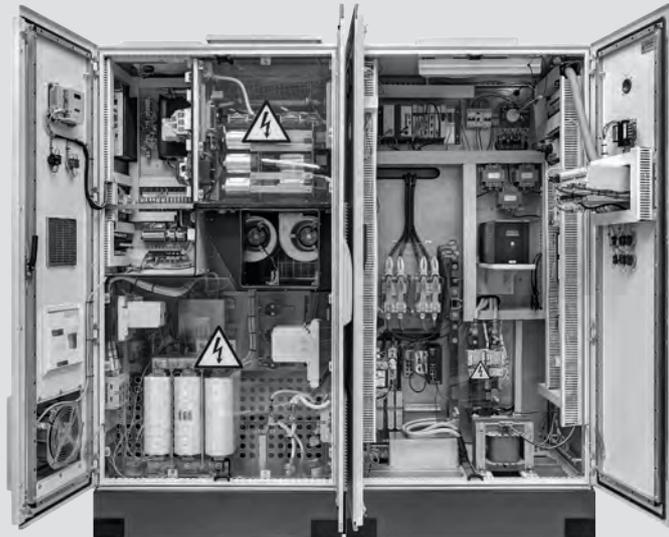


# CASE

# STUDY

105kWh Storage & STATCOM  
Smart City Málaga



SmartCity Malaga is a project for developing smart grid research, lead by the company Endesa Distribución.

Within the project, Ingeteam has participated in the deployment of a storage system in the Trade Fairs and Congress Center of Malaga.

## STATCOM & Energy Storage System with Lithium Ion Batteries



### Applications:

#### For the end user:

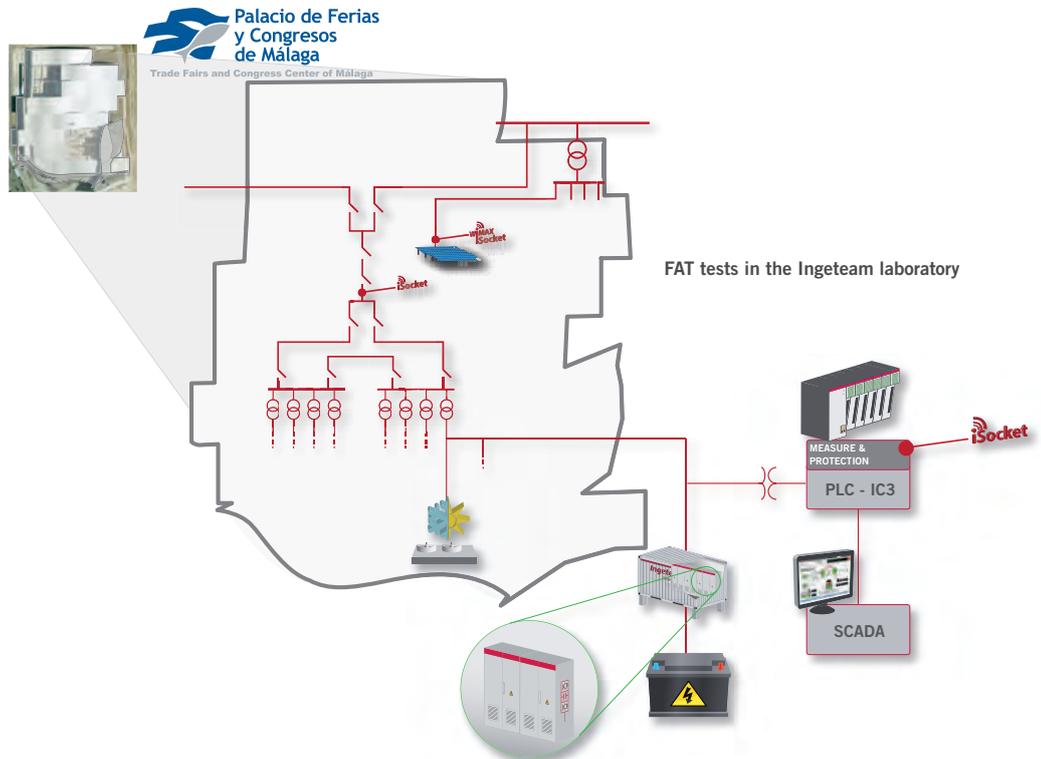
- System load control (peak shaving)
- Power factor regulation.
- Stabilization and management of the power output from the existing PV plant (100kW).

#### For the grid operator:

- Voltage control.
- Power flow control depending on the energy price.



[www.smartcitymalaga.es](http://www.smartcitymalaga.es)



[www.ingeteam.com](http://www.ingeteam.com)  
[ingegrid.info@ingeteam.com](mailto:ingegrid.info@ingeteam.com)

**Ingeteam**

**Converter  
Scada**

**Control**

**Other**

**INGETEAM® Equipment Supplied for the Installation**

- 1 x INGEGRID SH-B Power Conversion System (PCS), air cooled, LV 200 (400V 156kVAs 100kW)
- 1 x INGESYS IC3: Control equipment (PLC) programmed as an Energy Management System (EMS).
- 1 x INGESAS Gateway: Control equipment including the Energy Factory Suite software for communication with the control centre using the IEC61850 standard.
- 1 x INGESAS Gateway: Control equipment including INGESYS IT software and local SCADA.
- 2 x INGESAS Gateway: Control equipment such as 61850 gateway.
- 4 x Cabinets each including 15 units 12,8V-138Ah lithium ion batteries to provide 105 kWh.

**Services Provided**

- Electrical and electronic system specification.
- System container specification.
- Power flow simulation.
- Energy Management System (EMS) configuration.
- Substation automation system configuration and integration into the telecontrol centre using the IEC61850 standard.
- SCADA monitoring system configuration
- Comprehensive system tests in the Ingeteam Power Electronics laboratory.
- Commissioning.

**Others**

Ingeteam's contribution has been to design, manufacture and test a smart storage system which has been installed in the existing medium voltage transformer substation, and to develop an Energy Management System (EMS) which adapts the solution to each application in the medium-voltage grid.

The system was installed by Acciona Instalaciones in the Trade Fairs and Congress Center of Malaga, the main objective being to control the system's load (peak shaving) and stabilise the existing photovoltaic generation plant's voltage output.

The technical data in this catalogue is subject to change without prior notice. CS22IPT01\_A