Calcom Cement India Limited
[A Subsidiary of Dalmia Cement (Bharat) Limited]

Proposed Green Field Clinkerisation Plant
Clinker Production 5.6 Million TPA in 2 Phases of 2.8 Million TPA each along with WHRBs of 22 MW (11 MW in each Phase)

19 Kilo Umrangso, Tehsil - Umrangso, Dist. - Dima Hasao (earlier N.C Hills), State - Assam

Environmental Clearance under EIA Notification 2006
Sl. No. 3(b); Category 'A' (≥1.0 MTPA)

To Determine 'TOR'

Application/Form-1
Proposed TOR
Feasibility Report

July 2022

EIA Consultant

ABC Techno Labs India Private Limited, Chennai
Certificate No. NABET/EIA/1922/RA0155 validity extended till 22.08.2022
(Sl. No. 3 of List 05.07.2022)

INDEX

PRE - FEASIBILITY REPORT

1.0 EXECUTIVE SUMMARY

M/s. Calcom Cement India Ltd., a *subsidiary of Dalmia Cement (Bharat) Ltd.,* has proposed a Greenfield Clinekrisation Plant of 5.6 Million TPA in 2 phases of 2.8 Million TPA each along with Waste Heat Recovery System of 22 MW (11 MW in each phase) and D.G. Set of 1000 KVA (500 kVA in each phase) at village 19 Kilo Umrangso, Tehsil: Umrangso, District: Dima Hasao (earlier N.C. Hills), Assam

Table - 1

Salient Features of the Project

S. NO.	PARTICULARS	DETAILS
A.	*Nature of the Project*	Greenfield Clinkerisation Project in 2 phases
B.	*Size of the Project*	○ Clinekrisation Plant - 5.6 Million TPA in 2 phases of 2.8 Million TPA each ○ Waste Heat Recovery System of 22 MW (11 MW in each phase) and ○ D.G. Set of 1000 kVA (500 kVA in each phase)
C.	*Category of the Project*	As per EIA Notification dated 14th Sept., 2006 & as amended from time to time; this project falls under S. No. 3 (Material Production), Category - 'A', Project Activity '3 (b)' Cement Plants
D.	*Location Details*	
	Village	19 Kilo Umrangso
	Tehsil	Umrangso
	District	Dima Hasao
	State	Assam
	Latitude & Longitude	• Plant area: Latitudes from 25°31'19.08"N to 25°31'29.24"N and Longitudes from 092°47'44.13"E to 092°48'41.56"E. • Approach area is bounded by Latitude from 25°31'14.44" to 25°31'28.27"N and from Longitude 092°46'20.20" to 092°47'44.81"E.
	Toposheet No.	G46O10, G46O11, G46O14 and G46O15
E.	*Area Details*	
	Total Project Area	Total Project area is 280 Bigha (37.47 ha); out of which 240 Bigha (32 ha) is plant area and 40 Bigha (5.35 ha) is approach road. required for proposed plant and approach road is 37.47 ha. The present land is Revenue Khas land (waste land) & will be converted into industrial use. The

S. NO.	PARTICULARS	DETAILS
		Revenue and Settlement Dpt. of NC Hills Autonomous Council, Haflong, has allowed the land for industrial use on Periodic Patta.
	Greenbelt / Plantation Area (ha)	Out of the total proposed plant area; 33% i.e. 12.37 ha area will be covered under greenbelt / plantation including Lay down area which will be later on converted into Green area.
F.	*Environmental Setting Details (with approximate aerial distance and direction from the nearest boundary of plant site)*	
1.	Nearest Town	Umrangso (Aerially ~5.8 km, West)
2.	Nearest City	Lanka (Aerially ~44.7 km, NNE)
3.	Nearest National Highway / State Highway	○ NH-627 (earlier SH – 20) (~2.3 km, West) ○ SH – 7 (~5.55 km, West)
4.	Nearest Railway station	Langting Railway Station (~30.11 km, East)
5.	Nearest Airport	• Lokpriya Gopinath Bordoloi International Airport, Guwahati (~136 km, NW); • Kumbhigram Silchar Airport (~69.3 km, SSE)
6.	National Parks, Wildlife Sanctuaries, Biosphere Reserves, within 10 km radius	No National Parks, Wildlife Sanctuaries, Biosphere Reserves, within 10 km radius.
7.	River / Water Body (within 10 km radius)	• Umrong Reservoir (7.1 km in West direction), • Langyen Nadi (0.25 km in SE direction), • Langlai River (6.1 km in S direction), • Mongle Nadi (3.8 km in NE direction), • Kopili River (9.4 km in NW direction), • Kopili Reservoir (14.7 km in WSW direction), • Diyung River (14.7 Km NE) and • Many seasonal nallas exist within 15 km radius of the plant site out of which Amrang nalla is nearest which is 0.14 km, East from plant boundary
8.	Reserved Forests (RF) / Protected Forest (PF) within 10 km radius	• Krungming RF (2.3 km in W direction) • Langting Mupa RF(14.7 Km NE)
9.	Seismic Zone	Zone - V [as per IS 1893 (Part-I): 2002]
G.	*Cost Details*	
	Total Cost of the expansion project	Rs. 3015 crores
	Cost for Environment Management Plan	Capital cost: Rs. 200 Crores as well as Recurring cost: 30 Cr./ annum

<table>
<tr><th>S. NO.</th><th>PARTICULARS</th><th>DETAILS</th></tr>
<tr><td>H.</td><td colspan="2">Basic Requirements for the Project</td></tr>
<tr><td></td><td>Water Requirement (KLD)</td><td>The water requirement for the proposed plant is 1700 KLD; which will be sourced from nearby flowing Longlai river, Amrang nalla, other rivers/ streams, Nallah, within a radius of 25 km of the Plant site.</td></tr>
<tr><td></td><td>Power Requirement (MVA)</td><td>The Power requirement for the proposed plant is estimated to be 36 MW (~ 18 MW for each unit). Power will be sourced from 132 kV sub-station of Assam Power Distribution Company Ltd (APDCL) & stepped down to 11kV at plant and Proposed WHRS (2x11 MW). 500 kVA DG sets (for each unit) is proposed for emergency back-up</td></tr>
<tr><td></td><td>Manpower Requirement
(No. of Persons)</td><td>
<table>
<tr><th>Description</th><th>Approximate Manpower Requirement</th></tr>
<tr><td>Implementation Phase</td><td>180</td></tr>
<tr><td>Operation Phase</td><td>General Shift – 87
Shifts – 180 (total in 3 shifts)
Total – 267</td></tr>
</table>
During Construction Phase: Approx. 750 Persons will be employed from nearby area during construction phase.
</td></tr>
</table>

2.0 INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

(i) Identification of Project and Project Proponent

Calcom Cement India Ltd. (CCIL), a subsidiary of Dalmia Cement (Bharat) Limited, is engaged in the business of manufacturing cement. Its plant is located in North East India. Clinkerisation unit is located at 16 Kilo Umarngso, Dima Hasao District with installed capacity 1.52 Million TPA clinker and split located grinding unit at Lanka, district Hojai. Calcom Cement India Limited's Corporate Identification Number is (CIN) U26942AS2004PLC007538. CCIL is registered at Registrar of Companies, Shillong and its registration number is 7538. CCIL has two major sets of shareholders, 1) Dalmia Cement (Bharat) Limited (DCBL) part of Dalmia Bharat Group holding 76% of the voting rights in the Parent and the Bawri Group (BG) holding 20.5%.

Dalmia Cement (Bharat) Ltd. (DCBL) is one of the leading cement producers of India. It was founded in 1935 by Shri Jaidayal Dalmia. First Cement Plant of DCBL was established in 1939 at Dalmiapuram, Tamil Nadu, thus enjoying a heritage of over 82 Years of expertise and experience.

The company operates a manufacturing capacity of 35.9 Million Tonnes per annum (MIL. TPA), across 14 cement plants and grinding units which are spread across 10

states. The DCBL currently has cement plants in Tamil Nadu (Dalmiapuram & Ariyalur), Andhra Pradesh (Kadapa), Meghalaya (Thangskai), Assam (Umrangso, Lanka & Jagir Road), Karnataka (Belgaum), Jharkhand (Bokaro), Odisha (Rajgangpur & Kapilas), Bihar (Kalyanpur), West Bengal (Medinipur) and Maharashtra (Chandrapur).

(ii) Brief description of nature of the project

M/s. Calcom Cement India Ltd. is proposing a greenfield Clinkerisation Unit- an intermediary product for manufacturing cement. The manufactured clinker will be transported to split located grinding unit/s for manufacturing different varieties of cement.

As per EIA Notification dated 14th Sept., 2006 & as amended from time to time; this project falls under S. No. 3 (Material Production), Category - 'A', Project Activity '3 (b)' Cement Plants.

(iii) Need for the project and its importance to the country and or region

Ever since it was regulated in 1982, the Indian Cement industry has attracted huge investments both from India as well as foreign Investors. India has a lot of potential for development in the infrastructure and construction site and the cement sector is expected to largely benefit from it.

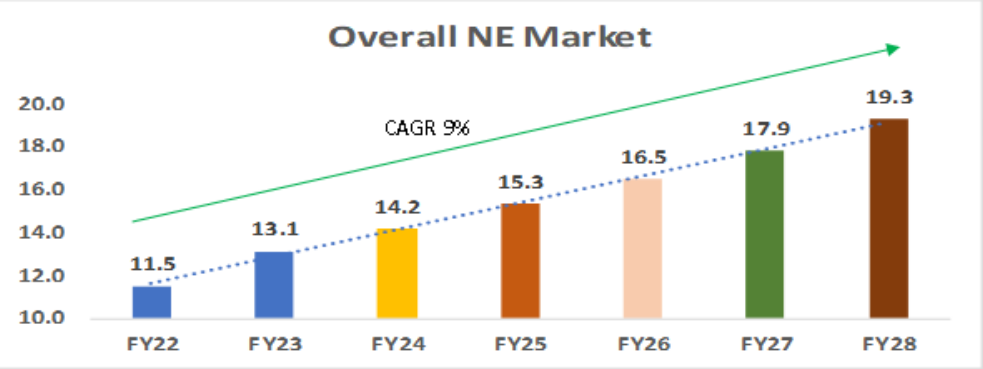
The cement market in Assam has growth potential due to the central government liberalization policies and new schemes for housing, road projects. Cement demand growth is anticipated to be about 9 to 10%.

(iv) Demand- Supply Gap

In the North Eastern region, the demand and supply gap is very large; as most of the demand of cement is met from supply from other parts of the country, the market is abundant. Both private and governmental developmental activities including construction of highways, roads, flyovers, bridges, building apartments and townships are playing a key role in increasing demand of cement. Both private and government developmental activities including construction of highways, roads, flyovers, bridges, building apartments and townships are playing a key role in increasing demand of cement. So, to meet the increased cement demands in the region DCBL is planning to enhance the cement production capacity of CCIL by installing a greenfield Clinkerisation unit at 19 Kilo Umrangso with production capacity of 5.6 Million TPA MIL. TPAproposed to be implemented in 2 phases 2.8 Mil.TPA each. The clinker produce will be transported to split located grinding unit at Lanka/ other end users to

cater the market requirement

Demand and Supply – North East Market



Particulars	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Capacity	15	17	19	19	19	19	19
Demand	12	13	14	15	17	18	19
Surplus/(Deficit)	**4**	**3**	**4**	**3**	**2**	**1**	**-1**

Capacity of NE players getting fully utilized by FY27 & may provide room for Eastern players

(v) Imports vs. Indigenous Production

The proposed project will utilize locally available raw material namely limestone, hill sand, coal and AFR. However, Import will also be required for coal.

