

EXECUTIVE SUMMARY

ES 1 PROJECT FACT SHEET

ES 1.1 BASIC PROJECT INFORMATION

Name of Project	:	Cement Plant and Power Plant Project (the “Project”)
Project Location	:	Barangay Sacsac, Pinamungajan, Cebu
Nature of Project	:	Cement Plant with Power Plant Component Mineral Processing Projects – Non-metallic mineral processing plant; Power Plants – Coal-fired
Project Size	:	6,000,000 MT Maximum Annual Production Rate 1 x 60 MW Power Plants

ES 1.2 PROPONENT PROFILE

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

ES 1.3 PROJECT RATIONALE

The proposed project will supply the cement needs of Central Visayas (i.e. Cebu, Bohol, Negros Oriental and Siquijor) and parts of Mindanao with both ordinary Portland cement and pozzolan cement. Both types of cement will be manufactured in accordance with the standards of ASTM C 150 (Type I) and PNS:C7:1992.

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 major components and support facilities of the project are listed below:

Project Components	Current Conditions		Conditions after Expansion	
	No. of units	Total Plant Capacity / Specifications	No. of Units	Total Plant Capacity / Specifications
Cement Plant				
Clinker Production	1	2,000,000 MTPY	3	6,000,000 MTPY
Limestone Primary Crushing Plant	1	1,500 TPH	3	4,500 TPH
Limestone Storage and Reclaiming Plant	1	1,500 TPH	3	4,500 TPH
Clay Crushing and Drying Plant	1	200 TPH crushing capacity	3	600 TPH crushing capacity
Raw Mill Plant with De-dusting	1	500 TPH	3	1,500 TPH
Raw Meal Silo Plant and Kiln Feeding	1	400 TPH	3	1,200 TPH
Pre-Heater with Pre-calciner	1	300 TPH	3	900 TPH
Rotary Kiln Plant	1	300 TPH	3	900 TPH
Clinker Cooler with De-dusting	1	300 TPH	3	900 TPH
Coal Mill Plant	1	45 TPH	3	135 TPH
Cement Mill Plant with Pre-grinder	2	160 TPH/mill	6	160 TPH/mill

Project Components	Current Conditions		Conditions after Expansion	
	No. of units	Total Plant Capacity / Specifications	No. of Units	Total Plant Capacity / Specifications
Clinker Silo	2	40,000 m ³ each capacity (minimum)	6	40,000 m ³ each capacity (minimum)
Cement Silo	4	10,000 m ³ each capacity (minimum)	12	10,000 m ³ each capacity (minimum)
Packing and Bulk Loading Plant	1	4x100 TPH packers; 1x100 TPH bulk truck loader	3	12x100 TPH packers; 3x100 TPH bulk truck loaders
3x60 MW Power Plants				
CFB combustion boiler	1	220 TPH, circulating fluidized bed, drum type	1	No changes.
Electrostatic precipitator	1		1	No changes.
Steam turbine	1	60 MW	1	No changes.
Generator	1	62,500/50000 kVA/kW, 10500 V	1	No changes.
Surface condenser	1		1	No changes.
Cooling water system	1		1	No changes.
Ash handling system	1		1	No changes.
Ash disposal facility	1	Concrete structure with a total area of 3.4 hectares capable of storing a volume of 221,000 m ³	1	No changes.
Process control system	1		1	No changes.
Coal Storage Facility	1	Reinforced concrete structure with minimum dimension of 70m x 50m x 15m (LxWxH). The structure will be an open shed with no walls.	1	No changes.

