
- Commissioning and Start-up
- Mark up As-built Drawings
- Assistance for site authorizations and Kickoff Meeting

Engineering
Management
Contracting

DESIGN & ENGINEERING

ENVIRONMENTAL CONSULTING & STUDY

HSE ENGINEERING & MANAGEMENT

PROJECT & CONSTRUCTION MANAGEMENT

PROCUREMENT & LOGISTIC

MANUFACTRING & SUPPLYING

EARLY PRODUCTION FACILITIES

OPERATIONS & MAINTENANCE

MAIN INTEGRATED SERVICES

- Procurement Planning
- Developing Cost Estimates
- Material & Spare Parts management
- Scouting and management of suppliers
- Screening and Qualifying Bidders
- Bidding and Bid Evaluation
- Purchasing and contracting activities
- Contract Preparation & Administration
- Negotiating and Awarding Purchase Orders
- Transport logistics and management
- Expediting Vendors
- Coordinating Inspection / Logistics / Shipping
- QA/QC documents management
- Reporting

Engineering
Management
Contracting

DESIGN & ENGINEERING

ENVIRONMENTAL CONSULTING & STUDY

HSE ENGINEERING & MANAGEMENT

PROJECT & CONSTRUCTION MANAGEMENT

PROCUREMENT & LOGISTIC

MANUFACTURING & SUPPLYING

EARLY PRODUCTION FACILITIES

OPERATIONS & MAINTENANCE

MAIN INTEGRATED SERVICES

- Offshore modules and structures
- Gas Dehydration Packages
- Glycol Regeneration Packages
- Crude Oil Electrostatic Coalescers
- Crude Oil Heater Treaters
- Process Analyser Validation Systems
- Gas Heaters
- Launching and Receiving Pig Traps
- Gas Treatement Units
- Separators
- Commissioning and start-up assistance
- After-sales assistance
- Spare parts supply
- Troubleshooting
- Operation and Maintenance engineering optimization

Engineering
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DESIGN & ENGINEERING

ENVIRONMENTAL CONSULTING & STUDY

HSE ENGINEERING & MANAGEMENT

PROJECT & CONSTRUCTION MANAGEMENT

PROCUREMENT & LOGISTIC

MANUFACTRING & SUPPLYING

EARLY PRODUCTION FACILITIES

OPERATIONS & MAINTENANCE

MAIN INTEGRATED SERVICES

EPF provided on turn key basis, has the advantages to:

- create **early cash flow** with minimum cash outlay
- rapid delivery and implementation of production methods to provide competitive edge
- accelerate **time to market** of new discovered field
- support **peak production with temporary facilities** in mature field
- guarantee a **short supply chain** for rapid commercialization of oil and gas discoveries.

Integrated Business Models for production systems that afford customers the flexibility to maximize their return on investment:

- **Build-Own-Operate:** equipment rental plus operation
- **Build-Own-Operate-Transfer:** equipment rental plus operation with the option to purchase that leave maximum flexibility to our Clients, depending on market strategies.

DESIGN & ENGINEERING

ENVIRONMENTAL CONSULTING & STUDY

HSE ENGINEERING & MANAGEMENT

PROJECT & CONSTRUCTION MANAGEMENT

PROCUREMENT & LOGISTIC

MANUFACTRING & SUPPLYING

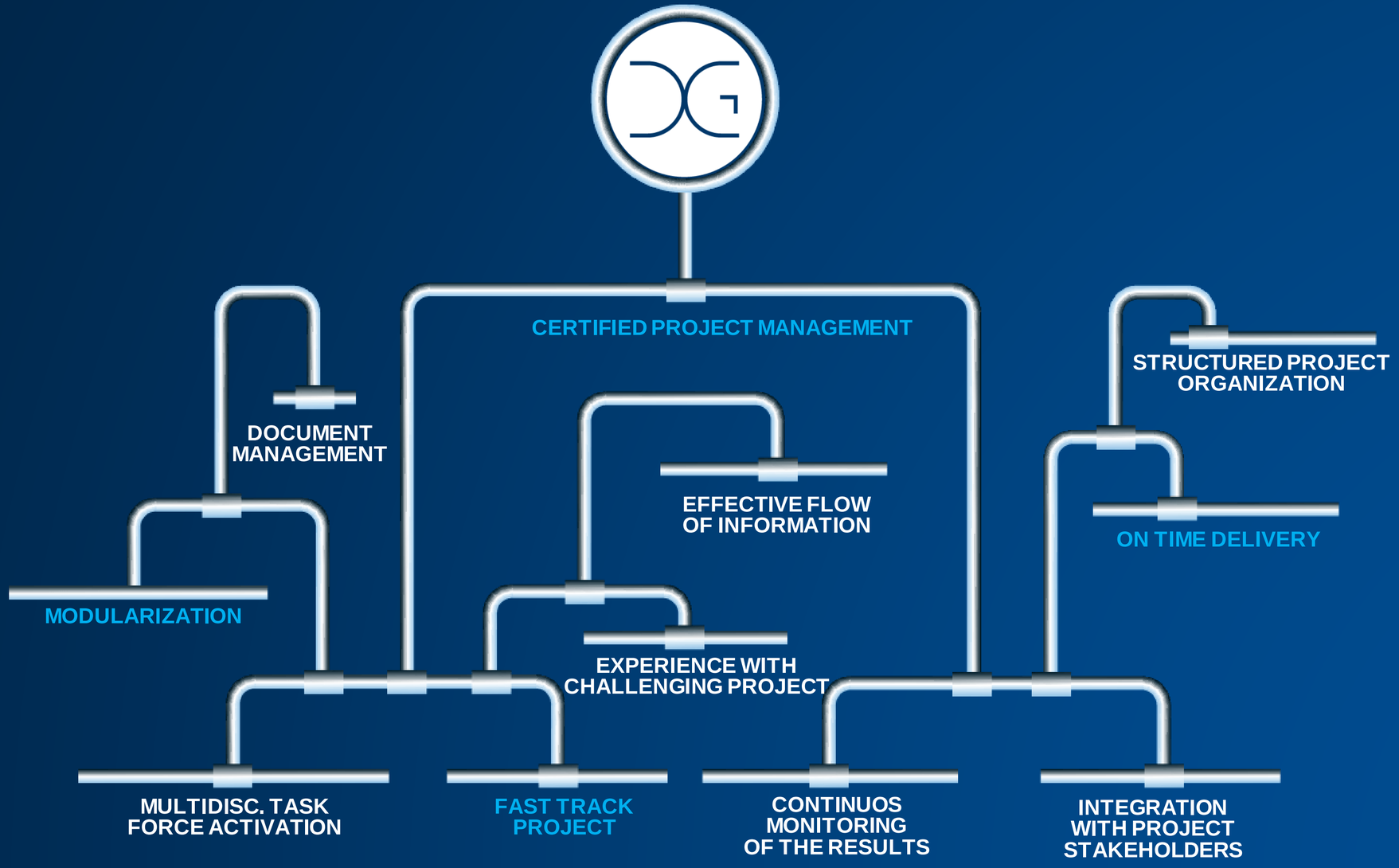
EARLY PRODUCTION FACILITIES

OPERATIONS & MAINTENANCE

MAIN INTEGRATED SERVICES

- Reliability, Availability, Maintainability & Safety (RAMS) Analisys
- Reliability Centered Maintenance (RCM)
- Maintanance Workload Evaluation and Manning Definition
- Implementation and optimization of Computerized Maintenance Management System (CMMS)
- Programming, Planning and Supervision of Operation and Maintenance Activities (O&M)
- Asset Integrity Management (AIM) Services
- Asset Performance Management (APM) • Material Management

KEY STRENGHT OF SUCCESS



ROBUST PROJECT MANAGEMENT TO ACHIEVE PROJECT GOAL

Provide a **Certified Project Management Team** strongly focused on Management & Control, having clear every activities in each phase of the project:

- *Engineering*
- *Procurement*
- *Delivery*
- *Prefabrication*
- *Construction*
- *O&M*



BROAD IN HOUSE EXPERIENCE FOCUSED TO SPEED UP PROJECT EXECUTION

Guarantee a S**INGLE POINT OF CONTACT** for our clients focuses on fully integrated solutions, having *overall process knowledge*, *project execution and interface management experience*

Extensive in-house experience and specific know how in:

- *Engineering & Management*
- *Delivery*
- *Prefabrication & Construction*
- *Commissioning & Start Up*
- *Operation & Maintenance*

Solid capability to work with **local partners** to complete all site activities

MODULARIZATION APPROACH FOR FAST DELIVERY

Integrated **modular and flexible design** and fabrication techniques focused on plug-and-play operations

1. Capability to fast **turn key delivery**:
   - **stand alone** production systems (EPF, Greenfield)
   - **integrated** into existing processing facilities (Upgrading\Revamping of Mature Field)

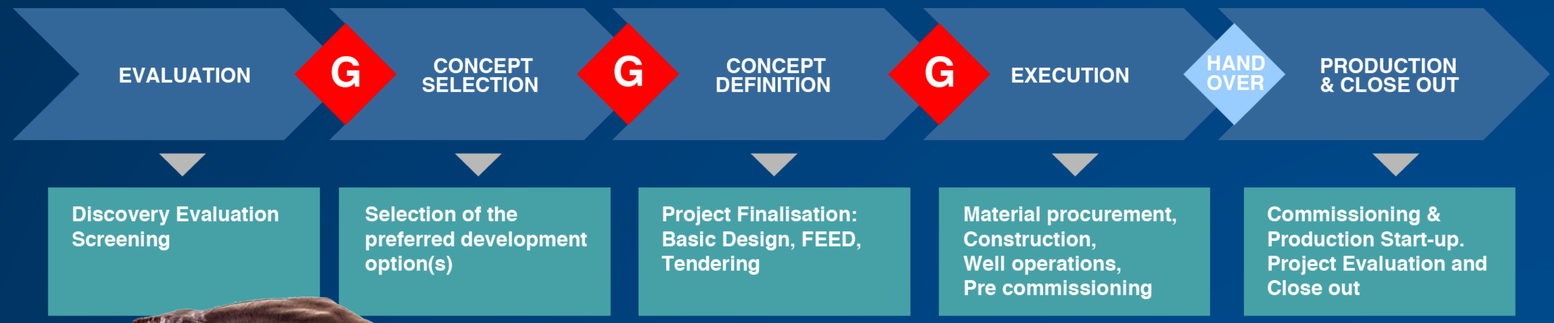
2. Combined phased oil and gas facility implementation to maximize site revenue:
   - Fast delivery of on-site oil treatment
   - Modular gas producing facilities to be integrated with existing producing facilities
   - Large equipment availability: Standardized units – Fast assembly as needed

TIME TO MARKET REDUCTION

FAST TRACK:
NEW PROJECT EXECUTION STRATEGY

To face the new challenging market DG changed project execution strategy shifting from:

“CONVENTIONAL MODEL”:
sequential select, design, construct, operate





Markets are volatile, and innovation is accelerating rapidly

“FAST TRACK MODEL”:

select, design while build, operate

Major issue of a project shift from TECHNOLOGY PUSH to BUSINESS SOLUTION

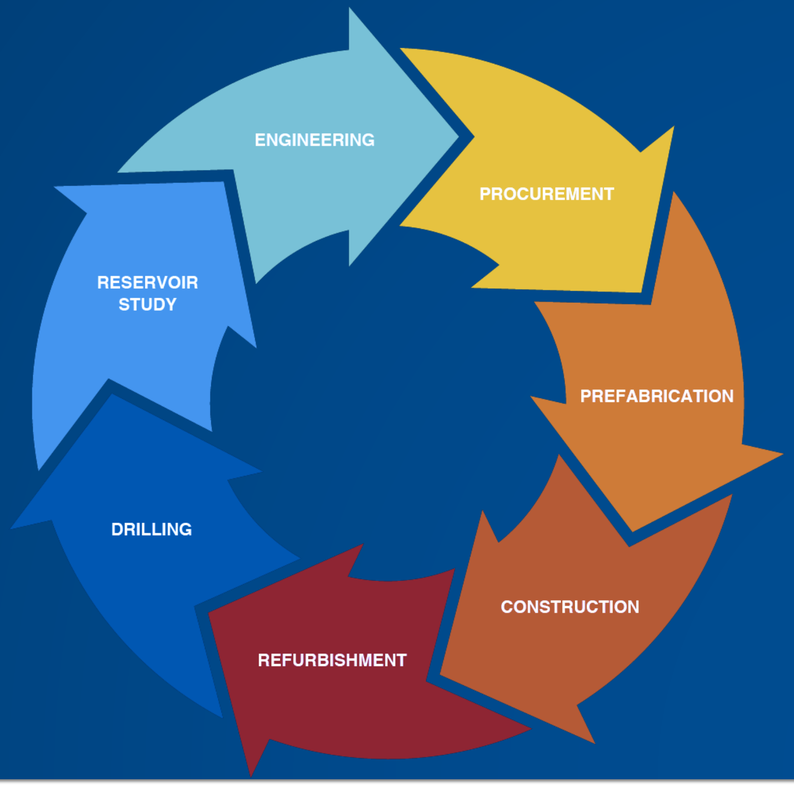
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Management
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FAST TRACK:
PROJECT SCHEDULE OPTIMIZATION

- **TRADITIONAL PROJECT PHASES:** step by step



- **FAST TRACK APPROACH:** Continuous improvement of solution working in parallel on each phase of a project development



