

Ingeteam

ABOUT US

Ingeteam is a company specializing in energy conversion.

We develop:

- Power electronics.
- Control electronics.
- Electric motors, generators & submersible pumps and motors.
- Electrical engineering and generation plant engineering.

We operate in the following sectors:

- Energy: wind, solar, hydropower, biomass, geothermal, diesel and gas, integrated service of operation & maintenance.
- Power transmission and distribution.
- Steel industry.
- Marine.
- Rail.



OUR SECTORS



Wind Power



PV Power



Hydropower



Thermal Electric
(Solar Thermal and Biomass)



O&M Services



Power Transmission and Distribution



Energy Storage



Marine and Ports



Steel & Metals



Water



Oil & Gas



Mining



Energy Efficiency



Thermal Power Generation



Railway Traction



E-Mobility



Smart City

ENERGY DIVISION



Wind Energy

Accumulated Power **50 GW**



Solar Energy

Accumulated Power **17.5 GW**



Energy Storage

Accumulated Energy **1 GWh**

COMPLETE SOLUTIONS

Always

Power Converter

Single / Dual



SINGLE INVERTER



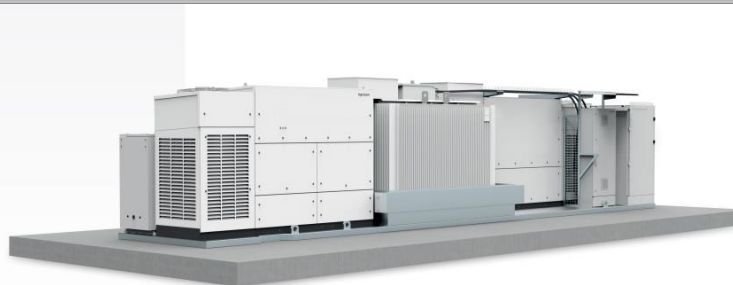
DUAL INVERTER



IN-HOUSE

Preferred

MV Power Conversion System



INTEGRATOR

Optional

Local SCADA

EMS / Power Plant Controller



IN-HOUSE

Batteries

Battery Containers

Integration/BOP

O&M



INGETEAM BESS Energy

FLEXIBILITY

Third
Companies

Consultancy

Civil Works

Electromechanical Installation



FLEXIBILITY

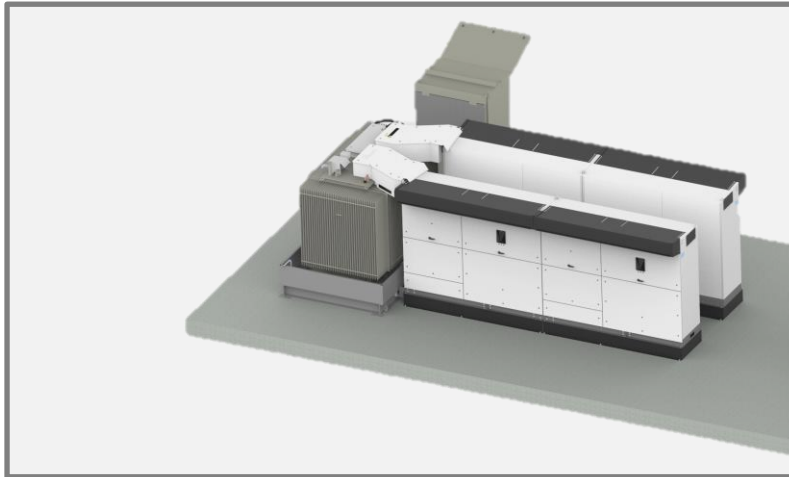
Power Conversion Systems
+ Battery integration
+ Power Plant Controller
+ S C A D A
+ **Commisioning and O&M**



SOLUTIONS



DESIGN LIFETIME (10-20y)



