Case study on fly ash bricks

Business

Fly Ash Brick Kunal Bhatia Project report on starting a fly ash based brick manufacturing unit covering aspects related to investment, running cost, market and return on investment. kunal.

in Introduction Fly Ash bricks are made of fly ash, lime, gypsum and sand. These can be extensively used in all building constructional activities similar to that of common burnt clay bricks. The fly ash bricks are comparatively lighter in weight and stronger than common clay bricks. Since fly ash is being accumulated as waste material in large quantity near thermal power plants and creating serious environmental pollution problems, its utilisation as main raw material in the manufacture of bricks will not only create ample opportunities for its proper and useful disposal but also help in environmental pollution control to a greater extent in the surrounding areas of power plants. Market Potential The country consumes about 180 – 250 billion bricks (figure an estimate from various sources including governmental and private), exhausting approximately about 5000 acres of top soil land is made unfertile for a long period. The Government is seriously concerned over soil erosion for production of massive quantities of bricks, in the background of enormous housing needs.

The excellent engineering property and durability of fly ash brick enlarges its scope for application in building construction and development of infrastructure, construction of pavements, dams, tanks, under water works, canal lining and irrigation work etc. Enormous quantities of fly ash is available in and around thermal power stations in all the states. The demand of bricks could be met by establishing small units near thermal power stations and to meet the local demand with less transportation costs. Basis

and Presumptions i. It is assumed that the unit will operate on single shift basis for 300 working days in a year.

ii. The salary and wages for staff and labour has been taken into consideration on the basis of prevailing rate. iii. Interest rate at 13% is considered in the project profile for both recurring and nonrecurring investment. iv. Margin money will vary from 10- 25% depending upon the location and scheme adopted by the entrepreneur.

. Operative period of project is around 10 years considering technology obsolescence rate and period of repayment of loan. vi. The costs of land, construction charges, machinery and equipment, raw materials, and consumables, other contingent expenses etc. indicated in the scheme are based on the prices understood by the author while conducting his research.

Therefore, these are subject to necessary changes from time to time based on the local conditions. Implementation Schedule Sl. Activity No. 1. 2. 3.

4. 5. 6. 7. Period Period Starting Completion 1st month 2nd 3rd 4th 6th 7th 8th month Survey of collection of data in respect of demand, availability of technology, power, 1day to land and clearance from State Pollution Control Board Arrangement for margin money Preparation registration of project report and 1st to 2nd to 2nd to Finance assistance Development of Site and construction of 4th to building Machine purchasing and installation Production 6th to 7th Above mentioned time schedule has been established on the basis of large variation in implementation. However, it is strongly advised that the time schedule can be cut into half to around 3-4 months

from registration to production dependent on the feasibility, market demand and belief in the idea.

Technical Aspects Process of Manufacture Fly ash, lime sand and gypsum are manually fed into a pan mixer where water is added in the required proportion for intimate mixing. The proportion of the raw material is generally in the ratio 50-80% of fly ash 10-20% lime, 10% Gypsum and 10% sand, depending upon the quality of raw materials. After mixing, the mixture is shifted to the hydraulic/mechanical presses. The bricks are carried on wooden pellets to the open area where they are dried and water cured for 21 days. The bricks are tested and sorted before despatch. Quality Control and Standards The Bureau of Indian Standards has formulated and published the specification for maintaining quality of product and testing purpose.

IS 12894: 1990 Production Capacity (Per year) Quantity (Nos.) Value Motive Power : 60 Lakhs bricks _____ 30 KW. Pollution Control The technology adopted for making fly ash bricks is eco-friendly. It does not require steaming or auto calving as the bricks are cured by water only. Since the firing process is avoided, there are no emissions and no effluent is discharged. On the other hand, it solves the problem of fly ash disposal.

Energy Conservation General precautions for saving electricity are required to be followed by the unit by adopting energy conservation techniques not only to conserve the power but also to save considerable expenditure in their own and also in the interest of the nation as a whole.