PANGKALAHATANG BUOD

BACKGROUND

With increasing demand of rebars due to the boost in infrastructure industry in the Philippines together with the rehabilitation activities in some parts of the country, LMC proposed to construct and operate a steel mill manufacturing plant project with a total capacity of 800,000 metric tons per year (MTPY). However, with the urgency of the project, LMC has already started constructing the steel mill plant. With this, a Notice of Violation (NOV) has been issued and this has been discussed and settled with the EMB Central Office dubbed as EMB CASE NO. 2022-03-0201. LMC paid the penalty and the NOV has been issued a Notice dated 21 July 2022 which closed and terminated the NOV.

Todate, the Plant is already in 50% completed.

A. IMPORMASYON TUNGKOL SA PANUKALANG PROYEKTO

Pangalan ng Proyekto	**Proposed Liansheng Steel Mill Manufacturing Plant Project**
Lugar kung nasaan ang Proyekto	Purok 1, Barangay Balsik, Jose Abad Santos Ave., Hermosa, Bataan
Uri ng Proyekto	Iron and Steel Manufacturing
Sukat ng Proyekto	84,980 m^2
Kapasidad	800,000 metric tons per year (MTPY)
Project Rationale	Ang industriya ng bakal sa Pilipinas ay isa sa pinaka-importanteng growth industries. Ito ay isang importanteng sangkap ng pagnanais ng ating bansa na maabot ang development at industrialization. Kaakibat nito ang paglikha ng mga industriyang nakadugtong dito gaya ng building and construction, automotive, shipbuilding and repair, electronics, packaging, etc. at ito ay may kahalintulad na kontribusyon sa employment generation, growth, at promotion ng industrial activity. Dahil dito, ang paninigurado ng isang matibay na domestic steel and steel-based industry ay mahalaga sa pad-develop ng competitive edge ng ating bansa upang makamit ang challenges ng globalization. Dahil sa pag unlad ng infrastructure industry sa ating bansa kasabay ng mga pagawaing kaakibat ng rehabilitation sa iba't-ibang parte ng bansa, mas lalaki ang pangangailangan sa produktong kabilya o reinforcing steel bars. Dagdag pa dito, ang proyekto ay itatayo dahil sa mga sumusunod na dahilan: • Paglago ng imprastraktura sa GItnang Luzon at KAlakhang Maynila • Supporta sa mga industriya ng pabahay, pagnenegosyo, turiso, at konstruksyon sa rehiyon • Suppora s amga sumusnod na proyektong imprastraktura sa Gitna at Hilagang Luzon: a. Clark Green City b. Manila - Clark Railway c. New Clark International Airport Terminal Building d. Central Luzon Link Expressway (CLLEX) e. North Luzon Expressway East (NLEX) f. San Rafael - Cabanatuan Expressway g. Bulacan Bulk Water Project • Karagdagang trabaho • Pangangalaga ng paglago ng local na ekonomiya Dahil sa madaliang pangangailangan sa pagtatayo ng proyektong ito, sinimulan na

<table>
<tr><td></td><td>ng LMC ang pagtatayo ng planta at pagtest sa mga equipment. Kapag naigawad na ang ECC, ipagppatuloy na nila ang kabuuang konstruksyon at operasyon ng planta.</td></tr>
<tr><td>Project Components</td><td>
<table>
<tr><th>Components</th><th>Number of Units/ Area/Capacity</th></tr>
<tr><td>Major Components</td><td></td></tr>
<tr><td>Rolling Mill</td><td></td></tr>
<tr><td>Horizontal (H) and vertical (V) stands</td><td>Two (2) units</td></tr>
<tr><td>High-pressure water jets</td><td></td></tr>
<tr><td>Pinch-roll</td><td>Ten (10) sets</td></tr>
<tr><td>Roughing and intermediate mills</td><td>Roughing mill: 8 sets
Intermediate mill: 21 sets</td></tr>
<tr><td>Cold shear</td><td>Two (2) Sets</td></tr>
<tr><td>Cooling bed</td><td>Two (2) Sets</td></tr>
<tr><td>Metallic disc saws</td><td>Five (5) Sets</td></tr>
<tr><td>Sawing equipment</td><td></td></tr>
<tr><td>Stacking station</td><td>1000m^2</td></tr>
<tr><td>Bundling and tying equipment</td><td>Two (2) Sets</td></tr>
<tr><td>Electric overhead cranes</td><td>Sixteen (16) units</td></tr>
<tr><td>Melt Shop</td><td></td></tr>
<tr><td>Scrap Yard</td><td>One site/5000m^2
Two workshop/3500m^2</td></tr>
<tr><td>Medium Frequency Induction Furnace</td><td>3 sets, 6 units
30t/1200m^2/3x18000kVA</td></tr>
<tr><td>Electric Arc Furnace</td><td>50t/500m^2/50000kVa</td></tr>
<tr><td>Scrap Preheating and Fume Extraction System (FES)</td><td>1000kVa</td></tr>
<tr><td>Ladle Furnace</td><td>14000kVa</td></tr>
<tr><td>Continuous Casting Machine (CCM)</td><td>R6M four-machine four-flow billet continuous casting machine
Installed capacity : 280KW
Use area: 2000m^2</td></tr>
<tr><td>Make up Water Supply (Deepwell)</td><td>Two (2) submerged pumps
feed 10t water per hour</td></tr>
<tr><td>Cooling Water System</td><td>1.3 sets of closed cooling tower cooling electric furnace power supply
Installed capacity : 134.5kW
Use area: 90m²

