Oil&Gas Alliance

E&I division

TURN-KEY APPLICATIONS AND SYSTEM INTEGRATION

POWER CONVERTION & BATTERY STORAGE

E-MOBILITY INFRASTRUCTURES

ELECTRICAL CABINETS & PLC

CIVIL& INDUSTRIAL TURN-KEY ELECTRICAL SYSTEMS

DRIVES

turnkeyvaluechain

E&I division

E2C SRL - Conversion system composed by a PV plant with an energy storage system for powering a charging station for EV in the highway.

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ALLIED COMPANIES EQUIPMENT & PACKAGES

CEMI SPA / ELECTRICAL CABINETS, PLC AUTOMATION PANELS, SYSTEM INTEGRATION

E2C – ENERGY 2 COME SRL / POWER ELECTRONICS & SMART CITY E-MOBILITY

SAEL SRL / CONVERTION, AC/DC DRIVES

TEAM ENGINEERING SRL / E&I PLANT ENGINEERING

Oil&Gas Alliance

O&G Alliance is the italian partnership between highly specialized manufacturers in turnk-key plant engineering and system integraton, allied to supply high demanding worldwide projects

About

Founded in 2017, O&G Alliance Italy serves the leading Contractors counting on the partnership between its Italian partner companies, higly well-known in the plant engineering and turn-key system integration.

The Alliance

Highly specialized and independent Italian companies, partnering to seve joint engineering integration and turnkey construction in:

ELECTRIC CABINETS

PLC AUTOMATION PANELS

BATTERY & STORAGE SYSTEMS

SMART CITY & E-MOBILITY ELECTRIC INFRASTRUCTURES

POWER ELECTRONICS, CONVERTION, AC/DC DRIVES

E&I PLANT ENGINEERING & SYSTEM INTEGRATION

Turn-key valuechain

E&I
applications

E&I projects **Integrated supply**

POWER CONVERTION &
BATTERY STORAGE

ELECTRICAL SYSTEMS &
TURN-KEY PLANT
INTEGRATION

E-MOBILITY
INFRASTRUCTURES

Power convertion & battery storage

Charging infrastructure

Photovoltaic systems Storage facilities

Hydrogen production plants

Container with: PCS, EMS e Battery Sizes: 100kWh – 1500kWh

BESS
Customize solution storage system from 100kWh to 1,5MWh
Fast Charge for Bus or Heavy duty veichles or Ship
Infrastucture for Ports or Docks

The PCS is an intelligent conversion system, capable of managing and controlling different circuits both in AC and DC. It can be made up of AC / DC and DC / DC converters in different combinations as needed. All the components necessary for proper operation are inserted inside the panel such as: EMS, HMI, high frequency filters, preloads, contactors, protections, isolation transformer, etc ...
Each system is fully customizable, is modular and can be connected in parallel to increase the operating
power.

E-mobility infrastructures

- E-Bus
- Light Trucks
- Tractors
- Locomotives
- AGV
- Fast charging and night charging system (Power from 50 to 800kW – DC from 0 to 800Vdc). CCS type 2 or Chademo Protocol.
- Fast Charging Station for E-bus and Storage Area

As General Contractor of solutions of static e-mobility and providers of energy services we are able to support each Client with customized solutions and services capable of implementing the future mobility strategy.
We offer a complete range of customized solutions and services which meet the most particular needs taking care of every single step: from planning to concept design, from selection to delivery, from installation to maintenance of charging infrastructure, to the management of the charging process thanks to cloud platforms and mobile app user friendly

We supply Utility clients, automotiv, public transport, real estate or investors with customized and integrated solutions of electric mobility for all kind of targets.

Turn-key E&I systems

The services offered by the Alliance can satisfy all technical and operational needs in the plant engineering and shipbuilding sector in general:

design, construction management and testing of civil and industrial works, technological systems, consultancy for fire prevention, safety, assistance and training courses related to the aforementioned materials;
site management and project management activities;
refurbishments in the energy saving and energy management sector;
acquisition of maintenance and / or construction contracts for civil and industrial plants, to be managed through the use of third-party companies and / or suppliers.

