

**ALTENIA**  
ENERGY THAT WORKS.

 **Terna Energy  
Solutions**  
MORE VALUE, TOGETHER.

**Innovation and experience  
for advanced energy solutions**

## THE GROUP

**Altenia offers advanced, tailor-made solutions for every phase of the life cycle of high- and medium-voltage infrastructures and is the benchmark for companies and operators investing in the energy sector.**

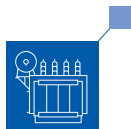
Altenia is part of the Terna Energy Solutions Group, a company within the Terna Group, which, through specific and diversified skills of its member companies, offers 360° support that covers the entire life cycle of projects, including the supply of strategic components for the energy transition, such as cables and electrical transformers.

Thanks to the existing synergies between the various Group companies, TES is the partner of excellence in the energy and digital transition of its customers in Italy.

The other companies within the Terna Energy Solutions Group are:



Design, manufacture, installation and maintenance of cables, accessories, and system solutions for energy suppliers, TSOs, and industrial applications.



For over 100 years design, manufacture, installation and maintenance of transformers for industrial and power applications.



The Group also provides connectivity services to the market, supporting customers in building customised project solutions.







## ABOUT US

From design to maintenance, from operation to regeneration, we ensure targeted interventions to optimise plant performance, safety and efficiency.

Our integrated approach allows us to respond promptly to market needs, contributing to operational continuity and maximising yield from energy assets.

Thanks to our well-established and constantly evolving technological know-how, we support our customers in three strategic areas:



### **High Voltage**

EPC, O&M, Revamping of HV/MV infrastructure



### **Photovoltaics**

EPC, O&M, Revamping of photovoltaic systems



### **Energy Storage Systems**

EPC services for utility-scale storage facilities



### **Energy Efficiency**

Tailor-made strategies to reduce consumption and improve the performance of energy-intensive infrastructures

ALTENIA is much more than a design, construction and maintenance company in the energy sector: it is a benchmark for a sustainable future.

# SERVICES FOR END-TO-END MANAGEMENT OF ELECTRICAL INFRASTRUCTURE

With our integrated portfolio of services, we provide our customers with an all-round approach to the design, construction and maintenance of electrical infrastructure and photovoltaic systems.

Our experience, combined with the nationwide presence of our integrated network of field technicians, is a guarantee of competence, responsibility and reliability.

## HIGH VOLTAGE

**>250**

plants  
installed and  
operated

**>1,000**

O&M works  
per year

## PHOTOVOLTAICS

**>1** GW<sub>p</sub>

plants installed  
in EPC and  
revamping mode

**>1.3** GW<sub>p</sub>

managed  
power

## ENERGY EFFICIENCY

**>4** mln tons

CO<sub>2</sub> reduction

**>250**

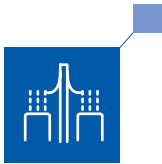
energy audits











# HIGH VOLTAGE

## EPC

We design and build electrical transmission infrastructures for industrial customers, data centres, distributors and energy producers, ensuring efficient solutions that meet the highest quality standards.

Our experience covers a wide range of infrastructures, including electrical substations, overhead and cable connections, ensuring certain lead times and compliance with applicable regulations.

From engineering to construction and commissioning, our integrated approach allows us to optimise cost and performance, offering customers safe, reliable and ready-to-use installations.

### Our services

#### Final connection

- Feasibility study, business plan definition and design
- Plant construction (civil works and electrical assembly) and testing
- Equipment supply and installation
- Protection, Command and Control System: installation and management of systems capable of dialoguing with Terna's Control Centre

#### Provisional connection

- Rapid Installation Connection Solution: supply of a 'mobile' HV station with rapid installation
- AIS (Air Insulated Switchgear) system: complete supply of connection technology

Care, responsibility  
towards the customer,  
rapid intervention  
and respect for the  
environment guide  
the work of ALTENIA.

## REVAMPING

We renovate existing electricity transmission infrastructures, improving their efficiency, safety and business continuity.

Through an in-depth analysis of the condition of the installations, we assist customers in identifying the most effective interventions to restore performance or integrate advanced technologies.

Our goal is to extend the life cycle of assets, reduce operating costs and maximise plant productivity, ensuring a sustainable return on investment over time.

### Our services

- Upgrade of full-service user substation
- Re-engineering of the protection, command and control system
- Replacement of components required for plant operation
- Regulatory adaptations and improvements in terms of ESG and sustainability

Reliability, innovation and rapid intervention, together with the company's wide range of services and technical expertise, make us the best choice for your energy assets.







## OPERATION & MAINTENANCE

We provide comprehensive O&M services, ensuring the management, maintenance and continuous monitoring of assets to optimise reliability and performance.