2.3 sets of open cooling tower KEDK-400T cooling electric furnace body
Installed capacity : 179kw
Use area: 100m²

3.1 set of open cooling towers KEDK-1100T cooling Crystallizer
Installed capacity : 600kw
Use area: 80m²

4.1 set of open cooling tower KEDK-300T cooling continuous casting equipment water</td></tr>
</table>
</td></tr>
</table>

	Installed capacity : 165.5kw Use area: 20m²
Support Facilities	
Rolling Mill	
Electrical Substation	Unit 1: 35KV/660v Unit 2: 35KV/440v
Generator Set/Emergency Power System	800kW
Water Catchment Pond	Two ponds/1600m²
Drainage System	The storm drainage is connected to the Water Catchment Ponds to accumulate water to serve as make-up water
Cranes	Cranes will be a mix of Overhead Cranes and Semi- Gantry Cranes with capacity ranging from 10 tons to 30 Tons, and 6 to 20 tons under magnet. Overhead cranes will be used in the installation, production, and in maintenance, Semi-gantry cranes will be used for lifting the raw material from the truck to the piles of billet then lift to charge the rolling mill. Cranes with magnet will help to store raw materials and finish products faster and safer.
Firefighting System	Series of fire hoses are installed in all areas of the mill. Sprinkler firefighting system will be located in the Admin Building, General Stores, Canteen, Locker rooms, etc.
Fuel Tank 50 to 60 liters	The system consists of the LSFO and LPG/LNG tank, unloading device, gasification unit, piping with supports, fire protection system and control system, etc
Melt Shop	
Power Supply - Substation	One (1) high voltage distribution room/total capacity 100000KVA one transformer One (1) low voltage distribution room/capacity 6000KVA
Water Supply	30 sets of water pump/total installed power 700KW
QA laboratory	20m²
Pollution Control Devices	
Rolling Mill	
Sludge Treatment with auxiliary System	One (1) unit.
Flue Stack	One (1) unit 50m
Melt Shop	
Sludge Treatment System	

	Slag Treatment System	One (1) unit
	Material Recovery Facility	Individual general solid waste storage/200m^2
	Hazardous Waste Storage Area	individual dangerous waste storage/100m^2
	APSI / **APCD**	
	Electric Arc Furnace / Dedusting System / Baghouse (Pulse Jet)	Filter area: 9500m^2 Installed capacity: 1120kW
Workforce	At least 500 employees for construction and operations phase.	
Project Schedule	Full operations will commence as soon as the ECC is issued with local permits.	
Project/Investment Cost	PhP 1,250,000,000.00	
Profile of the Proponent		
Name of Proponent	**Liansheng Manufacturing Corporation**	
Address	133 Rose Mabuco, Hermosa, Bataan	
Authorized Signatory/ Representative	**Ms. Susan Tan** President	
Contact Details	Telephone No.: (02) 984 3785 Mobile No.: +639173151255 Email address: sumracing@gmail.com; lianshengmfgcorpltd@gmail.com	
Profile of the Preparer		
EIA Preparer	**Mediatrix Business Consultancy**	
Address	L29 Joy-Nostalg Center, 17 ADB Ave., Ortigas Center, Pasig City	
Contact Person	**Matilde R. Jimenez-Fernando** General Manager	
Contact Details	Telephone No.: (02) 689 7114 Mobile No.: +639175064499 Email Address: mediatrixbusinessconsultancy@gmail.com	

B. EIA PROCESS DOCUMENTATION

EIA Team

Ang EIA Study ay isinagawa ng multidisciplinary team ng mga professional experts ng Mediatrix Business Consultancy (Mediatrix), na may matatag na background sa larangan ng environmental assessments, kasama ang Liansheng Manufacturing Corporation (LMC). Ang komposisyon ng EIA Team ay ipinakita sa **Table ES-1**. Ang sworn statements ng accountability ng LMC at Mediatrix ay nasa **Annex ES-1**.

