

# **Statement of Qualification**

**(December 2014)**

## STATEMENT OF QUALIFICATION

### **i. Core Business and Number of Years in Business**

SIMECO is an engineering and contracting firm established in 1984, having their headquarters in Via Romilli, 22 - Milano, Italy.

Other SIMECO operating offices are SIMECO Systems d.o.o. (Gradacacka 29B, 71000 Sarajevo - Bosnia i Herzegovina) and SIMECO GCC Regional Office (Suite 32, Petrodar Tower, Seed District, Kingdom of Bahrain).

SIMECO provide multidiscipline engineering and project management services for Oil & Gas plants (On-shore/Off-shore, Upstream, Downstream/Refining), Pipelines, Petrochemical & Chemical plants, Power plants.

The engineering services provided by SIMECO include:

- Feasibility Studies and Cost Estimates
- Conceptual Design
- Basic Engineering Design
- Front End Engineering and Design (FEED)
- Project Management
- Project Management Consultancy
- Owner's Engineering Services
- Risk Analysis and HSE Reports
- Detail Engineering
- Procurement Services
- Expediting and Inspections
- Construction Management & Site Supervision
- Commissioning
- Assistance to Plant Start-up and Operation
- Operative Maintenance

SIMECO present workforce is approx. 300,000 manhours/year (approx. 170 engineering and technicians operating on a full time equivalent basis). Sub-contracting agreement with qualified engineering firms account for additional 100,000 manhours/year managed by SIMECO for a total capacity of approx. 400,000 manhours/year.

SIMECO present workforce in the specific area of Process Technologies is approx. 50,000 engineering manhours/year performed through a staff of more than 30 engineers and consultants.

SIMECO provides expertise, know-how and solutions in brownfield projects. For instance, SIMECO has frame agreements with Eni Spa to provide process engineering service – with the main focus on feasibility studies, process optimization studies, technical assessment, preparation of extended Basic Design Package (BEDP) and cost estimate, etc... - to Eni group plant in Italy and worldwide. Most of the projects completed so far deal with troubleshooting and debottlenecking of existing units, energy savings and identification of technical solutions for operational

improvements. The original two years contract was extended for additional two years thanks to the excellent track record achieved.

Frame agreements for engineering services, including operative maintenance, have been in force with URS for Adriatic LNG (a JV between Exxon Mobil, Qatar Gas and Edison) for the offshore LNG Regasification Terminal in the Northern Adriatic Sea (Italy) and with Trans Mediterranean Pipeline Company (TMPC) for the Transmed Pipeline between Cape Bon (Tunisia and Italy) and Mazara del Vallo (Italy) (see paragraphs viii and ix).

Further to be a provider of engineering services, SIMECO is a Main Contractor for EPC projects. SIMECO boasts recent experiences in revamping and debottlenecking of refinery units (see following par. vii). Services provided covers up to commissioning, assistance to plant start-up and operation and operative maintenance during the warranty period.

## **ii. Recent reference on Refining (Engineering Services)**

Please find here below a list of selected recent reference relevant to pre-feasibility/feasibility studies, process studies, basic engineering design, FEED and detail design of refinery units.

Client: Pacific Future Energy Co. (Canada)

- Pre-Feasibility Study for a 200,000 BPSD Greenfield Refinery, British Columbia, 2014.

Pacific Future Energy 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 shouldn't be done at the sacrifice of BC's coast or broader environment and must be done in full partnership with First Nations.

The facility will process bitumen from Alberta's oil sands into refinery fuels such as gasoline, kerosene, diesel and other distillates.

The Study addressed the implementation of the first train/module of the Refinery, processing 266,000 BPSD of DilBit (Diluted Bitumen) equivalent to 200,000 BPSD of Raw Bitumen.

The \$ 10 Billion Refinery will be built in modules, with each phase having a process capacity of 200,000 BPSD. The Refinery has the potential to increase the capacity to 1 MBPSD, if needed.

The main project bases/constraints driving the overall configuration of the refinery were:

- Greenest Refinery Ever: the complex will produce exclusively white products, i.e. no fuel oil nor coke will be produced. Effluents will be minimized through extensive water reuse and flue gas treatments.
- Target Market: the fast growing Far East countries (China, South Korea,...) were considered as the target market for the Refinery.
- Near Zero Net Greenhouse Gas Emissions: CO<sub>2</sub> capture was foreseen to reduce greenhouse gas emissions and to comply with the most demanding BC's environmental requirements.
- No Diluted bitumen shipping: as the coast of British Columbia is one of the Canadian most vulnerable areas to marine oil spills any shipment of Dilbit will be avoided.

Client: United Petrochem (UAE)

- Pre-Feasibility Study for a New Condensate Refinery, 2014.