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	Team Leader, EIA Process, GIS Mapping	056
ENGR. RONALD PAHUNANG	Air Quality and Noise	173
FOR. ARMANDO GILLADO JR.	Terrestrial Flora	312
ENGR. CATHERINE ADDAWE	Hydrology, Water Quality	055
MR. FRANCIS DEL ROSARIO	Socio-economic/People Module	-
ENGR. LOUIE JUNE D. SIOSON	Project Description, ERA, Small Sections	095
MR. MICHAEL EDRIAL	Terrestrial Fauna, Freshwater Biology	-

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:

- a. Review of relevant laws, rules and regulations
- b. Site inspection and field survey
- c. Identification of gaps between primary and secondary data
- d. Design and implementation of field studies
- e. Baseline information gathering
- f. Identification, prediction and evaluation of impacts
- g. 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 77-hectare area in Barangay Sacsac, Municipality of Pinamungajan, Cebu Province where all project facilities are proposed to be located and where operations of the project are to be undertaken. DIAs also include 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. The municipality of Pinamungajan is 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
LAND	
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
Terrestrial Ecology	- Gathering and validation of secondary data - Site observation, Quadrat Sampling, Transect Walk Method
WATER	
Hydrology and Hydrogeology	- Site observation - Gathering of secondary data - Computation of estimated streamflow using Drainage Area-

Modules	Methodologies Used for Assessment
	Ratio Method (or the "Basin Factor" method)
Water Quality	- Site observation - In-situ measurements - Grab sampling for laboratory analysis
AIR	
Climate	- Gathering of secondary data from PAGASA and MM5 data
Greenhouse Gas Emissions	- Computation using the prescribed methodology by Intergovernmental Panel on Climate Change (IPCC)
Air Dispersion Modeling	- Methodology follows the Guidelines for Air Dispersion Modeling (MC 2008-003) falling under category of TIER -4
Ambient Noise	- Ambient noise measurements
PEOPLE	
Socio-economic Profile	- Review of secondary information - Perception survey

ES 2.4 PUBLIC PARTICIPATION

Public participation in the EIA process was achieved through the conduct of household and perception survey, IEC and FGDs with the various stakeholders.

ES.3 SUMMARY OF BASELINE CHARACTERIZATION, KEY ENVIRONMENTAL IMPACTS, MANAGEMENT AND MONITORING PLAN AND EMF AND EGF COMMITMENTS

ES 3.1 SUMMARY OF BASELINE CHARACTERIZATION

Module	Summary of Baseline Condition
LAND	
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. Cebu province is not located in earthquake-prone areas thus the low risk to

Module	Summary of Baseline Condition
	<p>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>
Terrestrial Ecology	<p>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, and Mango among others. The area is also heavily dominated by introduced/invasive grass/shrub species such as Gonoï (<i>Chromolaena odorata</i>).</p> <p>One threatened species was recorded in the sampling sites that falls under the “vulnerable” category of 2017 IUCN Red List of Threatened Species: Mahogany (<i>Swietenia macrophylla</i>) and is well distributed in the country. Two endemic species Niog niogan (<i>Ficus pseudopalma</i>) and Toog (<i>Petersianthus quadrialatus</i>) are also distributed in other parts of Philippines.</p> <p>Species with highest importance value are Coconut (<i>Cocos nucifera</i>), Alim (<i>Melanolepis multiglandulosa</i>), Mahogany (<i>Swietenia macrophylla</i>), Bunga (<i>Areca catechu</i>), Carabao grass (<i>Paspalum conjugatum</i>), <i>Strobilanthes sp.</i>, and invasive species such as Gonoï (<i>Chromolaena odorata</i>), Wedelia (<i>Sphagneticola trilobata</i>), Cogon (<i>Imperata cylindrica</i>).</p> <p>Characterization of vertebrate fauna was dominated by avifauna. In terms of family representation, the pigeon and doves (Columbidae) and flycatchers (Muscicapidae) have the highest number of species recorded.</p> <p>Fifteen amphibian and reptile species recorded in the area were composed of frogs, lizards, skink, o lizard, snakes, and turtle. Frogs and skinks were mostly observed along trails near riparian area, agro-forestry and marginal areas along sampling site, while snakes were observed in bamboo thickets and leaf litters. Domesticated animals such as cow, carabao, goat, chicken, ducks and pigs were also recorded in the area, being an agricultural area.</p> <p>No restricted-ranged species of Cebu Faunal Region was recorded in the area.</p> <p>The evenness indices of bird diversity were all within the <i>moderate</i> to <i>very high</i> range. High index value indicates distribution of individuals per species is very close to one another. The index also shows the stability and greater probability for habitat recovery.</p> <p>Two species considered invasive were recorded in the area namely: cattle egret <i>Bubulcus ibis</i> and Oriental house rat <i>Rattus tanezumi</i>.</p>

