

Main Projects

SIMECO

MAIN PROJECTS 2001-2020

Version: 1



Construction supervision services during turnaround

Sarroch 2020 Major Turnaround (MTA) has been the most important in the refinery history for the number of plants and personnel involved.

Simeco's provided 25 supervisors during the preparation of the MTA and during the MTA to ensure the construction works were carried out according to the detail engineering design of plant modifications developed by Simeco for the following units:

- Topping 1
- Alkylation
- FCC
- Sour Water Stripper
- Blow-down
- Power station (CTE)
- Tank Farm



Client: **SARLUX**

Year: 2020

Contract type: Reimbursable

Manhours: 25,000

Location: Sarroch, Italy

SOW: Supervision Services



Waste to Fuel Plant

Project scope was the development of the process design package and the execution of the Front End Engineering Design for a new plant - based on Eni's proprietary W2F - producing Bio-Oil (LHV = 35 MJ/kg) by thermo-liquefaction of 150 ktpy of organic fraction of Municipal Solid Wastes (FORSU) (dry matter 35% wt.).

Bio-Oil target yield is approx. 40% on dry matter.

Residual solid LHV is 22 MJ/kg, therefore it can be used as a fuel for production of electricity in a

W2F technology has been extensively tested by Eni on a demo plant at Gela Refinery.



Client: **ENI REWIND**

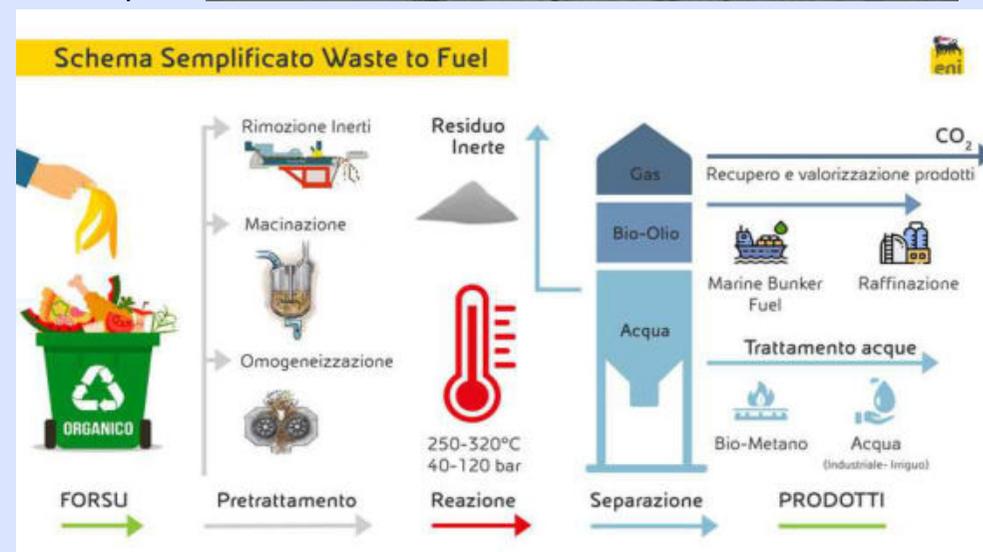
Year: 2020

Contract type: LS of Engineering Services

EMHS : 40,000

Location: Porto Marghera (VE), Italy

SOW: FEED



New Vapor Recovery Unit

Project scope was the installation of a New Vapor Recovery Unit to recover up to 5500 Nm³/h of hydrocarbon vapours during Gasoline and Light Virgin Naphtha ship loading at Sarlux Refinery Marine Terminal (Sarroch, Sardinia, Italy).

SIMECO's scope included preparation of Material Requisition for the VRU Package, PMC Services during EPC of the VRU unit, FEED and detail design of the Balance of Plant (including: hoses handling system and gangway system on the jetty, interconnecting lines from jetty to the VRU unit on-shore and the complete electrical and control systems), field engineering services and supervision during construction.



Client: **SARLUX**

Year: 2018 - 2019

Contract type: LS of
Engineering Services

EMHS : 30,000

Location: Sarroch Refinery
(Italy)

SOW: PMC Services, BOP FEED
and Detail Design, Field
Engineering Services,
Construction Supervision



New Crude Oil Transfer Lines

Project scope included the basic design of two new 40" Crude Oil transfer lines being installed on the jetty at Sarlux Marine Terminal, and basic, FEED and detail design of a new 24" x 2.5 km on-shore line inside the Refinery.

Simeco's Scope of Work also included the detail design of new manifolds and modification of existing crude oil receiving installations on-shore.

Client: **SARLUX**

Year: 2018 - 2019

Contract type: LS of

Engineering Services.

EMHS : 12,000

Location: Sarroch Refinery
(Italy)

SOW: Basic Design, FEED,
Detail Design, Cost Estimate +/-
10%, Construction Supervision.