The refinery feedstock is 100,000 BPSD of High Sulphur Condensate (S content 2,500 ppmwt). Sour condensates contain very highly odorous sulphur compounds, mainly natural mercaptans.

The High Sulphur Condensate must be treated for removing sulphur compounds up to a maximum S content of 500 ppmwt.

The refinery scheme include the following units:

- Condensate Hydrotreating
- Condensate Splitter
- H<sub>2</sub>S Removal Unit
- Amine Regeneration Unit
- Sulphur Recovery Unit & Tail Gas Treatment
- Hydrogen production

Client: SAIPEM (final Client: Petrobicentenario S.A a JV between Eni and PdVSA)

- Technology advisory services for the 350,000 BPSD heavy oil grass root refinery, 2013-2014.

The Petrobicentenario Refinery is a grass root refinery which will convert 8°API Extra Heavy Crude Oil EHO (Zuata type), produced in the Orinoco Oil Belt, into final products such as LPG, Naphtha and Euro 5 Diesel.

Refinery configuration was selected to maximize production of ultra low sulphur diesel, complying with European grade EN 590 diesel. No residual fuel is produced. Delayed Coking technology is used to maximize conversion of vacuum residue.

Client: Dynergy (Italy) (Final Client: Al-Masha'el Markmore - Bahrain)

- Feasibility Study for Sohar Bitumen Refinery, Sohar (Oman), 2010

The refinery converts 30,000 BPSD of Extra-Heavy/Heavy Crude Oil into bitumens of different grades.

Client: Saipem (Final Client: Northwest Redwater Partnership)

- FEED activities (piping desing) for the New Residue Hydrocracking Unit (LC Finer), Alberta, Canada, 2013- 2014.

Client: Eni Refining & Marketing Division, Livorno Refinery (Italy)

- Front End Engineering Design for the revamping of the existing jetty LPG, gasoline, gasoil, and bitumen loading/unloading and transfer facilities, 2013
- Basic and Detail Design for Revamping of existing Furfural Plant to produce Treated Deasphalted Aromatic Extract (TDAE), 2014.
- Front End Engineering Design for the revamping of the Waste Water Treatment Plant, 2013 - 2014
- Feasibility Study and Front End Engineering Design of (TDAE) Plant, 2012-2013
- Feasibility Study for Implementation of Bitumen Production, 2011
- Study for VOC (Volatile Organic Compounds) recovery from Bitumen Plant, 2011
- Energy Saving Analysis of the Motor Fuel Plant, 2011
- Feasibility Study for Flare Gas Recovery, 2011
- Assessment of the combustion efficiency of the refinery flare, 2011

Client: Eni Refining & Marketing Division, Sannazzaro Refinery (Italy)

- Hydraulic Study of the Cooling Water Network for debottlenecking, 2014.

- Front End & Detail Engineering Design of the new Hydrogen Plant based on Eni's proprietary SCR-CPO technology, 2012-2014.
- Front End and Detail Engineering Design of the new Waste Water Treatment System for Water Reuse, 2011- 2013
- Feasibility Studies for the removal of SO<sub>x</sub> from the FCC regenerator flue gas, 2012-2013
- Process study for Energy Saving by optimization of the FCC unit feed preheating, 2012
- Feasibility Study for the replacement of existing Hot Oil System furnace, 2012
- Process Study for the optimization of the existing Condensate Recovery System, 2011
- Assessment of the Combustion Efficiency of the refinery flare, 2011
- Detail Engineering and Design of the new EST (Eni Slurry Technology) Plant (23,000 BPSD residue hydrocracker based on Eni's proprietary technology) (project carried out as Saipem engineering subcontractor), 2009-2012,

Client: Eni Refining & Marketing Division, Taranto Refinery (Italy)

- Hydraulic Study of the Cooling Water Network for debottlenecking, 2014.
- Basic Engineering Design for the optimization of Light Gas Oil recovery, 2012
- Basic Engineering Design for the new natural gas compressor of the existing Steam Reforming Unit, 2012
- Assessment of the combustion efficiency of the refinery flares, 2012
- Process Study for the optimization of the existing Deisopentanizer column condenser, 2012

Client: Eni Refining & Marketing Division, Venezia Refinery (Italy)

- Basic Engineering Design for the optimization of the Light Gas Oil recovery, 2012
- Green Refinery Project – Technical Assessment of the existing tank farm for storage of raw vegetable oils and biodiesel and Front End Engineering Design of the relevant revamping, 2013-2014.
- FEED for the revamping of logistic assets, 2013-2014.