Engineering
Management
Contracting

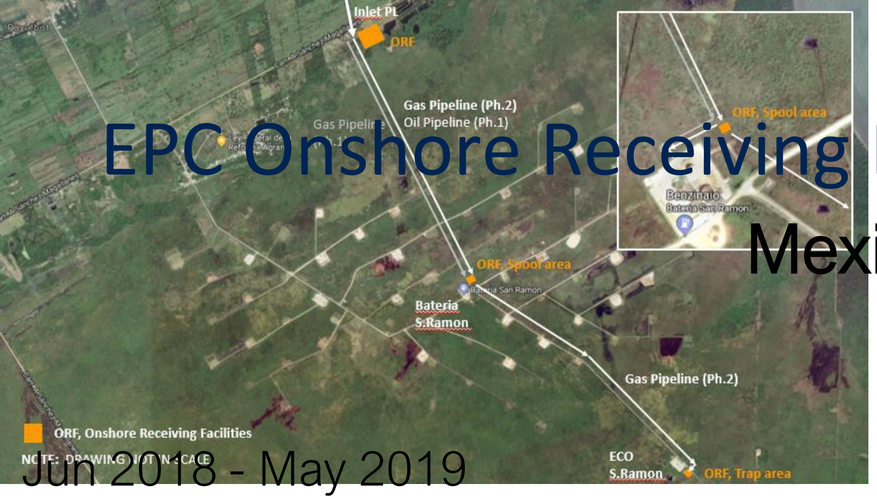
Main References

Project cards

Oil&Gas and Energy

EPC Onshore Receiving Facilities – Mexico Offshore Area 1 – ENI MEXICO

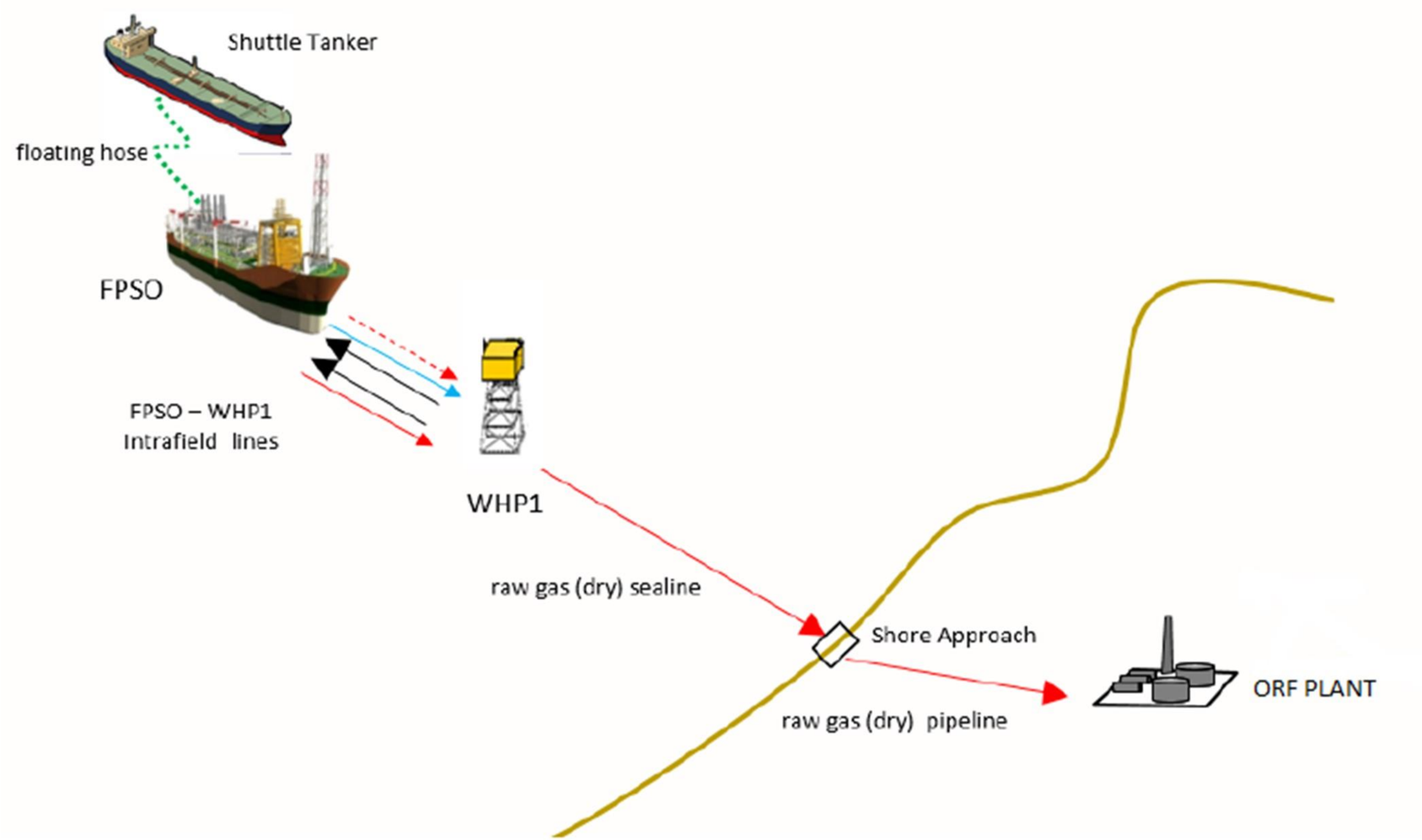
Mexico Development Early Production



Jun 2018 - May 2019

EPC Value:
50,000,000 USD

Early Production Concept - GREENFIELD

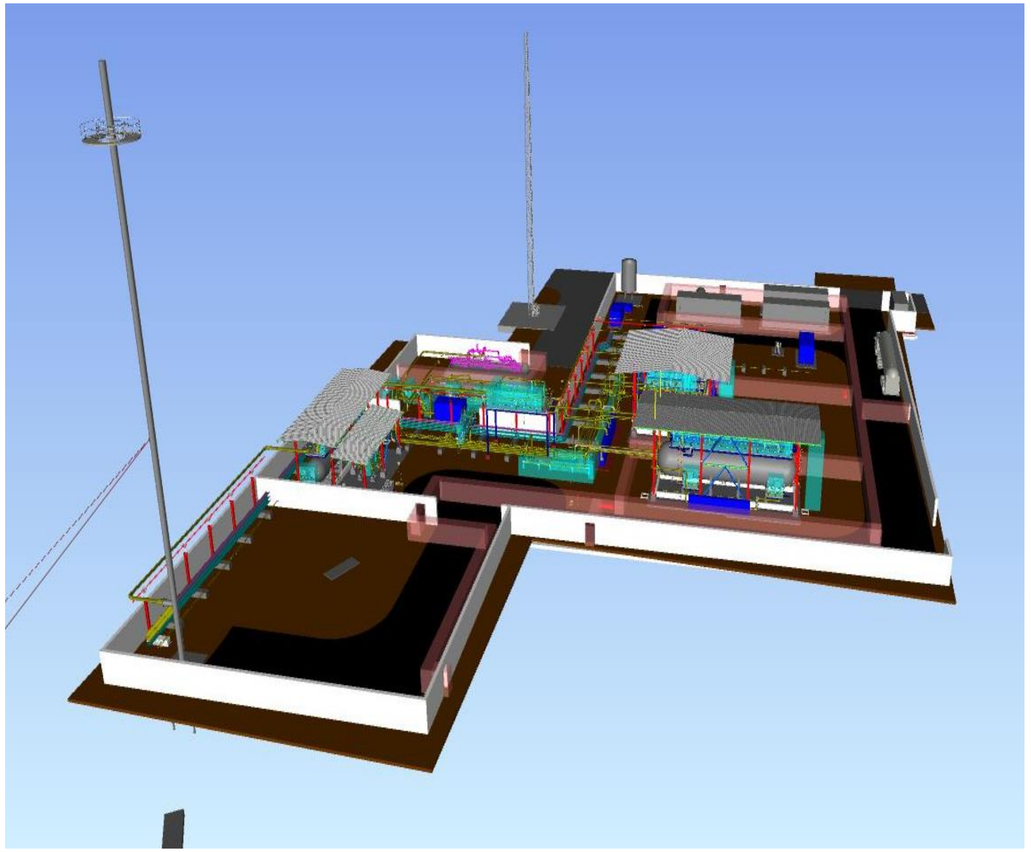


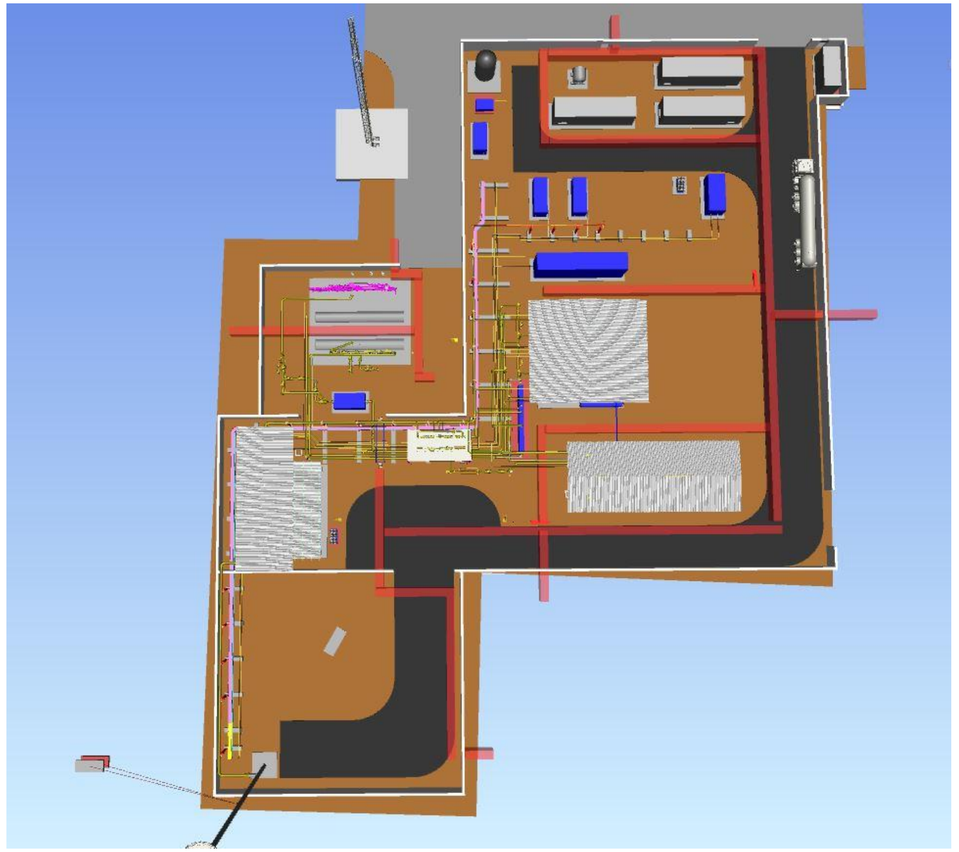




EPC Onshore Receiving Facilities – Mexico Offshore Area 1 – ENI MEXICO

Mexico Development Early Production





EPC Onshore Receiving Facilities – Mexico Offshore Area 1 – ENI MEXICO

Mexico Development Early Production





EPC Onshore Receiving Facilities – Mexico Offshore Area 1 – ENI MEXICO

Mexico Development Early Production





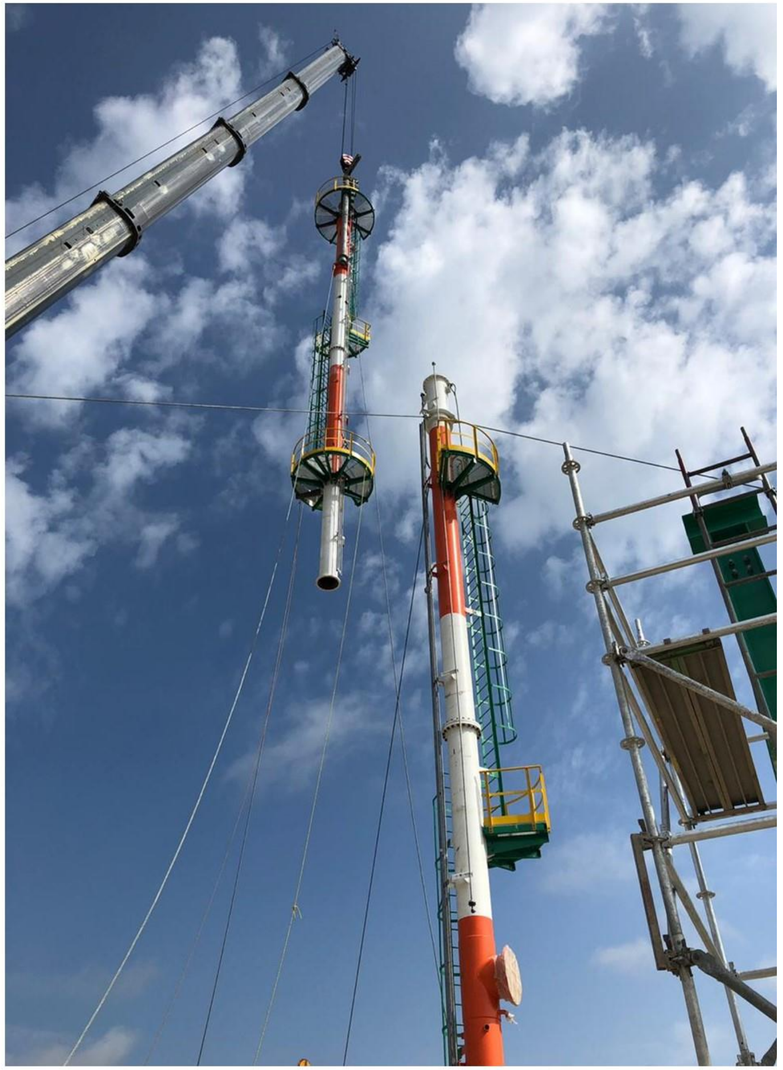
Onshore Receiving Facilities – EQUIPMENT

Eni Mexico - Mexico Development Early Production











Onshore Receiving Facilities – EQUIPMENT

Eni Mexico - Mexico Development Early Production













Onshore Receiving Facilities – EQUIPMENT

Eni Mexico - Mexico Development Early Production







Onshore Receiving Facilities – PLANT VIEW

Eni Mexico - Mexico Development Early Production







Onshore Receiving Facilities – PLANT VIEW

Eni Mexico - Mexico Development Early Production





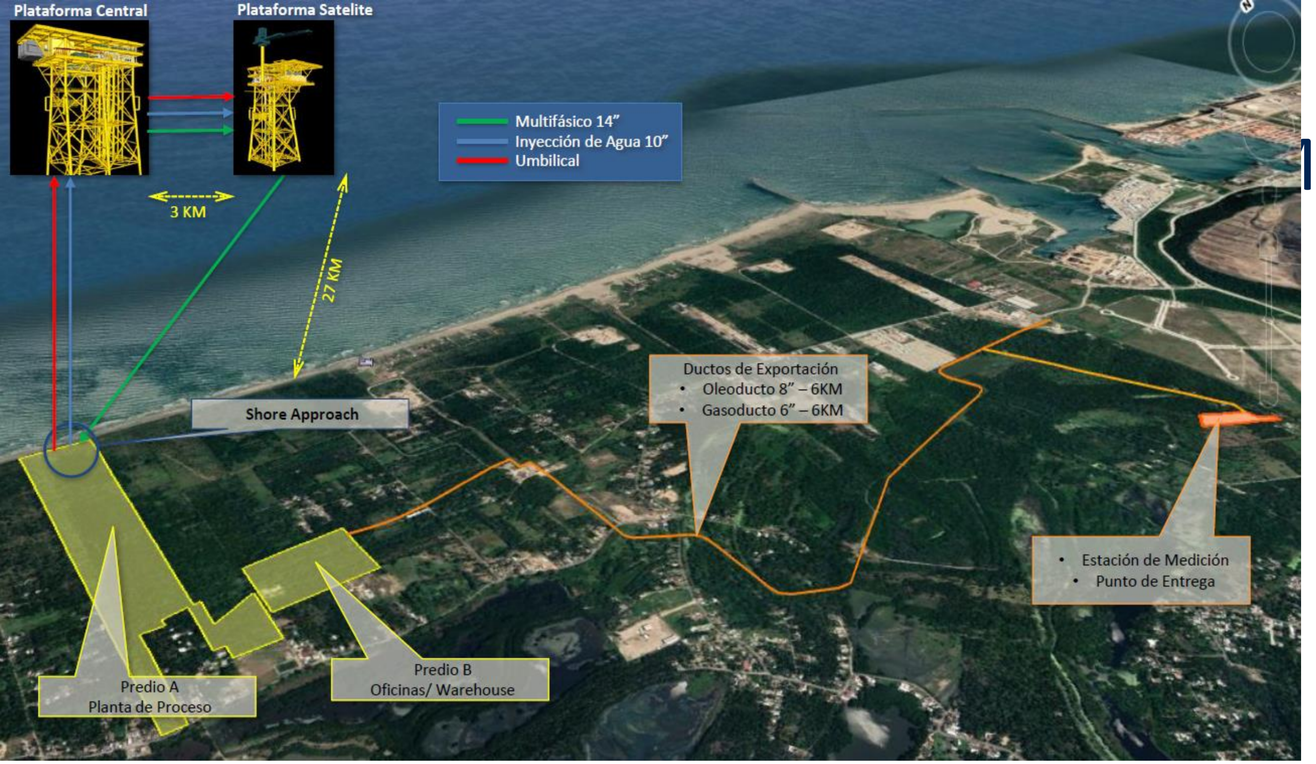
Project Management Consulting
Photovoltaic Power Plant - 100MW NAVOI Project (Uzbekistan)

Client NUR NAVOI SOLAR (Masdar company)
Activity PROJECT MANAGEMENT CONSULTING
Year 2020 – 2021

Description
The “Nur Navoi Solar” is a pilot 100 Megawatt Photovoltaic Project located about 35 km west of the city of Navoi in Uzbekistan. The site covers an area of about 267 hectares. The Project is mainly divided into PV substation, 220kV Switching Station and PV area. 220kV Switching Station will be connected with the existing Power Transmission Line by an Overhead Line. The PV area has a total installed capacity of 130 MWp, with an estimated number of 300.000 PV modules, 700 modular inverters and 19 PV transformers. The photovoltaic panel is equipped with a 445Wp single-crystal dual-glass photovoltaic module with a group-type inverter and a single-axis traceable bracket.



lexico)

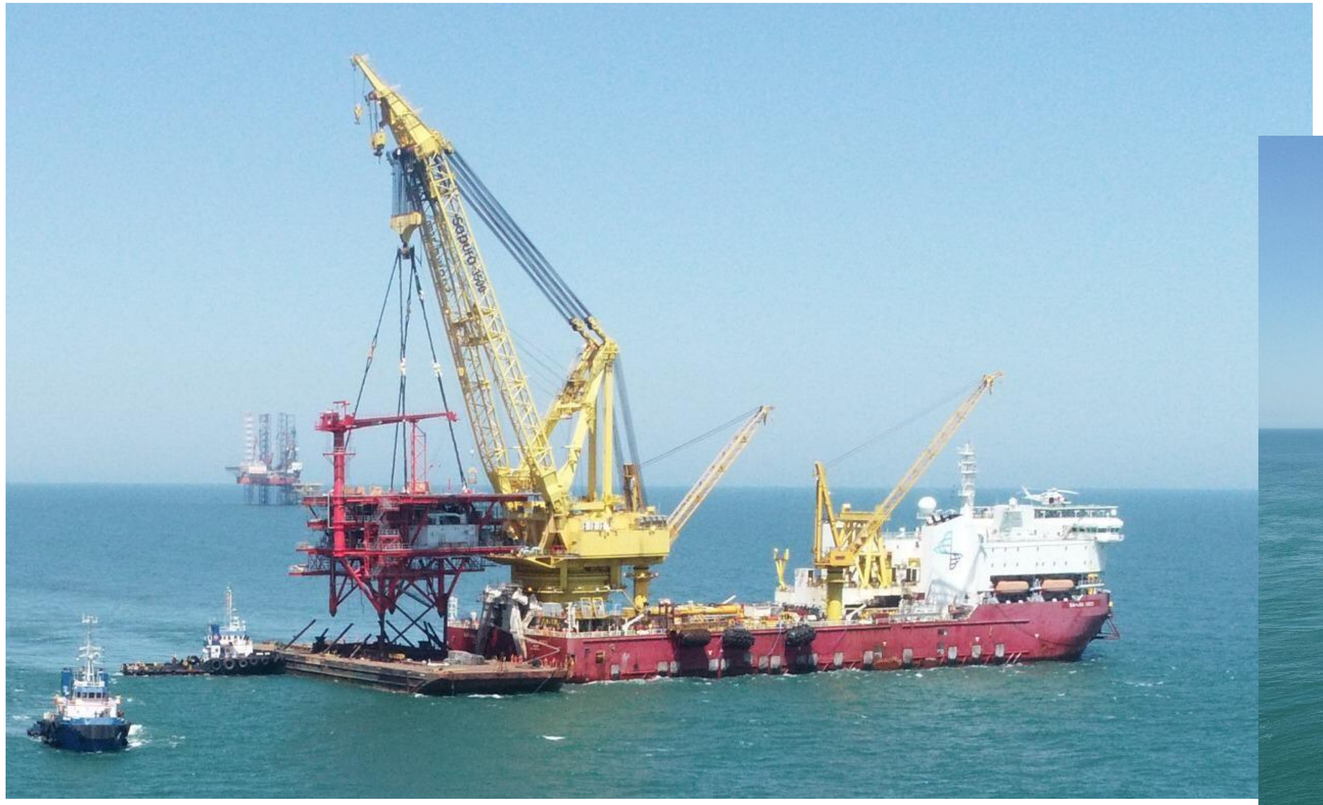


Paraiso, Tabasco.

The EPC system is composed by two offshore platforms, Central and Satellite platforms (HCP and HSP) and an onshore facility which includes a compression station, gas and oil treatment, water injection, separation and measurement system, storage tanks and 14 buildings.

The project is divided into a Phase 0, with the aim of energizing the offshore platform and to enable the control by onshore and a Phase 1, which include the complete process plant start up.