E&I companies

Allied companies

34.000.000

E&I companies aggregate turnover €/yr

Sael
automation electronic systems

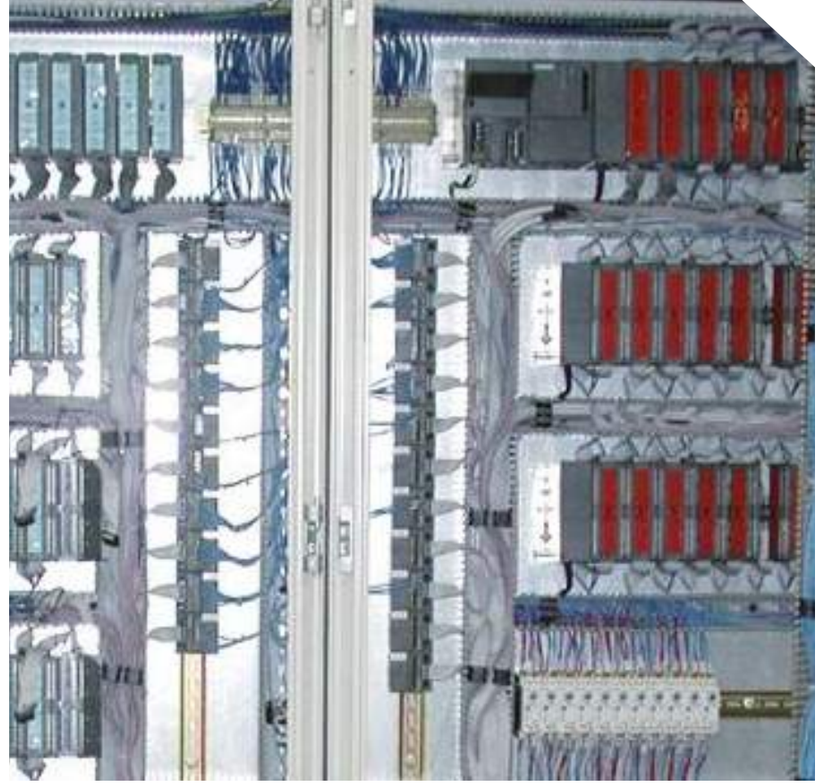
CEMI

E2C

TEAM ENGINEERING

Electrical cabinets

CEMI designs, installs and adjusts electrical cabinets. This activity has to be carried out with special care since electrical cabinets are subject to continuous evolution of the legislation and because they operate at medium voltage (generally 20,000 Volts) and need to be approved by the energy provider (ENEL).



E&I Turn-key projects

CEMI Spa designs and manufactures electrical systems for the Industrial and Tertiary sectors. The core mission of CEMI Spa is the installation of industrial electrical systems always in step with the latest regulations and the most advanced technologies.

•Calculation and sizing of equipment, protection systems, cables and cable routes;

•Preparation of specifications and data-sheets;

•Preparation of functional and interconnection diagrams and terminal block drawings; preparation of P&ID diagrams, flow charts and system construction drawings;

•List of tools, preparation of layout and assembly drawings

CEMI

Oil&Gas Alliance

PLC AUTOMATION PANELS AND ELECTRO-INSTRUMENTAL PROJECTS

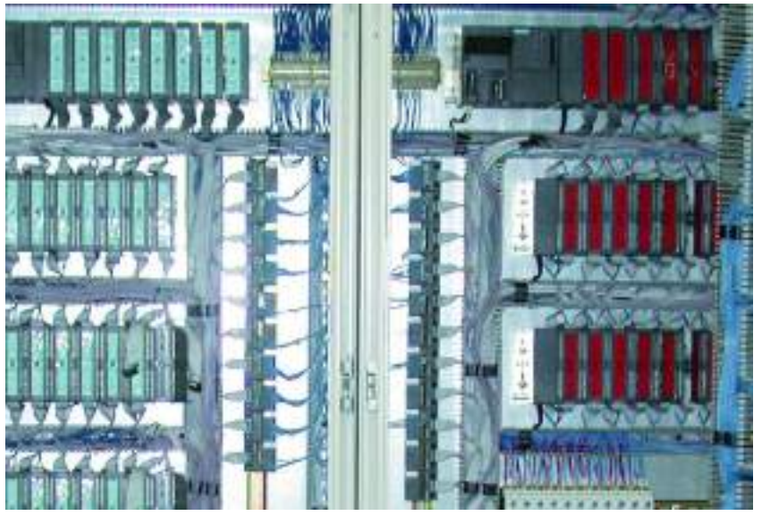
CEMI operates in the field of industrial automation, specialising in the development of PLC/PC based systems (SCADA supervisory systems), the design of electrical diagrams, and the construction of switchboards. PLC programming is of crucial importance in the development of an automation system: CEMI builds and maintains these systems.

