

CASE STUDY 5 : USE OF PET COKE AND BIO-MASS AS ALTERNATE FUEL - MADRAS CEMENTS LIMITED, ALATHIYUR

Project Implemented by : Madras Cements Limited

Project Implemented in : 2008

Company Details

Madras Cements Ltd is the flag ship company of Ramco Group, a well known business group of South India. It is based at Chennai. The main product of the company is Portland Cement manufactured through the five advanced production facilities spread over South India. The cement capacity is 10.49 million tons per annum. The company is the fifth largest cement producer in the country. Ramco Super grade is the most popular cement brand in South India. The company also produces Ready Mix Concrete and Dry Mortar products. In addition, the company also operates one of the largest wind farms in the country.

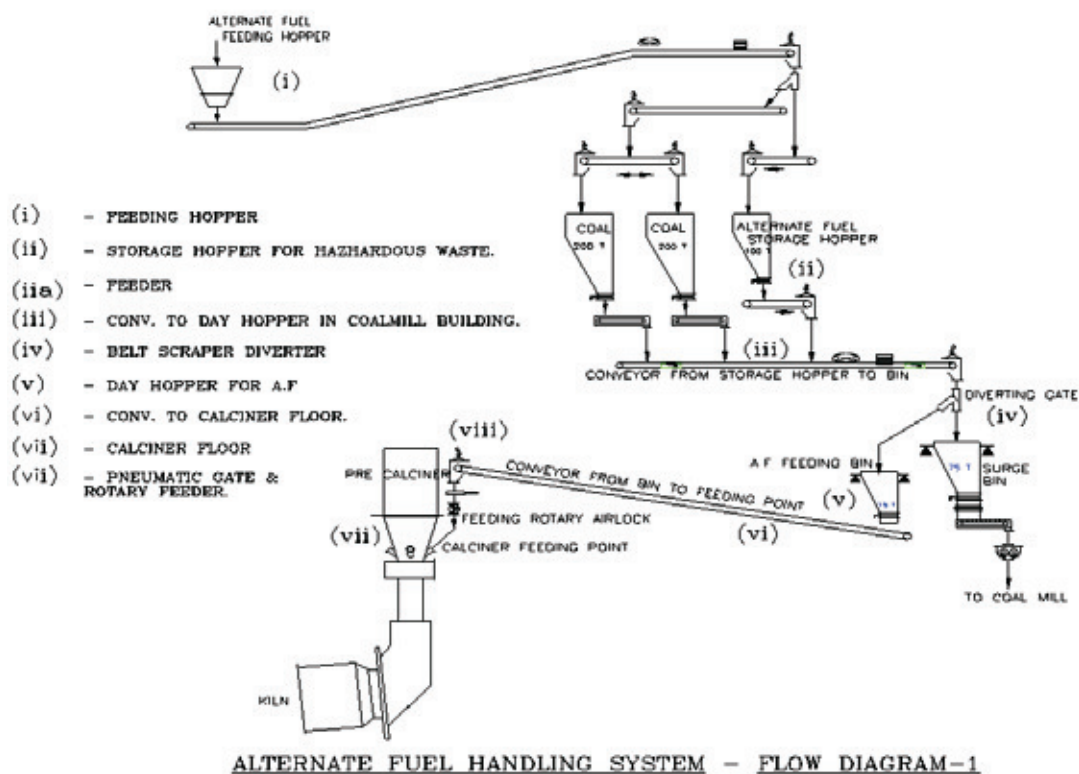
Project Details

Madras Cement Limited has set up a mechanized system for Alternative Fuel feeding in its cement works. The company burns various alternate fuels such as pet coke, coffee husk, cashew nut shell, ground nut shells, charcoal, and coal dust in their cement kilns

Process Description

Feeding Hopper is provided for alternate fuel feeding. Alternative fuel is extracted from hopper and is transported to storage hopper. From storage hopper, alternative fuel is extracted and fed to the calciner by belt conveyor through rotary air lock. Detailed process flow chart is given below:





Results of the Project

Implementation of this project resulted in following benefits Intangible Benefits:

- Conservation of Fossil Fuels
- Conservation of High Grade Limestone
- Reduction in GHG emission

Replacing the 1% of fossil fuels by alternate fuel reduces the GHG by 2.15 Kg CO₂/ MT of cement produced. Alternate fuel used in fuel mix is 5% reduced 28,734 MT CO₂/ Year

Tangible Benefits:

Average Pet Coke consumed is 81,154 MT / Year and Average alternate fuel consumed is 8,970 MT / Year.

1 Kg of Pet Coke equals 1.33 Kg of Coal.

1 Kg of Alternate Fuel equals 0.5 Kg of Coal.

Implementation of this project resulted in Rs 78.28 Million /year

Replication Potential

Similar installations are possible in several cement plants, subjected to availability in the same region. The substitution of Coal with Rice husk contributes to conserve the fossil fuel reserves

Issues faced by the unit during the implementation of the project

- Pet Coke has higher sulphur content; this causes the ring formation in the kiln. This problem was solved by adding the alkali to the kiln feed
- Carbon Monoxide (CO) formation was higher in the kiln inlet. This problem was rectified by grinding pet coke finer. The fixed carbon is higher in pet coke, so the residue in 90 micron is brought < 1%

Recommendation to other units

Other cement plants are recommended to implement this project.

Contact Information of the plant

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