Through preventive and predictive maintenance strategies, timely interventions and advanced remote-monitoring systems, we reduce downtime risks and maximise operational availability.

Our data-driven approach enables us to optimise plant efficiency, improving profitability and ensuring compliance with safety and sustainability standards.

### Our services

#### Ordinary maintenance

- Technical inspections with and without out-of-service
- Availability and emergency response
- Remote Network Management

#### Extraordinary maintenance

- Replacement of individual components
- Occasional interventions and complete overhauls

We are the perfect partner for entrepreneurs and administrators looking for advanced and sustainable energy solutions.



# PHOTOVOLTAICS

## EPC

We offer design, procurement and implementation services for medium and large-scale photovoltaic plants, guaranteeing a full-service contract for every type of plant and full operation throughout the country.

Our commitment begins with the Procurement phase, guaranteeing the timely purchase of the best components on the market.

Design is led by qualified technicians who produce complete drawings, from preliminary drawings to as-builts, ensuring precise and detailed plant implementation.

### Our services

- Management of paperwork with public bodies (GSE, UTF, ARERA) and of the connection process with the grid operator (TICA)
- Managing procurement and logistics
- Carrying out tests and inspections to ensure the proper functioning of the plant
- In-house design of all documents for the construction of the plant, from preliminary drawings to as-builts
- Site management through dedicated project managers

We are the ideal choice for modern, turnkey photovoltaic systems.









## REPOWERING & REVAMPING

Technological evolution and changing operational requirements make it essential to upgrade existing photovoltaic installations.

With our Revamping and Repowering services, we ensure improved performance, increased production and extended asset life, ensuring regulatory compliance and high efficiency standards.

### Our services

- Replacement of inverters with better performing and more efficient models
- Upgrading of switchboards and protection systems for greater safety and compliance with current regulations
- Optimisation of plant layout to improve shading management and maximise energy yield
- Advanced monitoring for real-time performance control and failure prevention
- Replacement of photovoltaic modules with the latest generation of more efficient and higher capacity panels
- Adaptation of inverters to support the new power installed
- Upgrading of management and control systems to optimise production and reduce losses

The relentless pursuit of technological innovation makes us a pioneering company that ensures efficient and modern solutions.



## OPERATION & MAINTENANCE

Altenia offers comprehensive monitoring and maintenance services for every type of photovoltaic system (ground or rooftop), including through multi-year contracts.

Thanks to a nationwide presence of field technicians co-ordinated by dedicated field managers and service managers, we guarantee reliability, prompt intervention and excellent performance 365 days a year, throughout the entire life of the plant.

### Our services

- Continuous remote supervision through customised software, ensuring full telemonitoring of key plant parameters
- Detailed plant performance analyses, comparing electrical production, irradiance and clusters of similar plants to optimise performance
- Comprehensive thermographic analysis of modules, DC and AC panels and transformers, including with the aid of drones and electroluminescence tests on photovoltaic modules
- Scheduled maintenance activities: washing, green and pest management, component warranties and insurance, including minor breakdowns/repairs
- Anti-theft and anti-intrusion system design; CCTV/microwave perimeter system installation; installation of CCTV systems with thermal and video analysis technology; anti-theft cables with seismic technology for modules and power cables

**We guarantee maximum energy efficiency and plant safety, allowing the customer to concentrate on their core business**









## Extra Works Services

Thanks to the department of Extra Works, Altenia accompanies you in the search for corrective and improvement solutions to ensure and optimise the performance of photovoltaic systems.

We support the customer through detailed analyses and innovative proposals, enhancing the performance of photovoltaic systems, optimising energy production and maximising the return on investments.

### Our services

Replacement and revamping of modules, cables, string boxes, inverters, parallel switchboards, MV switchboards, transformers, batteries and conditioners, monitoring systems

- System restoration following *force majeure* events (fire, theft, hail, lightning)
- Tracker system optimisation and anti-intrusion system restoration
- Plant dismantling and/or reassembly
- Re-sheathing and module fixings with partial or total replacement of damaged structures
- Adaptation to current regulations with issue of declaration of conformity
- Moving of cable ducts and/or switchboards
- Deconditioning of inverter cabins, cleaning of sumps or pipes
- Backfilling of manholes against theft
- Installation and supply of Central Plant Controller (CPC)

Extra Works is ready to intervene quickly to restore the functionality of photovoltaic systems. We minimize damage and prevent future disruptions, ensuring continuity and maximum efficiency.



over  
**1,200**  
interventions  
completed in  
2024

Thanks to the expertise of our subsidiaries, **Half Bridge Automation** and **STE Energy**, we are able to respond promptly to market needs, contributing to business continuity and maximum yield of energy assets.



