

# PRE – FEASIBILITY REPORT



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## 1.0 EXECUTIVE SUMMARY

### 1.1 EXECUTIVE SUMMARY

JK Cement Works, Nimbahera Plant is situated at Kailash Nagar, Tehsil – Nimbahera, District – Chittorgarh (Raj.) having an existing Integrated Cement Plant - Clinker (2.8 MMTPA), Cement (3.6 MMTPA) along with Captive Power Plant (22 MW) and WHRB (13.2 MW).

The company is now proposing an expansion of Clinker, Cement, CPP and WHRB Production Capacity from 2.8 MMTPA to 5.0 MMTPA of Clinker, 3.6 MMTPA to 6.5 MMTPA of cement production, 13.2 MW to 15.0 MW of WHRB and 22 MW to 47 MW of CPP respectively due to increase in market demand. The proposed expansion is coming up within existing plant area 170.27 ha. (Including plant and residential). No additional land is required for the proposed expansion. The expected capital investment for the proposed expansion will be Rs. 2,667.51 Crore.

The proposed brownfield expansion of cement plant is categorized under **3 (b) column 3 {Cement plants [ $>1.0$  million tonnes/annum production capacity]}** of Gazette Notification dated Sep 14<sup>th</sup>, 2006 and its subsequent amendment on dated December 1<sup>st</sup> 2009 and April 4<sup>th</sup> 2011. Thus, the project is “A” category project. The general condition is also applicable on this proposed expansion as the Interstate Boundary of Rajasthan and Madhya Pradesh is at a distance of 8.277 Km towards SE from the project site.

### 1.2 SALIENT FEATURES OF THE PROJECT

Particulars	Details					
Latitude		N		E		
Longitude		Latitude 24°38'41.50" N		Latitude 24°38'33.52" N		
		Longitude 74°41'1.84" E		Longitude 74°41'11.69" E		
		S		W		
		Latitude 24°38'18.46" N		Latitude 24°38'25.78" N		
		Longitude 74°41'5.93" E		Longitude 74°40'37.50" E		
Toposheet No.	45 L/ 10.					
Production Capacity	<b>S. No.</b>	<b>Product</b>	<b>Existing (MMTPA)</b>	<b>Proposed (MMTPA)</b>	<b>Total After Expansion (MMTPA)</b>	
	1	Clinker	2.8	2.2	5.0	
	2	Cement	3.6	2.9	6.5	
	<b>Power Generation</b>					
	3	CPP	22 MW	25 MW	47 MW	
	4	WHRB	13.2 MW	1.8 MW	15.0 MW	



Estimated project cost	<b>Project Cost</b>		<b>Amount (In Rs.)</b>		
	Existing		997.51		
	Proposed		1,670.00		
	<b>Total</b>		<b>2,667.51 Crore</b>		
Man Power	Existing - 584; Proposed - 125; Total - 709 (Approx.)				
Elevation	Highest - 446 MSL; Lowest - 440 MSL.				
Land use	Industrial Land				
Nearest Habitation/ Town	Nimbahera - 1.827 Km, SE				
Nearest Airport	Udaipur - 82.570 Km, W				
Nearest Highway	<b>S. No.</b>	<b>Particulars</b>	<b>Connectivity</b>	<b>Distance (Km)</b>	<b>Direction</b>
					<b>(From Project Boundary)</b>
	1.	NH - 79	Ajmer -Madhya Pradesh	2.480	W
	2.	NH - 113	Nimbahera - Dahod	5.462	SSW
<i>Source: All distances are taken with respect to Google Earth.</i>					
Nearest railway track from project boundary	Nimbahera - 1.827 Km, SE				
Power supply	<b>Phase</b>	<b>Demand (MW)</b>	<b>Expected Source</b>		
	Operational	35.5 (Existing) 26 (Proposed) 61.5 (Total)	22 MW met from CPP, 15.0 MW from WHRB, 25 MW from proposed CPP.		
Nearest Telephone	Nimbahera - 1.827 Km, SE				
Nearest Dispensary and Govt. Hospital	<b>Name</b>	<b>Near Village</b>	<b>Distance and Direction (From Project Boundary)</b>		
Educational facility	<b>Medical Facility</b>				
	Govt. City Hospital	2.066	SSE		
	Life Care Hospital	1.895	SSW		
	Sharma Hospital	2.276	SW		
	<b>Schools</b>				
	Smart Kids School	1.549	S		
	Govt. Sr. Sec. School	1.901	SSE		
	Govt. Girls School	1.919	SSE		
	<i>(Source: All distances are taken with respect to Google Earth).</i>				

Water demand and supply	<b>S. No.</b>		<b>Water Demand (KLD)</b>			<b>Source</b>
			<b>Existing</b>	<b>Proposed</b>	<b>Total</b>	
	1.	Domestic	385	--	385	About 2,545 KLD will be met from Ground water, 1,396 KLD from Gambhiri Dam and remaining water will be met from existing adjacent Ahirpura Limestone Mine pit, Maliakhera Mine, Karunda Mine, Tilakhera Mine & Mangrol Mine.
	2.	Cement	410	700	1,110	
	3.	CPP	276	350	626	
	4.	WHRB	1,750	200	1,950	
<b>Total</b>		<b>2,821</b>	<b>1250</b>	<b>4,071</b>		
Nearest tourist places	None within the study area.					
Defense installations	None within the study area.					
Archeological Features	<b>S. No.</b>	<b>Particulars</b>	<b>Distance (Km)</b>	<b>Direction</b>		
				<b>(From Project Boundary)</b>		
	1.	Gambhiri Dam	5.436	NE		
Ecological sensitive zones	None within the study area.					
Nearest Forests	<b>S. No.</b>	<b>Particulars</b>	<b>Distance (Km)</b>	<b>Direction</b>		
				<b>(From Project Boundary)</b>		
	1.	Reserved Forest	9.060	NE		
	2.	Reserved Forest	9.733	SW		
<i>(Source: All distances are taken with respect to S.O.I. GT Sheet.)</i>						
Nearest streams/ rivers/ water bodies (from project boundary)	<b>S. No.</b>	<b>Particulars</b>	<b>Distance (Km)</b>	<b>Direction</b>		
				<b>(From Project Boundary)</b>		
	1.	Gambhiri Dam	5.436	NE		
	2.	Gambhiri River	8.078	NE		
	3.	UnchaTalab	8.976	SW		
	4.	Nimbahera River	2.087	E		
5.	Kadmali River	2.187	NE			
<i>(Source: All distances are taken with respect to S.O.I. GT Sheet.)</i>						
Seismic zone	According to BMTPC's vulnerability atlas, II Edition, the area falls in a region of low damage risk zone, Seismic Zone – II.					

### 1.3 PROPOSED PLANNING

Company : J. K. Cement Works

Project Cost : Rs. 2,667.51 Crore.

Production : As given below:-



S. No.	Product	Existing (MMTPA)	Proposed (MMTPA)	Total After Expansion (MMTPA)
1	Clinker	2.8	2.2	5.0
2	Cement	3.6	2.9	6.5
<b>Power Generation</b>				
3	CPP	22 MW	25 MW	47 MW
4	WHRB	13.2 MW	1.8 MW	15.0 MW

Table 1: Land Use of Project Site

S. No.	Land Use	Area (Hectare)			Percentage (%)
		Existing	Proposed	Total	
1.	Plant Area, Office Area, Residential Colony (All covered area).	76.272	5.457 (Without residential colony)	81.729	48.02
2.	Paved Area (Road, Corridor, Parking and Drainage).	20.25	0.610	20.86	12.25
3.	Green Belt Area	54.02	3.752	57.772	33.92
4.	Open Area	8.358	1.551	9.909	5.81
	<b>Total</b>	<b>158.9</b>	<b>11.37</b>	<b>170.27</b>	<b>100</b>

## 2.0 INTRODUCTION OF THE PROJEC/ BACKGROUND INFORMATION

### 2.1 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

J.K. Cement Works is a unit of M/s J.K. Cement Limited, which is a public limited company registered under Indian Companies Act.

J.K. Cement Works was established in the year 1974 and is ranked among Western India's leading industrial group and the premier producer of cement. J.K. Cement Works has its cement manufacturing plant at Nimbahera & Mangrol, Tehsil - Nimbahera in Chittorgarh District of Rajasthan.

Name and address of the Applicant	<b>J. K. Cement Works</b> Mr. S. K. Rathore (Unit – Head) Kailash Nagar, Nimbahera, District - Chittorgarh (Rajasthan) – 312 617 Mobile No. – 01477-220098/ 97 Email:- sk.rathore@jkcement.com
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## 2.2 BRIEF DESCRIPTION OF NATURE OF THE PROJECT

The proposed expansion project is for enhancement of Clinker from 2.8 MMTPA to 5.0 MMTPA, Cement from 3.6 to 6.5 MMTPA, WHRB from 13.2 MW to 15.0 MW and CPP from 22 MW to 47 MW. The total land area is 170.27 Ha. including plant and residential colony. The land is already converted for industrial use by D.I.C. Chittorgarh. The daily water demand will be 4,071 KLD after expansion, which will be met from Ground Water, Gambhiri Dam and existing adjacent mine pit.

