



World's largest concentrated solar plant switches on in the Sahara

By [Phoebe Parke](#), for CNN

🕒 Updated 1055 GMT (1855 HKT) February 8, 2016

Photos: Morocco bets on solar power

A new concentrated solar plant in Morocco will be the world's largest when completed. It could produce enough energy to power over one million homes by 2018 -- lowering carbon emissions by an estimated 760,000 tons per year.

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Photos: Morocco bets on solar power

The construction of the plant cost \$765 million and is expected to have a capacity to generate 160 MW.

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Photos: Morocco bets on solar power

Solar mirrors at the Noor 1 concentrated solar power plant outside the central Moroccan town of Ouarzazate slowly follow the sun as it moves across the sky during the day.

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Photos: Morocco bets on solar power

On the edge of the Sahara desert the sea of metal mirrors capture the sun's rays and use it to heat a liquid which, when mixed with water reaches 400 degrees Celsius.

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Photos: Morocco bets on solar power

The steam produced from this process drives a turbine and generates electrical power.

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Photos: Morocco bets on solar power

Moroccan King Mohammed VI inaugurated the plant on 4 February 2016. He talks here with the French minister for Ecology, Sustainable Development and Energy, [Segolene Royal](#).

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Photos: Morocco bets on solar power

The complex, opened in February 2016, is the first of several phases. Morocco is investing heavily in renewable energy to reduce its dependency on fossil fuels.

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Photos: Morocco bets on solar power

The plant uses concentrated solar power technology which is more expensive to install than photovoltaic panels, but able to

store energy for nights and cloudy days.

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Photos: Morocco bets on solar power

Morocco's environment minister Hakima El Haite walks in front of a solar array in 2015 that is part of the Noor 1 solar power plant, which opened in February 2016.

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Photos: Morocco bets on solar power

Even at night, the plant will be able to provide energy, thanks to the power of salt. A cylinder full of salt is melted by the warmth from the mirrors, and stays hot enough when the sun goes down to provide up to three hours of power.

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Photos: Morocco bets on solar power

This plant is expected to increase the share of renewable energy in total electricity generation from 13% to 42%.

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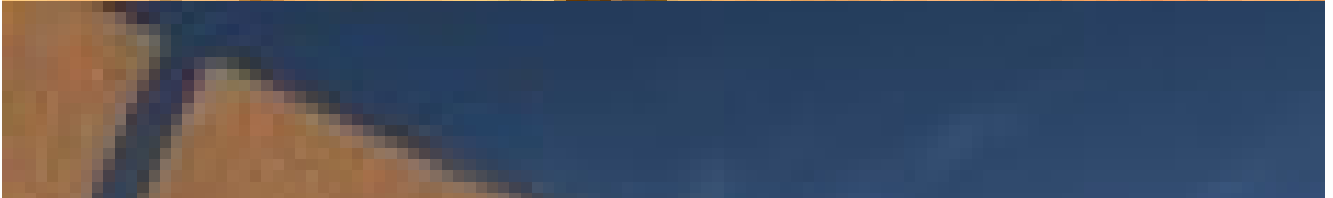
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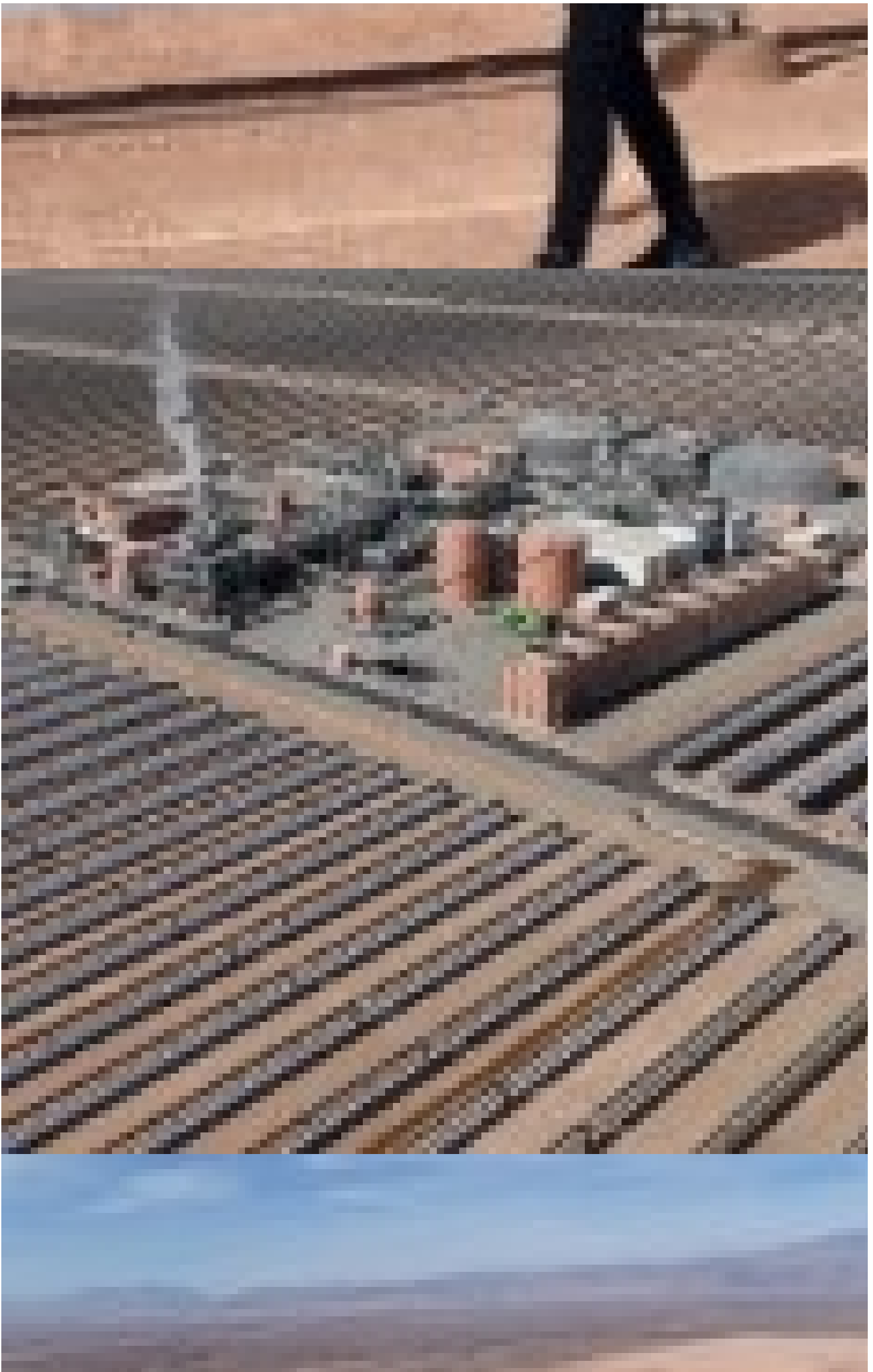