Table ES-1: EIA Team Composition

EIA Team	Areas of Expertise	EMB Registry No.
Matilde J. Fernando	Team Leader, Socio-Economics and Legal Framework	IPCO-035
Reynaldo S. Tejada	Water and Air Module	IPCO-036
Hernani Bayani	Geology Module	IPCO-058
Benjamin Francisco	Freshwater Ecology	IPCO-038
Alexis Fernando	Research and Field Assignments	IPCO-034
Garry Benico	Aquatic Ecology	IPCO-106
Juvinal Esteban	IEC and Community Relations	IPCO-091

EIA Schedule

Ang EIA Study ay sinimulan sa pamamagitan ng Information, Education at Communication (IEC) at Public Scoping. Ang Technical Scoping naman ay isinagawa noong December 2, 2019 kasama ang EMB at EIA Review Committee (EIARC) members at nagkaroon ng kasunduang listahan ng mga kailangang isama sa EIA. Dahil dito, nagkaroon ng collection ng primary at secondary data na pinroseso, inalisa, at na-evaluate para sa impact assessment at paggawa ng Environmental Management Plan (EMP) at Environmental Monitoring Plan (EMoP). Ang mga datos na ito ay isinulat sa EIA document na tinatawag na Environmental Impact Statement (EIS) Report at ang final version nito ay isusumite sa EMB-Central Office for ECC application. Ang mga pangunahing activities na mga nagawa na upang makumpleto ang EIA ay nakalista sa Table ES-2.

Table ES-2: EIA Study Schedule

Activity	Date
IEC Activities	August 9, 2019
Public Scoping	November 7, 2019
Technical Scoping	December 2, 2019
Primary and Secondary Data Gathering	August 2019 to February 2020
Geology and Geological Hazards	
Pedology	
Terrestrial Ecology	
Groundwater and Freshwater Quality	
Air Quality and Noise	
Perception Survey	
Preparation of EISR	
Submission of EISR to EMB	November 03, 2021
First EIARC Meeting	May 3, 2023
Public Hearing	June 2, 2023

EIA Study Area

Ang sakop ng pag-aaral ay ang 84,980 m^2 or ang mahigit-kumulang 8.5 ektaryang project site sa Purok 1 in Barangay Balsik, Jose Abad Santos Ave., bayan ng Hermosa, sa probinsya ng Bataan. Kasama rin sa pag aaral ang Balsik River at Saba Creek na mga pinakamalapit na anyong tubig sa lokasyon ng project site.

EIA Methodology

Alinsunod sa Department Administrative Order (DAO) No. 30 Series of 2003 ng Revised Procedural Manual of the Philippine EIS System (PEISS) at EMB Memorandum Circular 005 na may petsang Hulyo 7, 2014, ang proyekto ay nauri bilang Category A - Environmentally Critical Projects (ECPs) na nangangailangan ng EIA Report para sa aplikasyon ng Environmental Compliance Certificate (ECC).

Ang EIA ay alinsunod sa Revised Procedural Manual para sa DENR Administrative Order (DAO) 2003-30 at DAO 2017-15 sa pagsasagawa ng mga sumusunod na aktibidad, na: (i) IEC at Scoping, (ii) koleksyon ng pauna at pangalawang data, (iii) identification/prediction/assessment ng mga epekto sa kapaligiran, (iv) pagbabalangkas ng EMP, at (v) pagbuo ng EMoP. Ang pangunahin at pangalawang impormasyon ay nakuha mula sa Local Government Units (LGUs) at iba pang mga ahensya ng gobyerno. Ang nakolektang mga datos ay batay sa EIA Scoping at Screening Form na ipinakita sa **Annex ES-2**, na napagkasunduan noong Technical Scoping. Ipinapakita sa **Table ES-3** ang detalyadong EIA methodology kada sector ng kapaligiran at tinatalakay kung ano ang kasalukuyang estado nito na wala pa ang Proyekto.

Table ES-3: The EIA Methodology

EIA Study Module	Parameters/Scope	Baseline Sampling and Methodology
Land		
Geology/Geomorphology, Pedology, Land Use and Classification	Reconnaissance, land use, land classification assessment, slope, soil types and classification, erosion	Review of secondary data, soil sampling and testing, review of geological reports and maps, soil site assessment
Terrestrial Biology – Wildlife and Vegetation	Flora and fauna species inventory, species endemicity and conservation status, species abundance, frequency and distribution	Use of secondary data and inventory
Water		
Hydrology/Hydrogeology	Regional hydrogeology, catchment and drainage system	Review of secondary data
Water Quality	Physico-chemical and bacteriological characteristics of rivers, wells, springs, and coastal water	Conduct of water quality sampling and analysis
Air		
Meteorology/Climatology	Monthly average rainfall, climatological normal and extremes, wind rose diagrams, and frequency of tropical cyclones	Use and review of secondary data
Air Quality and Noise Level	Ambient air quality and noise levels	Conduct of air quality and noise sampling and analysis
Air Dispersion Modeling	Worst case scenario identification, use of meteorological data	Use of AERMOD Model
Temperature and Rainfall Change	Seasonal Temperature (in °C) and Rainfall (in %) Change in 2020 and 2050 under medium range emission scenario in Hermosa, Bataan Monthly Average Temperature and Rainfall without Climate Change Monthly Average Temperature and Rainfall with Climate Change (2006-2035) Monthly Average Temperature and Rainfall with Climate Change (2006-2065)	Assessment of effects of Temperature and Rainfall Change
Greenhouse Gas Assessment	GHG Emissions based on IPCC 2006 Guidelines and USEPA Procedure	Assessment of Bunker oil consumption vs GHG emissions
People		
Public health and Demography	Morbidity and mortality trends, Demographic data of impact area: Number of households and household size Land area, Population, Population density /growth, gender and age profile, literacy rate, profile of educational attainment	Interviews with key elected officials of the barangays (from barangay captain to councilors and the social welfare barangay officers/ barangay health workers); analysis of secondary health data; Use of secondary data from RHU and PSA; Interviews with the locals; household-level survey
Socio-economics	Socioeconomic data: Main sources of Income, Employment rate/ profile, sources of livelihood, Poverty incidence,	Perception surveys, Interviews with city and barangay officials; analysis of secondary data; analysis of survey results, Traffic assessment