(vi) Export Possibility

Currently, there are no export plans from the project. Major production will be consumed in Assam, North-east states of India. Export of finished product to neighbouring Countries will depend upon opportunities available in future.

(vii) Domestic / Export Markets

Domestic market mainly includes Assam, North-east states of India.

(viii) Employment Generation (Direct and Indirect) due to the project

The proposed project will generate temporary and contractual employment during construction phase and Operation Phase. The company will give preference to local people in employment. Details of manpower requirement is given in table below:

Table - 2
Details of potential employment

Description	Approximate Manpower Requirement
Implementation Phase	**180**
Operation Phase	General Shift – 87 Shifts – 180 (total in 3 shifts) **Total – 267**

In addition, approx. 750 contract labours will also be employed during construction which will be sourced locally to the extent possible. Apart from the above, various indirect employment opportunities are envisaged by way of transportation, workshops, petty contractors, network of retailers (cement stockists) throughout the state and in its marketing regions. Thus, the project will have positive impact on the employment pattern of the region and state.

3.0 PROJECT DESCRIPTION

(i) Type of Project including interlinked and Interdependent projects if any

M/s. Calcom Cement India Ltd. is proposing a Greenfield Clinkerisation unit of 5.6 MIL. TPA capacity in 2 phases of 2.8 MIL. TPA in each phase along with WHRS of 22 MW (11 MW in each phase) at village 19 Kilo Umrangso, Tehsil: Umrangso, District: Dima Hasao (earlier N.C. Hills), Assam.

Interlinked and Interdependent Projects:

Interlinked Project:

- Split Located Grinding Unit.: CCIL has a split located grinding unit at at Village: 2 No. Pipalpukhuri, Taluka: Lanka, District- Hojai (Assam). Environmental Clearance was also obtained from MoEF&CC vide letter dated 26th July, 2007 & SEIAA vide EC Identification No. EC22B009AS121520 dated 19.05.2022. As per EC, the proposed Grinding Capacity is 5.9 Mil. TPA Cement.
- Captive Limestone Mine: It is proposed that limestone will be sourced from New Umrangso Limestone mine (Area: 417.50 ha) of CCIL at Umrangso, District: Dima Hasao (earlier N.C. Hills), Assam. Environmental Clearance for limestone mining for 7.77 Mil. TPA is obtained from MoEF&CC vide F. No. J-11015/202/2011-IA.II(M) dated 11th June 2020. and is under operation. Expansion in capacity to meet the desired quantum of limestone i.e. 10.72 Mil.TPA shall be taken after implementation of First phase. Existing capacity is sufficient to cater the limestone requirement of existing unit & 1st phase of the proposed unit.

- After being assured of limestone source, CCIL is now proposing to install a pit-head Clinkerisation unit at 19 Kilo Umrangso and manufactured clinker will be transported to Company's owned grinding unit at Lanka/ other Gus of region. The Revenue and Settlement Dpt. of NC Hills Autonomous Council, Haflong, has allowed the land admeasuring 280 Bighas at 19 Kilo Umrangso on Periodic Patta for industrial use vide letter number S.CASE NO.160(USO)2021-2022, Issue no.9757-60 dated 30th April 2022 (**Attached as Annexure I**).

Interdependent Projects -

Limestone will be sourced from New Umrangso Limestone mine (Area: 417.50 ha) of CCIL at Umrangso, District: Dima Hasao (earlier N.C. Hills), Assam. EC has been obtained vide letter dated 11th June 2020 and mine is under operation.

(ii) Location (map showing general location, specific location, and project boundary & project site layout) with coordinates

Total Project Area of proposed clinkerisation unit is 280 Bigha (37.47 ha) out of which Plant area is 240 Bigha (32 ha) & Approach road is 40 Bigha (5.35 ha) at village 19 Kilo Umrangso, Tehsil: Umrangso, District: Dima Hasao (earlier N.C. Hills), Assam. The Project area falls in Survey of India Toposheet no. 83C/14 (G46O14). Plant area is bounded by Latitudes 25°31'19.08"N to 25°31'29.24"N and Longitudes, 092°47'44.13"E to 092°48'41.56"E. Approach area is bounded by Latitude 25°31'14.44" to 25°31'28.27"N and Longitude 092°46'20.20" to 092°47'44.81"E. Plant Boundary (240 Bigha) GPS Coordinates is given as **Fig. 3** and Approach Road (40 Bigha) GPS coordinates is given as **Fig. 4**.

