Central Luzon Premiere Power Corp.

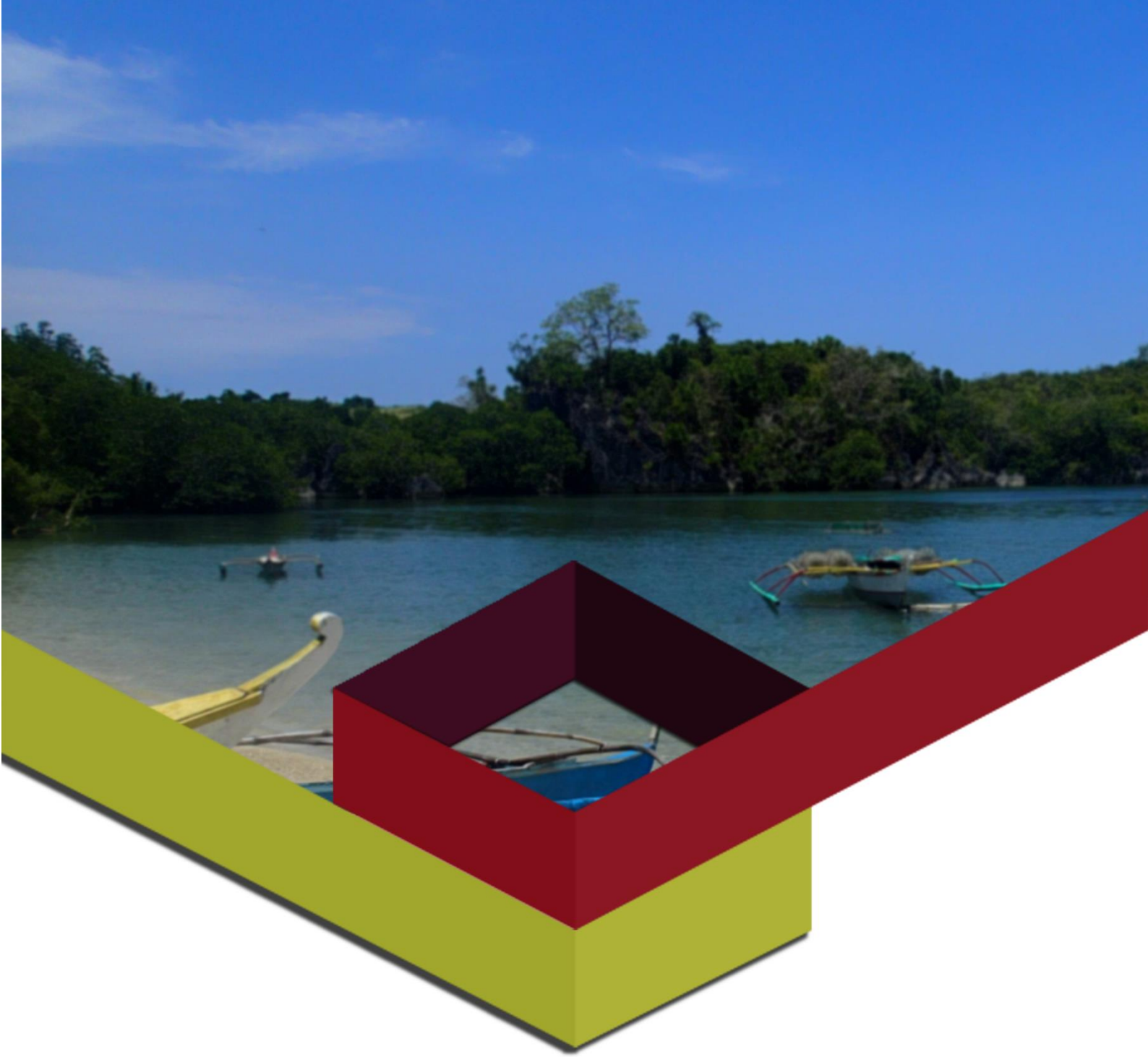
Project Description for Scoping

for the

4x355MW Pagbilao Power Plant Project

Barangay Ibabang Polo, Pagbilao, Quezon

February 2020



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LIST OF ACRONYMS

ADA	Ash Disposal Area
CAA	Clean Air Act
CCTV	Closed-Circuit Television
CEMS	Continuous Emission Monitoring System
CFB	Circulating Fluidized Bed
CLPPC	Central Luzon Premiere Power Corp.
CSR	Corporate Social Responsibility
DENR	Department of Environment and Natural Resources
DIA	Direct Impact Area
DOE	Department of Energy
EIA	Environmental Impact Assessment
EMB	Environmental Management Bureau
ERA	Environmental Risk Assessment
ESP	Electrostatic Precipitator
EPC	Engineering, Procurement and Construction
FGD	Flue Gas Desulfurizer
GSA	Gas Suspension Absorber
HELE	High Efficiency Low Emission
IEC	Information, Education and Communication
IHS	Initial Household Survey
IIA	Indirect Impact Area
IPP	Independent Power Producer
IPPA	Independent Power Producer Administrator
LETI	Lumiere Energy Technologies, Inc.
LGU	Local Government Unit
MW	Megawatt
NGCP	National Grid Corporation of the Philippines
NOx	Nitrogen Oxides
OFA	Overfire air
PC	Pulverized Coal
PDS	Project Description for Scoping
PSALM	Power Sector Assets and Liabilities Management Corporation
SC	Supercritical
SCR	Selective Catalytic Reduction
SLEX	South Luzon Expressway
SMC	San Miguel Corporation
SOx	Sulphur Oxides
SPC	Supercritical Pulverized Coal
STP	Sewage Treatment Plant
SWFGD	Seawater Flue Gas Desulfurizer
SWMP	Solid Waste Management Plan
TPH	Tons per hour
USC	Ultra-supercritical
WWTP	Wastewater Treatment Plant

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PROJECT DESCRIPTION FOR SCOPING

1.0 PROJECT FACT SHEET

Name of Project	**4x355MW Pagbilao Power Plant Project**		
Project Location	**Province**	**Municipality**	**Barangay**
	Quezon	Pagbilao	Ibabang Polo
Project Area	Approximately 75 hectares		
Nature Type of Project	Thermal power plant		
Proposed Installed Capacity	4x355MW (gross)		
Summary of Major Components	**Major Components**	**Brief Description**	
	Jetty	Length: 1,700 m	
	Boiler System	4 units x 355 MW – Super Critical PC	
	Steam Engine	4 units x 355 MW	
	Stack	2 stacks with 2 flues each; 150m height	
	Ash handling system	~ 40 hectares ADA with leachate treatment facility	
	Cooling Water Intake Pipe	Length: 810 m Depth: 8.5 m	
	Cooling Water Outfall	Length: 414 m Depth: above sea level	
	Electrical Switchyard	500kV	
Project Cost	Php 140 Billion		
Construction Period	August 2020 – July 2026		
Commercial Operation Date	November 2024 for CLPPC Unit No.1		
Proponent Name	Central Luzon Premiere Power Corporation (CLPPC)		
Proponent Authorized Representative	Elenita D. Go General Manager		
Proponent Address and Contact Details	19th Floor SMPC Building, St. Francis Street, Ortigas Center, Mandaluyong City Contact Number: (632) 8667 5000		
EIA Preparer	Aperçu Consultants, Inc.		
Preparer Contact Person	Lilli Beth S. Yazon Managing Director		
Preparer Address and Contact Details	Unit 307 Philippine Social Science Center Commonwealth Avenue, Diliman, Quezon City Telephone Number: +63 2 8929 2778 E-mail Address: bethyazon@apercu.biz.ph		

1.1 PROJECT OVERVIEW

Central Luzon Premiere Power Corp. (CLPPC) is a wholly owned subsidiary of SMC Global Power Holdings Corp. (SMCGPHC or SMC). SMCGPHC is one of the largest power companies in the Philippines with a diversified portfolio utilizing a mix of coal, natural gas, and hydroelectric plants. These power assets are under Independent Power Producer Administrator (IPPAs) agreements with the Power Sector Assets and Liabilities Management Corp. (PSALM) or are owned/ under joint-venture agreements and are classified as Independent Power Producer (IPPs) agreements. It has seven operational power plants (3 – IPPAs; 3 owned, and 1 – Joint Venture plant) and one (1) greenfield power plant in the pipeline.

