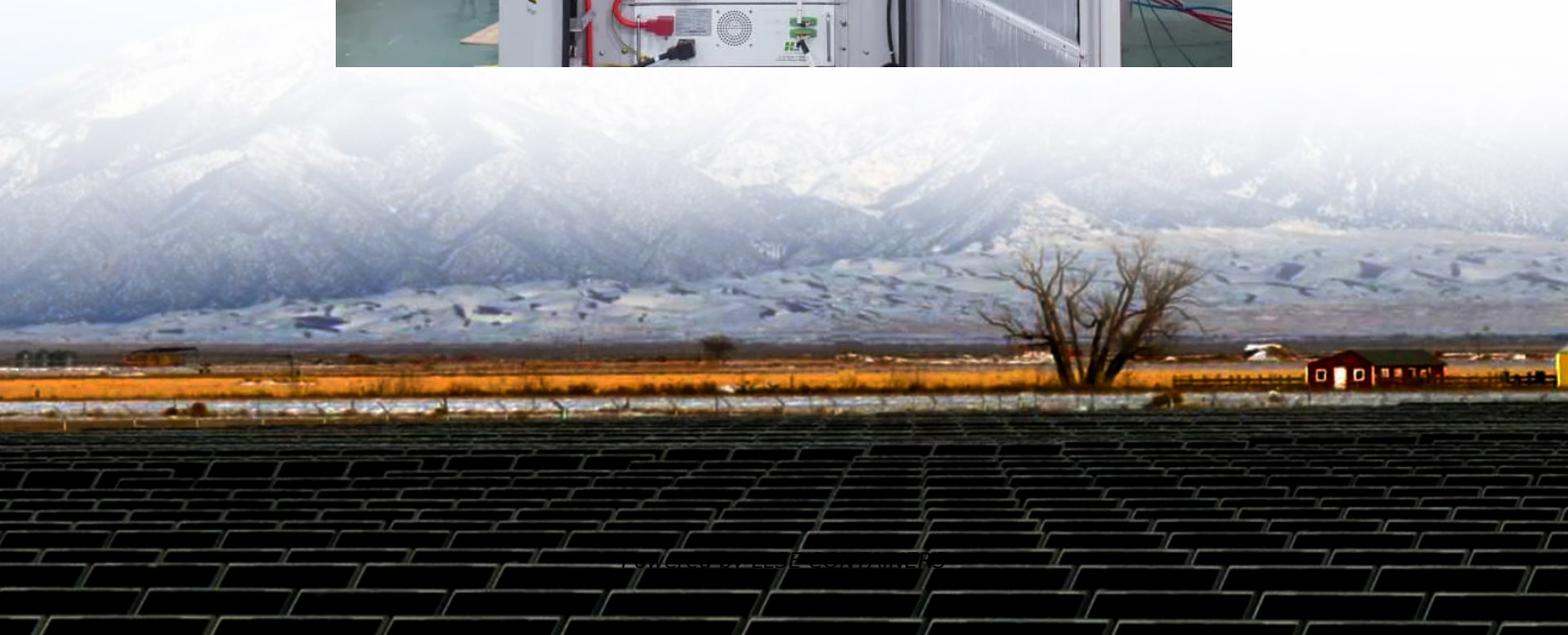


# **Wind-resistant photovoltaic container for cement plants**





## Overview

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This work describes the implementation of concentrated solar energy for the calcination process in cement production. Approach used for providing solar energy includes the utilisation of a solar tower sy.

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).

Which cement plant is used for solar thermal application?

Location and DNI availability of the investigated plant A conventional cement plant (Kotputli Cement Works (KCW), an UltraTech Cement Limited manufacturing unit) at Kotputli, Jaipur, Rajasthan, was investigated for solar thermal application.

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.

How a solar cement plant is designed?

Solar cement plant was designed based on cement production and the Direct Normal Irradiation (DNI) data available at plant location. Total thermal energy and the amount of land needed for the solar cement factory were analysed. Additionally, total mirror surface, number of heliostats, and land requirement are estimated.



## Wind-resistant photovoltaic container for cement plants

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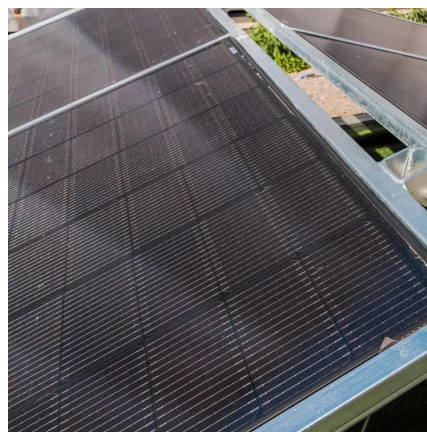


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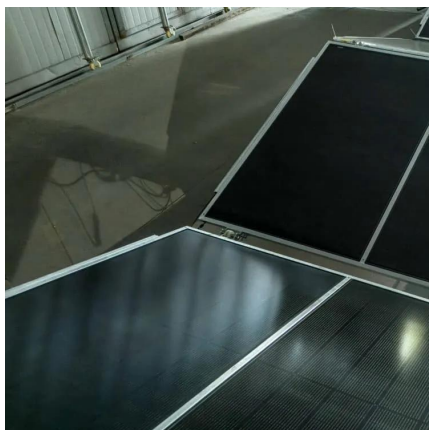


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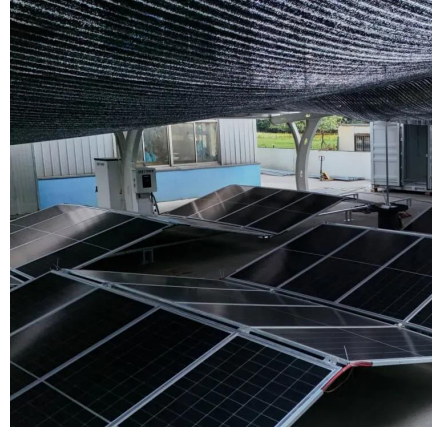
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An innovative and efficient solar power plant solution has been developed for cement factories. On an annual basis, solar PV systems in cement plants may save 22,941 tonnes of CO2.



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### Producing cement with solar energy

Mar 2, 2022 · The process takes place in a reactor, the calciner. In most cement plants currently in operation, the extracted CO<sub>2</sub> escapes into the ...



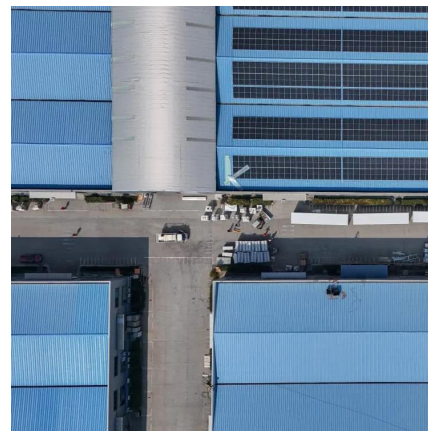
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