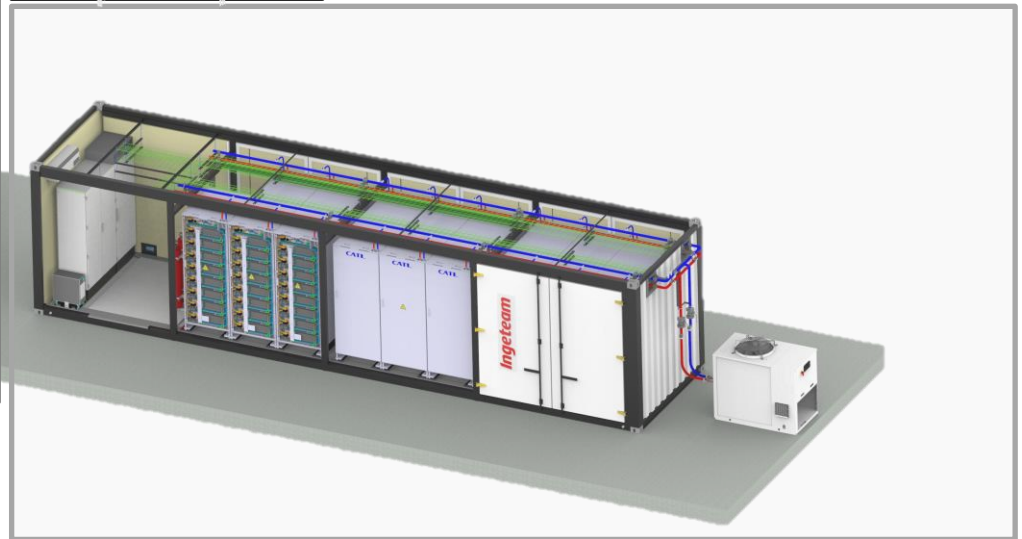
POWER CONVERSION STATION

Power
Grid Connection – MV Solution
Functionalities



CONTROL

Functionalities SW



BATTERY

Energy
Degradation

- Lifetime
- Usage – Cycling
- Usage – Energy Throughput

Outdoor Turnkey Solution up to 7.2MVA BSeries

LV bushing for close-coupled connection between the PV inverters and the transformer

Two dual solar PV inverters

MV switchgear (RMU)

MV output (IP54)

LV panel (IP55)