Client: Raffineria di Milazzo (RAM), Milazzo (Italy)

- Front End Engineering Design for the Revamping (from 2400 to 4000 t/day) of the existing Kerosene Hydrodesulphurization Unit (HDS-1), 2013.
- Basic Design for the new Gasoline Hydrotreating Unit (HDT-3), 2014.

Client: Raffineria di Gela (Gela Refinery), Gela (Italy)

- Basic Design and Detailed Design for the installation of new Ultra Low NO<sub>x</sub> Burners on all refinery fired heaters, 2013.

Client: Saras, Sarroch (Italy)

- Basic design and FEED for various energy recovery projects, 2013 – 2014.
  - Energy integration between Mild Hydrocracking Unit (MHC) and Gasoline Etherification Unit (TAME)
  - Energy integration between Mild Hydrocracking Unit (MHC) and New Sea Water Desalination Plant (DAM)
  - Energy efficiency improvement (replacement of Medium Pressure Steam with Low Pressure Steam) at Topping Unit (RT-2) and Sour Water Stripping Unit (SWS-3).
- FEED and Detail Design of the new oxygen line (6" x 600 m) to the FCC unit for Oxygen Enrichment System, 2014.
- Feasibility Study for a new scrubber for FCC flue gas desulphurization, 2014.
- Detail Design for the new Lean/Rich Amine transfer lines to Versalis, 2014.

Client: IES Italiana – MOL group, Mantua Refinery (Italy)

- Feasibility Study for the revamping of the refinery Railway Unloading Terminal, 2014.

Client: Tamoil, Cremona Refinery (Italy)

- Front End and Detail Engineering Design of the new Chlorine Removal Unit upstream of the Continuous Catalytic Reforming (CCR) Unit, 2010.

### **iii. Recent reference on Oil & Gas Upstream Projects (Engineering Services)**

Client: ABB (Final Client: Sonatrach)

- FEED for revamping of production satellites at Hassi Messaoud Field, Algeria, 2014-in progress.

Existing installations at Hassi Messaoud dates back to the early '70s. An extensive revamping is required to replace old equipment and to improve the oil and gas recovery efficiency. The project scope includes the revamping of the flowlines, installation of new equipment for gas/oil/water separation and new export lines to the processing facilities.

Client: Tecnomare/Eni SpA

- Detailed Design Activities (Electrical & Instrumentation) for Anticipated Early Production Platform, Nenè Project, Congo, 2014.

Client: Saipem/Eni SpA

- Detailed Design activities (Instrumentation & Automation) for EPC2, EPC3, EPC4 (Offshore Drilling/Production Clusters), Kashagan Field, Caspian Sea, Kazakhstan, 2013-2014.

Client: Saipem/Eni SpA E&P Div.

- FEED of Zubair Degassing Station(DGS) at Zubair Field, Iraq, 2011.

Zubair DGS is one of n. 5 Degassing Stations included in the Zubair Oil Field Development Project (the others being: Zubair Mishrif, Hammar, Hammar Mishrif and Rafidya-Safwan). The Zubair field - being developed by Eni with Occidental Oil Co., Korean Gas and Missan Oil Company has an estimated production capacity of 1,200,000 BOPD.

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

The FEED developed by Simeco has been used as the base case for the development of the other n.4 DGS FEED.

Client: Eni Spa E&P Div.

- FEED and Cost Estimate (+/- 15 %) for n.3 Gas Platforms (i.e. Fauzia, Elettra, Benedetta), Offshore Adriatic Sea, Italy, 2010-2011.

The platforms characteristics are as follows:

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

Client: Saipem Energy Services/Eni Spa E&P Div.

- Review of Basic Engineering Design Package of the Gas Oil Separation Plant (GOSP) at Burun Oil Field (Turkmenistan), 2009.

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. Simeco Scope of Work 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 were provided to Company regarding the possibility to use the BDP as a basis for an EPC bid to de-bottleneck the Plant.

Client: Eni Oil Co. Ltd (Libyan Branch)

- Risk Analysis/Assessment Study for the Out of Service (Decommissioning and Dismantling) of Gas Sweetening Unit at DP4 Platform – Bouri Field (Libya), 2008-2009.

DP4 Platform produces oil and associated gas which is partially used as fuel (5mmscfd), the excess being flared.

The Fuel Gas Sweetening Unit located on DP4 platform was designed to produce the required fuel gas free from Hydrogen Sulphide. Since its commissioning the unit did not run properly resulting in high operation and maintenance cost. Since the materials of the Fuel Gas System were compatible with sour gas materials specifications, the issue to remove the unit to recover space for other Field’s development installations was raised.