CLPPC was formed to carry on the business of producing and generating electricity and processing alternative fuels for power generation. This includes the expanded operation of energy supply bases and the generation and co-generation of electric power, as well as the supply and consolidation of the electric power demand of end-users and to carry on all services incident and/or ancillary to the above. It includes, without limitation, the construction, assembly, testing, commissioning, operation, maintenance, rehabilitation and management of power generating plants, substations and related facilities and equipment. CLPPC also aims to engage in promoting, marketing and selling electric power and to engage in all other business incidental to the foregoing, including but not limited to, the sale of the by-products of power generation.

CLPPC intends to develop a 1,420MW (4x355MW) coal-fired power plant (CLPPC Project or Project) in the Province of Quezon in southern Luzon. The Project will involve the construction of a 4x355MW power plant facility utilizing Supercritical Pulverized Coal (PC) technology in Barangay Ibabang Polo, Pagbilao, Quezon. The Project, through a 13-km 500kV transmission line, that will connect to the proposed 500kV NGCP Pagbilao station and provide additional capacity to the Luzon Grid.

The CLPPC Project forms part of the Pagbilao Coal-Fired Power Plant Projects. The Pagbilao Coal-fired Power Plant Project consists of two (2) components: (i) the CLPPC Project with 4x355MW capacity and (ii) the LETI Project with a 2x355MW capacity, both using a Supercritical PC boiler system. Both components will share facilities required for the operation of plant.

2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION AND AREA

The Project will be situated in Pagbilao Grande Island, Sitio Tubahin, Barangay Ibabang Polo, Pagbilao in the Province of Quezon within a 140-hectare land area that will be leased from Dewsweeper Holdings Corporation. The Project site is bound by Pagbilao Bay to the west, and northwest, Tayabas Bay to the southwest and is less than 3km south of the existing Pagbilao Power Plant owned by TeaM Energy. The project location is presented in **Figure PDS-1** while the project site map is presented in **Figure PDS-2**.

Annex A provides maps and photos of the project site.

2.2 IMPACT AREAS AND RATIONALE FOR SELECTION

Following the Philippine Environmental Impact Statement (EIS) System IRR or DAO 2003-30, the Project-affected areas are defined as follows:

- Primary Impact Area/ Zone, also referred as Direct Impact Area (DIA); and,
- Secondary Impact Area/ Zone also referred as Indirect Impact Area (IIA).

According to DAO 2003-30 guidelines, the DIA generally refers to areas where the project facilities or infrastructures are proposed to be constructed/located or traversed such as buildings or structures, irrigation, drainage and other utility areas, quarry sites, access roads and others to be set up during the construction and operation phases.

The IIA generally refers to the influence area of the project that could be indirectly affected by the proposed development. This could include areas in the vicinity of the DIA. Examples of these may include communities or settlements outside of the DIA which can also be benefited by the employment opportunities created by the project; sub-tributaries of the river system which can be indirectly affected by project induced pollution, and/or areas where water sources will be indirectly affected by drawdown in the DIA.

For the Project, the Direct Impact Area (DIA) is the area where all project facilities are proposed to be constructed and operations are proposed to be undertaken. For this project, the DIA shall be the 75 hectares (35-hectare for the power plant and 40-hectare for the ash pond) project area located in Sitio Tubahin, Barangay Ibabang Polo, and Pagbilao.

The barangays where the DIA is located (i.e. where permanent and temporary structures will be located) are referred to as directly affected barangays**.** People and households where both permanent and temporary facilities will be located will be referred to as directly affected persons/households all of whom/which may be subject to physical/economic resettlement/ compensation.

As defined above, the IIA includes the area of influence of the project facilities. For environmental impacts and benefits, the IIA is considered to cover the land area and receptors which are located approximately 2.5km from the DIA. For socio-economic benefits and impacts, the rest of Barangay Ibabang Polo is considered as an IIA since the LGU will receive benefits from the Project and people may be employed from these areas. Ilayang Polo is also considered as part of the IIA which will be included in the Environmental Impact Assessment (EIA) study. **Figure PDS-3** delineates the impact area on a NAMRIA topographical map.

Once the EIA study is done, the impact areas will be more technically defined per environ.

2.3 PROJECT SITE ACCESSIBILITY

From Metro Manila, which is located approximately 140 kilometers south-east, the site can be accessed via the South Luzon Expressway (SLEX) exiting at Sto. Tomas (Batangas). Then, one follows the Maharlika Highway traversing the municipalities of Tiaong, Candelaria, Sariaya and the city of Lucena going to the Municipality of Pagbilao. The 15km Quipot Mirant Road, through barangays Binahaan, Silangan Malicboy and Kanluran Malicboy, provide the current access point to a bridge that leads to Pagbilao Grande Island and into Barangays Ilayang Polo and Ibabang Polo. The Quipot Mirant Road, entering Barangay Ibabang Polo, provides direct access to the 75-hectare Project site. The Project vicinity map is presented as **Figure PDS-4**.

