

**ACTIVITY FIELDS**



SOLAR THERMAL



BIOMASS



FOSSIL FUELS



**Comprehensive Management of Power Plants**

Ingeteam provides comprehensive and customized solutions in the field of power generation, integrating Ingeteam range of products to maximize the profitability of the projects.

**EPC / turnkey projects**

- Project management.
- Engineering.
- Equipment supply.
- Construction.
- Commissioning.

**Services**

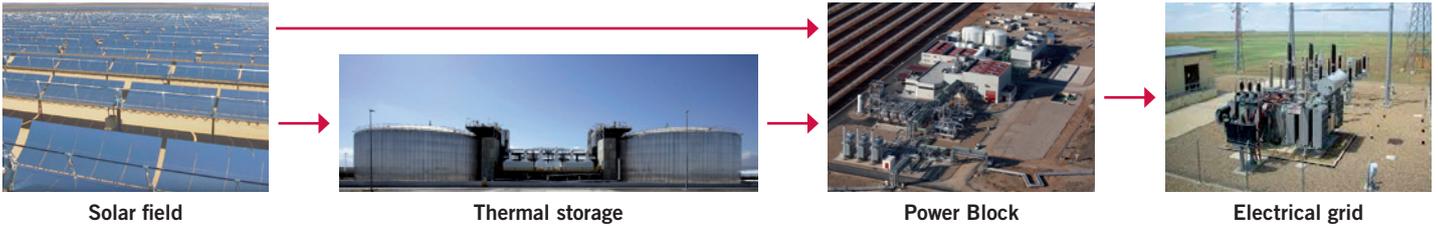
- Feasibility studies.
- Conceptual engineering.
- Basic and detail engineering.
- Owner engineering.
- Construction supervision.
- Commissioning.
- Operation and maintenance.

**SUCCESS PROJECT**

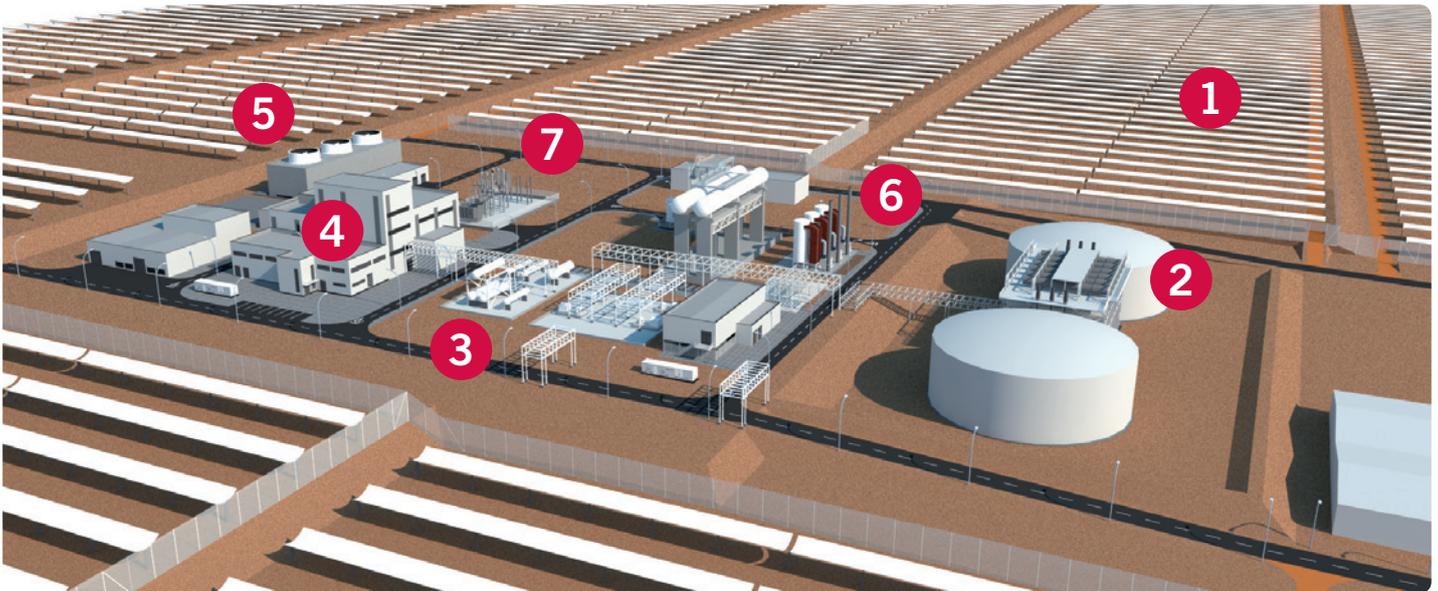
Location	<b>Palma del Río (Spain)</b>
Surface	<b>270 ha</b>
Net Reflective Surface	<b>744,480 m<sup>2</sup></b>
Electrical Power	<b>2 x 55 MWe</b>
Annual Electrical Generation	<b>230 GWh/year</b>
Avoided CO2 emissions	<b>223 kt/year</b>
Fuel Saving	<b>19,800 toe/year</b>
Construction Peak	<b>700 staff</b>

## Solar Thermal: electrical generation

## POWER PLANTS



- 1. Solar Field:** Reflective surface concentrate solar radiation along parabolic trough receiver tubes, heating heat transfer fluid, named HTF to desired temperature.
- 2. Thermal Energy Storage System:** Excess of solar thermal energy not used by steam generation system, is stored in molten salts tanks. This system allows increasing autonomy and dispatching ability of the power plant.
- 3. Steam Generation System:** Thermal power collected by solar field is used to generate steam superheated.
- 4. Steam Turbine - Generator:** Steam expands in the turbine with the purpose to generate electricity.
- 5. Cooling System:** Power plant has a cooling system that can be dry or wet as per availability of water resources and environmental conditions.
- 6. HTF Boiler:** It is used to hybridize with fossil fuel plant and prevent freezing of the HTF.
- 7. Electrical Switchgear:** It allows electrical generation evacuation.



## ADVANTAGES

- Local Content:** CSP technology allows that a large part of the components and equipments are manufactured locally.
- Dispatchability:** Unlike other renewable energy technologies, CSP power plants with thermal energy storage ensure electrical generation predictable and manageable, independent of solar radiation and able to provide constant electrical generation (24/7).