# PANGKALAHATANG BUOD

## 1.1 A. BUOD NG IMPORMASYON TUNGKOL SA PANUKALANG PROYEKTO

| | |
|---|---|
| **Pangalan ng Proyekto** | **Proyekto ng Panukalang Optimisasyon ng Planta ng Steel Rolling Mill** |
| **Lugar kung nasaan ang Proyekto** | Barangay Perrelos, Carcar City, Cebu |
| **Uri ng Proyekto** | Iron and Steel Manufacturing |
| **Sukat ng Proyekto** | 9.7198 hectares. |
| **Kapasidad** | Kasalukuyang kapasidad: 160,000 MTPY<br>Panukalang kapasidad: 370,000 MTPY |
| **Project Description** | Ang kasalukuyang Planta ng Steel Rolling Mill Plant (dating Steel Rebar Plant Facility Development and Operation) sa Barangay Perrelos, Carcar City, Cebu ay napapaloob sa Environmental Compliance Certificates (ECC) No. ECC-98B-07CE-009, na iginawad ng Department of Environment and Natural Resources – Environmental Management Bureau (DENR-EMB) Region 7 noong Pebrer 19, 1998. Ang Plantang ito ay pag-aari noon ng AC Steel Industries Inc. (ACSII) hanggang sa ito ay nabili NCMI. Noong Oktubre 1, 2009, pinarentahan ng NCMI ang plants sa SteelAsia Manufacturing Corporation (SAMC). Bilang Lessee, nagrequest si SAMC ng pag amiyenda ng ECC upang palitan ang pangalan ng kumpanya mula sa ACSII papuntang SAMC at ito ay naaprubahan noong Marso 19, 2010. Mula Marso 1, 2015 hanggang ngayon,si NCMI na ang nag ooperate ng Planta dahil sa exclusive na kasunduan sa Tolling sa SAMC. Ayon sa kasunduan, ang NCMI ang mag-o-operate ng planta upang gumawa ng reinforced steel bars para sa SAMC mula sa mga materyales na ibibigay ni SAMC.<br><br>Nasasaad sa ECC-98B-07CE-009, ang plants ng steel rolling mill ay may kapasidad na gumawa ng bakal na 160,000 tonelada kada taon. Ito ay aamiyendahan sa pamamagitan ng EPRMP na ito upang maging 370,000 tonelada kada taon. Ang kabuuang sukat din ng proyekto ay mababago mula sa 5 ektarya papuntang 9.7198 ektarya. Walang mababgo sa ekwipong nasa planta. Ang dagdag na kapasidad ay magiging resulta lamang ng pag-optimize ng produksyon ng bakal upang i-maximize ang maximum rated capacity ng mga equipment at ng planta. Bilang pagdidiin, ang proyekto ay binubuo ng process optimization, fabrication activities, rehabilitation/improvement ng rainwater catchment pond at construction ng warehouse. |
| **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.<br><br>Dagdag pa dito, ang proyekto ay itatayo dahil sa mga sumusunod na dahilan:<br>• Karagdagang trabaho<br>• Pangangalaga ng paglago ng local na ekonomiya<br>• Paninigurado ng kalidad ng produkto |
| **Project Components** | Ipinapakita sa comparative matrix sa ibaba ang kasalukuyan at panukalang pagbabago ng komponents ng proyekto: |

| NO. | MAJOR COMPONENTS | CAPACITY/ SPECIFICATION AT 160,000 MTY | CAPACITY/ SPECIFICATION AT 370,000 MTY | TOTAL NO. OF UNIT/S |
|---|---|---|---|---|
| **ROLLING MILL** | | | | |
| **1** | **Re-heating furnace** | 50TPH (under utilized during AC Steel time) | 50TPH optimized | 1 |
| **2** | **Rolling Mill Stands** | | | |