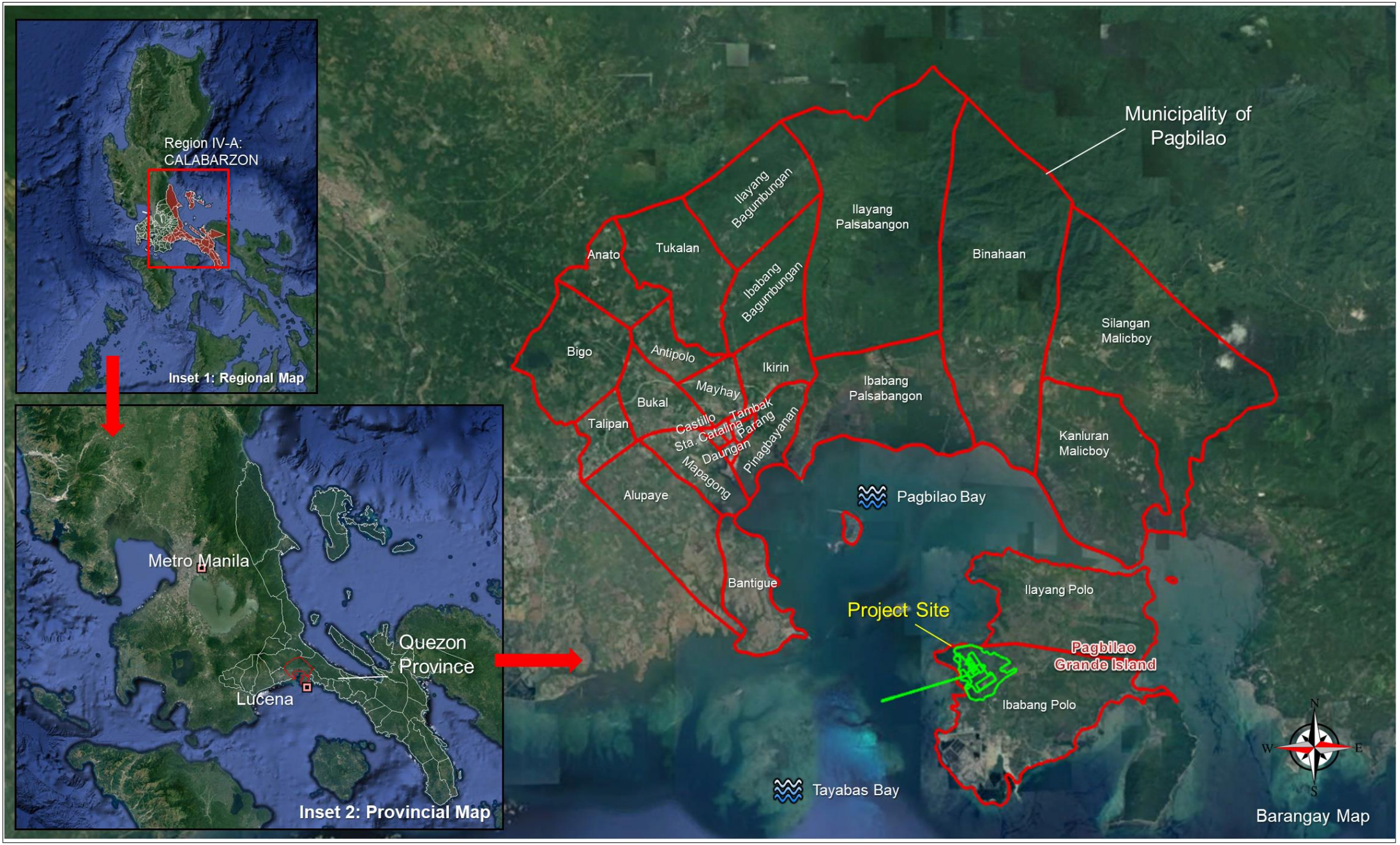

Figure PDS-1. Project Location Map

PROJECT DESCRIPTION FOR SCOPING
4x355MW PAGBILAO POWER PLANT

LEGEND: (as above)

0 2.5 5
Kilometers

DATA INFORMATION/SOURCE:
Basemap: GOOGLE EARTH IMAGERY, 2020
Project Boundary: CLPPC, 2020
Boundaries: NAMRIA BOUNDARY, 2019
Imagery Date: 27 JANUARY 2020
Created by: APERCU CONSULTANTS, INC (2020)

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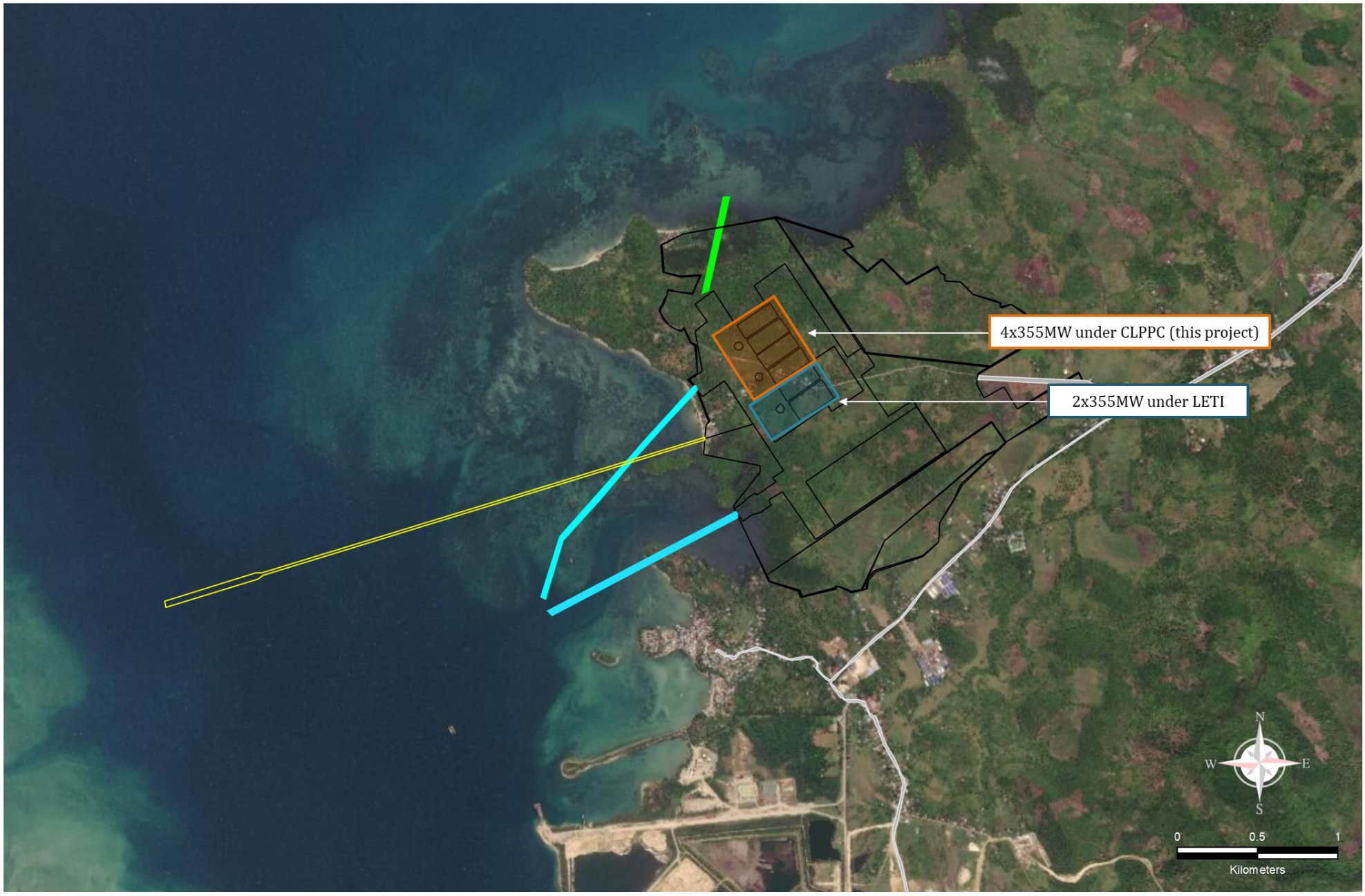

Figure PDS-2. 4X355MW Pagbilao Power Plant Project Site Map

PROJECT DESCRIPTION FOR SCOPING
4x355MW PAGBILAO POWER PLANT

LEGEND:

- Project Boundary
- Seawater Intak Pipe
- Pier/ Jetty
- Access Road
- Seawater Discharge Pipe

DATA INFORMATION/SOURCE:

Basemap: GOOGLE EARTH IMAGERY, 2020
Project Boundary: CLPPC, 2020
Imagery Date: 27 JANUARY 2020
Created by: APERCU CONSULTANTS, INC (2020)