New Hydrogen Recovery Unit

Project scope is the installation of a new Pressure Swing Adsorption Unit to recover approx. 900 kg/h of Hydrogen > 99.9 % vol. from Refinery Off Gas streams.

The scope of work includes the Feed Gas Compressor and the Tail Gas Compressor packages.



Client: **RAM**

Year: 2018 - 2019

Contract type: LS of

Engineering Services

EMHS : 7,000

Location: Milazzo Refinery
(Italy)

SOW: FEED, Cost Estimate +/-
10%, Tender documents for
EPC



TAAE (tert-amyl ethyl ether) production plant

Project scope of the Feasibility Study for a new TAAE Plant (high octane oxygenate blendstock) at PKN ORLEN, Plock Refinery, to:

- Produce 100,000 ton/year TAAE based on available refinery feeds and bioethanol
- Maximise TAAE yield, i.e. to obtain high selectivity (high ether yields with low by-product formation).
- Achieve operating flexibility, enabling a wide range of feedstock properties changes.
- Achieve energy efficiency and utilities consumption optimisation.
- Estimate Total Investment Cost

Technical proposal received from technology Licensors have been analyzed and compared according to a comprehensive Scoring Model based which addressed the following aspects:

1. Product Characteristics
2. Technical Aspects of the Technology
3. Operational Aspects
4. Economics
5. Licensor Related Aspects



Client: **PKN ORLEN**

Year: 2019

Contract type: LS of

Engineering Services

EMHS : 1,500

Location: Poland

SOW: Feasibility Study

Technology Licensor selection



Energy Integration between MHC and TAME plants

Project scope is the reduction of LP steam consumption by recovering the enthalpy content of the Light Gasoil stream from the Mild Hydrocracking Unit (MHC-1) to preheat the etherified gasoline stream entering the Main Fractionator of TAME plant.

Client: **SARLUX**

Year: 2014- 2017

Contract type: LS of
Engineering Services

EMHS : 25,000

Location: Sarroch Refinery
(Italy)

SOW: Basic Design, FEED,
Detail Engineering Design,
Document for Permitting,
Procurement Services,
Field Engineering &
Construction Supervision
Services

The main activities consisted in
the installation of new pumps
and heat exchangers.

A challenging task was the
installation
of the heat exchangers
on a new structure built over
a service road
in a congested area
of the Refinery.



Revamping of Kerosene Desulphurization Unit

Project scope was a major revamping of the existing Kerosene Hydrodesulphurization Unit (HDS-1) to expand the capacity from 2,400 to 4,000 t/d. Improvement of product quality to target specification Pro Clear and Bright and maximum S content of 10 ppm were foreseen as well. New feed pumps, stripper, kero dryer and heat exchangers have been installed. The start-up of the revamped unit and the achievement of performance target was exceptionally fast and smooth.

Client: **RAM**

Year: 2014- 2016

Contract type : EPC LSTK

Value : 16 M€

Location: Milazzo Refinery
(Italy)

SOW: Process Design, Detail
Engineering Design, HazOp and
Risk Analysis, Permitting
Applications, Risk Based
Inspection, Procurement
Services and Supply of
Equipment & Bulk Materials,
Construction Works and
Commissioning & Start-up
Assistance for the New Unit.



New Naphtha Hydrotreating Unit

The scope of the Basic Design Package is a new naphtha hydrotreating unit named HDT-3. HDT-3 will produce 450,000 tons per year of hydrotreated Naphtha containing less than 0.5 ppmw of sulphur and 24,000 tons per year of olefin saturated LPG with target specification Pro Isomerization.

The plant will include a refurbished hydrotreating reactor and new pumps, heat exchangers in the preheating trains, fired heater, tree-phase separators, reboiled stripper distillation tower, associated utilities, LPG and off-gas amine gas treating packages, recycle / make-up gas compressor package and control systems.

Client: **RaM**

Year: 2014-2015

Contract type: Reimbursable

EMHS: 3,000

Location: Milazzo Refinery
(Italy)

SOW: Feasibility Study, Process
Design, Basic Engineering
Design, HazOp.



British Columbia Greenfield Refinery

Pacific Future Energy Co. (Canada) is committed to build and operate the world's greenest refinery on British Columbia's north coast. PFEC believes it's in Canada's national strategic interest to gain access to international markets for Alberta's oil, especially the fast growing Asian market. The company believes it should not be done at the sacrifice of BC's coast or broader environment and must be done in full partnership with First Nations.

The \$10 Billion refinery will be built in modules (each phase having a process capacity of 200,000 BPSD).



The refinery will be powered by a combination of natural gas and renewable sources reducing emissions by 40%.

Additional investment in carbon-capture technology has the potential to further reduce GHG emissions by another 52%.

