NOORo III

Power,
Oil & Gas

- Concentrated solar power plant with central tower receiver and molten salt heat storage technology that allows it to produce electricity after sundown, covering the 5 hours of peak electricity demand.
- Part of NOORo (Ouarzazate, Morocco), the largest complex of concentrating solar power (CSP) in the world.

NOORo III is the natural evolution of Gemasolar (Seville), the first commercial plant in the world of this type and in which SENER carried out the design, led the construction and was the supplier of the technology.

In CSP, SENER is world leader not only in in the number of projects it has under its belt, the majority turnkey projects, but also for the development of proprietary technology applied to these plants, where it is also able to carry out their operation and maintenance.

Tower height **250 m**

Total reflective area **1.3 Mm²**

Surface area of the solar field **550 Ha**

Turbine power capacity **150 MWe**

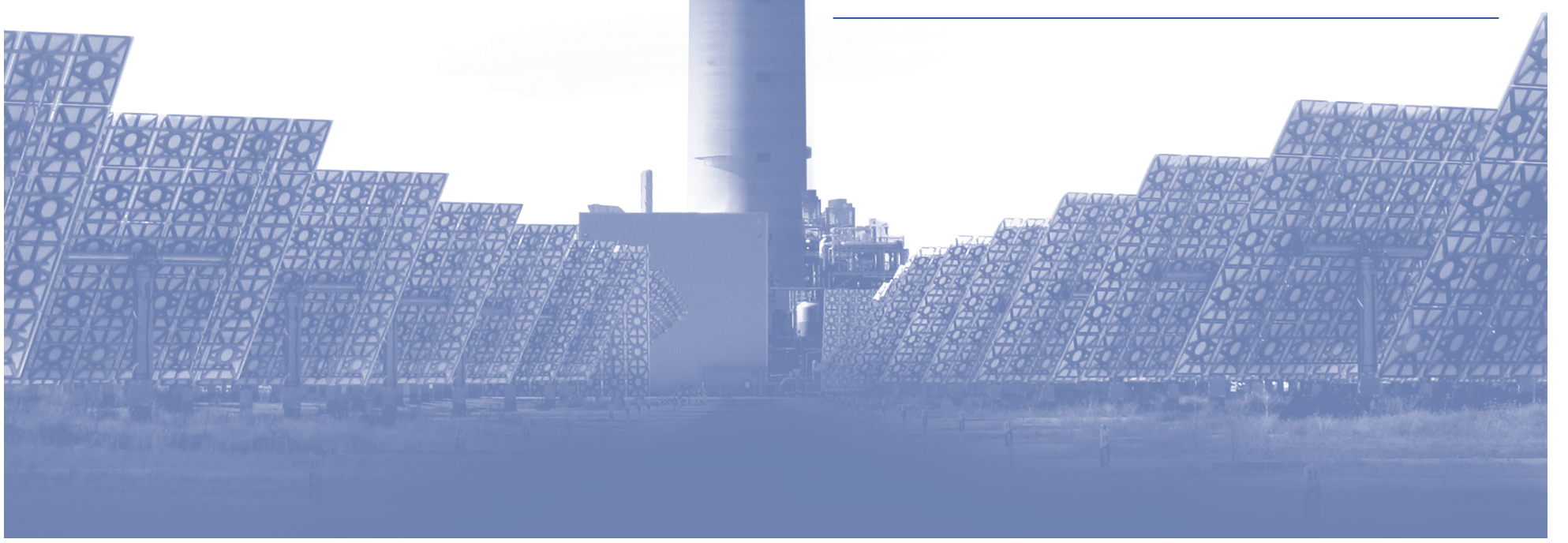
Number of heliostats **7.400**

660 MWt Receiver thermal power

7.5 h Thermal storage capacity
(equivalent hours of turbine operation)

