

## CUSTOMER

- ▶ Cobra Thermosolar Plants, INCE
- ▶ Prime contractor: Preditec
- ▶ Amount: 165.000 €
- ▶ Implementarion: 2013



## PROJECT AND SOLUTION

Solar Reserve is a leading global developer of solar energy projects which include electricity generation using solar thermal energy and photovoltaic panels. In addition, Solar Reserve has patented an advanced technology that enables integrated energy storage within its system, which solves the issues arising as a result of power failures experienced with other renewable energy resources.

Solar Reserve's Crescent Dunes facility, located in Nevada, is the first utility-scale facility in the world to have advanced molten-salt power tower energy storage capabilities. The project delivers enough steady, reliable electricity from solar energy

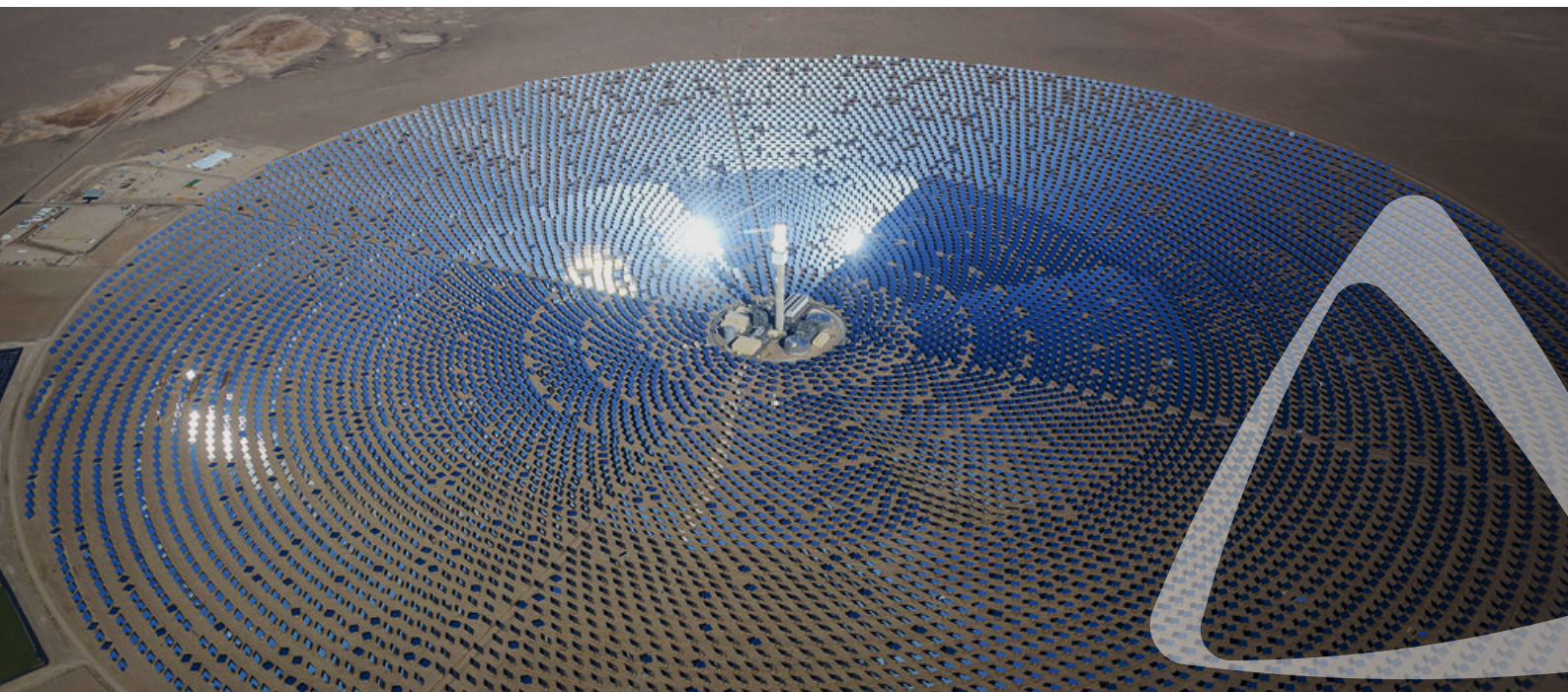
to 75,000 homes in Nevada during peak demand periods, day and night, regardless of weather conditions.

The project became fully operational in late 2015 and delivers 110 megawatts of energy and stores another 1100 megawatt-hours, all thanks to the only utility-scale molten salt power tower in the world. It is this storage capacity that enables this facility to generate more than double the overall annual production (kilowatt-hours) of an equivalent solar or photovoltaic energy project.

Solar Reserve is the US clean energy project with the most advanced, reliable on-demand energy storage system in the industry. It has no requirement for natural gas or oil back-up, so it is completely emission free. It represents real progress in the development of applied technology to renewable energy.

The design of this project significantly reduces the use of water for cooling the plant by using a low-water hybrid cooling system, and removes 300,000 tons of CO<sub>2</sub> from the atmosphere each year.

The solution put forward by Grupo Álava covered the continuous monitoring of equipment critical for operation without



interrupting the thermosolar plant. This equipment includes: recirculation pumps, condensate pumps, water pumps and molten-salt pumps.

In addition to full machinery diagnostic capabilities, the system includes the integration of vibration processing parameters into the distributed control systems (DCS) and motor control systems (MCS) to monitor and, where necessary, trip machinery.

The objective was to provide the client with a fully functional, bespoke system. To achieve this, Grupo Álava integrated sensors of different brands and models; supplied monitoring modules built into

cabinets ready to be installed in the plant; provided engineering services for the monitoring project; configured monitoring and communication systems; carried out FAT, validation checks of the facility and existing wiring and SAT; provided training in managing the system; and installing the alarms.

The huge significance of these systems stems from the fact that they are critical to the proper functioning of the plant, as any unplanned or catastrophic downtime of the molten-salt system could cause the salt to solidify in the pipes and pumps. If this were to occur, the affected facility would need to be dismantled and rebuilt.



## ” Think Big

We aim to be a **leader**: providing clients with the latest technologies and accompanying them throughout their projects to deliver **value-added** products, backed up by experienced professionals and **excellent** service.

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