EIA Study Module	Parameters/Scope	Baseline Sampling and Methodology
	commercial establishments and activities, banking and financial institutions	
Environmental Risk Assessment		
Risk Assessment	Safety risks and physical risks	Consequence and Frequency analyses to be undertaken using the methodology described in the Revised Procedural Manual (RPM) for DAO 2003-30

Public Participation Activities

Alinsunod sa DAO 2003-30, MC 2010-14, at DAO 2017-15 at DAO 2018-18, nagsagawa ang LMC ng aktibidad kasama ang publiko sa pamamagitan ng pre-scoping Information, Education and Communication (IEC), perception survey at public scoping upang makuha ang kanilang aktibong partisipasyon ayon sa Section 12.1 ng DAO 2017-15. Sila ay kinabibilangan ng mga apektadong residente ng barangay at host community, lokal na pamahalaan, mga ahensya ng gobyernong related sa proyekto, EMB Regional Office No. at ang DENR Region.

IEC

Isinagawa ang IEC noong August 9, 2019 upang magbigay ng updated na impormasyon tungkol sa panukalang optimisasyon at para hikayatin ang mga concerned stakeholders na makiisa sa EIA Study. Ang ginawang IEC ay isinagawa sa pamamagitan ng pakikipagpulong sa mga barangay officials at residente ng Barangay Balsik. May mga dokumento din ng IEC na ginamit gaya ng attendance, issues raised, at mga photos habang isinasagawa ang IEC at ito ay nasa **Annex ES-3**.

Perception Survey

Ang perception survey questionnaire ay ipinamigay at pinasagutan sa mga participants pagkatapos ng IEC. Kasama dito ang mga impormasyon na dapat ibigay ukol sa demographic characteristics, source of income, livelihood, health and sanitation, education, employment, their knowledge and attitude sa panukalang proyekto. Ang detalyadong resulta ng perception survey at ang ginamit na questionnaire ay makikita sa **Annex ES-4**.

Public Scoping

Ang Public Scoping ay isinagawa noong November 7, 2019. Ito ay pinangasiwaan ng mga kinatawan ng EIA Division ng EMB-Central Office Office upang magbigay ng impormasyon ukol sa poryekyo at tipunin ang mnga site-specific issues, concerns at inputs sa EIA Study. Ito ay inatendan ng mga barangay officials and residents and LGU Officials. Ang mga issues/concerns, kopya ng mga nireceived na invitation letters, attendance sheets at photos taken noong Public Scoping ay nasa **Annex ES-4**. Nakalahad sa ibaba ang summary ng mga issues raised.

1. Panukalang pa lamang ang proyekto pero sinimulan na ang konstuksyon. Kailan ito nagsimula
2. Bakit hinayaan ang ganitong proyekto sa lokasyon ng bahayan at pangsakahan?
3. Posibilidad na hindi matuloy ang poryekto dahil sa hindi pag apruba ng barangay o ng munisipyo.
4. Pwede bang kasuhan ang Liansheng sa pagtatayo ng planta ng walang permit? ermit)
5. KApangyarihan ng EMB upang ispasara ang proyekto
6. Isyu ng Land Use compatibility
7. Walang taga-Balsik na nagtatrabaho sa Liansheng.
8. Gagamit ba ang Liansheng ng bunker fuel, Lubricating Oil/ iba pang hazardous materials?
9. Lebel ng ingay sa operasyon ng planta
10. Ang emission ay maaring makapagdulot ng smog/acid rain.

11. MAgaganda ang mga plano pero maaring hindi naman maipatupad sa aktwal na operasyon.
12. Makapapag operte ba ang Liansheng ng walang ECC
13. Hanapbuhay na maar isa mga kababaihan at mga Ina ng Tahanan
14. Saan kukuha ng tubig at magkakaroon ba ng kumpetisyon sa paggamit ng tubig?