SCALE: 1: 19,000 **PAGE:** 5

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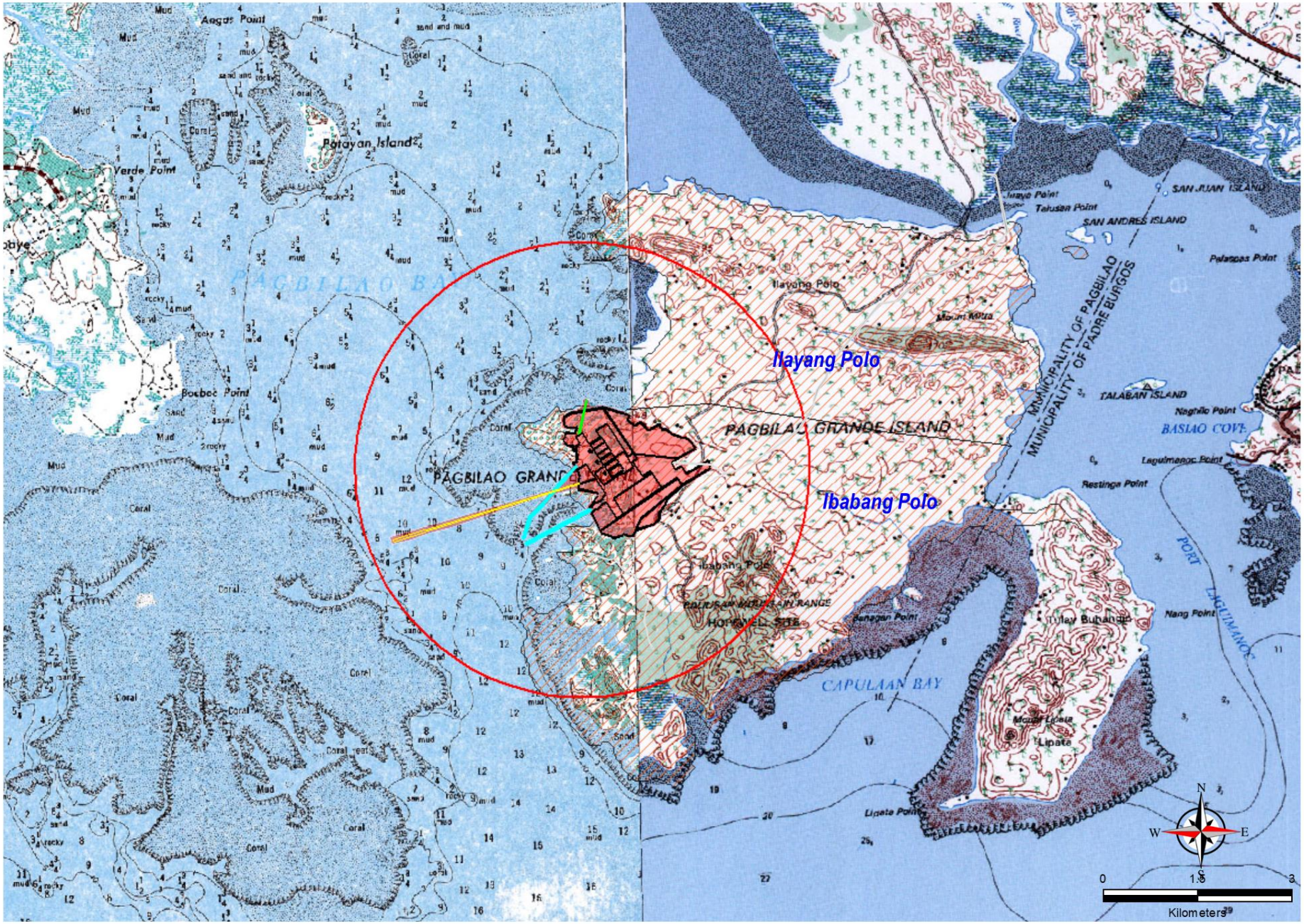

Figure PDS-3. 4X355MW Pagbilao Power Plant Project Impact Area Map

PROJECT DESCRIPTION FOR SCOPING
4x355MW PAGBILAO POWER PLANT

Legend

- Project Boundary
- Seawater Intak Pipe
- Pier/ Jetty
- Access Road
- Seawater Discharge Pipe
- Direct Impact Area
- Indirect Impact Area
- 2.5km Radius / Indirect Impact Area

DATA INFORMATION/SOURCE:
Basemap and Boundary: NAMRIA Topographic Sheet: (1) LUCENA Sheet No. 3361- IV
(2) UNISAN Sheet No. 3328- I
Project Boundary: CLPPC, 2020
Imagery Date: 27 JANUARY 2020
Created by: APERCU CONSULTANTS, INC (2020)

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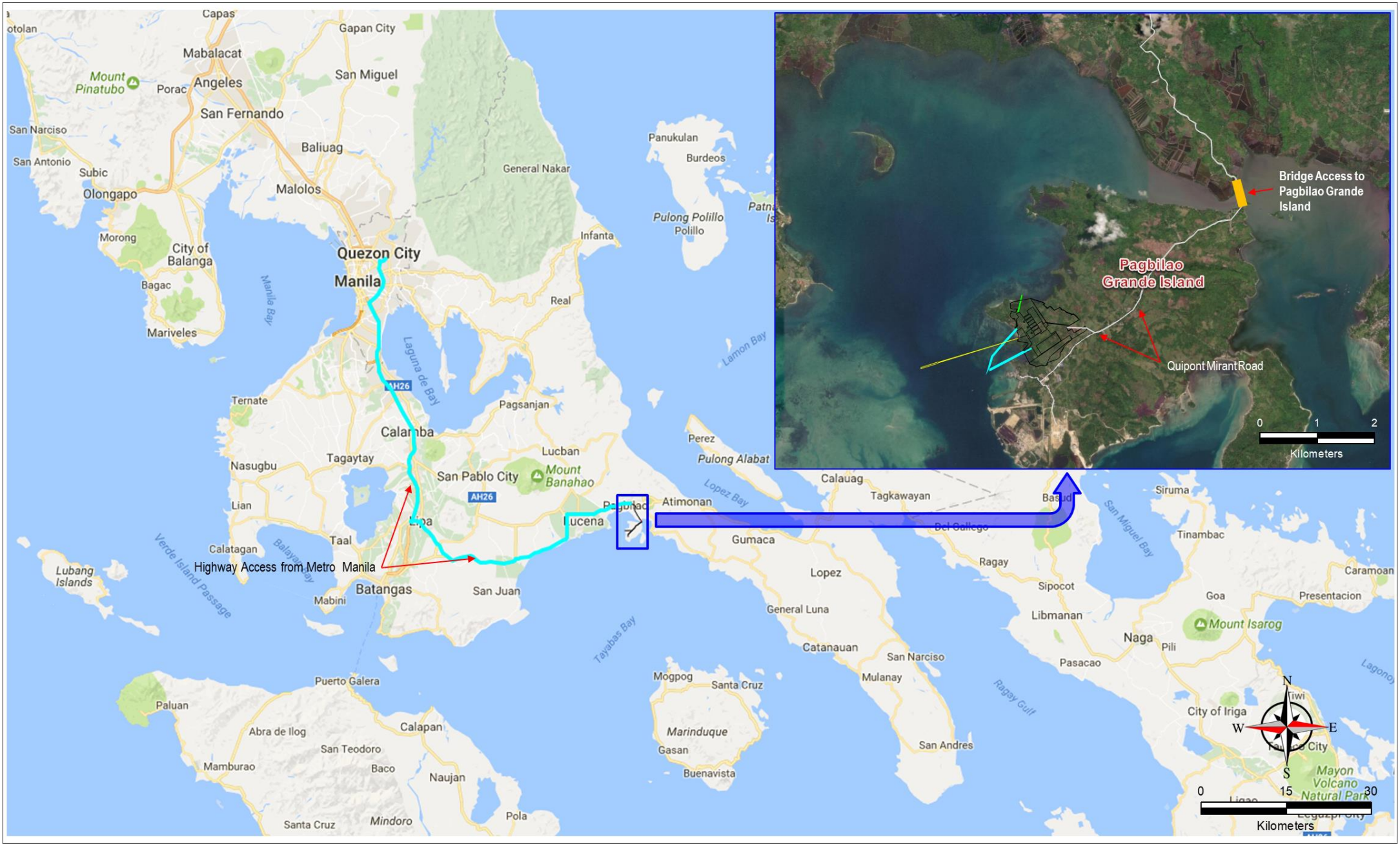