Auxiliary Services Transformer

Oil deposit

Hot-dip galvanized steel skid

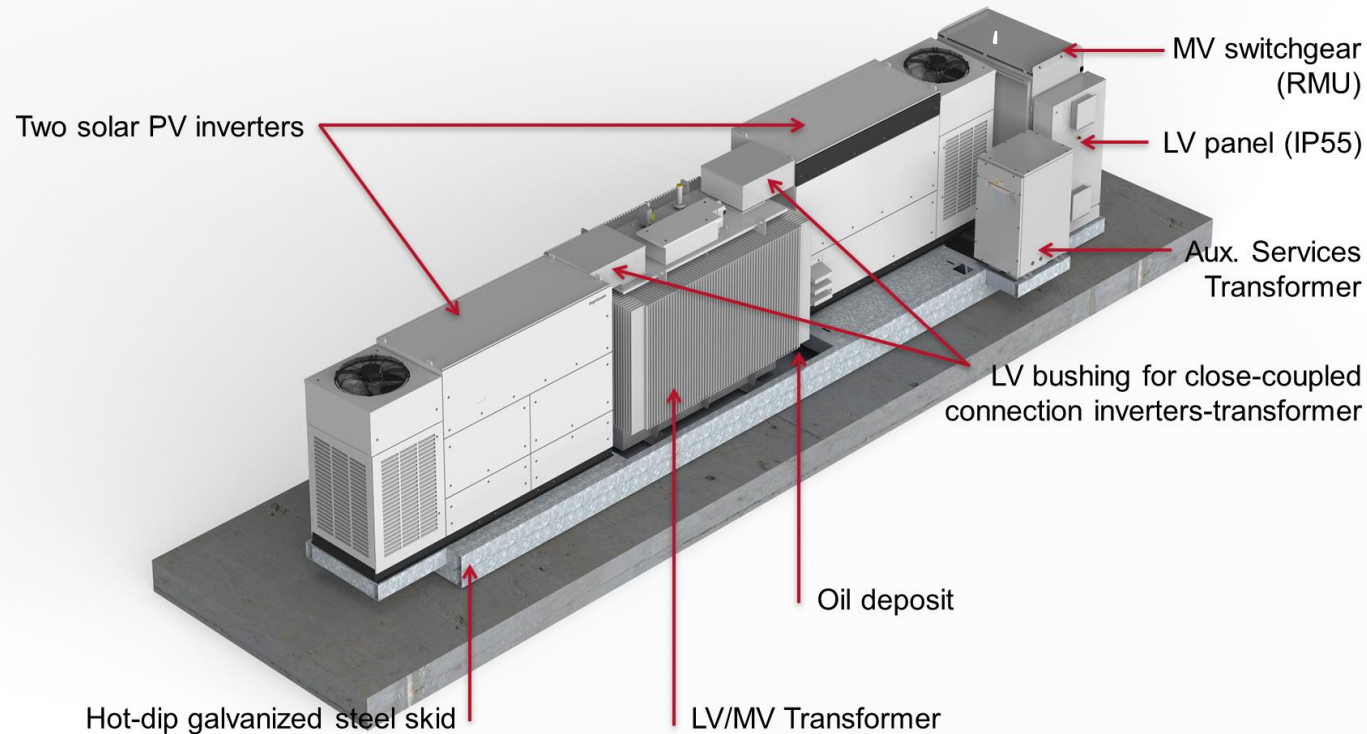
LV/MV Transformer

Outdoor Suited IP56

PV + Storage MV Solution

SOLUTIONS

Outdoor Turnkey Solution up to 7.4MVA CSeries



Outdoor Suited IP65

PV + Storage MV Solution

FLEXIBILITY



OPERATING MODES

GRID SERVICES



Grid Forming

Critical loads & stand alone



Frequency Regulation

Primary/Secondary Control



Capacity Firming

Power Reserve



Power Quality