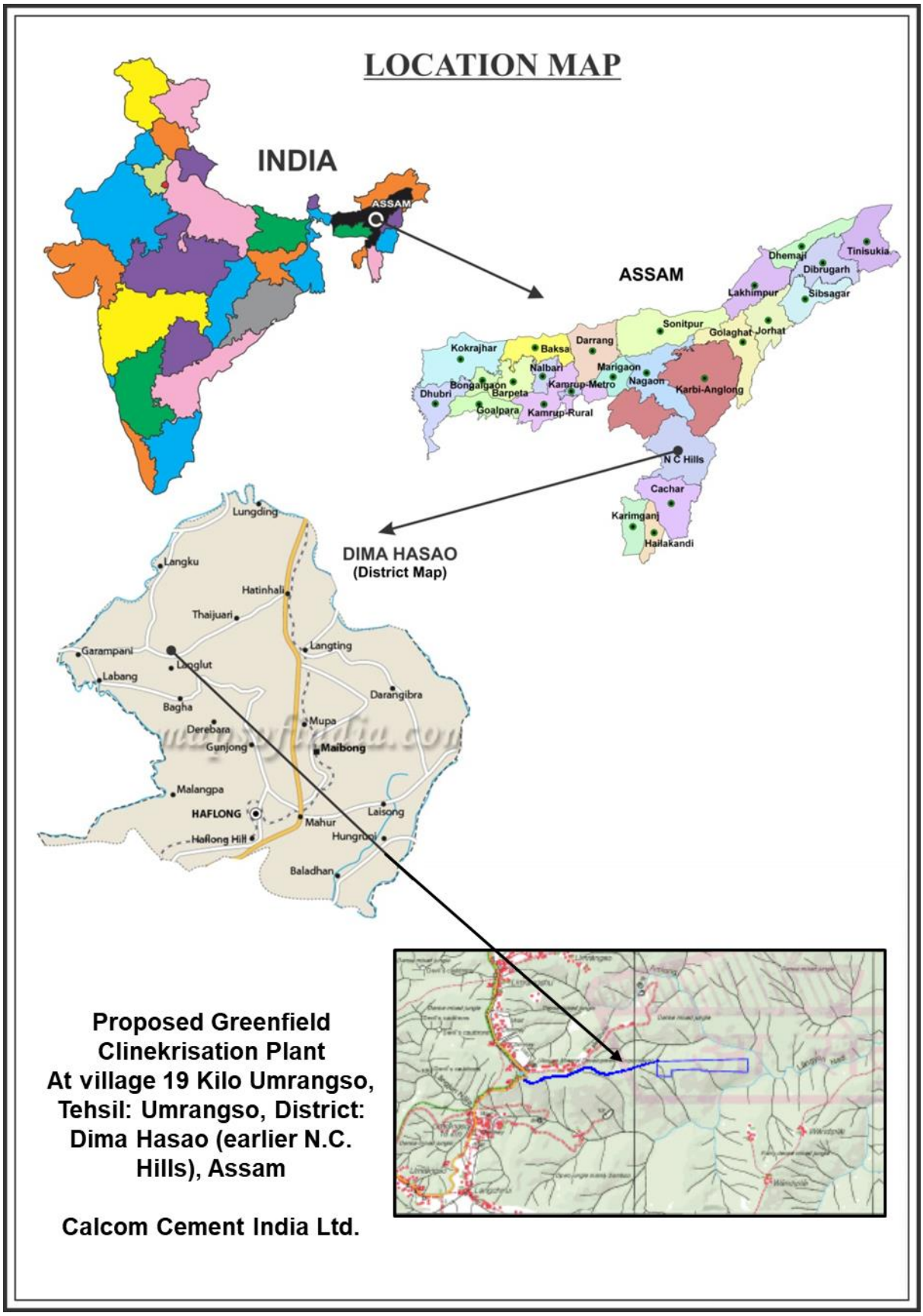


Figure - 1: Location Map

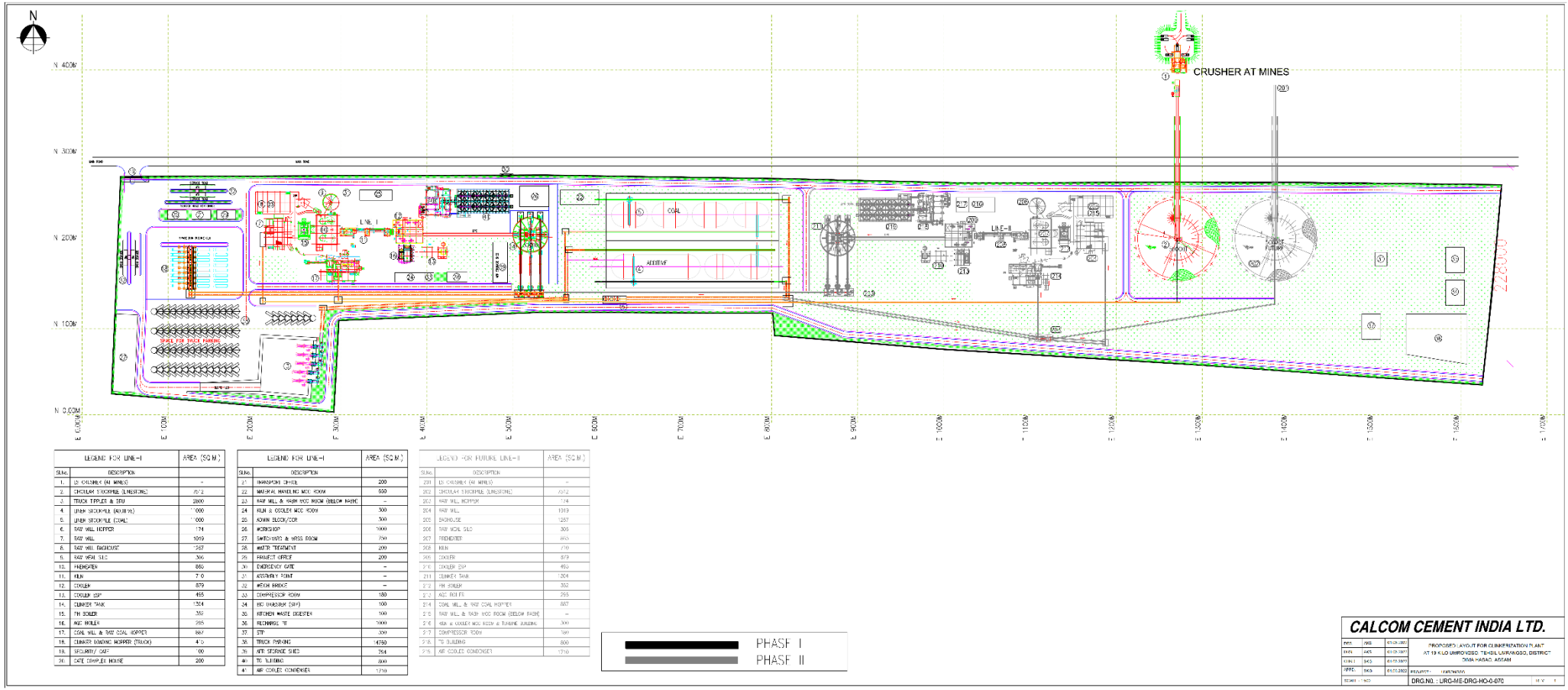
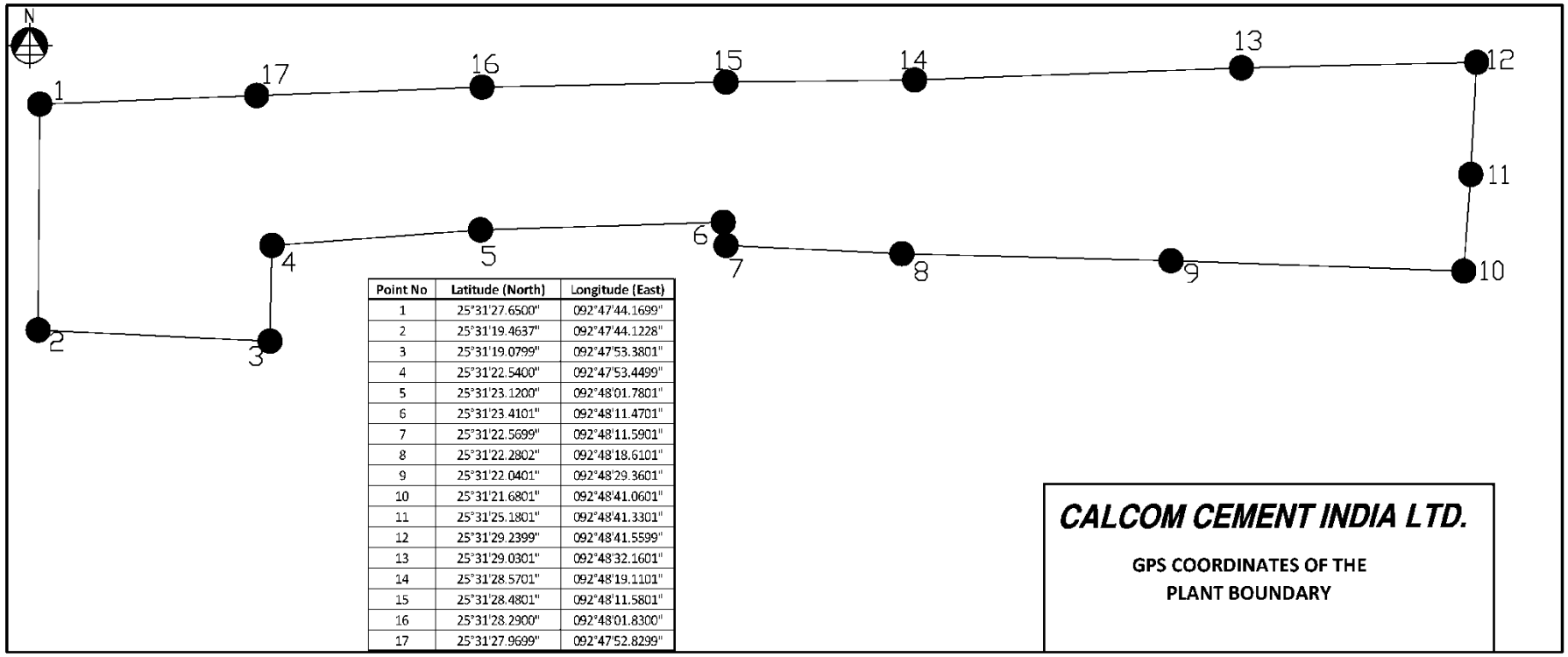
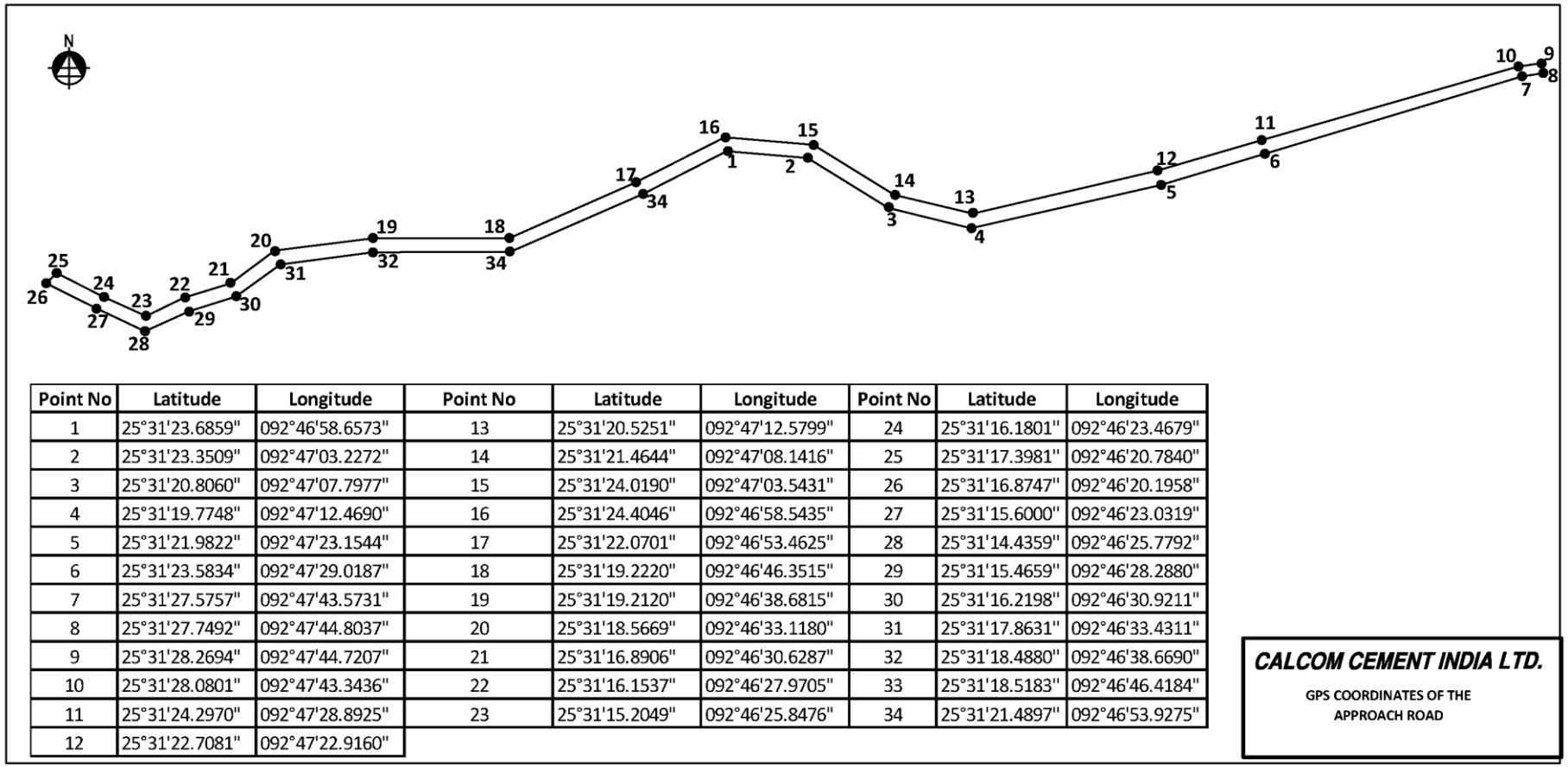


Figure - 2: Plant Layout



Point No	Latitude (North)	Longitude (East)
1	25°31'27.6500"	092°47'44.1699"
2	25°31'19.4637"	092°47'44.1228"
3	25°31'19.0799"	092°47'53.3801"
4	25°31'22.5400"	092°47'53.4499"
5	25°31'23.1200"	092°48'01.7801"
6	25°31'23.4101"	092°48'11.4701"
7	25°31'22.5699"	092°48'11.5901"
8	25°31'22.2802"	092°48'18.6101"
9	25°31'22.0401"	092°48'29.3601"
10	25°31'21.6801"	092°48'41.0601"
11	25°31'25.1801"	092°48'41.3301"
12	25°31'29.2399"	092°48'41.5599"
13	25°31'29.0301"	092°48'32.1601"
14	25°31'28.5701"	092°48'19.1101"
15	25°31'28.4801"	092°48'11.5801"
16	25°31'28.2900"	092°48'01.8300"
17	25°31'27.9699"	092°47'52.8299"

Figure - 3: Plant Boundary GPS Coordinates



Point No	Latitude	Longitude	Point No	Latitude	Longitude	Point No	Latitude	Longitude
1	25°31'23.6859"	092°46'58.6573"	13	25°31'20.5251"	092°47'12.5799"	24	25°31'16.1801"	092°46'23.4679"
2	25°31'23.3509"	092°47'03.2272"	14	25°31'21.4644"	092°47'08.1416"	25	25°31'17.3981"	092°46'20.7840"
3	25°31'20.8060"	092°47'07.7977"	15	25°31'24.0190"	092°47'03.5431"	26	25°31'16.8747"	092°46'20.1958"
4	25°31'19.7748"	092°47'12.4690"	16	25°31'24.4046"	092°46'58.5435"	27	25°31'15.6000"	092°46'23.0319"
5	25°31'21.9822"	092°47'23.1544"	17	25°31'22.0701"	092°46'53.4625"	28	25°31'14.4359"	092°46'25.7792"
6	25°31'23.5834"	092°47'29.0187"	18	25°31'19.2220"	092°46'46.3515"	29	25°31'15.4659"	092°46'28.2880"
7	25°31'27.5757"	092°47'43.5731"	19	25°31'19.2120"	092°46'38.6815"	30	25°31'16.2198"	092°46'30.9211"
8	25°31'27.7492"	092°47'44.8037"	20	25°31'18.5669"	092°46'33.1180"	31	25°31'17.8631"	092°46'33.4311"
9	25°31'28.2694"	092°47'44.7207"	21	25°31'16.8906"	092°46'30.6287"	32	25°31'18.4880"	092°46'38.6690"
10	25°31'28.0801"	092°47'43.3436"	22	25°31'16.1537"	092°46'27.9705"	33	25°31'18.5183"	092°46'46.4184"
11	25°31'24.2970"	092°47'28.8925"	23	25°31'15.2049"	092°46'25.8476"	34	25°31'21.4897"	092°46'53.9275"
12	25°31'22.7081"	092°47'22.9160"						

