CASE STUDY 12: EXPERIENCES OF UTILIZING DIVERSE WASTE AS ALTERNATE FUEL - ACC LTD., LAKHERI CEMENT WORKS

Project Implemented by : ACC ltd, Lakheri Cement Works

Project Implemented in : 2009

Company Details

ACC Limited is India's foremost manufacturer of cement and concrete. ACC's operations are spread throughout the country with 16 modern cement factories, more than 40 Ready mix concrete plants.

Since inception in 1936, the company has been a trendsetter and important benchmark for the cement industry in many areas of cement and concrete technology. ACC has a unique track record of innovative research, product development and specialized consultancy services. The company's various manufacturing units are backed by a central technology support services centre - the only one of its kind in the Indian cement industry. Lakheri Cement Works is one of cement plants in ACC Group. This is located at Lakheri, Bundi, Rajasthan.

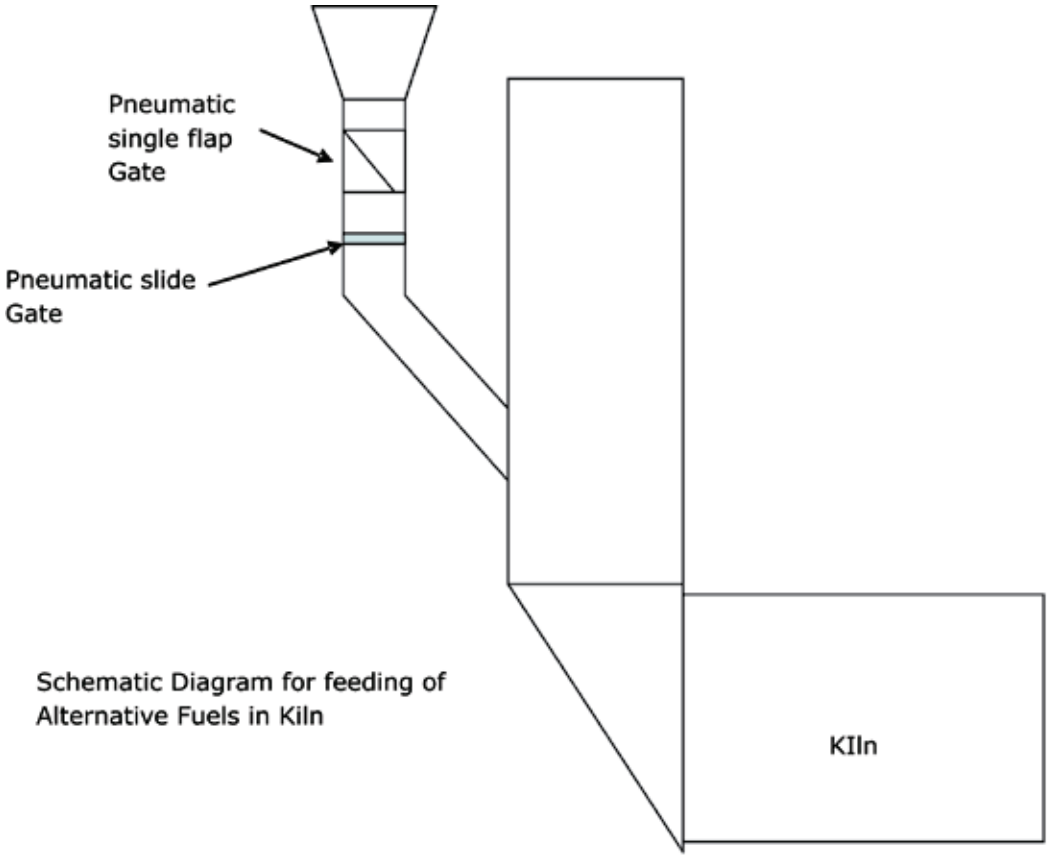
Project Details

ACC ltd, Lakheri Cement works, burning waste as alternative fuel in their rotary kiln. List of wastes are being burnt is summarized in table below.

No	Type of Waste Fuel used	Quantity of waste fuel used (Tons or any other Eq Unit)	Equivalent of Conventional energy used (kWh of electricity or Ton / kL of fuel)	Waste fuel as % of total energy
1	Soya bean Waste	3	2	0.017
2	Saw dust	174	88	0.74
3	Mustard Husk	721	412	3.45
4	Scrap tyre cutting	207.27	368	3.08
5	Animal Waste	21	9	0.075
6	Nevia Waste products	71.26	46	0.385
7	ETP bio solid sludge	41.15	13	0.11
8	White Coal	27.9	19	0.16
9	MSW	0.3	0.08	_
	Total AFR	**1266.88**	**957**	**8.01**




Following arrangement has been made to feed the various Alternative fuels in kiln to ensure maximum co-processing of waste fuel/ material directly into kiln.



Schematic Diagram for feeding of
Alternative Fuels in Kiln

Issues faced during implementation

While selecting the waste, Lakheri Cement Works has ensured various aspects of related with occupational health & safety.

1. Refuse the listed "banned wastes"
2. Guarantee the quality of our products

Feasibility study by AFR team was done; to study following aspects :

1. Know the potentials and limits of the kiln for co-processing Technical AFR assessment
2. Co-processing needs full control & legal compliance Baseline emission and Trial Burn
3. Waste fuel is not allowed to enter the plant without Quality checking
4. Waste sample analysis, co-processing plan & Finger print analysis
5. Use AFR Standard Equipment for storage, handling, and dosing

Financing of the Project

The plant has invested about Rs 85.00 Lakhs for implementation of the project. This investment is for conveying, handling equipments and storage facilities. Implementation of project will result in annual savings of Rs 19.00 Lakhs with payback period of 4 years

Results of the Project

Following environmental benefits associated with implementation of this project

- Reduction in CO2/GHG emissions
- Safe and optimal waste disposal
- Reduction in consumption of natural materials
- Reduction in overall emissions
- Effective contribution to waste management at local / regional levels
- Regional job creation in waste collection and pretreatment etc.
- Saving of public funds in building alternative infrastructure
- Substitution of Fossil fuels or natural raw materials
- Income from co-processing service

Replication Potential

Replication potential is very high. Similar project is possible in several cement industries. At present, uses of alternative fuel in cement kiln is the key issue/ target for cement sectors and many cement companies are co-processing the waste in cement kiln.

Recommendation to other units

All cement plants are recommended to install alternative fuel handling system.

Contact Information of the plant

Lakheri Cement Works,

P.O. Lakheri 323 603

Dist Bundi , Rajasthan

Phone: 91-7438-261642

Fax: 91-07438-261504