Voltage Regulation & STATCOM

T H D

RENEWABLE PENETRATION



Load Leveling

Time Shifting



Peak Clipping

Curtailment



Load Balancing

Consumption/Generation

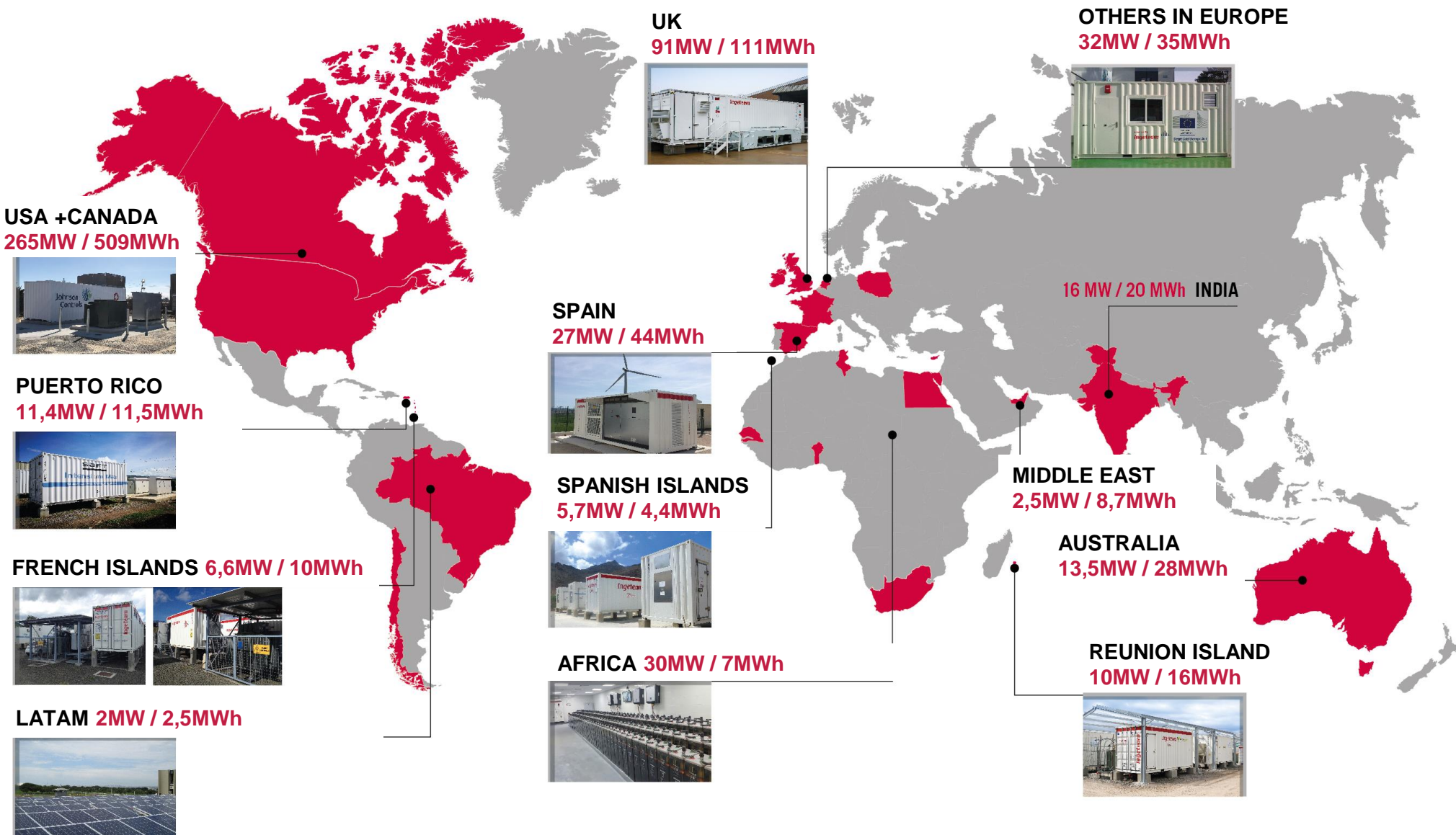


EMISSIONS REDUCTION

Normatives & Standards

STORAGE REFERENCES

>1 GWh worldwide



INGETEAM STORAGE References

Case Study : PUERTOLLANO – SPAIN

EU largest Green H2 Production Plant

- 5MW - 4h Energy Accumulation
- Water Cooled Batteries – LFP (CATL)
- Installation grid-connected