Figure - 4: Approach Road GPS Coordinates

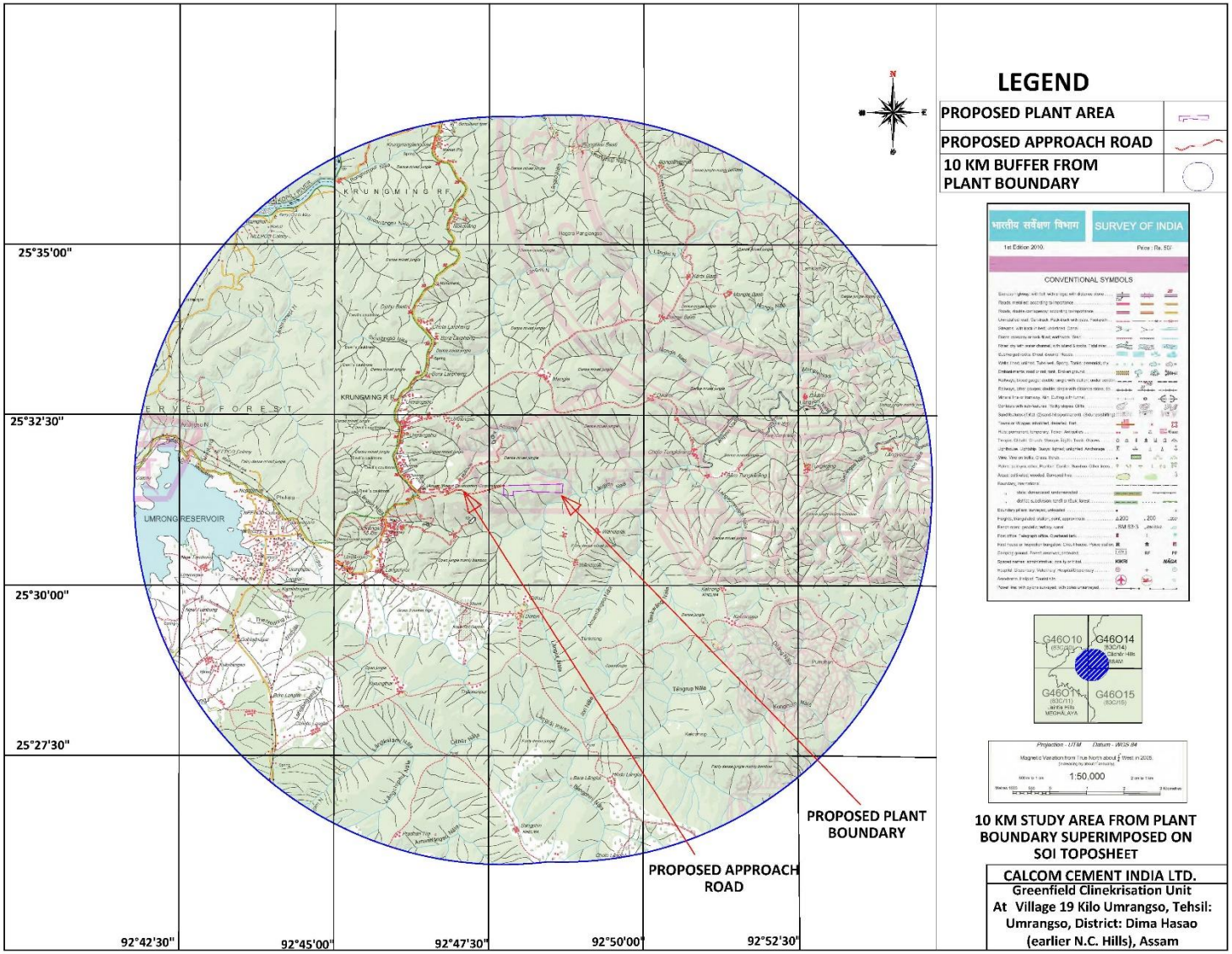


Figure - 5: SOI TOPOSHEET MAP SHOWING STUDY AREA

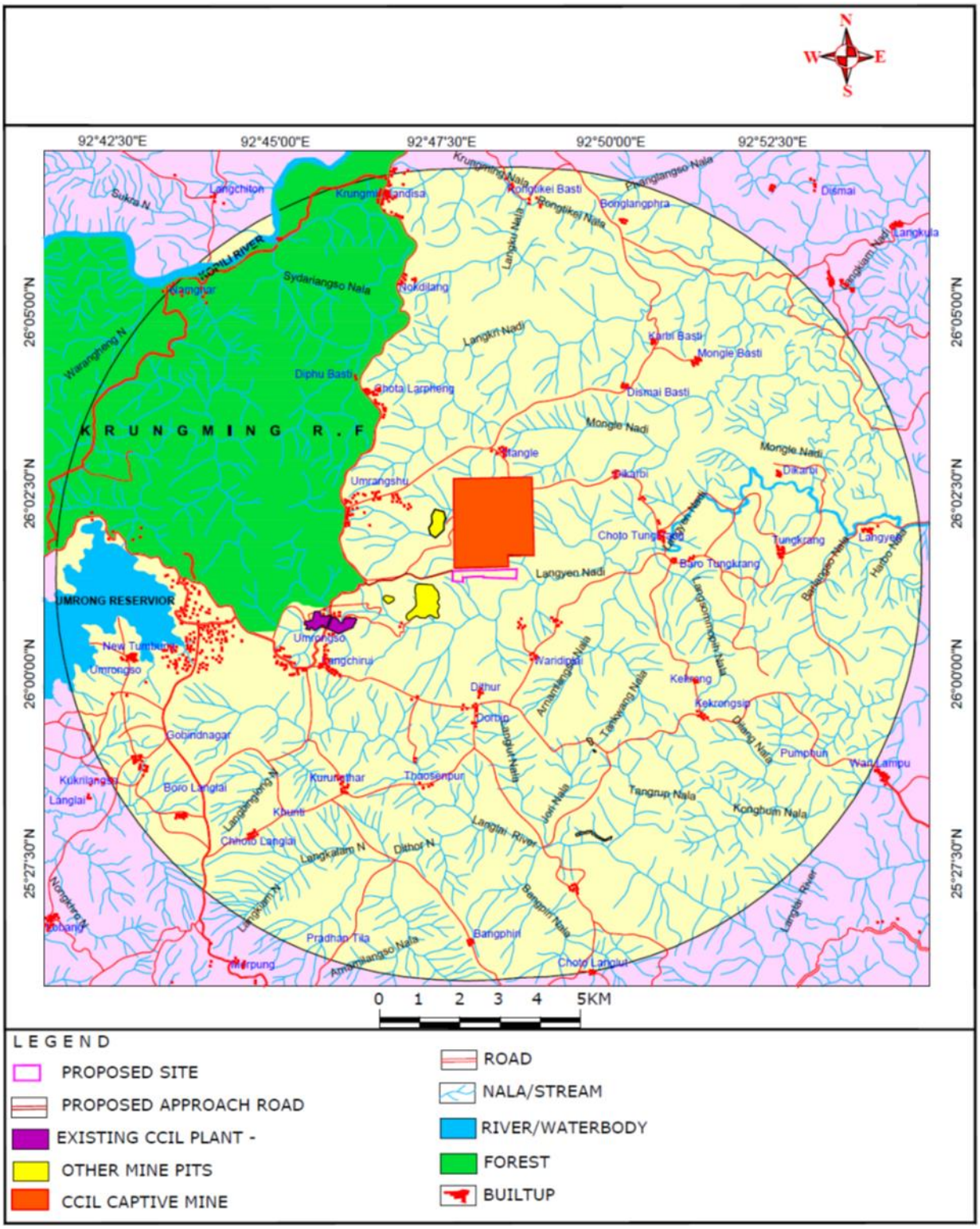


Figure-6: Environmental Setting Map

(iii) Details of alternative sites consideration and basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted.

- CCIL is operating a standalone grinding unit at Lanka, Hojai, Assam. This project was planned to implement as an Integrated Cement Plant and Environmental Clearance was also obtained from MoEF&CC vide letter dated 26th July, 2007.
- It was proposed that limestone will be sourced from the captive New Umrangso Limestone mine (Area: 417.50 ha) of CCIL at Umrangso, District: Dima Hasao (earlier N.C. Hills), Assam, for this project. But due to delay in implementation of limestone mine, only grinding unit was established and required clearances were obtained.
- Now, EC for New Umrangso Limestone Mine has been obtained vide letter dated 11th June 2020 and is under operation.
- After being assured of limestone source, CCIL is now proposing to install a Clinkerisation unit. But Considering the lead distance from limestone mine to plant at Lanka (located ~70 Km by road), CCIL dropped the proposal to install the clinkerisation unit at Lanka.
- CCIL intends to set up clinkerisation unit in close proximity to the mine to reduce the lead distance for transportation of limestone. CCIL approached N.C. Hills Autonomous Council in this reference for identification and allotment of non-forest land in close proximity to the limestone mine to set up clinkerisation unit.
- The Revenue and Settlement Dpt. of NC Hills Autonomous Council, Haflong, has allowed the land admeasuring 280 Bighas at 19 Kilo Umrangso on Periodic Patta for industrial use vide letter dated 30th April 2022 (Attached as an **Annexure I**).

The Current site is selected considering the following benefits:

- The selected site is adjacent /pit-head to the Mining Lease area this reduces the impact of limestone transportation (the major raw material which constitutes 94% of Raw mix). Being in close proximity to the ML area, closed conveyor belt will be used for transportation of crushed limestone to the plant.
- The current site is about 2.6 km from NH 627 and a dedicated approach road is planned to be constructed.
- The entire area is Non-Forest land.
- There is no Habitation within and in close proximity of plant.
- The existing operating plant of the company is also nearby the selected site.

Considering the above, the proposed site is the best suite.

(iv) Size or magnitude of operation

Size in terms of area: Total project area is 280 Bigha (37.47 ha) out of which area earmarked for setting of plant & associated infrastructure is 240 bigha (32 ha). Area for approach road to connect NH 627 is 40 Bigha (5.35 ha). Out of total project area, 33% area (12.37 ha) will be covered under greenbelt /plantation/avenue plantation, which includes the laydown area.

Magnitude in terms of production: Details of production of proposed clinkerisation plant as follows:

Table-3

Production Details

S. No.	Particulars	Phase I	Phase II	Total
1.	Clinker (Million TPA)	2.8	2.8	5.6
2.	WHRS (MW)	11	11	22
3.	D.G. Set (kVA) –for emergency purpose	500	500	2x500

Magnitude in terms of Cost: The estimated capital cost of the project is Rs. 3015 Crores.

Table-4

Project Cost Break-Up

Particulars	Phase I	Phase II	Total
Project Cost (Rs in Cr.)	**1625**	**1390**	**3015**

As per EIA Notification dated 14th Sept., 2006 & as amended from time to time; this project falls under S. No. 3 (Material Production), Category - 'A', Project Activity '3 (b)' Cement Plants. Clinker is an intermediary product for manufacturing Cement.

(v) Project description with process details (a schematic diagram/ flow chart showing the project layout, components of the project etc. should be given)

Project Description

M/s. Calcom Cement India Ltd. is proposing Clinkerisation Unit at 19 Kilo Umrangso, Tehsil: Umrangso, District: Dima Hasao, Assam.

Process Details

Clinker is an intermediary product for manufactiring Cement. The Clinker produced from the plant will be sent to split located Grinding Units for cement manufacturing.

Clinkerization Plant

Clinker manufacturing process is based on dry process technology involving:

o Quarrying & crushing raw materials and transportation to Plant & Storage,

o Raw Mix Preparation & Homogenization- Grinding the carefully proportioned materials to a high degree of fineness

o Preheating, Calcination & Clinkerization - Pyroprocessing the raw mix in a rotary kiln to produce clinker.

o Cooling, Storage and transport of Clinker to split located Grinding Unit/s.

WHRS- to use waste heat from Pre-heater and cooler

✓ ***Transport of excavated limestone from Captive Mines***

Crushed Limestone of required size will be transported to Cement Plant from Crusher proposed to be installed in Captive Limestone Mine through Covered Conveyor belt of 1000 TPH capacity for each line of clinkerisation unit.

Raw Mix Preparation & Homogenization

- *Raw Material Reclaiming and Transport***-** Limestone will be stored in a pile through automatic stacker machine. Once the pile of required quantity and quality will be achieved then reclaimer will be used to reclaim the stockpile material. By using stacker and reclaimer machines, pre-blending takes place to minimize fluctuation in crushed limestone quality. The pile of LS will be continuously reclaimed, when raw mill will be in operation and stored in hopper at raw mill section. Magnetic separators will be installed over the belt conveyers to remove any foreign materials.
- *Corrective and Coal Stacking & Reclaiming*

  Correctives and Coal shall be received by trucks and unloaded in the plant with the help of truck tippler and box feeders.

  Correctives and Coal shall be stored in covered longitudinal stockpiles. The luffing and slewing type linear boom stacker and side scraper type reclaimers are envisaged.