Project Management Consulting
HOKCHI PARAISO PLANT (Tabasco - Mexico)





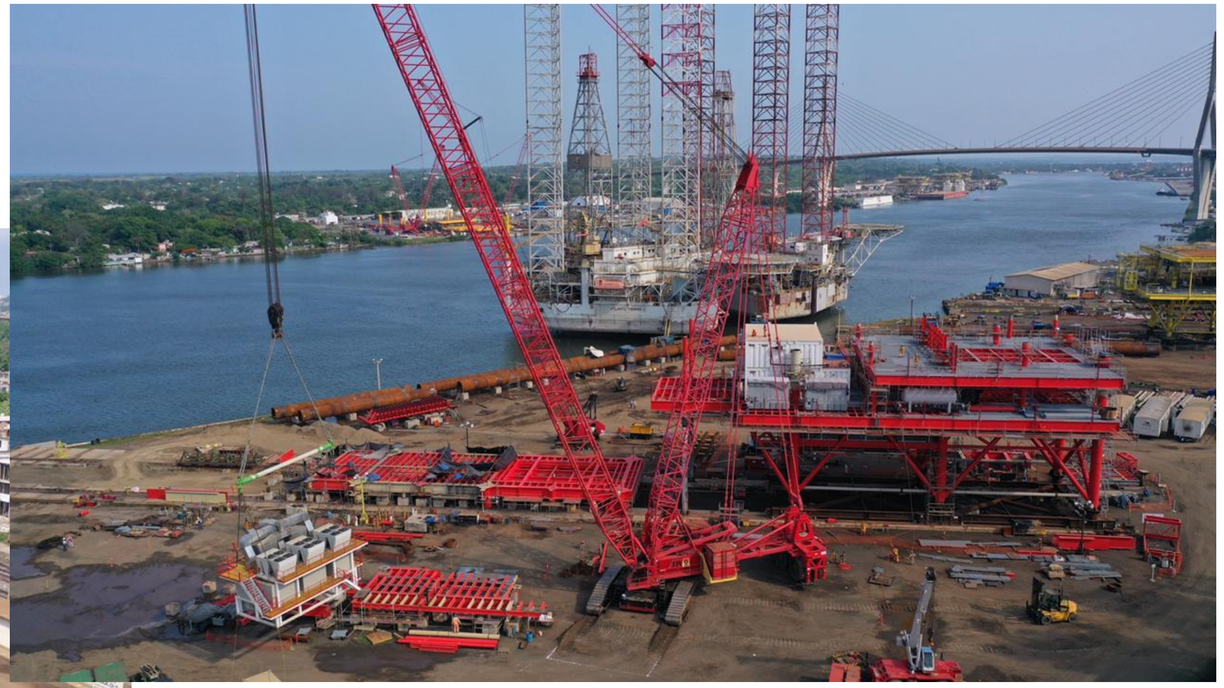
Project Management Consulting
HOKCHI PARAISO PLANT (Tabasco - Mexico)





Project Management Consulting
HOKCHI PARAISO PLANT (Tabasco - Mexico)





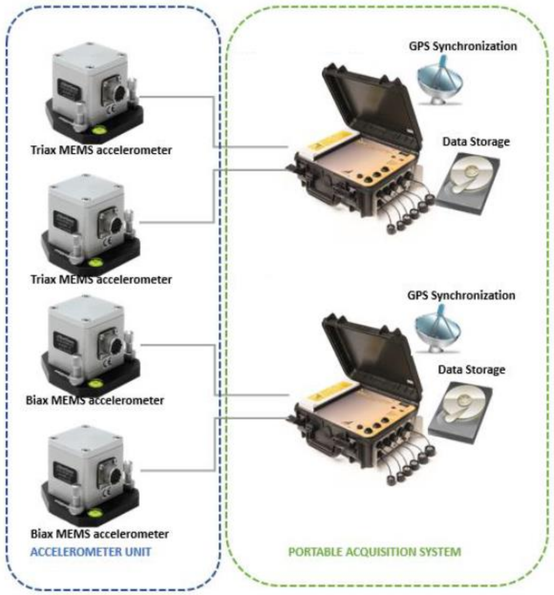
OFFSHORE STRUCTURAL MONITORING SYSTEM

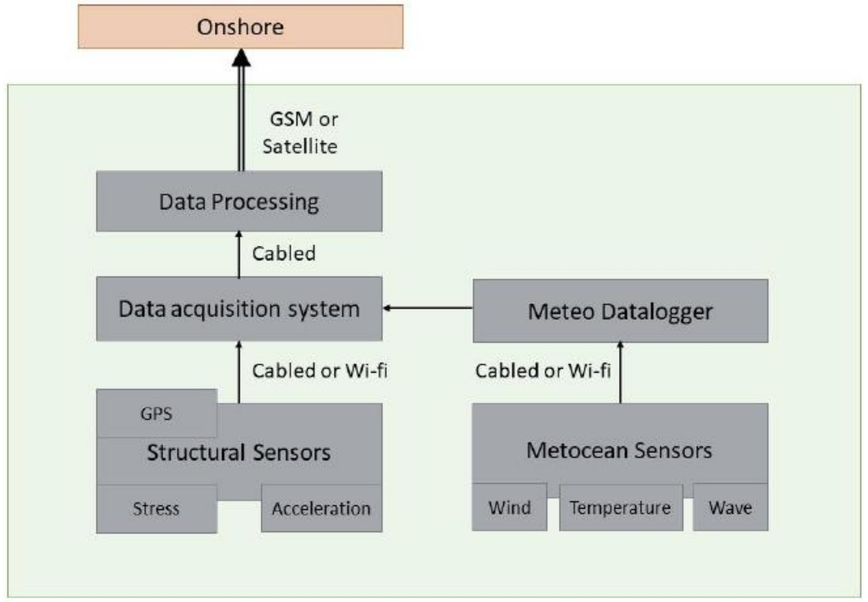
ENGINEERING, PROCUREMENT, COSTRUCTION SUPERVISION, COMMISSIONING AND START-UP

MONITORING SYSTEM is based on reliable, easy-to-install hardware with minimal maintenance, coupled with data monitoring, reporting and data elaboration.

The MONITORING SYSTEM is able to detect rupture or major deficiency of the structure. Such system measures the jacket structure vibration modes, so to detect any change in the structural stiffness.

Mode frequencies derived from the spectral response can be compared with those from the structural model of the platform for verification purposes.





BLACK SEA – Online Structural Monitoring System

All OMV Petrom Offshore Steel Structures of the Asset Petromar have a limited lifetime based on initial project assumption.
The extension of lifetime requires a set of inspections, measurements and other activities that have to be implemented to ensure to Indipendent Verification Body (IVB) that the metallic structures are protected for longer period of time and the new lifetime will not be affected by environmental conditions.
Based on an Engineering, Procurement and Construction Management Contract, DG is implementing Fixed Structural Online Monitoring Systems on Petromar Assets (no. **17 Offshore Structures**).
Contract Amount: **2.600.000,00 EUR**
Year: **2020 – 2021**

ADRIATIC SEA – Structures Assessment and Rental Online Monitoring System (IVANA C - IKA B - IDA C platforms)

DG is working to rank INA offshore assets (no. **3 platforms**) according to risk evaluation in order to develop a plan for all platforms aimed to verify the status of the sub-structures through a re-assessment based on: verification of original design and findings of inspection thru operative years.
Based on ranking DG will provide rental structural monitoring systems, will detect real structural response, will provide to INA and to CRS Authority reliable data, reporting and a proper risk analysis to approve platforms lifetime extension.
Contract Amount: **300.000,00 EUR**
Year: **2021**

EARLY PRODUCTION FACILITY - HOKCHI PARAISO TABASCO

Client HOKCHI ENERGY S.A - HOKCHI PARAISO TABASCO PLANT (Tabasco State - Mexico)

Activity ENGINEERING, PROCUREMENT, PRE-FABRICATION, CONSTRUCTION, MANAGEMENT, OPERATION & MAINTENANCE

Year 2020 **Turnkey Delivey Time:** 4 months

Oil flow rate: 5.712 BOPD **Gas flow rate:** 2.285 SCMPD

Description:

"EPF SEPARATOR" system having the following characteristics:

- Receiving first oil (gas, water, oil) from Hokchi-4DEL and Hokchi-7 wells trough a provisional pipeline (ID 8"),
- Separate the first oil into its three phases,
- Perform fiscal sales measurement and characterizes each one phase,
- Combine the three phases together
- Deliver first oil as multiphase fluid to a provisional export pipeline (ID 8") delivered to the Puerto Ceiba battery (Pemex).

It is made up of the following main items:

- Three-phase separator
- Slug Catcher
- Valve skids
- Cold vent (no flare)
- Instrument air unit
- Power generation unit
- Closed drain
- Auxiliary materials (connection pipelines, cable ways, etc..)
- Metering system (flowmeters Coriolis type)





MIDIA GAS TREATMENT PLANT REVAMPING PROJECT

Client OMV PETROM
Activity FEED ENGINEERING
Year 2020 - 2021

Description
Incoming gas enters the plant via 16-inch diameter pipeline with a flow rate of ~110,000 Ncm/h at 42 barg. The gas is currently processed in a Linde designed C3+ plant to maximize the liquids extracted from the gas and to meet sales gas specification to TRANSGAZ. Due to frequent process upset, the aim of the project is to by-pass existing process units with new ones using a robust process with minimal requirements for maintenance, operability and high plant reliability/availability, with a limited off-gas specification time. DG SoW:
Site survey to gather the required technical data for bypass engineering; Laser Scanning of brownfield area; Identification of Hydrocarbon volumes, gas and liquids, produced through the C3+ bypass; Design & integration of C3+ bypass tie-ins to Midia Gas Treatment Plant and construction strategy for reducing to minimum the need for shutdowns; Conduct Engineering and Design works for the project; Process Equipment Datasheet for Main Equipment and List; Design P&IDs, PFDs, UFDs; Civil Drawing for Foundations and Pipe Racks, JT skid and interconnection piping; 3D Modeling; Upgrade of: Earthing System; Lighting system; Electric System; Heat tracing system; UPS; integration with existing C3+ recovery system; integration with existing ICSS system.
Permitting documentation for DTAC and all required permits, needed for applying for the Construction Authorization.



VAL D'AGRI OIL TREATMENT PLANT REVAMPING PROJECT

Client ENI DIME
Activity FEED ENGINEERING
Year 2020 - 2021

Description
FEED Engineering and Permitting Engineering for Oil Treatment Plant Revamping.
Most of the following activities have been developed for the major 2021 turnaround. Gas Detection (H2S and SO2) system revamping, New By-pass of SCOT (Claus off-gas treating process) Unit (to divert gas directly to incinerator unit, for maintenance purposes), New nitrogen package, ESD upgrade, new drainage line to V560 unit, Emergency showers system adjustment, Fire fighting system verification and upgrade, Loading pumps modification and new installations, Smoke detectors replacement, Water loading system and steam lines revamping and upgrading, Condensate drain adjustment, flow meter and transmitter installation, liquid catcher on steam lines installation, Smoke detectors improvement in SSC/SS1/SQP/SQS, Area L fluid sampling system improvement, Hub 1 Parking PAGA system installation, Acoustic monitoring, Firefighting tank maintenance and pumps installation, Pedestrian traffic plan, Geodynamic monitoring (Subsidence analysis and data validation, Strongholds installation, Micro-seismic monitoring), Environmental Engineering activities for Alignment of Val d'Agri Biodiversity Action Plan (BAP) with Eni UPS Technical Guideline on Biodiversity and Ecosystem Services.





SINAI FACILITIES OFFSHORE ESD FEED PROJECT

Client ENIPROGETTI EGYPT / PETROBEL

Activity FEED DESIGN

Year 2020



Description

CONSTRUCTABILITY, COST AND SHUTDOWN PLAN REPORT FOR BELAYIM OFFSHORE FIELD

Feed Engineering will be provide an overview with regards to the construction strategy for the work to be completed at Petrobel ESD Revamping Project for the following Petrobel Belayim fields:

1) Multi Wells Platform MWP-2
2) Multi Wells Platform MWP-3
3) RAS GARA, SP-1 Platform.
4) PP-2 Production Platform, and its connected platforms PP-1, RLP and MWP-1.
5) PP-3 Production Platform, and its connected platforms SCP-1.
6) D-10 Production Platform, and its connected platforms SCP-1, MWP-4 and MWP

This project by adding New ESD system with all its related components and replacing the ageing control methods and field devices with state of the art technologies and equipment.
The new ESD System will be ensure that the Platform is in safe condition on a confirmed or process upset conditions.

Site visit to the above mentioned platforms to collect data; verify the existing instrument locations, existing cable trays routing and status, Cables and Control Rooms data, Also conduct meetings with Petrobel projects team to check the available data and documents of existing instrument and control systems on the Platforms

The purpose of this document is to outline the detailed Completions (meaning all Construction and Commissioning activities) strategy for Petrobel Belayim Field six offshore Platforms with regards to all aspects of the implementation program from design through to the handover of the work to Operations offshore.

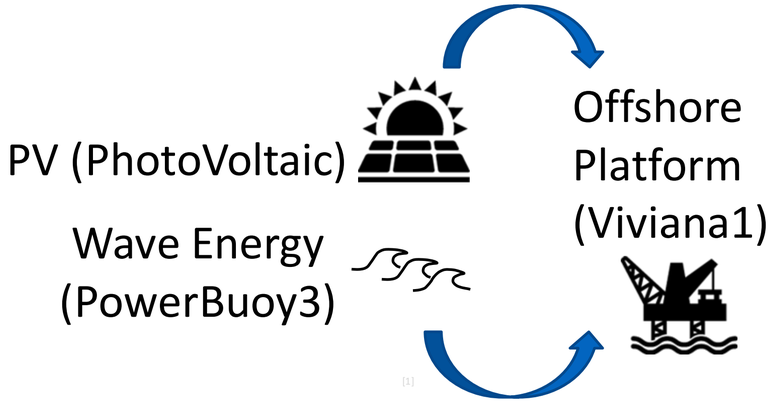
PLACE PROJECT (Adriatic Sea - Italy)

Client ENI
Activity ENGINEERING AND PROJECT MANAGEMENT
Year 2019

Description
Adriatic Sea, 9 km Offshore Pineto, Viviana Platform, 22 m water depth.
Feasibility Studies, Basic and Detail engineering for a new hybrid power generation system based on photovoltaic and wave energy converter to be installed on Viviana Platform:

- Project Engineering Services
- Coordination with Vendors
- Technical Bid Evaluations
- Structural assessment, calculation and modifications
- New Photovoltaic Plant sizing and design
- Remote control and monitoring
- Interface with Authorities and Contractors





GAS DEHYDRATION PACKAGE MODULE



Client Hong Kong and China Gas Company Limited

Activity ENGINEERING, PROCUREMENT, CONSTRUCTION

Year 2017-2018

Description

The glycol Package provided consists of the following major components:

1. **Column internals SS316**, with the following specification:

The selected internals for the tower is Koch International Intalox Ultra IMTP 40 made of SS 316
The supply is complete of special random packing support
The supply is complete with the top liquid distributor with suitable drip points
All above internals are suitable for introduction through the existing openings
The reason of a special random instead of M-252 Y is the opportunity to avoid the grinding of the actual trays support rings
The mist eliminator at the top cannot be a demister with the new capacity; our proposal is a vane separator, in vertical position; some minor weld-in parts will be necessary for installing the vane separator blank-offs.



2. **New skid**, similar to the existing old one, interchangeable in terms of overall dimensions, upgraded and made by following main items: Lean/Rich Glycol Exchanger, Glycol Charcoal Filter, Glycol Particulate Filter (x 2), Glycol Reboiler, 2 x 100% Glycol Circulation Pumps, Lean Glycol Cooler (Shell & Tube) The package will be supplied with all necessary instruments, valves (control valve, isolation valve & pressure relief valve) for safe operation, electrical & pneumatic hook up to skid edge junction boxes, grit blasting to SA2.5 followed by painting (epoxy primer + top coat - finished color- aluminum).

Gas Composition (Typical): CO2 19%, CO 3%, CH4 28%, H2 50%
Maximum Gas Flow: 78,749 SCMH

FEED AND DETAIL FOR IVANA A OFFSHORE PLATFORM

Client INA JADRAN

Activity FEED AND DETAIL DESIGN

Year 2019

Description

IVANA A platform life extension, JACKET structural verification.
Scope of the project include to collect all data and information to analyze the jacket of IVANA A offshore platform, aimed to check its strength and to extend its service life. Life Platform extension as result of a series of steps:
- Analysis and reports from the construction drawings;
- Concept update with the real load cases and conditions;
- 3D model update with real conditions;
- Surrounding environment conditions analysis;
- Static Analysis (loads cases, operative and storm analysis);
- Dynamic Analysis;
- Deterministic analysis (1st CRS Check, comments and alignment);
- Stochastic Analysis (2nd CRS Check, comments and alignment);
- Activities will be concluded with the thickness checks on-site structures.





IVANA A Platform

Client INA JADRAN

Activity ENGINEERING

Year 2019

Description

Engineering services for Sewage Unit and Grease Trap Installation

MARICA offshore platforms modifications

Client INA JADRAN

Activity ENGINEERING

Year 2019

Description

Engineering services for Marica offshore platform modifications for the purpose of drilling and new well connection, including the following: Engineering of all modification required for drilling and rig approach to platform Marica; Preparation of engineering design book required for obtaining the construction permit following the “PRAVILNIK” requirements; Engineering of all post drilling modifications on Marica – new wells connection to existing platform systems (separator, etc.,).

IKA-B offshore platforms modifications

Client INA JADRAN

Activity ENGINEERING

Year 2019

Description

Engineering services for Ika-B offshore platform modifications for the purpose of drilling and new well connection, including the following: Engineering of all modification required for drilling and rig approach to platform Ika B; Engineering of all post drilling modifications on Ika B – new wells connection to existing platform systems (separation, etc.,).

VESNA Platform - Deck re-use

Client INA JADRAN

Activity ENGINEERING

Year 2019

Description

Structural and naval design for VESNA Deck platform re-use on a new monopode named ILENA: Check of the last documentation available as-built (process, structural, piping, mechanical and E&I documentations); Survey on board to evaluate the difference between the last documentations and the actual deck; Design of the disconnections plant; Structural activities for deck removal/re-installation; Dismantling activities of the elements as top-deck and flare from platform to the barge and barge deck surface organization; On-board barge construction sequence of activities; Cost estimation (deck structural refurbishment, lifting and transportation).

VESNA Platform - Jacket re-use

Client INA JADRAN

Activity ENGINEERING

Year 2019

Description

Structural and naval design for VESNA Jacket platform re-use on a new monopode named ILENA: Check of the last available structural documentation verification (CoG, lifting analysis, lifting bollards...); Survey on board to evaluate the difference between the last documentations and the actual deck; Design and plan of jacket and transition module disconnection points; Subsea cutting methods (piles, conductors/casing...) and sequence shall be part of the study; Jacket lifting analysis from the seabed and loading to the standard 300 x 90 ft barge (Crane vessel selection and minimum requirements will be part of the study); Design of sea fastening for transportation to shore and MTO definition; Calculation report for sea fastening; Jacket transportation analysis; Necessary jacket modifications description; Execution plan definition (modifications on barge moored to yard quay vs. load out to shore); Jacket refurbishment – MTO definition and work sequence; Cost and time estimation necessary for jacket refurbishment.

BONACCIA Platform Requalify

Client EniProgetti

Activity ENGINEERING

Year 2019

Description

Engineering services for BONACCIA Platform Requalify (deck, jacket and appurtenances)

Angola NGC - Quiluma and Maboqueiro Platforms

Client Saipem

Activity ENGINEERING

Year 2018 - 2019

Description

Offshore Angola - Detail Engineering services for offshore primary structures - Angola NGC Platforms - Quiluma e Maboqueiro

FPSO Firenze Project

Client Saipem

Activity ENGINEERING

Year 2018

Description

FPSO Firenze Project - Abo Redeployment

ZATCHI ZERO WATER DISCHARGE PROJECT

Client ENI CONGO

Activity ENGINEERING

Year 2018 - 2019

Description

Detail Engineering for the EPC Contract “Zatchi Zero Water Discharge”.
Engineering will be developed starting from FEED endorsement, including HAZID/HAZOP recommendations of previous project phase. The job consists in the expansion and revamping of the existing oily water treatment system and injection facilities. The Scope of work includes Vendor Follow-up Services, Supervision (Construction & Commissioning), Contract Management Support

LOANGO ZERO WATER DISCHARGE PROJECT

Client ENI CONGO

Activity ENGINEERING

Year 2018 - 2019

Description

Detail Engineering for the EPC Contract “Loango Zero Water Discharge”.
Engineering will be developed starting from FEED endorsement, including HAZID/HAZOP recommendations of previous project phase. The job consists in the expansion and revamping of the existing oily water treatment system and injection facilities. The Scope of work includes Vendor Follow-up Services, Supervision (Construction & Commissioning), Contract Management Support

MULTIDISCIPLINARY ENGINEERING SERVICES FOR VALAGRO S.P.A.

Activity AS BUILT - CHELATES PRODUCTION LINE IN ATESSA PLANT

Year 2017 - 2018

Description

Laser scanning of existing Chelates production line in Atessa plant. Creation of a 3D Model in AutoCAD Plant 3D from cloud of points scanned. Walk down of process and utilities lines and creation of PFD, H&MB, P&IDs. As Built of multidisciplinary documentation and issue of new drawings, necessary to properly manage plant.



Activity BASIC DESIGN AND DETAIL DESIGN - SOUTH CAROLINA PLANT

Year 2017 - 2018

Description

Basic design and detail design for a new big plant in South Carolina, able to produce both liquid and chelates fertilizers.
Site selection, layout study, process and utilities definition, development of multidisciplinary detail engineering design, Capex estimation, issue of ITT documentation for procurement and construction tender, technical bid evaluation.