100MW PV Power

20MWh LFP batteries

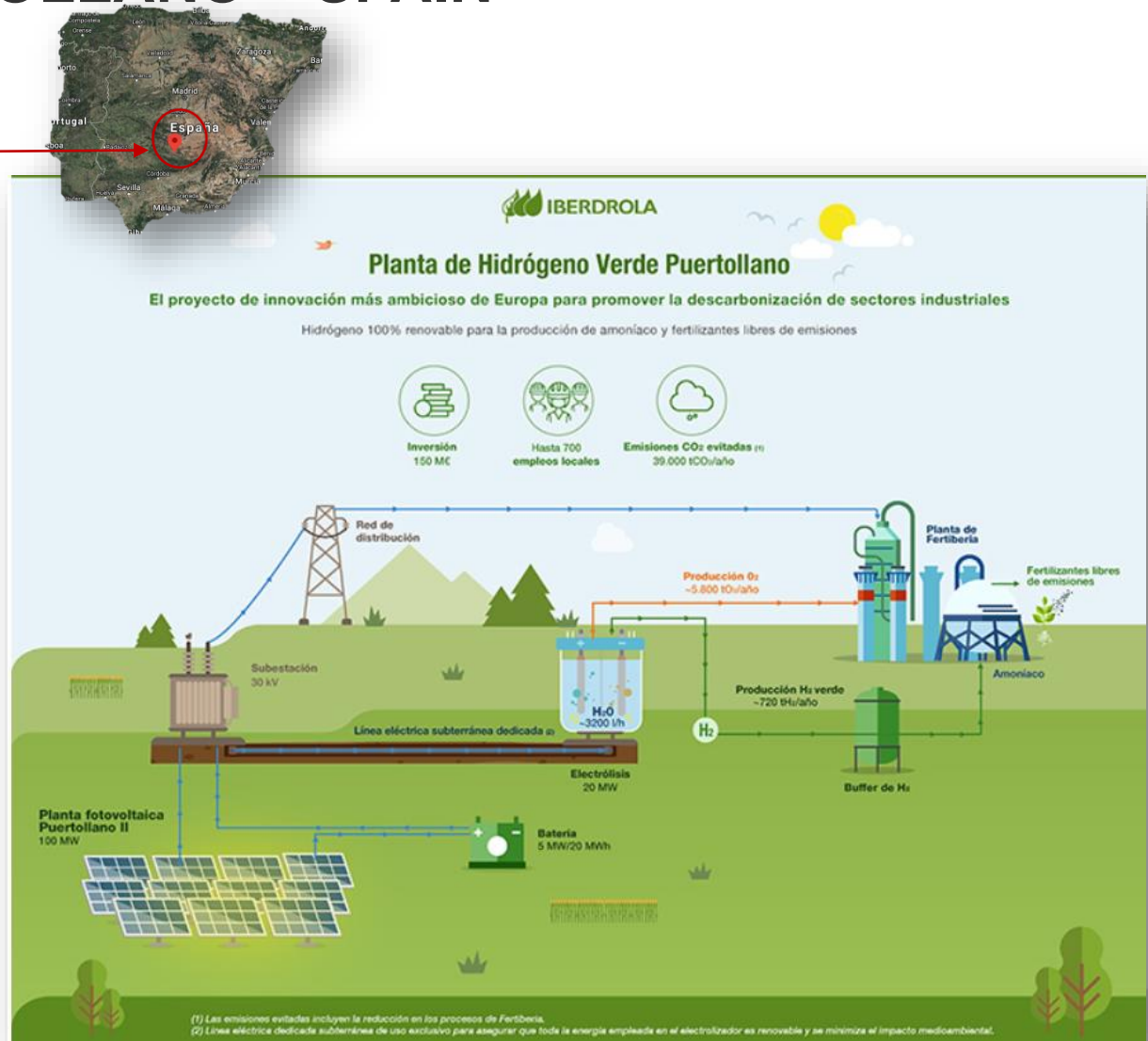
20MW Green H2

Ancillary Services

- Renewable Penetration & Management
- Frequency Regulation Market

Grid Support - TSO

- WindFarm services >150,000households
- Load Growth – Load Balancing
- Offgrid System – Black Start



