

STAGE-STE

WP11 Acciona Energía capabilities & Infrastructures



STAGE-STE WP11

ACCIONA ENERGÍA CAPABILITIES & INFRASTRUCTURES

Engineering capability for the task 11.1.1:

Acciona Energía will collaborate with the partners in plant engineering of new solutions developed with ORC cycles. It will evaluate costs and compare performance with higher temperature Rankine cycles as existing plants in operation.

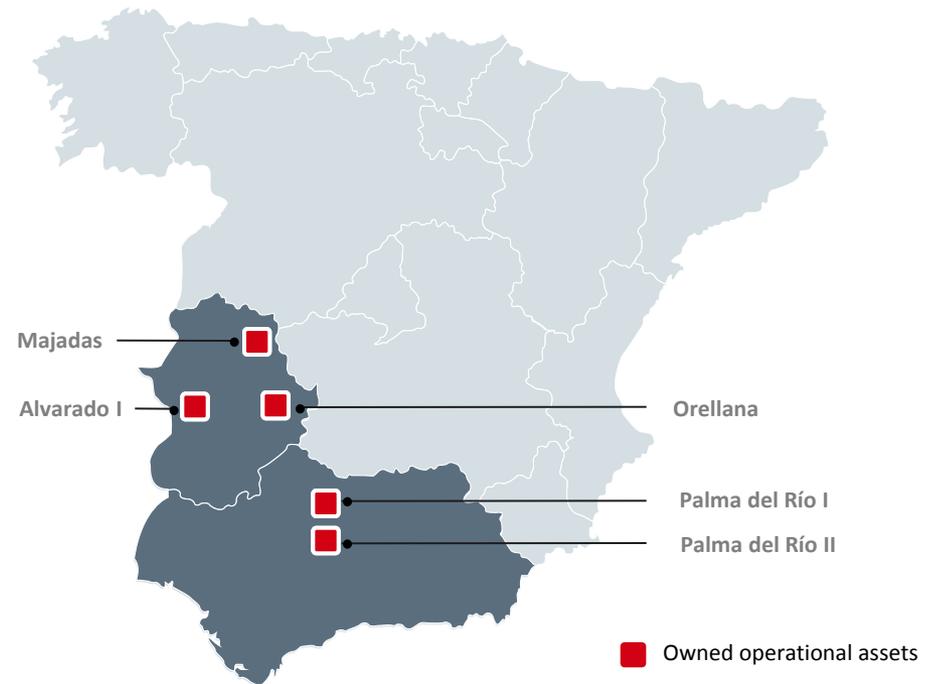
Spanish CSP plants for tasks 11.2.1 and 11.2.2:

Acciona is developing procedures to use instrumentation on the solar field to calculate performance and compare it with dynamic simulation tools to evaluate also the plant efficiency degradation.

Acciona will develop testing procedures but also will analyse procedures and equipment developed by other partners to compare performance