C. EIA SUMMARY

Summary of Alternatives

Siting

2 lugar ang ikinonsidera ng LMC upang pagtayuan ng planta. Isa ang Purok 1, Barangay Balsik, Jose Abad Santos Ave., Hermosa, Bataan at ang isa naman ay ang bayan ng Valenzuela. Ang Valenzuela ay isang industrial area. Kaya langhindi ito napili dahil masyadong maliit ang lugar at masyado ng siksikan sa iba pang mga industriya.

Technology

Wala ng ibang technology na pinagpiliian maliban sa advanced electric arc furnace na maaring makatugon sa target na ang kapasidad at kalidad ng bakal na nais ng LMC. Naniniwala ang LMC na ang EAF ang best technology dahil sa mga sumusunod na kapakinabangan:

1. The entire EAF-preheater system is predominantly kept closed for most of the melting cycle; as compared to batch-charging sequences for conventional EAF's. Much lesser fumes and heat escape from the furnace, allowing a cleaner and safer work environment. Less arcing noise is also felt by workers around the furnace. The in-factory environment becomes more pleasant, as shown in photo below.
2. The furnace can be made to operate under flat-bath condition, whereby electric arcs are generated under the protection of a layer of slag. By so doing, the arcs become more stable hence imposing less power demand from the grid.
3. With proper tuning of the waste gas temperatures, all volatile gases can be completely oxidized along the scrap preheater system, hence negating the formation of dioxins in the stack emission.

Summary of Baseline Characterization

Ipinapakita sa **Table ES-4** ang mga aspeto ng kapaligiran at ang buod ng key findings dito.

Table ES-4: Summary of Baseline Characterization

Environmental Component	Key Findings
Land	
Land Use and Classification	• The project site is designated as Industrial Zone based on the Land Cover Map of Hermosa, as well as on the Resolution reclassifying the area as industrial.
Geology/ Geomorphology	• The topography of Hermosa is generally flat to gently rolling. • The project site is located in the part of the chain of Quaternary volcanoes formed by subduction in the Manila Trench. • No local fault had been encountered in outcrops nor indicated in the geomorphic maps of the area. • Based on the Earthquake-triggered Landslide Susceptibility Map of Region 3, which is based on Critical Acceleration Values and Intensities, the project area is not susceptible to landslide. • Project area is not susceptible to liquefaction.

Environmental Component	Key Findings
	• The project site is far from active volcanoes such as Taal and Pinatubo to be directly affected by volcanic activities
Pedology	• The types of soil in Hermosa, Bataan are classified as Antipolo Cay, Antipolo Soils (undifferentiated), Culis Loam, Hydrosol, La Paz Fine Sand, and La Paz Silt Loam. • The soil in the proposed project site belongs to La Paz Fine Sand.
Terrestrial Ecology	• The project site is a fully-fenced private property with almost 10 trees present in the open area. • There are no wildlife observed in the project site except for domestic animals such as dogs and cats.
Water	
Hydrology/ Hydrogeology	• The Municipality of Hermosa is generally well-drained. • There are two (2) river systems in the vicinity of the proposed project, the Balsik River and the Saba Creek. Balsik River is the main river system in the vicinity of the project site, which is located in the secondary impact area more than 2km from the plant site. On the other hand, Saba Creek is located 930 meters away from the plant site. • Hermosa has been susceptible in flooding.
Water Quality	• The results of freshwater quality sampling showed that pH, Chloride, Nitrate-N, Arsenic, Cadmium, Copper, and Lead were conformant to the DENR guidelines for Class A Waters. On the other hand, Biochemical Oxygen Demand, O&G, Phosphate, Chromium Hexavalent, and Fecal Coliform in all stations exceeded the DENR Water Quality Guideline Values. Other exceedances are color in FW1, temperature in FW1 and FW2, TSS and Iron in FW2, and Total Mercury in FW. The Total Coliform measured in all stations were also high. • The results of groundwater quality sampling showed that pH, Color, O&G, TSS, Chloride, Nitrate-N, Arsenic, Cadmium, Copper, Lead, and Total Mercury were conformant to the DENR guidelines for Class A Waters. On the other hand, Phosphate in all stations exceeded the DENR Water Quality Guideline Values. Other exceedances are temperature in FW3, Iron in FW2 and FW3, and Fecal Coliform in FW1. The Total Coliform measured in all stations were also high.
Freshwater Ecology	• The phytoplankton community in stations RVR1 to RVR4 was comprised of four (4) major groups namely diatoms, green algae, cyanobacteria and euglenoids. Diatoms were the most abundant phytoplankton group accounting for almost 73%, followed by green algae with 17%, cyanophyte with 9% and euglenophyte with 1%. • The cyanophyte was mostly represented by genus Merismopedia accounting for almost 6% and total cell density of 1,723 cells/L. • The mean phytoplankton abundance during this sampling was 6,787 cells/L. This was still low compared to healthy freshwater ecosystem but the occurrence of planktonic life forms in these bodies of water indicates that the water quality condition could still support its existence. • Analysis of samples taken from four (4) stations showed a total of fourteen (14) zooplankton groups (adult and larval forms). Zooplankton observed during this sampling was a typical groups/type found in freshwater environment. These zooplankton groups include protozoan (Arcellidae), rotifer, freshwater copepods, amphipod, nematode larvae, insect larvae, unidentified egg, and bivalve veligers, gastropod veliger, amphipod and cladoceran. The presence of Amphipod is station RVR3 at 6,000 ind/m3 is indicative of relatively good water condition because this group of zooplankton is sensitive to pollution. • A total of thirty-eight (38) individuals belonging to eight (8) orders/families were quantified from samples collected during the survey with different abundances at various sites • Macrobenthos belonging to Phylum Mollusca was the most abundant accounting for 54%, followed by Phylum Annelida with 38% and Phylum Arthropoda with 8%.

