

Long-lasting photovoltaic container used in Indian cement plants





Overview

This study describes the potential of solar thermal calciner technology and consequent carbon mitigation for Indian cement industries. Approach used to provide solar energy involves the installation of.

How do cement plants use solar energy?

Cement plants would harness solar energy by using solar reactors. The reactor concentrates the solar energy to provide heat and depending on the reactor's location, it is possible to obtain two different solarisation designs for the calcination step (Meier et al., 2005; González and Flamant, 2014; Meier et al., 2006).

Can a solar cement plant run continuously throughout the day?

A solar cement plant cannot run continuously throughout the day. Therefore, several restrictions and simplifications are considered and incorporated into the model. The solar reactor needs a minimum of two hours of solar incident power to start the reaction. No reaction is possible during the warm-up period.

Can concentrated solar thermal (CST) technology be used in a cement plant?

González and Flamant (2014) investigated the technical and financial viability of concentrated solar thermal (CST) technology in a conventional cement plant, whose daily production capacity was 3000 tons of cement clinker.

Can solar energy be used for calcination process in cement production?

Concentrated solar energy is used for the calcination process in cement production. Annual cement production and solar irradiation for each location of the cement plant have been identified. Total thermal energy that could be saved is estimated as 133.36 PJ/annum. CO₂ mitigation is estimated as 7413.73 thousand tonnes per annum.



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