To reach the goal of zero emissions, the remaining energy used to power the facility will come from biogas.

Client: **Pacific Future Energy Co**

Year: 2014

Location: British Columbia
(Canada)

Contract type: Lump-Sum

SOW: Prefeasibility Study



Vacuum Column & Filtration System for FCC Slurry Oil

Project scope was the installation of a new Vacuum Column & Automatic Filtration System on the Slurry Oil stream produced by the existing FCC Plant of the Refinery. The purpose of the new Unit is 1) to recover additional LVGO for the Hydrocracking, 2) to increase Slurry Oil flash point and 3) to remove the catalyst fines in order to feed the stream to the existing Gasification Plant or to recycle it to the FCC riser .

Client: **Eni R&M Division**

Year: 2011-13

Contract type : EPC LSTK

Value : 15 M€

Location: Sannazzaro de'
Burgundi Refinery (Italy)

SOW: Process Design, Detail
Engineering Design, HazOp and
Risk Analysis, Permitting
Applications, Procurement
Services and Supply of
Equipment & Bulk Materials,
Construction Works and
Commissioning & Start-up
Assistance for the New Unit.



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Waste Water Treatment System for Water Re-use

Project scope is the installation of a new Waste Water Treatment Package to process 740 m³/h of water discharged from the existing Refinery Water Treatment System, to obtain permeated desalted water (conductivity < 100 µS/cm, hardness < 5 mg/l as CaCO₃).

The purpose of the new Unit is to recycle water previously discharged to the environment in order to feed the existing demineralized water production system for the new requirements of the Process Plants.

Client: **Eni R&M Division**

Year: 2011-12

Contract Type : LS of
Engineering & Site Services

EMHS : 18,000

Location: Sannazzaro de'
Burgundi Refinery (Italy)

SOW: Process Design, Detail
Engineering Design, HazOp and
Risk Analysis, Permitting
Applications, Vendors follow-
up, Management Services and
Assistance at Site.

The New System includes:

- Coagulation and Flocculation Unit, for suspended solid removal
- Ultra-filtration Pretreatment Unit, for colloid removal
- RO Treatment Unit, for dissolved salt removal
- Storage tanks



Carbon Dioxide Removal Unit

Project scope was the Detail Design, the Equipment & Bulk Material Procurement and the Home Office Project Management Services for the 10,000 Nm³/h Carbon Dioxide Removal Unit at an iron ore reduction plant. The Unit, based on Giammarco-Vetrocoke hot carbonate process, was extensively modularized in order to facilitate the construction by local labour.

Client: **Danieli Far East**

Year: 2011-12

Contract type : LS for
Engineering, Procurement &
Management Services .

Location: Far East

SOW: Detail Engineering
Design, HazOp Study,
Procurement Services of
Equipment & Bulk Materials,
Home Office Management
Services



Fauzia, Elettra & Benedetta Platforms

The project was carried out providing our Client with the EPC Tender Documents for n.3 new gas platforms located offshore Adriatic Sea and the relevant $\pm 15\%$ Cost Estimate.

SIMECO developed the multidiscipline Front End Engineering Design according to the following main specifications:

Client: **Eni E&P Division**

Year: 2010-11

EMHS: 50,000

Location: Adriatic Sea Offshore

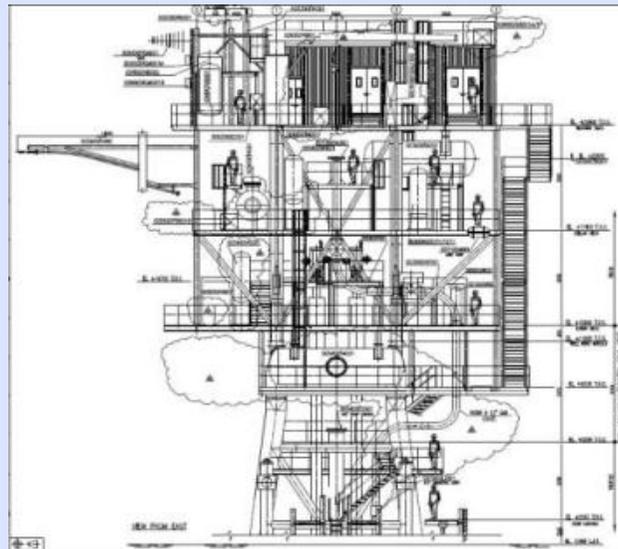
Contract: LS of Engineering Services

SOW: Multidiscipline Front End Engineering Design for EPC Tender with $\pm 15\%$ Cost Estimate

FAUZIA PLATFORM: 12" export sealine; n° 2 wellheads double completion; 3-legs jacket

ELETTRA PLATFORM: 8" export sealine; n° 1 wellhead double completion; 3-legs jacket

BENEDETTA PLATFORM: 8" export sealine; n° 1 wellhead single completion; monopode



Electrically Traced Transfer Line for Liquid Sulfur

Project scope was the installation of the new 4" x 1 km Liquid Sulfur transfer line from the Sulfur storage tanks to the Unit producing solid chips.