Environmental Component	Key Findings
	• Balsik River is allegedly being periodically replenished by Tilapia fingerlings. Key informants that were interviewed declared that an annual seeding of Tilapia fingerlings is being undertaken by the Municipal Agriculture Office of Hermosa, to resuscitate deteriorating fisheries productivity and to provide a source of food and supplemental income to communities along its banks. • In spite of its turbid waters and narrow width, the Saba Creek is a popular fishing ground for locals using simple pole and baited hooks. Two (2) groups of fishers were encountered in Saba Creek and the catch composition was documented. These include two (2) pieces of snakehead (Channa striata) and four (4) pieces of Tilapia (Oreochromis sp).
Air	
Meteorology/ Climatology	• The climate at the proposed Project site falls under the Type 1 category based on the Modified Coronas Climate Classification of Philippine Climate • Type I climate is characterized by two (2) pronounced seasons, dry from November to April and wet from May to October with maximum period from June to September. Areas under this type of climate are generally exposed to the southwest monsoon during rainy season and get a fair share of rainfall as brought about by the tropical cyclones occurring during the maximum rainy period. • PAGASA had tracked 25 tropical cyclones that crossed in the province of Bataan. • Project site is under medium typhoon risk.
Air Quality	The summary of the air quality monitoring results is presented in **Table 2.3-8**. The result shows the particulate concentrations (TSP and PM_{10}) in all stations are within the CAA limit. Moreover, concentrations of NO_2 and SO_2 in all stations are also below the CAA limit. Heavy metals concentrations (As, Cd, Cu, Cr^{+6}, Pb, & Hg) in all stations are all below the method detection limit.
Noise Level	Noise level measurement was conducted in four (4) sampling locations within the project site and its vicinity. The measured noise level from the established stations is used to represent the baseline data of the project. The noise monitoring station is the same as the ambient air station. Refer to Table 2.3-12 and Figure 2.3-7 above which shows the station identification and the geographical position. The noise level presented in the table below are the median of the noise measured at each station. Noise levels for all stations were well within the maximum allowable noise level limit during daytime period. The recorded noise sources include domestic noise, trucks, vehicles, motorbikes, wind blows, and birds. The sound from bird chirping, insects, animals and wind blows are common noise sources in the station's vicinity.
People	
Demography	• Hermosa has a total population of 65,862 as of 2015 with a growth rate of 3.1% from 2010. • In terms of gender, there are slightly more males than females, with 50.90% females and 49.10% males. In terms of age, at least 63 out of 100 individuals are 15-64 years old and 37 are dependents, with 32 young dependents and 5 old/elderly dependents. • In 2015, 99.13% of the total household population 10-year old and over of Hermosa are basically literate. • Barangay Balsik has no ancestral domains.
Social Infrastructure and Services	• Hermosa is 100% electrified and is being served by the Peninsula electric Company (PENELCO) All 23 barangay of Hermosa are served, giving a rate of 100% barangay with electricity. • The main sources of potable water in Hermosa are ground water sources. Shallow wells are popularly used in upland area, while deep-well and free flowing wells are popularly used in low land areas. Only few depends on rivers, creeks or stream for their water domestic need. Other source of water supply is provided by the Hermosa Water District, which has a total of 5,085 concessionaires serving 13 barangays or 38 % of the total Household Population.

Environmental Component	Key Findings
	• Hermosa has 18 elementary schools and only two (2) high school. • The LGU of Hermosa had passed an ordinance on Solid Waste Management Program. The "No Segregation No Collection Policy" is implemented. The garbage collection covers all the barangays of the municipality. The municipality is operating a controlled dumpsite in barangay Mambog.
Socio Economic Profile	• Majority of the households in Hermosa are engaged in farming that makes agriculture its primary economic activity. However, the main driver of the economy of the municipality is trading.
Public Health and Safety	• There are 19 Barangay Health Centers in the municipality, a Municipal Puericulture Health Center, and a lying-in clinic. Health officers are composed of one (1) doctor, three (3) nurses, 17 midwives, one (1) rural sanitary inspector and one (1) dentist. There is no hospital or emergency clinic within the municipality. • The three leading causes of death are heart disease, carcinoma and CVA thrombosis while the top • causes of morbidity are ARI, diarrhea and headache.
Public Access	• The total aggregate of roads in the municipality is about 102km, of which about 12.159 km or 11.96% are classified as national roads. These roads form part of main trunk line system which generally cater to inter and intra municipal mobility and demand higher intensity and structural strength for long distance trips and heavy vehicles. These include the old Junction – Layac – Mariveles Road and the Roman Superhighway, a road parallel to the old road from Hermosa to Mariveles, which was constructed in support to the industrial areas and has an alternative route to the old road. • Provincial, municipal, and barangay roads comprise 18.91km or 18.52%, 11.191km or 10.96%, and 59.77km or 58.55% of the total road network, respectively.

