

Successful Implementation – Energy Conservation Measure

Measure	
Fuel substitution in boiler from Furnace oil (FO) to Bio-mass	
Equipment	
Boiler for steam generation	
Industry / Sector	
Agrochemical Industry	
Year of Implementation	
2007	
Cost Benefit Analysis	
□ Type of Measure	: Long Term
□ Annual energy Savings	: 88000 ltr of FO
□ Actual cost savings	: 15 Lakhs (Excluding CDM benefits)
□ Actual investment	: 17.5 Lakhs
□ Payback	: 14 months
Implementation Highlights	
<ul style="list-style-type: none"> ▪ Installation of external furnace ▪ Installation of boiler economizer and ID fan ▪ Getting approvals from all authorities which includes Factory inspector and Pollution board ▪ All above jobs done by external consultant ▪ Duration of project implementation – 45 days ▪ De-rating of boiler by 60-70% of designed MCR (Maximum Continuous Rating) ▪ This project helped to mitigate the CO₂ emissions and made us to go far the CDM project which is in pipe line along with other GHG emission reduction projects 	

Summary

3 TPH of FO fired boiler is being used to generate the steam in an agrochemical industry to cater the steam requirement of maximum of 1.3 TPH at any movement. A suggestion had come through one of our mega scale cost cutting initiative and decided to go for the fuel substitution. It has been implemented due to availability of one more same capacity boiler as stand-by running with furnace oil.

Project design, manufacturing, erection and commissioning done by external consultant including supply of fuel (bio-mass) and entered into annual maintenance contract (AMC) with the same consultant.

Background

It is our constant endeavor to reduce utility cost of products in our organization. We have learned and visited the organizations where this project implemented. After taking the pros and cons of this project, decided to implement this project to reduce the steam generation cost.

Principle

The energy to be imparted on water for steam generation to be supplied through flue gases, which are generated from external furnace, where Bio-mass is used as fuel for combustion. In FO fired boilers, FO is used as fuel for combustion by using burners and FD fan.

During this conversion i.e., from FO to Bio-mass, burner system to be removed and kept in aside and connect duct of external furnace.

Details of techno-economics: Not Applicable

Particulars	Actual energy savings
Contract Demand	
Earlier MD	
MD after installation of controller	
Demand savings per month @ Rs. 150/ kVA	
Annual Cost savings, Rs. lakh	
Cost of implementation, Rs. lakh	
Simple payback period, Year	

Implementation issues

Nothing worth to mention about the issues during the implementation expect some routine delays in getting government approvals as concerned personnel on leave.

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