

To : All Executive Committee Members and Invitees
Sub : **Agenda for the Executive Committee Meeting on 10th January 2003 at "Rahejas" 6th Floor, Seminar Room, Santacruz (West), Mumbai - 400 054**

NO	AGENDA ITEMS	TIME
1	Discussion on New Joint Venture Projects.	10:00 AM - 10.45 AM
2	Policy changes.	10:45 AM - 11:30 AM
3	Organisational Changes.	11:30 AM - 12:00 Noon
4	Extension of formal Appraisal system to MM1 & MM2 levels.	12:00 Noon - 12:30 PM
5	Any other Issues.	12:30 PM - 1:00 PM
	LUNCH	1:00 PM onwards
6	Capex Proposals for Plants.	2.30 PM - 4.30 PM
7	Open House Discussion	4.30 PM - 6.30 PM

Minutes of the Executive Committee Meeting (Item No 6)		Date: 10 Jan 2003
		Time: 10 am to 6.30 pm
		Location: Corp Office
Excom Attendees:	Vijay Aggarwal, S.G.Hegde, A.K.Kaviraj, K.K.Rathi, G.S.Patnaik, R.Kurup, D.K.Deshmankar,	
Minutes		
Agenda Item	Pen Plant Expansion	
<i>Discussions:</i>		
Market Feedback:		
<p>Analysis of the feedback from the market indicates an increased demand of about 5000 sqm/d for vitrified tiles and a sizeable demand for larger format polished vitrified tiles upto size 600*1200mm and 900*900mm. Large sizes with soluble salt application can be comfortably positioned in the market. For smaller sizes 600*600mm, there is considerable demand for full body effects. Hence the expansion has to consider atleast half the production with full body effects. Details of the product types shall be shared by the Product Management Group.</p>		
Scale:		
<p>Considering the technological development and availability of machinery, the approximate economical size of the expansion is determined to be about 7500 sqm/d of Vitrified Tiles. Sizes being considered for expansion are 600*600mm polished. Full capacity utilization can take about 6 months to 1 year. In the long run, this scale is expected to be more attractive.</p>		
Configuration:		
<p>For body preparation, evaluation of one continuous mill vs 5 batch mills is under progress. Continuous mill is convenient to operate, requires less manpower, consumed less electrical energy and consistency in output is higher. However, the recurring savings in operational expenses has to justify the incremental cost of continuous mill.</p>		
<p>For Spray Drying, one 10 tph capacity Spray Dryer has been considered. The 6tph spray dryer shall be utilized for color body preparation. About 1000 ton capacity color silos have been planned.</p>		
<p>Press: Three high tonnage presses with RollFeed and Double Charge Feeding Systems are under consideration. Support systems for color management and vertical dryers are also planned adequately.</p>		
<p>Kiln: A 2.85m wide and 140m long kiln is being considered. This size of kiln is also expected to be more fuel efficient. Material handling systems, Glaze Lines and Laser Guided Vehicles as required have been planned.</p>		
<p>Auxiliary: One Gas Turbine Generator with co-generation is being considered. This system will be able to generate about 4 MW of electrical power and deliver about 8 Mn Kcal/h of heat energy in the form of hot air that can be used for spray drying application. The availability and cost of natural gas are a concern area. The final decision is to be taken after considering the cost of power generation and hot air generation. Along with the other two projects at Kunigal & Dewas which are being planned for biomass based hot air generation, this project is also being evaluated to consider carbon revenues. A detailed presentation has been made to understand the carbon emission reductions and indicative revenues thereof that can potentially help the projects become sustainable despite the technical & commercial problems. This is also to provide enough information to various functions to identify and pursue carbon projects wherever feasible and economical.</p>		
<p>Tool Room & IPD: The tool room is being provided with advanced machines to process large sized dies and moulds. Small</p>		

investments are planned for the IPD to scale up the manufacture of industrial products for home consumption. With this addition, it is also proposed to make the tool room a business unit along with the Industrial Products Division to market the industrial products in the open market and generate revenues.