| | | | | | |
|---|---|---|---|---|---|
| | | 450x3 ROUGHING MILL (RM) | Composed of Herringbone Gearbox, Reduction Gearbox and 3 pinion Gearbox. Two parallel rollers enclosed in stand type. Three roughing mill stand driven by one motor. | Same | 3 |
| | | | Rated power = 1600Kw; Frequency = 60hz; rated rotor = 1620V; Rated stator =6000 V; Speed = 594 rpm: Max roll force= 140 tons: Max roll torque= 10.6 ton-meter: Roll dia min = 430mm: Roll dia. Max = 480mm, | | |
| | | 350 X 4 1ST INTERMEDIATE MILL | Two parallel rolls enclosed in stand type. Four mill stands driven individually by four motors. Each stand composed of Reduction gearbox and pinion gearbox. The stand is connected to the pinion gearbox through a spindle assembly. | Same | 4 |
| | | | 504 kw; Voltage = 440 V; Speed = 448/850rpm; Frequency 60 Hz; Max roll force = 75.6 tons; Max roll torque = 5.287 ton-meter; Max roll dia. = 370 mm: Min roll dia = 330 mm: Roll length = 700 mm: Roll radial (up -down) movement = 50 mm: Speed ratio 4 = 6.7: Speed ratio 5 = 5.11.: Speed ratio 6 = 4.07: Speed ratio 7 = 3.22 | | |
| | | 300 X 4 2nd INTERMEDIATE MILL | Two parallel rolls enclosed in stand type. Four mill stands driven individually by four motors. Each stand composed of Reduction gearbox and pinion gearbox. The stand is connected to the pinion gearbox through a spindle assembly. | Same | 4 |
| | | | 504 kw; Voltage = 440 V; Speed = 448/850rpm; Frequency 60 Hz; Ratio= 2.047: Max roll force = 57.5 tons: Max roll torque = 3.21 ton-meter: Max roll dia = 320 mm: Min roll dia = 290 mm: Roll length = 600 mm.: Roll radial (up -down) movement = 60 mm: Speed ratio 8 = 2.68: Speed ratio 9 = 2.03: Speed ratio 10 = 1.59: Speed ratio 11 = 1.23 | | |
| | | 260 X 6 FINISHING MILL | Two parallel rolls enclosed in stand type. Stand 12, 13 & 14 is composed of reduction gearbox and pinion gearbox and its individual motors. Stand 15, 16 and 17 is composed of pinion gearbox and its individual motors. | Same | 6 |
| | | | 395 Kw; Voltage = 440V; Speed = 987/1400 rpm; Frequency 60Hz; Maximum roll force = 36 tons: Max roll dia = 295 mm: Min Speed ratio 12 = 2.05: Speed ratio 13 = 1.64: Speed ratio 14= 1.32: Speed ratio 15,16,17 = 1. | | |
| | 3 | Cooling Bed | COOLING BED: Rack type walking bed. Max length of finished product = 60 m : Max load = 36 tons: Rack pitch = 80mm: Distance between stationary racks = 200mm & 300 mm: Distance between walking racks = 500mm: Offset distance from cam center line = 40 mm: Min rack cycle time = 3 sec., 75 kW | Same | 1 |