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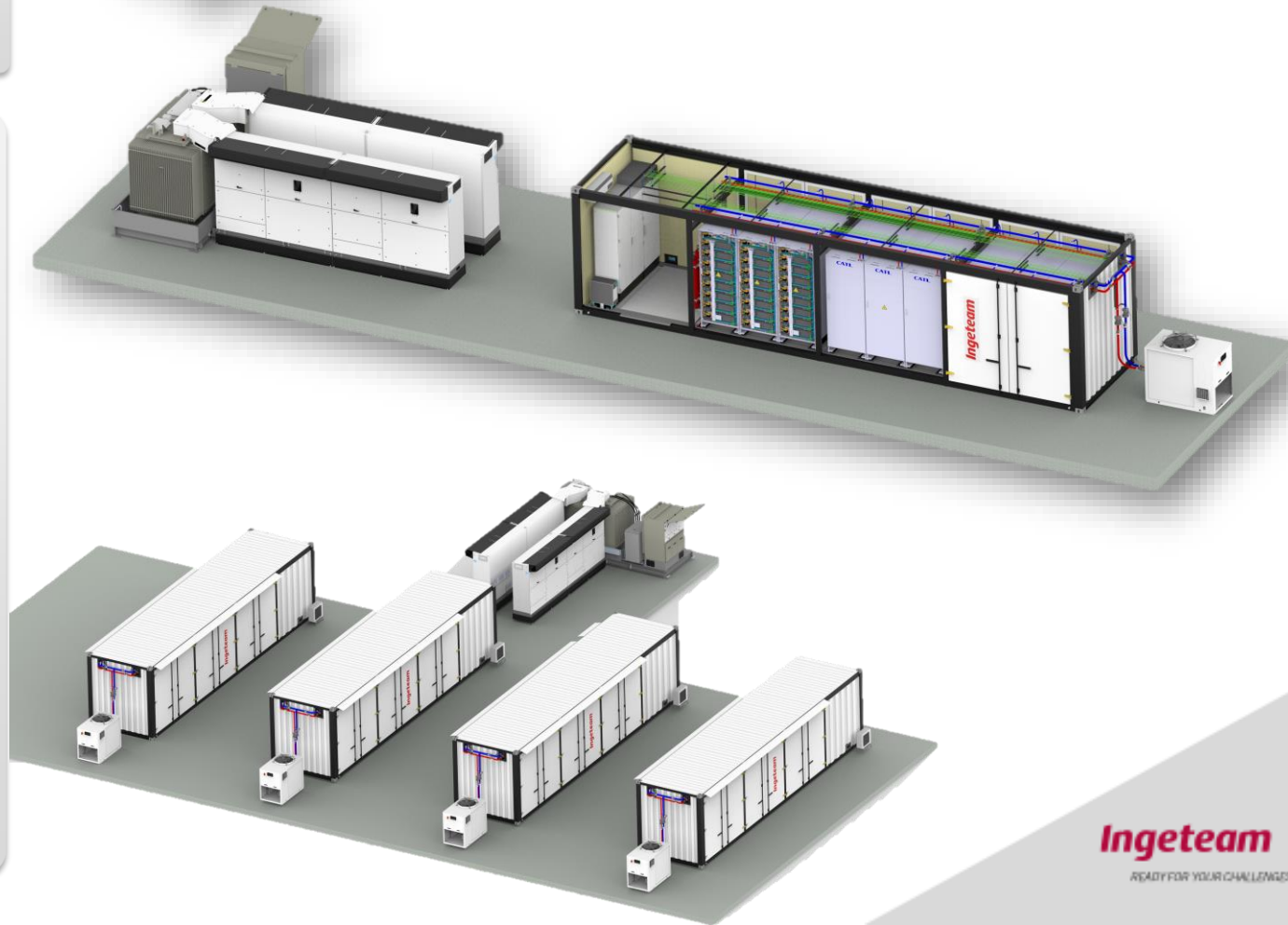
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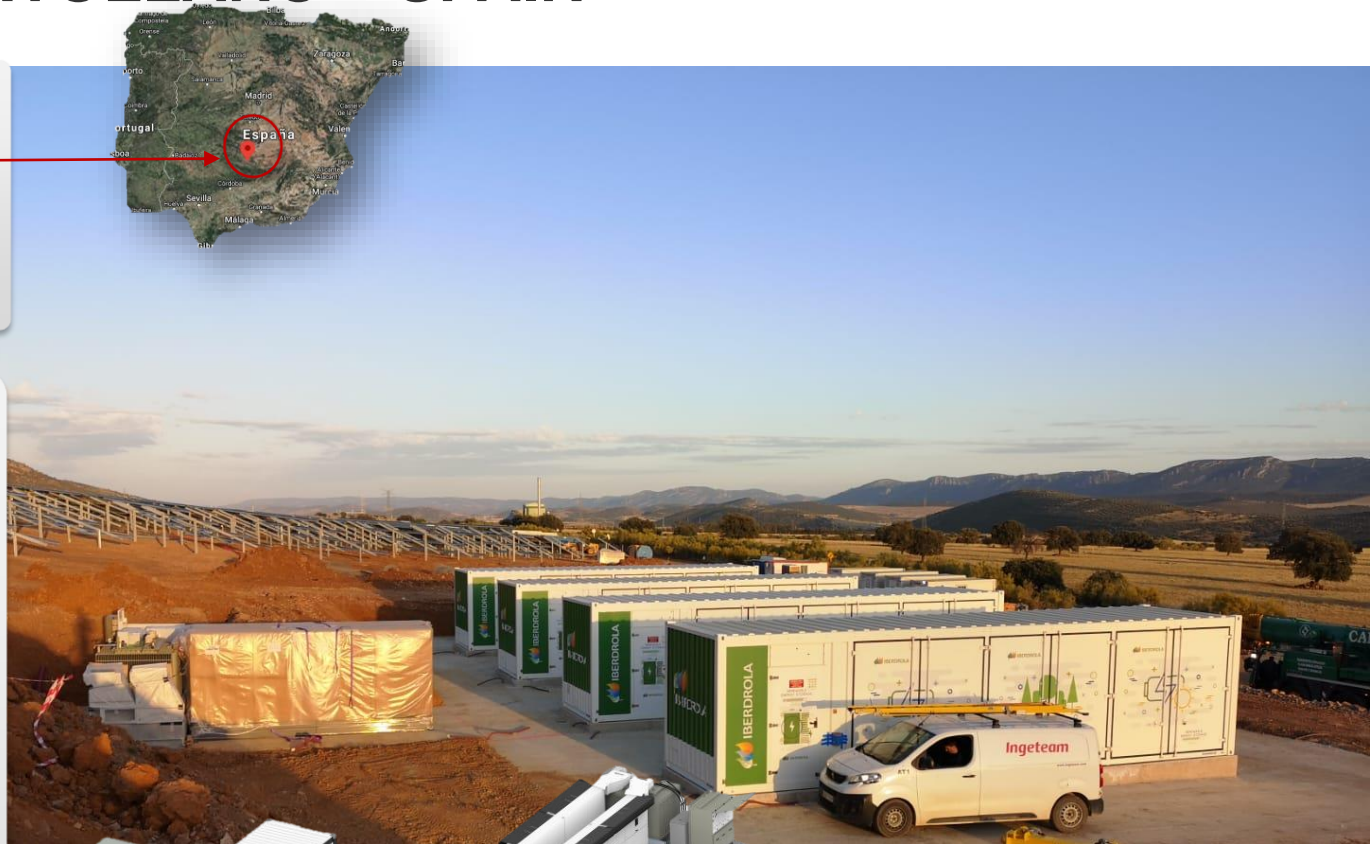
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INGETEAM STORAGE References