Activity DETAIL DESIGN - BRONNOYSUND AND ATESSA PLANT REVAMPING (ITALY / NORWAY)

Year 2017

Description

The projects are related to the multidisciplinary detail engineering for the design of Fertilizer Plants, using Autocad Plant 3D for modeling activities. In particular DG scope includes the overall design of the plants with the aim to optimize the process and to provide the economical estimation for construction activities. The engineering activities include the preparation of MRs for machinery & vessels, the design of automation and control system , electrical, steel structures and civil.

FEED FOR DECK WHP1 OFFSHORE PLATFORM

Client EniProgetti

Activity FEED DESIGN

Year 2018

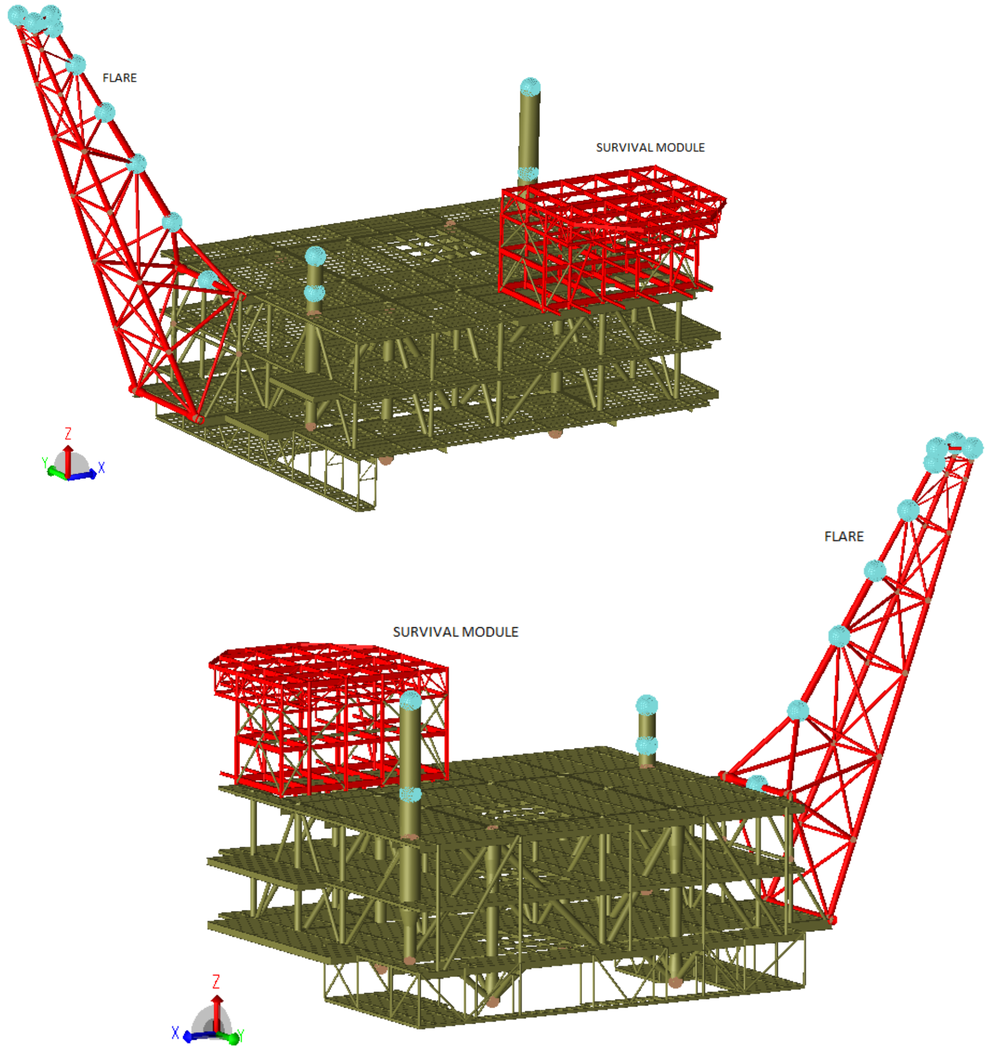
Description

WHP1 platform will be part of a wide context of oil/gas field development. It will be installed in the AMOCA Field located offshore Mexico, in about 28.5 metres water depth (MSL).

Scope of work of DG Impianti for the WHP1 Feed Project includes off-shore structural design of the deck, structural analysis, reports and design drawings.
The structural analyses include the activities reported below:

- In-Service condition
- Seismic condition
- Lifting condition for deck, flare and survival module
- Transportation condition for deck, flare and survival module
- Load-out condition for deck, flare and survival module

Also, DG Impianti has developed 3D model to extract structural drawings and MTO.



PPE AND WHPA OFFSHORE PLATFORMS - MELLITAH FIELD

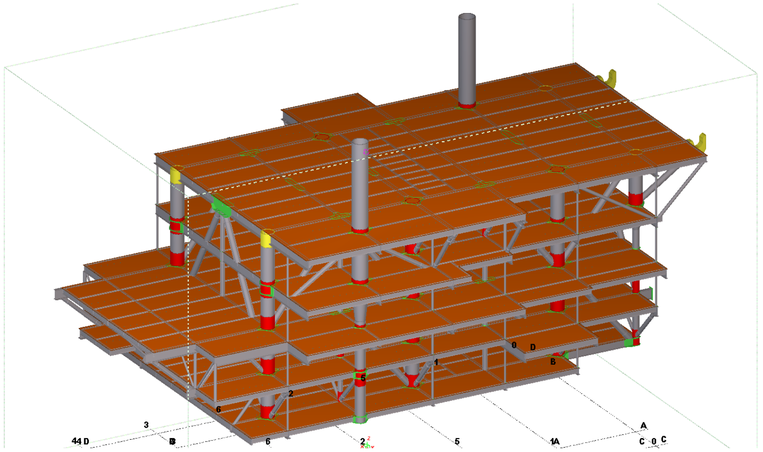
Client EniProgetti

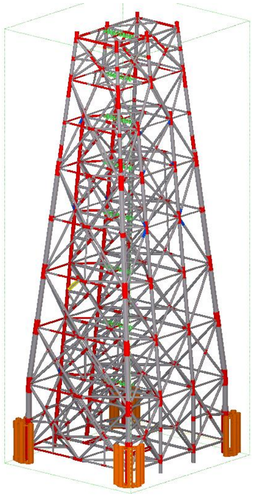
Activity BASIC DESIGN

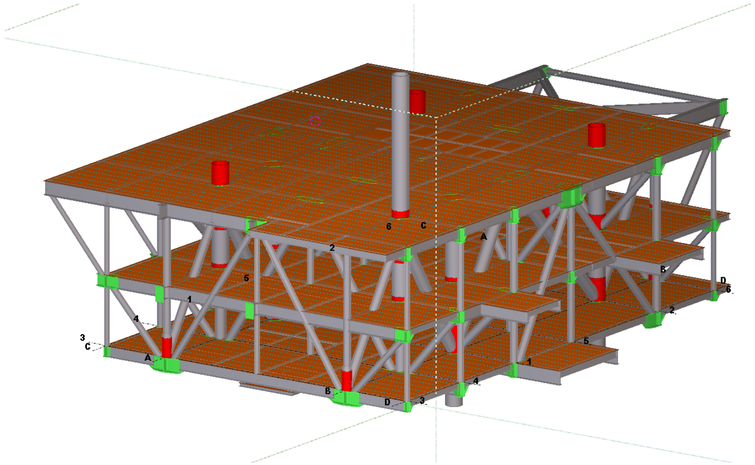
Year 2017 - 2018

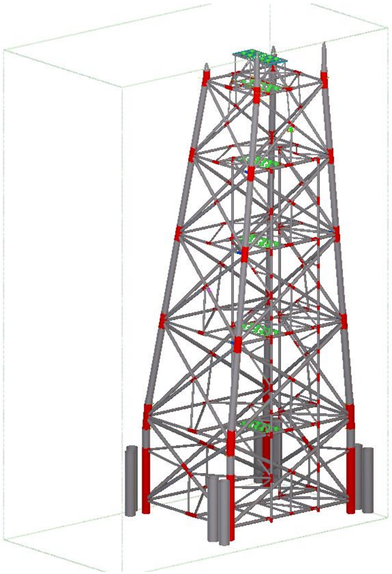
Description

PPE and WHPA platforms will be part of a wide context of oil/gas field development. They will be installed in the Mellitah Field located in the offshore Lybia. PPE platforms in about 218 metres water depth and WHPA in about 91 metres water depth.
Scope of work of DG Impianti for the PPE and WHPA basic project includes off-shore structural design of the WHPA deck and design drawings for both platforms.
The In-service condition structural analyse has developed for WHPA deck.
Also, DG Impianti has developed 3D model to extract structural drawings and MTO for both platforms.







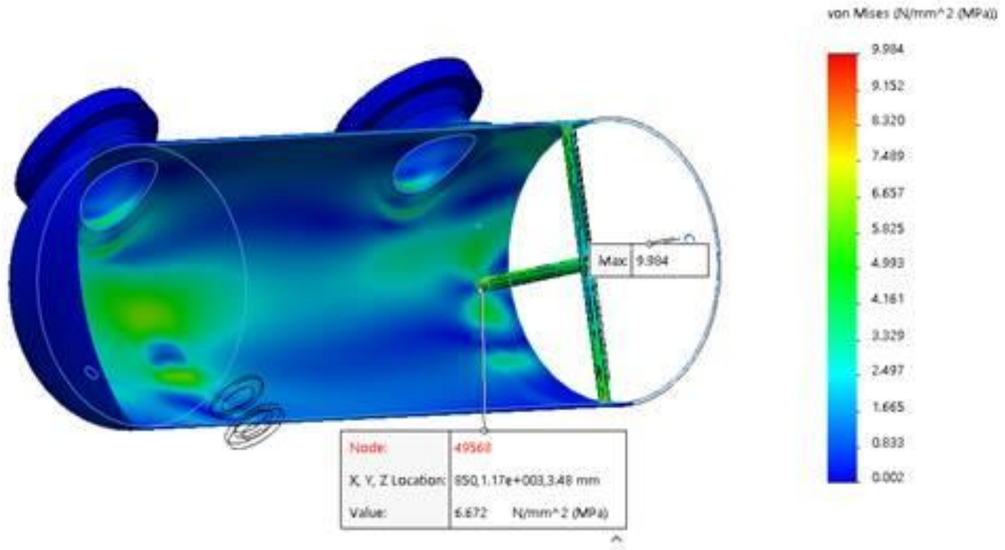


REVAMPING OF COLUMN - E 3402 - SANNAZZARO REFINERY

Client ENI - SANNAZZARO REFINERY

Activity EPC (including commissioning & start-up)

Year 2018



Description

The project is related to the engineering, procurement, fabrication, inspection and installation of the head of the column E3402 , included in the HDC2 plant of Sannazzaro de' Burgondi Refinery .
The equipment is a vertical column of height 26,63 m containing hydrogen , hydrocarbon, H2S of material ASTM A516.
The scope of work include the fabrication and replacement of the head of the column which has been damaged by corrosion, from elevation +19.725 mm to +21.490 mm.
Critical activity of the project was the execution of the cut and the connection detail between the new and the existing and the development of finite element analysis to investigate the behaviour of the equipment under PWHT .

REVAMPING OF COLUMN - E 1101 - SANNAZZARO REFINERY

Client ENI - SANNAZZARO REFINERY

Activity EPC (including commissioning & start-up)

Year 2018



Description

SANNAZZARO DE BURGONDI REFINERY (ITALY)
Replacement column E1101
DESIGN, PROCUREMENT, CONSTRUCTION, COMMISSIONING, including Vendor Follow-up Services and Expediting.
Replacement column E1101 / Sannazzaro Refinery
H=44m, Maximum internal diameter=3,5m, Design Pressure=3,6barg.



SP3D MODELING FOR PNEUMATIC CONVEYING SYSTEM

Client ZEPPELIN FOR TECHNIMONT

Activity ENGINEERING

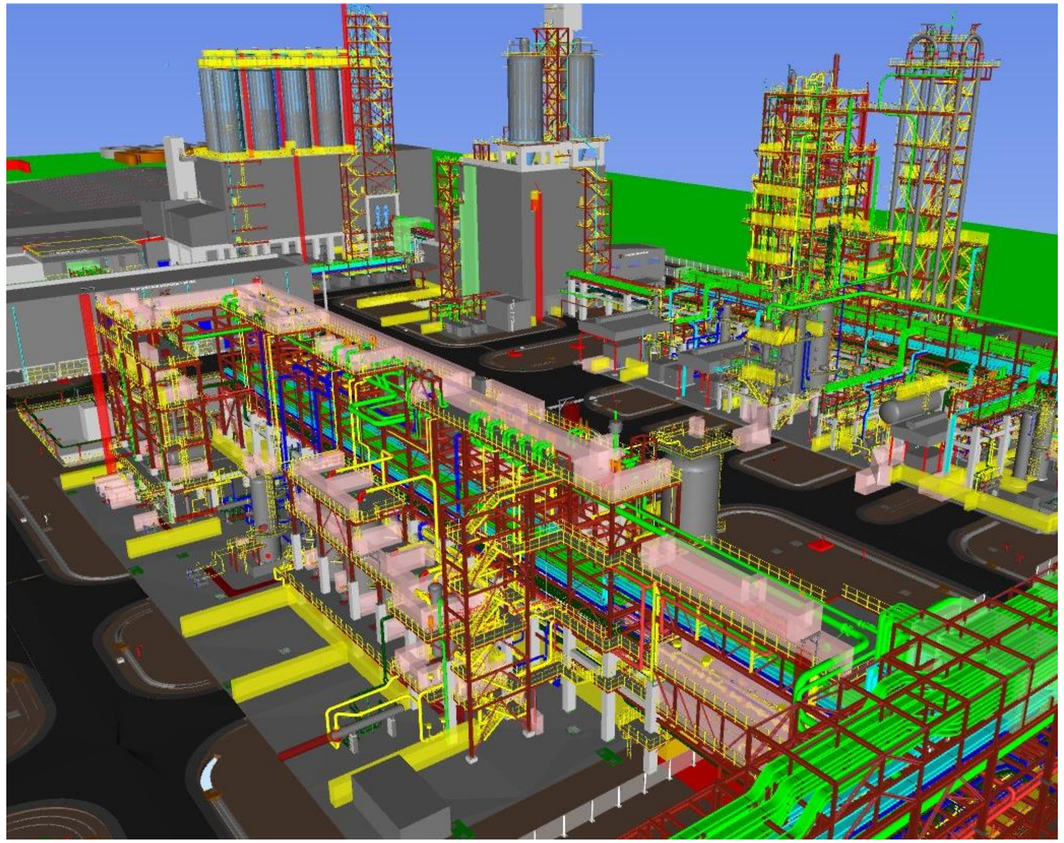
Year 2017

Description

The project is related to the realization of new polyethylene and polypropylene systems, to be installed in the same plant.
DG scope of work include 3D modeling activities, using the software SP3D and its tools, for the plant named PCS.
The model include the definition of :

- Equipment;
- Pipes;
- Valves;
- Supports;
- Instrumentations;
- Steel Structures;

Related to the design of a pneumatic conveying system for PP & PE.



VYSOTSK - LNG PLANT PROJECT

Client SINI

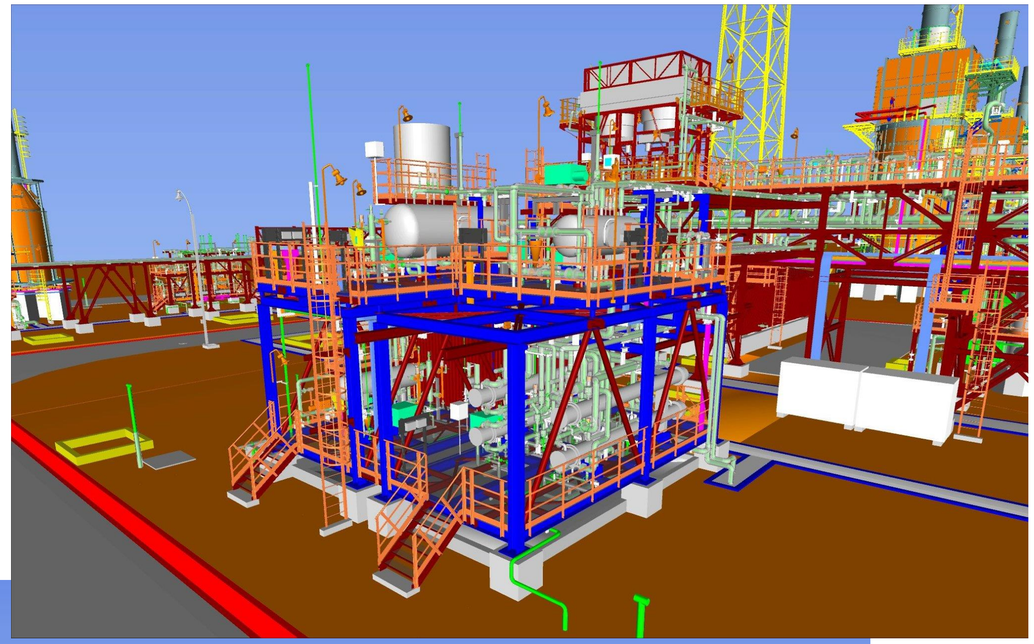
Activity DETAIL DESIGN

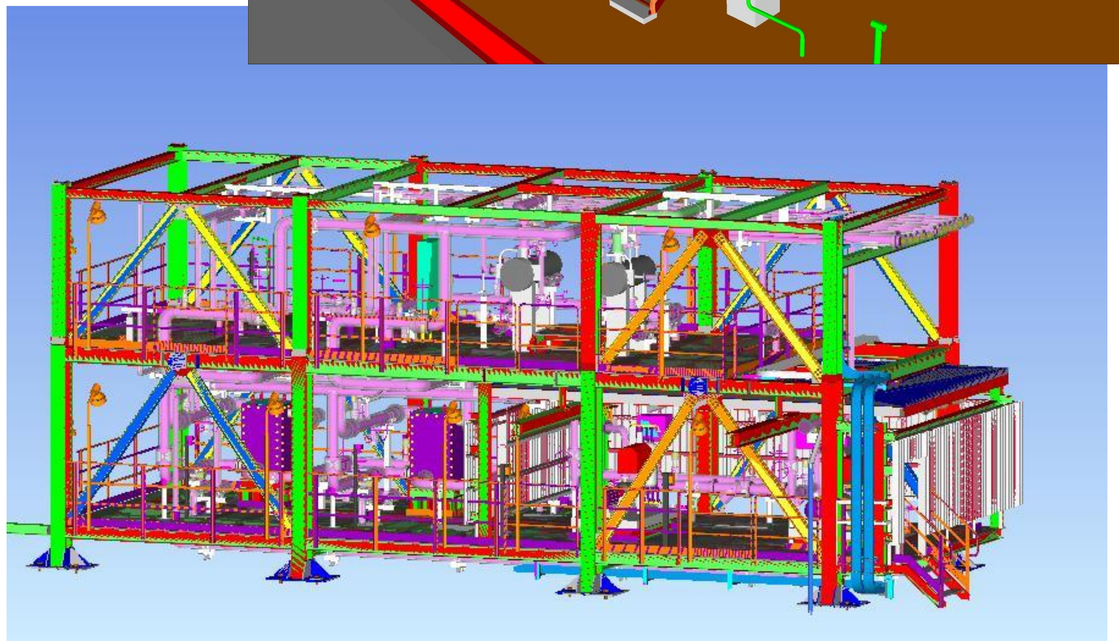
Year 2016

Description

Siirtec Nigi awarded DG Impianti Industriali a contract for the multi-disciplinary detail design of the new Liquefied Natural Gas Terminal of the Vysotsk Seaport located in the Leningrad Region, Russia.
LNG Terminal will be a capacity about 660,000 tons per year, the plant will be composed of Inlet Facilities (Feed Pre-Heater & Mercury Removal), Acid Gas Removal (AGR) where CO2 is removed by means of amine solution absorption, Dehydration Unit (DHU) that dehydrate gas by means of adsorption on a molecular sieve bed and Hot Oil System (HOS).