| | | | | | |
|---|---|---|---|---|---|
| | 4 | Bundling Area | PRODUCT TRANSFERRING UNIT CHAIN CONVEYOR BUNDLING AREA: One (1) motor driving a shaft with multiple sprockets to transfer the product to the inspection table. Distance between centers of sprockets = 9220 mm: Distance between sprockets on a shaft = 1000 mm: Chain speed = 0.284 m/s: Maximum load on chain 3 tons, 7.5 kW trolley transfer, 15kW Chain drive conveyor | Same | 1 |
| | **SUPPORT FACILITIES** | | | | |
| | 5 | Billet storage area / Billet yard | 14,000 Metric Tons | 60,000 Metric Tons | 2 |
| | 6 | Finished Goods Warehouse | 17,000 Metric Tons | 32,000 Metric Tons | 3 |
| | 7 | Roll Shop | Area: 840 m² | Same | 1 |
| | 8 | Fuel Storage | 500,000 Liters for Bunker Fuel and 5,000 Liters for Diesel | Same | 2 |
| | 9 | Generator set / Emergency power system | Model: MPP-625C-SP, 00KW/625KVA | Same | 1 |
| | 10 | Substation | 10MVA Transformer with rated capacity each, 69KV/6000 volts primary and secondary voltages | Same | 2 |
| | 11 | Rain Catchment Basin | 3,982.81 cu. m/meter depth | Same | 1 |
| | 12 | F2 Production line | Area: 1533.6 m² | Same | 1 |
| | 13 | Fire Protection System | 1.) Fire hydrant system<br>2.) Fire Detection and Alarm System<br>3.) Portable Fire Extinguishers in various bldgs. | Same | 3 |
| | 14 | Admin Bldg. | Area (1st Floor): 300m² | Same | 1 |
| | | | Area (2nd Floor): 300m² | Same | 1 |
| | | | Area (3rd Floor): 300m² | Same | 1 |
| | 15 | Training Center | Area: 714 m² | Same | 1 |
| | 16 | Canteen | Area: 206.4 m² | Same | 1 |
| | 17 | Fabrication Office | Area: 152 m² | Same | 1 |
| | 18 | Mechanical Office | Area: 38.4 m² | Same | 1 |
| | 19 | Production Office | Area: 38.4 m² | Same | 1 |
| | 20 | MPC Stores | Area: 588 m² | Same | 1 |
| | **Pollution Control Devices** | | | | |
| | 22 | Furnace Stack | Fuel Oil Pre-heater | Same | 1 |
| | | | Recuperator | Same | 1 |
| | 23 | Generator Set | Exhaust Muffler | Same | 1 |
| | | | Silencer | Same | 1 |
| | 24 | Water Cooling System | Indirect cooling system: Composed of 3 horizontal centrifugal pump and 1 bottle type cooling tower. 1 unit cooling tower, water flow rate = 800 m3/hr ; wet bulb temperature = 27C, dry bulb temperature = 31.5C, inlet temperature = 37C, outlet temperature = 32 C, P=99.4kpa; motor = 15kW; air flow rate = 330,000 m3/hr, Cooling capacity = 4,002,678 kcal/hr. 3 horizontal centrifugal pump 75 hp; 1770 rpm; 60 Hz, 1 running and 2 stand-by. | Same | 1 |
| | | | Direct Cooling system: Composed of 3 horizontal centrifugal pumps and 2 bottle | Same | 1 |

| | | | | | |
|---|---|---|---|---|---|
| | | | type cooling towers. 3 units Horizontal Centrifugal Pump with volume flow rate of 300m3/hr, motor power of 90 kw, 1 running and 2 stand-by. 2 units bottle type cooling tower 300 m3/hr water flow, 3,000,000 Kcal/Hour cooling capacity, 37 KW fan power, Change of Water Temp. = 10 C, Hot Water Temp = 45 C, Cold Water Temp = 35 C, 1 running and 1 standby. | | |
| | | | Tempcore Cooling system (Quenching Process): Composed of 4 split case double suction centrifugal feed pumps, 2 horizontal centrifugal pump for cooling towers, 2 horizontal centrifugal pump for tempcore box cooling showers, 2 box type cooling towers and 3 horizontal centrifugal return pump . 4 units Split case double suction centrifugal pump had volume flow rate of 227 m3/hr, motor power of 185 kw and total dynamic head of 160 m, 3 running and 1 stand-by. 1 unit bottle type cooling tower LRC-SAS- 700, 9100 li/min water flow, Cooling capacity 2,730,000 Kcal/hr, Condition Temperature = 37 °C - 32°C - 27°C. , 20 HP, 6 Poles 3phase, 60 hz, 440V, inlet pipe connection 5", outelet pipe connection 8". 1 unit bottle type cooling tower LRC-N-1000, 13,000 li/min water flow, Cooling capacity 3,900,000 Kcal/hr, Condition Temperature = 37 °C - 32°C - 27°C. , 40 HP, 6 Poles 3phase, 60 hz, 440V, inlet pipe connection 8", outelet pipe connection 10". | Same | 1 |
| | 25 | **Scale pit** | Scale pit: Composed of 3 horizontal centrifugal pumps 3 units Horizontal Centrifugal Pump with volume flow rate of 300m3/hr, motor power of 90kw | **Same** | **1** |
| | 26 | **Reservoir** | Tempcore Water Reservoir: Concrete reservoir with 724 m3 of water capacity. | **Same** | **1** |
| | | | Indirect Cooling Water Reservoir: Concrete reservoir with 200 m3 of water capacity. | **Same** | **1** |
| | | | Direct Cooling Water Reservoir: Concrete reservoir with 300 m3 of water capacity. | **Same** | **1** |
| | | | Daytank: Steel reservoir with 200 m3 of water capacity. | **Same** | **1** |
| | | | Reservoir (billet yard): Concrete reservoir with 3,982 m3 at 1 meter depth water capacity. | **Same** | **1** |
| | 27 | Septic Tank (Admin Building) | 11 m³ | Same | 1 |
| | 28 | Septic Tank (Driver's Lounge) | 11 m³ | Same | 1 |
| | 29 | Septic Tank (Guard House) | 11 m³ | Same | 1 |
| | 30 | Septic Tank (MCC Building) | 11 m³ | Same | 1 |
| | 31 | Septic Tank (F2 Office) | 11 m³ | Same | 1 |
| | 32 | Septic Tank (Loading 2) | 11 m³ | Same | 1 |