Figure PDS-4. Project Site Vicinity Map

PROJECT DESCRIPTION FOR SCOPING
4x355MW PAGBILAO POWER PLANT

LEGEND: (other legend as above)

- Project Boundary
- Seawater Intak Pipe
- Pier/ Jetty
- Seawater Discharge Pipe
- Access Road

DATA INFORMATION/SOURCE:

Basemap: GOOGLE MAPS IMAGERY, 2020
Project Boundary: CLPPC, 2020
Created by: APERCU CONSULTANTS, INC (2020)

SCALE: 1: 550,000 **PAGE:** 7

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3.0 PROJECT RATIONALE

3.1 PROJECT NEED AT THE NATIONAL LEVEL

Given the country's rapidly growing economy, the proposed power Project will augment the demand for reliable and affordable baseload power supply. The proposed power plant will not only supply enough electricity to Filipino households and businesses but will also contribute to the national development.

As a developing country, the Philippines' energy usage is increasing because of growth in our industries and the growing demand from households. Daily activities in large and small businesses, hospitals, schools, offices, government agencies and households are heavily dependent on electricity. However, the power supply from existing power plants is not enough to meet the continually increasing demand. The Philippines, by 2040, will need an additional capacity of 62,248MW based on the Power Demand Supply and Outlook of the DOE for year 2018 – 2040 (**Figure PDS-5**).

The total power supply, in terms of installed capacity, grew by 4.8% from 21,730MW in 2017 to 23,815 MW in 2018. A total of 933.6 MW new capacities were added to the country's supply in 2018 which include coal -fired (720MW), oil-based (87.3MW), geothermal (12MW), hydropower (80.3MW) and biomass (34MW) power plants. In terms of share by grid, Luzon contributed additional capacity of 659.5MW or 71% of the newly installed capacities and Mindanao at 274.1MW or 29% while Visayas has not installed any additional capacity for 2018. Capacities from committed power projects reached 6,329 MW by the end of 2018. About 80% of these capacities are from coal-fired power projects that will provide baseload capacity in the system in the coming years.[1]

In the 2018 Power Situation Report of DOE, the country's total peak demand in 2018 was recorded at 14,782MW, which is 993MW or 7.2% higher than the 13,789MW in 2017. The Luzon grid contributed 10,876MW or 74% of the total demand while Visayas and Mindanao has a share of 14% (2,053MW) and 13% (1,853MW), respectively. Among the three grids, Luzon grid showed the highest increase of 822MW or 8.2% from 2017 peak demand of 10,054MW while Visayas and Mindanao grew by 3.9% and 5.3%, respectively.

3.2 PROJECT NEED AT THE REGIONAL LEVEL

Along with supply security, the DOE also embarks on increasing the reliability and resiliency of the system. In 2016, several yellow and red alerts were declared by the system operators in Luzon and Visayas in addition to the major grid disturbances and load dropping incidents. The actual capacity expansion for Luzon in 2018 is provided in **Figure PDS-6** wherein Luzon will need an additional capacity of 43,123MW by 2040. The proposed power plant aims to address in part, the requirements of the grid as a baseload plant.

The grid's insufficient power reserves have consistently left Luzon, home of the Philippines' national capital region, either on the brink of a shortage or saddled with rotational brownouts. The situation has led not only to inconvenience among consumers but also to increased electricity cost and economic loss, not to mention recurring fears of collusion among power producers.[2]

The CLPPC plant will contribute to increased reliability and resiliency of the Luzon grid. The proposed power plant will also help to stimulate the local and provincial economy. It will provide employment opportunities to the working-age population of Pagbilao and neighboring localities during the construction period and during the plant's commercial operation.

In addition to employment opportunities, other benefits, such as revenue share (as mandated by the Law) and local taxes will be made available to the community. The plant may also encourage other businesses to the area, both related and unrelated.

[1] 2018 DOE Power Situation Report
[2] optimusenergy.ph/behind-philippines-power-crisis