Project is interlinked to a J.K. Cement Works of Nimbahera - Ahirpura Limestone Stone Mine situated near Village - Ahirpura, Tehsil - Nimbahera, District- Chittorgarh, Rajasthan. Environmental Clearance has been granted from MoEF&CC, New Delhi vide letter no. J11015/83/2004- IA.II dated 30.05.2005. Limestone produced will be transported to the cement plant by tippers.

## 2.3 NEED FOR THE PROJECT AND ITS IMPORTANCE TO THE COUNTRY AND OR REGION

The need for the expansion unit for Cement manufacturing is due to the rising Cement demand from the existing unit and to keep its continuous supply, owing to the mega infrastructural growth in the region. Cement consumption for the past 10 years in Rajasthan is given in the table below:-

**Table 2: Cement consumption for the past 10 years in Rajasthan**

Year	Consumption (Mio T)	Cement Growth
FY 05	6.97	5%
FY 06	8.27	19%
FY 07	9.13	10%
FY 08	10.33	13%
FY 09	10.98	6%
FY 10	11.18	2%
FY 11	11.50	3%
FY 12	13.23	15%
FY 13	14.96	13%
FY 14	16.56	11%
FY 15	17.88	8%
FY 16 est.	18.0	4%
<i>Source:- CMA data and Market Information</i>		

### **Past Cement Consumption in Rajasthan**

The past cement consumption in Rajasthan grew at an average of ~ 10.1 % pa in the last 5 years and at ~8.4% p.a. in past 10 years.

## **2.4 DEMAND - SUPPLY GAP**

According to the Cement Manufacturer's Association (2010) India ranks second in cement production in the world, with an installed capacity of about 230 million tons in 2008-09. The Indian cement industry has been on a high growth trajectory for more than a decade, led by buoyancy in sectors such as real estate and construction. The cement consumption of India based on the market information and Holtec estimates, for FY 16 is estimated to be around 289 million tons. Government expenditure on infrastructure, in the Eleventh Five Year Plan (2007-2012), was about US\$ 350 billion. Moreover, the Government's continued thrust on infrastructure will help the key building material to maintain an annual growth of 9-10 % in future.

Cement demand in India is expected to increase due to Government's push for large infrastructure projects, leading to 45 million tonnes (MT) of cement needed in the next three to four years.

India's cement demand is expected to reach 550-600 Million TPA (MTPA) by 2025. The housing sector is the biggest demand driver of cement, accounting for about 67% of the total consumption in India. The other major consumers of cement include infrastructure at 13 per cent, commercial construction at 11% and industrial construction at 9%.

To meet the rise in demand, cement companies are expected to add 56 MT capacities over the next three years. The cement capacity in India may register a growth of eight per cent by next year end to 395 MT from the current level of 366 MT. It may increase further to 421 MT by the end of 2017.

The future growth rate of cement demand, in Rajasthan for next 5 - 7 years based on this analysis is estimated at around 9% to 10%.

### **Future Cement Demand in Rajasthan**

The likely demand-supply gap has been calculated based on the estimated future most likely demand as well as the expected growth of cements capacity in the state of Rajasthan. Future supply has been estimated based on the assumption that in the year of commissioning a plant is capable of supplying only 50% of its installed capacity and it starts supplying 100% from the next year onwards. The demand supply gap is given in the table below:-

**Table 3: Future Demand**

Year	Future demand (Mio T)
FY 16	18.60
FY 17	20.43
FY 18	22.44
FY 19	24.65
FY 20	27.08
FY 21	29.75
FY 22	32.69
<i>Source:- Holtec Analysis</i>	

Rajasthan is a surplus state and is likely to remain so in future. The state is expected to supply its surplus cement to the neighboring states of Haryana, Delhi, Punjab and West Uttar Pradesh, which are cement deficit. The proposed unit of JK Cement industry has witnessed continuous modernization and adoption of new technologies in recent years for the production of cement.

## 2.5 IMPORTS VS. INDIGENOUS PRODUCTION

There will be no import for the proposed expansion project. The machinery used is indigenously manufactured and will be purchased. Local villagers will be employed. There will be Indigenous production in the entire activity.

## 2.6 EXPORT POSSIBILITY

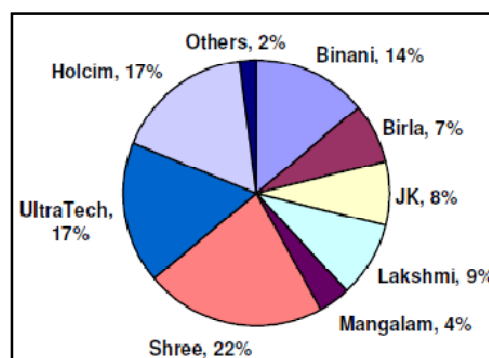
The proposed expansion activity is not prospecting exports. However, if the domestic demand is fully met and surplus is generated, foreign markets will be explored.

## 2.7 DOMESTIC/ EXPORT MARKETS

On the basis of Cement Manufacturers Association (CMA Rajasthan, FY 10) and market information, Rajasthan receives almost all its cement requirement from plants in the state itself. Only a 2% from Madhya Pradesh is also supplied by Vikram Cement, Jawad which is part of Sirohi (Rajasthan) cluster. The dispatch pattern of cement from Rajasthan in FY10, (as per the CMA), is around 65% of cement to markets in North India viz. Rajasthan, Delhi, Haryana and Punjab. Balance 35% is dispatched mainly to markets in Central India i.e. UP (16%) and MP (6%) and Gujarat (8%).

**Market Share in Rajasthan:**

Shree, Holcim, Ultratech and Binani are the dominant players in the market, with a combined market share of approx. 60%. Other main players in the market are Lakshmi, J.K., Birla and Mangalam with 4 – 9% share each as can be seen from the chart. These players together have a share of ~28%. Balance 2% share is with other players.

**2.8 EMPLOYMENT GENERATION (DIRECT AND INDIRECT) DUE TO THE PROJECT****2.8.1 DIRECT EMPLOYMENT**

The proposed expansion project generates employment for around 709 people (after expansion). Priority for employment is given to local persons. Following staff & workers are proposed to be employed:-

**Table 4: Manpower Details**

S. No.	Category	No. of Persons			Remark
		Existing	Proposed	Total	
1.	Permanent Staff	316	95	411	Employment to local people.
2.	Permanent worker (Skilled)	174	30	204	
3.	Worker (Semi - Skilled)	94	--	94	
<b>Total</b>		<b>584</b>	<b>125</b>	<b>709</b>	

**2.8.2 INDIRECT EMPLOYMENT**

- The vocational training camps and Technical Training of generating skilled manpower for cement plants will be done to generate potential manpower.
- Available for the proposed & surrounding cement plants of the Tehsil.
- The proposed employee development and welfare activities already envisaged and proposed by the expansion project aims to engage many people with various jobs indirectly.
- There will be development of externalities viz. local logistics, warehousing etc. as supporting services.
- This would create Indigenous technologies for sustainable development.

### 3.0 PROJECT DESCRIPTION

#### 3.1 TYPE OF PROJECT INCLUDING INTERLINKED AND INTERDEPENDENT PROJECTS, IF ANY.

It is an existing project and this is an expansion of Cement, Clinker, WHRB and CPP to the tune of 5.0 MMTA, 6.5 MMTA, 15.0 MW and 47 MW. Cement will be used in civil and construction works. Building construction, irrigation canals, dams, roads, bridges and other infra structural facilities are the areas, where the material will be consumed.

Project is interlinked to a J.K. Cement Work's of Nimbahera – Ahirpura Limestone Stone Mine is situated near Village - Ahirpura, Tehsil – Nimbahera, District- Chittorgarh, and Rajasthan. Environmental Clearance has been granted from MoEF&CC, New Delhi vide letter no. J11015/83/2004-IA.II dated 30.05.2005. Limestone produced will be transported to the cement plant by tippers.

#### 3.2 LOCATION (MAP SHOWING GENERAL LOCATION, SPECIFIC LOCATION, AND PROJECT BOUNDARY AND PROJECT SITE LAYOUT) WITH COORDINATES.

The proposed expansion project is situated at Kailash Nagar, Tehsil – Nimbahera, District – Chittorgarh, Rajasthan in an area of 170.27 hectare including residential and plant. The project site falls in Survey of India Toposheet No. 45 L/ 10.

The geographical location with respect to boundary pillars of the proposed expansion project are:-

**Table 5: Geographical Position of the Boundary Pillars**

N	E
Latitude 24°38'41.50" N	Latitude 24°38'33.52" N
Longitude 74° 41'1.84" E	Longitude 74°41'11.69" E
S	W
Latitude 24°38'18.46" N	Latitude 24°38' 25.78" N
Longitude 74°41'5.93" E	Longitude 74°40'37.50"E

The map showing location of the project site is enclosed as **Annexure – VII**.

#### 3.3 DETAILS OF ALTERNATE SITES CONSIDERED AND THE BASIS OF SELECTING THE PROPOSED SITE, PARTICULARLY THE ENVIRONMENTAL CONSIDERATIONS GIVEN INTO SHOULD BE HIGHLIGHTED.

