

EXECUTIVE SUMMARY

INTRODUCTION

M/s Shivshakti Cements is planning to set up 200 TPD clinker and/or cement manufacturing plant based on Vertical Shaft Kiln technology at **15th Mile, G.S. Road, N. H. No.: 40, Village Byrnihat, Taluka Sonapur, District Kamrup - 782 482, Assam**. M/s Shivshakti Cements is a partnership firm constituted on 21st day of October of the year 2007. The present partners of the firm are :

1. Mr. Narayan Prasad Jhunjhunwala
2. Mr. Prithu Jhunjhunwala
3. Mrs. Ramita Jhunjhunwala
4. M/s Shubharambh Trading Pvt. Ltd.
5. M/s. H. M. Holdings Pvt. Ltd.

The office of the firm is at H. M. Tower, H. B. Road, Panbazar, Guwahati (Assam).

The proposed project of Shivshakti Cements is an extension of the existing campus where Clinker grinding unit is operating. Category of the project is B, 3(b) Cement Plants (<1 Million tonnes/annum production capacity) as per EIA Notification dated 14 September, 2006.

LOCATION OF THE PROPOSED PROJECT

The proposed unit to be located on a plot of land measuring 1927 sq.m. at **15th Mile, N. H. No.: 40, village Byrnihat, Taluka Sonapur, District Kamrup in the state of Assam** that is at the border Assam and Meghalaya at a distance of 25 km from Guwahati –Shillong road. Proposed project is extension of the existing campus where clinker grinding unit is operating by our group company, M/s. Mahashakti Cements. No new land is proposed to be acquired as the project is proposed in the same industrial campus.

Proposed plot is a part of the plot of land measuring 7 Bighas 3 Kathas 18 ¼ lechas bearing Dag No. 38 covered by Patta No. 40 Mouza Sonapura situated at village Burni, Circule Sonapur and is owned by M/s Shubharambh Trading Pvt. Ltd., the corporate partner of Shivshakti Cements. The entire plot of 7B-3K-28 1/4L has been leased out to M/s Mahashakti Cements for 15 years and which is further extended vide lease deed no. 1620/06 dated 20/02/2006. This lease deed between M/s Mahashakti Cements and M/s Shubharambh Trading Pvt. Ltd. is proposed to be modified in favour of M/s Shivshakti Cements with the prior approval of the Financial Institution with whom the leased right is mortgaged.

DETAILS OF THE SITE

The selection of the site has been highly influenced by location factor. The site enjoys maximum location advantage with respect to availability to raw materials, market proximity and infrastructure facility.

Details of the project site are as given in following table:

| SR. NO. | PARTICULARS | DETAILS |
|---------|-------------------------|---|
| 1. | Location | |
| a. | Site | Village : Byrnihat |
| b. | Taluka | Sonapur |
| c. | District | Kamrup |
| d. | State | Assam |
| e. | Latitude | 26°2'59.45" N |
| f. | Longitude | 91°52'18.68" E |
| 2. | Nearest Railway Station | Guwahati Railway Station (25 km North west) |
| 3. | Nearest Airport | Lokpriyo Gopinath Bordoloi Airport |
| 4. | Reserved Forest | Kaziranga National Park (more than 150 km East) |
| 5. | Nearest City | Guwahati (25 km North west) |
| 6. | Nearest village | Sonapur |
| 7. | Nearest River | Umtru (100 m East) |

PROJECT COST

Cost of the proposed project would be Rs. 1242.66 Lacs. Breakup of proposed investment is as follows:

| SR. NO. | DESCRIPTION | COST (Rs. in Lacs) |
|---------|-----------------------------------|--------------------|
| 1. | Land | (Lease Land) |
| 2. | Site Development | 7.94 |
| 3. | Building | 29.34 |
| 4. | Plant and Machinery | 1011.65 |
| 5. | Environmental Protection Measures | 32.00 |
| | Total (1 to 5) | 1080.93 |
| 6. | Preoperative Expense | 27.38 |
| 7. | Unpredictable Expense | 22.24 |
| 8. | Misc. Fixed Assets & Deposit | 43.00 |
| 9. | Working Capital Margin | 69.11 |
| | Total (6 to 9) | 161.73 |
| | Total (1 to 9) | 1242.66 |

BRIEF PROCESS DESCRIPTION

1. Crushing Section: - The raw materials mainly limestone, clay, coke are crushed in the separate crushers and stored automatically into the respective silos.