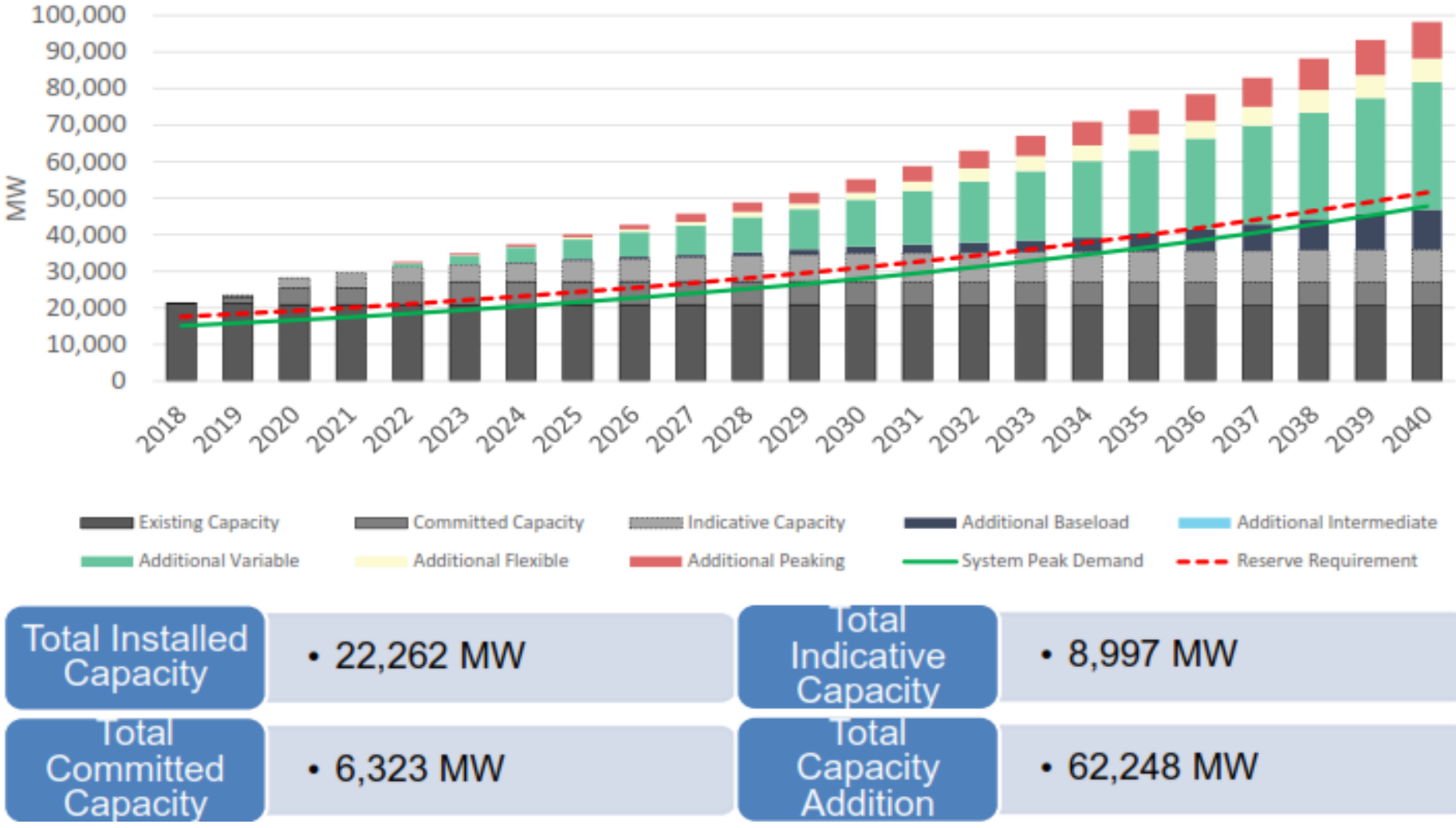
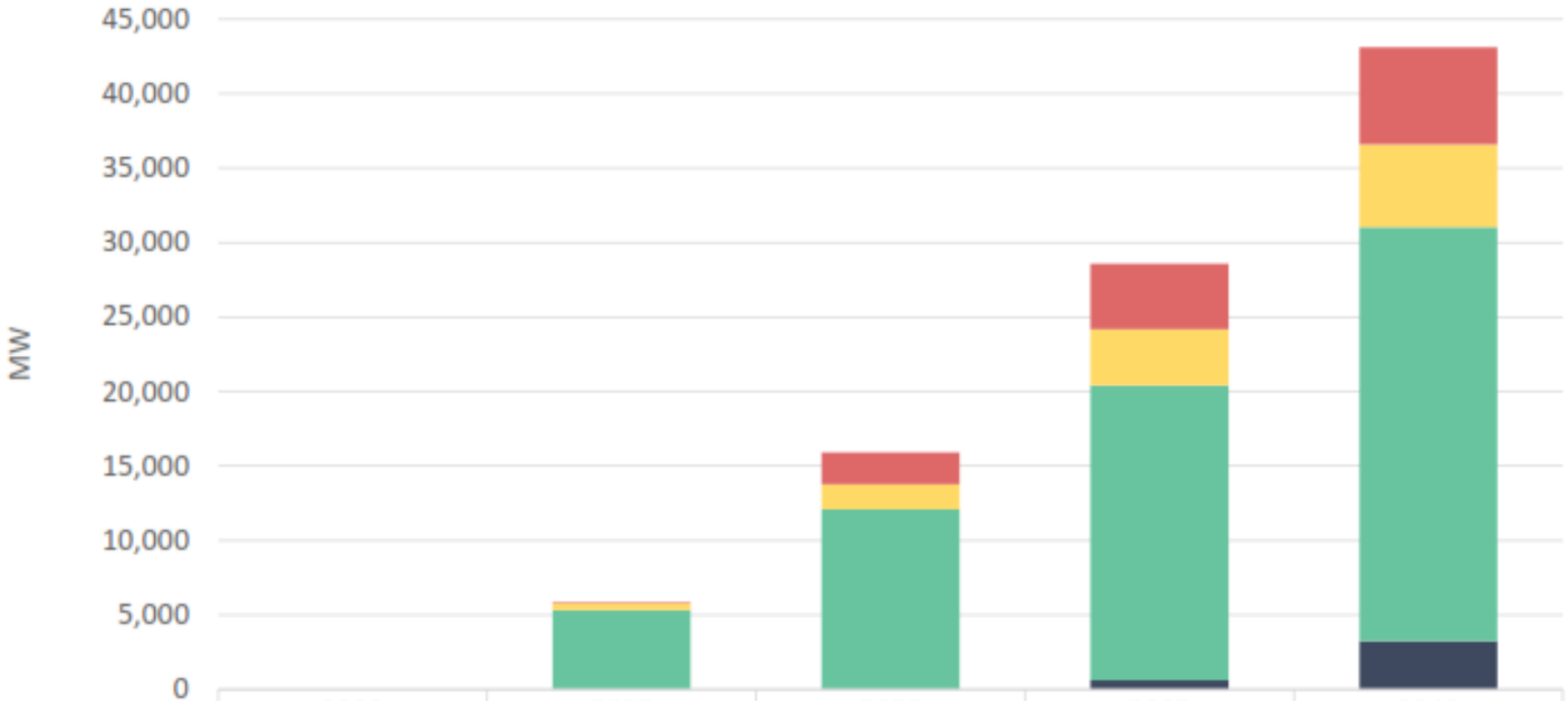


Figure PDS-5. Philippines Capacity Expansion (2018-2040).

Source: Department of Energy: Power Demand and Supply Outlook 2018-2040.



	2020	2025	2030	2035	2040
Peaking	0	85	2,140	4,395	6,525
Flexible	0	465	1,685	3,760	5,560
Variable	0	5,324	12,093	19,819	27,798
Intermediate	0	0	0	0	0
Baseload	0	0	0	610	3,240

Figure PDS-6. Luzon Capacity Addition 2018-2040.

Source: Department of Energy: Power Demand and Supply Outlook 2018-2040.

3.3 PROJECT SOCIAL AND ECONOMIC BENEFITS

CLPPC will ensure that Barangay Ibabang Polo and the municipality of Pagbilao in general will be benefited by the Project. Socio-economic benefits shall include:

- Local project funding, paid for by funds generated by the DOE's ER1-94 fund, where 1 centavo for each kWh of power generated by the power plant is deposited with the DOE for use by the host communities for local projects that meet the criteria set out by the DOE for those ER 1-94 funds.
- Increased opportunity for employment of qualified residents during the construction stage and long-term employment to qualified residents during the operation phase.
- Additional income to the host LGU and the province through the increased share in the Internal Revenue Allocation, as a result of the added collection of business and property taxes fees from permits and clearances as well as corporate income tax.
- The establishment of major industries, not just power plants, is expected to have a multiplier effect that will stimulate the local economy and generate substantial indirect employment
- Social assistance and generation of livelihood programs as part of CLPPC's Corporate Social Responsibility (CSR) programs.

4.0 PROJECT COMPONENTS

4.1 PROJECT DESCRIPTION

The Project is designed with state-of-the-art supercritical pulverized coal technology for burning Lignite coal and sub-bituminous coal as the main fuel.

The entire proposed plant will have 4x355MW Pulverized Coal Supercritical outdoor type boiler and has the following components, once-through, spirally wound tube wall & vertical tube wall furnace, steam separators, superheater, reheater, attemperator, economizer, air preheater, coal feeder, coal pulverizer, low NOx burners and overfire air (OFA), combustion fans. The plant will also have coal storage, handling and feeding system, it will also have a crushing and screening facility. **Figure PDS-7** presents the schematic diagram of the Pulverized Coal.

The turbine unit consists of two cylinders, tandem-compound, two exhausts, condensing reheat turbine designed for high operating efficiencies and maximum reliability and the Generator is a totally enclosed type, self-ventilated, forced lubricated, cylindrical rotor type, synchronous alternator.

The post combustion system consists of Electrostatic Precipitator, Flue Gas Desulfurizer, optional Selective Catalytic Reduction, and Exhaust Stack.

4.2 MAIN PROJECT COMPONENTS

The Project will utilize the Supercritical PC boiler technology, with the following major components: the boiler, turbine and generation system; the coal handling and storage system; the auxiliary materials handling and storage systems; the water supply system, and the ash handling and disposal area. **Table PDS-1** provides a complete list that indicates the specifications of the various components.