130.000 t/año CO_2 emission savings

120.000 hh Homes receive this clean and safe power



SENER
The way to see the future

masen
endless power for progress

www.poweroilandgas.sener

NOORo III
How it works

Power,
Oil & Gas

1 Heliostats
Solar light is reflected by the heliostats towards the receiver, located on top of the tower.

2 Cold salts tank
Molten salts, at 300ºC, are pumped from the cold molten salt tank to the receiver.

3 Tower
Inside the receiver, molten salts are heated up to over 550ºC before being stored in the hot molten salt tank.

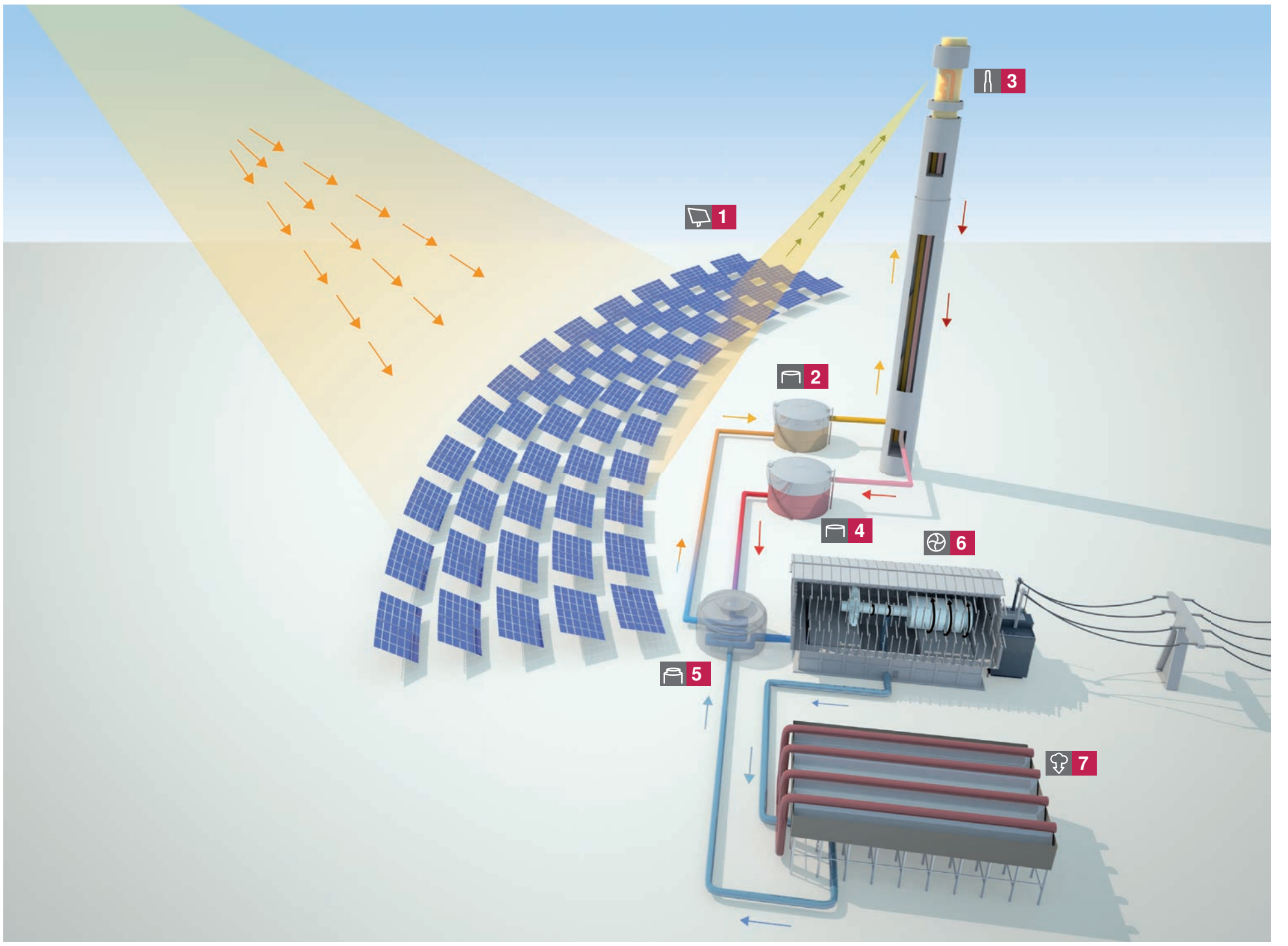
4 Hot salts tank
In this tank the salts are stored during the day to generate electricity at times of peak demand.

5 Steam generator
From the hot tank the salts are delivered to the steam generation system transfer their heat, reducing their temperature.

6 Turbine
The steam produced under high pressure is used to move the turbine. The turbine is connected to an alternator that generates electric power.

7 Air cooled condenser
The air cooled condenser provides the necessary cooling for condensing the steam that leaves the turbine. Using an air cooled condenser, reduces the water consumption of the plant in more than 80%.

8 Electric Generator
The electricity is delivered to a transformer to be injected into the distribution grid.



SENER
The way to see the future

masen
endless power for progress

www.poweroilandgas.sener