Therefore, to allow an effective and rational decision about re-commissioning or decommissioning and dismantling the Gas Sweetening Unit, a thorough Risk Assessment Study (including HAZID, HAZOP, Risk Analysis, Consequence Analysis, Toxic Gas Dispersion Study, Explosion Consequence Assessment, Fire Consequence Assessment and Environmental Assessment) was awarded to SIMECO. The study addressed the possible impact of untreated of gas with high concentration of H<sub>2</sub>S on:

- the operation of the equipment of the fuel gas system, i.e. heaters and Gas Turbines
- the environment
- personnel safety

An extensive constructability review was carried out to identify the most appropriate dismantling sequence of the existing unit to allow the simultaneous operation of the production platform.

Client: Eni Oil Co. Ltd (Libyan Branch)

- FEED of the Water Injection and Power Generation systems at El Feel Field (Libya), 2006-2007.

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 Pump;
- Gathering System, consisting of n. 5 Trunk-lines up to 24''x 38 km.

The Power Generation Systems (50 MWe) consists of:

- n. 3+1 Heavy Duty Gas Turbines GE FR5-1 fed with either with Crude Oil (chemically treated for V inhibition) or Natural Gas;
- New dedicated Control Room;
- New dedicated Electrical Sub-Station.

#### **iv. Recent reference on Chemical, Petrochemical, Fertilizers (Engineering Services)**

Client: Saipem

- FEED activities (piping design) for Spiritwood Nitrogen Plant and associated units, North Dakota (USA), 2014.

Spiritwood is fertilizer factory producing 2,200 MTPD of Ammonia and 3,850 MTPD of Urea (3,850 MTPD) from Natural Gas.

Client: Saipem

- Detail Design for Dangote Ammonia/Urea/Granulation Plant, Nigeria, 2013.

Dangote plant will produce 7,700 MTPD of Granulated Urea from Natural Gas.

The ISBL consist of n.2 x 2,200 MTPD Ammonia Synthesis Units, n. 2 x 3850 MTPD Urea Synthesis Unit, n.2 x 3,850 MTPD Urea Granulation Units, Utilities (i.e. Steam, Power Generatio, Cooling Water System, Natural Gas System, Waste Water System, Instrument & Plant Air System, Nitrogen System, Ammonia Storage, Bulk Urea Storage & Handling, Product Bagging and Truck Loading System, Administrative/maintenance buildings).

The OSBL consist include:

River Water Intake, Natural Gas Pipeline, Raw Water Pipeline and Temporary Jetty.

Client: Versalis, Sarroch Petrochemical Complex (Italy)

- Process Study and Assessment of the Blow Down system after the installation of new process unit, 2013-2014.
- Basic Design of the New Flare Gas Recovery Unit, 2013.

Client: Versalis, Porto Marghera Petrochemical Complex (Italy)



- Basic Design, FEED and Cost Estimate for the installation of n.2 x 150 t/h HP Steam Generators, 2011-2012.

Client: Versalis, Ravenna Petrochemical Complex (Italy)

- Owner Engineering Services during the construction phase of the revamping of the ETBE/Butene-1 Plant, 2014.

Client: Versalis

- Owner's Engineering Services during the FEED of the Elastomers Plants of Refinery and Petrochemical Integrated Development (RAPID) Project (Pengerang, Malaysia), 2012-2013
- Feasibility Study and Basic Design for a Commercial Demonstration Plant for Tackifying Resins (Italy).

Client: Danieli Far East

- Detail design of the Carbon Dioxide Removal Unit (10,000 Nm<sup>3</sup>/h), Far East 2011-2012.

Project scope was the implementation of the Detail Design, the Equipment & Bulk Material Procurement and the Home Office Project Management Services for the 10,000 Nm<sup>3</sup>/h Carbon Dioxide Removal Unit at a new iron ore reduction plant. The Unit, based on the Giammarco-Vetrocoke hot carbonate process technology, was extensively modularized in order to facilitate the erection activities utilizing local labour.

Client: Saipem

- Detail Design for QAFCO 5 Fertilizer Plant (Mesaieed, Qatar), 2008-2009.

Simeco's project scope was the execution Multidiscipline Detail Engineering and Design services including CAD3D Model, TBE for Instrumentation, Analyzers and Electrical Materials.

The Plant consists of 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; CO<sub>2</sub> removal by MDEA; Methanation; Syngas Compression; Ammonia Synthesis Loop; Ammonia Refrigeration; Purge Gas Scrubbing & Hydrogen Recovery; Process Condensate Stripper; Deaerator & BFW pumps;

along with the following infrastructure 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

- Detail Design for Enven 1.3 Project at Engro Fertilizers Co. (Daharki, Pakistan), 2007-2008.  
Multidiscipline Detail Engineering Services including: CAD 3D Model, TBE of Ammonia Reciprocating Compressors & Pumps, Centrifugal Pumps.