No alternative site was examined or chosen, as the proposed expansion is coming up in existing land area available with J.K. Cement works. Following are the main criteria, considered for locating a cement plant of desired capacity:-

- The existing plant site is close to limestone deposit, considering the fact that for every ton of clinker produced, about 3.08 of limestone is required to be transported to the plant site.
- The existing plant site is ideally having 170.95 ha. of slightly undulating land for accommodating plant, railway siding, CPP, development of greenbelt and employees' colony with all the amenities besides keeping in view the future expansion prospects for the projected capacity of plant.
- Adequate ground water or perennial source of water exists in a reasonable vicinity of the plant site.
- Availability of reliable power supply.
- Proximity to rail-head to optimize transportation costs.
- Proximity to an established township, which will offer reasonable amenities to the plant employees.
- The land sub-strata should have good load bearing capacity to minimize the construction cost.
- From the above considerations, the land adjacent to the existing Nimbahera Unit of **JKCL** in Chittorgarh district of Rajasthan has been found suitable for locating the proposed cement plant.

### 3.4 SIZE OR MAGNITUDE OF OPERATION

The size and magnitude of the project area is as given below:-

**Table 6: Size or Magnitude**

S. No.	Particulars	Details
1.	Area (Ha.)	170.27 Ha.
2.	Production (After Expansion)	Cement – 6.5 MMTPA Clinker – 5.0 MMTPA WHRB – 15.0 MW CPP – 47 MW
3.	Total Man Power (Nos.) (After Expansion)	709 Nos.

### 3.5 RAW MATERIAL (Quantity and Source), PRODUCT AND MODE OF TRANSPORT

Following raw materials will be required for the manufacturing of Cement.

**Table 7: Details of Raw Material**

S. No.	Raw Material	Existing	Proposed	Total	Source	Mode of transport
		Consumption				
1	Limestone	4.2	3.08	7.28	Maliakhera Limestone Mine, Karunda Limestone Mine, Ahirpura Block	Road
2	Red Ochre	0.317	0.22	0.537	Sawa, Chittorgarh, Rajasthan	Road
3	Laterite	--	0.33	0.33	Choti Sadri, Chittorgarh, Rajasthan	Road
4	Gypsum	0.198	0.189	0.387	Nagaur/ Bikaner Districts and Gujrat	Road
5	Dry Fly Ash	0.540	0.348	0.888	Kota, Suratgarh, Bina, Chabra, Kawai, Bhadresh	Road
6	Wet fly ash	--	0.072	0.072	Kota, Suratgarh, Bina, Chabra , Kawai, Bhadresh	
7	Indian Coal for CPP	100 TPD	550 TPD	650 TPD	SECL Coal fields	Road
8	Pet coke for CPP	200 TPD	265 TPD	465 TPD	Jamnagar/ Kandla Port	
9	Indian Coal for Cement Plant	1,766 TPD	1,333 TPD	3,099 TPD	SECL Coal fields	
10	Pet coke for Cement Plant	965 TPD	732 TPD	1,697 TPD	Jamnagar/ Kandla Port	
11	Imported Coal for Cement Plant.	1,433 TPD	1,,065 TPD	2,498 TPD	--	--

### 3.6 PRODUCT

**Table 8: Details of Product**

S. No.	Product	Existing (MMTPA)	Proposed (MMTPA)	Total (MMTPA)
1	Clinker	2.8	2.2	5.0
2	Cement	3.6	2.9	6.5



Power Generation				
3	CPP	22 MW	25 MW	47 MW
4	WHRB	13.2 MW	1.8 MW	15.0 MW

### 3.7 SOURCE OPTIMIZATION/RECYCLING AND REUSE ENVISAGED IN THE PROJECT.

The unit will utilize all the fly ash generates in the captive power plant. The unit will used from existing water reservoir situated in Mangrol – Tilakhera Mine & Nimbahera – Ahirpura Limestone Mine of J.K. Cement Works.

### 3.8 AVAILABILITY OF WATER, ENERGY/ POWER REQUIREMENT AND SOURCE.

#### 3.8.1 WATER DEMAND

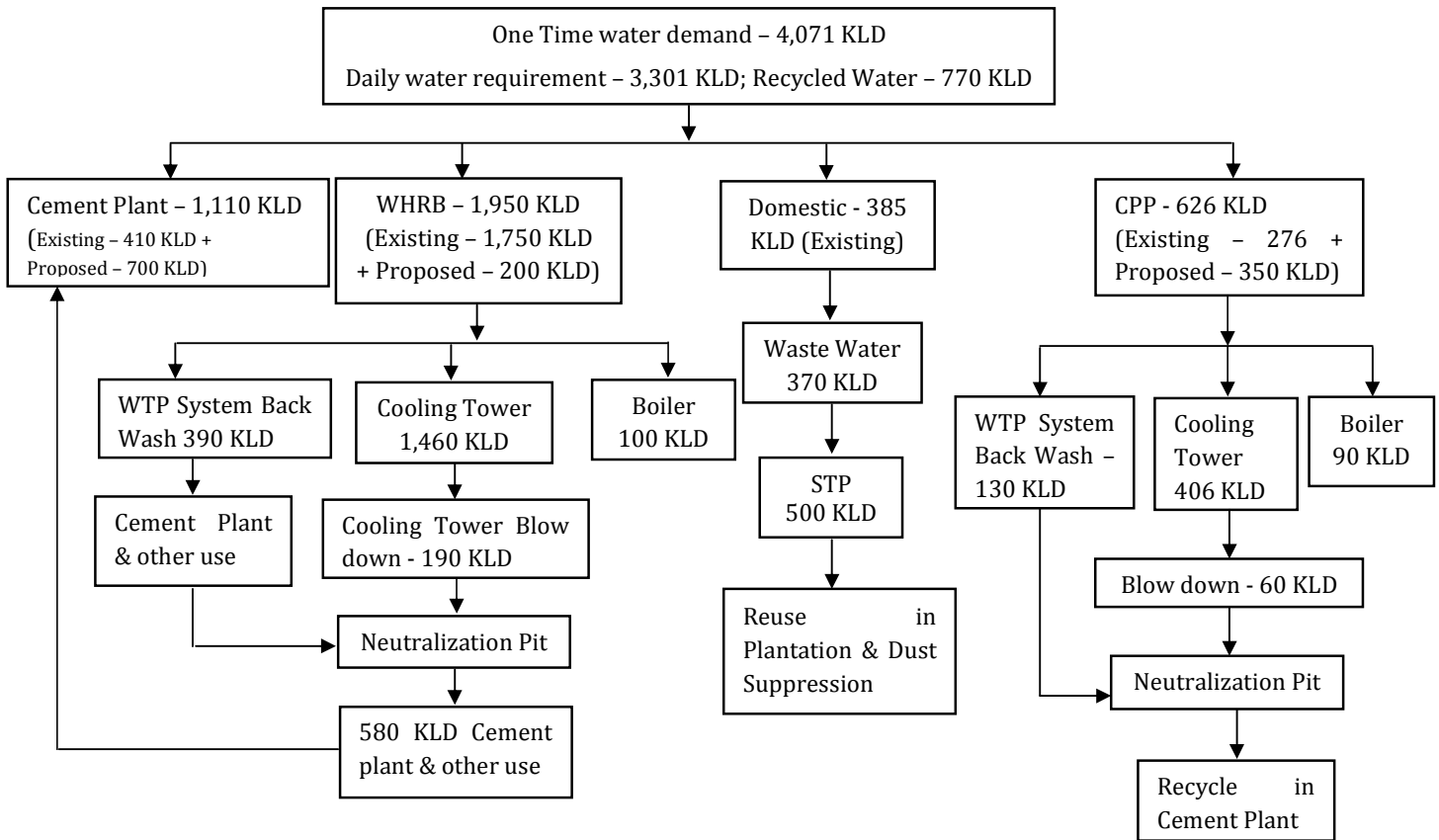
The total water requirement for the proposed expansion will be 4,071 KLD. The detailed breakup of the same is given below:-

**Table 9: Water Demand**

S. No.	Particulars	Water Demand (KLD)			Source
		Existing	Proposed	Total	
1.	Domestic	385	--	385	Ground water, Gambhiri Dam and nearby existing mine pit.
2.	Cement	410	700	1,110	
3.	CPP	276	350	626	
4.	WHRB	1750	200	1,950	
<b>Total</b>		<b>2,821</b>	<b>1,250</b>	<b>4,071</b>	

**Water Balance**

Total Recycled water (770 KLD)



**3.8.2 POWER DEMAND**

The total power requirement for the proposed expansion is as given below:-

**Table 10: Power Demand**

Phase	Demand (MW)	Expected Source
Operational	35.5 (Existing) 26 (Proposed) 61.5 (Total)	22 MW met from CPP, 15.0 MW from WHRB, 25 MW from proposed CPP