Case Study : Arañuelo II – SPAIN

Spain DCDC BESS largest system

- 3MW – 3h Energy Accumulation
- Air Cooled Batteries – LFP (CATL)
- Installation grid-connected

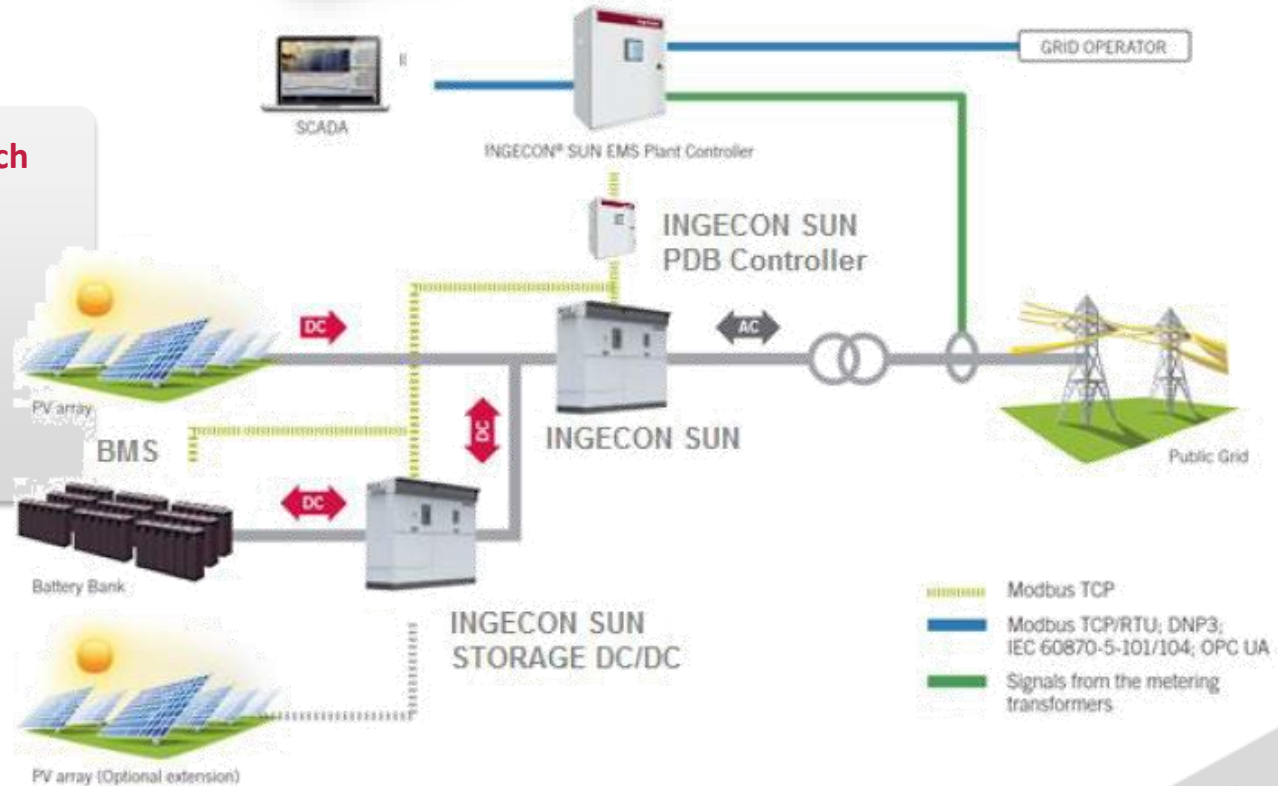


40MW PV Power – Bifacial Panel Tech

9MWh LFP batteries

Ancillary Services

- PV Peak Clipping



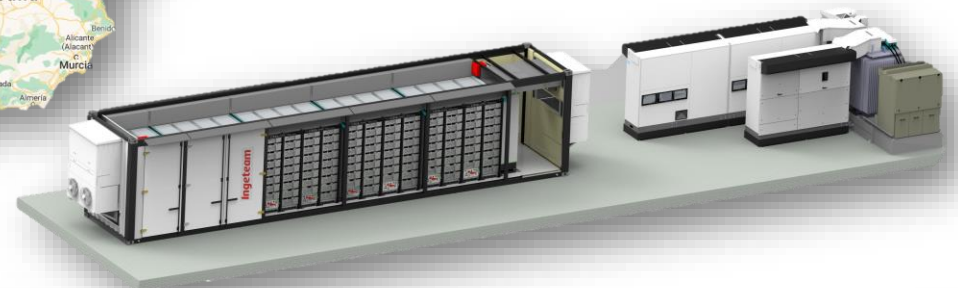
INGETEAM STORAGE References

CATL

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Ingeteam
READY FOR YOUR CHALLENGES