  Common slewing type stacker shall be used to stack coal and correctives in linear stockpiles placed adjacent to each other. Reclaimer shall be used to reclaim coal while correctives shall be reclaimed and fed to the reclaim conveyor manually through pay loaders.
- *Raw Mill Feed* **-** The Limestone along with additives will be transported from their respective feed bins via weigh feeders and belt conveyor to the raw mill system.
- *Raw Meal Grinding Process* **-** A vertical roller mill of 550 tph for raw material grinding is envisaged for each phase. The mill construction shall be in open and

maintained through mobile crane. Raw Mill will be used to grind the raw mix which is capable to meet the production needs. The raw grinding section comprises of Mills, fans, separators & cyclones as well as all ductwork and control dampers. The ground product from raw mill is known as 'Raw Meal'.

- *Raw Meal Transport and Storage* **-** From the separator cyclones the raw meal will be transported via air slides and a bucket elevator to the homogenizing silo.

  Homogenizing silo will be prerequisite for raw meal blending to achieve consistent quality of Kiln feed. This is/ will also ensure regulated feed with minimum variation in quality for smooth operation of Kiln. A continuous blending silo of RCC construction of required capacity will be used for the same. The silo capacity would be suitable for the required daily clinker production.

✓ ***Preheating, Calcination & Clinkerization***

- *Raw Meal Transport to Kiln Feed* - From the homogenizing silo the raw meal will be extracted to the Kiln feed bin below the silo.
- *Kiln Feed* - From the Kiln feed bin the material will be transported through mechanical conveyors with measurement and control of Kiln feed rate.
- *Pre-heating* - The pre-heating equipment will be comprised of the multi stage cyclone system connected with gas ducts and meal chutes, the down comer duct and the ID fan. In cyclone pre-heater system, an efficient heat transfer takes place to finally disperse the raw material particles, when they come in contact with hot gases from Kiln.

  The raw meal, which will be fed into the top stage gas duct, will be carried by hot gas steam into cyclone. The material gets separated from gas in cyclones and then travels downwards and through meal chute will be discharged into next lower stage gas duct. In this way, material comes into contact with high temperature gases and gets pre-heated and partially calcined and then enters the pre-calcinator.

  The calciner will provide sufficient residence time for efficient combustion of not only conventional coal but also for Petcoke and other alternate fuels which are difficult to handle. The calciner will be equipped with multi firing points for the above said requirements.

  The preheater will be equipped with induced draught fan for ensuring counter current heat transfer from the Kiln through the calciner & the series of cyclones.

  The exit hot gas from the preheater will be utilized for Waste Heat Power recovery system and drying of raw material in Raw Mill & drying of coal / Petcoke in Coal Mill and for Clinker / slag grinding with/without fly ash/gypsum for Cement production.

- ❖ *Pre-calcining and Kiln* - These groups consist of an in-line low NO2 pre-calciner, tertiary air duct from the Kiln hood and a rotary Kiln.

  In the pre-calcinator, further Calcination takes place by firing pulverized coal/pet coke to provide the necessary heat in the Kiln and the Pre-calciner located at the bottom of the pre-heater. Calcined material from bottom stage cyclone is fed to the Kiln. The feed travels down as the Kiln rotates. The complete chemical reaction takes place when the material reaches the burning zone and cement clinker is formed.

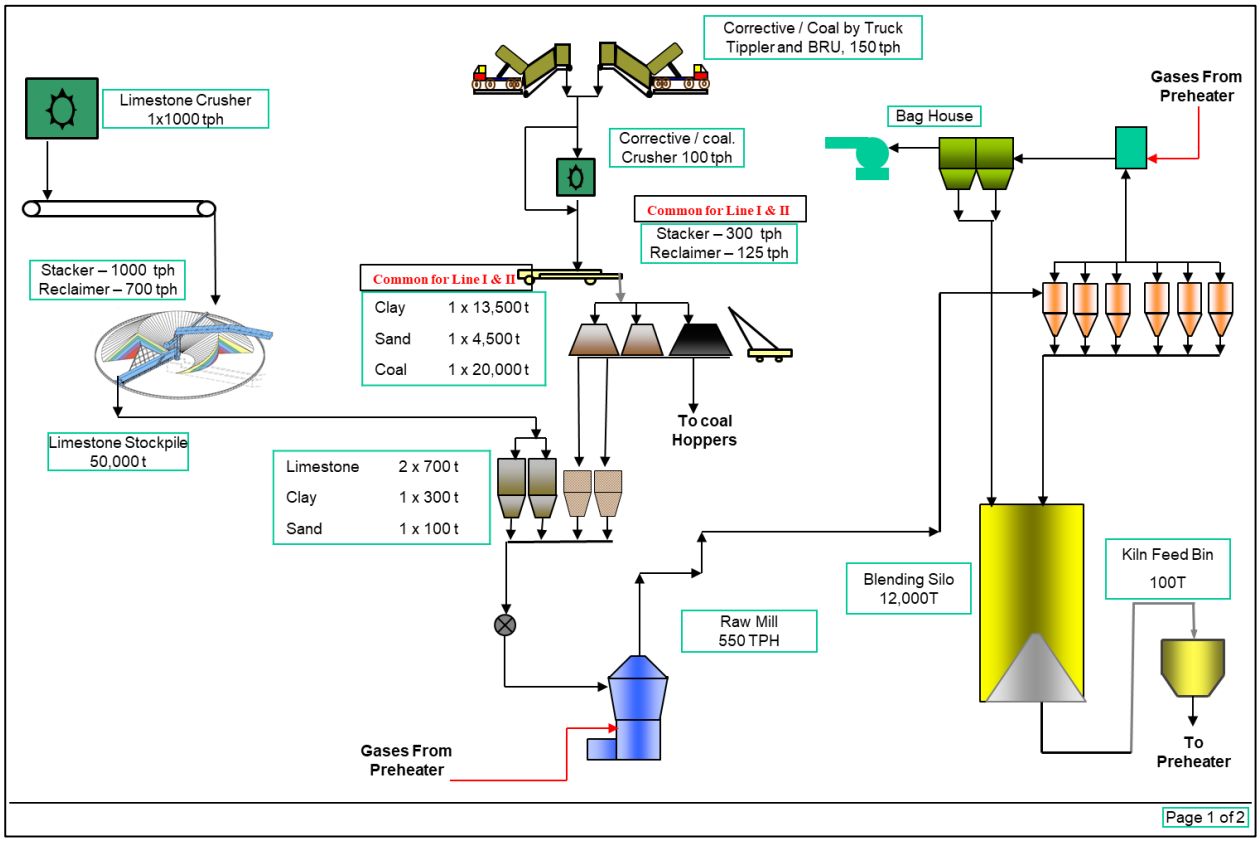
✓ ***Clinker Cooler***

This equipment recuperates heat from hot clinker, which reduces the consumption of fossil fuel and other fuels required for cement clinker making. It is a spillage-free and high efficiency third generation clinker cooler with roller crusher, ESP (electrostatic precipitator) including fan and stack, WHRS (Waste Heat Recovery System) for cooling clinker to 65 degree Centigrade plus ambient. Hot clinker discharged from the Kiln drops on the grate cooler and gets cooled.

✓ ***Clinker Transport and Storage***

The clinker leaving the clinker cooler stored in RCC Silo. The same will be transported by trucks to the Grinding Units, Lanka, Assam.

Process Flow sheet and Mass Flow diagram is given as Fig.6



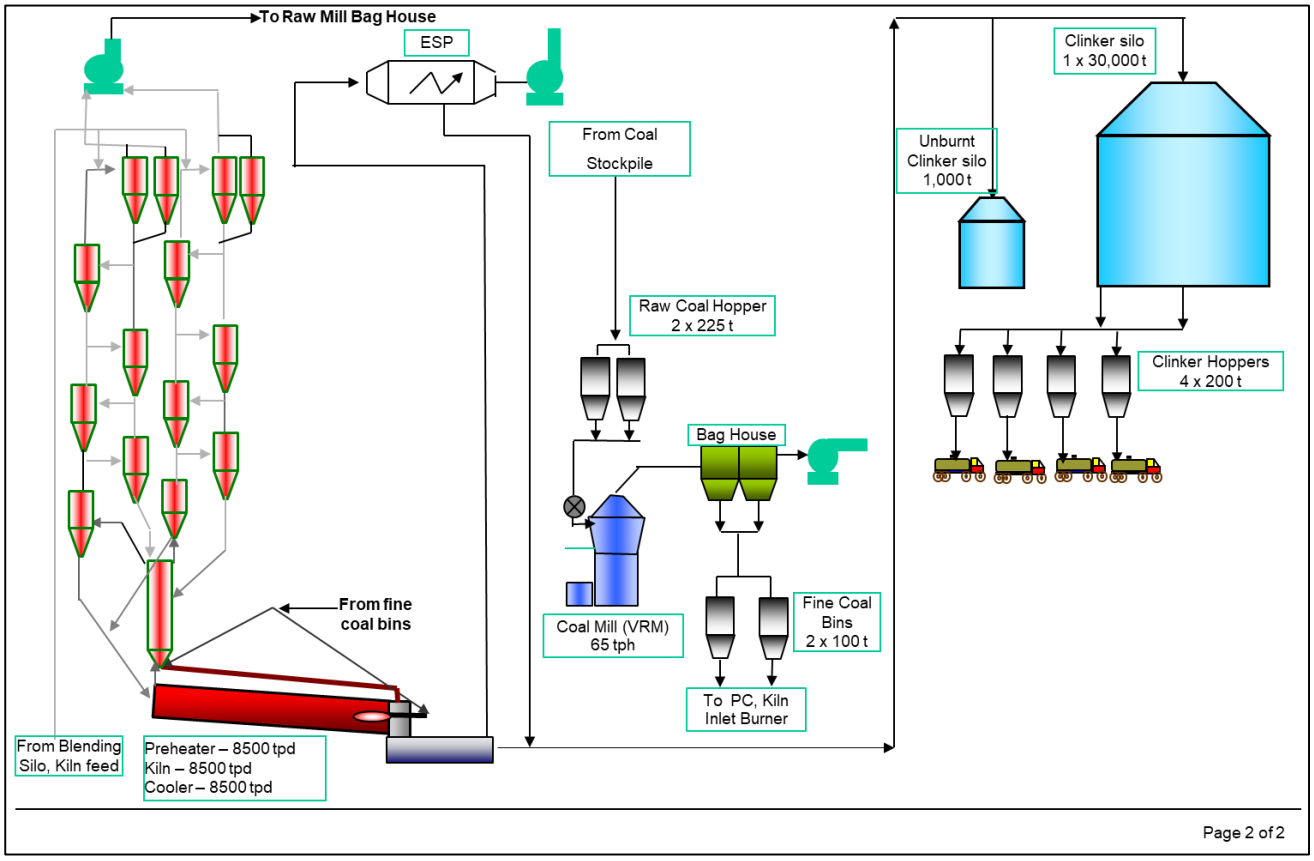


Figure 6: Process Flow sheet and Mass Flow diagram

Waste Heat Recovery Boiler

An installation of 11 MW Waste Heat Recovery System in each phase is proposed for re-utilization of the exhaust gases from the Pre-heater/ Cooler to generate electric power and consequently reduce consumption of grid power through fossil fuel. The project will contribute to the more efficient use of energy and will reduce reliance on exhaustible fossil fuel.

PH boiler will be a vertical configuration single drum boiler. AQC boiler will be vertical single drum boiler. Both the boilers are top supported, outdoor Unit suitable for the specified Pre-heater and clinker Cooler exhaust of cement plant.