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|---|---|---|---|---|---|
| | 33 | Septic Tank (Training Center) | 11 m³ | Same | 1 |
| | 34 | Septic Tank (Furnace Area) | 11 m³ | Same | 1 |
| | 35 | Water Supply (deep well 1 & 2) | 5 liters/second | Same | 1 |
| | Dahil sa optimized na kapasidad, makakatulong ang NCMI Carcar Works sa pangangailangan sa bakal ng isla ng Mindanao na kasalukuyang may rehaboilitasyon para sa Marawi at iba pang big-ticket construction projects ng ating pamahalaan. Dagdag pa sa dami ng kabilyang magagawa ng Planta ng NCMI, makapagbibigay din ang NCMI sa kanyang mga customers ng maasahang supply, timely delivery at freight savings ng hindi bababa sa P1000 kada tonelada dahil mas malapit ito sa merkadong pagdadalhan ng produkto. | | | | |
| **Manpower** | • Para sa paggawa ng warehouse at rehabilitation/improvement ng rainwater catchment pond at operations ng fabrication area at Repair, rehabilitation - 20<br>• Plant Operation:<br>o Existing – 400<br>o Proposed –17 | | | | |
| **Project/Investment Cost** | PhP 4.32 Billion | | | | |
| **Profile of the Proponent** | | | | | |
| **Name of Proponent** | **New Carcar Manufacturing, Inc.** | | | | |
| **Address** | 25th Floor Ore Central Building, 31st Street corner 9th Avenue<br>Bonifacio Global City, Taguig City, Philippines 1634 | | | | |
| **Authorized Signatory/ Representative** | **Engr. Romeo R. Soliven**<br>Vice President - Rolling Mill Operations | | | | |
| **Contact Details** | Telephone No.: +63 2 858 0500<br>Mobile No.: 09175873348<br>Email address: rrsoliven@steelasia.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**<br>General Manager | | | | |
| **Contact Details** | Telephone No.: (02) (8) 689 7114<br>Mobile No.: +639175064499<br>Email Address: mediatrixbusinessconsultancy@gmail.com | | | | |

## B. 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 New Carcar Manufacturing Inc. (NCMI). Ang komposisyon ng EIA Team ay ipinakita sa **Table ES-1**. Ang sworn statements ng accountability ng NCMI at Mediatrix ay nasa **Annex ES-1**.

*Table ES-1: KOmposisyon ng EIA Team*

| 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 |
| Ria Caramoan | Water Module | IPCO-106 |

## 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 28 September 2018 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 Performance Report and Management Plan (EPRMP) 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 | May 17, 2018 |
| Public Scoping | August 4, 2018 |
| Technical Scoping | 28 September 2018 |
| Primary and Secondary Data Gathering | |
| Geology and Geological Hazards | |
| Pedology | |
| Hydrology/Hydrogeology | |
| Groundwater and Freshwater Quality | |
| Freshwater Ecology | July 6-8, 2018 |
| Air Quality and Noise | |
| Perception Survey | May 29 – June 17, 2018 |
| Preparation of EISR | |
| Submission of EISR to EMB | |
| First EIARC Meeting | |
| First EIARC Meeting | |
| Public Hearing | |
| First EIARC Meeting | |

## EIA Study Area

Ang sakop ng pag-aaral ng EIA ay ang 9.7198 na ektaryang proyekto sa Barangay Perrelos at Carcar City sa Cebu.