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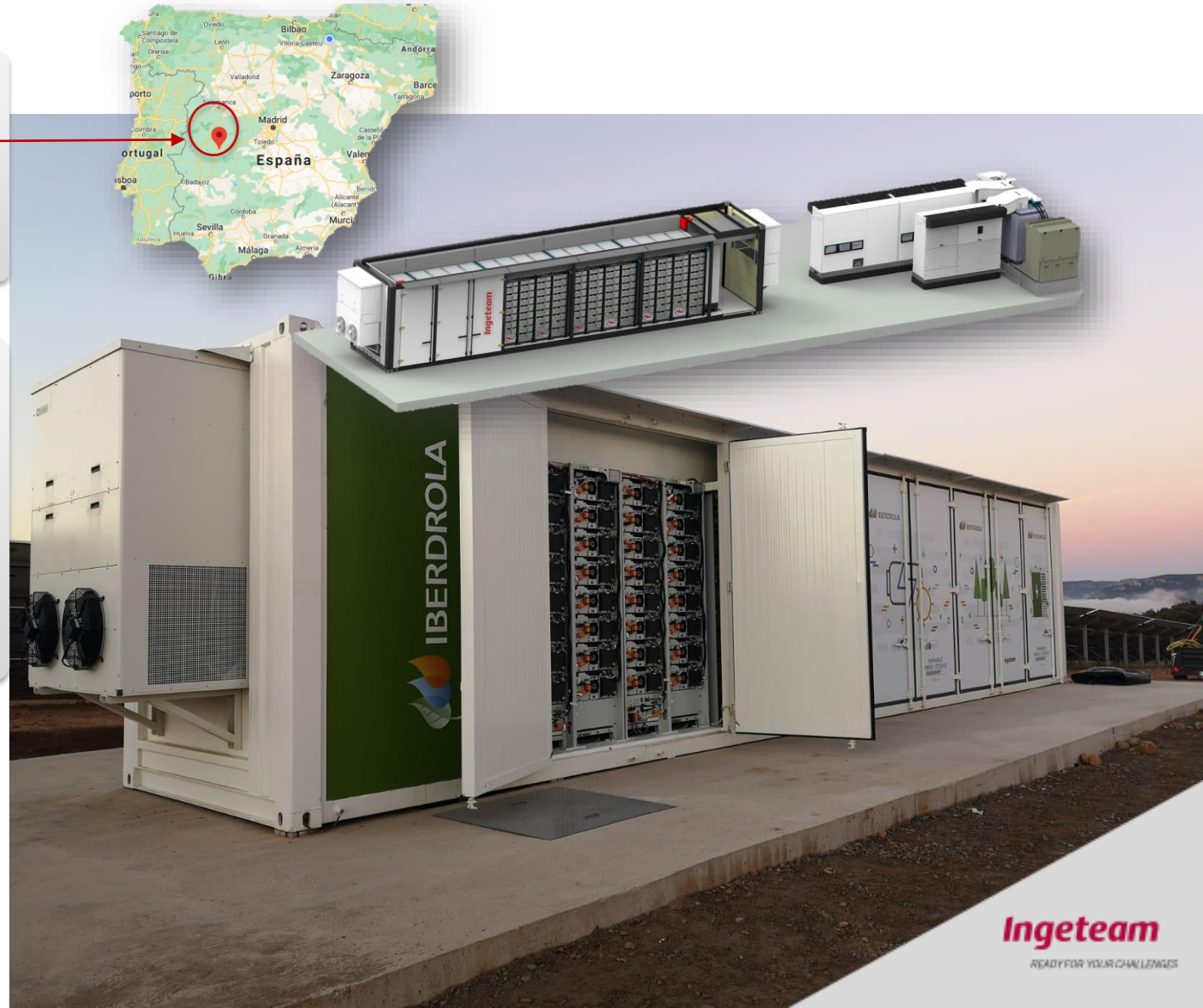
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INGETEAM STORAGE Complete Solutions



Más de **10 años** de experiencia en instalaciones utility-scale



1 GWh instalados en todo el mundo en subestaciones de generación y distribución

Ingeteam

READY FOR YOUR CHALLENGES