The Plant consists of:

N.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; CO<sub>2</sub> removal by MDEA; Methanation; Syngas Compression; Ammonia Synthesis Loop; Ammonia Refrigeration; Purge Gas Scrubbing & Hydrogen Recovery; Process Condensate Stripper; Deaerator & BFW pumps.

N.1 Urea Plant (Licensor Snamprogetti; 3835 MTPD) connected to existing facilities, such as Instrument Air, Plant Air, Steam Generation, Power Generation, Raw Water, Potable Water, Natural Gas Treatment and New Utilities Systems, i.e. Cooling Water Package, Process and Steam Condensate Recovery & Polishing, BFW, Raw Water Prefiltration, Steam Distribution, Power Distribution, Chemical Dosing and Unloading, Flares.

Client: Tecnimont

- Detail Engineering and Design services for NKNK Polyethylene Plant (Nizhnekhamsk, Russia), 2006-2007.

NKNK is a Polyethylene Plant based on the BASSELL Spherilene Process Technology. The plant annual capacity is 230,000 MTPY of HDPE, MDPE and LLDPR type. The units concerned by the performance of the engineering activities were: Polymerization Area, Extrusion Area, Alkyl Area, Homogenization, Bagging, Palletizing, Warehouse, Interconnecting & Pipe Racks, Effluent Basin, Purification, Propane Storage, Control Room and Substation, Valve House, Flare Area, Underground.

**v. Recent reference on Pipeline Projects (Engineering Services)**

<b>Project / Description</b>	<b>Client</b>	<b>Year</b>	<b>Scope of Work</b>	<b>Product</b>	<b>Location</b>
<b>OLGA – LEDA Comparison Study</b>	SAIPEM	2013	Flow Assurance (Steady, Dynamic and Transient State) to perform comparison study and validate the LEDA flow software.	Natural Gas, Saturated Gas, Saturated Gas with Free Water, Multiphase Oil	Italy
<b>Safety Valves' Installation</b> <i>Detailed Engineering</i>	SIGEMI – Shell Italia	2012-2013	Safety Valves. Sizing and Installation at the pipelines' arrival	Petroleum Products	Italy
<b>LPG tankers unloading facilities + n.2 10'' x 4 km pipelines from jetty to LPG underground storage - Livorno</b> <i>Basic &amp; FEED</i>	Eni R&M Div.	2012 – 2013	Basic engineering, Front End Engineering and Cost Estimate	LPG	Italy
<b>Ferrera - Fegino DN12 Pipeline, Pig Dislodging &amp; Nitrogen Displacement.</b> <i>Services</i>	SEAPAD	2012	Hydraulic Analysis, Specification and Operating Procedure.	Petroleum Products	Italy
<b>New DN10 Gela – Giaurone Pipeline for CO2 re-injection.</b>	Eni / PPC	2012-2013	Basic Engineering: Flow Assurance, Pipeline material and thickness definition, P&ID's, Pipe Sizing, Specifications and Data Sheets for various equipment (Linepipe, Induction Curves, Pig Traps, Main Line Valves)	Liquid CO2	Italy
<b>Trans Mediterranean Pipeline (Cap Bon - Mazara del Vallo)</b>	TMPC	2012	Flow Assurance Study, Gas Pipeline Control Valve sizing with LedaFlow	Natural Gas	Tunisia

<b>Project / Description</b>	<b>Client</b>	<b>Year</b>	<b>Scope of Work</b>	<b>Product</b>	<b>Location</b>
<b>West Qurna 2</b> <i>Basic Design</i>	Technip	2011	P&ID's, Main Line Valves Sizing, Blow Down Study, Hydraulic Calculation	Crude Oil, Gas, LPG	Iraq
<b>El Merk</b> <i>Detail Design</i>	ABB	2011	Flow Assurance (with OLGA)	Multiphase	Algeria
<b>Nord Stream Project</b> <i>Detail Design</i>	NSP - Saipem	2008 - 2011	Precommissioning, Commissioning, Landfall design, P&ID, Pipe Sizing, Blow Down	Natural Gas	Russia-Germany
<b>Trecate – Cremona</b> <i>Pipeline Products Re-Conversion</i>	Tamoil	2011	Hydraulic Study, batch study, products interface length	Diesel, gasoline	Italy
<b>Lacchiarella – Cremona</b> <i>Pipeline Products Reversal</i>	Shell Italia Tamoil	2011	Hydraulic Study, batch study, products interface length	Diesel, gasoline	Italy
<b>Cornegliano L. – Cervignano</b> <i>Conceptual Design</i>	Italgas Storage	2011	Conceptual & Hydraulic Study	Natural Gas	Italy
<b>San Quirico – Arquata – Lacchiarella with DRA</b> <i>Flow Increase Study</i>	Shell Italia	2011	Hydraulic Study	Diesel, gasoline	Italy
<b>Interconnecting Pipeline Recompression Station</b> <i>Conceptual Design</i>	Italgas Storage	2011	Conceptual & Hydraulic Study	Natural Gas	Italy
<b>San Quirico – Arquata – Lacchiarella</b> <i>Pipeline Study</i>	Shell Italia	2010 - 2011	Hydraulic Study	Diesel, gasoline	Italy
<b>Genova Loading System</b> <i>Basic &amp; Detail Design</i>	POPEGE	2011	Hydraulic Calculation	Crude Oil & Products	Italy