2. Storage & Proportioning: - The different raw materials are extracted from the silos in the desired proportion through table feeders and conveyed to raw mill.

3. Raw Milling: - The raw mix is ground into a Ball Mill at desired fineness to produce Raw Meal, and transported for Homogenizing.

4. Blending & Homogenization: - The raw meal is homogenized in the blending silos, and is stored automatically into a storage silo for feeding to the kiln.

5. Palletizing & Burning: - The nodules are made into a nodulisor and charged into the kiln for burning. The clinker after discharge is stored in the clinker yard through deep **Bucket Elevator**.

6. Clinker/gypsum crushing, storage & proportioning: - Clinker & Gypsum after crushing stored into the hoppers and extracted in the desired proportion with the help of table feeders and transported to the Cement mill Hopper.

7. Cement Milling: - The clinker & Gypsum/Fly ash mix is ground in the cement mill to produce cement.

8. Storage & Packing: - The cement is stored into the cement silos and aerated, tested and packed for dispatch.

DETAILS OF RAW MATERIAL CONSUMPTION ITS SOURCE, AVAILABILITY & TRANSPORTATION

The main raw material for the clinker and/or cement manufacturing unit is Limestone. Limestone is available in both Assam and Meghalaya.

The location of the unit is such that it is very close to Meghalaya. The Prominent Limestone deposits in Meghalaya are Cherrapunjee, Mawlong-Ishamati, Komorrah, Shella, Borsora in Khasi Hills, Siju and Nagwalbibra in Garo Hills, Lumshnong, Sutnga, Nongkhlieh, Sybdai and Lakadong Jaintia Hills.

Hence the unit will be able to procure limestone both from the state of Assam and Meghalaya.

Other raw materials like Clay, Iron Dust, Cock Breeze and Gypsum are also readily available. Details of which given in following table.

| SR. NO. | NAME OF THE RAW MATERIAL | CONSUMPTION | | SOURCE & THEIR DISTANCE (KM) | MODE OF TRANSPORTATION |
|---------|--------------------------|-------------|--------|--|------------------------|
| | | TON/TON | MT/DAY | | |
| 1. | Limestone | 1.36 | 272 | Cherraounji – 150 km Meghalaya | By Road |
| 2. | Clay | 0.119 | 23.8 | Byrnihat Assam | By Road |
| 3. | Iron Dust | 0.017 | 3.4 | Durgapur – 500 km Bihar | By Road |
| 4. | Cock Breeze | 0.204 | 40.8 | Byrnihat Assam | By Road |
| 5. | Gypsum/Fly Ash | 0.048 | 9.6 | Samdrup – 200 km Jongkhar Bhutan | By Road |

REQUIREMENTS FOR THE PROJECT

Land: Around 1927 sq.m. land will be required for the proposed clinker and/or Cement manufacturing unit. Proposed land will be taken on lease from the M/s Shubharambh Pvt. Ltd.

Water: Total water requirement of the proposed project is 33 KL/Day which shall be met through ground water using Bore Well. Water requirement will be mainly for the process of nodules preparation 25 KL/Day, Domestic use 3 KL/Day and for gardening 5 KL/Day.

Electrical Energy: The estimated power requirement for the proposed project will be 800 KW. Power supply to the proposed project will be sourced from Assam State Electricity Board.

Manpower: The proposed cement plant will have great employment potential providing employment to approximately 49 full time persons.

SOURCES OF POLLUTION AND CONTROL MEASURES

The particulate emissions are among the most significant impacts of cement manufacturing.

Air environment :

1. Sources of Air Pollution

Particulate Matters: There will be emission of particulate matter due to operation of crusher, hammer mill, raw mill, kiln and cement mill. The cement dusts are alkaline with size varying from 5 μm to 250 μm .