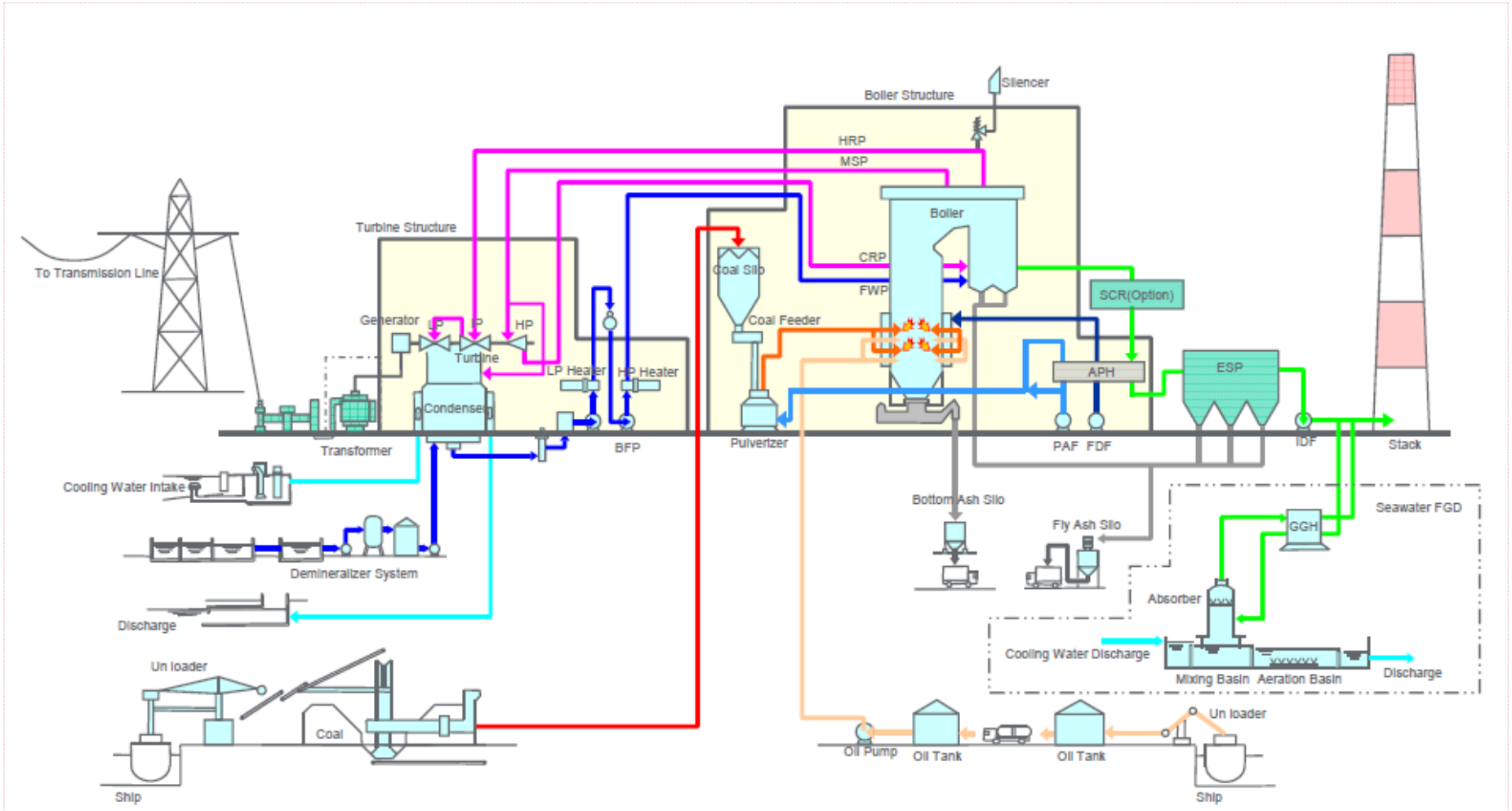


Figure PDS-7. PC Supercritical Boiler Components and Process Flow.

Source: Jampoo, Undated

Table PDS-1
Main Project Components

Components	Specifications
PC Boiler, Steam Turbine and Generator System	• 4x355 MW Supercritical PC Boilers • 4x355MW steam turbine generators
Coal Handling and Storage System	• Coal Unloading System • Covered conveyor system • Coal Storage Area with blending facility good for 30 days inventory level
Pollution Control Equipment	• Electrostatic Precipitator (99.8% efficiency) • Flue-gas Desulfurizer (SWFGD or GAS Suspension Absorber + Bag Filter) • Combustion Technology (Low NOx Burner + Over Fire Air) and/or Post Combustion Technology (Selective Catalytic Reduction (SCR)
Stack	• 2 stacks with 2 flues each stack • 150m height
Seawater Cooling System	• Sea Water cooling condenser • Sea water intake structure • Chlorination system • Sea water heat dissipation and discharge
Water Supply	• Water Treatment Facility

Water Pollution Control Facilities	• Industrial Wastewater treatment plant
	• Individual sanitary wastewater facilities per area:
	  ○ Turbine Generator bldg.
	  ○ Water treatment
	  ○ Coal yard
	  ○ Admin bldg.
	• Staff House (Oily Water treatment facility)

Ash Handling and Disposal Area	• Estimated 40-hectares ADA with Leachate Treatment Facility

Auxiliaries and Support Facilities include:

- Cooling Water System
- Emergency Diesel Generators
- Air Compressors
- Diesel Fuel Tanks
- Central Control Room
- Warehouse
- Maintenance Workshops
- Administration Building
- Dormitory or Staff House

4.3 POLLUTION CONTROL DEVICES

CLPPC is committed to ensuring that the proposed Project will operate in an environmentally responsible manner. Pollution control devices and processes will be installed to meet the Department of Environment and Natural Resources (DENR) standards. **Table PDS-2** lists the pollution control devices.

As part of the prevention and mitigation measures of the power plant, coal-carrying ships will be made to comply with the plant's policy and procedures, such as prohibiting them from discharging oily wastes and bilge water directly into the bay (nearshore and offshore) while unloading coal at the jetty.

Table PDS-2
Pollution Control Devices

Pollution Control Device/ Process	Facility Being Served	Purpose
Covered Unloaders	Pier	Prevent coal dust emissions during unloading
Covered Conveyor Belts	Coal Handling System	Prevent coal dust emissions and spillages during conveying
Covered Coal Storage Area with Sprinkler System and Drainage System	Fuel Storage Area	Prevent coal dust emissions; Manage spontaneous combustion of coal; manage runoff from storage area
Combustion Technology (Low Nox Burner + Over Fire Air) and Post Combustion Technology (Selective Catalytic Reduction (SCR)	Boilers	Reduce NOx emission during combustion to comply with CAA
Electrostatic Precipitator	Flue Gas	Removal of particulate matter from the combustion of flue gas to comply with CAA
Sea Water Flue Gas Desulfurizer or GAS Suspension Absorber + Bag Filter	Flue Gas	Removal of SOx to comply with Clean Air Act (CAA)
Stack of sufficient height	Boilers	Better dispersion of emissions resulting in lower ambient concentration of pollutants
Leachate Treatment Facility	Ash Disposal Area	Leachate treatment before effluent discharge
Dedusting / Defogging System	Ash Disposal Area	Prevent fugitive dust emissions
Wastewater Treatment Facility (WWTF)	Entire Facility	Treatment of effluents to comply with DENR standards prior to discharge
Sewage Treatment Plant	Entire Facility	Treatment of effluents to comply with DENR standards prior to discharge

