

Collaboration cuts costs and increases capacity by 35%



One Source

CASE: India Cements Limited, Chilamkur

By reusing existing equipment from a competitor and inserting FLSmidth technology in parallel, the plant got an innovative solution to its capacity challenge.

Plant pleased to team up with new partner

Innovation and teamwork help India Cement's Chilamkur plant get the most out of its old cement plant with FLSmidth upgrade solutions

Before defining the ideal upgrade solution, FLSmidth and the plant's senior management thoroughly discussed potential bottlenecks and challenges. ▼



The objective

The Chilamkur plant wanted to increase capacity from 3,400 tpd to 4,500 in the most economical manner possible. Originally supplied by a competitor for a capacity of 3,000 tpd, the equipment was later upgraded by the competitor to 3,400 tpd. But now India Cements Limited was eager for a new, more innovative upgrade solution.

Defining the project

FLSmidth and the plant's senior management thoroughly discussed the potential bottlenecks and challenges of a new solution. A competitor had recommended replacing the plant's existing preheater tower with a new, 4,500 tpd capacity tower. FLSmidth, however, suggested a different, less obvious approach that made much more financial sense. Teaming up, India Cements Limited and FLSmidth defined the ideal upgrade solution.

The solution

Rather than replacing the existing preheater with a new, higher capacity tower, FLSmidth recommended installing a balancing tower, thereby utilising the existing preheater as well. The existing tower was de-rated to the capacity of 2,800 tpd, which has reduced pressure drop across the old preheater. A new, high-efficiency preheater tower was installed for the balancing capacity of 1,700 tpd. Since the capacity was less for the balancing tower, its size was smaller, thereby less expensive.

The technical solution included the following:

- New, 4-stage balancing preheater tower with inline calciner for a capacity of 1,700 tpd production
- Modifications to tertiary air duct connection to new tower
- New, additional Tirax Coal Mill exclusively for new calciner firing capacity (15 tph production)
- New coal firing system exclusively for the new calciner

The already existing booster fan and ESP of flash drier for coal were used as the preheater fan and de-dusting unit for the new tower.

Challenges

Gas distribution between the two preheater towers was one of the most significant challenges. FLSmidth modified the existing tertiary air duct, provided branching between the two towers and keenly monitored the solution during commissioning to ensure success. The coal conveying piping was another major issue, solved by a new fine coal bin in the new preheater tower. The new tower was constructed with pre-engineered steel structure in a very short time.

"IT WAS A PLEASURE TO WORK WITH FLSMIDTH, MAINLY BECAUSE THEY VALUE GOOD CUSTOMER RELATIONS – READILY ACCEPTING CUSTOMERS' IDEAS AND CONVERTING THEM INTO SUCCESSFUL PROJECTS."

Duraisamy Sivagurunathan,
President Manufacturing, India Cements Limited

In addition to a new balancing preheater tower with inline calciner, the upgrade included a new, additional Tirax Coal Mill and a new coal firing system exclusively for the new calciner.



Results

The plant achieved all its guaranteed performance parameters, such as 1,700 tpd production on a consistent basis from the balancing tower and 15 tph for the coal mill. It was a model project, where the customer and FLSmidth worked hand in hand. For example, FLSmidth helped the plant’s civil consultant determine the optimum size and location for the new tower, and FLSmidth gave the plant guidance on its dust handling system for the existing GCT (gas conditioning tower) as well.

“It was a pleasure to work with FLSmidth, mainly because they value good customer relations – readily accepting customers’ ideas and converting them into successful projects,” says Duraisamy Sivagurunathan, President Manufacturing, India Cements Limited. “They’re good partners and team players, and they freely discuss things with customers. They are also quite responsive to customers’ problems. We would use them again for future projects, mainly due to the good customer relation and their ability to implement innovative ideas.”



Working hand in hand, the plant and FLSmidth achieved all the guaranteed performance parameters.



Project Centre Denmark

FLSmidth A/S
Vigerslev Allé 77
DK-2500 Valby
Copenhagen
Tel: +45 3618 1000
Fax: +45 3630 1820
E-mail: info@flsmidth.com

Project Centre USA

FLSmidth Inc.
2040 Avenue C
Bethlehem, PA 18017-2188
Tel: +1 610-264-6011
Fax: +1 610-264-6170
E-mail: info-us@flsmidth.com

Project Centre India

FLSmidth Private Limited
FLSmidth House
34, Egatoor, Kelambakkam
(Rajiv Gandhi Salai, Chennai)
Tamil Nadu – 603 103
Tel: +91-44-4748 1000
Fax: +91-44-2747 0301
E-mail: indiainfo@flsmidth.com