The Waste Heat coming out of Pre-heater and cooler from present Kilns and proposed Kiln will be used in Waste Heat Recovery Boiler to produce low pressure steam which is fed to turbine to produce power of 2x11 MW. WHR boiler will be based on steam ranking cycle and envisaging recovery of heat from exhaust gases at two points viz. pre-heater and clinker cooler (tapping at exhaust or mid-cooler). Steam generated in the boiler will be used in the turbine to generate electricity in the generator. *Process flow chart is shown in Figure* - 7.

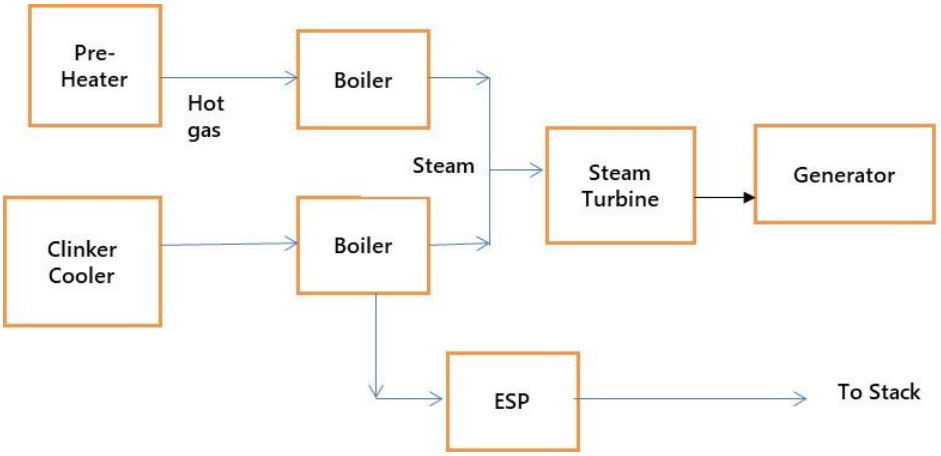


Figure - 7: Process Flow Chart of WHRS

Table:5

Details of Air Pollution Control Equipments

S. No.	Location of APCE	Type of APCE	Number		
			Phase I	Phase II	Total
1.	Raw Mill and Kiln	Bag House	1	1	2
2.	Coal Mill	Bag House	1	1	2
3.	Clinker Cooler	ESP	1	1	2
Total			3	3	6

De-Sox System:

- There is high pyritic sulfur (0.57%) reported in the limestone. The fuel sulfur will also contribute for SOx generation. In view of this, SOX emission level in the plant is expected to be higher. CCIL is proposing to install De-SOX System in the Plant to keep the SOX level in the desired limit. With installation of De-SOX system, the SO2 emission shall further reduce.

NOx Control

- The company will take adequate measures to keep NOx at the minimum level. These measures include installation of low NOX calciner, Low NOx burner and usage of Alternate Fuel (AF).

- CCIL is considering maximizing the use of AF further including plastics and proposes to upgrade the processing and feeding system. Enhanced usage of AF would help to control NOX level further.

(vi) Raw material required along with estimated quantity, likely source, marketing area of final products, mode of transport of raw material and finished product.

a) Raw Material Requirements:

Details regarding raw material is given in Table - 3 and regarding fuel in Table - 4:

Table - 6
Raw Material Requirement, Source & Transportation

S. No.	Raw Material	Quantity (Million TPA)	Source	Mode of Transportation / Approx. Distance
		Total		
1.	Limestone	8.22	Captive Limestone mine (New Umrangso)	Covered Conveyor belt/ adjacent
2.	Hill sand	0.45	Purchase from Kekrang	By road/~10 km
3.	Coarse Sand	0.14	Purchase from Kopili River	By road/~45 km

b) Fuel:

CCIL will use indigenous/imported coal and petcoke as primary feed. Mix of indigenous fuel will be the primary fuel for the plant. This will be further substantiated with AFR as may be available. Provision for Alternate fuel firing system shall also be considered for upto 35% TSR (Thermal Substitution Rate). Necessary processing, storage and feeding system will be provided in the plant.

Table - 7
Fuel Requirement

S. No.	Name of Fuel	Quantity Required (MIL. TPA)	Calorific value (Kcal. /kg)	% Ash	% Sulphur	Source	Mode of Transportation / Approx. Distance
		Total					
1.	Coal (Indian and Imported)/ Petcoke	1.16	4500-7500	24-4	<8	Purchase from Local/ Assam/ Meghalaya/ South Africa/ Australia	Imported coal by rail upto Lanka and thereafter by road/ (From Nearest Port Diamond Harbor)/ Local Coal by Road
2.	AFR	0.03	3000	5	<3	Purchase from local area	By Road

Proximate Analysis of Indigenous Coal as available in nearby area is given in table below:

Table - 8
Analysis of Indigenous Coal

Properties	Unit	Indigenous Coal						
		Assam 1	Assam 2	Local 1	Local 2	Local 3	Local 4	Local 5
TM	%	10.01	11.56	16.91	10.85	13.61	16.85	10.27
Ash	%	19.35	22.03	33.57	36.31	28.28	32.76	30.57
GCV	Kcal/kg	6202	5771	4593	4656	4926	4654	5084
IM	%	0.49	0.64	0.52	0.48	0.6	0.4	0.49
VM	%	34.04	36.5	42.6	38.8	43.2	40.2	36.93
Sulphur	%	4.06	3.50	3.00	3.00	3.00	3.00	6.00

c) Marketing Area and Mode of transportation of Final Product

This is a clinkerisation unit which will be transported to split located grinding unit of CCIL at Lanka and other Grinding Units for manufacturing of Cement. As the area being located in Hilly region and there is no rail connectivity the Clinker will be transported to the split located grinding units by road.

Marketing area of Final product i.e., Cement which will be dispatched from the split located Grinding Unit is Assam and other parts of North East region of the country. Export of finished product to neighbouring Countries will depend upon opportunities available in future.

(vii) Resources optimization/ recycling and reuse envisaged in the project, if any, should be briefly outlined.

- It is proposed to install Waste Heat Recovery System (WHRS) of 11 MW in each phase for re-utilization of the exhaust gases from the Pre-heater/ Cooler to generate electric power & consequently reduce consumption of grid power through fossil fuel.
- Dust from various air pollution control equipment will be recycled back to process.
- Sludge from STP will be used as manure in greenbelt development / Plantation.
- Domestic wastewater will be treated in STP and treated water will be re-used in greenbelt development/ plantation, dust suppression.
- The company will also use waste materials as fuel in kiln as AFR to reduce coal.

(viii) Availability of water its source, energy /power requirement and source should be given.

a) Water Requirement and Source

The water requirement for the proposed plant is 1700 KLD; which will be sourced from nearby flowing Longlai river, Amrang nalla, other rivers/ streams, Nallah, within a radius of 25 km of the Plant site.

Table - 9
Water Requirement

Description / Area	Water Requirement, KLD		
	Phase I	Phase II	Total
Cement Plant	600	600	1200
Waste Heat Recovery System (WHRS)	200	200	400
Drinking and Sanitation	30	20	50
Landscaping and Gardening	50	--	50
Total	**880**	**820**	**1700**

b) Power Requirement and Source

The Power requirement for the proposed plant is estimated to be 36 MW (~ 18 MW for each Phase). Power will be sourced from 132 kV sub-station of Assam Power Distribution Company Ltd (APDCL) & stepped down to 11kV at plant and Proposed WHRS (2x11 MW). 500 kVA DG sets (for each Phase) is proposed for emergency back-up.

(ix) Quantity of waste to be generated (liquid and solid) and scheme for their management/disposal

- No wastewater will be generated from clinker manufacturing process, as it is based on dry process technology.
- Domestic wastewater 40 KLD will be treated in STP. Treated water will be re-used for greenbelt development/ plantation.
- Construction waste generated due to proposed project like soil, brick bits will be utilized in levelling of land and construction of roads
- RO reject and boiler blow down (136 KLD) will be treated in ETP and treated water will be used for dust suppression/plantation.
- Dust collected from various air pollution control equipment is estimated to be about 15500 tonnes/month which will be recycled back into the process.
- Used oil & Grease (Cat. 5.1) (~2 KL/Month), Contaminated Cotton Rags (Cat. 33.2) (~0.5 Tonnes per Month), Empty barrels/containers/liners contaminated with hazardous chemicals /wastes (200 nos./annum) will be generated and stored in the

designated area & will be disposed-off/sold to Authorized recyclers/ actual user as per HWM Rule, 2016..will be generated and stored in the designated area & will be disposed-off/sold to Authorized recyclers/ actual user as per HWM Rule, 2016. Used Oil & Cotton rags can be co -processed in kiln.

- Sludge (~0.4 Kg / day) from STP will be used as manure in greenbelt development / Plantation.
- Refractory bricks (255 Tonnes/month) due to wear & tear will be replaced once in a year, it has high recycling values hence will be sold to outside agencies.
- Redundant machinery or equipment scraps (~1200 -1300 tonnes / annum) as and when generated, will be segregated, stored and sold to the authorised recyclers.
- Municipal solid waste (~150 Kg/day) generated from plant and will be disposed off after segregating into bio –degradable and non- biodegradable waste. Bio – degradable waste will be composted & will be used as manure in greenbelt development / plantation. Non-biodegradable waste will be disposed off suitably. Concept of waste minimization 3R's(Recycle, Reduce & Recover)scheme will be adopted.
- Used Lead acid batteries (~600 - 800 Nos. / annum, approx. 5.0 tonnes /annum) will be generated which will be stored in the designated storage area and will be disposed off / sold to registered vendors as per prevalent rules.

4.0 SITE ANALYSIS

(i) Connectivity

The plant site is well connected to NH 627 (earlier SH – 20). A dedicated road connecting NH and proposed plant, of ~2.3 km length with 15 m width is proposed for transportation of raw material, fuel and finished product.

Nearest Railway Station is Langting Railway Station (Aerially ~30.11 km, East) and nearest airport is Lokpriya Gopinath Bordoloi International Airport (Aerially ~136 km, NW). CCIL is already operating a clinkerisation unit at 16 Kilo, Umrangso which is about 3 km, SW and all necessary infrastructure is available.

(ii) Land form, Land use and land ownership

Total land required for proposed plant and approach road is 37.47 ha.

Land Form: The land for of the project area falls under "Structural Origin-Low Dissected Hills and Valleys" as per Geo-morphology map available on NRSC-Bhuvan.

Land Use: As per the land use/land cover map as available on NRSC-Bhuvan (Cycle II, 2011-12; 50K), the project area falls under barren/un-culturable/waste land.

Land ownership: Project area is Revenue Khas land/ Non-Forest Land & allowed by the Revenue & Settlement Dept. of NC Hills Autonomous Council for industrial use. Earlier, the land was granted to villagers for Jhum Cultivation on pattas. Upon allotment of land to CCIL, it will be used in sustainable manner for clinker production & allied infrastructure including approach road alongwith Greenbelt development and plantation in 33% of the earmarked area i.e.,12.37 ha area.

(iii) Topography

Topography of the project area is undulating. Topography of the land will change as construction will require grading and levelling of land. The maximum elevation of the plant site is 396 AMSL at NW corner and minimum elevation is 254 AMSL at SE corner with average elevation of 343 AMSL.

(iv) Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ), shortest distances from the periphery of the project to periphery of the forests, national park, wild life sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the gazette notification should be given in Table – 6.

Project area is 37.47 ha which is Revenue Khas land/ Non-Forest Land& allowed by the Revenue & Settlement Dept. Of NC Hills Autonomous Council for industrial use. Upon allotment of land to CCIL, it will be used in sustainable manner for clinker production & allied infrastructure including approach road alongwith Greenbelt development and plantation in 33% of the earmarked area i.e.,12.37 ha area.