Summary of Key Environmental Impacts and Management Plans

Ipinapakita sa **Table ES-5** ang buod ng key environmental impacts ng panukalang proyekto at ang karampatang management plan at mitigating measures nito.

Table ES-5: Summary of Key Environmental Impacts and Management Plan

Major Activities Description/ Key Environmental Aspects	Significant Issues/Impacts	Impact Mitigation, Built-In Management Measures and Facilities Planned	Rating/ Performance off Mitigating Measures
Construction Phase			
Site Clearing and Construction of the Plant	Land contamination due to generation of construction debris such as excess fill materials from grading and excavation activities, scrap wood and metals, and small concrete spills.	Provision of temporary area within the site near the construction site will be designated for storage and segregation	100 % compliance with RA 9003
		Designation of an area as Material Recovery Facility (MRF) and Hazardous Waste Facility Area	
		Practice good housekeeping through segregation of wastes and compliance to RA 9003	
		Proper segregation and storage of hazardous waste and compliance to RA 6969	
	Soil erosion/ loss of top soil	Establish a reforestation program in the designated site in coordination with the LGU and FMB	100% compliance

Major Activities Description/ Key Environmental Aspects	Significant Issues/Impacts	Impact Mitigation, Built-In Management Measures and Facilities Planned	Rating/ Performance off Mitigating Measures
	Possible land and water contamination or health & safety hazard/risk from the generated hazwaste such as used oil, used batteries, contaminated rags, busted bulbs and lamps	Provision of a Hazardous Waste Area with proper labeling, segregation and storage of wastes	100 % compliance with RA 6969
		Transport, treatment and disposal by DENR accredited third party contractor	
	Water pollution due to domestic wastewater discharges	Construction of septic tanks in all the permanent project facilities (admin bldg) that will be channeled into a centralized holding chamber and will be collected by an accredited sanitation contractor thru siphoning on a monthly basis.	100% compliance to DAO 2016-08 and RA 9275
	Degradation of air quality due to dust generation from transport of building materials	Implementation of water sprinkling during wet season 2x a day and four (4x) times a day during dry season.	100% compliance to RA 8749
		Dust suppression will be undertaken where necessary by covering and/or spraying affected land surfaces with water.	
		Vehicle speed restrictions will be applied on internal roads across the project site to avoid escessive dust generation (and prevent collisions and other accidents).	
		All vehicles carrying excavation and demolition material/waste will be covered by tarpaulin to prevent spread of dust excavation and demolition materials etc.	
		Comply with the local & national requirements on accepted levels of exhaust emissions from equipment and vehicles.	
		Minimize unneccessary journeys and adopt switching-off equipment when not in use.	
Operation of Electric Arc Furnace			
Operation of Electric Arc Furnace for melt shop	Land contamination due to mixing of low and high quality scrap metals to be melted	Implementation of proper sorting of scrap metals into low and high quality and putting them on separate stockpiles	100 % compliance with RA 9003
		Electric Arc Furnace (EAF) by propducts such as skulls and billet rejects will be cut into size to be feed as material to the EAF in addition to the scrap.	
		Collection of metals from filter dust, slag, and waste metals; Slags will be crushed and the metallic component will be extracted by a magnetic separator and recycled back to the EAF. The rest of slag will be screened and segregated to be used as back filling material or in the road construction. The dust will be collected and process to extract the zinc and remove the hazardous element such as lead then sold to sintering plants or	

