



## | GRID & POWER UTILITIES

### SAFETY IN POWER GENERATION, TRANSMISSION AND DISTRIBUTION

At Salicru, we've been protecting the electricity grid against elements that can cause interruptions for six decades. Much like a nervous system, it is sensitive, interconnected and vulnerable to any disturbance, requiring constant layers of protection.

Our mission is not to mitigate failures, but to protect the foundation of the electrical system by anticipating risks that range from local micro-cuts to disturbances that affect critical infrastructure.

Our track record has positioned us uniquely within the energy ecosystem. We have first-hand knowledge of the vulnerabilities affecting each link in the chain, and it is precisely there that we take action.





In terms of generation, we work with technologies capable of stabilising voltages that can easily exceed 20–25 kV in both conventional and renewable power plants. Given that fluctuations typically occur at the initial stage of supply, we implement solutions that ensure a safe start-up and continuous operation, as well as a power quality that meets the highest industrial and regulatory standards. We also offer integrated solar energy solutions to enhance generation efficiency.

In the field of transportation, we work with high- and extra-high-voltage power lines ranging from 66 to 400 kV, where even the slightest deviation can have region-wide repercussions. We provide voltage transformation systems, uninterruptible power supplies and specialised power electronics designed to shield control centres, substations and internal network communications. Our mission is to ensure that minor auxiliary failures do not escalate into significant structural problems.

When it comes to distribution, at voltages ranging from 1 to 36 kV, the network approaches the point where the energy is converted into a service. This is the segment most vulnerable to atmospheric phenomena, overloading and load fluctuations. Our backup solutions—from UPS systems to stabilisers and rectifiers—support the operation of transformers, remote control systems and sensitive equipment, ensuring that homes, businesses, industries and essential services receive a stable, usable voltage.

Every device, every architecture and every technological advance we develop has a purpose: to ensure that electricity reaches its destination with the required quality and without interruption. Remote monitoring, redundant communications, and predictive analysis allow actions to be taken before the network suffers, transforming reactive maintenance into preventive maintenance.

## DISTURBANCES

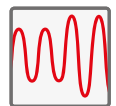
Disturbances occur very frequently at all stages of the electrical system.



Dropouts and blackouts



Sags and undervoltages



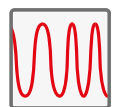
Surges and overvoltages



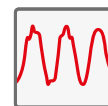
Harmonics



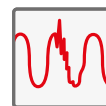
Voltage fluctuations



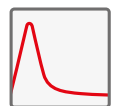
Flickers



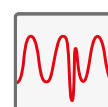
Noise waveform



Burst transients



Spikes



Notches

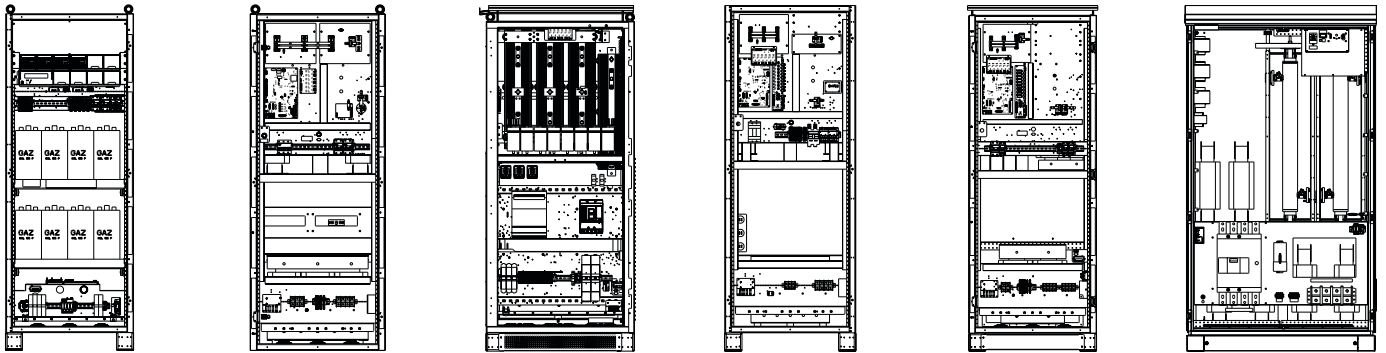
## CUSTOM SOLUTIONS

Customisation makes it possible to provide protection tailored to the specific needs of each customer, seamlessly guaranteeing the continuity and security of all their operations. In a world driven by electricity, having systems that ensure an uninterrupted, high-quality power supply is essential to prevent losses, breakdowns and associated risks. At Salicru, we understand these needs through more than six decades of experience and offer our engineering team to design solutions and respond to the most demanding market challenges. For this reason, our custom solutions are designed to perfectly adapt to the particular requirements of each project. We embrace flexibility as one of our

core principles and offer customisations that always incorporate in-house developments, as existing market options rarely cover the specific requirements of each customer in a uniform way. To achieve this, we develop solutions from scratch or adapt existing equipment, always under the strictest quality controls.

DC Systems are units that convert alternating current into direct current (rectifiers, chargers), or direct current into alternating current (inverters). These systems are capable of storing energy in a battery bank, providing continuity of DC supply or AC supply (via an inverter) without interruptions.

When rectifiers, chargers and inverters are integrated into a single unit, they form what is known as a DC System, allowing the connection of both AC- and DC-powered loads. In addition, these systems include a control unit to manage all parameters and communication ports to interface with the outside world, enabling integration into management software and allowing remote monitoring of the system's status, alarms, events and measurements. DC Systems guarantee flawless operation without unexpected power outages. Depending on requirements, and with the option of a modular design, they can grow as needs increase, optimising the Total Cost of Ownership (TCO).



## REFERENCES



*Electrical grids are increasingly facing more disturbances, resulting from imbalances between supply and demand and from intermittent generation.*



### DC POWER-S

DC power systems



### DC POWER-SD

DC/DC power systems



### DC POWER-L

Thyristor rectifiers 10 A - 800 A



### CS-IS

DC power converters



### EMI3

Servomotor voltage stabilisers from 5 kVA to 5 MVA



### RE3

Electronic voltage stabilisers from 300 VA to 200 kVA