Scope of work of DG Impianti Industriali for the Vysotsk LNG plant includes civil and structural design, piping and stress analysis design, electrical and instrumentation engineering, Project Management, Material Management and the study of all construction and installation sequences in order to optimize the design by full modularization of the plant as far as possible.





ABU QIR CCGT PROJECT

Client EDISON

Activity MECHANICAL AND PROCESS ENGINEERING

Year 2016

Description

The purpose of this project is the relocation Sarmato Combined Cycle Power Plant (part of it) in Egypt, close to the Maedia gas treatment plant, in order to burn natural gas set available by the AQP, and produce electric power that will be distributed to the industries.

The engineering services include all mechanical and process detailed design required for the development of the activities.

During executive design it may be necessary to update design basis considering final information and data in order to improve project efficiency (in terms of costs, time and performances).

The aim of the Project is also to use as much as possible the design developed for construction of Sarmato Power Plant and subsequent modification related to SSTG debottlenecking, considering that new Plant will share most of the layout with the existing.



RABIGH PHASE II PROJECT - Miscellaneous Utility Off-Site inside

Client SAIPEM

Activity DETAIL DESIGN

Year 2016

Description

Saipem awarded DG Impianti Industriali a contract for the piping detail design of the new Vanadium Recovery and Treatment Unit facilities to be located in the existing Rabigh's Refining and Petrochemical Complex approximately 150km north of Jeddah, Saudi Arabia.

Scope of work of DG Impianti Industriali includes:

- P&ID Mechanization
- Piping MTO of aboveground and underground lines
- Material Management
- Piping detail design and interferences check with the existing plant

of the following areas:

- Chemical Warehouse
- Vanadium Treatment Facility
- Spent Caustic Incinerator
- Aeration System For Liquid Incinerator
- Motor Testing Building



FEED ENGINEERING FOR IDPP OFFSHORE PLATFORM

Client TECHINT FOR ENI
Activity FEED DESIGN
Year 2015

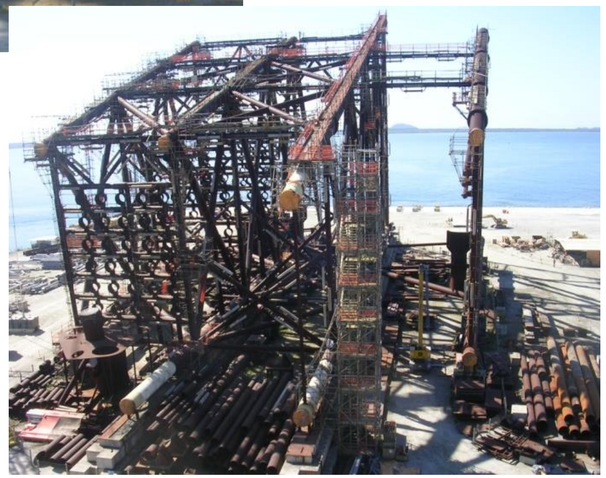
Description

The new Integrated Drilling Production Platform (IDPP) has the purpose to process multiphase well-fluid coming from a maximum of 16 production wells, installed on the Platform itself, plus the fluid coming from DP4, DP5, DP6&IKALOU and MWAFI Platforms:

Well-fluid from the platforms and from the production wells is separated in the hydrocarbon oil, gas and water phases and each of them is treated to match the specified quality prior to export.
Oil Process consists of water separation, flash stabilization and acid gas (H2S) stripping by heating.
The Fuel Gas is produced by the treatment of the Sour Gas that consists mainly in: compression, acid gas (H2S) removal and water dew-pointing control through dehydration process.
Produced Water and the excess Sour Gas are treated and disposed by re-injection to Disposal Wells. The excess of treated produced water is disposed to sea.

Scope of work of DG Impianti for the IDPP Feed Project includes off shore structural design, piping design, electrical and instrumentation engineering, HSE, and the study of all construction and installation sequences in order to minimize the lifting impact.





GELA REFINERY - Desulfurization Plant

Client ENI

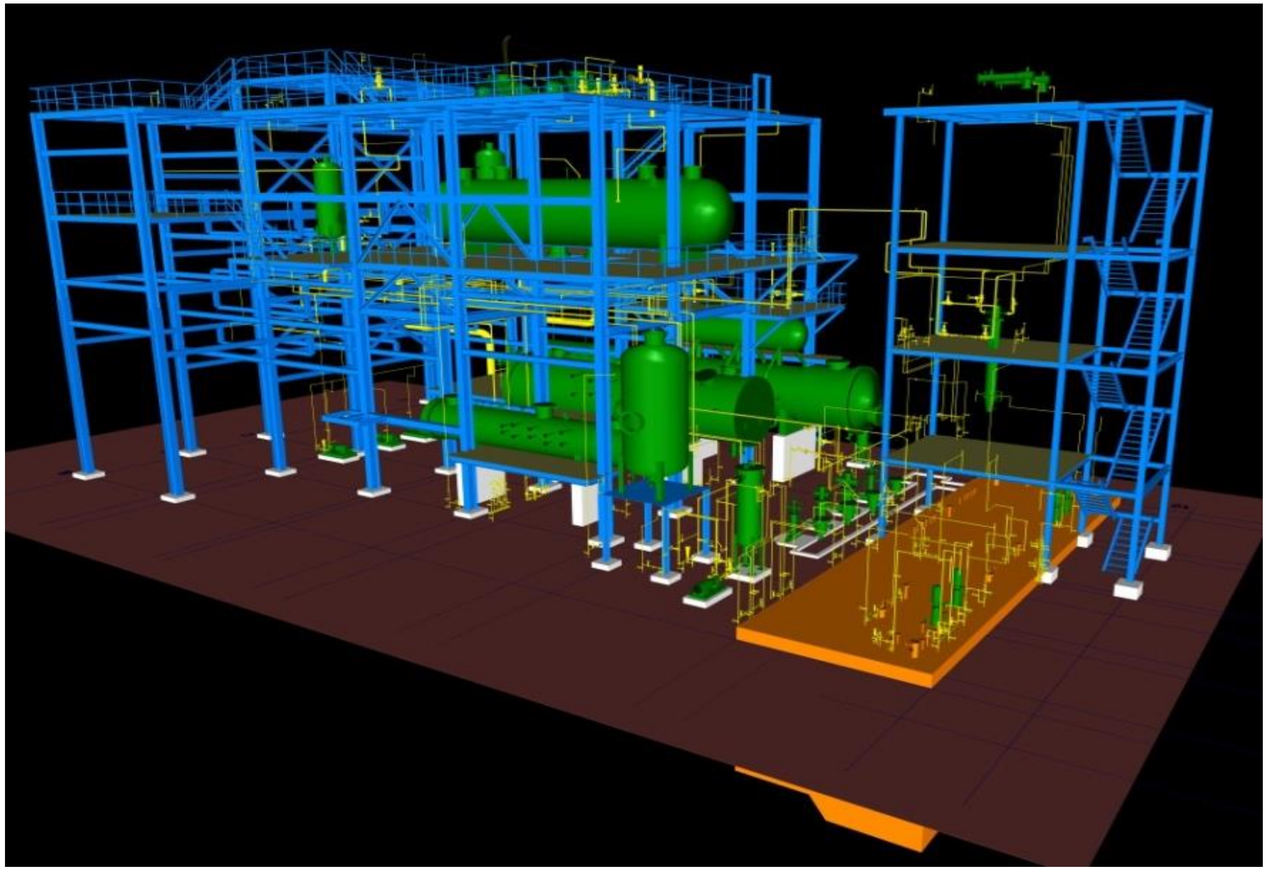
Activity DETAIL DESIGN

Year 2014

Description

Eni awarded DG Impianti Industriali a contract for the multi-disciplinary detail design of the new desulfurization plant to be installed on the GELA (Italy) refinery.

The design of the ENI GELA Refinery desulfurization plant is complicated by the re-utilization of existing foundation in new plant area. These foundation derived from en existing plant now dismantled. Scope of work of DG Impianti Industriali for the ENI GELA Refinery includes civil and structural design, piping and stress analysis design, electrical and instrumentation engineering and the study of all construction and installation sequences.



SAIH NIHAYDA CONDENSATE STABILIZATION PLANT

Client ABB / PDO

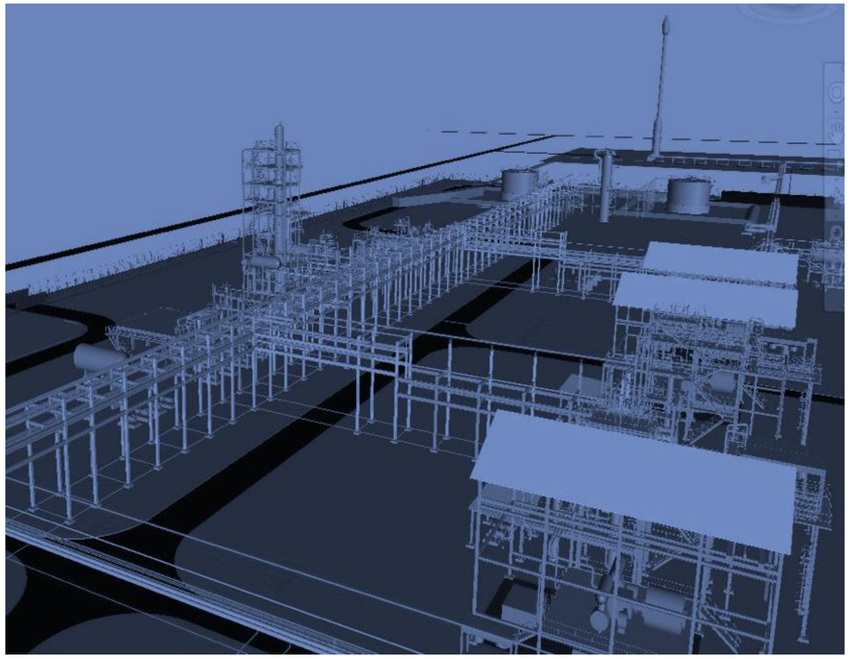
Activity DETAIL DESIGN

Year 2013 - 2014

Description

The new SNCP will have the capacity to process 4,500 standard cubic meters of condensate per day and will be used as a backup for the existing central processing plant to ensure continued gas production. In addition, it will process portion of Kauther Gas Plant (KGP) unstabilized condensate that will be fed to the plant via a two new 6", approximately 18 km GRE pipelines branched from the existing 18" KGP-CPP condensate pipeline. The separated flash gases from the SNCP will be compressed and fed to the suction manifold of the Saih Nihayda depletion compressors or SNS. The associated produced water with unstabilized condensate will be separated and pumped to Saih Nihayda Oil Station (SNOS) through a new 6", approximately 2.5 km pipeline. The separated off gases will be injected into the discharge line of the existing SNGP off gas compressor and routed in the existing 4" pipeline to the suction manifold of the lift gas compressors located within SNOS facilities.

The SNCP Project consists of the following main sub-systems: Kauther Slug Catcher, HP/LP Inlet Condensate Flash Vessel; Dry Condensate Flash Vessel,Condensate Water Coalescer, Condensate Stabilizer System including side re-boilers, Three stages of Flash Gas Compressors trains, Condensate Export Pumps and Condensate Export air coolers , Produced Water System, Pipelines and Utilities.



CENDOR FPSO - GAS DEHYDRATION PACKAGE (TEG)

Client PETROFAC - MMHE

Activity EPC (including commissioning & start-up)

Year 2011 / 2013

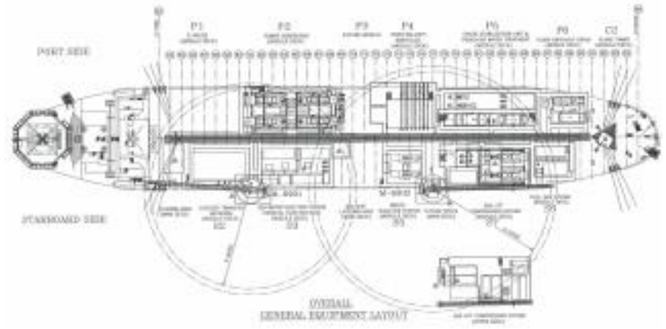
Location Malaysia

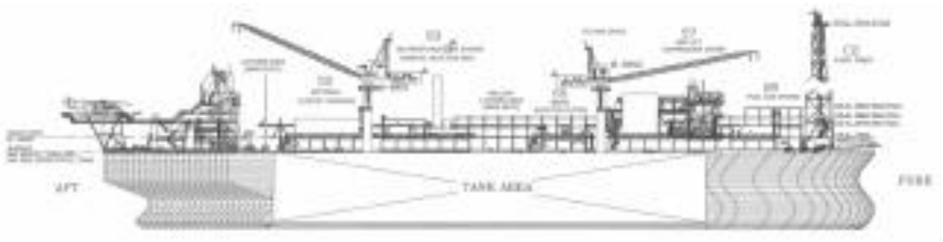
Description

Cendor field sits in the block PM-304 that is owned 30% by Petrofac, 30% by Petronas Carigali, 15% by PetroVietnam Exploration & Production and 25% by Kuwait Foreign Petroleum Exploration Company. Gas Dehydration and Glycol Regeneration Package based on TEG









KAZATCHIYA GAS TREATMENT PLANT PROJECT



Client SINI

Activity DETAIL DESIGN

Year 2013

Description

Siirtec Nigi awarded DG Impianti Industriali a contract for the multi-disciplinary detail design of the greatest gas treatment plant in the world which will be built at the compression station in Kazatchiya, the starting point of the offshore segment of the South Stream gas pipeline, from Russia to Europe, through the Black Sea.

The plant with a capacity of 195.2 standard million cubic meter per day of natural gas will be able to dehydrate gas and reduce the dew point of hydrocarbons before its introduction to the gas pipeline and this will allow ensuring conformity with strict specifications required for the long distance transportation under sea.

The design of the Kazatchiya gas treatment plant is complicated by very severe climatic conditions of the area and complexity is also further increased by the situation that Krasnodar, as all Northern Caucasus area, is located in a zone of high seismic activity. Scope of work of DG Impianti Industriali for the Kazachya gas treatment plant includes civil and structural design, piping and stress analysis design, electrical and instrumentation engineering and the study of all construction and installation sequences in order to optimize the design by full modularization of the plant as far as possible.

Early Production Facility, ROM – GSA (Algeria)

Client GSA

Activity Early Production Facility

Year 2011-2017

Description

Oil flow rate = 50,000 BOPD
Gas flow rate = 1,200,000 SCMPD

Compression Station
Gas condensate recovery
Gas treatment with Low Temperature Separators
Oil storage
Oil pumping station
Water treatment for reinjection

Turnkey Delivery Time: 8 months





Early Production Facility, FAYROUTZ – PETROBEL (Egypt)



Client PETROBEL

Activity Early Production Facility

Year 2009-2012

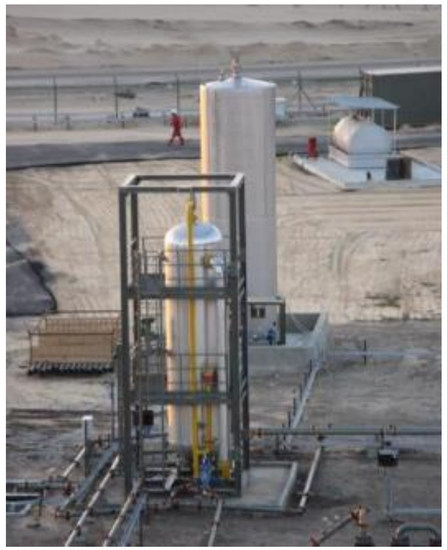
Description

Oil flow rate = 30,000 BOPD
Gas flow rate = 450,000 SCMPD

Compression Station
Gas Treatment with H2S and CO2 removal
Gas Dehydration with molecular sieve process
Oil pumping station
Oil storage
Crude oil stabilization
Gas metering station
Condensate loading

Turnkey Delivery Time: 8 months





Early Production Facility, IRMINIO – ENI (Italy)



Client ENI

Activity Early Production Facility

Year 2008-2012

Description

Oil flow rate = 10,000 BOPD
Gas flow rate = 200,000 SCMPD

Gas oil Separation
Gas condensate recovery and
Incinerator System
Oil stabilization
Oil storage
Water treatment and disposal
Oil pumping station
Gas dehydration with molecular sieve

Turnkey Delivery Time: 6 months







MARLIN PTF - CRUDE OIL ELECTROSTATIC COALESCER

Client ROSETTI MARINO - FOXTROT

Activity EPC (including commissioning & start-up)

Year 2012-2013

Description

FOXTROT OVERSEAS has awarded ROSETTI MARINO the EPC contract the offshore Topside “MARLIN Platform” for the Ivory Coast.

Among other packages and equipment, a crude oil electrostatic coaliscer is included in the Topside.

As DG IMPIANTI INDUSTRIALI Spa has developed jointly to Politecnico di Milano its own technology for this kind of equipment. The system will be installed on the platform in a fabrication yard and DGI will provide all process and mechanical guarantees for performance of the treatment.





OFFSHORE DESIGN REVIEW

Client Det Norske Veritas

Activity ENGINEERING

Year 2012 - 2013

Description

Thanks to the long experience with the use of DNV SESAM Software, DG Impianti Industriali S.p.A has been awarded by Det Norske Veritas (DNV) with a contract of consultancy services for Offshore Structural Design Review concerning some of the biggest projects of the North Sea.

Within such activities, DGI personel has been working close to DNV people both in DNV Hovik offices and in DGI Milan offices with the purpose to carry out independent analyses and checks of the design carried out by others.