Major Activities Description/ Key Environmental Aspects	Significant Issues/Impacts	Impact Mitigation, Built-In Management Measures and Facilities Planned	Rating/ Performance off Mitigating Measures
		selling it as a raw material to cement plants, use it for social development / livelihood programs or corporate social responsibility.	
	Degradation of air quality due to generation of particulate matter during melting, oxygen injection and decarbonizing phases (primary off gas emissions), and harging/ tapping (secondary off-gas emissions)	Installation of dedusting system which induced draft fans to absorb/suction	100% compliance to RA 8749
	Air pollution due to generation of dioxins and furans	Assignment of temperature above 1200°C to ensure complete combustion of fuel	100% compliance to RA 8749
		Use of activated carbon-injection and post combustion of the EAF off-gas to ensure complete combustion.	
Operation of the Rolling and Finishing Mills	Degradation of water quality	Design and Construction of Water Treatment Plant (WTP) for the removal of oil and sediments in the process water thru filtration system where raw water from the reservoir will be pumped to the filters by a centrifugal pump for treatment.	100% compliance to DAO 2016-08 and RA 9275
		Desludging and collection of sludge from Water Treatment Plant for proper disposal at least once a year.	
		Installation of 3 chamber septic tanks in all the permanent project facilities to desludged by accredited sanitation contractor on a monthly basis.	
		Construction of rainwater cisterns and water catchment pond. Cistern tank need to be fitted with tight cover for preventing and reduce contamination of the stored water.	
	Air pollution due to emissions containing SO_2 and NO_2	Use of Low Sulfur Fuel Oil (LSFO), or alternative as fuel for the reheating furnace.	100% compliance to RA 8749
		Installation of pollution control device if SO2 emission exceeds the CAA standards.	
		Use of enclosures for equipment and insulation for structures.	
		Regular maintenance of equipment and making sure the recuperator system is always working.	
		Periodic maintainance of generator set and reheating furnace and quarterly monitoring of emissions.	
	Land contamination due to generation of hazardous wastes such as used oil, used	Establishment of a solid waste management system. Provision of a Hazardous Waste Storage Area (Material Recovery with proper labeling, segregation and storage of wastes.	100% compliance to RA9003 and RA 6969

Major Activities Description/ Key Environmental Aspects	Significant Issues/Impacts	Impact Mitigation, Built-In Management Measures and Facilities Planned	Rating/ Performance off Mitigating Measures
	batteries, contaminated rags, busted bulbs and lamps	Implement RA 6969 through Proper segregation and storage of hazardous waste and allocation of Hazardous Waste Facility Area	
		Transport, treatment, and disposal by DENR accredited third-party contractors on a weekly basis.	
Plant Operation and Maintenance	Degradation of air quality due to fugitive dusts from equipment and vehicles	Regular wet suppression or water spraying during dry weather condition of the access road every two (2) days.	100% compliance to RA 8749
		Strict implementation of routine plant maintenance and good house keeping.	
		Regular maintenance of trucks to reduce or maintain tailpipe emissions.	
		Regular monitoring and maintenance of equipment, generators and flares will be routinely undertaken as part of the environmental monitoring plan.	
	Degradation of water quality due to domestic wastewater generation	Provision of septic tanks in all the project facilities.	100% compliance to DAO 2016-08 and RA 9275
		Prevention of the release of any materials that will infiltrate and contaminate groundwater.	
		Maintain adequate control of any subsurface pipelines (such as potable and domestic wastes) in order to prevent any accidental or potential leakage.	
		Implementation of a continuous and regular site inspection system that includes spill control and pollution prevention procedures for handling and storage of any contaminants	
	Water pollution from run-off and domestic wastes	Construction of rainwater cisterns and Reservoir/Water Catchment pond with an estimated capacity of 8500m³.	100% compliance to DAO 2016-08 and RA 9275
		Construction of Perimeter channels during site formation and earthworks to intercept runoff at site boundary.	
		Installation of drainage channels on site to convey storm water to sand/silt traps for removal of soil particles.	
		Regular cleaning and maintainance of the facilities to ensure that the facilities are in normal function at all times.	
		Installation of septic tank for domestic wastewater which will run from one main sewer drainage pipe which will be buried, water & air tight container which will be regularly collected by an accredited sanitation contractor on a regular basis.	

Major Activities Description/ Key Environmental Aspects	Significant Issues/Impacts	Impact Mitigation, Built-In Management Measures and Facilities Planned	Rating/ Performance off Mitigating Measures
	Land contamination due to solid wastes generation	Provision of Material Recovery Facility (MRF)	100% compliance to RA 9003
		Segregation or establishment segregation within the area is strictly enforced.	
		Coordination with the local government units for a weekly schedule of collection.	
	Land contamination due to generation of hazardous wastes such as used oil, used batteries, contaminated rags, busted bulbs and lamps	Provision of a Hazardous Waste Storage Area with proper labeling, segregation and storage of wastes	100% compliance to RA 6969
		Transport, treatment, and disposal by DENR accredited third-party contractors on a weekly basis.	
	Resource use competition for use of river water for make up water and process water	Recycling of water from Rainwater Catchment Pond.	100% compliance to DAO 2016-08 and RA 9275
		Construction of cooling towers.	
		Design and Construction of Water Treatment Plant (WTP) for removal of oil and sediments in the process water.	

Risks and Uncertainties

Batay sa isinagawang EIA, ang maaring pagbuga ng usok at alikabok ng mg mga dust collector ang maaring maging sanhi ng pagppatigil ng operasyon ng planta. Upang maiwasan ito mahigpit na pagbabatay at pagmonitor sa mga kontrata ng mga Kontraktor ang ipatutupad.