## 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: EIA Methodology*

| EIA Study Module | Parameters/Scope | Methodology and Approach on Impact Assessment |
|---|---|---|
| **Land** | | |
| Geology/ Geomorphology, Pedology, Land Use and Classification | Reconnaissance, land use, land classification assessment, slope, soil types and classification, erosion | • Assessment of the compatibility of the project vis-à-vis approved land use plan and zoning classification.<br>• Review of available reports, geologic literature and information from Mines and Geosciences Bureau (MGB), Philippine Institute of Volcanology and Seismology (PHIVOLCS), Philippine Atmospheric, Geophysical and Astronomical Services (PAGASA), and National Mapping and Resource Information Authority (NAMRIA)<br>• Assessment of construction and operation impacts based on the construction and operation activities of the project, and the susceptibility of the project area to natural hazards. |
| **Water** | | |
| Hydrology/ Hydrogeology | Regional hydrogeology, catchment and drainage system | • Review of existing literatures and maps from DENR and MGB.<br>• Assessment of impacts based on the construction and operation activities of the project to the existing environment and the susceptibility of the project area to flooding. |
| Water Quality | Physico-chemical and bacteriological characteristics of freshwater and effluent | • Review of existing water quality monitoring reports.<br>• Assessment of impacts based on the construction and operation activities. |
| Freshwater Ecology | Benthic habitats, species, composition, density, and diversity of sea grass resources and associated macro benthic algae in front of the project site, commercially-important macro invertebrates in the inter-tidal areas, plankton community | • Use of primary and secondary data and interviews<br>• Assessment of impacts based on the construction and operation activities of the project to the existing ecosystem. |
| **Air** | | |
| Meteorology/ Climatology | Monthly average rainfall, climatological normal and extremes, wind rose diagrams, and frequency of tropical cyclones | • Assessment of impacts based on the construction and operation activities.<br>• Calculation of GHG emissions using emission factor-based estimation method prescribed in The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard, Revised Edition, World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI), 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National GHG Inventories and 2014 IPCC Assessment Report.<br>• Projection of monthly average temperature and rainfall and frequency of extreme events. |
| Air Quality and Noise Level | Ambient air quality and noise levels | • Review of ambient air quality and noise monitoring reports<br>• Assessment of operation impacts on air quality using the prediction model by AERMOD |
| **People** | | |
| Socio-economic and Public health | Morbidity and mortality trends, Demographic data of impact area:<br>- Number of households and household size<br>- Land area<br>- Population<br>- Population density /growth | • Conduct of IEC, Public Scoping, and Perception Survey<br>• Review of CLUP and other secondary data from LGU and PSA.<br>• Assessment of impacts based on the results of IEC, Public Scoping, perception survey and construction and operation activities of the project. |

| EIA Study Module | Parameters/Scope | Methodology and Approach on Impact Assessment |
|---|---|---|
| | - gender and age profile,<br>- literacy rate, profile of educational attainment<br>Socioeconomic data: Main sources of Income, Employment rate/ profile, sources of livelihood, Poverty incidence, commercial establishments and activities, banking and financial institutions | |
| **Environmental Risk Assessment** | | |
| Risk Assessment | Safety risks and physical risks | Conduct consequence and Frequency analyses 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, nagsagawa ang SAMC ng aktibidad sa publiko sa pamamagitan ng pre-scoping Information, Education and Communication (IEC), perception survey at public scoping kasama ang mga Opisyal ng City at Barangay ng Perrelos at Carcar City.

**IEC at Perception Survey**

Isinagawa ang IEC noong May 17, 2018 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 Perrelos. 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**.

Ang perception survey questionnaire ay ipinamigay at pinasagutan sa mga participants pagkatapos ng IEC. Kasama dito ang mgha impormasyon na dapat ibigay ukol sa demographic characteristics, source of income, livelihood, health and sanitation, education, employment, their knowledge and attitude sa panukalang optimisasyon.

**Public Scoping**

Ang Public Scoping ay isinagawa noong August 4, 2018 na poinangasiwaan ng mga kinatawan ng EIA Division ng EMB-Central 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.