**3.8.3 MANUFACTURING PROCESS**

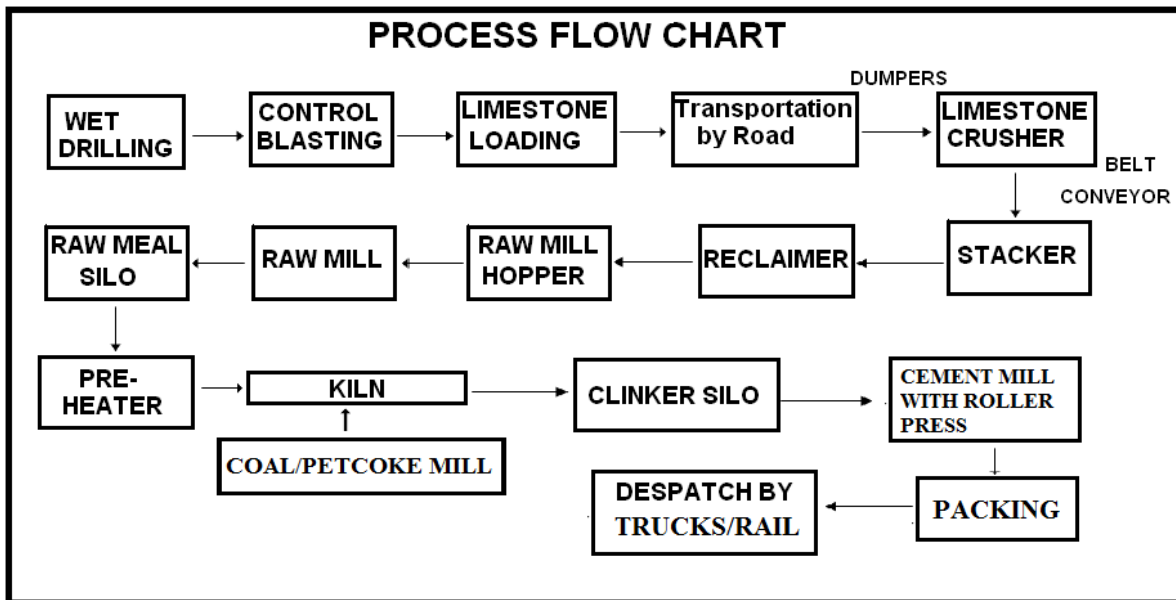
**3.8.3.1 Process Description of Clinker Manufacturing Unit**

The dry process essentially consists of the following unit operation steps:-

- Crushing of limestone at the mine site.
- Pre-blending of crushed limestone.
- Drying – cum-grinding of raw materials.
- Homogenization of raw meal in a blending silo.
- Clinkerisation of the raw meal in a rotary kiln with pre-heater and precalcinator.



- Grinding, storage and packing.



Various operations of dry process plant are detailed as follows:-

### 1 Crushing of Limestone

Crushing of limestone is done usually in a single stage crusher to reduce the size of ROM limestone from 1.0-1.2 m to less than 50 mm feedable to Vertical Roller Mill (VRM). This is achieved in a single rotor Hammer crusher.

### 2 Limestone Handling and Transportation to stockpile

The capacity of the limestone handling and conveying system is proposed as 1500TPH considering installation of wobbler feeder and screening arrangement before the limestone crusher.

### 3 Pre-blending of Crushed Limestone

Pre-blending of limestone is done in a longitudinal stockpile where limestone is stacked in large number of layers in a pre-determined configuration. When reclaimed across the layers, homogenized limestone is obtained. Longitudinal stockpile is proposed to be used due to its flexibility of increasing the capacity simply by extending the length of the stockpile or by slewing the stacker at a later date.

The storage capacity for limestone has been considered as 10 days. The limestone received from the crusher shall be stacked with the help of a stacker of capacity 1,500 TPH. For limestone extraction, one bridge type reclaimer (common for both the mills) of capacity 600 TPH has been considered.



#### **4 Drying and Grinding of Raw Material**

In the dry process, the raw materials are dried and ground in close circuit drying-cum-grinding installations.

Considering the lower specific energy consumption amongst available options, low material drying requirement, ease of operation and compact layout the Closed Circuit Roller Press in finish mode (CCRP) offers advantages over other grinding systems. Thus, CCRP of 1 x 450 TPH has been considered for drying and grinding of the raw materials (limestone and correctives).

#### **5 Blending of raw meal and Storage of kiln feed**

A continuous flow homogenizing silo system shall be provided to reduce the quality variation in the raw meal and the kiln feed. The capacity of the raw meal-blending silo shall be 1 x 15,000 t. Blending silo shall be sufficient for 1.3 days active storage.

#### **6 Pre-heater, Pre-calculator**

In cyclone pre-heater system, an efficient heat transfer takes place to finally dispersed raw material particles when they come in contact with hot gases from kiln.

The pre-heater is multi stage cyclone system (5 stages) connected with gas ducts and meal chutes. The raw meal is fed into top stage gas duct and is carried by hot gas steam into cyclone. The material gets separated from gas in cyclones and then travels downwards and through meal chute is discharged into next lower stage gas duct. In this way, material comes into contact with high temperature gases and gets preheated and partially calcined and then enters the pre-calculator.

In the pre-calculator, further calcination takes place by firing pulverized coal/pet coke and then material is discharged to the kiln. The feed travels down as the kiln rotates. The chemical reaction completes when the material reaches the burning zone and cement clinker is formed.

#### **7 Kiln and Kiln burner**

The technical concept considers a rotary kiln with capacity of 6,500TPD. The kiln shall be 6 roller stations and shall be driven by suitably sized frequency controlled variable speed drive. Kiln burner platform shall be roofed and shall include a suitable gantry crane for lifting of equipment and refractory. Individual fans have been considered for kiln shell cooling. For monitoring the kiln shell temperature, shell scanner has been considered. A modern multi channel, multi fuel type burner with low primary air consumption shall be installed for fuel firing in the kiln. Kiln burner will be suitable for using multiple fuels.

#### **8 Pet Coke Grinding**

Grinding of pet coke is done in vertical roller mill. Because of saving in energy and better drying capacity VRM is proposed for use.

## 9 Cooling of Clinker

The clinker is discharged from kiln at around 1000°C temp. and is cooled in a grate cooler. The cooled clinker is then transported to clinker storage silo by Deep Bucket Conveyor (DBC).

## 10 Clinker Storage and transportation

The clinker is stored in covered silos and transported to our clinker grinding units at different locations through trucks.

### 3.8.3.2 Waste Heat Recovery Power Plant (WHRB)

A WHR of 13.2 MW is already installed with Line 1, 2, & 3 having a Turbine suitable for generation upto 15 MW. Line 1 & 23 & PC are having one Boiler each installed with PH exhaust gases & one Boiler installed for clinker cooler.

In addition, 1 no new PH Boiler for PH exhaust gases and AQC Boiler for the clinker cooler of Line 4 is proposed to be installed in this project. A cooler vent air recirculation arrangement shall be provided to enhance the cooler mid-air temperature and WHR potential thereof.

The generated superheated steam shall be introduced to the existing common steam driven turbine generator set located at a distance of about 275 m. Considering heat utilization in cement VRM from cooler and long distance transport of steam it is expected that around 13 MW (net) power would be possible to generate through proposed single pressure WHR system, alongwith recirculation of vent air after Line 4 installation. The power shall be utilized for the cement plant operations while operating in parallel with RSEB grid and captive thermal power plant.

### 3.8.3.3 Process description of clinker grinding unit

#### Ball Mill and Roller Press (BMRP) combination

In this system, a closed circuit RP is installed as a pre-grinder in semi finished mode before the ball mill, which is used for finish grinding. Fresh feed along with the RP output is fed to a high efficiency, static separator installed above the RP. Coarse material from this separator is taken as feed to the RP. Fines from this separator are either taken to the mill inlet or fed directly to a high efficiency dynamic separator (mill separator). The product from ball mill is fed through a bucket elevator to the mill separator. Coarse material from mill separator returns to the mill inlet, while fines are transported to the cement silo(s). For mill venting, a bag filter or an ESP may be installed. Fines collected in bag filter/ ESP is transported to cement storage silo(s) by a system of air slides and bucket elevator.

Technically, all of the cement grinding options, viz., CCBM, BMRP, CCRP and VRM, are acceptable in the cement industry. Based on the evaluation of parameters like power consumption, investment cost, proven performance and customer preference.

### Cement packing plant

The cement grinding capacity at Nimbahera shall be enhanced by about 1.5 MTPA from existing 3.6 MTPA. Considering the total production of 6.5 MTPA after upgradation and capacity enhancement, the capacity of total packing system at Nimbahera becomes:

$$\text{Packer capacity} = 6.5 \times 10,00,000 = 1,003 \text{ TPH}$$

(Considering 100 % packing in bags) 360 x 18

It is proposed that the packing plant shall be operated by external agency under contract and shall function 3 shifts and 6 hours working per shift.

Currently, the Nimbahera plant consist of 6 nos. 90 TPH (Total 540 TPH) capacity mechanical packers to cater the existing packing requirement, which will be inadequate after the upgradation of existing Lines and of Line 4 capacity enhancement. Further the conventional mechanical packers are maintenance prone with poor accuracy. Hence, it is recommended to upgrade the existing 6 nos. mechanical packers to electronic type digital packers. After upgradation into electronic packers, it is expected that the packers can achieve a capacity of 120 tph each.

In addition to that, a new packer of 120 tph capacity, 8 spouts, single discharge with 2 nos. truck loading machine is proposed to be installed. Thus, the total packing capacity of the Nimbahera plant after upgradation will be 7 x 120 tph (Total 840 tph), which will have margin of about 15% to meet the seasonality of demand. Considering the space constraints the proposed capacity is manageable to meet the requirement assuming cement bulk loading facility shall continue to be utilized.

The existing truck loaders with addition of 2 new truck loaders for loading of bags to road trucks have been considered to be adequate for the enhanced capacity. The rotary packer outlet up to loading of the packed bags, existing system with flat transport belts and diverters will continue to be utilized.