The transfer line is electrically heated by a skin effect tracing system capable to remelt the sulfur in case of in-line solidification.

Client: **Eni R&M Div.**

Year: 2010

Contract type: EPC LSTK

Value: 1.1 M€

Location : Taranto Refinery
(Italy)

SOW: Design, Procurement
Services and Material Supply,
Construction Works,
Commissioning & Start-up



Combined Heat & Power Plant Revamping

Project scope was the Front End Engineering Design for the revamping of Enipower Combined Heat & Power Plant located in Bolgiano, San Donato Milanese, Italy.

The revamping consisted in dismantling of the existing power generation units and their replacement with a new gas turbine (aeroderivative type), installation of n.2 endothermic engines with waste heat boilers for power generation and production of hot water, n.3 auxiliary boilers, n.10 buffer tanks for hot water distribution to the existing district heating network, n.1 new pumping station, new electrical room, new technical room.

SIMECO SOW included +/- 15% Cost Estimate and preparation of Tender Documents for EPC.

Client: **Enipower**

Year: 2010

EMHS: 18,000

Location: San Donato Milanese,
Italy

Contract: LS of Engineering
Services

SOW: Multidiscipline Front End
Engineering Design, $\pm 15\%$
Cost Estimate, Preparation of
Tender Documents for EPC.



OLT Livorno FSRU

PROCESS UNITS: LNG Storage, complete on-board regassification unit, WOBBE Index correction and loading arms.

PROJECT DESCRIPTION: The world's first offshore Floating Storage and Regassification Unit (FSRU) was constructed by converting LNG Carrier Golar Frost. The FSRU is permanently moored offshore Livorno, Italy, about 12 miles from the coast in a water depth of about 120 meters and connected to shore through a gas export pipeline.

Storage capacity of 137,000 cubic meters in four spheres, production capacity of 3,75 billion standard cubic meters per annum (bscmpa).

Client: **Saipem SES**

Final Client: **OLT Offshore LNG
Toscana S.p.a.**

Year: 2008-2010

EMHS: 25,000

Location: Livorno, Italy

SOW: Detailed engineering of instrumentation and automation. FAT of ESD and DCS.



Zubair Degassing Station (DGS)

Project scope was the development of the Front End Engineering Design for a new Oil Degassing Station (DGS) and rehabilitation of an existing one at Zubair field, Iraq.

The Zubair field - being developed by Eni with Occidental Oil Co., Korean Gas and Missan Oil Company - with an estimated production capacity of 1,200,000 BOPD is one of the few existing super giant oil field.

Zubair is a “brown field” project involving the realization of new plants as well as the revamping of existing unit.

Client: **Saipem**

Final Client: **Eni E&P Division**

Year: 2010-11

EMHS: 50,000

Location : Zubair, Iraq

Contract type: LS of

Engineering Services

SOW: Multidiscipline Front End

Engineering Design for EPC

Tender



EST Project – Sannazzaro Plant

EST (Eni Slurry Technology) is a new deep hydrocracking technology developed by Eni for the valorization of heavy and extra heavy oils, tar sands and refinery residues.

Sannazzaro Plant, with a capacity of 20,000 BPSD, will be the first industrial application of the EST technology, which has been extensively tested in a Commercial Demonstration Unit in Italy.

Client (Main Contractor) :

SAIPEM

Year 2009-2012

EMHS : 220,000

Contract : Reimbursable with ceiling.

Location: Sannazzaro de' Burgondi, Italy

SOW: Multidiscipline Detail Engineering, 3D Model, TBE of reactors and HP vessels.

SIMECO SOW deals with the multidiscipline detail engineering with 3D Modeling of the following process units, utilities and off-sites:

- Hydro-treating,
- Amine Regeneration Unit,
- Cooling Water Unit,
- Flare & Blow Down,
- Steam System,
- De-mineralized Water and Condensate Recovery,
- Fuel Gas,
- Instrument Air,
- Fire Fighting System,
- Interconnecting,
- General EP Distribution,
- Electrical Substation,
- Switchyard.



EST plant features n.2 x 2,000 t hydro-cracking reactors made of CrMoV + SS 347 Weld Overlay, supplied by GE-Nuovo Pignone, the largest ever built.

SIMECO has been in charge for the Technical Bid Evaluation and the follow-up of the hydro-cracking reactors, hydro-treating reactors (400 t) and large HP Gas/Liquid Separators (300 t) made of CrMoV (supplied by ATB).