*Table ES-4: Public Scoping Summary of Issues Raised*

| Issue/Concern | Proponent's Response |
|---|---|
| Rebar sizes and weight | Engr. Aurelio "Leo" Bagot, Plant Manager of NCMI responded that the rebar sizes are 95, 98, 35, 36 . Common sizes produced by the Plant is size 6m with a standard weight of 3.6. |
| What are the mitigating measures jjust in case your product will create problem to the community? | If in case the project creates problems or negative impacts to the community, proper investigation will be undertaken and the environmental guarantee fund (EGF) will be tapped if the environmental degradation affects people. |
| Air emission | Plant emissions are compliant with the Clean Air Act (CAA) standards. For the ECC amendment, air dispersion modeling will be conducted and results will be presented in the Public Hearing. |
| Noise in billet yard | The Proponent duly noted these concerns to be addressed for compliance. |
| Use of road for construction and large trucks – use main gate; There is an Ordinance by Carcar City prohibiting use of barangay roads by trucks | The Proponent duly noted these concerns for compliance. |

| | |
|---|---|
| What are the air quality standards under the Clean Air Act? | The standards under the Clear Air Act are as follows:<br>• $SO_2$ 340<br>• $NO_2$ 260<br>• TSP 300 |

**Perception Survey**

Ang perception survey ay isinagawa sa host barangay ng project noong May 29 – June 17, 2018 sa kabuuang 2,551 na mga respondents na nasa legalna edad na. Ang sample ng perception survey questionnaire ay nasa **Annex ES-5**.

## C. EIA SUMMARY

**Summary of Alternatives**

Ipinapakita ang buod ng criteria used for the alternatives considered in terms of siting, technology selection/operation processes and design

**Technology Selection/Operation Processes**
As a member of the Steel Asia group of companies, the technology and the processes to be used in the increase in production capacity of San Martin Steel Rolling Mill is common to their other existing plants in the country. The production capacity of each plant may be different but they will use the more modern rebar rolling technology and for this project, upgrading of the technology will be undertaken.

**Resources**
In terms of water source, the existing capacity of NCMI's deepwell within the Plant compound can still supply the Plant's water requirements which is reused and recycled. In terms of power supply, power from local cooperative is used with standby generator sets.

**Logistics**
Steel manufacturing is essentially a transportation business as it requires a lot of moving and handling for its raw materials and finished goods. The plant is sited near the port and major highways where customers can optimize the logistics cost.

**Manpower Availability**
Manpower at the Plant does not discriminate against gender and age as long as the worker is qualified and fit to work. Also, equal protection clause on employment is considered by prioritizing local employment in the barangay/s and within the affected municipality for technical staff and workers.

**Land**
The land area must accommodate all the facilities needed in a contiguous manner. In addition, it should not require a long time for land conversion and expensive site development. It should have sufficient elevation for flooding. The Project site is an existing plant within an industrial area.

**Carbon footprint**
The proponent's policy is to adopt practices to minimize fuel use. These include optimized trip planning/routing to increase fuel efficiency, reducing the number of kilometers each truck travels daily and minimizing travel time. This is being implemented by SteelAsia that it why it is locating in places near the development areas.

The following locations in Cebu were evaluated using these criteria.

*Table ES5: Summary of Alternatives Considered*

| SITE | AREA | DISTANCE | | ENVIRONMENTAL IMPACT | REMARKS |
|---|---|---|---|---|---|
| | | PORT | AIRPORT | | |
| **Municipality of Sibonga** | 60 hectares | 54.4 Kms or 1hr & 15mins | 64.8 Kms or 1hr & 30mins | 85% Flat, 15% Rolling | Ownership issues and area is cut by old Cebu Railway system |

| | | | | | |
|---|---|---|---|---|---|
| **NCMI Carcar City Plant** | 9,718 sqm | | | | |
| **Carcar City - Brgy. Ocaña** | 18 hectares | 48.8 Kms or 1hr % 10mins | 59.2 kms or 1hr & 20mins | 70% Flat, 30% Rolling | Found out that portion of the property is occupied by school |
| **Municipality of San Fernando** | 6.6 has (expandable to 10 has) | 33.7 kms or 42 mins | 44 kms or 1 hr | 30% Flat, 70% Rolling | Not considered due to limited area |
| **Bogo City** | 25 hectares | 105 kms or 1hr & 54mins | 100 kms or 1hr & 58mins | | Too far from market and port facility |
| **Toledo City - Brgy. Dumlog** | 13.18 hectares | | | | Limited area |
| **Municipality of Concepcion, Iloilo** | 91 hectares | 112 kms or 1hr & 36mins | 111 kms or 1hr & 44mins | Rolling terrain per google map; Beside proposed 270 MW Coal-fired Power Plant owned by A. Brown Company | Distance to Iloilo City is 107 kms or 1hr & 36mins<br>Located in the upper portion of Panay Island near Municipality of Estancia |
| **MUNICIPALITY OF CARMEN** | 15.77 hectares | 39.4 kms or 54 mins | 39.8 kms or 58 mins | 60% Flat, 40% Rolling | One access road but long frontage area |
| | 100% Titled | | | Nearest distance to river (shallow during dry months) is 20 meters | Nearest distance to National H-way is 700 meters via Municipal Road |
| | Residential | | | Has existing lagoon/pond | National H-way elevation 25 ft; Site lowest elevation 45ft; Site highest elevation 85 ft |
| **Sitio Kirahon, Villanueva** | **industrial** | | | | **Chosen as additional site** |