Provision for bulk loading shall also be provided from packer/ cement silos keeping in view the demand for bulk cement. Cement from the cement silo shall be transported to the packer and bulk loading with the help of a set of air slides and bucket elevator.

Figure 1.0: Process Flow Diagram Manufacturing Process Clinker & Cement

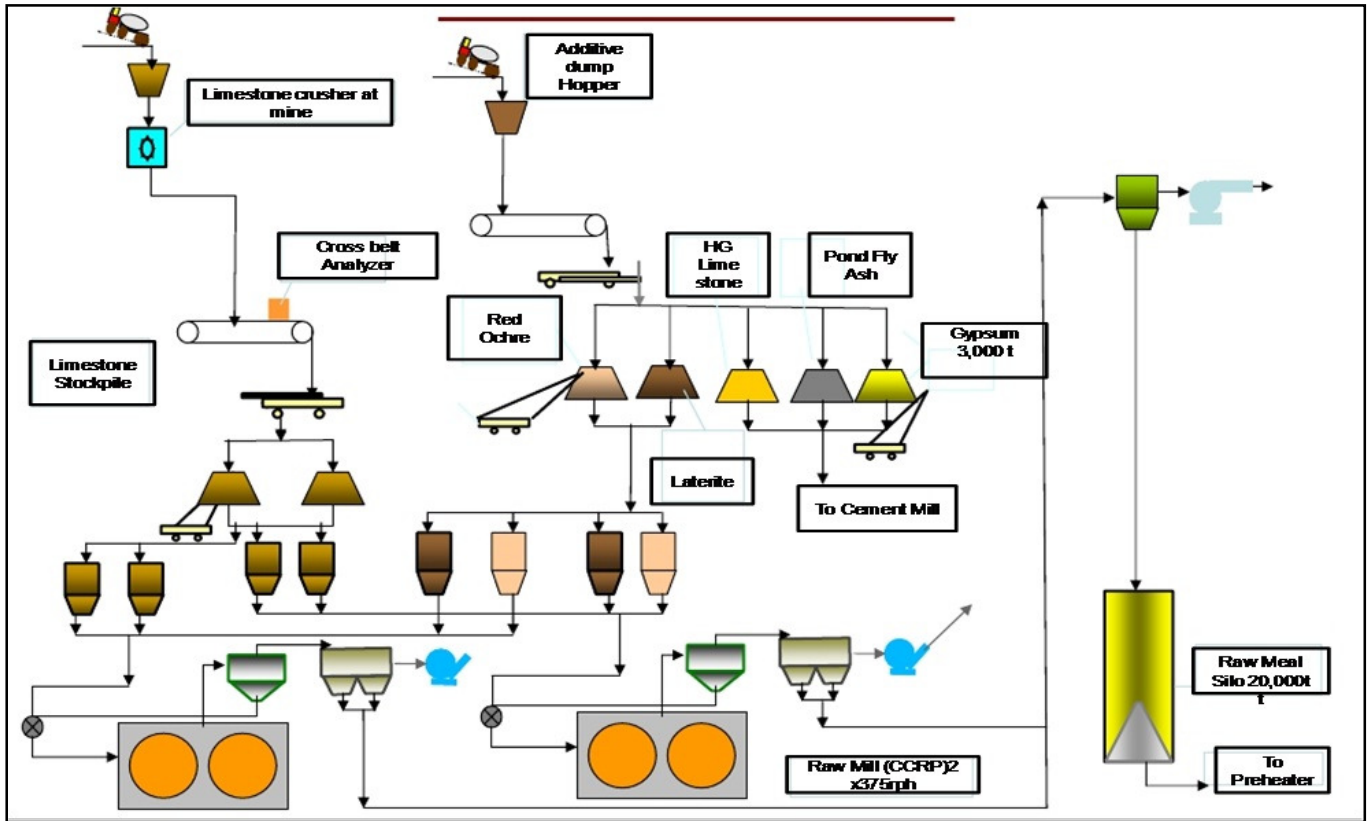


Figure 1.1: Manufacturing Process CPP

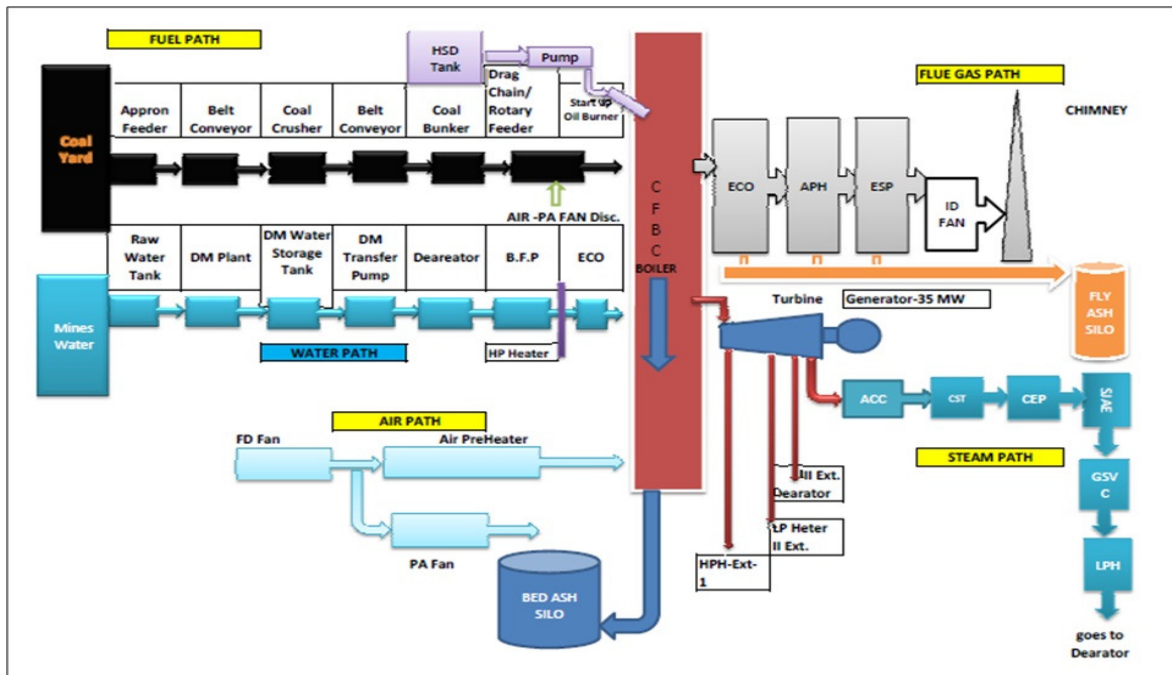
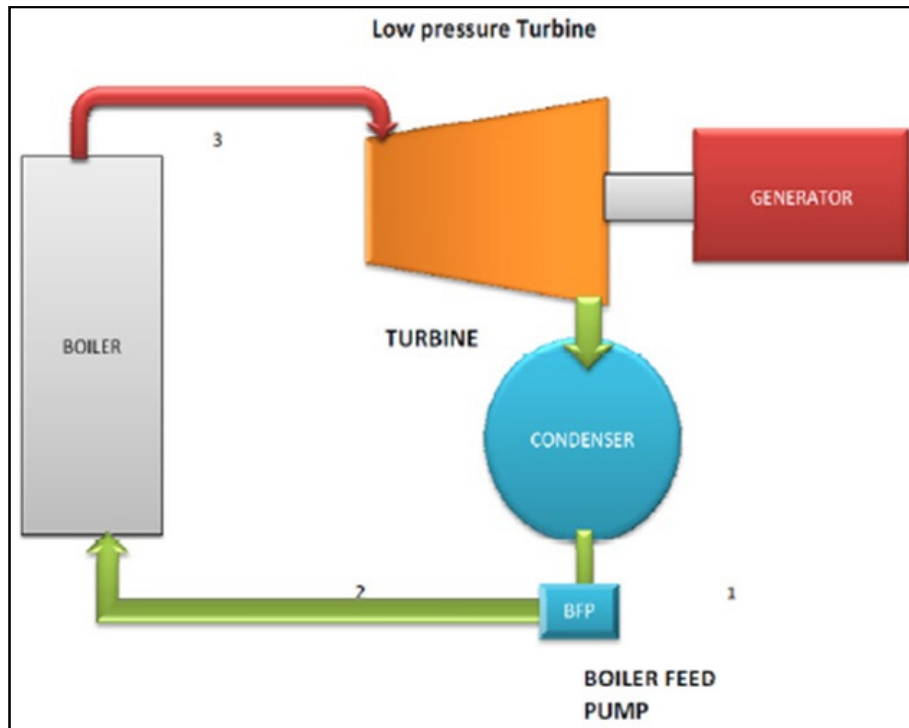