C4 Dryers Package (Butylenic Stream)

The new C4 Dryer Package was designed to remove impurities (water, acetone, acetonitrile) from a C4 Olefinic Stream, feeding the existing Isomerization Unit. The purification is obtained throughout adsorbents continuously regenerated. The regeneration unit includes a hydrogenation reactor to remove to reduce olefins content from the adsorbent regeneration stream.

The Unit is entirely installed on a steel structure “straddling” an existing pipe-way in a very congested area of the Refinery.

Client: **Eni R&M Div.**

Year : 2008-2009

Type of Contract: EPC LSTK

Value : 8.5 M€

SOW : Development of Licensor's Process Design, Detail Engineering Design, HazOp and Risk Analysis, Permitting Applications, Procurement Services and Supply of Equipment & Bulk Materials, Construction Works, Commissioning, Start-up & Test Run of the New Unit.



GOSP at Burun Oil Field – TURKMENISTAN

The GOSP at Burun Oil Field had some trouble operations, i.e. sand carry over, clogging of filters by paraffines contained in the crude oil and HSE issues.

SOW was to carry out, on a very tight schedule, a review of the existing BDP developed by the previous Owner of the Oil Field in order to solve the operating problems.

Each document of the BDP was reviewed: several inconsistencies were identified and for each document a Comment Sheet was produced.

Eventually, recommendations have been provided to Company regarding the possibility to use the BDP as a basis for an EPC bid to de-bottleneck the Plant.

Client: **Saipem Energy Services**

Period: February 2009

EMHS : 1,600

SOW: Review of Basic Design

Package.



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TAS (WWT) Covering System

The New Unit recovers and condenses the vapors produced at existing jetty on oil tankers during loading operations and vapors produced in the API Separator basins.

A fixed roofing system, pressurized with nitrogen, is provided on the API Separator basins to recover and neutralize hazardous vapors.

The New Cryogenic Condensation Unit was designed to reduce emissions of VOC (Volatile Organic Compounds) to the atmosphere, in compliance with the most recent EC Rules.

Client: **Polimeri Europa**

Year: 2006 – 2007

Contract type : EPC LSTK

Value : 6 M€

Location: Sarroch - Italy

SOW : Process & Detail

Engineering Design, HazOp and

Risk Analysis, Permitting

Applications, Procurement

Services and Supply of

Equipment & Bulk Materials,

Construction Works,

Commissioning, Start up & Test

Run of the New Unit.



Underground Gas Storage

Bordolano is a depleted gas field, 50 km from Milan, owned by STOGIT (Stoccaggi Gas Italia – SNAM Rete Gas).

STOGIT intend to convert the existing reservoir into an Underground Gas Storage. The Plant consisted of a temporary gas compression and Injection station, called Early Injection Station, withdrawing natural gas from the national pipeline network owned by Snam Rete Gas. Natural Gas is collected and delivered to the reservoir though 2 new pipelines. The Early Injection Station shall be dismantled once completed the injection phase of the cushion gas in the reservoirs.

Client: **Bonatti**

Year: 2008-2009

Contract : LS of ENG. Services

EMHS : 15,000

Location: Bordolano - ITALY

SOW: Basic Design, Detailed

Engineering of the Early

Injection

Station, Certifications according

to PED and ATEX, Bid Technical

Evaluation.



QAFCO V Project – Ammonia Plant

PROCESS UNITS

N. 2 complete Ammonia Plants (Licensor Haldor Topsoe A/S - design capacity 2 x 2,200 t/d) based on Steam Reforming of Natural Gas consisting of the following process systems:

Natural gas desulphurization; Process Air Compression; Steam Reforming of Natural Gas and Waste Heat Recovery; HT & LT Shift Converters; CO₂ removal by MDEA; Methanation; Syngas Compression; Ammonia Synthesis Loop; Ammonia Refrigeration; Purge Gas Scrubbing & Hydrogen Recovery; Process Condensate Stripper; Deaerator & BFW pumps.

INFRASTRUCTURES AND SITE FACILITIES

Urea Storage - Capacity 160,000 t
Urea Product Handling System – Capacity 195 t/h
132 kV Substation
Cogeneration Plant
Sea-water Multi-cell Cooling Unit
Electro-chlorination Unit & Chemical Dosing System
Closed Cooling Water System
Potable Water System
Desalination Plant by TC/MED
Utility and Fire Fighting Water Systems
Waste Water Treatment Plant.



Client : **Saipem**

Year : 2008/2009

EMHS : 170,000

Location: Mesaieed, QATAR

Final Client: Qatar Fertilizers
Co.