BMS SYSTEMS

Building Management Systems (BMS) are for the integrated management of all the technological functions of a building that include systems for access control, security, fire detection, lights, smart lifts, and air conditioning. CEMI Spa is able to install fully integrated systems in the industrial sector as well as in large residential centres thanks to its decades of experience in the electrical field and knowledge of hydraulics

SWITHCBOARD

Technicians and specialised personnel design and install the electrical systems. Our technical office has CAD and software stations for the design and calculation of MV or LV power switchboards and industrial automation switchboards.



IT SYSTEMS AND DATA AND CCTV NETWORKS

CEMI can install and maintain data transmission systems. These include: LAN and WAN corporate networks, fibre optic and copper cabling, Firewall security systems, data transmission systems with radio links, and Wi-Fi networks. The systems can be integrated with new technologies, assessing customers' requirements without ever underestimating the needs for future development. CEMI sets up and personalises all video surveillance systems in perfect keeping with the context and the customer's specifications.

INTRUSION DETECTION SYSTEMS AND PREPARATION OF CONTROL ROOMS

CEMI designs, installs and tests intrusion detection systems, and provides customer support. The systems supplied can all be managed and programmed using a local or remote PC and allow for maximum flexibility and availability of the programming functions. We also set up control rooms and control units for large-scale video surveillance or remote control systems, from technical equipment for housing monitors, computers and videowalls, to the system interface with law enforcement agencies.

Movable Storage System

Conversion system with storage installed into two movable containers. It has been developed for charging electrical buses through a CCS charging station on-board installed or powered by a pantograph at 400 Vac.

Highway charging station

Conversion system composed by a PV plant with an energy storage system for powering a charging station for EV in the highway.

Electrical Data	
PV Power	500 kW
LFP Storage	240 kW – 350 kWh
EVC Power	4 x 150 kW CCS2
Grid Inverter Power	300 kW
Commercial Data	
Costumer	Easy Power
Production year	2022
Country	Greece
Quantity	1

Electrical Data	
400Vac Power	250 kW
EVC Power	150 kW CCS2
Storage	100 kWh
Commercial Data	
Costumer	Tper
Production year	2023
Country	Italy
Quantity	1

E2C_ENERGY TO COME
is a society recently constituted that, to be ready in a constantly evolving market, has selected and gathered together highly professional figures, multinational partner companies and research institutes of a long and proven experience in power electronics, in automation systems and in production technologies in the different industrial areas.

A streamlined, dynamic and efficient society which is able to optimize time and costs and develops innovative products capable of respond to the most demanding requests of: clients, industries, utility, transports and facilities.

E2C_ENERGY TO COME is organized in three areas:

- E-mobility
- Power Electronic
- Storage Sistems

PCS

The PCS is an intelligent conversion system, capable of managing and controlling different circuits both in AC and DC. It can be made up of AC / DC and DC / DC converters in different combinations as needed. All the components necessary for proper operation are inserted inside the panel such as: EMS, HMI, high frequency filters, preloads, contactors, protections, isolation transformer, etc ...

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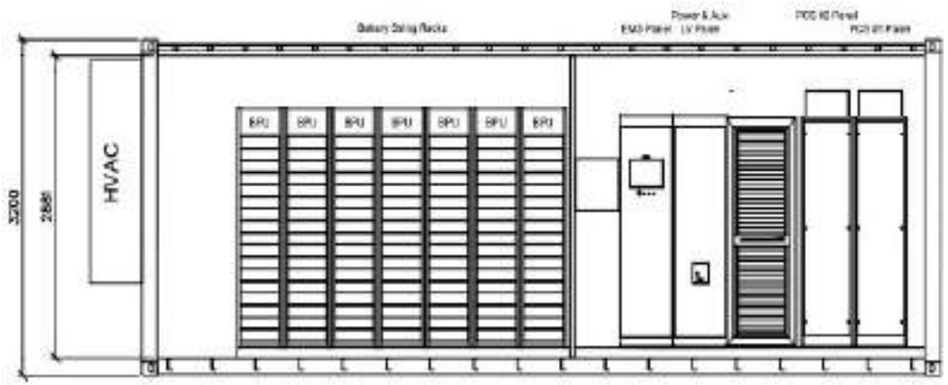
BESS:

- Customize solution storage system from 100kWh to 1,5MWh
- Fast Charge for Bus or Heavy duty veichles or Ship