Among the activities performed are the following:

Review of document “DN02 Draupne Jacket FEED – DET NORSKE – BASIS OF DESIGN”; the scope of work is to check the suitability and the consistency of the document with Norsok and International applicable standard;

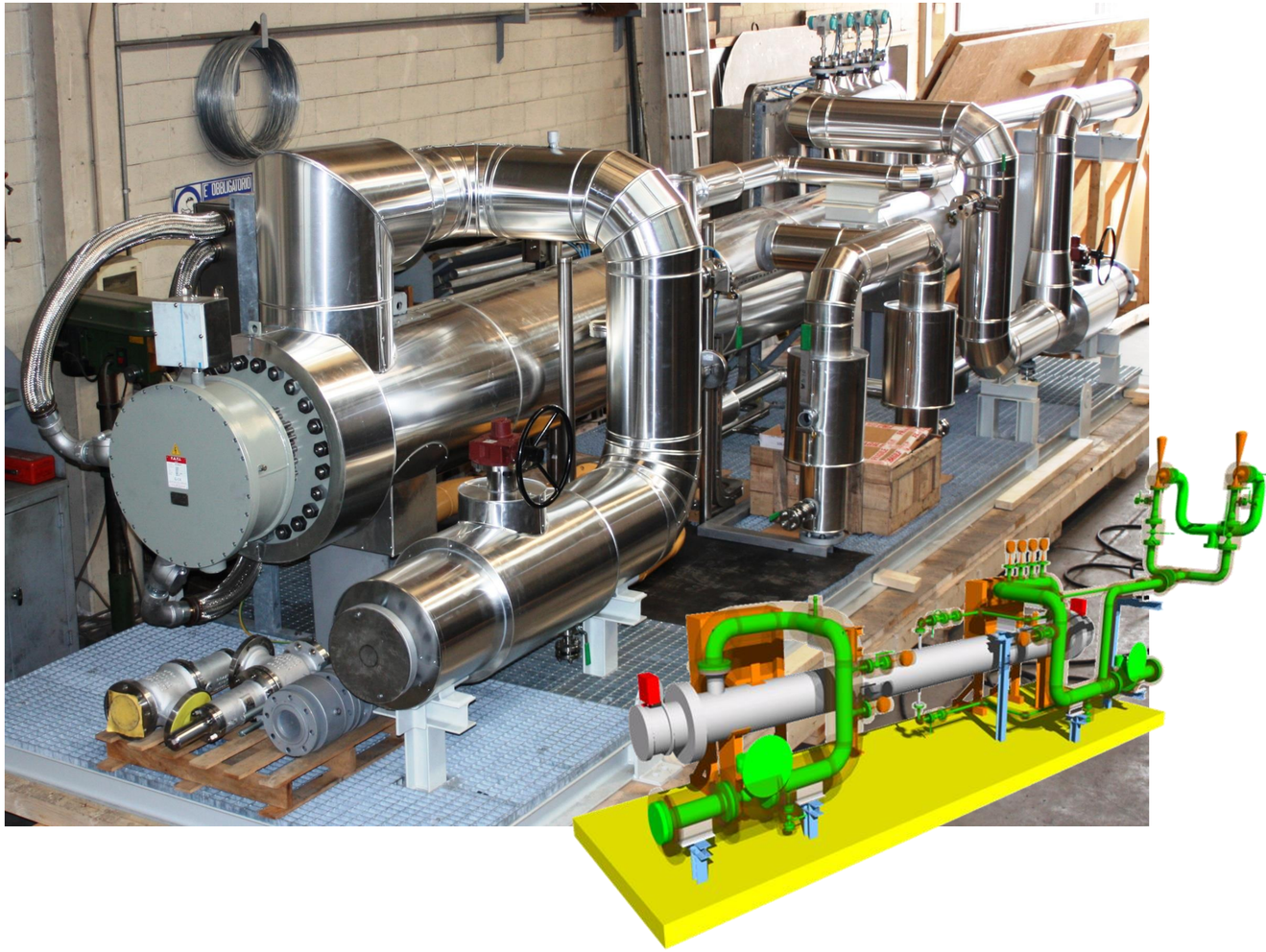
Design review for Eldfisk 2/7 S platform - placed in Great EKOFISK Area; the overall objective is to verify that the design of the topside and jacket structure are in compliance with the requirements of the PSA Regulations (Petroleum Safety Authority) and NORSOK standards by independent structural analyses. DNV performs the 3rd party verification.



DAMIETTA EXPORT FACILITIES - ELECTRICAL HEATER

Client EPPC – EGYPT
Activity EPC (including commissioning & start-up)
Year 2011-2012

Description
EPPC (Egyptian propylene and polypropylene Company) has awarded to DG Impianti the engineering of a propane electrical heater package, to be installed in Egypt as part of Damietta Export Facilities Modifications.
The package, composed mainly from an electric heater (Heating rate 1900 kW) , a control panel and a step down transformer, is designed and constructed to be suitable for outdoors continuous operation in presence of marine environment.
The package is aimed to heat up the propane gas received from UGDC from temperature - 46°C to a maximum + 5°C to avoid propane vaporization. Then this heated liquid propane will be pumped to the storage tanks of EPPC to be used for the production of propylene and with more polymerization process to produce polypropylene.



KHALABASCIA - CRUDE OIL HEATER TREATERS

Client Khalda OIL COMPANY – PETROJET – EGYPT
Activity EPC (including commissioning & start-up)
Year 2012

Description
Khalda Oil Company awarded DG IMPIANTI INDUSTRIALI and PETROJET with the design and manufacturing of 3 heater treaters
for the Khalabascia Project (Egypt).
The "Heater-Treater" is used to remove the water from oil that comes from the production separator package unit, in order to improve its quality and sent it to the Desalter package unit. The “Heater-Treater” typically combines the following components inside: a heater, free-water knockout and oil separator.
Each single unit as scope of DG IMPIANTI work is composed by the following items :

- Heater Treater
- Combustion Air Blowers
- Oil Feed Pumps
- Fuel Gas K.O. Drum
- Burners Assemly
- Firing Skid





REFINERY ANALYSERS VALIDATION SYSTEMS

Client SATORP - BAGGI

Activity EPC (including commissioning & start-up)

Year 2011-2012

Description

Increasing specialization in chemical and petrochemical production requires to operate with raw material always more pure in order to optimize their use and to get better production results.

Products which do not comply with purity standards can dirty the entire batch.

As a matter of fact, oil & gas and petrochemical plants includes on line analysing instrumentation as gas chromatographers or blend analysers aimed to certify the characteristics of the analysed fluid. Validation is the process of checking the actual reading of the analyser against an expectation that may be provided by an external laboratory, a certified sample or other techniques like internal diagnostics.

The process analyser has a continuous sample flowing.

It may be cooled or heated or filtered or coalesced or all of the above and the final sample to the analyser is a dynamic sample.



REFINERY ANALYSERS VALIDATION SYSTEMS

Change any one of these parameters and it is possible the result will change. So it is important to present the validation sample to the analyser in as close an identical condition as the process sample. This means flowing at the same flow rate, pressure, temperature so that the analyser and sampling components see no change. That is true validation. The ultimate intent of the analyser package is to certify the blend. DG IMPIANTI INDUSTRIALI S.p.A has been awarded with the contract to design two validation packages, for diesel and gasoline, to the Saudi Oil Company SATORP. The job required a deep engineering and design phase with 3D modelling followed by the supply of high quality stainless steel ASME U Stamp tanks containing the fluids for the blend product; the packages includes also the mixing system, the chilling system and all piping, instrumentation and electrical connections. Everything has a characteristic of huge precision: tanks are insulated and built with a shell-in-shell system, with circulating chilling fluid in the between. Such system has been designed by DG IMPIANTI mechanical department which operated to optimize the thermal exchange between the chilling fluid and the product used for the validation sample. Furthermore, the whole package shall prevent any contamination of the validation fluids from outside agents in order to guarantee its purity.



GUENDALINA - GAS PRODUCTION PLATFORM

Client ENI E&P Division

Activity EPC (including commissioning&start-up)

Year 2010 / 2012

Location Italy

Description

The project consisted in the design and construction of a Gas Production Platform called GUENDALINA.

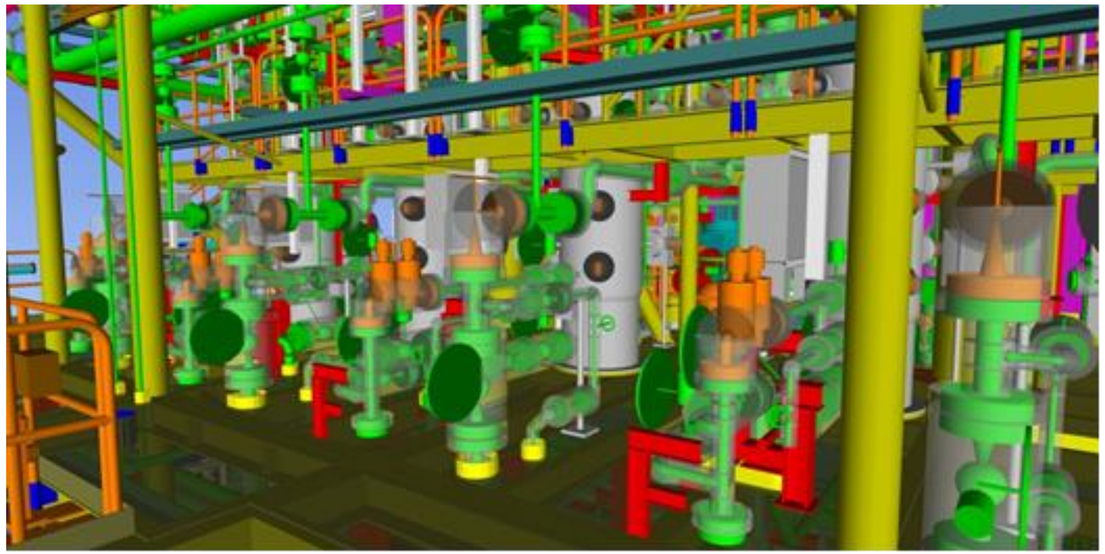
GUENDALINA was installed in the Adriatic Sea, 47 km far from the Italian seashore and was connected to the existing TEA platform.

GUENDALINA includes three main sections: monopode, transition spool and deck.

DG provided basic engineering endorsement, detailed mechanical engineering (equipment, piping, vessels and structures), electrical & instrumental engineering, procurement services and commissioning & start-up management.







B193 PROSESS PLATFORM PROJECT

Client COMART

Activity ENGINEERING

Year 2011

Description

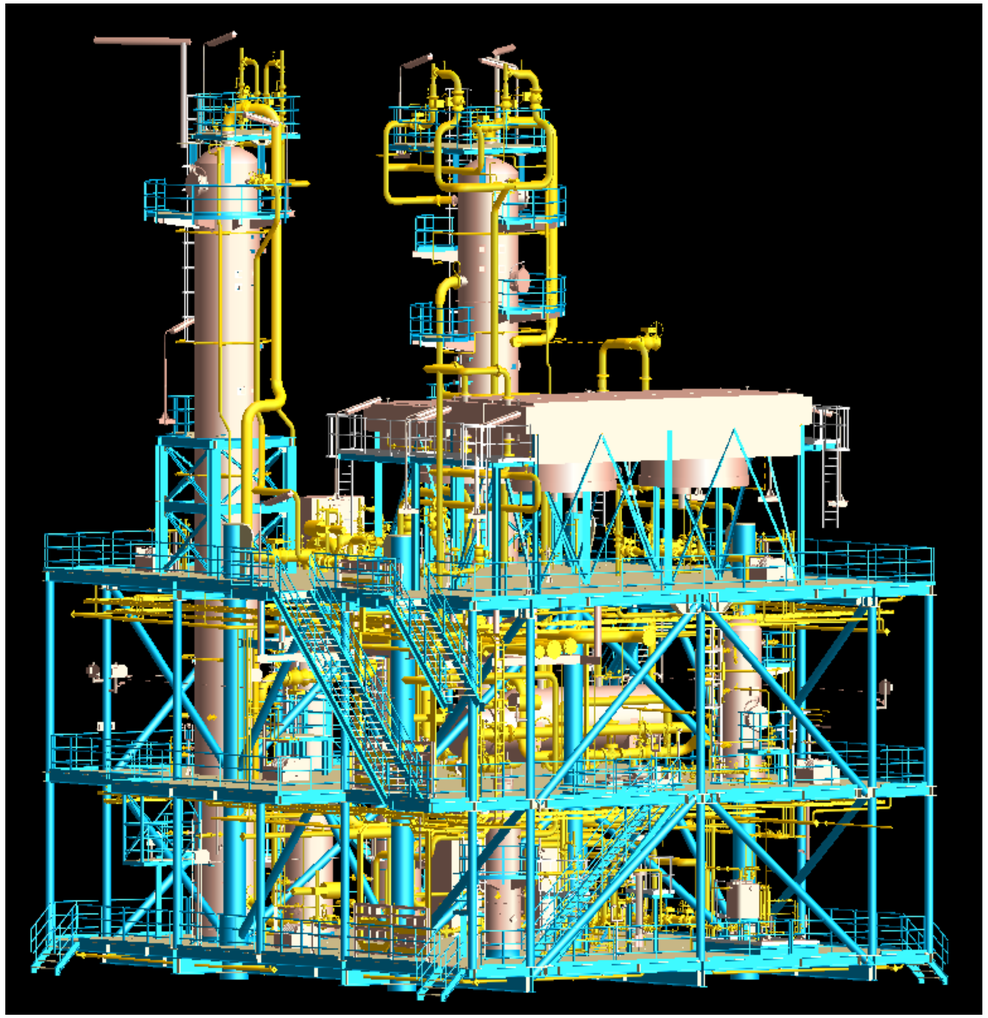
The project consisted in the design of a Acid Gas Removal Unit to be installed on the B193 Process Platform. The platform is actually under construction in the Malaysian site of Sime Darby and will be located in Krisna Godawari Bay, 75 km far from the seashore of Mumbay, India.

The platform End User is Oil and Natural Gas Corporation (ONGC, India), while the Licensor is Shell Global Solutions.

The Gas Sweetening process is utilized to reduce the content of H2S and CO2.

The module is completely integrated and single-lift type.

DG provided mechanichal engineering (equipments, piping, vessels and structures), electrical & instrumental engineering and procurement services.



SHAH GAS PLANT

Client SAIPEM

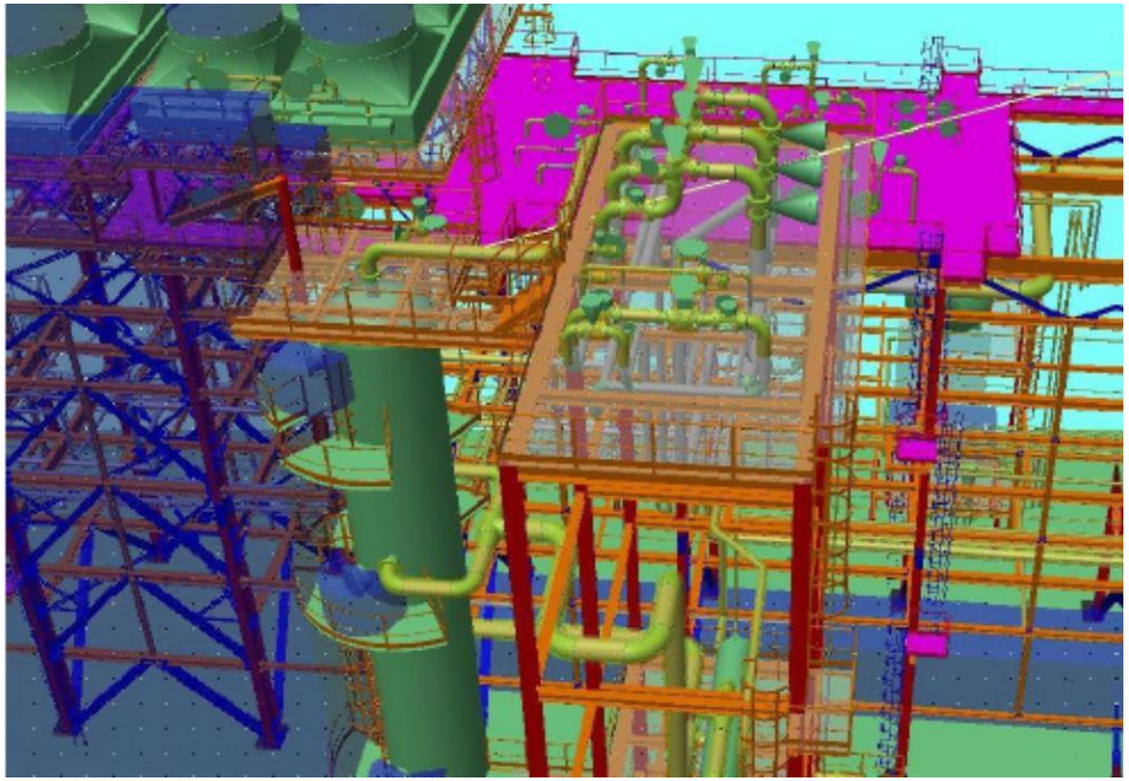
Activity Detail Engineering for steel structures, pipe racks & piping

Year 2011

Description

The Project consists in the detail engineering and design of new steel structures, pipe racks and relevant piping for Shah Gas plant (UAE) on behalf of Saipem / Snamprogetti.

DG IMPIANTI has in charge the whole detailed engineering activities for piping and steel structures, 3D modelling by SmartPlant 3D, steel structures & piping MTO, foundations and construction drawings.



MOCHOVCE NUCLEAR POWER PLANT

Client ENEL

Activity DETAIL DESIGN

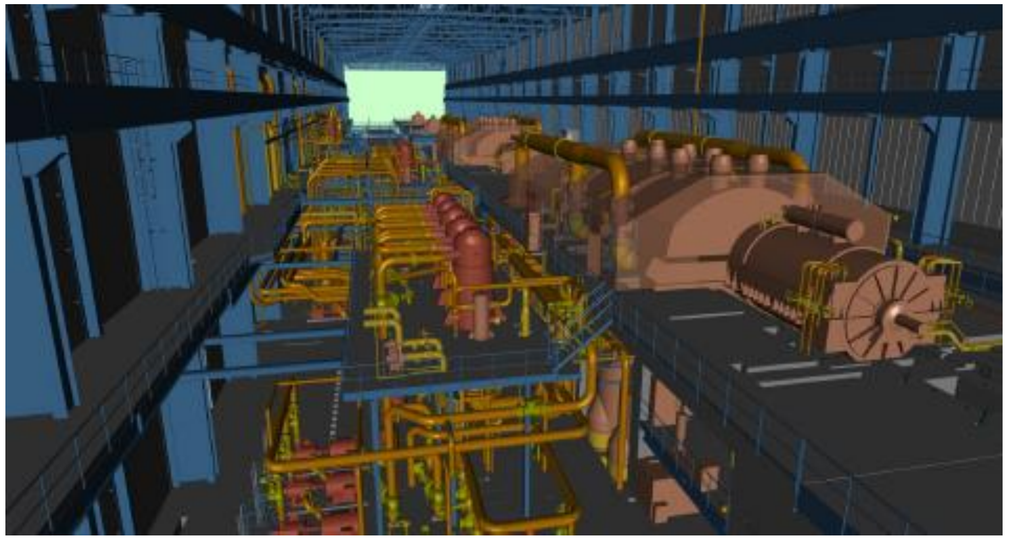
Year 2011

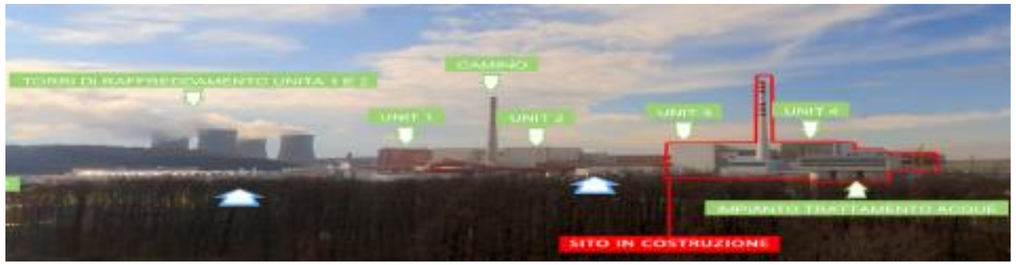
Description

The project consisted in the design of Sections 4 of the conventional island of Nuclear Power Plant of Mochovce, Slovakia.

