



SOLPART
High Temperature Solar-Heated Reactors for Industrial Production of
Reactive Particulates
European funded project - Grant Agreement number 654663

Deliverable 7.2

WP7 – Plant integration, scaling up, economic and risk assessment of the solar process

Deliverable D7.2. Economic analysis of the upscale solar process for the cement production

Date of Delivery: 10 January 2020

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1 Introduction

Deliverable 7.2 builds upon the previous task 7.1, which had the goal to do a design study for the scale-up of the solar reactor, thermal storage and particle transport processes for a 3,500 tons/day plant. The aim of this deliverable is to develop the business case for this study, including the calculation of the investment (CAPEX) and operational (OPEX) costs. In Task 7.1, one configuration for the solar cement plant was selected; D7.2 will now focus on such configuration for the business case development.

2 Conclusion and outlook

This report shows the investment needed by the cement industry to adopt the solar technology and integrate it into the clinker manufacturing process.

The several parts of the solar calcination area were described, and the costs of each part were defined. Chapter 4 presented the overall installation costs for a cement plant, with and without solar calcination.

It is concluded that the installation of a solar calciner is economically advantageous only if it is considered since planning a new green field as cement manufacturing unit using solar energy. In this case, the investment cost needed is twice the cost for a traditional manufacturing unit, whereas to integrate a solar calciner in an already existing plant, the cost can be more than 12 times.

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