

# **Comoros Photovoltaic Container DC Power Supply for Cement Plants**





## Overview

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Can a solar power system save CO<sub>2</sub> in cement industry?

Concentrated solar power system is designed for cement industry. Substitution of required thermal energy ranging from 100% to 50% is studied. 7600 heliostats with 570 ha land required for 50% conventional energy replacement with solar energy. Selected conventional cement plant could save 419 thousand tons of CO<sub>2</sub> annually.

Can a cement plant use solar heliostats?

Scaling up solar reactors, transportation system for raw and calcined material, and storing of calcined materials are the major barriers. Conventional cement plant that is situated in a location with a DNI value of more than 438 (W/m<sup>2</sup>) can use this solar design model. It must have adequate land for installing a large number of heliostats.

Can a solar cement plant run continuously?

There is no way that a solar cement plant can run continuously throughout the whole solar day. Therefore, several assumptions/constraints and modifications are considered and included in this model. The model is considered a solar calciner, constructed and tested at the German Aerospace Centre (DLR).

Can a conventional cement plant be used for solar thermal applications?

A conventional cement plant (Kotputli Cement Works (KCW), an UltraTech Cement Limited manufacturing unit) at Kotputli, Jaipur, Rajasthan, was investigated for solar thermal application. According to Indian Minerals Yearbook 2020, the plant produced 2.37 million tons, while the production capacity of the plant is 4 million tons.



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CONTAINERIZED SOLAR COMOROS

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