<b>Project / Description</b>	<b>Client</b>	<b>Year</b>	<b>Scope of Work</b>	<b>Product</b>	<b>Location</b>
<b>Multedo – Fegino &amp; Fegino – Multedo</b> <i>Pipeline Requalification</i>	SEAPAD	2010	Hydraulic Study	Crude & Oil Products	Italy
<b>Multedo Booster Station</b> <i>New Pipeline Booster Pump Design</i>	SEAPAD	2010	P&ID's, Basic Design Study, Hydraulic Calculation	Crude Oil	Italy
<b>Busalla – Multedo &amp; Multedo – Busalla</b> <i>Pipeline Requalification</i>	Iplom	2010	Hydraulic Study, Thickness & MAOP verification	Crude Oil	Italy
<b>Sannazzaro – Cremona</b> <i>Pipeline Products Re-Conversion</i>	Eni R&M Div. + Tamoil	2010	Hydraulic Study, batch study, products interface length	Diesel, gasoline	Italy
<b>Venezia – Mantova Nitrogen Displacement &amp; Restart</b> <i>Services</i>	IES	2010	Displacement Procedure, Commissioning, Hydraulic Study & Field Operations Management	Crude Oil	Italy
<b>S. Quirico – Arquata - Lacchiarella Nitrogen Displacement &amp; Restart</b> <i>Services</i>	Shell Italia	2010	Displacement Procedure, Commissioning, Hydraulic Study & Field Operations Management	Diesel, gasoline	Italy
<b>Busalla - Multedo Nitrogen Displacement &amp; Restart</b> <i>Services</i>	Shell Italia	2010	Displacement Procedure, Commissioning, Hydraulic Study & Field Operations Management	Diesel, gasoline	Italy
<b>Mellitah Loading System</b> <i>Basic &amp; Detail Design</i>	Eni Oil Co. Ltd	2009	P&ID's, Basic Design Study, Hydraulic Calculation	Crude Oil	Libya
<b>Vlore Unloading System</b> <i>Basic &amp; Detail Design</i>	Tecnimont	2009	P&ID's, Basic Design Study, Hydraulic Calculation	Crude Oil	Albania
<b>Falconara – Porto S. Giorgio</b> <i>Conceptual Design</i>	API	2008	Conceptual & Hydraulic Study	Carbon Dioxide	Italy

<b>Project / Description</b>	<b>Client</b>	<b>Year</b>	<b>Scope of Work</b>	<b>Product</b>	<b>Location</b>
<b>Trans Anatolian Pipeline</b> <i>Samsun &amp; Ceyhan Tank Farm</i>	Saipem Fano	2007	Tank Farm Conceptual Design, Pipe Sizing	Crude Oil	Turkey
<b>Cartagena – Puertollano</b> <i>Basic Design</i>	REPSOL	2007	Hydraulic Study, Thickness definition, Pump Specification	Diesel, gasoline	Spain
<b>Taranto – Brindisi</b> <i>Conceptual Design</i>	Eni R&M Div.	2007	Conceptual & Hydraulic Study	Hydrogen	Italy
<b>Ogbainbiri/Ob-Ob Gas Pipeline</b> <i>Detail Design</i>	Eni E&P Div.	2007	Hydraulic Study	Natural Gas	Nigeria