Figure 1.2: Process Flow Diagram Waste Heat Recovery Power Plant



### 3.9 QUANTITY OF WASTES TO BE GENERATED (LIQUID AND SOLID) AND SCHEME FOR THEIR MANAGEMENT/ DISPOSAL.

#### 3.9.1 SOLID

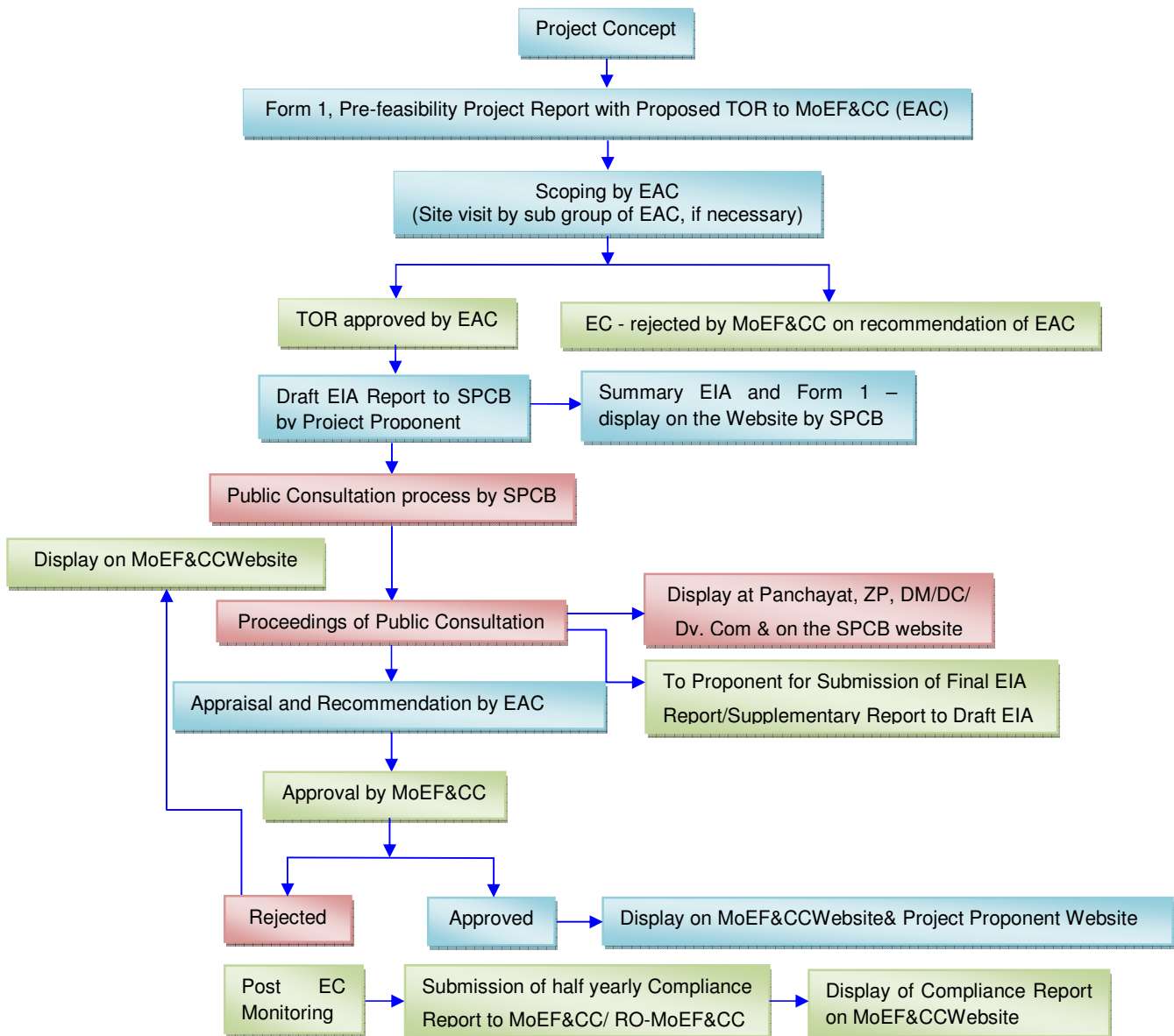
- No solid waste will be generated from the cement manufacturing process, hence zero solid waste generation from the Cement Plant.
- The spent oil will be generated from the machineries; the same is being and will be sent to authorize recycler.
- Dust collected from Air Pollution Control Equipment will be totally recycled back in the process.
- Sludge from Sewage Treatment Plant (STP) will be used as manure for green belt development.
- Solid waste generated from CPP is in the form of ash, will be utilized in cement manufacturing process.

#### 3.9.2 WASTE WATER

- No industrial waste water is will be generated during cement manufacturing process.
- Cooling tower blow-down from CPP will be neutralized in the neutralization tank before mixing with other effluents streams.

- After neutralization these two effluents will be mixed in guard pond. Then the treated effluent will be used in cement plant for further use.
- No waste water will be disposed off on ground outside the plant premises

**3.10 SCHEMATIC REPRESENTATIONS OF THE FEASIBILITY DRAWING WHICH GIVE INFORMATION OF EIA PURPOSE**



## 4.0 SITE ANALYSIS

### 4.1 CONNECTIVITY

JK Cement Works is an existing cement plant situated at Kailash Nagar, Tehsil- Nimbahera, District - Chittorgarh, Rajasthan. This has all possible amenities that are feasible for industrial projects viability.

**Table 11: Connectivity**

S. No.	Name	Distance (Km)	Direction
		(From Project Boundary)	
<b>Nearest Railway Station</b>			
1	Nimbahera	1.827	SE
<b>Nearest Airport</b>			
2	Udaipur	82.570	W
<b>Nearest Highway</b>			
3	NH - 79 (Ajmer - MP)	2.480	W
4.	NH - 113 (Nimbahera - Dahod)	5.462	SSW

## 4.2 LAND FORM, LAND USE AND LAND OWNERSHIP

### 4.2.1 LANDFORM

The proposed expansion is planned within existing land area of 170.27 ha. No additional land is required for the proposed expansion.

### 4.2.2 LAND USE

The land use pattern is given in point no. 1.2.

### 4.2.3 LAND OWNERSHIP

The land use as per revenue records is Industrial Land as allotted by D.I.C. Chittorgarh

## 4.3 TOPOGRAPHY (ALONG WITH MAP)

Topographically, the project area comprises of slightly undulation land gently sloping towards NW to SE. The highest elevation of the project area is 446 MSL. The drainage of the project area is towards SE.

**4.4 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.**

The existing land use pattern is given in point no. 1.2.

**4.5 EXISTING INFRASTRUCTURE**

The same has been given in point no. 3.8.1, 3.8.2 and 4.0.

**4.5.1 BASIC AMENITIES**

The details of basic amenities like schools, hospitals and community center located nearby the project site are mention below:-

**Table 12: Basic Amenities**

Name	Near Village	Distance and Direction (From Project Boundary)
<b>Medical Facility</b>		
Govt. City Hospital	2.066	SSE
Life Care Hospital	1.895	SSW
Sharma Hospital	2.276	SW
<b>Schools</b>		
Smart Kids School	1.549	S
Govt. Sr. Sec. School	1.901	SSE
Govt. Girls School	1.919	SSE
<b>Places of Worship</b>		
Charbhujaji Ka Mandir	2.200	SSE
Radha Kishan Mandir	880m	SE
Ayyappa Mandir	1.293	SE

*Source: All distances are taken with respect to Google Earth.*

#### 4.6 SOIL CLASSIFICATION

Yellowish brown soil are predominant in Chittaurgarh, Nimbahera, The hilly soils occur in Nimbahera Panchayat Samities. There are broad stretches of light sandy loam soils along banks of river.

According to soil taxonomical classification, there are six categories of classification i.e. i. Order (the broadest category) ii. Suborder, iii. Great group, iv. Subgroup, v. Family and vi. Series (the most specific category). The soil of the Rajasthan state have been grouped under five orders, namely, Aridisols, Alfisols, Entisols, Inceptisols and Vertisols. Soils have further been subdivided at suborder and great group levels under these five orders. The names of the soils orders occurring in the state and their subdivisions upto the great group level are given in Table 18.

**Table 13: Classification of Soils found in Rajasthan**

S. No.	Order	Suborder	Great group	Occurrence
1.	Aridisols	Orthids	a. Camborthids	Parts of Jalore, Churu, Jodhpur, Pali, Barmer, Sikar and Jhunjhunu districts.
			b. Calciorthids	Parts of Jalore, Jodhpur, Pali, Barmer, Nagaur, Sikar, Churu, Sriganganagar and Jhunjhunu districts.
			c. Salorthids	Found scattered in Ghaggar floodplain in Sriganganagar; Near sambhar, Pachpadra, Deedwana lakes, little Rann of Kutch area in Jalore and in Barmer districts
			d. Paleorthids	Scattered and cover a small area in Jaisalmer, Barmer and Nagaur districts.
2.	Alfisols	Ustalfs	a. Haplustalfs	Eastern and south-eastern part of Rajasthan in Udaipur, Chittorgarh, Bhilwara, Ajmer and Jaipur districts.
3.	Entisols	Psammments	a. Torripsammments	Cover upto 80% of the area at many places in western Rajasthan. Also cover a part of Jaipur, Alwar and Ajmer districts.
			b. Quartzipsammments	Small part of Jaisalmer and barmer districts.
		Fluvents	c. Torrifluvents	Occur in Ghaggar floodplain area of Sriganganagar district.
			d. Ustifluvents	Occur on the north-eastern and eastern portion of Rajasthan covering parts of Alwar and almost whole of Bharatpur districts.
4.	Inceptisols	Ochrepts	a. Ustochrepts	Occur along the foothill slopes and cover extensive areas in Bhilwara, Udaipur, north-eastern Sawaimadhpor and in parts of Sirohi, Pali, Jaipur and Chittorgarh districts.
5.	Vertisols	Usterts	a. Chromusterts	Parts of Bundi, Kota & Jhalawar districts in south-eastern

				part of Rajasthan and to a lesser extent in Chittorgarh, Dungarpur, Banswara&Bharatpur districts.
			b. Pellusterts	Cover a large are of Bundi, Kota, Jhalawar, Chittorgarh, Dungarpur, Banaswara and Bharatpur districts.

