

# CASE

# STUDY

9MWh Energy Storage & STATCOM  
Bardzour - La Reunion Island – Indian sea



The Bardzour plant is the largest project announced in the group of 16 solar farm projects awarded in 2012 under the French CRE tender for a total of 50 MW of solar photovoltaic production capacity with storage in Corsica and French overseas departments.

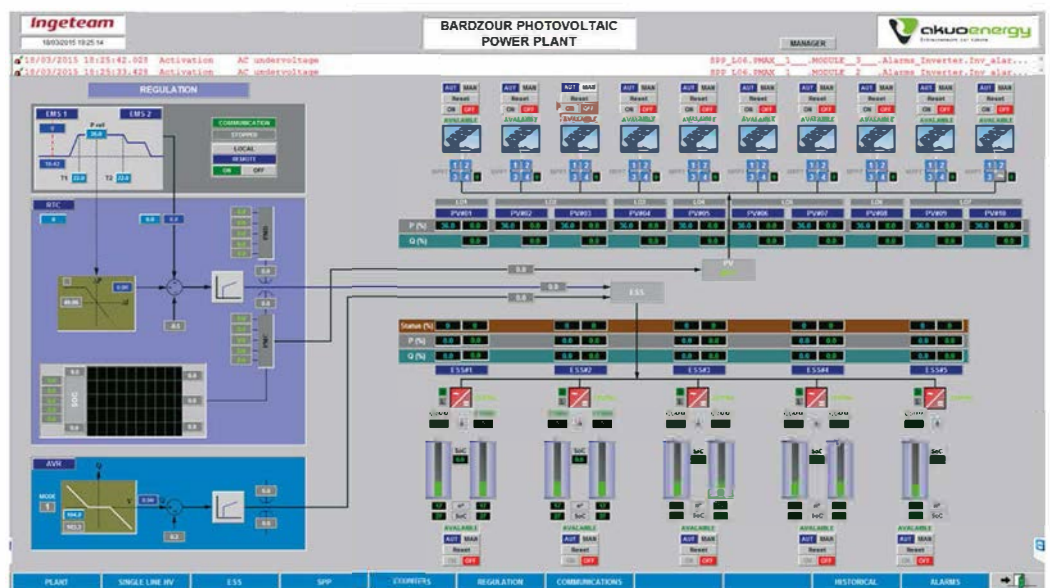
This project, promoted by the French company Akuo Energy, is located on La Réunion island in the Indian Ocean. Its 9 MW production capacity equals the average consumption of 13,500 people.

In terms of the storage system, Ingeteam is responsible for supplying the plant's power electronics equipment, EMS (Energy Management System), AAC (Advanced Automation Controller), medium-voltage switchgear, installation, commissioning, training and an operation and maintenance contract which will assure the availability and performance of the battery system, with a storage capacity of 9 MWh. Ingeteam is also supplying all of the plant's photovoltaic inverters.

## Applications:

- PV plant power firming
- Frequency Regulation
- Voltage Control
- Grid code fulfillment

## STATCOM & Energy Storage System with Lithium Ion Batteries



## INGETEAM® Equipment Supplied for the Installation

- 5 x INGEGRID SH-B : Power Conversion System (PCS)
  - 600V 1.558KVA 1.040kW liquid cooled
  - 10 x INGECON : PV Inverters
    - 400V 917kW 400V air cooled
- 1 x INGESYS EMS : Energy management system
- 1 x INGESYS IT : Local SCADA

## Services Provided

- Electrical and electronic system specification.
- System containers specification.
- Power flow simulation and modelling
- Electromagnetic modelling and simulations
- Substation automation system configuration and integration with the utility's SCADA.
- SCADA monitoring system configuration
- Comprehensive system tests in the Ingeteam Power Electronics laboratory , including battery rack provided by the battery manufacturer.
- Protection system.
- Commissioning.

## Other

- 1 x 20 ft air-tight container to hold PCS.
- 1 x 40 ft container to hold PV nverters.

The system was installed by AKUO Energy in 2014.

Electrical storage linked to renewable generation plants in weak grid environments, as is the case of La Réunion island, permits greater renewable generation integration and equips the electrical system with enhanced management capacity thanks to the delivery of stable, predictable power, regardless of the intermittency of the renewable resource, thus minimising deviations from the power forecast.

In this sense, the control system supplied by Ingeteam is a key element in guaranteeing the efficient management of energy flows in the system and to the grid, in accordance with demanding technical specifications. Deviations in production are penalised. Hence, Akuo Energy will depend on a precise energy management system as well as on the functioning of a stable system over time to assure an income and ROI in line with its objectives.