## Power Continuity: smart renewable energy solutions

Our offer is implemented by Half Bridge Automation (HBA), a subsidiary of Alenia that offers services and products dedicated to the energy continuity of photovoltaic systems.



With a team of engineers, specialised technicians and industry experts, HBA is the market leader in power electronics.

Thanks to its constantly evolving technological and logistical know-how and recognised technology partners, HBA guarantees technologically advanced solutions tailored to the specific needs of its customers.

## Our services

### - **Regeneration/repair of photovoltaic inverters**

We regenerate all types of photovoltaic inverters from the most popular brands on the market through reverse-engineering processes

### - **Laboratory and on-site repair work throughout Italy**

We carry out the inverter diagnosis/repair/testing process in a laboratory equipped with the most up-to-date instrumentation in the sector, spread over 13 independent production lines. Our technicians travel throughout Italy, 365 days a year, for direct intervention on the component, regardless of the plant's location

### - **Rental of small, medium and large inverters (up to 1 MWp)**

We provide our customers with a wide range of inverters to meet all their possible needs. Our Power Boxes are 1 MWp mobile cabin inverters designed to ensure the functional and energy continuity of large-scale photovoltaic plants

### - **Tracker implant regeneration**

We have developed a technological and customisable service that can maximise plant efficiency by almost 30%

### - **Industrial automation applied to renewables**

We optimise the management and control of photovoltaic systems. With advanced monitoring, control and diagnostic systems, we improve operational efficiency and maximise energy yields

### - **Production of the Central Plant Controller (MV), Power Plant Controller (HV) of Master and Slave Panels for the control and management of solar trackers**

We design and implement regulatory compliance devices for plants in order to make them suitable for the provisions of the Regulatory Authority for Energy Networks and the Environment (ARERA)

In the past year HBA has regenerated over 100 MWPs and worked around 600 hours on site, achieving a 95 per cent success rate on the first job. In '23-'24 over 2,000 inverter refurbishments carried out.



## Renewable energy and electricity infrastructure

STE Energy is the company controlled by Alenia with distinctive and specialized expertise in high voltage systems, energy storage, hydroelectric and solar power.



STE Energy is an EPC contractor with a track record of +600 installations for 2 GW of installed capacity worldwide, a dynamic company whose development strategy is based on technological and geographical diversification and a strong commitment to innovation.

## Our services

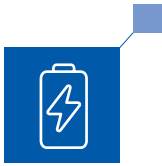
For our business lines we offer a wide range of services.

- We carry out activities as an **EPC contractor**, following each phase of the project, from design and procurement to construction and commissioning activities, and provide **Operation & Maintenance** services, through 24/7 remote assistance, real-time monitoring and complete plant management and maintenance.
- **The services and digital solutions** we provide distinguish our reality and complement Altenia's offer. We carry out network studies, power system analysis and specialized tests on high and medium voltage electrical systems, also developing digital automation and protection systems adapted to the customer's needs.
- Also in the digital field, our **eguardian platform** is a proprietary multi-technology software that integrates monitoring capabilities with those of analysis, transforming big data into smart data, thus facilitating the complete digitization of any type of renewable asset.

With 30 years of experience and more than 600 projects carried out in 30 countries around the world, STE Energy is today an internationally recognized player with over 1 GWp of installed hydropower and 2 energy storage plants built and managed.







# ENERGY STORAGE SYSTEMS

We provide design, procurement and installation services for Battery Energy Storage Systems (BESS) tailored to our customers' needs, offering advanced solutions for intelligent energy management.

Our systems allow the electricity produced to be stored and released when needed, providing grid stability and maximising operational efficiency in compliance with European energy management targets.

## Our services

### - **Project design**

We prepare all the documentation necessary for the construction of the system, from preliminary drawings to as-builts

### - **Procurement and logistics**

We manage all aspects of the procurement of materials needed for the construction of the plant and the logistics of the activities

### - **Site management**

Through dedicated project managers, we take care of all phases of on-site activities

### - **Tests and trials**

We ensure the proper functioning of the system by carrying out all the necessary checks



# ENERGY EFFICIENCY

We design tailor-made solutions for achieving energy efficiency.

We help companies identify specific areas for improvement to optimise the production chain and service delivery.

We support our customers in increasing their competitiveness, achieving the best balance between production and consumption and transforming outdated production systems into state-of-the-art systems that harmonise savings and revenue.

## Our services

### - Energy Diagnosis

We carry out in-depth energy audits using energy simulation models to optimise the production and management processes of individual departments or entire companies

### - Monitoring plans and diagnostic software

We process energy data in real time and provide predictive action plans using complex mathematical and statistical algorithms

### - Energy Performance Contract Interventions (EnPC)

We guide our customers in identifying integrated energy efficiency improvement measures, accompanying them in their design and implementation













## **Contacts**

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