Contract: LS of Engineering
Services

SOW: Multidiscipline Detailed
Engineering, 3D Model, TBE for
Instrumentation, Analyzers and
Electrical Materials.



saipem



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Trans Anatolian Pipeline TAP

The Project included the following facilities :

- A new unloading terminal located east of Samsun, on the Black Sea, suitable for handling a wide range of tankers, including VLCCs, through three (3) Single Point Moorings and relevant unloading facilities;
- A new tank farm located east of Samsun, on the Black Sea, featuring 12 floating roof storage tanks (total net capacity of 1,500,000 cu.m), comprehensive of all relevant facilities and a new dedicated power plant;
- A 48 inch diameter and 42 inch (for the last section), about 550 km long carbon steel pipeline provided with a Pressure Reducing Station (PRS), mainline isolation block valves and pigging trap systems;
- One head pump station (PS1) located at the unloading terminal on the Black Sea and three additional pump stations (PS2, PS3, PS4) located along the route of the TAP pipeline at different elevations, provided with power generation and all required facilities such as control rooms, accommodation, security and maintenance buildings;
- A new tank farm located at Ceyhan, featuring 12 floating roof storage tanks (total net capacity of 1,800,000 cu.m) , comprehensive of all relevant facilities ;
- A new jetty marine loading terminal, on the Mediterranean Sea, located in front of the new Ceyhan tank farm, suitable for a wide range of tankers, including VLCCs.



Client : **Snamprogetti**

Year : 2006 – 2007

EMHS : 90,000

Contract : LS of Eng. Services

SOW :

Phase 1 : Conceptual Selection of the crude oil transportation system throughout simulations of the alternative configurations of the overall system proposed by the Client. Multidiscipline Engineering Services to develop selected final system configuration and Preliminary Cost Estimate;

Phase 2 : Front End Engineering Design of the TAP Project : Detail Engineering Design of all Facilities (with the exception of Samsun Marine Terminal), Material Requisitions of Long Delivery Items, ITT for EPC Bids, Material Take Off for the Overall Project and Final Cost Estimate (+/- 15%).



Bocamina II - Power Plant

Bocamina II is a new 370 MWe Coal Power Plant owned by Endesa located in Puerto Coronel, 30 Km SE of Concepcion, CHILE.

The Plant features a SES Boiler and a GE Steam Turbine model D5 .

SIMECO and JV partners SOW covered Basic Engineering and Detailed Mechanical Design for Piping Engineering, including 3D modeling, of the following systems:

- Steam Generation
- Auxiliary Steam System
- Machinery Cooling Water (production and distribution)
- De-mineralized Water (production, storage and distribution)
- Instrument Air (production, storage and distribution)
- Fire Fighting Water (production, storage and distribution)
- Waste Water (storage, treatment and disposal)
- Condensate Recovery
- Vacuum Condenser
- Boiler Feed Water
- Fuel Oil
- Sampling
- Chemical Injection.

Client: **Maire Engineering**

Year: 2007

Contract : LS of Engineering Services

EMHS : 70,000

Location: Puerto Coronel, Chile

SOW: Basic Engineering (Process +Piping) and Detailed Engineering Design (Piping Discipline) including 3D Model



ENVEN 1.3 Project - Ammonia / Urea Plant

PROCESS UNITS

1 complete Ammonia Plant (Licensor Haldor Topsoe A/S; 2184 MTPD) based on Steam Reforming of Natural Gas consisting of the following process systems:

Natural gas desulphurization; Process Air Compression; Steam Reforming of Natural Gas and Waste Heat Recovery; HT & LT Shift Converters; CO₂ removal by MDEA; Methanation; Syngas Compression; Ammonia Synthesis Loop; Ammonia Refrigeration; Purge Gas Scrubbing & Hydrogen Recovery; Process Condensate Stripper; Deaerator & BFW pumps.

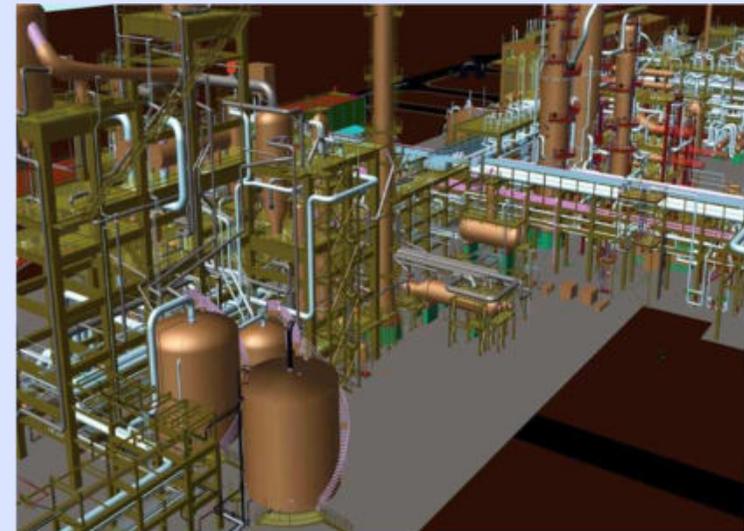
Urea Plant (Licensor Snamprogetti; 3835 MTPD)

Process units have been connected to existing Facilities as:

Instrument Air, Plant Air, Steam Generation, Power Generation, Raw Water, Potable Water, Natural Gas Treatment

NEW UTILITIES SYSTEMS

Cooling Water Package, Process and Steam Condensate Recovery & Polishing, BFW, Raw Water Prefiltration, Steam Distribution, Power Distribution, Chemical Dosing and Unloading, Flares.