#### 4.7 CLIMATE

The climate is characteristic of area is with a long intensely hot summer, low rainfall and a short wild winter. The temperature normally varies from 5°C in January to 41.7°C in June. The hot weather usually extends from the beginning of March to the end of June. The average annual rainfall of the region is about 762.7mm.

#### 4.8 SOCIAL INFRASTRUCTURE AVAILABLE

The well-established social infrastructure like hospitals, temple, community centre, roads, bridges, telecommunication and others similar are available/ existing within 15 km radius which is tabulated in point no. III of Form - 1.

#### 5.0 PLANNING BRIEF

##### 5.1 PLANNING CONCEPT (TYPE OF INDUSTRIES, FACILITIES, AND TRANSPORTATION ETC.) TOWN AND COUNTRY PLANNING/ DEVELOPMENT AUTHORITY CLASSIFICATION.

Cement demand in India is expected to increase due to Government's push for large infrastructure projects, leading to 45 Million Tonnes (MT) of cement needed in the next three to four years.

India's cement demand is expected to reach 550-600 Million Tonnes Per Annum (MTPA) by 2025. The housing sector is the biggest demand driver of cement, accounting for about 67 per cent of the total consumption in India. The other major consumers of cement include infrastructure at 13 per cent, commercial construction at 11 percent and industrial construction at 9 percent.

To meet the rise in demand, cement companies are expected to add 56 MT capacity over the next three years. The cement capacity in India may register a growth of eight per cent by next year end to 395 MT from the current level of 366 MT. It may increase further to 421 MT by the end of 2017. The country's per capita consumption stands at around 190 kg.

The industry growth rate is positively correlated with GDP growth rate of the country. Owing to this the management of J.K. Cement Works has decided to expand the existing cement and clinker manufacturing capacities.

## 5.2 POPULATION PROJECTION

There will be recruitment of few workers as per requirement in operational phase. Operation phase will require recruitment of skilled workers. Hence, there will be no change in the population projection of the most nearest & farther most villages of the project. There are approximately 40 villages in the study area as follows:-

Population Profile of the study area (10.0 Km):-

**Table14: Population Projection**

S. No.	Name of Villages	No. of Households	Total Population	Male	Female
1	Ahirpura	101	497	259	238
2	Arniya Joshi	254	1459	732	727
3	Arniya Mali	242	1167	593	574
4	Arnoda	751	4192	2113	2079
5	Bad KaAmrana	59	291	147	144
6	BadoliMadhosingh	345	1754	904	850
7	Bamniya	210	1107	573	534
8	Bansa	118	640	334	306
9	Barda	313	1848	941	907
10	BaroliGhata	239	1290	659	631
11	BhatKotri	151	826	409	417
12	BhatiyonKaKhera	135	628	336	292
13	Bhawaliya	254	1359	669	690
14	BhoojiyaKheri	115	684	355	329
15	Bhopali	1	9	5	4
16	BorKheri	83	429	218	211
17	Bora Kheri	126	656	324	332
18	Charliya	113	552	278	274
19	Gadola	466	2316	1167	1149
20	Gilund	667	3540	1808	1732
21	Gothra	10	52	24	28
22	Kanpura	30	137	66	71
23	Karoonda	172	874	447	427
24	Karthana	221	1221	634	587
25	Laxmipura	90	475	246	229
26	MaliyaKheri	71	408	208	200
27	Mangrol	723	3673	1898	1775
28	Mayra	76	348	182	166

29	Mewasa	185	946	477	469
30	Mohammadpura	68	451	231	220
31	Motha	131	797	400	397
32	Murliya	94	520	266	254
33	Nawabpura	101	545	266	279
34	NeemKaAmrana	50	240	122	118
35	Nimbahera	9890	53327	27537	25790
36	Peepaliya Kalan	297	1692	872	820
37	PemandiyaKhera	56	296	175	121
38	PhacharAheeran	224	1300	681	619
39	Phachar Solanki	79	533	257	276
40	Phalwa	338	1644	853	791

\*Source: Census of India, 2011

### 5.3 LAND USE PLANNING (BREAKUP ALONG WITH GREEN BELT ETC.)

The existing unit has approximately 31.73% total land area in green belt and plantation. Now, for the proposed expansion additional 2.19% green belt will be developed. Thus, after expansion the total land area in the green belt will be 57.772ha. (i.e. 33.92 %).

The main aim of the green belt development is to improve the ecosystem to a maximum possible extent by designing the green cover with the same native species. The year wise plantation programme in five years is given below:-

**Table 15:- Green Belt Development Programme**

S. No.	Year	Name of Species	No. of Species
1.	Up to March' 2006	Neem, Sheesham,	<b>1,05,915</b>
2.	2006 - 07	Jamun, Kesia	7,200
3.	2007 - 08	Samiya, Kachnar,	6,051
4.	2008 - 09	Karenj, Peepal,	4,370
5.	2009 - 10	Banyan, Amla,	9,235
6.	2010 - 11	Custard Apple,	7,968
7.	2011 - 12	Ashok, Kadam,	3,000
8.	2012 - 13	Guyava, Lemon,	3,221
9.	2013 - 14	Mango, Banana etc..	19,719
10.	2014 - 15		5,615
11.	2015 - 16		3,056
12.	2016 - 17		8,241
<b>Total</b>			<b>1,83,591</b>

Photographs showing existing Greenbelt development are enclosed as **Annexure – VIII.**

However, in order to compensate the loss of vegetation, it is suggested to carry out extensive afforestation program mainly in and around the project area. Appropriate plant species of different life forms have been suggested in the following table to grow and to re-establish the vegetation cover and thereby provide habitat for the faunal species. The list of plant species suggested includes the following criteria:-

- Tree species which are well adapted to local environmental setting, tall, bearing larger canopy cover and leaf area.
- Tree species of different size classes (small, medium and larger) were suggested to maintain the different canopy levels at vertical profile.
- Fruit trees in the selection list would help to attract birds and fruit eating bats which are locally available.
- Wild species were suggested to provide habitat for faunal species, increase the faunal species diversity and maintain the naturalness.

#### 5.4 ASSESSMENT OF INFRASTRUCTURE DEMAND (PHYSICAL AND SOCIAL)

On the basis of the preliminary site visit, the infrastructure demand in the villages assessed on the basis of need and priority.

The health infrastructure of the study area requires improvement. The lack of modern and specialist facilities in hospitals needs improvement.

The assessment will be identified in the socio economic survey, after the grant of TOR and will be submitted at the time of final presentation regarding EC.

#### 5.5 AMENITIES/ FACILITIES

The project expansion envisages improvement in the facilities provided to workers. Provision for the same has been made as given below:-

**Table 16: Facilities provided to workers**

S. No.	Activities	Capital Cost (Rs. In Lacs)	Recurring Cost (Rs. In Lacs)
1.	Shelter/ Housing Facility	8.0	1.50
2.	Health Facility	4.0	2.00
3.	Drinking Water	3.0	1.25
4.	Sanitation Facilities	5.0	0.25
5.	Education	1.0	0.50
<b>Total</b>		<b>21.0</b>	<b>5.50</b>

## **6.0 PROPOSED INFRASTRUCTURE**

### **6.1 INDUSTRIAL AREA (PROCESSING AREA)**

The area is very well connected by road network to the site, district headquarter etc. The area is self sufficient to cater the needs of the project. Hence, no infrastructure is proposed.

### **6.2 RESIDENTIAL AREA (NON PROCESSING AREA)**

The unit already has housing facility for operational employee.

### **6.3 GREEN BELT**

The same has been given in point 5.2.

### **6.4 SOCIAL INFRASTRUCTURE**

The existing project is situated at Tehsil – Nimbahera, District – Chittorgarh (Rajasthan). Local population will be employed by the company in the proposed expansion project. Further, indirect means of earnings have been created in the area of contractual jobs, vehicle driving, shops, construction etc. Therefore, this project brought a positive impact on the adjoining society. The proponent will spend 1% of profit for the development of the area i.e. medical facilities, schools, temples and other social work. There is well developed social infrastructure in the area; detail has been tabulated in section – III of Form – 1.

### **6.5 CONNECTIVITY (TRAFFIC AND TRANSPORTATION ROAD/ RAIL/ METRO/WATER WAYS ETC.)**

Given in point no. 4.0.

### **6.6 DRINKING WATER MANAGEMENT (SOURCE AND SUPPLY OF WATER)**

Given in point no. 3.8.1.

### **6.7 SEWERAGE SYSTEM**

For the treatment of domestic sewage, STP (500 KLD) has already provided with adequate capacity in existing plant & colony and will be covered proposed expansion project also.

### **6.8 INDUSTRIAL WASTE MANAGEMENT**

No additional infrastructure is required for the industrial waste management for the proposed expansion project and the existing facility viz, guard pond, STP and etc. will sufficient.

**6.9 SOLID WASTE MANAGEMENT**

The same has been given in point no. 3.9.

**6.10 POWER REQUIREMENT AND SUPPLY/ SOURCE**

The same has been given in point no. 3.8.2.

