



Saft Li-ion energy storage smoothes grid integration for Acciona Energia's large PV power plant



A Saft Intensium® Max 20E containerized system has been deployed as part of the Eurogia+ ILIS project to demonstrate grid-connected energy storage for an industrial scale photovoltaic (PV) plant in Spain.

Acciona Energia meets the challenges of integrating PV generation

Global clean energy operator Acciona Energia has more than 20 years experience in wind, hydropower, photovoltaics and other forms of clean energy. It aims to be at the forefront of new developments in electric power systems as they evolve from centralized generation towards a more decentralized format, both in terms of

generation, distribution and supply. Acciona Energia anticipates that future grids, in addition to incorporating increasing levels of intermittent renewable energy resources, must also include energy storage systems (ESS) and active demand management.

Acciona Energia and Saft join forces in Eurogia+ ILIS project

Acciona Energy and Saft have joined forces in a three-year Eurogia+ European framework program of support for clean energy technologies, aimed at improving the viability of photovoltaic and other renewable energy power plants. ▶

Case study



SAFT

- ▶ The result is the ILIS (Innovative Lithium-Ion System) project, also including DT2E (electronic systems) and Oxymontage (battery container).

The ILIS project demonstrates the technical and financial benefits of using containerized energy storage, conversion and management systems to provide grid ancillary services as well as power management to help smooth plant output.

Megawatt scale energy storage supports clean energy technologies

ILIS is now operational in Acciona Energia's 1.2 MW PV plant at Tudela (Navarra, northern Spain).

ILIS is investigating intelligent centralized management and control solutions based on parameters such as meteorological data and electricity pricing.

The system also sends real-time information to the grid operator (REE), therefore optimizing the plant's integration within the wider power network.

For the energy storage element, Saft has deployed a turnkey Intensium® Max ESS.

Its key features include:

- Li-ion storage technology, characterised by long life, high energy-efficiency and zero maintenance
- Rated for 730 V, 1 MW power and 560 kWh energy storage capacity
- Housed in a six-meter industrial container
- Easily scalable as operational needs change
- Control and communication interface with main plant control centre
- Active temperature control and fire suppression systems

Knowledge in designing, manufacturing and controlling large scale ESS is a key contribution

"With the ever increasing contribution of renewables in our electricity mix, it is of crucial importance to improve the electrical behaviour of renewable power plants. It was a natural decision to work with Saft, since in addition to the high energy-efficiency and reliability of their Li-ion batteries, their containerized solution is ideal when it comes to addressing environmental constraints of field deployment. Furthermore, Saft's knowledge in designing, manufacturing and controlling large energy storage systems is a key contribution to the partnership."

Miguel Arrarás

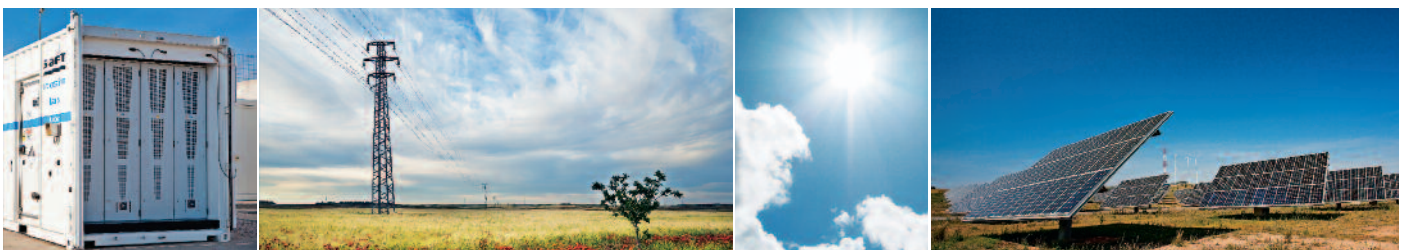
Solar PV Development Director
Acciona Energia



Power regulation capability for Tudela PV plant

With the Saft Li-ion ESS and the advanced control system in place and connected to the grid, Acciona Energia can now control and manage its Tudela PV generation plant from its worldwide control centre in Sarriguren. This offers a number of operational benefits:

- Better integration of renewables into the grid
- Primary regulation depending on grid voltage and frequency
- Control of plant power fluctuation ramp rates
- Improved grid stability and security of backup power
- Provision of ancillary services
- Higher profitability of clean energy generation infrastructure
- Reducing the Levelized Cost of Energy (LCOE)



Saft

12, rue Sadi Carnot
93170 Bagnole - France
Tel. : +33 1 49 93 19 18
Fax : +33 1 49 93 19 64
www.saftbatteries.com

Document N°21862-2-0313
Edition: March 2013

Data in this document is subject to change without notice and becomes contractual only after written confirmation.

Photo credits: Saft, Acciona Energia, Fotolia.
Rouge 485 - D019/7

© Saft – Société par Actions Simplifiée au capital de 31 944 000 €
RCS Bobigny B 383 703 873