### Environmental Impacts of Each Alternative

Ang mga potential na impacts sa mga pinagpiliang lugar ay halos pare-pareho. Subalit sa ibang lugar na hindi napili, ang mga sumusunod ay ang mga dahilan:

- Mayroong mangrove plantation
- Kulang sa sustainable na supply ng tubig at source ng kuryente
- Ang klasipikasyon ng lupa ay hindi pa industrial

### Summary of Key Environmental Impacts and Management Plans

Ipinapakita sa **Table ES-6** ang buod ng key environmental impacts ng panukalang proyekto at ang karampatang management plan at mitigating measures nito.

*Table ES-6: Summary of Key Environmental Impacts and Management Plan*

| Activity | Impact | Mitigating Measure | Rating / Efficiency of Measures |
|---|---|---|---|
| **OPTIMIZATION PHASE** | | | |
| Construction of warehouse/ Rehabilitation and upgrading of the Plant | Land contamination due to generation of debris such as scrap wood and metals and small concrete spills | Designation of temporary area within the site for storage and segregation | 100% removal of debris |
| | | Implementation of RA 9003 thru provision for Material Recovery Facility (MRF) and practice good housekeeping through segregation of wastes | |
| | | Implementation of RA 6969 through Proper segregation and storage of hazardous waste | |
| Transport of supplies and materials to be | Safety and health hazards | Strict implementation of Health and Safety Policies at the Plant | 100% compliance to safety and health standards |
| | | Regular conduct of employee safety inspections and toolbox meetings | |

| Activity | Impact | Mitigating Measure | Rating / Efficiency of Measures |
|---|---|---|---|
| used for upgrading | | Regular APE and strict implementation on the use of PPEs<br>Regular conduct of First Aid Training<br>Provision of Fire Fighting System | |
| | Traffic and road safety | • Implementation of traffic management through proper scheduling of delivery.<br>• Installation of adequate signages approaching National Highway<br>• Provision of Traffic Personnel to manage or direct the vehicle going in and out of the premises. | 100% compliance to traffic and road safety rules |
| | Water contamination due to generation of domestic wastewater discharges | Channelling of runoffs into a temporary drainage system<br>Equip barracks with sanitary facilities such as three chamber septic tank | 100% containment of domestic wastewater |
| | Air pollution due to generation of dust due to transport of supplies and materials to be used for upgrading | • Continuous sprinkling or water in open areas at least once times a day, especially during dry season.<br>• Delivery trucks shall be covered with canvass materials | 100% reduction of fugitive dust from transport vehicles |
| | Degradation of air quality due to $SO_x$ and $NO_x$ emissions from motor vehicles | Continuous regular maintenance of heavy equipment at least once a year and motor vehicles at least twice a year | 100% compliance to air quality standards and Clean Air Act |
| **OPERATION PHASE** | | | |
| Operation of the rolling mill facility on its optimized production capacity | Land contamination due to solid waste generation | Continuous operation and maintenance of MRF<br>Continuous strict implementation of segregation of wastes within the area<br>Coordination with the local government units for schedule of collection. | 100% reduction of solid wastes in the facilities |
| | Land contamination due to generation of hazardous wastes such as used oil, used batteries, contaminated rags, busted bulbs and lamps | • Continuous provision of a Hazardous Waste Storage Area with proper labeling, segregation and storage of wastes<br>• Continuous transport, treatment, and disposal by DENR accredited third-party contractors | 100% containment of hazardous wastes |
| | Water contamination due to generation of water pollution from run-off, domestic wastewater and sludge from septage | Continuous implementation of Zero Discharge thru recycling of water and water recirculation for process wastewater and for domestic wastes, implementation of regular siphoning conducted by DENR accredited contractors. | 100% compliance to RA 9275 otherwise known as the Philippine Clean Water Act of 2004 |
| | Possible depletion of ground water source as used by the community | Regular maintenance and continuous operation of Plant Reservoir with holding capacity of 3,982.81 cu. m/meter depth for recirculating water process for reuse | 100% water recycling and recirculation |
| | Contamination of soil and water due to improper management of hazardous waste materials, e.g. transformer oil spill | • Continuous provision of Hazardous Waste area with proper labeling, segregation and storage of wastes<br>• Continuous management of transformer oil to prevent spills. Storage rooms should have concrete containment. The transformer room/ area should also be designed to prevent accidental spills to contaminate soil in the area. The storage room also for used transformer oils should have containment - this is our Hazmat Storage Facility. | 100%compliance to RA 6969 provisions |