Client :

Snamprogetti

Year : 2007/2008

EMHS : 90,000

Contract : LS of Eng. Services

Location: Daharki, Pakistan

Final Client: ENGRO Fertilizers Co.

SOW: Multidiscipline Detailed Engineering, 3D Model, TBE of Ammonia Reciprocating Compressors & Pumps, Centrifugal Pumps.



LLDPE/HDPE Plant – NKNK Russia

NKNK is a Polyethylene Plant based on the Spherilene Process Technology from Basell Italia.

The plant annual capacity is 230,000 MTPY of polyethylene in pellets, HDPE, MDPE and LLDPR type.

The units included in the Scope of Work of the engineering activities were:

- Polymerization Area
- Extrusion Area
- Alkyl Area
- Homogenization
- Bagging, Palletizing and Warehouse
- Interconnecting & Pipe Racks
- Effluent Basin
- Purification
- Propane Storage
- Control Room and Substation
- Valve House
- Flare Area
- Underground.



Client : **Tecnimont**

Year: 2006-2007

EMHS : 127,000

Contract: Reimbursable

Location: Nizhnekhamsk –
RUSSIA

SOW: Multidiscipline Detailed
Engineering Design.



Water Injection Plant & Power Generation Systems

The Water Injection Plant (275,000 BWPD) consists of:

- Water Supply System, including Oil / Water separation by induced gas flotation, Filtration and Chemicals Injection Systems.
- Injection Water System, consisting of: Buffer Tank, Injection Water Booster Pumps, Injection Water Pumps
- Gathering System, consisting of n. 5 Trunk-lines up to 24" x 38 km
- The Power Generation Systems (50 MWe) consisting of:
 - n. 3+1 Heavy Duty Gas Turbines GE FR5-1 fed with Crude Oil (chemically treated V inhibition) or Natural Gas.
 - New Control Room
 - New Electrical Sub-Station.



Client: **ENI Oil Co. Ltd,**

Libyan Branch

Year: 2005-2006

EMHS : 25,000

Location: Elephant Field – Libya

Contract: LS of Engineering Services.

SOW: Feasibility Study, FEED, Cost Estimate +/- 15 %, ITT Document for EPC.



Revamping Marine Loading Arms

The Project consisted of two Phases:

During Phase 1, 4 x 16" existing Crude Oil Loading Arms at Pier 2/Mooring 5 were dismantled and replaced with 3 x 16" Loading Arms.

During Phase 2, same operation as per Phase 1 were carried out on Pier 2 / Mooring 6.

- FMC were in charge for the supply of the Loading Arms
- SIMECO provided Engineering Services, Procurement of piping materials and Supervision during Construction, Commissioning and Start-up
- IFA carried out the Construction.

Client: **RAM** (Raffineria di Milazzo)

Year: 2005 – 2008

Contract: EPC LSTK

Value:

Phase 1 – 2.7 M€

Phase 2 – 2.9 M€

Location: Milazzo - ITALY

Project carried out in JV with FMC Technologies (Loading Arms Supplier) and IFA (Construction).



ISOCRACKER Plant

Sannazzaro ISOCRACKER Plant is a 25,000 BPSD Hydro-cracking Plant based on Chevron Texaco technology. Scope of the Engineering Services executed by SIMECO and Partners included the Main Process Units along with the following Auxiliary Units:

- Sour Water Stripper Unit
- Amine Regeneration Unit
- Interconnecting, Off-sites & Cooling Water Unit.

Client : **Snamprogetti**

Year : 2005

EMHS : 140,000

Contract: LS of Engineering Services

Location: Sannazzaro de Burgondi.

SOW: Multidiscipline Detail Engineering, 3D Model, TBE.

Project carried out in JV with:
IN.PRO (Civil & Steel Structure Design)
CO.IMP (Piping Design).



FCC GASOLINE HDS Unit

Sannazzaro FCC Gasoline Hydrodesulphurization Plant
20,000 BPSD is based on CDHYDRO catalytic distillation
technology by CDTECH.

Auxiliary Units were also included in the SOW.



Client : **Snamprogetti Sud**
Year : 2003-2004
EMHS : 70,000
Contract: LS of Eng. Services
Location: Sannazzaro de
Burgondi.