**vi. Recent reference on Power Projects (Engineering Services)**

YEAR	CLIENT	PROJECT	MW	LOCATION	SCOPE OF WORK
2013	E.ON	Gas Turbine Relocation	7,5	Mira - Adria (Italy)	Preparation of Work Requisitions of dismantling/relocation of existing gas turbine and Material Requisitions for n.2 new auxiliary boilers.
2011-2012	Versalis (former Polimeri Europa)	New HP Steam Generators (2 x 150 t/h @ 120 barg, 510°C) & Auxiliary Units	-	Porto Marghera (Italy)	Basic Design, FEED, Cost Estimate
2011	Enipower	New Steam Generator (200 t/h)	-	Ravenna (Italy)	Basic Design & Cost Estimate
2010	Enipower	Combined Heat & Power Plant	70 (140 th)	S. Donato Milanese (Italy)	FEED, Cost Estimate, Preparation of ITT documents for EPC, EPC Technical Bid Evaluation
2009	Enipower	Photovoltaic Plant	4	Ferrandina (Italy)	Detail Design
2009	Enipower	Photovoltaic Plant	1	Taranto (Italy)	Detail Design
2009	SIRAM	Biomass Power Plant	14	Augusta (Italy)	Conceptual Design & Cost Estimate
2009	SIRAM	Biomass Power Plant	10	Coniolo (Italy)	Conceptual Design & Cost Estimate
2008	Maire Tecnimont	Biomass Power Plant	17	Olevano (Italy)	Basic Design
2007	Maire Tecnimont	Bocamina II - Coal Fired Power Plant	370	Puerto Coronel (Chile)	Basic Design & Piping Detail Design
2007	Eni R&M Div.	Power Generation Unit	3,5	Robassomero (Italy)	Basic Design, Detail Design
2005	Eni Oil Co.	Power Generation Unit	50	El Feel Field (Libya)	Basic Design, FEED, Preparation of ITT documents for EPC, Technical Bid Evaluation
2004	Eni E&P Div./NAOC	Gas Fired Power Plant - Repowering	960	Okpai (Nigeria)	FEED, Preparation of ITT documents for EPC, EPC Technical Bid Evaluation
2004	Eni E&P Div./NAOC	Power Generation for Community	3	Okpai (Nigeria)	FEED, Preparation of ITT documents for EPC
1999	Enelpower	Combined Heat & Power Plant	100	Castleford (UK)	Detail Design

## **vii. Recent reference on EPC Contracts**

Please find here below a list of recent reference of SIMECO relevant to EPC Contracts:

Client: RAM (Raffineria di Milazzo), Milazzo Refinery (Italy)

- EPC contract on a Fixed-Lump Sum and Turn-Key Basis for the revamping of the existing Kerosene Hydrodesulphurization Unit (HDS-1), including Pre-commissioning, assistance to Client during Commissioning and Operation up to Final Acceptance, 2014-in progress.

Contract Value: 15 M€.

Client: ENI S.p.A. Refining & Marketing Div, Sannazzaro Refinery (Italy), 2011-2013

- EPC contract on a Fixed-Lump Sum and Turn-Key Basis for installation of a Clarified Oil Vacuum Distillation and Filtration System on the existing FCC Plant including Process Design, Detail Design and Engineering, Procurement, Construction, Pre-commissioning, assistance to Client during Commissioning and Operation up to Final Acceptance, supply of spare parts during the warranty period (2 years operation), 2011-2013.

Contract Value: 14 M€.

Client: ENI S.p.A. Refining & Marketing Div., Taranto Refinery (Italy)

- EPC contract on the Fixed-Lump sum and Turn-Key Basis for the installation of a new Electrically Traced Liquid Sulfur Transfer Line (4'' x 1 km by skin effect electrical tracing technology) including Process Design, Detail Design and Engineering, Procurement, Logistics, Construction, Pre-commissioning, assistance to Client during Commissioning and Operation up to Final Acceptance, supply of spare parts during the warranty period (2 years operation), 2010.

Contract Value: 1,1 M€.

Client: ENI S.p.A. Refining & Marketing Div., Sannazzaro Refinery (Italy)

- EPC contract on the Fixed-Lump sum and Turn-Key Basis for the installation of a new dehydration and hydroisomerization unit of a C4 butylenic stream, including endorsement of Process Design Package, Detail Design and Engineering, Procurement, Logistics, Construction, Pre-commissioning, assistance to Client during Commissioning and Operation up to Final Acceptance, supply of spare parts during the warranty period (2 years operation), 2008-2009.

Contract Value: 8,5 M€



Client: Polimeri Europa, Sarroch Petrochemical Complex (Italy), 2008-2009

- EPC contract on the Fixed-Lump sum and Turn-Key Basis for the installation of new API separators covering system and cryogenic unit for VOC recovery including Process Design, Detail Design and Engineering, Procurement, Logistics, Construction, Pre-commissioning, assistance to Client during Commissioning and Operation up to Final Acceptance, supply of spare parts during the warranty period (2 years operation). Contract Value: 6,0 M€.

Client: RAM, Milazzo Refinery (Italy), 2005 (Phase 1) – 2008 (Phase 2)

- EPC contract on the Fixed-Lump sum and Turn-Key Basis for the replacement of existing crude oil loading arms (Phase 1: 4 x 16''; Phase 2: 4 x 16) at refinery jetty, including Detail Engineering and Design, Procurement, Logistics, Construction, Pre-commissioning, assistance to Client during Commissioning and Operation up to Final Acceptance, supply of spare parts during the warranty period (2 years operation). Contract Value: 5,6 M€ (Phase 1 + Phase 2).