| Activity | Impact | Mitigating Measure | Rating / Efficiency of Measures |
|---|---|---|---|
| | | • Continuous transport, treatment and disposal of DENR accredited third party contractors<br>• Continuous provision of secondary containment for oil drums & diesel fuel tanks<br>• Continuous provision of oil skimmer for mechanical clean up in case of accidental spillage<br>• Continuous proper labelling of oil drums & diesel tanks | |
| | Possible increase in ambient concentration of $PM_{10}$, $CO_2$, CO, $SO_x$, and $NO_x$ | • Continuous regular maintenance of equipment and making sure the recuperator system is always working<br>• Continuous use of enclosures for equipment and insulation for structures<br>• Continuous quarterly monitoring of the ambient air to ensure the project's operation is compliant with the clean air act<br>• Continuous provision of additional blower to ensure complete combustion | 100% compliance to air quality standards and Clean Air Act |
| | Degradation of air quality due to fugitive dusts from equipment and vehicles | • Continuous strict implementation of speed limits in vehicles<br>• Continuous proper maintenance of equipment<br>• Continuous strict implementation of routine plant maintenance and good house keeping<br>• Continuous regular wet suppression or water spraying during dry weather condition of the access road<br>• Continuous regular maintenance of trucks to reduce or maintain tail pipe emissions | 100% compliance to air quality standards and Clean Air Act |
| | Generation of Air Pollution from all sources (Point, Area, Volume, Line, generator set, reheating furnace, rolling mill) | Continuous regular stack test monitoring | 100% compliance to air quality standards and Clean Air Act |
| | Emissions containing $SO_2$ and $NO_2$ | | |
| | Noise due to plant operations (product handling, waste or by-product gas fans, process cooling and draft fans, dedusting systems, cutting activities, wire rod pay-off units, and transport and ventilation system) | • Continuous enclosure of process buildings and/or insulation of structures<br>• Continuous maintenance of appropriate measures and buffer zones along the entire periphery of the industrial complex with appropriate species/dense vegetation cover to enhance the condition of the ecosystem and to serve as noise, vibration and dust buffers; | 100% noise abatement |
| | | Continuous immediate repair or replacement of defective equipment/parts with abnormal noise and/or vibration | |
| | | Continuous provision of proper PPE especially ear protectors to all employees working on site | |
| | Noise from vehicles | Continuous strict compliance of the Contractor at all times with all current statutory environmental legislation especially on noise | 100% noise abatement |

| Activity | Impact | Mitigating Measure | Rating / Efficiency of Measures |
|---|---|---|---|
| | Health and safety hazards | • Continuous strict implementation of Health and Safety Policies at the Plant<br>• Continuous regular conduct of employee safety inspections and toolbox meetings<br>• Continuous regular APE and strict implementation on the use of PPEs<br>• Continuous regular conduct of First Aid Training<br>• Continuous provision of Fire Fighting System | 100% compliance to health and safety standards |
| | Traffic due to increase in number of trucks | • Continuous allocation of open yards and spaces for stationing of the trucks and provide ample parking spaces<br>• Continuous adequate signages and proper scheduled hours for the truck and vehicles coming in and out<br>• Continuous assignment of traffic personnel to manage the traffic | 100%<br>Compliance to traffic rules |

***Risks and Uncertainties in Decision Making***

Batay sa isinagawang EIA, wala masyadong risk and uncertainties sa Proyekto sapagkat mitigation at management plans ay inilatag Proponent's mother company, ang SteelAsia Group of Company ay nasa negosyo nang higit sa 54 taon.