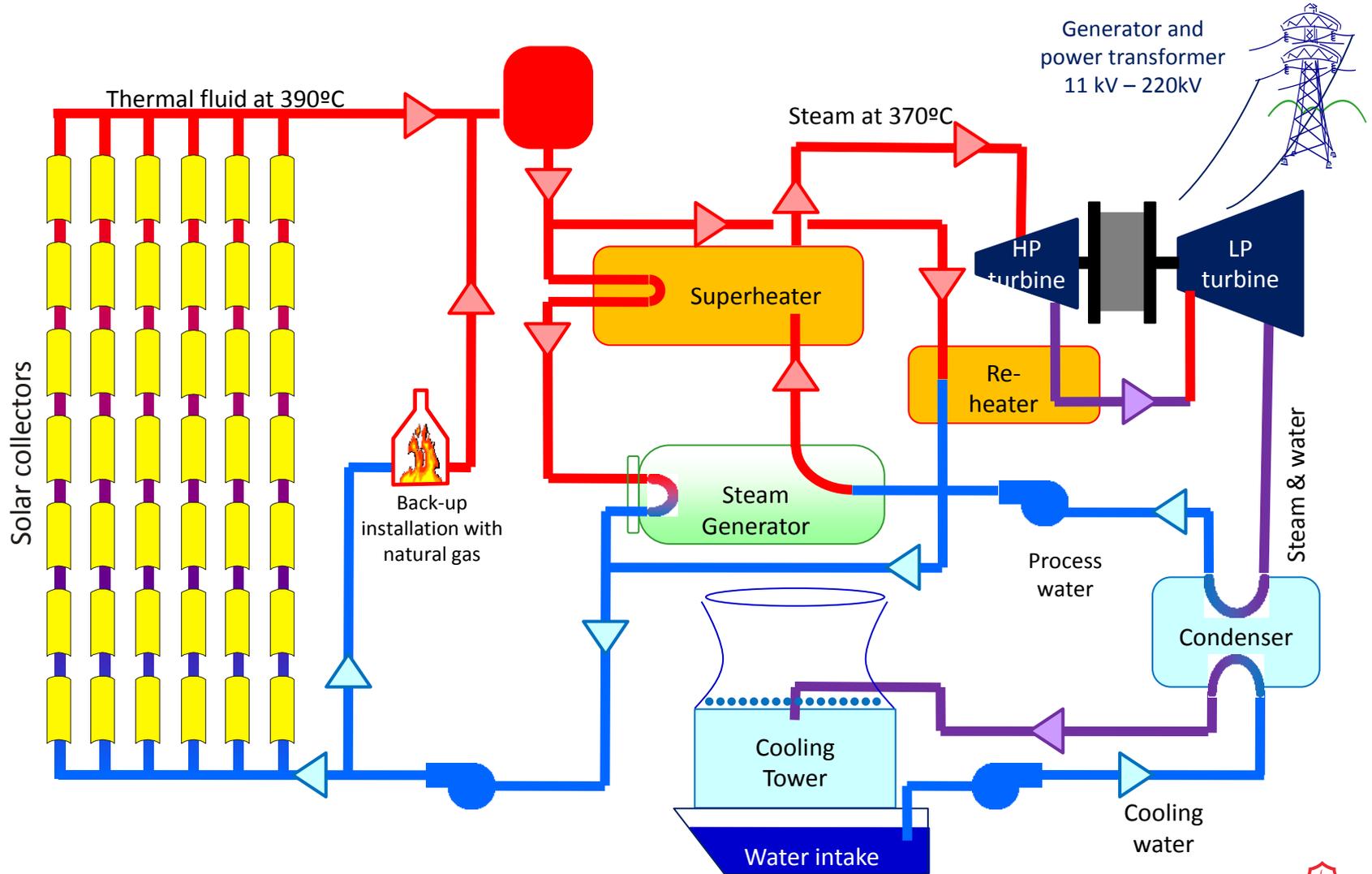
CSP. Location

- **250 MW in operation**
5 plants in Spain
- **In-house technology**
in parabolic trough collectors



All plants have 50 MW capacity

Plant diagram



Solar field characteristics

In each plant:

- 4 solar fields
- 99 Loops
- 792 collectors + actuator
- 9,504 space frame
- 190,080 mirrors
- 370,240 m² capture surface



Power Block characteristics

In each plant:

- 2 steam generation lines
- Turbine
- Feedwater tank
- Heat transfer pumps
- Feedwater load pumps
- 3 gas boilers - 16.6 MWt

- 2 feedwater pre-heaters
- 2 steam generators
- 2 superheaters
- 2 intermediate reheaters between HP and LP turbines

2009. Alvarado (Badajoz, Spain)



2010. Majadas (Cáceres, Spain)



2010. Palma del Río II (Córdoba, Spain)



2011. Palma del Río I (Córdoba, Spain)



2012. Orellana (Badajoz, Spain)

