



Power Plant Business Unit Overview

ISSUE – APRIL 2025

FIELDS, VALUES / ADVANTAGES



Off-shore

- Platforms
- FPSO



On-shore

- Oil & Gas Upstream
- Gas Processing and Liquefaction
- LNG Import/Export Terminals
- Pipelines



Drilling

- Deep Water Drillship
- Semisub Drillship
- Landrigs
- Drilling Facilities Plants



Chemical

- Chemical Plants
- Refineries
- Industrial Process Plants



Energy

- Power Plants
- Combined Cycle Plants
- Renewable Energy Plants



Environment

- Carbon Capture
- Waste to Energy
- Water Treatment Plants
- Sewage Treatment Plants

PROECO Values and Advantages

Versatility and flexibility demonstrated by long-standing successful partnerships, completion of significant projects (including some EPC contracts) and consolidated expertise in different fields.

From stand-alone services to integrated actions with the customer's team, **adapting resources and methods** to the specific client / project requirements.

Our **expertise in EPC / EPCM applications** - across all phases of engineering, procurement, construction, installation, commissioning and startup - allow PROECO to implement, from the engineering stage, practical and feasible solutions that address in advance any potential challenges, **streamlining the execution and minimizing the risks**.

A general overview of our Services on New Power Plants and/or Revamping Projects is introduced at the following pages.

MARKET / TECHNOLOGICAL AREAS

Natural Gas or Oil Fired Power Plants for CHP / IPP applications

- Gas Turbines in simple or combined cycle (range 5 to 200 MWe)
- Steam Turbines in Rankine or combined cycle (up to 100 MWe)
- Gas fired Engines integration (up to 100 MWe)
- Thermal Plants for Steam / Hot Water District Heating

Green Energy applications

- Solid or Liquid Biomass To Energy Plants
- Waste To Energy Plants
- Biogas Plants
- PV / CSP Projects

Gas Compression applications

- Gas Compressor Unit integration

KNOW-HOW / EXPERTISE AREAS

FEED & Preliminary Studies (Project Definition)

- Early Definition: Technologies, Process, Tech. Feasibility
- Permitting Engineering
- Tendering: FEED Package, Basic & Conceptual Engineering and Full-Cost Estimation

EPCM or EPC (Project Execution)

- Management: Project Overall Services, Controlling, Scheduling, HSEQ
- Engineering: Basic, Conceptual, Detailed, Handover
- Procurement: Support, Alignment, Expediting
- Site Services: Construction, Commissioning & Testing

Consultancy

- Owner's Engineering: Engineering, Site services
- Proposal Engineering: technical and sales support for tendering
- Taking Over: Performance & Testing
- After Completion: O&M Assistance

MANAGEMENT & PROJECT EXECUTION SERVICES

Management Services

- Contract Gap analysis, Monitoring
- Risk assessment / management
- Project Management
- Design Management
- Document Controlling
- Packages Management
- Design Management
- Project Scheduling & Controlling
- Project Progress Reporting
- Owner Engineering

Procurement Support Services

- Request For Quotation Support
- Offer technical alignment, clarification meeting
- Negotiation And Order Placement Support
- Shop Inspection & Expediting

Quality Control / Quality Assurance

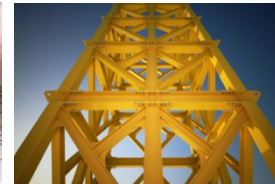
Environmental Health Safety

- Home office and Site managing and survey

ENGINEERING DISCIPLINES AND SERVICES



Process Engineering



Civil
and Structural
Engineering



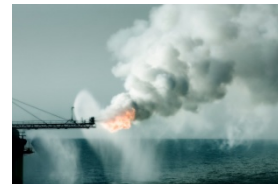
Mechanical
and Piping
Engineering



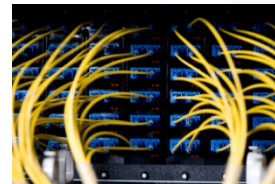
Electrical and
Instrumentation
Engineering



Automation
and Control
Engineering



Firefighting and
Safety Engineering



Telecommunication
Engineering



State-of-the-art
Projects
3D Modelling



Feasibility
Studies



Project
Services

BASIC & CONCEPTUAL ENGINEERING SERVICES

Multidisciplinary

- Basis of Design (Directive, Norms, Local authority rules)
- Tender Engineering (on Employer's or on Bidder's side)
- Main / Long Lead Items Specification
- Packages and Machines Design

Civil

- Geology, Soil Investigation
- Topographer Consultancy
- Architectural Design
- Civil Works Specification (site setup, BoQ, procurement)

Process

- Technologies and Process Definition
- Heat and Mass Balances
- Process design (PFD, P&ID)

Mechanical

- Mechanical Design (Arrangement, Layout plans & sections)