Module	Summary of Baseline Condition
	<p>One species in particular <i>Varanus nuchalis</i> 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>
WATER	
Hydrology and Hydrogeology	<p>The entire MPSA 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>Low DO levels observed during the 2017 assessment were probably due to the almost stagnant water during the sampling activity because of the high tide wherein the downstream portions of Kadlom and Mangoto Rivers were submerged in seawater. Consequently, a significant increase in conductivity and TDS was observed in the surface water stations during the 2017 water sampling due to the said high tide.</p> <p>BOD and oil and grease levels were within the WQG values except for SS2 which is equal to the limit value for oil and grease.</p> <p>Metals in all samples analyzed were all below their respective method detection limits while Fecal Coliform exceeded the 200 MPN/100ml WQG for Class C waters. It should be noted that a piggery is located upstream to the stations along Kadlom River. The said piggery allegedly discharges its effluent along Kadlom River which is being complained by the community.</p>
AIR	
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 (no very pronounced maximum rain period with a dry season last only from one to three months, either during the period of from December to February or from March to April).</p>
Greenhouse Gas Emissions	<p>The estimated CO_{2e} emissions for the project (initial design unit) was 2,182,475 MT per year. For the combined operation of three (3) units cement and three (3) units power plants and doubling the mobile units, this would yield an estimated CO_{2e} emissions of about 6,541,590 MT per year.</p>
Air Quality and Ambient Noise	<p>Levels of particulate air pollutants (PM₁₀ and TSP) at the project site and vicinities ranged from 5 to 79 µg/Nm³ and 9 to 79 to µg/Nm³, respectively, and were within the ambient standards set for PM₁₀ of 200 µg/Nm³ and 300 µg/Nm³ for TSP. Emissions along paved and unpaved roads near the project</p>

Module	Summary of Baseline Condition
	<p>site were the sources of fugitive emissions at the time of monitoring.</p> <p>For the gaseous air pollutants (SO₂ and NO₂), background levels were way below the standards set for these pollutants. The highest measured SO₂ and NO₂ concentrations were 10 and 12 µg/Nm³.</p> <p>Particulate metals in ambient air (Cr, Pb, Hg, As, Cd, and Cu) were below detection limit (not detected) during air sampling in May 2015 and October 2017.</p> <p>At all monitoring stations, sources of noise at the time of monitoring were from passing vehicles (motorcycles and four-wheels), except at Station ASR7A wherein sounds from animals and winds were the sources of noise.</p> <p>In comparison with the daytime noise standards set for residential areas, background noise levels at all stations monitored appeared to be within noise limit of 55 dBA plus correction factor of 5 dBA (or total of 60 dBA) for areas directly facing two-lane roads.</p>
PEOPLE	
Socio-economic	<p>Pinamungajan has a household population of 57,978.</p> <p>Barangay Sacsac is the identified direct impact area of the proposed project. It is one of the rural barangays of Pinamungajan. It has a total household population of 1,415 in 2010 and has a population share of 2.44%.</p> <p>The municipality of Pinamungajan is predominantly agricultural.</p> <p>Based on the output of the research and the methodologies used, particularly from methods 3 to 6, 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"> 1. Loss or depletion of water supply 2. Damage/destruction or loss of farm/agricultural lands 3. Safety of employees during landslide 4. Threat to health due to generation/dispersion of dust 5. Provision of documents and updates to the municipal office regarding the status of the project 6. IEC and consultation on community

ES 3.2.4 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. The expenses include costs for travel, accommodation, laboratory expenses, among others;
- 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.

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.