DG Impianti provided detailed piping engineering of the following services:

- main steam
- condensate
- feed water
- auxiliary systems





AQUILA FPSO

Client COMART

Activity ENGINEERING AND PROCUREMENT SERVICES

Year 2010 - 2011



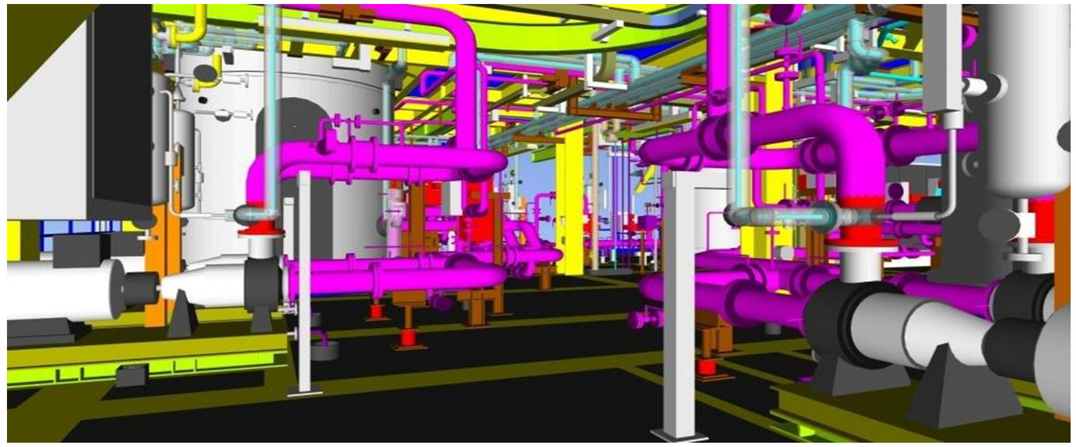
Description

The project consisted in the design of a H2S removal unit to be installed on the FPSO SAIPEM “Aquila”.

Lo-CAT® process is utilized to reduce the H2S content and produce resalable sulphur. Natural Gas (with H2S content reduced) is used for gas turbine combustion to produce electrical energy and for production of steam from a steam generator.

The module is completely integrated and single-lift type with a weight of 407 ton.

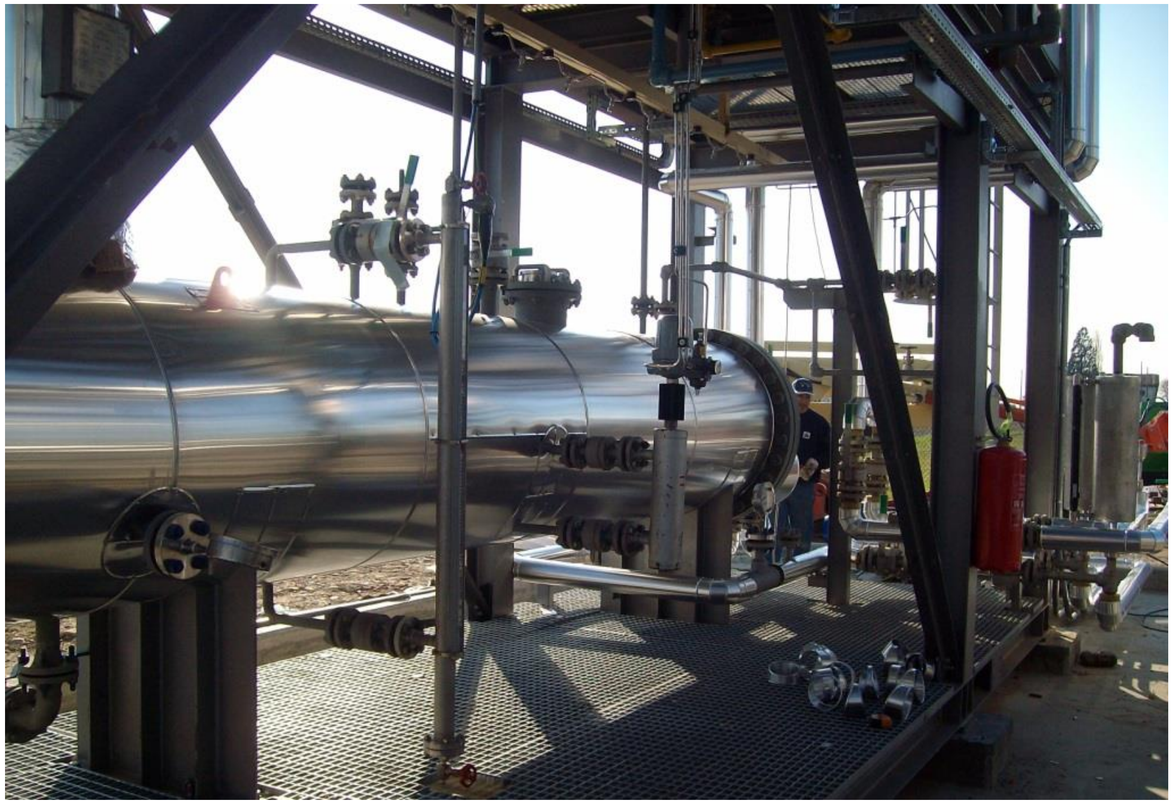
DG provided mechanichal engineering (equipments, piping, vessels and structures), electrical & instrumental engineering and procurement services.



CASCINA SAN PIETRO - GLYCOL REGENERATION PACKAGE

Client NorthSun Italia
Activity EPC (including commissioning & start-up)
Year 2009-2010

Description
For Cascina San Pietro project DG IMPIANTI INDUSTRIALI has designed two the glycol regeneration package, including the supply of recirculation pumps.
The package is design for the treatment of 1 Million of Sm^3/day.



CASCINA SAN PIETRO - GAS TREATMENT UNIT

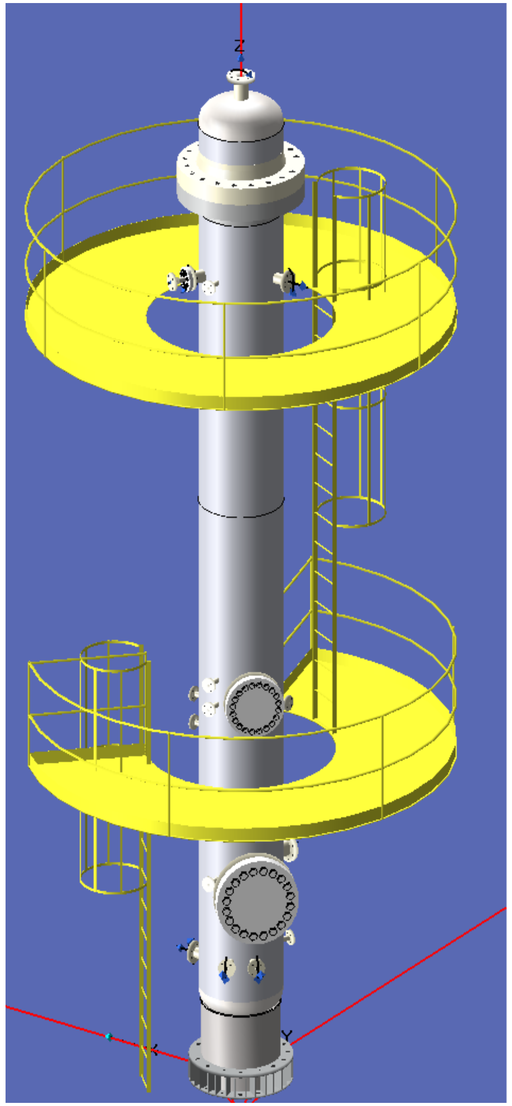
Client NorthSun Italia
Activity EPC (including commissioning & start-up)
Year 2009-2010

Description
Cascina San Pietro plant is a gas production and treatment facilities located in Italy, Emilia Romagna, close to Bologna.

SEMAT (Gruppo Trombini) has been selected by NorthSun Italia as EPCI Contractor for the development of plants surface facilities.

Within such project, DG IMPIANTI INDUSTRIALI fully developed the process, safety, civil, mechanical, electrical and instrumentation engineering, as well as the design of main equipments for natural gas treatment.





LAUNCHING & RECEIVING PIG TRAPS

Client ENPPI – GPC – EGYPT
Activity EPC (including commissioning & start-up)
Year 2008-2009

Description
ENPPI awarded DG IMPIANTI INDUSTRIALI the design of one pig launching vertical trap (12”), as well as one pig receiving skid mounted horizontal trap (12”).
The two traps have been designed according to NACE MR 0175, while all valves wet parts have been cladded with INCOLOY 625 or HASTELLOY C.



SILLARO - NATURAL GAS FIELDS DEVELOPMENT

Client SEMAT - Po Valley Energy
Activity EPC (including commissioning & start-up)
Year 2008-2009

Description
Gas Dehydration Packages (TEG)
Sillaro is a natural gas marginal field located in the Po valley area in Italy, close to Bologna.
DG IMPIANTI INDUSTRIALI has fully developed the process, safety, civil, mechanical, electrical and instrumentation engineering, as well as the design of main equipments for natural gas treatment and export to Snam Rete Gas national gas grid.
Sillaro gas dehydration packages, as well as high pressure gas separators, drain tanks and venting system. The glycol reboiler was designed by DG IMPIANTI to satisfy the process guarantee.





VITALBA AND CROCETTA - NATURAL GAS FIELDS DEVELOPMENT

Client NorthSun Italia
Activity EPC (including commissioning & start-up)
Year 2008-2009

Description
Natural Gas Separators
For Vitalba and Crocetta projects, DG IMPIANTI INDUSTRIALI has fully developed the process, safety, civil, mechanical, electrical and instrumentation engineering of natural gas high pressure separators.

Vitalba is a single separator skid whilst Crocetta is a five separators skid where three high pressure separators will be fully connected to the plant since the start-up, while the remaining two will be connected after the drilling of a new well.





CASCINA SAN PIETRO - NATURAL GAS HEATERS

Client NorthSun Italia
Activity EPC (including commissioning & start-up)
Year 2008-2009

Description
For Cascina San Pietro project DG IMPIANTI INDUSTRIALI has designed two electrical gas heaters.

The Heaters will be installed downstream the choke valves of two high pressure gas wells, in order to avoid the possible hydrates formation due to the further gas expansion and cooling (Joule-Thompson effect) in the subsequent dehydration process (TEG adsorber).
The heaters duty is 400 kW and 120 kW respectively, while the vessels shell design pressure is 130 Barg.





THISVI POWER STATION

Client EDISON

Activity BASIC AND DETAIL DESIGN

Year 2008/2009

Description

The Project consists in the engineering and design for a new combined cycle power plant in the industrial area of Thisvi in Greece (the Plant). The Plant has been realized under a Turnkey Engineering Procurement and Construction Agreement (the Agreement), and will have a gross power output of 421.6 MW at the alternators' connection points. As main components, the Plant's design foresees: a Gas Turbine, a Heat Recovery Steam Generator with supplementary firing, a Steam Turbine, and an Air Cooled Condenser.

DG IMPIANTI has in charge process, electrical and instrumentation, mechanical and piping design. All 3D model has been managed by Intergraph PDS.



ARAK POWER PLANT PLANT - NEW POWER STATION

Client EUROPOWER

Activity FEED DESIGN

Year 2007/2008

Description

Arak is a well known industrial area in Iran. Within the area a new power station is needed. DG IMPIANTI INDUSTRIALI has been awarded with the contract for the basic and detail engineering activities for the Steam & Power Generation Project – Unit 21 for the Arak Power Plant (150 MW). The steam and power generation system is designed to supply 43.1 BarG steam (HPS), 21.5 BarG steam (MPS), 4.5 BarG steam (LPS) at producer battery limit and electrical power to users. The system mainly consists of:

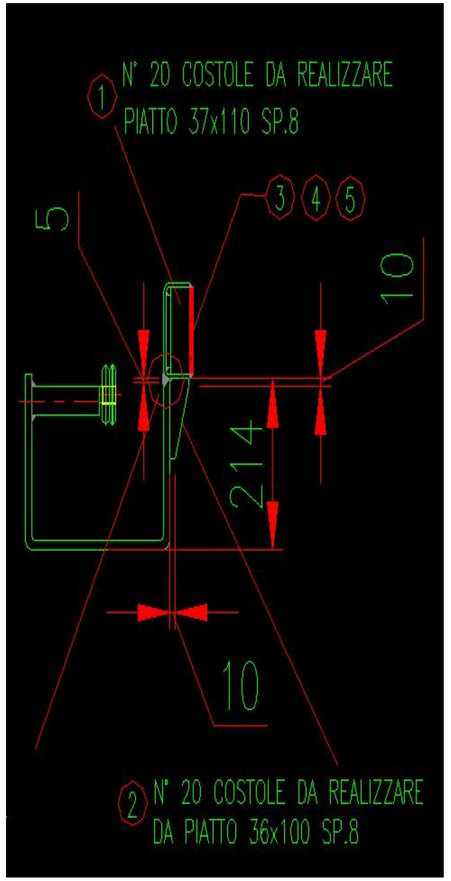
- Gas Turbine Generators
- Heat Recovery Steam Generators
- Steam Turbine Generators
- Utility Boilers – Deaerators

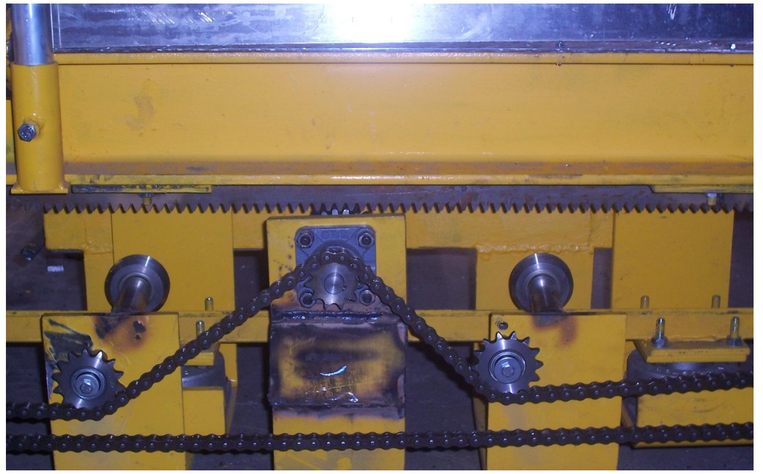


MULTIDIRECTIONAL WELDING PLATFORMS

Client ATB RIVA CALZONI
Activity Mechanical, Electrical and Instrumentation
Year 2007

Description
Within the ATB RIVA CALZONI facilities revamping project, DG IMPIANTI has been awarded to study a system to semplificate can weldings in workshop.
Basing on the existing lay-out, DG IMPIANTI has developed a platform system which allows vertical and horizontal movements in order to reduce the set-up times during such operations.
Welding equipment as well as the welder controller are bothe placed on the platform that can be controlled both on board and remotely.
Safety equipments has been carefully investigated and installed in order to guarantee the highest safety level.
ISPEL documentation has been prepared and presented to get authorisation to operate and necessary certifications.







ROVIGO ALT LNG PROJECT

Client EMTUNGA

Activity ENGINEERING FOR PERMITTING

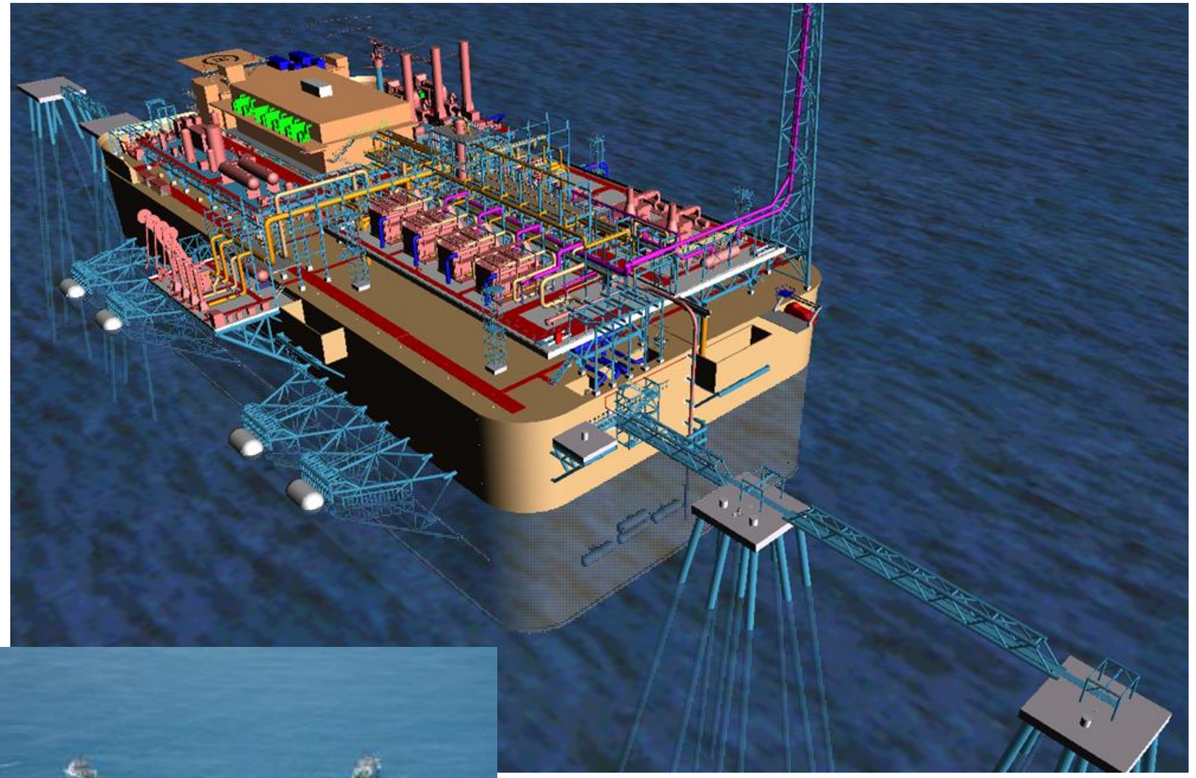
Year 2005 – 2007

Description

Within the ALT (Adriatic LNG Terminal) Project, DG IMPIANTI INDUSTRIALI S.p.A has carried out engineering activities connected to Emtunga living quarters design, compliance with Italian Law and permitting.

The activities have included:

- Living Quarters and Maintenance Building structural checks;
- Living Quarters and Maintenance Building electrical plant, fire fighting and HVAC design;
- Living Quarters architectural design;
- Compliance checks towards major applicable Italian Law (46/90, 1086/71).