- Infrastucture for Ports or Docks



Container with: PCS, EMS e Battery Sizes: 100kWh – 1500kWh

Grid electrical data	
Voltage Range DC	250 – 750 V
Voltage Range AC	400 V ± 10%
Nominal frequency	50 Hz ± 10%
THDi max	5%
Power Range	50 – 300kW
Ambie nt data	
Operating temperature	0 / +40 °C
Storage temperature	0 / +60 °C
Umidity max	95% without condensation
Altitude max	1000 m s.l.m.
Ambient	Industriale
Phisical data	
Colore esterno standard	RAL 7035
Protection degree	IP 54
Accessibility	Front
Cable Inlet/Outlet	Bottom
Dimensions min (LxWxH)	800x600x2500 mm
Weight min	1000 kg
Cooling	Forced air

Figure 1 – Example photo (100kW)

General	
Possible applications	Charging infrastructure Photovoltaic systems Storage facilities Hydrogen production plants

Hybrid conversion system for the boat propulsion with salt and hydrogen storage systems.

Electrical Data	
Motor Power	2 x 100 kW
NaC Storage	160 kW – 140 kWh
Hotel Power	20 kW

Commercial Data	
Costumer	Vulkan
Production year	2022
Country	Italy
Quantity	1

Energy Storage into Yatch

Conversion system with salt batteries used for the peak shaving and load levelling of the hotel services into a yatch.

Electrical Data	
Power	150 kW
Energy	360 kWh
Storage Type	NaNiCl2

Commercial Data	
Costumer	Azimut Benetti
Production year	2023/24
Country	Italy
Quantity	2

Electrical Data	
Power	8 x 20 kW
Voltage range	35 – 720 Vdc
Current	260 – 390 A

Commercial Data	
Costumer	Vulkan
Production year	2022
Country	Italy
Quantity	20

Galvanically isolated, bidirectional conversion system for hybrid propulsion of boats with energy storage systems.

Sael
automation electronic systems

Two sites and over 50 employees in Italy, with hardware and software technical teams focused on projects and development. 12% of the budget is re-invested in R&D projects and new technology research. Own AC and DC drives implementing the main field buss communication protocols. Supervision control systems with own technology and system integration using the most popular Drives.

- AC / DC three-phase Inverter with active front end on the network and DC/DC
- DC/DC converters
- Voltage: 220 - 400 - 690V
- Powers 50kW to 1MW with the possibility of parallelizing several modules
- Traditional IGBT technology or SiC
- Complete cabinet

We develop high power electronic systems in the Industrial, Institutional field of Renewable Energies and Industrial Automotive.
Services include electrical and power electronic design, firmware development for micro-controllers and DSP, production of prototypes and pre-series, the research and procurement of appropriate electronic components, industrialization of product, technical support in the start-up of production.
We are capable to follow the client in a competent and professional way throughout the qualification process of products, from the identification of the applicable rules to the support in the execution of the planned tests and to the resolution of any criticalities.

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PRODUCTS:
- Static Converter AC/DC (ranging from kW to MW, from 50V to 690Vca)
- Static Converter Isolated and not Isolated AC/DC (rancing from kW to MW, from 50V to 1500Vdc)
- Storage Systems Power Intensive and relative interfaces (in the range from kWh to multi-MWh)

IN EVIDENCE:
- Converters AC/DC (rancing kW-MW – module with: SCR, IGBT or Sic Device. Size: 3kW- 500kW – Voltage from 400Vca to 690Vca).
- Topologies: 2-3-5 levels, multilevel cells configurations available for Medium Voltage insulated applications
- Converters DC/DC (in the range from kW to MW – 50Vdc to 1500Vdc with FET, IGBT and SiC Technology)
- Resonant DC//DC insulated power converter 50-100kHz water or air cooled
- Bidirectional back-boost, H bridge converters configuration
- Digital control boards, with lates model of: DSP, micro-controllers, FPGA; relevant for fast control and high precision processes

3 Phase AC/DC Inverters and DC/DC converters

Production of converters for power electronics:

3 Phase Voltages : 220-400-690Vca Power: 50 - 1000kW

Technology: IGBT with Sic

- AC / DC three-phase Inverter with active front end on the network and DC/DC
- DC/DC converters
- Voltage: 220 - 400 - 690V
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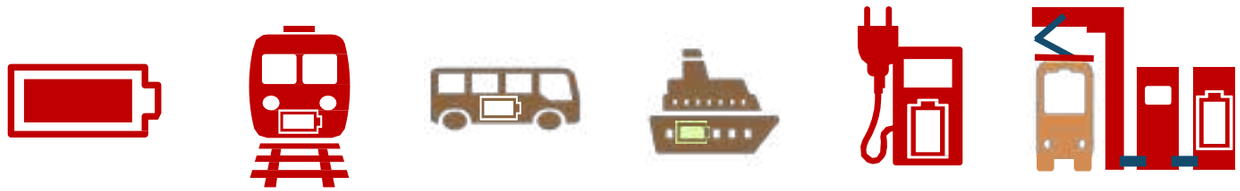
Control of DC motors, and purely resistive and inductive loads in general; rapid switching for inversion of polarity of the output terminals (only 4 quadrant version); feedback by encoder or tachometric dynamo (input with resistive divider); internal structural in blocks that can be fully configured to obtain (for example): speed control over the motor, with a reference speed (default); control over the motor with torque reference; feed-forward for position / speed / current, calculated inside the unit and/or coming from outside; following references from the encoder /electric shaft with gearing ratio settable); calculation of diameter and servo diameter; control of the dancer roller speed with / without reference to the line speed; reference selectors for differentiated jogging or differentiated references for machines with mechanical gearboxes or to exclude dancer roller control; positioners rooted in space; load shedding between two motors. limitation of one of the internal values, with suitable blocks; register cutting or cutting fly function. RC protection groups; pulse transformers board; transducers for the signal indicating automating limiting of the current.



Full Digital Control of AC motors, Induction Motors (IM), Permanent Magnet Synchronous Motors (PMSM-SPM and PMSM-IPM) as well as Synchronous Reluctance Motors (SynRM).
From 2 to 1500kw - With common DC bus, for industrial application that need high static and dynamic performances and independent controls or combination of speed, acceleration, torque and space. Examples: PID regulation, programmable rotund ramps for acceleration and deceleration, diameter control or pull for winder and unwinder, pull control or material stretching, space control (positioning), absolute electric shaft control with programmable numeric connection and settable trough serial way. STO Certified. - Water cooling system (VW series)

Main features
Sensorless control of IM, PMSM (both isotropic and anisotropic motor types) and SynRM with high overloading capability - Field Oriented Control (FOC) for IM, PMSM and SynRM motors with optimized flux weakening control - Flying restart functionality - Open loop scalar V/F control with current monitoring (2-300% of the nominal speed) for IMs - BLDC control option.

AC Drives power parts
Power circuit with IGBT,film capacitors with long life, connection to low inductance. PWM modulation with frequency settable from 2 to 5KHz; 3 phases AC/DC power supply available in different size and type: standard bridge, with brake resistor, regenerative with breaking power line recovery

TEAM ENGINEERING

ENGINEERING SERVICES

- design, construction management and testing of civil and industrial works, technological systems, consultancy for fire prevention, safety, assistance and training courses related to the aforementioned materials;
- site management and project management activities;
- refurbishments in the energy saving and energy management sector;
- acquisition of maintenance and / or construction contracts for civil and industrial plants, to be managed through the use of third-party companies and / or suppliers.

The knowledge of the chemical processes related to the “Oil & Gas” plants applied in the o-shore design, allowed to take advantage of the experiences gained over the years, at sea too, in the development of projects aimed at the On Shore sector. More precisely for the design of sludge treatment systems and the design of gas treatment systems; We also design the relative transport and processing facilities, such as slug catcher, manifolds, pipelines and so on is part of the petrochemical rening and storage facilities.

- Oil & Gas On-shore / Off-shore
- Drilling rigs
- Chemical plants
- Skid & package
- Energy
- Naval
- Hospital
- Foodstuffs & Pharmaceutical

TEAM ENGINEERING

Oil&Gas Alliance

- ELECTRICAL ENGINEERING
- INSTRUMENTAL ENGINEERING
- THERMOMECHANICAL ENGINEERING
- AUTOMATION
- CLASSIFICATIONS | EVALUATIONS ATEX
- FIRE PREVENTION
- ENERGY CERTIFICATES
- SUPPLY OF AUTOMATION PANELS
- SYSTEM TESTING
- ELECTROMEDICAL
- PRE-COMMISSIONING | COMMISSIONING
- SITE MANAGEMENT
- PHOTOVOLTAIC PERFORMANCE
- TRAINING

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