**7.0 REHABILITATION AND RESETTLEMENT (R & R PLAN)**

**7.1 POLICY TO BE ADOPTED (CENTRAL/STATE) IN RESPECT OF THE PROJECT AFFECTED PERSONS INCLUDING HOME OUSTEES, LAND OUSTEES AND LANDLESS LABOUR (A BRIEF OUTLINE TO BE GIVEN)**

Since, it is an existing project and there is no habitation in the unit area, therefore rehabilitation & resettlement plan is not required/ applicable.

**8.0 PROJECT SCHEDULE AND COST ESTIMATES**

**8.1 LIKELY DATE OF START OF CONSTRUCTION AND LIKELY DATE OF COMPLETION (TIME SCHEDULE FOR THE PROJECT WILL BE GIVEN).**

**Table 17: Expected Time Schedule for the Project**

S. No.	Particulars	Time Schedule (in month)*										Remark If any	
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>		
1.	Environmental Clearance												
2.	Consent To Establish												Project Establishment Period
3.	Consent To Operate												Production Start Period
*Time line may vary; subjected to rules & regulation/ & other unforeseen circumstances.													

**8.2 ESTIMATED PROJECT COST ALONG WITH ANALYSIS IN TERMS OF ECONOMIC VIABILITY OF THE PROJECT.**

The expected capital investment for the proposed expansion will be Rs.2,667.51 Crore.

**Table 18: Expenditure Proposed for Environmental Protection Activities**

S. No.	Description of Item	Capital Cost (In Lacs)	Recurring Cost (In Lacs)
1	Air Pollution Control/ Noise	1288.65	99.5
2	Water Pollution Control	20.0	0.60
3	Environmental Monitoring and Management	124.5	12.38
4	Green Belt Development	4.0	0.4



5	Occupational Health	25.68	0.72
<b>Total</b>		<b>1,462.83</b>	<b>113.6</b>

## 9.0 ANALYSIS OF PROPOSAL

### 9.1 FINANCIAL AND SOCIAL BENEFITS WITH SPECIAL EMPHASIS ON THE BENEFITS TO THE LOCAL PEOPLE INCLUDING TRIBAL POPULATION, IF ANY, IN THE AREA.

There have been many social benefits from the existing manufacturing operations. The underlying financial and social benefits envisaged through the existing plant have been listed as follows:-

**Table 19: Financial & Social Benefits**

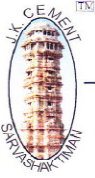
S. No.	Activities
1.	It aims to provide few additional employments to the local population of the proposed study area. Existing Direct employment provided: - 584 Approx. Indirect Employment to locals :- 25 + 25 Approx.
2.	The PP proposes for sustainable development as per the Companies Act 2013 and its subsequent notifications regarding activities enlisted under the CSR. The PP has been undertaking need based CSR activities annually and the same shall be given in the EIA / EMP report for the year 2016-17.

The proposed expansion project aims to continue the sustainable social development. The Project authorities are committed towards fulfilling its corporate social responsibility.

As per the preliminary site visit, the CSR activities were identified on the need based requirement of the study area. However after the analysis of the baseline data generation and socio – economic survey, and the public hearing, the appropriate sustainable development plan will be contributed on the basis of need based analysis and projected by the corporation.

The appropriate amount of CSR will be proposed by the JK corporation as per the Companies Act, 2013 with an appropriate 2% of the next three years average annual net profits of the coming years.

The adequate CSR contributed by the Corporation is INR 2,62,43,000.0 for the Financial Year 2015-16. The CSR Amount of over 2.62 Crore is adequately apportioned based on the Average annual profits of Last three Financial Years 2013-14, 2014-15 & 2015-16. The activities are listed as given:



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 Distt. Chittorgarh (Raj.) INDIA

CIN : L17229UP1094PLC017199

( An ISO 9001, 14001, 50001 & OHSAS 18001 CERTIFIED COMPANY )

**Corporate Social Responsibility work Detail As on .....2015-16 .**

**Unit Name- JK cement work's Nimbahera**

S.no.	Activity	Village Name	Gram Panchayat	Expenditure (Rs. In lac)	Work Detail
1	Infrastructure/ Civil work	Maliyakera	Phalwa	4400000.00	C.C.Road & Drainage line construction work in Maliya kere village .(P.P.Mode)
		Tilla khera ,Arniya paliwal	Arniya Joshi	040000.00	C.C.Road & Drainage line construction work in Tilla kera & Arniya joshi village .(P.P.Mode)
		Mangrol	Mangrol	2200000.00	Gravel gitti roac / C.C.Road & Drainage line construction work in Mangrol village .(P.P.Mode)
		Karunda /Pipliya Gadiya	Karunda	1150000.00	C.C.Road & Drainage line construction work in Karunda & Pipliya village (P.P.Mode)
		Ahirpur	Badolighata	500000.00	construction work of Community center at Ahirpura Village.
		Phacher Ahiran	Phacher Ahiran	1200000.00	construction work of Community center at Phacher Ahiran Village.
		Phacher Ahiran	Phacher Ahiran	500000.00	C.C.Road & Drainage line construction work in Tilla kera & Arniya joshi village .(P.P.Mode)
		charliya	Bhawliya	700000.00	construction work of Community center at Charliya Village.
				<b>TOTAL</b>	<b>11490000.00</b>
2	Drinking Water	All Surrounding Village Nearby Nsh &Mgrl plant	Nimbahera	510000.00	Water Tenker Supply in Summer session in Nimbahera city & Near by villages.
		Chittorgarh	Nimbahera	1000000.00	Financial Assitancen In "JAL SWALAMBAN ABHIYAN" AT CHITTORGARH
		Karunda	Karunda	265000.00	water shed construction for villagers at karunda village.
			<b>TOTAL</b>	<b>1775000.00</b>	
Education	All Surrounding Village School nearby Nbh &Mgrl plant			2000000.00	To Adopt five villages having Sec./Hr.Sec School for Next Three Years .to Develop as there need.
		Nimbahera	Nimbahera	235000.00	Providing the free furniturs in Govt school Nimbahera .
		Karunda	Karunda	65000.00	Gust faculty Teacher Payment for six Month in Govt. School karunda
		Mangrol	Mangrol	25000.00	Provide the School Uniforms & SchoolBooks to Govt .Primery School mangrol.
		Nimbahera	Nimbahera	200000.00	Distribute the Silver Madel to students (8th to 12th class who achived 65% marks in Bord Exams ) On Independence day fuction.
			<b>TOTAL</b>	<b>2525000.00</b>	
4	Medical & Health	All Surrounding Village nearby Nbh &Mgrl plant	Nimbahera	500000.00	Organized Free Eye(Catarect) camp at Govt refral hospital Nbh.(No.600 Villager are benefitted this camp)
		All Surrounding Village nearby Nbh &Mgrl plant	Nimbahera	750000.00	Financial assitancen to Organized Free 7 Days Mega Health Check up camp at Govt collage Nbh. Through Shree Seva Santhan .
		All Surrounding Village nearby Nbh &Mgrl plant	Nimbahera	350000.00	Organized the Free medical camps Neary By Nbh Sub Division Villages.
			<b>TOTAL</b>	<b>1600000.00</b>	
5	Social	Chittorgarh	Chittorgarh	51000.00	Financial Help for Promotion of <b>MEERA Mahostasav Cultural programe. 2015</b>
		Udaipur	Udaipur	251000.00	Financial assitancen to Srajan the Spark Sansthan to Organized Mushayra Programme .
			<b>TOTAL</b>	<b>302000.00</b>	

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 J. K. Cement Works Mangrol  
 J. K. Cement Works, Gotan  
 J. K. Cement Works, Jharli

J. K. Power, Bamania  
 J. K. Cement Works, Muddapur  
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6	Environment	All Surrounding Village School nearby Nbh & Mgrl plant	Nimbahera	1800000.00	Plantation in surrounding area of mines & Plant. (24000 New plantation up to March .2016)
				700000.00	
			TOTAL	2300000.00	Creation & Maintance of Greenery at Udaipur Airport.
7	Sanitation	Mangrol/ karunda/Badoli ghata	Nimbahera	2625000.00	Construction of 350 No. of Toilets under the Swachh Bharat Abhiyan in this year.
			TOTAL	2625000.00	
			8	livelihood Permation	Mangrol/Arniya Joshi.
		TOTAL		1800000.00	
9	Others	Chittorgarh	Chittorgarh	51000.00	Contribution to Nepal Earthquake Fund
			TOTAL	51000.00	
			Gross Total		

Asstt. Vice President (HR & ER)  
 J.K. CEMENT WORKS  
 NIMBAHERA ( RAJ.)

## 10.0 CONCLUSION

J.K. Cement Works is proposing an expansion of Cement, Clinker, WHRB and CPP is a manufacturing unit to the tune of 6.5 MMTPA, 5.0 MMTPA, 15.0 MW and 47.0 MW will not only contribute to the growth of Indian economy but also strengthen the socio-economic values/ status in the area. All the latest and environment friendly technology will be adopted. The unit will adopt all measures like; pollution control equipments, effective EMP & DMP to prevent harm/ damage to the environment. Green belt development in & around the area will increase aesthetic value, as tool for effective pollution mitigate measure, and will also serve as biological indicators for that particular site.

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