- Registered consultants, notified body identification (Natural Gas, Pressure equipment)

Electrical

- ATEX study
- Electrical Design (Diagram, Layout)
- Single Line Diagrams

I&C

- Instrument & Analytic Design
- Automation Design (DCS Architecture)

HSE

- Technical Feasibility Study
- Construction Permitting: environmental permit, construction permit, built warranty
- Noise measurement, Study and Design
- HAZOP assessment
- Fire Fighting: Fire Strategy, Exodus Ways, Fire Detection, Fire Extinguishing

DETAILED & TAKING OVER ENGINEERING SERVICES

Multidisciplinary

- Basic Engineering Review
- Secondary / Minor Items Specification (for procurement)
- Tender Engineering
- Minor items, BoP Data Sheets, Technical Specification (functional & standards)

Civil

- Civil Structural design (Local registered engineer)
- Meteoric water flow study, Sewage
- Civil HVAC MEP design

Process / I&C

- Automation & Control design (control philosophy, narrative) Instrument design (wiring diagrams, instrument and actuated valves data sheets, lists)
- Analytic design (Emission monitoring system design, analysers data sheets, sampling and dosing system design)

Mechanical

- 2D drawings, 3D model
- Mechanical design (Stress Analysis, pipes isometrics, sketches, supports)

- Thermal insulation & Painting
- BOQ of BOP (piping, fitting, exchanger, manual valves, ...)

Electrical

- Electrical design (cable list, cable trays, interconnecting)
- Lightning study
- Grid & Selectivity Studies
- Load flow and short circuit current study
- Telecommunications

Site Engineering

- Support to site (Execution Procedures, Test Of Completion, Turnover package)
- Commissioning & Operation Permitting (grid connection, waste discharge, exhaust gas emissions)
- Taking Over (Performance & Testing)
- Handover and Final Engineering (As Built documentations, O&M Manual)
- Spare parts definition
- Maintenance plan definition
- Operation & Maintenance Services

SUPERVISION & SITE SERVICES

Construction and Erection

- Construction management
- Method of Statement
- Scheduling at site
- Civil supervision
- Mechanical supervision
- Piping Supervisor
- Electrical supervision
- Instrument & Analytic supervision
- Automation & Control supervision
- Quantity surveyor
- Site storage and workshop
- Material Controller
- QA/QC
- Safety HSE
- Security
- Site engineering
- Packagers erection supervision
- Completion Tests
- Turnover Package, Punch List

Commissioning and Start up

- Commissioning Management
- Work permits to complete erection
- Mechanical supervision
- Electrical supervision
- Instrument & analytic supervision
- Automation & control supervision
- Main Package commissioning
- Site engineering
- Training documents & course
- Warranty List

Testing and Handover

- Functional test (TOC)
- Trial run
- Performance test
- Declarations and certifications
- Maintenance during DNP
- Plant Operation (Shift / Desk operators),
- Maintenance Services

ENGINEERING TOOLS CAPABILITY

Thermodynamic Simulation

- ASPEN HYSYS (process)
- HONEYWELL UNISIM (process)
- Own Calculation sheets
- SUNRISE PIPENET (process)
- THERMOFLOW (mass/energy balances)

Software for FEM study

- CAESAR II (stress analysis)
- PROSAP (structural design)

3D modelling Software and drawing

- AUTODESK DESIGN SUITE
- AVEVA PDMS / E3D (3D model)
- CADMATIC (3D model, Diagram, viewer)
- CADMATIC SHAREPOINT
- ESAIN ESAPRO (3D model)
- INTERGRAPH SMART 3D (3D model)
- NAVISWORK (3D viewer)
- SMART PLANT (Diagram)
- TEKLA

Instrumentation design Software

- Own Calculation sheets
- CONVAL (actuated valves)

Electrical design Software

- AMPÈRE (cables sizing)
- INTEGRA (cables sizing)
- NEPLAN (load flow & short circuit current calculation)
- ZEUS (lightning)

Civil Works

- PRIMUS (civil works computation and progress monitoring)

Scheduling & controlling

- MS Project
- Primavera P6

CADMATIC OVERVIEW

Apps

- Cadmatic 3D plant Modeller (pipe, Support, 2D DWG Out, 3D DXF in/out, 2D DXF in/out, PMS Tools, Plant Agent, Laser scan modeler)
- P&IDs - ISA codes, Electrical Diagram (diagram module)
- Cable trays and cable router modules
- Plant layout & piping design
- Pipe isometric Drawings - ASME codes (B31.1 power, B31.3 process)
- eBrowser project review tool (floating, fixed)
- eShare project information management tool (concurrent, floating)
- Common data base for information sharing (Exchanger, Co Designer site, Host Administrator)

Strengths

- Mechanical integrated design (3D Model – P&ID), civil & electrical (trays)
- Shared Database for MTO, lists, sketches, supports, plant & sections, diagrams, piping class, valves, instruments
- Stress analysis (Caesar II) interface
- Tekla interface
- Shared with site (construction and commissioning)
- Design review easiness

POWER PLANTS - OUR CLIENTS & MAIN REFERENCES

Year	Area	Client	End User	Plant Short Description
2001	Power	STC ATEL SPA	MALPENSA 2000 - CCPP	Trigeneration combined cycle power plant 34MWe with GT Rolls Royce RB-211 28,5 MWe + HRSG Single pressure level + ST GE Nuovo Pignone 5,5 MWe + natural gas compressor
2002	Green	STC ATEL SPA	C&T TERMOLI - Biomasse	Biomass plant (vegetable and natural wood) with one 50 MWth combustion grate integrated in one 55 t/h-55bar-450°C steam generator, one 13 MWel Steam Turbine Generator
2002	Green	STC ATEL SPA	SER AIRASCA - Biomasse	Biomass plant (natural wood) with one 50 MWth combustion grate integrated in one 55 t/h-55bar-450°C steam generator, one 13 MWel Steam Turbine Generator + District Heating
2002	Power	STC ATEL SPA	NOVEL CCPP Novara	Combined Cycle plant 104 MWe (full condensation), 93 MWe CHP (80 t/h steam) with n. 1 GT GENERAL ELECTRIC FRAME 6 FA 75,9 MWe + HRSG Three pressure levels + ST Man 33,0 MWe + AUX BOILER + GAS Compressors
2002	Power	STC ATEL SPA	CARIOLARO Paper Mill - GT CHP	CHP Plant in a Paper Mill with one 5.2 MWel Solar Taurus 60 Gas Turbine and Heat Recovery Steam Generator
2002	Power	STC ATEL SPA	ACTV CCPP - Vercelli	Combined Cycle plant 54 MWe (full condensing), 48 MWe CHP (27 t/h steam) with n. 1 GT GENERAL ELECTRIC MLM6000PD 43,1 MWe + HRSG Two pressure levels + ST Man 10,6 MWe
2002	Gas C.	SAIPEM S.p.A.	SAIPEM S.p.A.	Minerbio gas Station - New Gas Compression Station
2003	Power	STC ATEL SPA	AUSONIA Paper Mill - Gas Engine CHP	CHP Plant in Paper Mill based on 2x 3.3 MWel Gas Engines Rolls Royce KVG5-18G3 units
2003	Power	STC ATEL SPA	CEG - Gas Engine CHP	CHP Plant in Paper Mill based on 2x 3.3 MWel Gas Engines Rolls Royce KVG5-18G3 units
2004	Power	STC ATEL SPA	ELYO ITALIA for ROCKWOOD - GT CHP	CHP Plant in a Chemical Industry with one 5.5 MWel Solar Taurus 60 Gas Turbine and Heat Recovery Steam Generator
2004	Power	STC ATEL SPA	DELTA GAS GT CHP	CHP Plant in a Chemical Industry with one 7.5 MWel Solar Taurus 70 Gas Turbine and Heat Recovery Steam Generator
2005	Power	STC ATEL SPA	AQUAFIL GT CHP	CHP Plant in a Textile Industry with 2 x 4.6 MWel Solar Mercury 50 Gas Turbine and 2 Heat Recovery Steam Generators
2006	Power	STC S.p.A.	ELYO ITALIA for MICHELIN Cuneo CCPP	Combined cycle power plant 50 MWe (full condensing) 48 MWe (CHP steam 23 t/h)+ district heating (77 t/h steam) with n. 1 GT GE LM6000PD 43,1 MWe + HRSG Two pressure levels + ST BLOHM & VOSS/TBM 5 MWe + 2 Aux Boiler Type D
2007	Green	STC Power Srl	IPP Biopower Sardegna CCPP - Ottana (NU) (Etschwerke AG)	Combined cycle 37 MWe vegetable oil fueled with 2 x Wartsila 18V46 Engine 2x17,5 MWe + 2 HRSG: Two pressure levels + ST Dresser Rand 2,2 MWe
2012	Green	STC S.p.A.	FERRERO - Balvano (PZ)	CHP plant in a Food Industry based on one 8,4 MWe vegetable oil Wartsila 20V32 Engine + one fire tube heat recovery steam generator + flue gas SCR system
2012	Green	STC S.p.A.	FERRERO - Sant'Angelo (AV)	CHP plant in a Food Industry based on one 8,4 MWe vegetable oil Wartsila 20V32 Engine + one heat recovery steam generator + flue gas SCR system + Absorption machines
2013	Power	STC S.p.A.	ARKEMA - Marghera (VE)	Balance of Plant of a CHP plant in Rankine Cycle with a 6 MWel Steam Turbine Generator
2014	Power	STC BUCURESTI SUCURSALA	ORADEA GT District Heating - Romania	CHP plant for district heating based on one 45 MWel GT General Electric LM6000PF Sprint + 53 MWth Heat Recovery Boiler + 2x116 MWth Dual Fuel Auxiliary Boilers
2015	Power	STC POWER s.r.l.	MATER BIOTECH GT CHP Adria	CHP Power Plant 7,96 MWe (15 t/h saturated steam) GT unit: Solar Taurus 70 + HRSG simple recovery boiler + Biogas auxiliary Boiler
2015	Green	STC POWER UK Ltd	Widmerpool (UK) Waste Wood Biomass	Biomass plant (waste wood) with one 25.5 MWth combustion grate integrated in one 28 t/h-50bar-450°C steam generator, one 6.8 MWel Steam Turbine Generator + 4.5 MWth District Heating
2015	Gas C.	BONATTI S.p.A.	Sonatrach S.p.A.	"Station de compression Hassi R'mel" (Algeria) - Electrical and Instrumental Engineering
2016	Power	STC Power Srl	Burgo Sora Paper Mill	Combined cycle power plant (90 t/h steam) with n. 1 GT GE LM2500 31,7 MWe + HRSG post firing single pressure level

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2016	Green	STC Power Srl	Enel Green Power Finale Emilia Biomasse	Biomass plant (vegetables) with one 50 MWth reciprocating combustion grate integrated in one 55 t/h-60bar-470°C steam generator, one 17 MWel Nuovo Pignone Steam Turbine Generator
2016	Green	STC Power Srl	PowerCrop Macchiareddu - Biomasse	Biomass plant (natural wood) with one 63 MWth travelling grate integrated in one 122bar-535°C steam generator with reheat, one 22,8 MWel Steam Turbine Generator
2016	Power	STC Power Srl	Delek Sorek IPP Combined Cycle	Combined Cycle Power Plant 140 MWe IPP with 2 GT Siemens SGT800 Dual Fuel 50 MWe + 2 HRSG two pressure levels water tube boilers + ST Siemens SST400 42,5 MWe
2017	Power	STC Power Srl	Bunge GT CHP Ravenna	CHP in a Food Mill with one 5.6 MWel Solar Taurus 60 Gas Turbine + postfired Heat Recovery Steam Generator 45t/h 18bar + Auxiliary Steam Generator of 30t/h 15bar
2017	Green	Eni Mediterranea	Eni Mediterranea Idrocarburi SpA	CSP Gela Project - 1st Concentration Panels in the New Oil Center - Engineering and site services
2018	Green	STC Power Srl	Bridgwater (UK) WTE Power Plant	WTE plant (RDF and MSW) with one 39.4 MWth reciprocating grate integrated in one 47 t/h-50bar-400°C steam generator, one 9,6 MWel Steam Turbine Generator
2018	Green	EniProgetti SpA	Eni Mediterranea Idrocarburi SpA	CSP Gela Project - 2nd Concentration Panels in the New Oil Center, electrical generation, thermal storage - Engineering and site services
2019	Power	Siemens Italia SpA	SEA S.p.A. Malpensa	Replacing and integration of one 31.75 MWel Gas Turbine Rolls Royce RB211 with a new 31.25 MWel Gas Turbine Siemens SGT700 and relevant accessories
2019	Gas C.	BONATTI S.p.A.	Karachaganak Petroleum Operating B.V.	4th Injection Compressor Project in Karachaganak (Kazakistan) - Electrical Detailed Engineering
2022	Green	SAIPEM S.p.A.	SOLENOVA Ltd - Angola	25 MWp PV and 60 kV GIS Station - Electrical Engineering
2022	Green	BESTER ENERGY	SOLAR Italy III Srl	CASTRUM PV Plant 48 MWp in Montalto di Castro - Engineering activities for construction
2022	Green	BESTER NEW ENERGY ITALIA	SOLAR Italy VI Srl	SOLARFIELDS PV Plant 70 MWp in Pontinia - Engineering activities for construction
2022	Power	Siemens Italia	UNARETI SpA - Milano	Power Transformer Stations in Comasina and Mugello (Milano) - Cooling Plant Engineering
2023	Gas C.	BONATTI S.p.A.	DESFA S.A.	Gas Compression Station in Komotini Area (Greece) - Engineering Design
2023	Gas C.	ENI DICS	ENI S.p.A.	Casalborsetti gas Station - New Gas Compression Station
2023	Power	ENI S.p.A.	ENI S.p.A.	Eni Raffineria di Taranto - Replace of a 12.5 MWel Steam Turbine Generator Set
2024	Gas C.	Gruppo Antonini Energy	ENI S.p.A.	Fano gas Station - New Gas Compression Station





THANK YOU
FOR YOUR ATTENTION

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