EGTL ESCRAVOS

Client SNAMPROGETTI FOR CHEVRON

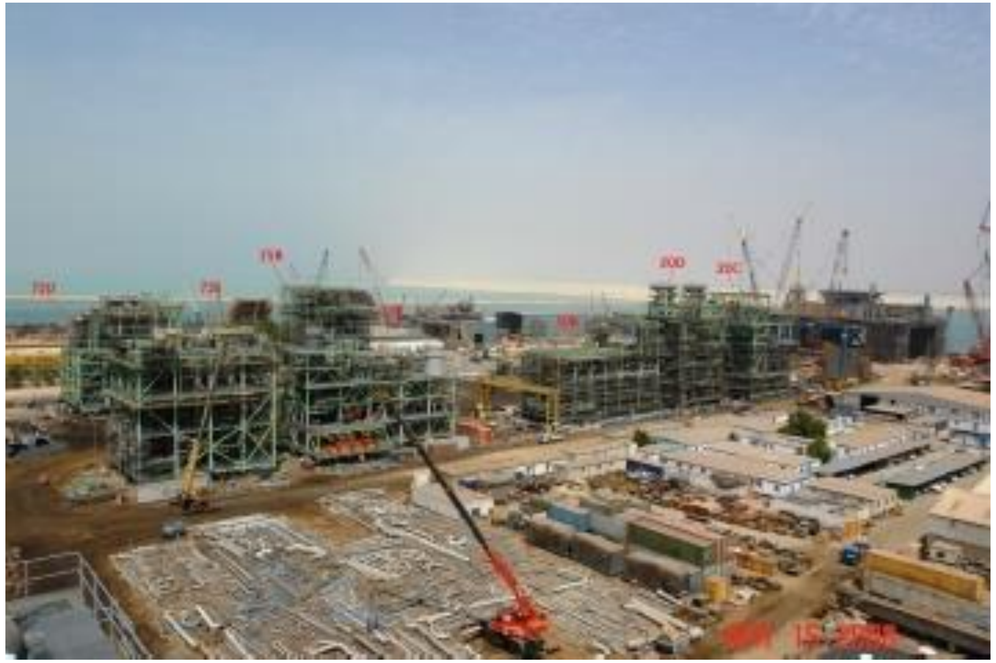
Activity PLANT ENGINEERING DESIGN

Year 2005/2007

Description

Snamprogetti, won in a Joint Venture the EPC contract for Chevron Nigeria EGTL Escravos Project. DG IMPIANTI INDUSTRIALI S.p.A, within the Project manage all engineering activities concerning the Snamprogetti engineering scope of work. The activities include:

- FEED check and endorsement
- Basic and detail design of all steel structures to be managed as pre-assembled units
- Basic and detail design of underground and foundations, with all problems connecting to soil settlements
- Process review
- Basic and detail design of piping, electrical and instrumentation
- MTO and issue of supply specifications for materials and equipments



PROCESS GAS MODULE (P-34 - BRASIL)

Client NUOVO PIGNONE

Activity DETAIL DESIGN

Year 2004 - 2005

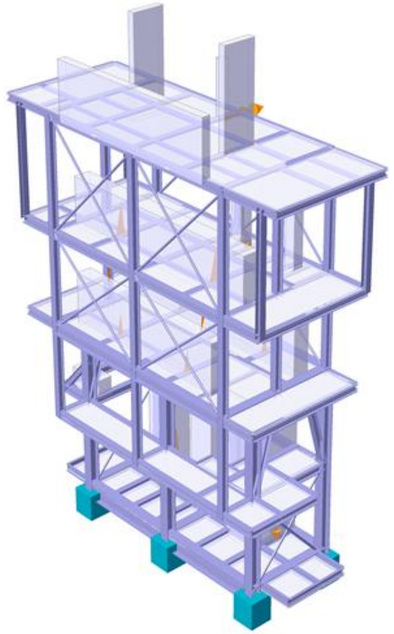
Description

GE - Nuovo Pignone awarded to DG IMPIANTI INDUSTRIALI design services concerning a new turbocompressor structure (PGM) to substitute existing one on FPSO P34 offshore Brasil, Jubarte field.

Process, structural, mechanical, piping and instrumentation & electrical engineering services have been carried out.

Additionally to project activities Client has been supported for:

- documentation analysis and preparation aimed to get Lloyd's Register (Aberdeen) certification;
- certification process follow-up;
- plant optimization;
- construction assistance and follow-up.





SABRATHA PLATFORM – NC41 LIBIA

Client SEI (Saipem Energy International) - Milan

Activity Drafting and structural activities

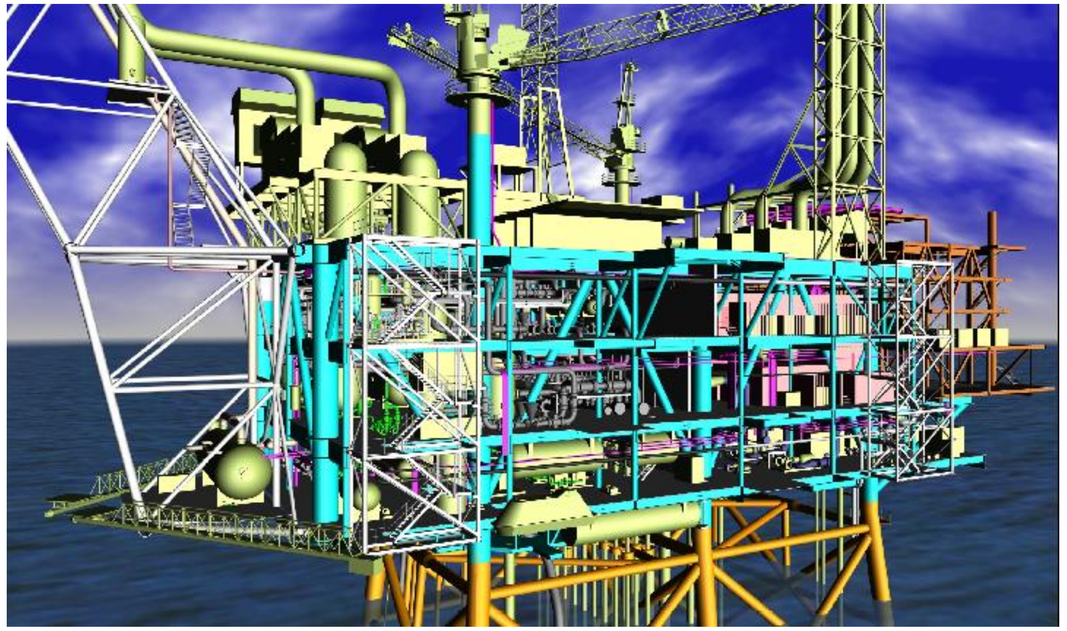
Year 2002 - 2003

Description

DG IMPIANTI INDUSTRIALI S.p.A has carried out two different kind of activities within the project:

- Detail drafting of deck structures;
- Structural design for blast wall;

The single integrated deck was built in Korea and installed offshore Libyan coast; the work carried-out has involved our structural drafting dept. leader and some structural engineers.



MILAZZO REFINERY

Client TECHINT

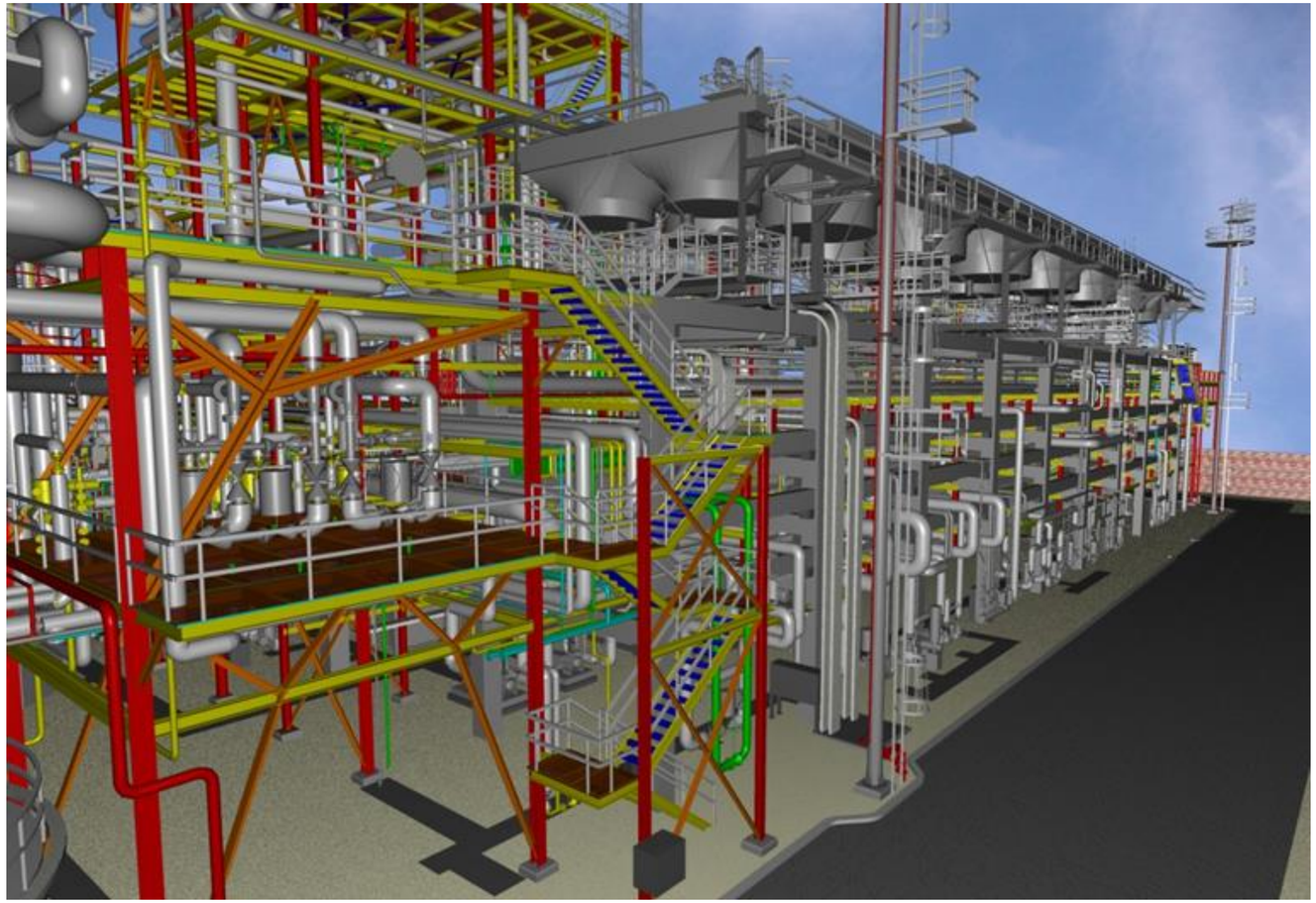
Activity PIPING PLANT ENGINEERING AND DESIGN

Year 2003 - 2004

Description

DG IMPIANTI INDUSTRIALI S.p.A., in plant HDT2 – Unit 500, has carried-out piping, supporting and stress analysis detail engineering.

The purpose of the job performed by DG IMPIANTI INDUSTRIALI S.p.A. includes, the coordination of all the activities object of the charge, the buried systems design, the piping design, the control of the schemes (process and services) and lines list, the upgrading of layout and equipment disposition, the drawing and check of isometric drawing (1300), gate orientation, stairs and walkways, the design of steel structure, the protection (insulating and painting), the stress analysis of 148 lines, the line supports with all special supports, MTO, Tie-ins, the fire fighting design, the interference check and the “as-built” documentation. The project was performed by three-dimensional computer design (PDS).



SERMIDE POWER PLANT

Client ENELPOWER
Activity ENGINEERING
Year 2002/2004

Description
Object of the job has been the transformation and the construction of 3 sections to cycle combined with the installation of three new turbines by 250 MWs, 3 vapor vertical generators of recovery to three levels of pressure, 3 steam turbine and relative alternators and 3 condensers with water of cooling in open cycle. The multidisciplinary team, picked in a task force of 36 designers and engineers, has developed all the activities of designing (engineering of piping, mechanics, electrical and instrumentation, civil and structural, assistance to the technical alignment of the offers received for the equipment and instrumentation vendors and assistance at field). Most binding problem list are those emerged for the interface between the parts of the plant of new realization and the existing parts but the job of the team has allowed however the Customer to start the plant with three weeks of advance on the planned program.





MODULES FOR PROJECT ESCRAVOS

Client TECHINT

Activity ENGINEERING

Year 2003

Description

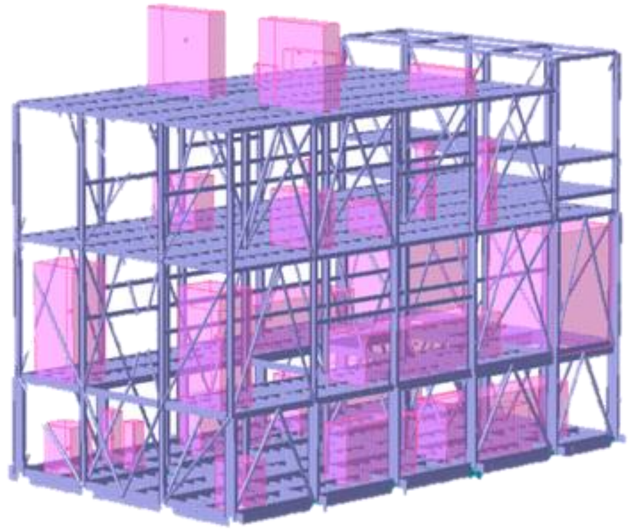
The site of the denominated project "Escravos Gas to Liquid" onshore is located in Nigeria, in proximity of the mouth of the river Escarvos and of Otumara Creek. The new plant of liquefaction is adjacent to the plant existing gas and to the terminals of oil export of Escravos.

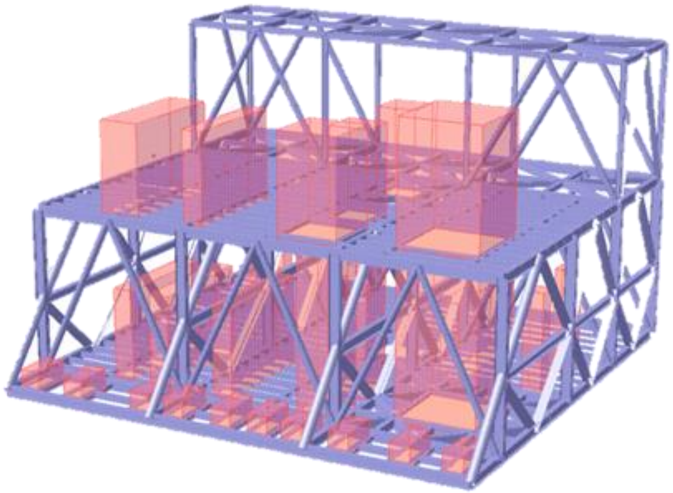
The modules are defined PAU (pre-assembled unit) and are sub unit of process unit, with equipment, piping, steel structure, instrumentation and electric cables.

The pipes rack is composed by unit defined PAR (pre-assembled rack) complete of piping, steel structure and ancillaries.

For this project structural analyses have been effected for the predimensioning of the modules in steel structures denominated 20-PAU-001, 50-PAU-001, and for the Pipes Rack. The predimensioning has been performed verifying the temporary phases of transport and jacking and the operational phase once effected the installation of the plant.

The dimensioning and the verification of the structures has been performed using Finite Element Method, with the aid of the software package SESAM developed by the DNV. The graphic part has been developed with the softwares Microstation and Framework Plus.



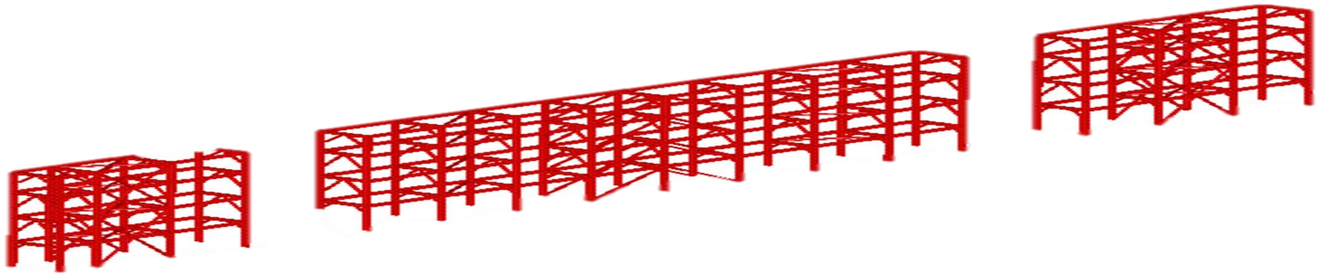


CASPIAN SEA PROJECT

Client TECNOMARE
Activity ENGINEERING
Year 2002 - 2003



Description
The project Caspian Sea consists in the design and realization of a plant OffShore and OnShore for the oil extraction. Particularly the plant will be realized both on artificial islands and on a series of Barges lifted by the level of the sea and you bind to nailed in poles in the ground through beating.
With Tecnomare, from the December 2002 and September 2003, a job of predimensioning has been developed for Pipes Rack and module to install on Barges, analyzing operational conditions and transport, and the modeling of a Barge with his relative building for an analysis of blast. The job has been performed using the finite element method, with the aid of the software package SESAM developed by the DNV



SEALINE NAOMI/PANDORA-GARIBALDI T

Client ENI S.p.A. – DIV. AGIP

Activity DESIGN AND DEVELOPMENT DATA

Year 1999/2000

Description

It was made the project of the sealine of connection Naomi/Pandora-Garibaldi T, with diameter of 20" and Post Trenched. Departing from the data of project provided by the Customer (batimetry and on-bottom survey) and from the material list available from the project Alto Adriatico, it has been made the pre-dimensioning of the pipeline, the materials to be stored for use have been selected, and the Data for specific parts and new materials to be ordered have been prepared; in particular the technical documentation for the following tenders document have been developed:

- order of pipes
- covering anticorrosion, increasing of weight and acquisition of the sacrificial anodes
- order of flanges welding neck and swivel ring
- order of elbows







OTHERS MAIN PROJECTS - Focus on Offshore Platforms

- PLATFORM EXTENSION OF LIFE
  - ANTARES
  - ARMIDA
  - BRENDA DRILL & PRODUCTION
  - GARIBALDI D
  - ARIANNA A
  - CERVIA B
  - AMELIA B
  - LUNA A
  - PCC
  - GELA 1
  - ZAF1&ZAP (Congo)

- PLATFORM HELIDECK
  - AMELIA
  - ANTONELLA
  - ANNABELLA
  - BARBARA B
  - PC80

- PLATFORM FEED
  - VEGA B (EDISON)
  - IDDP PLATFORM (TECHINT)
  - Deck WHP1 PLATFORM (EniProgetti)

- PLATFORM REVAMPING
  - BARBARA C / D / E / F
  - ANGELA ANGELINA
  - GIOVANNA
  - EMMA W
  - BASIL
  - REGINA
  - HERA LACINIA
  - ROSPO A / B (EDISON)

- PLATFORM DESIGN
  - GUENDALINA
  - FAUZIA (JACKET)



"It is not the strongest of species that will survive nor the most intelligent but the most adaptable to change".

– Charles Darwin –