SOW: Multidiscipline Detail
Engineering, 3D Model

Project carried out in JV with:
-IN.PRO (Civil Design)
-CO.IMP (Piping Design).



Topping 2 Revamping Project

Topping 2 was originally designed to process 715 t/h of Arabian Light Crude Oil.

A major de-bottlenecking to process up to 770 t/h of Djeno Melange Crude Oil was required.

Revamping consisted of:

- Addition of a new Pre-flash Column upstream of the existing Topping Column along with relevant Heaters and Pumps;
- Design of new steel structures

Complete review/check of the existing Utilities and Off-sites systems, i.e. BD, Utilities, Closed Drain.

Client: **Snamprogetti Sud**

(Main Contractor)

Year: 2003

EMHS: 20,000

Location: Sannazzaro de
Burgondi.

SOW:

Basic Design Review, Detailed
Engineering, TBE, Supply of
Heat Exchangers and Piping
Materials, Site Supervision
Services.



Genoa De-bottlenecking Project

Underground interconnecting to revamp and upgrade the 100 years old oil products offloading marine terminal in Genoa. "Trench-less" and "micro-tunnel" technologies were deployed due to the very high building densities and geologically critical areas involved.

4 x 30" & 2 x 12" pipelines in 2.6 m x 650 m microtunnel between Genoa Marine Oil Terminal and Praoil Petroleum Products Depot & Pumping Booster Station.

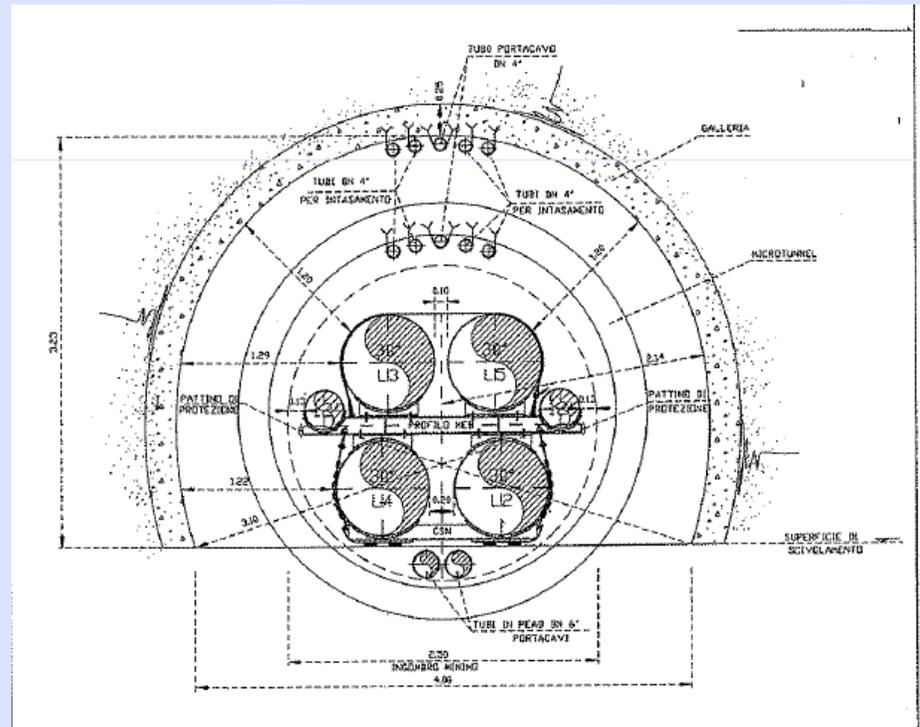
Client: **PRAOIL Oleodotti Italiani**

Year: 2003-2004

EMHS: 60,000

SOW:

Feasibility Study, Hydraulic Studies, Engineering Design (Basic+ Detail), Procurement Services including TBE and Material Supply Technical Follow-up.



Spent Lube Oil Re-refining Plant and Offsites Revamping

Client: **VISCOLUBE**

Year: 2001-2003

EMHS: 50,000

SOW:

Feasibility study,

Basic Design of Utilities & Off-

sites, FEED of Hydro-finishing

Unit (BD by IFP/Axens),

Detail Engineering,

Procurement and Site

Supervision Services.

VISCOLUBE is the European leader in re-refining spent lube oils, with over 60,000 MTPY of reclaimed oils.

The New Hydro-finishing Unit is based on a technology licensed by Axens (France). The Plant includes a Hydrogen Generation Unit designed by CALORIC Anlagenbau (Germany).

CALORIC is a firm specialized in gas generation plant package supply , i.e.: syngas, carbon monoxide, hydrogen.



VISCOLUBE



Simeco S.p.A. | www.simecomilano.it | simeco@simecomilano.it