EXECUTIVE SUMMARY

OF

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

&

ENVIRONMENTAL MANAGEMENT PLAN

FOR

PUBLIC HEARING

OF

Proposed to set up a green field Cement Grinding Unit with Cement Production Capacity of 4.5 Million Metric Tons Per Annum (MMTPA) and 0.5 Million Metric Tons Per Annum (MMTPA), Fly Ash / Slag Processing Unit

At

Village: Shahbaj, Taluka: Alibag,
District: Raigad, Maharashtra

by

M/s. Adani Cementation Limited

Study Period : Post - Monsoon Season (Oct. to Dec., 2021)

APPLICANT

adani

M/s. Adani Cementation Limited

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EXECUTIVE SUMMARY

i) Project name and location (Village, District, State, Industrial Estate (if applicable))

M/s. Adani Cementation Limited has proposed to set up a Greenfield Cement Grinding Unit with Cement Production Capacity of 4.5 Million Metric Tons Per Annum (MMTPA) and 0.5 Million Metric Tons Per Annum (MMTPA), Fly Ash / Slag Processing Unit at Village: Shahbaj, Taluka: Alibag, District: Raigad, Maharashtra.

As per EIA Notification dated 14th Sept., 2006 & as amended thereof; this project falls under category 'B' of Project Activity '3 (b)' all Standalone Grinding Unit category. Whereas, SEIAA Maharashtra referred this project to integrate with 'Berthing Jetty, Backup Area and Approach Road' Project *vide* ToR File No. 10-77/2018-IA-III and Proposal no. IA/MH/MIS/81470/2018 dated 05th October, 2018 issued by 'Infra & CRZ Committee' of MoEFCC and opined to apply under Category 'A' of Project Activity '3(b)' *vide* minutes of 219th meeting held on 23rd April, 2021.

Therefore, the project has been treated as Category - "A" project and appraised at Central Level - MoEFCC, New Delhi. Application (Form – I and PFR has been submitted to MoEFCC, New Delhi on 23rd April, 2021 and subsequently ToR Letter was issued *vide* letter no. IA-J-11011/261/2021-IA-II (I) dated 25th August, 2021.

ii) Products and capacities - If expansion is proposed, then existing products with capacities and reference to earlier EC.

Proposed products along with capacities of the proposed project proposal

S. No.	Particular	Unit	Proposed Capacity
1.	Cement (OPC, PPC and PSC)	MMTPA	4.5
2.	Fly ash/ Slag processing unit	MMTPA	0.5

Source: Pre-Feasibility Report

iii) Requirement of land, raw material, water, power, fuel with source of supply (Quantitative)

a. Land requirement - The total project area is 10.0 ha; out of the total area, 3.24 ha is under the possession of ACL and rest 6.76 ha which will be acquired till June, 2022. The present land use of the project site is agricultural; the setting up of Cement Grinding and Fly ash / Slag processing unit will result in permanent change of land use pattern from agricultural to industrial land. No Forest land is involved.

b. Raw material Requirement & Fuel requirement

S. No.	Raw Material	Quantity (TPD)			Source	Approx. Distance & Mode of Transportation
		100% OPC	100% PPC	100% PSC		
1.	Clinker	12954	8183	62817	Integrated Cement Plant of ACL at Lakhpat Cement Works or Other Domestic Plants or Imported.	By Ship
2.	Gypsum	680	680	680	Purchase from Market (Thal) or Imported	(~20 km) By Road / Rail
3.	Fly ash	-	4722	-	Adani Thermal Power Plant at Tiroda	(~5 km) By Road & (~1000 km) By Rail
4.	Slag	-	-	6136	JSW Dolvi Works or Imported	(~10 km) By Truck
For Fly ash/ Slag Processing Unit						
1.	Fly ash	1515			Adani Thermal Power Plant at Tiroda	(~1000 km) by Rail; then (~5 km) by Road
2.	Slag	1515			JSW Dolvi Works or Imported	(~10 km) By Truck

Source: Pre-Feasibility Report

c. Fuel Requirement

S. No.	Fuel	Quantity	Calorific value (Kcal. /kg)	Ash %	Sulphur %	Source	Approx Distance & Mode of Transportation
1.	Coal	0.04 MTPA	~2500 - 4000	20-35	0.1 - 1	(Adani Dahej Port, Gujarat)/ Imported	~ 500 km by Road
2.	HSD	1000 liter/Annum	~10500	0.01	0.25	Local Vendors, Procured from nearest storage terminal	~ 100 km by Road

d. Basic requirement for the project

S. No.	Particular			Details	Source
1.	Water Requirement (KLD)			800	MIDC
2.	Power Requirement (MW)			26	Maharashtra State Electricity Board / Grid
3.	Manpower Requirement (No. of persons)	A.	Construction phase	**650**	Unskilled / Semi-skilled - local area and Skilled - outside / local
		B.	Operation Phase		
		i.	Regular	65	
		ii.	Contractual	350	
		Total (i + ii)		**415**	

Source: Pre-feasibility Report

iv) Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.

The Proposed Cement Grinding and Fly ash/Slag Processing unit is based on Dry Process Technology for cement manufacturing by using Vertical Roller Mill (VRM) and Ball Mill. Major steps involved in the process of Cement manufacturing in Grinding Unit are given as below:

- Clinker Storage & Handling
- Fly Ash Storage & Handling
- Gypsum Storage & Handling
- Slag Storage & Handling
- Cement Production& Storage
- Cement Packaging & Dispatch

Fly ash/Slag Processing unit -

The Fly ash / Slag Processing Unit will process conditioned Flyash to produce cumulative 0.5 MMTPA Fine Fly Ash and other Similar Cementitious Material which will be used directly in Construction Industry.

a. Gaseous emission, liquid effluent and solid and hazardous wastes

Emissions	Source		Mitigation measures
	Plant Unit	Section	
PM	Grinding Unit	Cement Mill	• Installation of Bag House
Fugitive Emission	Grinding Unit	Raw Material Handling & Storage	• Covered Conveying System will be provided for transfer of raw materials/finished products. • De-dusting/Nuisance filters will be provided at all material transfer points • Fly ash will be received through closed bulkers & fed into silo through pneumatic system. • Clinker, Fly ash and Cement will be stored in the silos. • Gypsum will be stored in the covered sheds. • Water sprinkling will be done to control dust. • Road sweeping machines will be used • Proper maintenance of vehicles will be done to reduce gaseous emissions • PUC certified vehicles will be used • Greenbelt/ plantation (in 3.3 ha i.e., ~33 % of the total project area) will be done inside the project area along with 50 m towards the mangroves side to attenuate air pollution.
		Transportation activity	

b. Details of Effluent and their Mitigations

Effluents	Plant Unit	Mitigation measures to be adopted
Process Water	Process	• Grinding unit is based on the dry process technology. • Water used for cooling at various stages of cement manufacturing will be partially evaporated and partially recycled; hence, no waste water will be discharged. • Hence, zero liquid discharge will be maintained in Grinding Unit.
Sewage	Domestic Utilities	Domestic waste water (55 KLD) generated from office toilets and canteen will be treated in STP of 70 KLD capacity and treated water (50 KLD) will be used for greenbelt development / plantation.

c. Details of Solid & Hazardous waste generation and their Mitigations

Plant Unit	Type of Waste	Waste	Quantity	Treatment / Disposal
Grinding Unit (APCE)	SW	Dust	0.10 MTPA	Dust collected from various APCEs will be totally recycled into the process.
STP	SW	STP Sludge	0.2 tons	Used as manure for greenbelt development / plantation
Workshop/ Main machinery/ Drives	HW	Used Oil / Grease	2 tons	Grease: Reused internally for lubrication of scrapper chains; Oil: Disposed through approved recycler (TSDF); Used as Liquid alternative fuel (AFR) in Kiln in cement plants
Workshop /Machinery maintenance area	HW	Cotton Rags	10 tons	Disposed through approved recycler (TSDF) Used as AFR
Workshop	HW	Discarded Container @ 20L	5000 Nos.	Disposed through approved recycler (TSDF)
Admin Building	SW	Kitchen Waste	30 tons	Compost and used as manure for greenbelt development

a) Material Balance :-

Material / Mass Balance Diagram for manufacturing of OPC, PPC and PSC are shown below -:

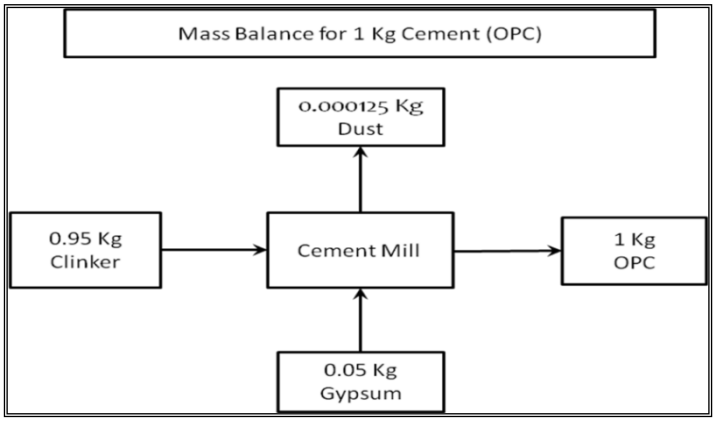

Figure 1: Mass Balance Diagram for OPC

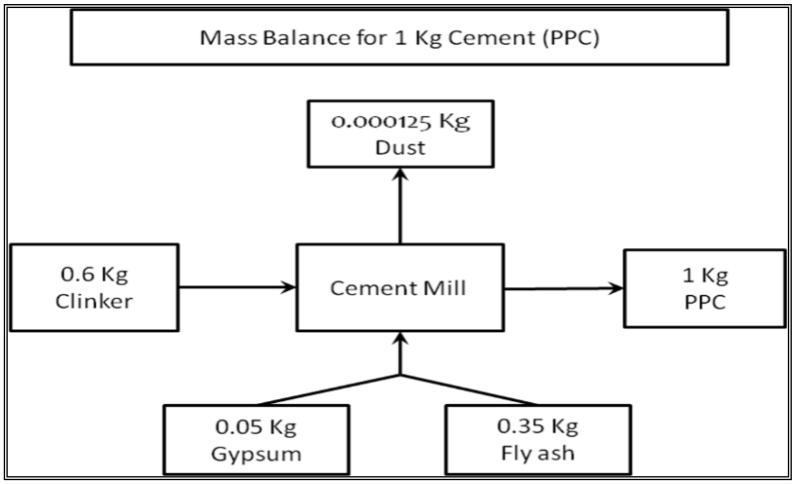

Figure 2: Mass Balance Diagram for PPC

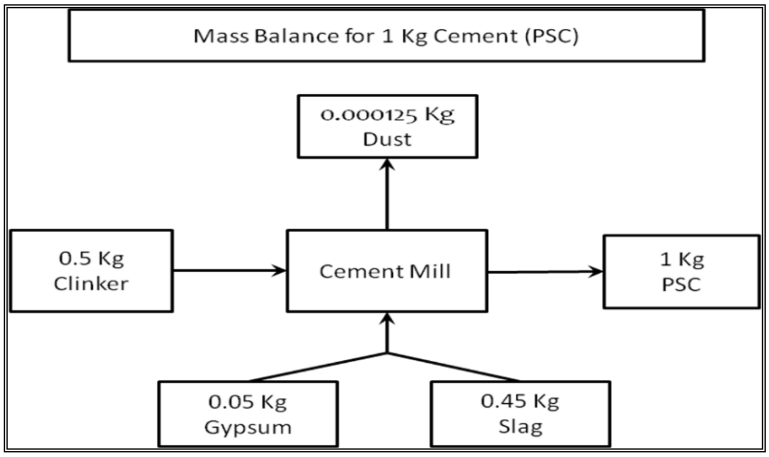

Figure 3: Mass Balance Diagram for PSC

v) Measures for mitigating the impact on the environment and mode of discharge or disposal.

Particulars	Details
Air Quality Management	ꕥ Installation of Bag House along with cement mill stack. ꕥ Enclosures will be provided for unloading operations. ꕥ Bag filters will be installed at all transfer points to reduce fugitive dust emissions. ꕥ All the roads inside the plant premises will be concreted. ꕥ Regular sweeping of all the roads & floors will be done. ꕥ Dust collected from air pollution control equipment will be totally recycled in the process. ꕥ Fly ash will be pumped directly from the bulkers to silos pneumatically in closed loop such that fugitive emissions do not occur. ꕥ The packing machines will be equipped with dust extraction arrangement.
Water Management	ꕥ Domestic waste water (55 KLD) generated from office toilets and canteen will be treated in STP of 70 KLD capacity and treated water (50 KLD) will be used for greenbelt development / plantation. ꕥ Rain Water Harvesting will be practiced within the plant premises.
Rain Water	ꕥ Total Artificial Rainwater harvesting inside the Cement Grinding and Fly ash/Slag

Particulars	Details
Harvesting	unit is 13804.73 cum/annum.
Noise Management	ꕥ Equipment generating excessive noise will be kept in properly insulated enclosures ꕥ Improved silencers within the equipment generating high noise ꕥ Isolation of continuously vibrating structures/ machines by proper and secured mountings ꕥ Proper maintenance, oiling and greasing of machines at regular intervals to reduce generation of noise. ꕥ Personal Protective Equipment (PPEs) like earplugs and earmuffs will be provided to the workers exposed to high noise level. ꕥ Development of greenbelt of appropriate width inside the plant premises and at the plant boundary. ꕥ Regular monitoring of noise level and corrective measures accordingly.
Solid & Hazardous Waste Management	ꕥ No solid waste will be generated from the cement manufacturing process. ꕥ Dust collected from various air pollution control equipment will be recycled in the process. ꕥ STP Sludge (~5 KLD) will be used as manure in greenbelt/ plantation development. ꕥ Used oil / spent oil Grease (~2 Tonnes / annum) & Waste residue (contaminated cotton rags) containing oil and Empty Barrels (~ 10 Tonnes/Annum) will be generated as per Schedule - I of Hazardous and other Wastes (Management and Trans boundary Movement) Rules, 2016; which will be sold to CPCB/ SPCB authorized recycler.
Greenbelt Development / Plantation	ꕥ Out of total project area of 10 ha, greenbelt / plantation will be developed in 33 % (i.e., 3.3 ha) of the total project area. ꕥ Native species i.e., *Mangifera indica* (Mango), *Acacia nilotica* (Babool), *Azadirachta indica* (Neem), *Bombax ceiba* (Semal/ Kapok), *Dalbergia sissoo* (Shisham) etc. will be planted under proposed greenbelt development. ꕥ Besides, 50m greenbelt as buffer towards mangrove outside plant boundary will be developed

vi) Capital cost of the project

S. No.	Particular	Details
1.	Total Cost of the Project	Rs. 990 Crores
2.	Cost for Environmental Protection Measures	Capital Cost: Rs. 25.0 Crores
		Recurring Cost: Rs. 5.0 Crores / annum

vii) Site selected for the Project-Nature of land- agricultural (single/double crop), barren, Govt. /private land, status of its acquisition, nearby (in 2-3 km) water body, population, within 10 km other industries, forest, eco-sensitive zones, accessibility (Note- in case of industrial estate this information may not be necessary).

a) Nature of land

The total project area is 10.0 ha. The present land use of the project site is private agricultural (since last 4 years no agriculture activities takes place in the proposed project area and remain as fallow land). The setting up of Cement Grinding and Fly ash / Slag

Processing unit will result in permanent change of land use pattern from agricultural to industrial land. No Forest land is involved in the proposed project area.

b) Nearby (in 2-3 km) water body, forest, eco-sensitive zones, accessibility

S. No.	PARTICULARS	DETAILS
A.	*Environmental Setting Details (with approximate aerial distance & direction from nearest boundary of project site)*	
1.	Nearest Village	Shahbaj (~ 1.8 km in SW direction)
2.	Nearest Town and City	Alibag (~15.5 km in WSW direction)
3.	Nearest National Highway/ State Highway	NH-166A (~1.2 Km in SW direction)
4.	Nearest Railway station	Pen Railway Station (~8 Km in NE direction)
5.	Nearest Airport	Mumbai Airport (~46 km in NW direction)
6.	National Parks, Wildlife Sanctuaries, Biosphere Reserves, Protected Forest (PF), Reserve Forest (RF), etc. within 10 km radius.	No National Parks, Wildlife Sanctuaries, Biosphere Reserves, etc. within 10 km radius. o Mangrove forest ~50 m from project boundary. o There are 3 Reserve Forests (RF), Reserve Forest patch ~4 km in East, ~6 km in South & ~8 km in WNW from project site.
7.	Water Bodies (within 10 km radius)	o Amba River (~0.4 km in East direction) o Bhogeshwar River (~7.5 km in NNE direction) o Shreegaon Dam (~6 km in SSW direction)
8.	Seismic Zone	Zone-IV as per IS:1893 (Part – I) : 2002

c) List of industries within 10 km radius study area

List of Major Operational Industries falling within 10 km radius of the project site (i.e. study area) is given below: -

S. No.	Name of the Company	Type of Industry	Approx. Distance and direction from project site
1.	M/s. Marine Frontiers	Small Boat Manufacturing company	~0.1 km in SE direction
2.	PNP Port	Shipping	~ 0.6 km in SE direction
3.	M/s. Sanghi Cement Dharamtar Unit	Cement Plant	~0.8 km in SSE direction
4.	JSW Port	Shipping	~ 1.0 km in East direction
5.	M/s. JSW Steel Dolvi Works	Steel Industry	~2.0 km in East direction
6.	M/s. JSW Cement Limited	Cement Grinding Unit	~3.5 km in SSE direction
7.	H & R Johnson Tiles Plant	Tiles Industry	~ 4.5 km in SE direction

Source: Field Survey

viii) Baseline environmental data- air quality, surface and ground water quality, soil characteristic, flora and fauna, socio economic condition of the nearby population.

a) Baseline Environmental Data (Air, Noise, Water & Soil)

Baseline study of the study area was conducted during *Post - Monsoon Season* (Oct., to Dec., 2021). Ambient air quality monitoring has been carried out at eight locations in the study area on 24

hourly bases. The concentration of $PM_{2.5}$ varies between 27.1 µg/m³ (at Village Vadkhale Naka) to 55.2 µg/m³ (at Sampling Location - 1 & Near JSW Plant Site) and the concentration of PM_{10} varied between 51.3 µg/m³ (at Village Devali) to 91.9 µg/m³ (at Near JSW Plant Site), the concentrations of NOx and SO2 were found to be in range of 12.4 µg/m³ (at Village Devali) to 32.5 µg/m³ (at Near JSW Plant Site) and 6.33 µg/m³ (at Village Vadkhale Naka) to 13.9 µg/m³ (at Near JSW Plant Site) respectively. CO concentration was found to be maximum 0.93 mg/m³ (at Near JSW Plant Site) & minimum 0.52 mg/m³ (at Village Devali).

Ambient noise levels were measured at eight locations around the project site. Noise levels vary from 51.1 Leq dB to 65.4 Leq dB (A) during day time and from 42.0 Leq dB to 61.2 Leq dB (A) during night time.

There are two surface water bodies present in the study area, where pH varies from 7.16 to 7.95, Total hardness (79.20to 985.05 mg/l), Total dissolved solids (168.0 to 3882mg/l), total alkalinity (66.50 to 641.25 mg/l) and conductivity (274 to 6054 µS/cm).

The ground water analysis for all the eight sampling stations shows that pH varies from 6.61 to 7.39, Total hardness varies from 55.55 mg/l to 584.10 mg/l, Total dissolved solids vary from 86 mg/l to 936 mg/l.

Soil monitoring was carried out at eight locations and the analysis results show that soil is neutral to slightly alkaline in nature; pH ranging from 6.80 to 7.92 with organic matter from 0.6 % to 1.5 %and Organic carbon varies from 0.34 % to 0.87 %. Soil texture is Clay loam to silt loam. Total nitrogen ranges from 112.5 kg/ha to 205.5 kg/ha, indicates that nitrogen is in better amount in this soil; Phosphorous is present in the range of 38.80 kg/ha to 256.6 kg/ha which is in more than sufficient amount. Also, Potassium is found to be ranging from 161.6 kg/ha to 392 kg/ha which is present in more than sufficient amount in soil.

b) Biological Environment (Flora & Fauna)

Floral Diversity

Total of 60 species of trees, 30 species of shrubs, 38 species of Herbs & 23 types of climbers and 23 mangrove &mangrove associates were recorded based on primary observation as well as based on information collected from the secondary data within the 10 Km study area.

As per the field survey and list of Flora by ENVIS, MoEFCC; there is no endemic, endangered and rare species of flora observed under threatened status in the study area.

Faunal Diversity

Among fauna, total of 14 species of mammals, 13 species of Reptiles, 4 species of amphibians and 66 avifaunal species were recorded in the 10 km study area.

Based on primary field survey and secondary data collected, two Schedule- I avifaunal species viz. viz. Sparrow hawk (*Accipiter nisus*) & Osprey (*Pandion haliaetus*) were recorded in the study area

during field survey as per (IWPA) Indian Wildlife Protection Act, 1972. Wildlife Conservation Plan for the Schedule - I species is under process.

c) Socio-Economic Environment

The population as per 2011 Census records is 163447 (for 10 km radius). Scheduled Caste population of the study area is 3619 and Scheduled Tribe is14481. Literacy rate of the area is 61.55% & sex ratio of the area is 980 (females per 1000 males). Population of the workers engaged in occupation is 73855. Out of the total population; 55036 persons are main workers, 18819 persons are marginal workers and remaining 89592 persons are considered as non-workers.

ix) Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.

Risk Assessment table along with mitigation measures

S. No.	Activity	Associated hazards	Associated risk/ health impact	Mitigation Measures
1.	Storage & handling of raw material	Heat, Fire & dust	Exposure, physical injuries, burning, air pollution due to fugitive emissions	• Use of PPEs. • Continuous water sprinkling • Training to workers for proper handling • Proper system for loading & unloading operations • Firefighting& first aid facility. • Storage should be away from ignition source • Proper housekeeping facilities
2.	Working in Grinding Unit	Heat, Fire, Dust, Smoke & Explosion	Physical injuries, burning, air pollution	• Firefighting& first aid facility • Use of PPEs. • Use of proper APCDs like Bag house /Bag Filters • Inspection & regular monitoring • Training to workers for proper handling of raw materials
3.	APCD failure	Release of PM in ambient air	Air pollution	• Regular monitoring & inspection will be done. • The plant shall immediately shut down on APCD failure
4.	Working at height	Slip, trips & falls of operators	Physical injuries	• Individual alertness of the workers. • First aid boxes shall be provided
5.	Electrical maintenance work	Electric shock, short circuits in power room	Electrical shocks, Injury or burn	• Regular checking and maintenance of electrical units • Use of PPEs • Provision of First aid box
6.	Working near D.G. sets during emergency	High noise	Noise induced hearing losses	• Provision of PPEs to the workers.

x) Likely impact of the project on air, water, land, flora-fauna and nearby population.

S. No.	Project Activity	Aspect	Impact	Mitigation Measures
1.	Transportation raw materials by road	Fugitive Dust Emission	▪ Increase in the fugitive dust concentration in the ambient air which will affect the biotic environment.	• Use of PUC Certified vehicles • Vehicles to be covered with tarpaulin and not over loaded • Speed limit to be maintained • Paved road in plant premises
2.	Material storage and handling		▪ Increase in the fugitive dust concentration in the ambient air ▪ Workers affected by respiratory diseases due to working in the high dust-zone area	• Clinker, Cement and Fly Ash stored in silos. • Covered yard for storage of Gypsum. • Fly ash received through closed bulkers & fed into Silo through pneumatic system. • Personal Protective Equipment to the workers
3.	Cement Mill	Particulate Matter Emission & Fugitive Dust Emission	Increase in Particulate Matter and fugitive dust concentration in air environment	• Installation of Bag House with cement mill stack. • Better maintenance of pollution control equipment like Bag Filters and Bag House etc. • Development of greenbelt / plantation all along the plant boundary.
		Noise generation due to Exhaust fans and Cement grinding	▪ Increase in noise levels near source generation ▪ Hearing impairments ▪ Other health effects	• Earmuffs/ Earplugs to persons working in high noise zone. • Proper lubrication & maintenance of machinery • Development of greenbelt / plantation within the plant premises • Periodic Occupational Health Surveillance of worker
4.	Cement Packing & Dispatch	Fugitive Dust Emission	▪ Area source - Increase in fugitive dust concentration in air environment ▪ Respiratory Diseases	• Dust extraction arrangement • Spilled cement collected and recycled • Installation of Bag Filters at transfer points • Development of greenbelt • Personal Protective Equipment (Goggles, Mask etc.) to worker. • Periodic Occupational Health Surveillance

xi) Emergency preparedness plan in case of natural or in plant emergencies.

M/s. Adani Cementation Limited will have an Emergency Plan (Onsite & offsite) at the plant site. Suitable Risk Control Measures with respect to Risk Assessment will be implemented to minimize the risk to an acceptable level. Regular Training, Implementation of SOPs and compliance of

relevant Personal Protective Equipment's (PPEs) will help to minimize the health hazards and incidental casualties.

xii) Issues raised during public hearing (if applicable) and response given.

Public Hearing Notice for the proposed project is yet to be conducted.

xiii) Socio-economic Development Plan with proposed expenditure

As per MoEFCC OM dated 30th Sept., 2020 & OM dated 20th Oct., 2020; Socio-Economic Developmental activities will be formulated on the basis of the issues raised during Public hearing which will be addressed in EMP & will be implemented in a time bound manner with the start of the plant implementation.

xiv) Occupational Health Measures

Dust	▪ Implementation of adequate dust control systems and good housekeeping. ▪ Water sprinkling in the places where dust dispersion can occur. ▪ Regular sweeping of roads within plant premises ▪ Providing dust masks to employees working in handling and storage yards. ▪ Periodic work zone monitoring
Noise	▪ Proper maintenance of machineries ▪ Installation of compressors in closed buildings ▪ Regular monitoring of noise level ▪ Display of noise level with permission level ▪ Display instructions for using PPEs at high noise level area ▪ Periodic health checkup for Audiometry for the individuals working in high noise area
Heat stress	▪ Scheduling hot jobs in cooler part of the day ▪ Monitor those workers who are at risk of heat stress ▪ Provide rest periods with water breaks ▪ Use of personal protective equipment
Electrical Hazards	▪ Proper Earthing as per IS 3043 will be done ▪ Low Voltage Supply will be ensured ▪ Isolating Transformers ▪ Double Insulated Tools ▪ Over Load Protection ▪ Protection Against Leakages (G.F.C.I.) ▪ Flame- Proof Equipment ▪ Lightning Protection ▪ Protection against Static Electricity and safely using ladders and scaffolds
Fire and Explosion	▪ Suitable fire extinguisher, fire buckets and fire hydrant system. Fire buckets will be kept near transformer, cable, general store and office area. Hydrant line at all location in plant area along with coal, clinker storage area. Fire tender is to be kept ready at plant main gate. ▪ Oil and Flammable Gases storage area will be fenced and declared as Fire Hazardous Area-No Smoking Area" ▪ Permit and safety instruction will be given to use welding / gas cutting in the area of oil, gas, coal and bag go down. ▪ Predictive interlock in transformers so as to give alarm and trip the system.

	▪ Adequate height of brick walls for separation of all transformers, soak pits for storage of oil leakages from transformers will be done.
Other Hazards	▪ Structural soundness of silos and buildings. ▪ Installing light arrestors at all tall buildings. ▪ Permit to be taken to work at height with work instruction to use safety belts etc. ▪ Testing of all lifting tools, tackles and pressure vessel to avoid failure. ▪ Safe working pressure maintained in air receiver. ▪ Safe working load on cranes and ropes etc. ▪ Good housekeeping & Speed limit of vehicles will be 20 km/hr. inside the plant area. ▪ Display of emergency number at all suitable location. ▪ Fire tender, ambulance and emergency staff ready at the plant main gate at all the time ▪ First aid kits are kept at the sites and training provided ▪ Use of mobile while driving, alcohol, smoking etc. are ban inside the plant area. ▪ Proper illumination in plant area (100 to 150 LUX), office (250 to 300 LUX) and road area (20 to 30 LUX)

xv) Post project monitoring plan

Frequency and location for post-project monitoring

S. No.	Description	Frequency of Monitoring
1.	Meteorological Data	Hourly
2.	Ambient Air Quality	Twice a week & Continuous Online Monitoring
3.	Fugitive Emission Monitoring	Quarterly
4.	Stack Emission Monitoring	Monthly & Continuous Online Monitoring
5.	Noise Level Monitoring	Monthly & as per EC / CTO
6.	Ground Water Level & Quality	Pre – Monsoon & Post – Monsoon
7.	Waste water Monitoring	Monthly & as per CTO
8.	Medical Checkup of Employee	Yearly/ Six Monthly or as per Factory Act
9.	Performance evaluation of APCEs / Adequacy Study	Yearly