Table – 10

Environmental Settings of the Area

S. No.	Particulars	Details *(with approximate aerial distance and direction from the nearest boundary of plant site)*
1.	Nearest Town	Umrangso (~5.8 km, West)
2.	Nearest City	Lanka (~44.7 km, NNE)
3.	Nearest National Highway / State Highway	○ NH-627 (earlier SH – 20) (~2.3 km, West) ○ SH – 7 (~5.55 km, West)
4.	Nearest Railway station	Langting Railway Station (~30.11 km, East)
5.	Nearest Airport	• Lokpriya Gopinath Bordoloi International Airport, Guwahati (~136 km, NW); • Kumbhigram Silchar Airport (~69.3 km, SSE)

S. No.	Particulars	Details *(with approximate aerial distance and direction from the nearest boundary of plant site)*
6.	National Parks, Wildlife Sanctuaries, Biosphere Reserves, within 10 km radius	No National Parks, Wildlife Sanctuaries, Biosphere Reserves, within 10 km radius.
7.	River / Water Body (within 10 km radius)	• Umrong Reservoir (7.1 km in West direction), • Langyen Nadi (0.25 km in SE direction), • Langlai River (6.1 km in S direction), • Mongle Nadi (3.8 km in NE direction), • Kopili River (9.4 km in NW direction), • Kopili Reservoir (14.7 km in WSW direction), • Diyung River (14.7 Km NE) and • Many seasonal nallas, falls exist within 15 km radius of the plant site out of which Amrang nalla is nearest which is 0.14 km, East from plant boundary
8.	Reserved Forests (RF) / Protected Forest (PF) within 10 km radius	• Krungming RF (2.3 km in W), • Langting Mupa RF(14.7 Km NE)
9.	Seismic Zone	Zone - V [as per IS 1893 (Part-I): 2002]

(v) Existing Infrastructure /industries

There is no existing infrastructure at project site. Details and status of industries located in 10 km of the project site is given below:

Table - 11

Details and status of industries located in 10 km of the project site

S. No	Name of Industry	Type	Distance and direction from project site	Status as on date
1	NECEM Cement Ltd.	Cement Manufacturing, 100 TPD	2.7 km (WNW)	Not Operational
2	Umrangshu Cement Ltd	Cement Manufacturing, 100 TPD	2.5 km (WNW)	Not Operational
3	Vinay Cement Ltd, New Umrangshu	Cement Manufacturing, 500 TPD	3.5 km (SW)	Not Operational
4	Assam Mineral Development Corporation Limestone Mines	Limestone Mining Project (State Govt)	0.5 km (NW), 1.0 km (NW), 1.3 km (W), 3 km (N)	Not Operational

5	NEEPCO (National Eastern Electric Power Corporation Ltd.	Hydro Electric Power Project (CPSU)	9.9 km (NW)	Operational
6	Jamunannagar Limestone Mine.	Limestone Mining	0.7 km (SW)	Operational
7	Limestone Mine of NECEM	Limestone Captive Mining	1.7 km (SW)	Operational
8	Kopili Tea State	Tea Estate and tea manufacturing	3.25 km (SW)	Operational
9.	New Umrangshu Limestone Mine	Limestone Mining	Adjacent	Operational
10.	CCIL Clinkerisation Plant	Clinkerisation Unit	2.8 km (SW)	Operational

No industries have been established in the area after 2013, except Calcom Cement India Ltd. with clinkerisation capacity of 1.52 MIL. TPA- Operational Since April, 2015.

Storage facilities

Adequate storage facilities will be provided for the storage of raw materials & finished product, which are detailed below:

Table- 12

Storage Area Break-up

Storage	**Phase I**	**Phase II**
Limestone Stockpiles	1 x 50,000 t	1 x 50,000 t
Clay Stockpile	1 x 13,500 t	
Sand Stockpile	1 x 4,500 t	
Coal Stockpile	1 x 20,000 t	
Raw Meal Silo	1 x 12,000 t	1 x 12,000 t
Clinker Silo	30,000 t	1 x 30,000 t

(vi) Soil Classification

Soils predominate in the area is sandy loam.

(vii) Climatic Data from Secondary Sources

Umrangso has a pleasant weather throughout the year, owing to its location. Generally, the weather is cold and humid with rains occurring at frequent intervals.

Average rain fall is recorded as 1673 mm per annum. Summers are especially uncomfortable with hot and humid climate. During this time, temperatures ranges from a minimum of 25°C and can rise up to a maximum of 35 °C. Humidity is around 40 - 90% throughout the year.

(viii) Social Infrastructure available

Nearest Town is Umrangso (~5.8 km in West direction) and Nearest City is Lanka (44.7 km in NNE direction). Mobile network, medical facilities Educational Institutions, Technical Institute for skill up-gradation, Dispensary etc. are available in the area. Almost all the villages in the buffer zone are electrified. CCIL is already operating a clinkerisation unit at 16 Kilo, Umrangso which is about 3 km, SW with all the necessary infrastructure available.

5.0 PLANNING BRIEF

(i) Planning Concept (type of industries, facilities, transportation etc.) / Town and country Planning/ Development authority classification.

The proposed project is Clinkerisation unit (Red Category) with WHRS. Transportation of materials will be done by road / covered belt conveyors. Facilities required for the proposed project will be provided as per requirement. Preference will be given to local people in employment as per their eligibility. Operational workers/employees coming from distant places, will be accommodated in existing colony of the company's another cement plant nearby or may be accommodated in Umrangso town (~6 km).

(ii) Population Projection

Direct and Indirect employment opportunities will be created due to the project. Local people will be preferred in employment during Construction (180 Persons) & Operation phase (267 persons) for the proposed project. Hence, any significant impact on the population influx is not envisaged because of the proposed project & only marginal population influx is anticipated.

(iii) Land use planning

Total land required for proposed plant and approach road is 37.47 ha. The present land is Revenue Khas land & will be converted into industrial use. The Revenue and Settlement Dpt. of NC Hills Autonomous Council, Haflong, has allowed the land admeasuring 280 Bighas at 19 Kilo Umrangso on Periodic Patta for industrial use.

Out of the total plant area, 33% i.e. 12.37 ha area will be covered under greenbelt development / plantation.

(iv) Assessment of infrastructure demand (Physical & Social)

M/s. CCIL has estimated the demand of infrastructure (Physical & Social) in the nearby area of the plant site and appropriate developmental activities will be undertaken under for various rural developmental programmes and initiatives for the up-liftment of the nearby communities from time to time. CCIL has/is implementing various socio-economic activities under CSR programs of its nearby existing operating plant.

(v) Amenities/Facilities

CCIL will be providing all the amenities like First aid room/ Dispensary, drinking water facilities, Toilet facility, canteen etc. for the permanent and contract employees. Preference will be given to local people in employment as per their eligibility, however operational workers/employees coming from distant places, will be accommodated in existing colony of the company's another cement plant nearby or may be accommodated in Umrangso town (~6 km). Other facilities will be extended by nearby existing operating unit of CCIL.

6.0 PROPOSED INFRASTRUCTURE

(i) Industrial Area (Processing Area)

Total plant area is 280 Bigha (37.47 ha); out of which plant area is 240 Bigha (32 ha) and approach road is 40 Bigha (5.35 ha). The Revenue and Settlement Dpt. of NC Hills Autonomous Council, Haflong, has allowed the land admeasuring 280 Bighas at 19 Kilo Umrangso on Periodic Patta for industrial use.

- Workshop

A separate building for Mechanical/electrical/electronic maintenance workshop is considered.

- Warehouse and Spare Parts Store

A separate building for storing tools, spare parts, and consumables is considered. Sufficient spare parts are considered with the initial plant delivery for the first two years of operation.

- Elevators, Cranes, Hoists and Maintenance Tools

Elevators, maintenance cranes/ hoists and all required specially designed maintenance tools for equipment and plant will be provided.

- Ventilation and Air-conditioning

Suitable ventilation and air conditioning systems as appropriate have been considered in dedicated rooms i.e. electrical and control rooms, laboratories etc.

- Central Control Room Building

A central control room building will be considered at strategic location of the plant. The central control room building will house a spacious central control room, laboratories (Chemical) and various offices. All buildings will be provided with sufficient toilets and ablution blocks.

- Technical & Administrative office

A suitable technical office & administrative office will be constructed for the project activities and operation phase. All administrative and production buildings will be provided with sufficient toilets and ablution blocks.

- Time and Security office

At the entrance of all the plant, a time office and a security office will be constructed.

- Dispensary A dispensary with first aid facilities will be provided in the plant premises.

- Weighbridge

Pitless type weighbridges of 100 t capacity are envisaged at material entry gate and below clinker loading spouts

- Parking

Adequate parking space will be provided in the plant premises for the parking of inward and outward vehicles.

(ii) Residential Area (Non processing area)

No colony is proposed as local people will be preferably employed in the proposed unit and the existing operating unit of CCIL with colony is at about 2.8 Km from the proposed site.

(iii) Greenbelt

Out of the total plant area; 33% i.e. 12.37 ha area including the laydown area which will be covered under greenbelt development / plantation

(iv) Social Infrastructure

Proposed project will result in growth of the surrounding areas by increasing indirect employment opportunities in the region including ancillary development and supporting infrastructure.

(v) Connectivity

The plant site is well connected to NH 627 (earlier SH – 20_ Aerially 2.3 km, West), Nearest city to the plant site is Lanka (Aerially 44.7 km in NNE direction). Nearest

Railway Station is Langting (Aerially ~30.11 km in East direction) and Lokpriya Gopinath Bordoloi International Airport, Guwahati (Aerially ~136 km, NW); Kumbhigram Silchar Airport (Aerially ~69.3 km, SSE). CCIL is already operating a clinkerisation unit at 16 Kilo, Umrangso which is about 3 km, SW.

(vi) Drinking Water

The water requirement for the proposed plant is 1700 KLD; which will be sourced from nearby flowing Longlai river, Amrang nalla, other rivers/ streams, Nallah, within a radius of 25 km of the Plant site. Drinking water requirement is estimated as 50 KLD (30 KLD in Phase 1 and 20 KLD in Phase-2).

(vii) Sewerage system

Detailed above in point no. IX of Section 3.

(viii) Industrial waste management

Detailed above in point no. IX of Section 3.

(ix) Solid waste management

Detailed above in point no. VIII of Section 3.

(x) Power requirement and source

The Power requirement for the proposed plant is estimated to be 36 MW (~ 18 MW for each unit). Power will be sourced from 132 kV sub-station of Assam Power Distribution Company Ltd (APDCL) & stepped down to 11kV at plant and Proposed WHRS (2x11 MW). 500 kVA DG sets (for each unit) is proposed for emergency back-up.

7.0 REHABILITATION AND RESETTLEMENT (R & R) PLAN

(i) Policy to be adopted (Central/State) in respect of the project affected persons including home oustees, land oustees and landless labourers

There is no habitation within plant boundary hence, R & R Plan is not applicable. The land of proposed plant is a Revenue land and Revenue and Settlement Dpt. of NC Hills Autonomous Council, Haflong, has allowed the land for industrial use on Periodic Patta.

8.0 PROJECT SCHEDULE AND COST ESTIMATES

(i) Likely date of start of construction and likely date of completion

The project will start only after obtaining Environmental Clearance and all other required clearance. An implementation period of 18 months from the date of signing/ effectiveness of the main equipment supply contract is foreseen for this project.

Likely dated of start of construction is March 2023 and likely dated of operation September 2024.

(ii) Estimated project cost

The Project Cost is Rs. 3015 Crores (Rs.1625 crores for Phase-I & Rs.1390 crores for Phase-II). A budgetary allotment of Rs.200 crores has been made as Capital Cost for EMP Measures and Rs.30 crores per annum towards Operating Cost. As per OM dated 30th Sept., 2020, & OM dated 20th Oct., 2020 implementation of various Socio-Economic Developmental activities on the basis of the issues raised during Public hearing will be part of EMP cost.

