



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 MWel)
- Steam Turbines in Rankine or combined cycle (up to 100 MWel)
- Gas fired Engines integration (up to 100 MWel)
- 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

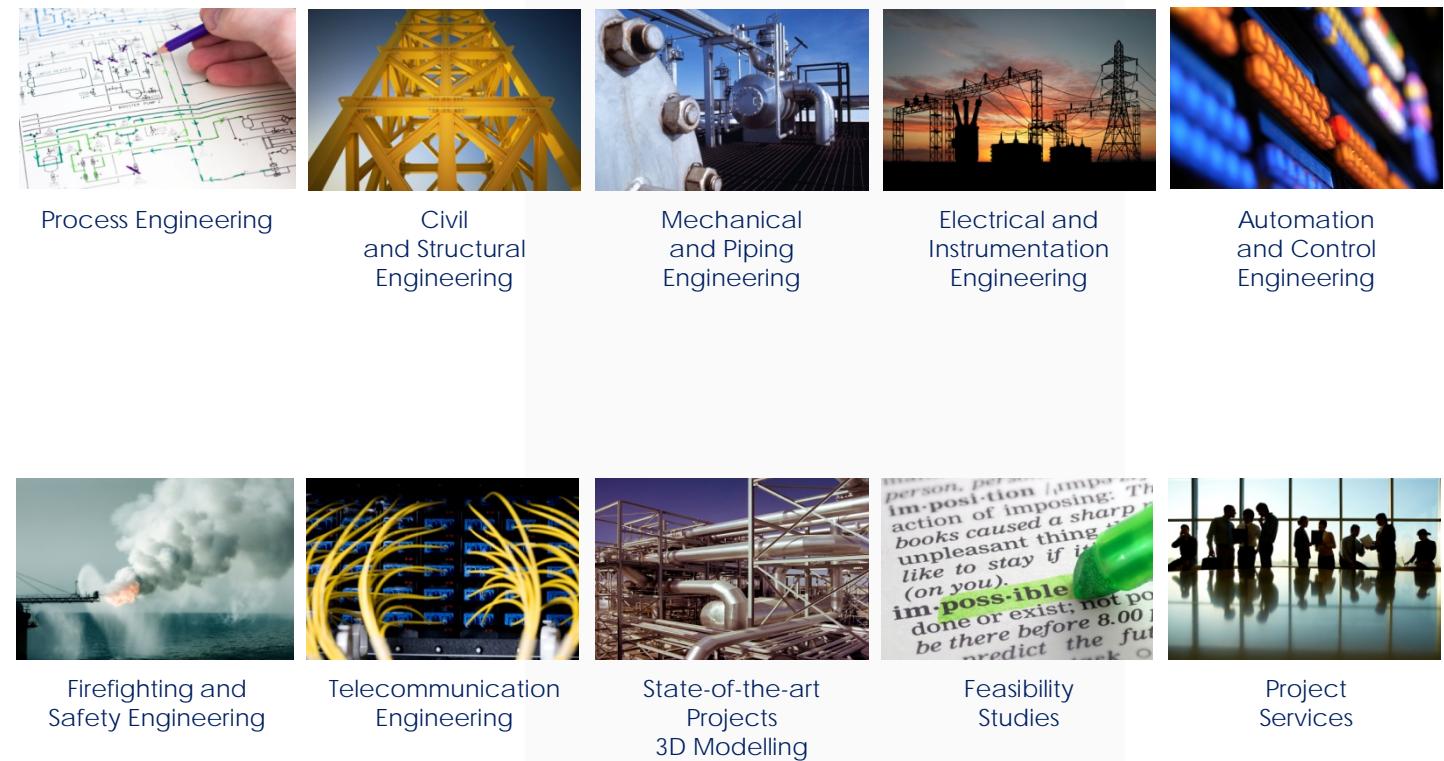
- Request For Quotation Support
- Offer technical alignment, clarification meeting
- Negotiation And Order Placement Support
- Shop Inspection & Expediting

Quality Control / Quality Assurance

Environmental Health Safety

- Home office and Site managing and survey

ENGINEERING DISCIPLINES AND SERVICES



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 KVGS-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 KVGS-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 2x 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 compresion 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 (Kazakhstan) - 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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