#### **viii. Recent engineering services for Adriatic LNG (Offshore Regasification) Terminal (Adriatic Sea, Italy)**

For Adriatic LNG, SIMECO provided secondment of personnel within Client Team and approx. 30,000 engineering manhours per year for new projects dealing with improvement of operation and maintenance:

- Detail Engineering for LV electrical distribution revamp
- Front-End Engineering Design services for a new High Pressure Air Compressor (HPAC) System for Wobbe Index correction of the Send Out Gas.
- Feasibility study and concept selection for a new Nitrogen Storage and Injection System for Wobbe Index adjustment into the ALNG onshore pipeline.
- Definition of a full Black Start philosophy of the Terminal.
- Feasibility Study for Boat Landing Modifications
- Feasibility Study for Potable Water UV Treatment
- Feasibility Study for installation of smoking cabins at selected locations.
- Feasibility Study for the upgrading of the flow measurements on the HP and LP flares.
- Detail Engineering of the enclosure to protect the Custody Transfer Sampling Skid (CTSS) to be installed on the platform
- Front End Engineering Design for the new Waste Water Treatment Plant.

Recent activities dealing with maintenance engineering and operative maintenance carried out by SIMECO personnel seconded at Terminal, include:

- N. 3 Gas Turbines 11 MW/each - ESD (Emergency Shut Down) reduction study and implementation by means of:
  - Enclosure water leakage sealing system improvements
  - Enclosure Ventilation enhancement
  - Exhaust damper system verification and improvements to reduce closing time.
  - Anti-icing thermal probes installation in a more suitable position

- Verification of Oil/water cooler and extension for actual needs fulfillment
- Planned Maintenance timing verification
- Installation of a new Back-Up Air Compressor (Diesel Engine rated 186 kW) including:
  - Installation compliance study
  - SS piping routing study for connection to General Instrumentation Air system and to Emergency Diesel Generator / Detail installation Study
  - Verification of installation compliance with technical, safety and environmental protection best practice
- Sewage Emergency transfer pump to ship including:
  - Mechanical equipment installation detailed design
  - Electrical new feed line: detailed design follow-up and installation supervision
- Installation of a Diesel Fuel delivery station with branching from Diesel Day Tank and air driver pumping station.
- Oil sampling points improvements, oil sampling methods specification, oil analysis data screening and machines conditions evaluation.
- Supervision to a vibration monitoring contractor for main mechanical equipment failure advance alert.
- Maintenance and upgrading of HW & SW of Yokogawa control systems (DCS, ESD, F&G systems), including:
  - DCS graphic pages: review and upgrade alarms display.
  - Fire and Gas system: Cause & Effect testing.
  - F&G system : Detectors substitution.
- GPS timer for ICSS time synchronization: equipment substitution.
- LNG Open Rack Vaporizers: control logic modification.
- Glycol Water Pump: shut down logic upgrade.
- Plant Resource Manager (PRM): system configuration.
- GBS heating system: fiber optic leak detection and temperature monitoring maintenance.
- Instruments: maintenance and replacement.
- Modification of the HVAC feeding of the block valve station, to avoid the service interruption at starting.
- Modification of the protections system in the metering station, by means of integration with TA to avoid protections trip by false current.

Management of spare parts at the Terminal is carried out by SAP.

#### **ix. Recent engineering services for TMPC**

The Scope of Services of the Frame Agreement for Operations Support at Transmed Pipeline Terminals in Cap Bon (Tunisia) and Mazaro del Vallo (Italy) started in 2010 include:

- Engineering support for day-to-day maintenance
- Engineering support for trouble shooting operational problems
- Engineering and Project Management for small-to medium modifications
- Execution of specialized activities as measurement, controls, tests
- Supervision, control and certification of services and supply provided by third parties
- Risk assessments

Projects related to day to day maintenance and troubleshooting operational problems carried out so far include, for instance, design and supervision to the installation of a new methanol injection plant for inhibition of hydrates and installation of bypass on control valves to allow a greater operational flexibility.

#### **x. Technical and Managerial Organization of the Firm**

The technical and managerial organization of SIMECO is represented in the attached Company Organization Chart (Attachment 1).

SIMECO's Quality Management System is certified by Det Norske Veritas for compliance with ISO 9001:2008 (Attachment 2).



## **ATTACHMENT 1**

### **SIMECO COMPANY ORGANIZATION CHART**

**ATTACHMENT 2**

**SIMECO QUALITY MANAGEMENT SYSTEM**

**ISO 9001:2008 CERTIFICATE**