Story highlights

World's largest concentrated solar power plant opens

Project could power one million homes by 2018

(CNN) — Morocco has switched on what will be the world's largest concentrated solar power plant.

The new site near the city of Ouarzazate -- famous as a filming location for Hollywood blockbusters like "Lawrence of Arabia" and "Gladiator" -- could produce enough energy to power over one million homes by 2018 and reduce carbon emissions by an estimated 760,000 tons per year, according to the [Climate Investment Funds](#) (CIF) finance group.

As His Majesty Mohammed VI of Morocco pressed a button on 4 February 2016, the first phase of the three-part project was set in motion.

Harnessing the power of salt

The solar plant, called the Noor complex, uses concentrating solar power (CSP) which is more expensive to install than the widely used photovoltaic panels, but unlike them, enables the storage of energy for nights and cloudy days.

Mirrors focus the sun's light and heat up a liquid, which, when mixed with water, reaches around 400 degree Celsius. The steam produced from this process drives a turbine and generates electrical power.

A cylinder full of salt is melted by the warmth from the mirrors during the day, and stays hot enough at night to provide up to three hours of power, [according to World Bank](#), who partially financed construction of the plant

through a \$97 million loan from the Clean Technology Fund.

"With this bold step toward a clean energy future, Morocco is pioneering a greener development and developing a cutting edge solar technology,"



Africa has tremendous potential for solar generation that remains largely untapped.

Sameh Mobarek, World Bank project manager

said [Marie Francoise Marie-Nelly](#), World Bank Country Director for the Maghreb.

"The returns on this investment will be significant for the country and its people, by enhancing energy security, creating a cleaner environment, and encouraging new industries and job creation."

Setting an example

Related Video: How solar power lights up Africa 00:58

Imported fossil fuels currently provide for 97% of Morocco's energy need, the World Bank [says](#) . As a result the country is keen to diversify and start using renewable energy.

This goal was one of the reasons that Morocco was chosen to host the next United Nations climate change conference (COP 22) in November 2016, [according to the CIF](#).

An aerial view of the solar mirrors at the Noor 1 concentrated solar power plant

"Africa, in general, and North Africa in particular, have tremendous potential for solar generation that remain largely untapped," Sameh Mobarek, Senior Counsel and World Bank's project manager told CNN.

"Morocco's leadership in this area may provide the model for other countries to follow in pursuing development of their energy sectors in a sustainable manner."

Lasting impact

As well as lowering carbon emissions and dependence on fossil fuels, this plant is expected to increase the share of renewable energy in total electricity generation from 13% to 42%, according to [CIF](#).

It is also hoped that the project will positively impact the surrounding area. Approximately 583,000 people live in Ouarzazate town 10km (6.2 miles) from the site.

The poverty rate there is 23% but the hope is that the cleaner energy and better supply will reduce the occurrence of flickering lightbulbs and [malfunctioning hospital equipment](#).

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