

## European Solar and Energy Storage Solutions

# First flight of solar molten salt power generation



## Overview

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The Crescent Dunes Solar Energy Project is a solar thermal power project with an installed capacity of 110 megawatt (MW) and 1.1 gigawatt-hours of energy storage located near Tonopah, about 190 miles (310 km) northwest of Las Vegas. Crescent Dunes is the first commercial concentrated solar power (CSP) plant.


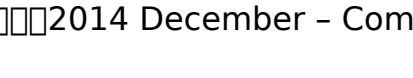
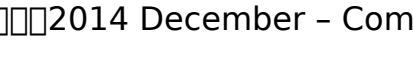
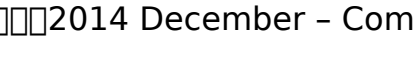
In late September 2011 Tonopah Solar Energy received a \$737 million from the (DOE) and the right to build on public land. The capital stack included \$170,000,000 in .

Crescent Dunes began operation in September 2015, but went off-line in October 2016 due to a leak in a molten salt tank. It returned to operation in July 2017. While its average monthly production was expected to exceed 40,000 .

• • • .

• . SolarReserve, LLC. Archived from on August 14, 2017. Retrieved April 28, 2015. • . Concentrating Solar Power Projects. (NREL).

The project's was , which carried out the engineering design, procured the equipment and materials necessary, and then constructed and delivered the facility to Tonopah Solar Energy. The project includes 10,347 that.

•  2012 January - The solar tower under construction as seen from a commercial airliner. The eponymous Crescent Dunes are at lower right.  •  2014 December - Completed site as seen from a commercial airliner. 

1. ^ . CleanTechnica. February 22, 2016. Retrieved June 15, 2016. 2. ^ (Press release). globalnewswire. December 31, 2021. Retrieved July 17, 2022.

[5] [6] Crescent Dunes is the first commercial concentrated solar power (CSP) plant with a central receiver tower and advanced molten salt energy storage technology at full scale (110 MW), following the experimental Solar Two and Gemasolar in Spain at 50 MW. As of 2023, it is operated by its new owner; ACS, and in a new contract with NV Energy .

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At the end of 2019 the worldwide power generation capacity from molten salt storage in concentrating solar power (CSP) plants was 21 GWh el. This article gives an overview of molten salt storage in CSP and new potential fields for decarbonization such as industrial processes, conventional power plants and electrical energy storage.

The facility is touted as being the first solar power plant that can store more than 10 hours of electricity, which translates into 1,100 megawatt-hours, enough to power 75,000 homes.

The first commercial molten salt power tower, Gemasolar (19.9 MW e) was built by Torresol (Masdar/Sener Joint Venture) in Seville Spain to generate electricity 24/7.

By 1996, a 10 MWe power system named Solar Two marked the first system using molten salt as both heat transfer and energy storage fluid. The introduction of molten salts has yielded numerous benefits for CSP plants.

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### Advancements and Challenges in Molten Salt Energy Storage for Solar ...

First of all, MS storage in solar thermal power generation systems can efficiently store excess solar heat during the day and release it at night or in overcast weather, ...

### World's First Utility-Scale Molten Salt Fresnel Concentrated Solar

First in the world, the 50MW molten salt Fresnel CSP plant begins commercial operation. Pioneers molten salt for Fresnel Concentrated Solar Power. This project is the first ...



### Sub-Saharan Africa's First CSP Molten Salt Tower , Investec

According to Bernard Geldenhuys, Senior Transactor in the Power and Infrastructure team at Investec Bank, it will also boast a number of other firsts. "Not only will it be sub-Saharan ...

### The first voyage energy-saving: the first voyage of photothermal power ...

The first flight energy saving in the trough, molten salt tower demonstration and disc Stirling three major photothermal technology fields have layout, is currently the only domestic enterprises to ...



## Gemasolar, the First Tower Thermosolar Commercial Plant with Molten ...

Molten salt storage is commercially available after it was demonstrated in the Solar Two project from 1995-1999 and its near term advancements include planned up scaling, better alternative ...

## Solar Two: A Molten Salt Power Tower Demonstration

Solar Two is a utility-led project to promote the commercialization of solar power towers by retrofitting the Solar One pilot plant with a molten salt system. The project is being cost shared ...



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