The fugitive dust emissions from the proposed plant would be significant and the sources will be as under:

1. Raw materials handling
2. Materials transfer points (bucket elevators, conveyor belts)
3. Loading of raw materials
4. Packing of cement
5. Unloading of cement bags
6. Transportation of vehicles

Emission of SO₂, NO_x and CO₂ from Kiln: Sulfur dioxide may generate due to the sulfur content in the coke breeze. However, the alkaline nature of the materials provide for direct absorption of SO₂, thereby mitigating the quantity of SO₂ emissions in the exhaust stream.

Oxides of nitrogen are generated during fuel combustion by oxidation of chemically bound nitrogen in the fuel and by thermal fixation of nitrogen in the combustion air.

There will be generation of CO₂ due to calcining of lime stone. In the calcining process, CaCO₃ thermally decomposes to CaO and CO₂.

2. Air Pollution Control Measures

The major sources of pollution are particulate matter from the proposed cement plant. The unit will install twin cyclone separators and bag filters to control air pollutants. The stacks will

be attached to the air pollution control equipments to disperse the air pollutants to the satisfactory levels. The details of proposed stacks and control equipments are as under.

| SR. NO. | STACKS ATTACHED TO | AIR POLLUTION CONTROL EQUIPMENTS | STACK HEIGHT (M) | STACK DIAMETER (M) |
|---------|--------------------|--|------------------|--------------------|
| 1. | L/S Crusher | Reverse pulse jet type bag filter | 10 | 0.5 |
| 2. | Hopper | Reverse pulse jet type bag filter | 22 | 0.5 |
| 3. | Raw Mill | Twin cyclone Separator followed by Reverse pulse jet type bag filter | 30 | 0.8 |
| 4. | B/Silo | Reverse pulse jet type bag filter | 28 | 0.5 |
| 5. | Kiln | Reverse pulse jet type bag filter | 32 | 0.5 |
| 6. | Cement Mill | Twin cyclone Separator followed by Reverse pulse jet type bag filter | 30 | 0.8 |

- Common Stack will be shared for two kilns.

The emissions of particulate matters from all the stacks will be limited to 50 mg/Nm³.

3 To control fugitive emissions, the following measures are proposed.

- ◆ Raw materials loading and unloading will be done in the covered area.
- ◆ Raw materials will be stored in the covered structure.
- ◆ All the conveyors will be provided with conveyor cover.
- ◆ The automatic bagging machine will be provided. The suction of bag filter will be provided at the packing section.
- ◆ The sprinkling of water will be done along the internal roads in the plant in order to control the dust.
- ◆ All the workers and officers working inside the plant will be provided with disposable dust masks.
- ◆ Green belt will be developed around the plant to arrest the fugitive emissions.
- ◆ Bag filter will be cleaned regularly.
- ◆ Maintenance of air pollution control equipments will be done regularly.

Water environment:

Waste water generation and mitigation measure

The domestic wastewater shall be 2.5 KL/Day. It will be treated through septic tank, and disposed off through local drain. There will not be any process wastewater generation source in the proposed plant.

Noise environment:

The noise levels near the sources such as raw material mill, cement mill etc will be higher during the operational phase but general noise levels within plant are expected to remain below 75 dB(A). In order to mitigate the noise levels during the operational phase, a green belt will be developed around the periphery of the plant.

Land environment:

Solid waste generation and its disposal method

Dust collected from air pollution control equipment will be 100% recycled in the process. Other solid wastes will be used/spent oil and discarded drums and bags. The sources of solid wastes, generation and its management are as given in the following table.

| SR. NO. | TYPE OF HAZARDOUS WASTE | SOURCE | QUANTITY MT/ MONTH | STATE | DISPOSAL METHOD |
|----------------|--------------------------------|---------------|---------------------------|--------------|------------------------------|
| 1. | Used/spent Oil | Prime Movers | 15 lit/month | Liquid | Sold to authorized recyclers |

CLEANER PRODUCTION

The unit will take following steps to implement the cleaner production in the proposed plant.

1. The proposed unit will install air pollution control equipments to control dust emissions. The collected dust will be 100 % recycled.
2. The proposed unit will implement good housekeeping.
3. Maintenance of air pollution control equipments will be done regularly.
4. Efficiency of air pollution control equipments will be checked regularly.
5. Where ever possible Green Belt will be developed in the industrial premise.