9.0 ANALYSIS OF PROPOSAL

(i) Financial and social benefits with special emphasis on the benefit to the local people including tribal, population, if any in the area

The plant shall be contributing revenue to the State & Central Govt. exchequer after start of operation.

The proposed plant will generate employment during construction (180) & operation phase (267). During construction of each phase, about 750 contractual labours will get employment opportunity. It is likely that the project will generate ~8 lakhs mandays of employment during construction. Also, proposed plant will contribute to various indirect employment & business opportunities like network of retailers in it's marketing regions, maintenance & housekeeping contract, transportation, workshops, shopkeepers. It will strengthen their economic conditions & improve standard of living.

Employment opportunities however is limited and require certain skill set. The area is dominated by tribal population, in order to maximise the benefits and improve the socio-economic status of the people, various socio-economic developmental activities by imparting livelihood trainings, creation of self-help groups, Health care / medical facilities, education facilities to underprivileged, social awareness and development programmes, Sanitation facilities etc. are undertaken by CCIL.

As the area is remote, CCIL has also undertaken various infrastructure developmental activities in the field of medical, water, education, Solar Lighting etc. to strengthen the socio-economic standard of the area.

CCIL believes in holistic socioeconomic development of the local community and with the implementation of the proposed project in the same area, cumulative effect of both plants will reach to larger beneficiaries which will help in the overall growth of the region. Rs. 3.56 Cr. has been incurred towards various Socio-economic developmental activities in phased manner from FY'15 till March 21. Summary of activities undertaken by CCIL in the region is attached as an **Annexure II**.

ANNEXURE-I

THE NORTH CACHAR HILLS AUTONOMOUS COUNCIL HAFLONG
DIMA HASAO DISTRICT
REVENUE & SETTLEMENT DEPARTMENT

S.CASE NO.160 (USO) 2021-2022/
To,

Dated Haflong, the 30.04 2022

M/S Calcom Cement India Ltd.
Camp-Umrangso,
District: Dima Hasao.

Sub: - Settlement of land.

With reference to your petition dated 01/02/2022, I am directed to inform you that the land measuring 280 (two hundred eighty) Bighas situated at 19 K.M. Umrangso is hereby allowed to you on Periodic Patta for Industrial Purpose on payment of settlement fee of Rs.40,000/- (Rupees forty thousand) only and Premium of land @ Rs.1,00,000/- Per Bigha. So, the total amount comes to Rs.2,80,40,000/- (Rupees two crores eighty lakhs forty thousand) only on condition the MoU shall have to be executed between NCHAC and M/S Calcom Cement India Ltd within 1 (one) month time.

Therefore you are hereby requested to deposit the above amount of fee to the Office of the undersigned at an early date and take over possession of the land from the L.P. i/c in due course.

N.C. HILLS AUTONOMOUS COUNCIL ★HAFLONG★

Secretary & Settlement Officer
N.C.Hills Autonomous Council
Haflong.
Dated Haflong, the 30.04 2022

S.CASE NO.160 (USO) 2021-2022/
Copy to:-

1. The Hon'ble Chief Executive Member, N.C.Hills Autonomous Council, Haflong for favour of his kind information with reference to his approval dtd.28/04/2022.
2. The L.P. i/c Umrangso for information and necessary action.
3. Office copy.

Issue No: 9757-60
Dated: 30.04.22

Secretary & Settlement Officer
N.C.Hills Autonomous Council
Haflong

ANNEXURE-II

SOCIO-ECONOMIC DEVELOPMENTAL ACTIVITIES CARRIED OUT BY CALCOM CEMENT INDIA LIMITED IN UMRANGSO AREA

An amount of Rs. 3.56 Cr. has been invested towards various Social Developmental Activities from FY'15 till March 2021.

Activities wise details with the expenditure incurred in the past five years are as follows:

Table - 1

Socio-economic developmental activities with expenditure from 2015-2021

Year	Activity	Village	Expenditure Amount (in Rs.)
2015-16	Construction of ring well with shed	Langcherui, Dithur, Longrung & Miyungpur	242240
	Bio compost Pit / Pond deepening	Dithur	65000
	Toilet Blocks in schools	Garampani High school, Umrangso High school, Sangvaihon Millick M.E school, Langcherui L.P school, JDSVM school	1445235
	Fuel Efficient Chullah	Langcherui, Dithur, Longrung & Miyungpur	105634
	Solar Lanterns	Langcherui, Dithur, Longrung & Miyungpur	103333
	Health camps	Langcherui, Umrangso 19 KM, Longku	61599
	Playground development	Langcherui, Dithur, Longrung & Miyungpur	145000
	School Support Program/ Repairing	Longrung L P school	44640
	Sports/Goal posts	Langcherui, Dithur, Longrung & Miyungpur	25863
	Community hall construction	Langcherui	1062893
	Driving trainee's Fee	Govinda Nagar, New Tumbung and others	205940
Total			3507377
2016-17	Construction of ring well with shed	15 KM, Longrung & Chotolarpheng	271500
	Water tank	Kekrangsip & Dorbinsip	132375
	Rubber project	Miyungpur, Chotolarpheng & Nobodi Longkukro	136798
	Fuel Efficient Chullah	Longrung & Miyungpur, 16 KM, 3 KM, Phuralangso, Dima hading, Rongkhelan	192000

Year	Activity	Village	Expenditure Amount (in Rs.)
	Solar Lanterns	Longrung & Miyungpur, 16 KM, 3 KM, Phuralangso, Dima hading, Rongkhelan	91800
	Solar Grid/Solar street light	Kekrangsip , Langcherui & Phuralangso	551510
	Skill Training Program/ Farmers' Training/SHG training	Nearby villages	123642
	Construction of new weaving centre	Miyungpur	242495
	Yarn and Furniture for weaving centre	Miyungpur and Langcherui	162917
	Turmeric processing centres	Langcherui & Dima Hading	299478
	Health camps		140585
	Toilet Blocks in schools	Krungminglangdisa M. E school, Longku High School, Kalanala M. E school, Jirsong M. E school	703830
	Medicine & equipments		149744
	Observation of environment day /children day	Nearby schools	38704
	Playground development	Hebron, Govinda nagar, New Tumbung, Phuralangso, Langmeklu, 19 KM, Longku & Dima Hading	381039
	School Support Program/ Reparing	Langcherui L. P school, Borolobang school	268798
	Sports/Goal posts	Dithur, Longrung, Miyungpur & Dima Hading	187570
	Food processing training	Tularam Club, 12 KM	50913
	Retaining wall construction	Longrung	200000
	Smart class equipments to schools	Garampani Govt. High School	301000
		Total	4626698
2017-18	Construction of ring well with shed	New Garampani, Voarkplak, Rongarting,Mirphung, Phuralangso, 16 Km & Longku	523500
	Water tank	Hebron, Rongbinong , Chotolobang, 19 KM & Borolangklam	299720
	Solar Lanterns	Hebron, Rongbinong , Chotolobang, 19 KM & Borolangklam	106000
	Solar Grid/Solar street light	12 Km market	725000

Year	Activity	Village	Expenditure Amount (in Rs.)
	Skill Training Program/ Farmers' Training/SHG training		187190
	Individual household toilet	Langcherui- 50 Toilets	2200000
	Observation of environment day /childrens day		22612
	School Support Program/ Reparing	Lovelywell Durong Memorial school	293768
	Retaining wall construction	Longrung	67975
	Total		4425765
2018-19	Construction of ring well with shed	Kukrilangso, Langmeklu, Sikilangso, Chekso & Amramlangso	500000
	Water tank	Borolobang	150000
	TDF projct - Wadi development including Agriculture input and capacity building	Kekrangsip, Dorbinsip, Digremdisa, Langmeklu, Borolangklam, Rongarting, Kukrilangso, Borolobang and sikilangso	6523767
	Fuel Efficient Chullah		124631
	Solar Lanterns		109725
	Skill Training Program/ Farmers' Training/SHG training		50000
	Exposure on TDF		48000
	Individual household toilet	Langcherui- 25 Toilets	1100000
	Total		8606123
2019-20	Construction of ring well with shed	Chotolobang, Mirphung & Borolangklam	300000
	Water tank	Borolangklam	175375
	Bio compost Pit	15 project villages	1140000
	TDF projct - Wadi development including Agriculture input and capacity building	Langcherui, Rongarting, Kukrilangso, Borolanglai, chotolanglai, Mirphung, Borolobang, Chotolobang and Baigaon	6537016
	Training and exposure	Farmers from project villages	30825
	Community hall construction with retaining wall (Civil work)	Tularam club, 12 km	1078148

Year	Activity	Village	Expenditure Amount (in Rs.)
	Village sanitation	15 Low cost toilet in Mirphung, Rongmepi & Rongarting	183720
	School Support Program/ Reparing	Rongarting L. P, Langmeklu L.P & Borolangklam L.P school	245205
		Total	9690289
2020-21	Construction of ring well with shed	Digremdisa, Rongmonjir	200750
	Water tank	Umrangso 19 KM, Chekso and Bhimrazi	391319
	Maintenance of wadi	Kekrangsip, Dorbinsip, Digremdisa, Langmeklu, Borolangklam, Rongarting, Kukrilangso, Borolobang and sikilangso	1230000
	Skill Training Program/ Farmers' Training/SHG training	Langmeklu, Umrangso 19 KM, Dorbinsip and Langcherui	104522
	Community sanitation block	12 KM market. Umrangso	400000
	Mask distribution	Umongso CHC and all PHC health workers	30000
	Bamboo plantation	Umrangso 19 KM, Amramlangso, Bhimrazi and Chotolanglai	991900
	Village road development	Umrangso 19 KM	300000
	Sports item	Umrangso 19 KM	10000
	Community hall construction- mechanical structure and roofing	Tularam club, 12 KM	1096960
		Total	4755451
2021 - till date	125 Acres of Bamboo Plantation	Umrongso 19 KM, Amramlangso, Bhimrazi and chotolanglai	991900
	Distribution of Plants protection equipment and other inputs	Digremdisa, Borolangklam, Langmeklu, Langcherui, Dorbinsip, Kekrangsip, Baigaon, Mirphung, Chotolanglai, Borolanglai, Borolobang, Chotolobang, Sikilangso, Rongarting and Kukrilangso	1232500
	Construction of Low Cost Individual House-hold Toilet	Chotolobang	297000
	Furniture Donation to Community club	Karbi club, Umrongso	139000
	Health camp and Vaccination	Hanjanglangso, Borotungkrang	45000

Year	Activity	Village	Expenditure Amount (in Rs.)
	Community connect program- Football match	Langcherui & Umrongso 19 Kilo	70000
	Village Road development in mining village	Umrongso 19 Kilo, Langcherui & Dithur	450000
	Installation of solar street lights	Umrongso 19 Kilo & Thaosenpur	369600
		Total	**3595000**
Grand Total			39,206,703 ~Say 3.92 Crores*

*Along with this, company have spent Rs. 11.89 Crores for repairing Lanka Umrangso Road (Now NH 627).

Photographs of the Activities conducted within the Nearby areas:

1. Training of SHG women members to develop SHG:

2. Construction of spring water harvesting Tanks and Ring wells

3. Book keeping Training of SHG women members:

4. Village Road development in villages:

5. Construction of open stage for community

6. Support of sports item for promotion of sports and cultural activity:

7. Raising of a bamboo Nursery and training on Bamboo plantation:

8. Support to agricultural custom hiring center:

9. Awareness camp on COVID 19 vaccination:

10. Mask Distribution to frontline COVID 19 warriors: