

## EXECUTIVE SUMMARY

## ES 1 PROJECT FACT SHEET

## ES 1.1 BASIC PROJECT INFORMATION

Name of Project	:	<b>Cebu Limestone, Pozzolan and Associated Minerals Quarry Expansion Project (the “Project”)</b>
Project Location	:	Barangays Binabag, Buhingtubig, Butong, Lut-od, Mangoto, and Sambagon, Municipality of Pinamungajan, Province of Cebu
Nature of Project	:	Extraction of Non-metallic Minerals
Project Size	:	1,200 Hectares

## ES 1.2 PROPONENT PROFILE

Proponent Name	:	<b>Century Peak Corporation</b>
Proponent’s Address	:	Unit 14/F Equitable Bank Tower Condominium, 8751 Paseo de Roxas Avenue, Salcedo Village, Makati City
Contact Person	:	<b>Mr. Wilfredo D. Keng</b> President
Contact Number	:	(+632) 856-0999

## ES 1.3 PROJECT BACKGROUND

Currently, the Project covers a 304-hectare area with an approved Environmental Compliance Certificate with Reference No. ECC-CO-1503-0011 issued on April 13, 2015 by the Department of Environment and Natural Resources. CPC plans to expand the area coverage from 304 hectares to 1,200 hectares that will cover portions of the abovementioned six (6) barangays.

## ES 1.4 TENEMENT HISTORY

The major events on tenement history involving the project area are summarized as follows:

- **June 18, 1996** – The Philippine Government through the Department of Environment and Natural Resources (DENR) and ASC Mining and Industrial Corporation executed Mineral Production Sharing Agreement (MPSA) No. 045-96-VII covering an area of approximately 3,028.74 hectares and MPSA No. 046-96-VII covering an area of approximately 1,766.81 hectares which are both located in the Municipality of Pinamungajan and City of Toledo.
- **2005** - then DENR Secretary Michael T. Defensor ordered final and executory the cancellation of non-performing mining tenements totaling 68,570 hectares throughout the country. The move was prompted by the failure of contractors to undertake mining activities under their respective contracts for a long period of time. In an effort to maximize the resource potential of the country’s mineral lands under the government’s mining revitalization program, these 65 cancelled tenements, including the two MPSA’s of ASC Mining and Industrial Corporation, were transferred from the Mines and Geosciences Bureau of the DENR to the Philippine Mining Development Corporation (PMDC) in 2007.
- **September 2007** - PMDC published an invitation to all interested mining companies, both local and foreign, to apply for eligibility and submit sealed bid proposals for a Joint Operating Agreement for the exploration, development and mining operations of the PMDC mining properties initially put up for public bidding.

- **November 17, 2009** – The PMDC held a public bidding for the exploration, development and utilization of the mineral resources in the two Contract Areas mentioned above.
- **December 6, 2010** - PMDC and CPC executed a Joint Operating Agreement (JOA) for the conduct of exploration, development, mining operation and utilization for commercial purposes of limestone and associated mineral deposit existing in the MPSA area.
- **March 3, 2011** – The Joint Operating Contract (JOA) between PMDC and CPC was registered at the Mines and Geosciences Bureau (MGB) Region VII.
- **July 31, 2015** - CPC was issued an Environmental Compliance Certificate by the Environmental Management Bureau for the Cebu Limestone, Pozzolan and Associated Minerals Quarry Project.

### ES 1.5 PROJECT RATIONALE

The limestone quarry operation will supply the raw material requirement of CPCMC's cement plant operation. Cement produced will support the needs of Central Visayas (i.e. Cebu, Bohol, Negros Oriental and Siquijor) and parts of Mindanao with both ordinary portland cement and pozzolan cement.

In the Visayas region, there are only two major cement plants, namely the Apo Cement of Cemex and Taiheiyo Cement, which barely provides the requirements of Regions 6, 7, and 8. This allows cement plants from Mindanao, namely, Iligan (Lafarge), Alsons (Holcim) and Davao Union (Holcim) to penetrate the Visayas market. Out of a market size of 3.616 million MT in the Visayas, 1.204 million MT are being serviced by cement plants from Mindanao.

Hence, the establishment of the proposed project may contribute to the cement needs in Visayas and provide a competitive advantage over Mindanao-based cement plants in terms of lower transport costs. The area is mineralized with limestone and pozzolan, proximate to the target natural and grey markets. The area is also near an existing port and is accessible by sea.

Annual average revenue from the project is estimated at Php 578 million, while income tax, excise tax and local government taxes are expected to amount to a total of Php 93 million per year. The project will directly hire 91 people, aside from providing indirect employment to several hundreds more through its contractor. Priority will be given to local residents of the host community, which will be included in the Company's Social Development and Management Program.

### ES 1.5 PROJECT COMPONENTS

The details of the project's major components, support facilities, and pollution control facilities/devices are presented in **Tables ES-1, ES-2, and ES-3**.

**TABLE ES- 1. MAJOR COMPONENTS OF THE PROJECT**

Project Component	Area/Capacity	Location	Component Description
Quarry Area (Limestone, Pozzolan and associated minerals)	1,200 hectares	Within the JOA area.	Quarry operation will have a maximum annual extraction rate of 7 million MT.
Stockpile Area	100 hectares		Stockpile area will be designated for the overburden materials as a result of the quarrying activity. Generation of overburden is estimated at 30,000m <sup>3</sup> for every hectare of quarry operation.
Main Haul / Access Road	30km		Haul roads and access roads network will be strategically establish to provide systematic and efficient traffic flow of the quarry operation. An aggregate distance of approximately 30 kilometers of road network will be developed throughout the operation.

**TABLE ES- 2. SUPPORT FACILITIES/COMPONENTS OF THE PROJECT**

Project Component	Area/Capacity	Location	Component Description
Administrative Office	2,000sqm	All support facilities will be located within the JOA area.	The admin office will accommodate the field personnel of the project.
Warehouse, truck shops and motopool areas	2,000sqm		Designated motorpool area and maintenance shops for equipment and service vehicles will be allotted.
Staff Houses	2,000sqm		Staff houses will be established to house key field staff and officers of the project. Staff houses will also include a common mess hall, kitchen, and recreational facility.
Explosive Magazine	28 sqm.		Explosive magazine will be established in an isolated and secured area. The facility will store explosive materials for
Power Source	250 kVA		The power requirement for the admin office, staff house, and motorpool area will be supplied by the powerplant component of CPCMC Cement and Powerplant Project.
Emergency Power Generator	2 units of 110kVA		2 generator sets will be utilized as back-up power generation equipment for the project.

**TABLE ES- 3. POLLUTION CONTROL FACILITIES/DEVICES**

Project Component	Area/Capacity	Location	Component Description
Drainage / diversion canals	-	All facilities will be located within the JOA area.	Along with the road network, drainage and/or diversion canals, designed as V-shape with dimension of 1m wide and 1m high/deep, will be established to direct runoff waters to designated settling ponds. Settling ponds will retain runoff water allowing sufficient time to settle suspended solids prior to discharge to nearest water body.
Settling Ponds and other wastewater treatment facilities	Approx. 6,000 sqm. (aggregate area)		Settling ponds will be established at strategic locations around the quarry area. The pond will have a typical dimension of 30m x 10m x 6m (LxWxH).  Septic vault will be provided for the staff houses and staff houses facilities to accommodate the generated domestic wastewater. Oil and water separator will be established to treat wastewater generated at the motorpool area.
Air pollution control devices for the back-up generator sets	-		Generator sets will be installed with built-in air pollution mitigating device. The generator sets will be regularly maintained to ensure efficiency of the pollution device.

## ES 2 PROCESS DOCUMENTATION OF THE CONDUCT OF THE EIA

## ES 2.1 THE EIA TEAM

The EIA Team is composed of multi-disciplinary specialists as listed below:

Team Member	Expertise / Module	IPCO No.
Mr. Jess Addawe	EIA Process, GIS Mapping	056
Engr. Ronald Pahunang	Air Quality and Noise	173
For. Armando Gillado Jr.	Terrestrial Ecology, Freshwater Ecology	312
Engr. Catherine Addawe	Hydrology, Water Quality	055
Mr. Francis del Rosario	Socio-economic/People Module	-
Engr. Louie June D. Sioson	Environmental Risk Assessment	095
Mr. Michael Edrial	Terrestrial Ecology, Freshwater Ecology	-
Engr. Michael Anthony Fabe	Mining Engineer	-

## ES 2.2 THE EIA STUDY SCHEDULE AND AREA

The EIA study was conducted from within a 4-month period within which the following activities were conducted:

- Review of relevant laws, rules and regulations
- Site inspection and field survey
- Identification of gaps between primary and secondary data
- Design and implementation of field studies
- Baseline information gathering
- Identification, prediction and evaluation of impacts
- Formulation of Environmental Management Plan (mitigation measures, management practices and monitoring)

The EIA study area focused on the identified direct and indirect impact areas of the Project. The direct impact areas (“DIA”) is the 1,200-hectare mining area in Barangays Buhing Tubig, Butong, Lut-od, Binabag, Sambagon, and Mangoto, all in the Municipality of Pinamungajan, Cebu Province where all project facilities are proposed to be located and where mining operations of the project are to be undertaken. DIAs also includes areas where emissions and effluent of the project may have significant environmental impacts based on the results of the impact assessment conducted.

Indirect impact areas are areas outside the project boundaries that may be affected by the project. In terms of the physical and biological environment, indirect impact areas include the downstream portions of Mangoto and Bonbon River as well as the terrestrial flora and fauna bordering the project area. The municipality of Pinamungajan is also identified as indirect impact area in terms of socio-economic impacts.

## ES 2.3 THE EIA METHODOLOGY

Both primary and secondary data were utilized in the assessment of various project impacts. Primary data were obtained through on-site investigation and field sampling/surveys while secondary data were collected from the proponent and from related government agencies/institutions. Sampling methodologies employed during the EIA process are listed below:

Modules	Methodologies Used for Assessment
<b>LAND</b>	
Land Use and Classification	- Gathering/Review of secondary data - Site observation/validation
Geology and Geomorphology	- Gathering/Review of secondary data - Site observation
Pedology	- Soil sampling - Analysis of soil samples - Review of secondary data

Modules	Methodologies Used for Assessment
Terrestrial Ecology	- Gathering and validation of secondary data - Site observation, Random Plot Method, Transect Walk Method, Strip-Census Method
<b>WATER</b>	
Hydrology and Hydrogeology	- Site observation - Gathering of secondary data - Computation of estimated streamflow using Drainage Area-Ratio Method (or the “Basin Factor” method)
Water Quality	- Site observation - In-situ measurements - Grab sampling for laboratory analysis
<b>AIR</b>	
Climate	- Gathering of secondary data from PAGASA
Greenhouse Gas Emissions	- Estimation using set ratios of MT CO2 per unit source
Air Quality	- High Volume Ambient Sampling (TSP, PM10, Heavy Metals) - Bubbler Method (SO2, NO2) - Secondary Data
Ambient Noise	- Ambient noise measurements
<b>PEOPLE</b>	
Socio-economic Profile	- Review of secondary information - Household and perception survey - Focus Group Discussion (FGD) - Key Informant Interview (KII)

#### ES 2.4 PUBLIC PARTICIPATION

Public participation in the EIA process was achieved through the conduct of household and perception survey, IEC and FGDs, and public scoping with the various stakeholders. IEC and Initial Perception Survey were conducted for the project last July 7-9, 2017. The survey and IEC were conducted in Barangays Buhing-Tubig, Butong, Lut-od, Binabag, Sambagon, and Mangoto all in the Municipality of Pinamungajan, Cebu. The public scoping was conducted las August 25, 2017.

#### ES.3 EIA SUMMARY

##### ES 3.1 SUMMARY OF BASELINE CHARACTERIZATION

The summary of baseline characterization and its corresponding environmental impacts and mitigation plan is presented below. Chapter 2 of this EIS provides a more detailed discussion of the baseline conditions, environmental impacts and mitigation measures.

Module	Summary of Baseline Condition
<b>LAND</b>	
Land Use and Classification	The Municipality of Pinamungajan has a total land area of 11,725.77 ha which is predominantly classified as Alienable and Disposable (A&D) Lands. Existing land uses within the Forestland Areas in the municipality include agriculture, built-up, fishpond/mangrove, grassland/shrubland, and National Greening Program (“NGP”) area. The entire project area is mostly forest land with grassland/shrubland as land use/cover. Patches of agricultural land and built-up areas can also be found within the mine site.
Geology and Geomorphology	The project area has steep slopes more than 50% at elevations ranging from 0 to 200 masl. The geology of the area is categorized as Pliocene-Pleistocene Characterized as: marine and terrestrial sediments; associated with extensive reef limestone; predominantly marl and reworked tuff in places; sporadic terrace gravel deposition in some elevated flat and land surfaces; deformation limited to gentle warping and vertical dislocation.

Module	Summary of Baseline Condition
	<p>Cebu province is not located in earthquake-prone areas thus the low risk to earthquakes category. The project area is categorized as moderately susceptible to rain-induced landslide and highly susceptible to earthquake-induced landslides. There are, however, no volcanic hazards in Cebu province.</p>
Pedology	<p>Pinamungajan is consisted of seven (7) soil types namely: Hydrosol, Beach Sand, Faraon Clay, Lugo Clay, Faraon Clay Steep Phase, Mandaue Clay Loam, and Bolinao Clay. The soil type of the project area is Bolinao Clay.</p> <p>Bolinao Clay soil has surface soil that is clayey, red to bright red characterized with moderately friable, granular when dry, and slightly sticky when wet.</p> <p>The two soil samples collected from the area generally has low fertility. Heavy metal concentrations fall within typical background levels for uncontaminated soil.</p>
Terrestrial Ecology	<p>The Project will involve quarrying activities thus removal of vegetation is inevitable. Most of the plant species that will be affected by the project during construction and operation are from grassland/shrubland and agroforestry ecosystem represented mostly by Coconut, Mahogany, Gmelina and other fruit bearing trees and herbs such as Banana, Guava, Mango among other. The area is also heavily dominated by introduced/invasive grass/shrub species such as Gono ( <i>Chromolaena odorata</i> ) and Cogon ( <i>Imperata cylindrica</i> ).</p> <p>Three (3) threatened species were recorded in the sampling sites that falls under the “vulnerable” category of 2017 IUCN Red List of Threatened Species: Antipolo ( <i>Artocarpus blancoi</i> ), Mahogany, and Molave ( <i>Vitex parviflora</i> ) are well distributed in the country. Four endemic species Niog niogan ( <i>Ficus pseudopalma</i> ), Antipolo ( <i>Artocarpus blancoi</i> ), Himbabao ( <i>Broussonetia luzonica</i> ), and Toog ( <i>Petersianthus quadrialatus</i> ), on the other hand, are also distributed in other parts of country.</p> <p>Species abundance is dominated by chestnut munia <i>Lonchura atricapilla</i>, Eurasian tree sparrow <i>Passer montanus</i>, yellow-vented bulbul <i>Pycnonotus goiavier</i>, and glossy swiftlets <i>Collocalia esculenta</i>.</p> <p>The evenness indices were all within the moderate to very high range with an average evenness index at 0.712 for terrestrial fauna.</p> <p>One species in particular <i>Varanus nuchalis</i> is threatened under three redlist category namely: CITES (Appendix II), DENR DAO 2004-15 (Vulnerable) and IUCN (Vulnerable). Eight other bird species and turtle are threatened namely: <i>Haliastur indus</i> (CITES App. II), <i>Accipiter virgatus</i> (CITES App. II), <i>Actitis hypoleucos</i> (CMS App. II), <i>Charadrius dubius</i> (CMS App. II), <i>Loriculus philippensis</i> (CITES App. II), <i>Tyto longimembris</i> (CITES App. II), <i>Mearnsia picina</i> (IUCN NT), <i>Muscicapa griseisticta</i> (CMS App. II) and <i>Cuora amboinensis</i> (IUCN Vulnerable).</p>
<b>WATER</b>	
Hydrology and Hydrogeology	<p>The entire 1200 hectares project area is traversed by (5) river systems that drain in a westerly direction towards Tañon Strait. The quarry area is bordered by two river systems. North of the project area is the Manguto River in Brgy. Poblacion while south of project area is an unnamed river in Brgy. Mangoto.</p> <p>Hydrogeologic units found within the vicinities of the project area are: Barili Marl, Carcar Limestone and Quaternary Alluvium. The project area is underlain by local and less productive aquifers.</p>
Water Quality	<p>The Project is still in Pre-Construction Phase thus no surface water quality monitoring was conducted since 2014.</p> <p>Results of 2017 baseline updating reveal that surface water stations downstream, specifically SW Mangoto, SW Bonbon and SW Cabiangon had high salinity values (brackish to brine). This is due to the locations of these stations which is subject to tidal changes. During the time of sampling, these stations were submerged in seawater due to the high tide. Exceedances were also observed in terms of Fecal Coliform count in all stations except SW Mangoto. In terms of TSS, only SW Buhing-tubig exhibited levels exceeding the Class C WQG (80 mg/l) with TSS = 119 mg/l.</p>
Freshwater	<p>Three phytoplankton taxa were found namely <i>Bacillariophyta</i>, <i>Chlorophyta</i> and <i>Cyanophyta</i>. Four genera of</p>

Module	Summary of Baseline Condition
Ecology	<p>diatoms (Bacillariophyta) were observed like <i>Cyclotella</i> sp. and <i>Cymbella</i> sp. Two genera of green algae (Chlorophyta) were identified such as <i>Treubaria</i> sp. and <i>Stigeoclonium</i> sp. Blue-green algae (Cyanophyta) had one genus observed namely <i>Merismopedia</i> sp. However, only one zooplankton taxon was observed in the samples.</p> <p>There were two aquatic insect taxa assessed in seven sampling sites namely Orders DIPTERA and COLEOPTERA. Four molluscan taxa belonging to families CORBICULIDAE, MELANOPSIDAE, PHYSIDAE AND VIVIPARIDAE, one aquatic worm (Class OLIGOCHAETA) and one freshwater crab (Family POTAMIDAE) were observed.</p>
<b>AIR</b>	
Climate	<p>The climate of the project site belongs to a zone classified as Type III Climate based on the Modified Classification of Philippine Climate.</p> <p>The annual average rainfall at the project site (MM5 data) is 2080 mm. This is 25% higher than the annual average rainfall of 1564.5 mm at PAGASA-Mactan Station. These annual averages (PAGASA-Mactan Station and MM5) were lower than the average annual rainfall in the Philippines of 2,562.5 mm.</p> <p>Monthly average wind directions at PAGASA-Mactan Station show two (2) prevailing wind flows, which are the northeast and southwest winds that prevail during the months of October to April and June to September, respectively.</p>
Greenhouse Gas Emissions	<p>The estimated total greenhouse gas emission of the project is 5,835 MT a year based on the number of equipment projected to be used for the project.</p>
Air Quality and Ambient Noise	<p>Ambient air quality in all the four (4) sampling stations was within DENR standard. PM10 readings ranged from 5 ug/Ncm to 9 ug/Ncm. Lowest TSP value were observed in Sta. 4 while Sta. 2 and 3 yielded the highest TSP. Both SO2 and NO2 were very low relative to the DENR standard. Heavy metals in all sampling stations were below the minimum detection limits.</p>
<b>PEOPLE</b>	
Socio-economic	<p>The Municipality of Pinamungajan is a second class municipality located at the southwest portion of Cebu Island.</p> <p>Pinamungajan has a household population of 57,978. The impact barangays have a total population of 16,016. It is 27.6% of the total population of the Municipality of Pinamungajan.</p> <p>Almost 50% of the population of Pinamungajan only reached elementary education and the rest were able to reach high school education. A small percentage were able to experience Post-Secondary education (0.85%) and college education (8.63%).</p> <p>The common leading causes of morbidity in Pinamungajan in 2014 are Hypertension, Pneumonia, Influenza, TB Pulmonary, Diarrhea, Skin Diseases, Measles, Dengue, Chicken Pox, and Typhoid Fever. The latest recorded leading causes of mortality in Pinamungajan are Cerebrovascular Diseases, Cardiac Diseases, Sepsis, All forms of Cancer, and Pulmonary Diseases.</p> <p>The known economic activities in the Municipality of Panimungahan are Agricultural, Fishery, Mining, Commercial and Service Centers, and Industrial. Since the area is predominantly agricultural, upland communities are engaged in farming and coastal communities are into fishery.</p> <p>Based on the output of the research and the methodologies used the following is the enumeration of the documented community's issues and concerns with regards to the project:</p> <ol style="list-style-type: none"> <li>1. Loss or depletion of water supply</li> <li>2. Damage/destruction or loss of farm/agricultural lands</li> <li>3. Safety of employees during landslide</li> <li>4. Threat to health due to generation/dispersion of dust</li> </ol>



Module	Summary of Baseline Condition
	5. Provision of documents and updates to the municipal office regarding the status of the project 6. IEC and consultation on community

## ES 3.2 SUMMARY OF MAIN IMPACTS AND MANAGEMENT & MONITORING PLAN, AND EMF AND EGF COMMITMENTS

### ES 3.2.1 LAND

The proposed project expansion is located in a grassland, agricultural and built-up areas. There are also at least 263 household within the proposed area. Hence possible impacts of the area are conflict with existing land use and possible tenurial issue. However, these possible impacts can be address by coordinating with LGU of Pinamungajan in updating the land use classification. Also, resettlement of affected household can also be implemented based on Resettlement Action Plan (RAP) of the project.

During the project operation change in surface landform and possible inducement of liquefaction and landslide might also occur as impact of the project. Thus, drainage system connected to silt ponds shall be provided to control surface runoff and prevent or mitigate erosion of exposed areas and siltation of rivers/creeks draining the quarry area. Erosion control structures such as canals, culverts, silt-collectors, etc. shall be regularly de-silted. Topsoil will be properly stockpiles for future use (i.e. potting medium, mine rehabilitation). Detailed subsurface geotechnical and geophysical studies will also help identify subsurface conditions and possible hazards such as subsidence from sinkholes. Proper mitigation measures can be identified from the results of the studies. In addition, site-specific geotechnical engineering study will be conducted to determine areas that may be prone to mass movements. Unstable areas and road cuts will be stabilized using engineering and/or vegetative measures. Engineering Geological and Geohazard Assessment will be conducted in the area. Slope condition and stability shall be regularly monitored during construction and operation.

Moreover, clearing of vegetation and disturbance to wildlife are inevitable once the quarry becomes operational. Hence, off-set planting can be conducted to replace the cleared vegetation. The proponent will also coordinate with DENR field offices to properly off-set the cleared vegetation. All statutory requirements relating to tree cutting permits shall be secured from the DENR prior to any clearing operations.

### ES 3.2.2 WATER

One of the most critical resources in the area is the groundwater. The stripping of vegetation, overburden removal, frequent passing of heavy equipment and the exposure of subsoil would all lead to a decrease in groundwater recharge. The decrease in groundwater recharge may affect the amount of water withdrawn from the springs/wells surrounding the quarry area. Groundwater resources surrounding the project area shall be closely monitored for any significant decrease in capacity.

The total water consumption for the quarry is estimated at 15,000 cubic meters per year. This will be used for sprinkling of dusty areas, cooling water for heavy equipment and for general cleaning purposes. Water supply will be sourced from the local water district.

The capacity of the Pinamungajan Water District is 1,050,097 cubic meters per year which is much more than the demand of the project. The project's total water requirement during quarry operation is only 1.4 % of total annual the capacity of the local water district. Existing domestic water demand of the municipality is estimated at 510,432 m<sup>3</sup>/year which is about 48.6% of the water district's annual capacity. With the additional water demand from the project, 50% or 524,665 m<sup>3</sup> of the water district's capacity is still available for future use. Therefore water use competition is not a major concern for this project.

The project will be using hazardous materials such as fuel. Consequently, the project will also generate hazardous wastes such as used oil, used batteries, etc. from the equipment used for project operations. Sewage from the administrative building may also potentially contaminate the groundwater.

To mitigate the potential impacts on groundwater quality, the following shall be implemented:

- Administrative buildings shall be provided with toilets and sewerage systems.



- All sewage will pass through septic tanks and no raw sewage shall be discharged.
- Facilities containing hazardous materials and hazardous wastes shall be lined with cement flooring and shall be provided with secondary containment facilities in case of spills.
- Liquid wastes shall be fully contained prior to disposal.
- Solid waste reduction and recycling shall be implemented.

The project will involve clearing of vegetation and earthworks that will result to accelerated soil erosion in the area due to the exposure of bare soil to surface runoff. Eroded soil from the stockpile and quarry areas may eventually reach the surface waters (rivers and coastal waters) and cause siltation. Potential siltation of surface waters shall be mitigated through the construction of a drainage system with sedimentation ponds.

### ES 3.2.3 AIR

Potential project impacts during construction and operation phase include increased emissions from vehicles, equipment and intermittent increase in suspended particulates. Impacts on air quality shall be mitigated through proper maintenance of equipment and vehicles, and watering/dampening of roads to minimize dust resuspension. Speed limits along access roads shall also be implemented. To offset the project's greenhouse gas emissions, a carbon sequestration program through reforestation shall be implemented by the proponent.

Activities during construction and operation phases of the Project will increase the level of ambient noise. Noise from vehicles, equipment and quarry operation could cause stress and nuisance to the nearby communities living near the project site. Noise and other hazardous sound can also cause hearing impairment to workers and/or disrupt certain body functions.

Noise emission requires management measures. Forestation and plantation in perimeter-buffer areas are other effective controls for noise propagation. Enclosures of the respective noise generator are recommended for noise control. Mining personnel will be required to wear ear protective devices and to minimize their exposure to excessive noise.

### ES 3.2.4 PEOPLE

The development and operation of a mine may result in several impacts to the communities. The changes in land-use from farm and agroforest lands to mining will have an effect in the daily lives of the residents. The effects may include psycho-social concerns due to the physical and socio-economic disruption of the norms of the community, economic condition, in-migration during development and operation, out-migration upon closure, safety and health risks to the employees and workers and the communities, peace and order in the area and possibly in the cultural and historical background of the area.

During Operation, the mining activity will fuel economic growth, in-migration and safety and health risk employees/workers and the communities, and may hasten the impact of climate change. Upon closure, the potential impact will be on the economic aspects and psycho-social concerns on job, livelihood, and opportunities loss because of the seizure of the operation.

#### ES 3.2.4.1 LAND CONVERSION AND DISPLACEMENT OF EXISTING SETTLEMENT

The proposed site for development is currently agricultural. Due to the proposed project, the area will be converted to industrial/mining. The area has existing land tenants who will be displaced before the onset of the proposed project. The proponent plans to relocate the affected tenants/households within the Municipality of Pinamungajan and proper compensation on identified assets will be ensured. Proper relocation and compensation process will be based on the Resettlement Action Plan to be prepared by the proponent in consultation with the affected tenants/households and the Municipal and Barangay Local Government Units.

#### ES 3.2.4.2 IN-MIGRATION

One possible impact in every development in an area is in-migration. Presence the opportunities for jobs and livelihood brought by the development activity will invite workers from other areas to migrate. Influx of workers from other areas is expected during the development and construction phase as well as during the operation phase with the introduction of other economic activities related to the cement and power plant operations.

In-migrants will add to the continuously increasing population of the Barangay and the Municipality. As observed, the population pyramid of both the Municipality and Barangay is expansive, wherein an increasing very young population is manifested. The natural increase in population in the areas will already cause competition in accessing the basic services and

available economic opportunities in the areas. With the entry of in-migrants, further competition in terms of local employment, public utilities, and access to basic services will be experienced. Also, in-migration may also lead to proliferation of informal settlers in the project impact barangay. In-migration may also introduce lifestyles and behaviors different from the locals which may lead to social tensions.

To mitigate potential impacts due to in-migration, the following management measures shall be implemented:

- Implement priority local hiring policy for qualified local workers;
- Provide skills training for the local residents of project impact barangays to give them a chance to qualify and compete for available employment opportunities;
- Coordinate with barangay or/and municipal LGU as to relevant ordinance on providing opportunities for local employment;
- Conduct consultation with barangay LGUs on requirements and process of hiring to maximize employment of local residents;
- Require and monitor contractor commitments on providing local employment;
- Coordination with the municipal and barangay peace and order councils to ensure peace and order;
- Coordination meetings shall also be undertaken regularly with the LGUs to identify threats and vulnerabilities in the society as well as to develop programs to prevent foreseen social problems.

#### ES 3.2.4.3 CHANGE IN LIVELIHOOD AND INCOME SOURCES

Land use conversions will also impact on the livelihood and job opportunities of the residents in the area. The once farming area will be transformed into an industrialized community. The talents and skills of the existing residents may not be suitable or limited to supply to the needed manpower of the operations. The proponent in coordination with the Public Employment Service Office of the Municipality will implement a training and skills development program for the residents of the impact Barangay. This will ensure the employability of the impact barangay residents in the proposed project. Also, in order to avoid increasing the number of poor families in the area, the proponent will also provide training and opportunities for livelihood development.

#### ES 3.2.4.4 COMPETITION ON EXISTING RESOURCES AND BASIC SERVICES

The existing resources and basic services in the areas are considered limited due to the current financial capacity of the LGUs to develop its natural resources to improve public utilities and the enhancement its basic services to constituents. The entry of the proposed project may cause further competition in the access of these resources and services. On the other hand, the proposed project may also provide opportunities for the development and enhancement of these services to ensure.

Currently, the residents have limited access to water and power supply. Although there are identified water source in the area, the waterworks system has limited capacity to reach other areas in the Municipality. The same with the power supply, a number of residents do not have access to electricity. In terms of basic services, the health sector needs improvement in order to ensure better health services to the residents. In terms of education, the existing classroom-student ration is very low despite the fact that not all children of school age are enrolled in any educational institutions. Also, based on the level of education attained by the residents in the municipality and the barangay, opportunities to access and complete college education are very limited.

The proposed project has already identified measures on how not to compete with the existing resources and services in the community. In terms of power supply, the proponent will put up a power plant to ensure its own supply of power needed for the operations. In terms of water use, additional demand from the proposed project on the existing demand of the communities will be for domestic use only because the proposed project will operate on a closed circuit design, which will allow the plant to recycle approximately 90% of its water supply.

The existence of the project will somehow provide opportunities for the improvement of services on education and health. Enhancement the education, health, as well as the social welfare services and public infrastructures will be enhanced due to the additional income opportunities of the LGUs from the taxes and fees to be collected from the proposed projects as well as the mandatory assistance of the proponent through the Social Development and Management Program and Corporate Social Responsibility Program.

#### ES 3.2.4.5 TRAFFIC CONGESTION

The project will cause an increase in traffic given the number of workers to be employed and delivery of some construction materials. This has the potential to add traffic congestion and affect sensitive receptors such as schools and community centers that may potentially cause road accidents. Heavy loads traversing infrastructure may also be over or near load bearing limits.

To mitigate traffic congestion and road safety concerns, a traffic management plan, in coordination with concerned LGUs and DPWH, will be prepared and implemented. IEC will also be conducted to communicate traffic impact and management plan to the community especially the host and neighboring barangays. Proper scheduling of delivery of construction materials will also be implemented to avoid peak hours/ traffic congestion and minimize the occurrence of accidents. Safety warnings and signage shall be installed.

### ES 3.2.3 ENVIRONMENTAL GUARANTEE AND MONITORING FUND / CONTINGENT LIABILITY AND REHABILITATION FUND COMMITMENTS

The Philippine Mining Act (1995 and its IRR) requires for the establishment of the Contingent Liability and Rehabilitation Fund (CLRf) which is the financial mechanism for the multi-partite monitoring, progressive mine rehabilitation and compensation for claims and damages. The CLRf ensures just and timely compensation for damages and progressive and sustainable rehabilitation for any adverse effect a mining operation or related-activity may cause. The CLRf is broken-down in three (3) forms such as the Mine Rehabilitation Fund (MRF), Mine Wastes and Tailings Fund (MWTF), and Final Mine Rehabilitation and Decommissioning Plan (FMRDP).

The MRF is established and maintained by each operating mine as sufficient environmental deposit to ensure the availability of funds for the satisfactory compliance and implementation of its Environmental Protection and Enhancement Program (EPEP). The MRF is utilized for the regular monitoring of mining operations, physical rehabilitation of mining affected areas and research on the technical and preventive aspects of rehabilitation. The MRF is further broken down into:

- Monitoring Trust Fund (MTF) - This fund covers the expenses incurred by the Multi-partite Monitoring Team (MMT) and Mine Rehabilitation Fund Committee (MRFC) for the monitoring activities and shall be in cash and in an amount to be determined by the MRF Committee. The minimum amount of the EMF is 600,000.00 Pesos maintained per annum that will be established in support of the compliance monitoring activities and to fund the annual work and financial plan (AWFP) of the MMT. In cases where the AWFP financial requirement is more than the established fund, the proponent will replenish the fund accordingly to correspond to the EMB-approved AWFP.

The EMF shall cover maintenance and other operating budget for the transportation and travel expenses, cost of laboratory analysis, cost of supplies and materials, cost of communication services, cost of consultancy work and other reasonable expenses incurred by the monitoring team;

- Rehabilitation Cash Fund - This fund covers the actual expenses/budget for the implementation of the EPEP activities amounting to 10% of the total EPEP amount or Php 5 million, whichever is lower; and
- Environmental Trust Fund (ETF) - Allocated as compensation for damages other than those caused by mine wastes and tailings. Based on relevant mining regulations, the ETF shall be set at a minimum of Php50,000.00.

MWTF is a fund collected semi-annually from each operating mining company as fees based on the amount of mine waste and tailings generated for the said period. The fund is reserved for payment of compensation for damages caused by mine wastes and tailings.

The FMRDF is established by each operating mining company to ensure the implementation of the approved Final Mine Rehabilitation and Decommissioning Plan. The FMRDF is accrued before the end of the operating life of the mine and is deposited in a Government depository bank for the sole purpose of FMR/DP implementation.