Action Items	Person responsible	Deadline
✓ Installation and commissioning the project	A.K.Kaviraj	Jan 2004
✓ Preparation of product mix and samples	R.Kurup/D.K.Deshmankar	May 2003

Agenda Item	South Greenfield Project for Floor Tiles
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Discussions:

Project:

Analysis of the feedback from the southern market shows enough room for a manufacturing unit to be set up in the region. JV partners have been identified and the process of setting up the plant is under active progress. Location is close to Vijayawada and natural gas for the first phase has been committed.

Scale:

The economical size of the plant is determined to be about 13000 sqm/d of Floor Tiles. Sizes being considered are 300*300mm to 400*400. Provision shall be made to double up the capacity in one years' time.

Configuration:

One Continuous Mill for body preparation (after evaluation for Pen project is complete), one 30 tpd Spray Dryer, 2 Nos. 2000ton Presses, 3 Nos. Glaze Lines, 1 No. 2.85*140m Kiln, 2 Nos. Sorting Lines and associated material handling systems and auxiliaries.

Target Commissioning: The plant is planned for early 2004 commissioning.

Action items	Person responsible	Deadline
✓ Preparation of product mix and production plan	R.Kurup	Oct 2003
✓ Installation and commissioning the project	A.K.Kaviraj	Feb 2004
✓ Body and Glaze Development	A.K.Kaviraj	Dec 2003

Agenda Item	Kunigal & Dewas Direct HAG for Spray Dryer
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Increasing cost of liquid and gas fuels have considerably increased the cost of our products. Information about competitors in the unorganized sector indicates that they are planning to switch over to coal for generation of hot air by the use of fluidized bed combustion chambers. It was decided to pursue the technology closely with an objective to reduce the cost of fuel at our plants.

Since both our plants are in the close vicinity of biomass / agriculture residues and hence the option of using such residues need to be evaluated. Although as per the preliminary information the cost of manufacturing is higher with the use of biomass fuels compare to other fossil fuel like coal, it is possible to mitigate the differential amount by getting the projects registered for carbon credits. Salient features of the carbon credit for renewable biomass projects as explained are as below

1 kg of coal emits 1.72 kg of CO₂

1 kg of renewable biomass emits 0 kg of CO₂ (Biomass is carbon neutral fuel)

1 ton of CO2 future price \$15 = Rs.675 (1 USD = 45 INR)

1 kg of CO2 future price = Rs. 0.675

1.72 kg of CO2 future price = Rs. 1.161/ per kg of coal

Indicative coal cost presented (in and around Kunigal) as Rs. 2000 / ton and biomass cost is Rs. 2050 / ton. Around 1.5 kg of biomass will be required to substitute 1 kg of coal. Therefore against Rs. 2000 / ton of coal , biomass requirement would be Rs. 3075 /ton, we have a carbon credit benefit of Rs. 1161 / ton of biomass being used in the facility, therefore net biomass cost comes out to be Rs. 1914 / ton of biomass.

Above calculation shows that by using biomass and taking carbon credits into consideration against usage of coal we will have an edge in the future in terms of project economics.

Though as per the current market feed back carbon credits are sold at \$3.5 per ton it is expected to reach to the tune to \$ 15 or more in recent future depending on the supply demand scenario.

Fund generated through carbon credits would be used to compensate the technological risk as well as higher operating cost with renewable biomass fuels. Moreover operation of this kind of projects with green renewable fuels like biomass in place of solid fossil fuel like coal will improve the company image by promoting environment friendly technologies.

The presentation on carbon revenues has already covered the requisite details and the Energy Management Team has been entrusted with the responsibility of identifying and pursuing all eligible carbon projects.

Action items	Person responsible	Deadline
✓ Carbon Initiatives	K.K.Rathi	Ongoing
✓ Installation of FBC Hot Air Generators – Dewas and Kunigal	A.K.Kaviraj	Asap