A general layout of the facilities is presented as **Figure PDS-8.**

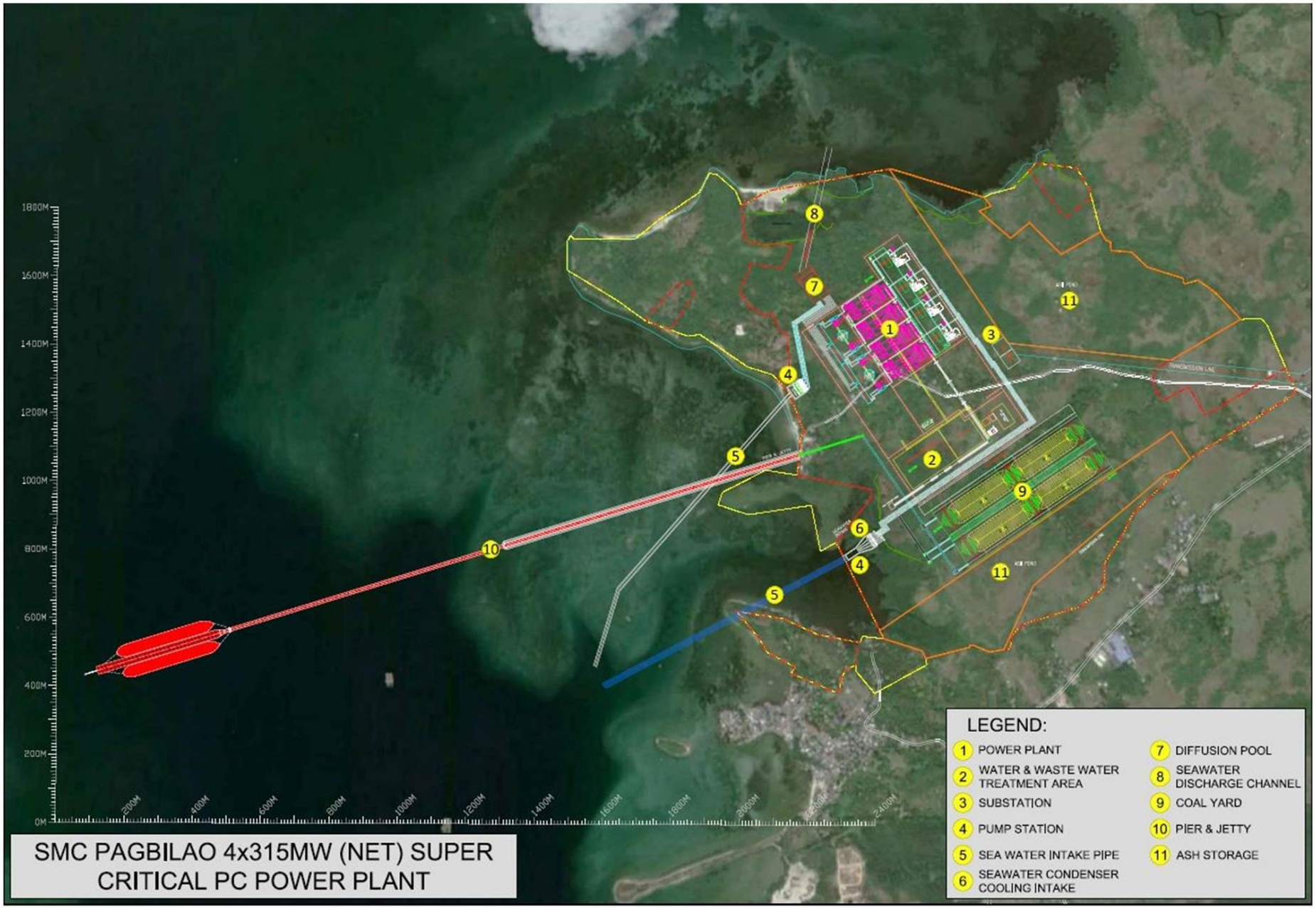


Figure PDS-8. General Layout of the Project	**LEGEND:** (as above)	**DATA INFORMATION/SOURCE:**	**SCALE:** 1: 19,000 **PAGE:** 15
PROJECT DESCRIPTION FOR SCOPING 4x355MW PAGBILAO POWER PLANT	N W E S 0 0.5 1 Kilometers	**Source Map:** CLPPC, 2020 **Modified by:** APERCU CONSULTANTS, INC (2020)	*Central Luzon Premiere Power Corp.* aperçu CONSULTANTS INC.

5.0 PROCESS/ TECHNOLOGY SELECTION

Coal is a preferred source of energy worldwide because it is cheap and plentiful. Forty percent (40%) of the electricity generation in the world today is supplied by coal. With a broad range of available clean coal technologies, gaseous emissions from coal combustion can now be mitigated, allowing coal power plants to operate within environmental standards. Two types of technology are available for high power generation coal-fired power plants. These are the Pulverized Coal (PC) technology and the Circulating Fluidized Bed (CFB) technology and may use sub-critical, supercritical or ultra-supercritical steam.

5.1 PROCESS DESCRIPTION

Coal will be delivered by cape size/ panamax cargo vessels and will be received onsite at the coal unloading jetty. Once unloaded, the coal will be conveyed via a fully covered belt conveyor equipped with a dust suppression system and stored in the enclosed type coal yard equipped with stacker-reclaimers.

Coals from the coal yard goes to a crushing and screening facilities where it will go to a process to ensure the particles are within a restricted range of sizes and particle size distribution before storing to a boiler bunker.

Raw coal enters through a center feed pipe onto the rotating grinding table and coal drying takes place with the air sweep principle of uniform air distribution around the table. The pulverized coal is carried upward and carried into the separator, where the particles impinges against the separator vanes, and only fine particles enter the inside, whereas the course are ejected away towards the outside. Each pulverizer will also be equipped with a steam inerting and cleaning system.

Combustion takes place where the fuel-air mixture is then fed to the furnace. At a specified temperature and pressure, the boiler generates steam which expands first to the high-pressure side of the turbine. High pressure steam from the governing valves enters the HP casing through two inlet pipes. The steam flows through the reaction stages in the HP turbine and exhausts to the reheater through the exhaust opening in the outer casing. The reheated steam returns to the IP element through two combined reheat valves, which are located on front side of the turbine. Combined reheat valves are connected by flexible steam inlet pipes with IP cylinder for reducing the thermal stress of each part. Steam flows through the intermediate reaction blading and expands thereby decreasing the pressure and temperature.

The steam, which has expanded in the intermediate reaction group, will leave the IP turbine through the crossover pipe, and flows into the low pressure turbine and must be condensed in once-through open loop heat exchange system so that the resulting condensate can be recirculated back to the boiler to complete the water-steam cycle.

The warm flue gas exiting the boiler will be handled accordingly to meet the CAA environmental safety standards. In the electrostatic precipitator, most of the very fine ash particles in the flue gas will be removed. This ash is collected and hauled, pumped, or conveyed to ash storage sites either within the site boundary, or located adjacent to the site. Where there is a market, ash will also be sold for use in manufacturing cement or other industrial purposes.

SOx compounds will be removed at the Flue Gas Desulfurizer. The flue gas will exit via the stack where it is dispersed high in the atmosphere. NOx reduction is accomplished through use of Low NOx burners and Overfire Air. In case the projected NOx levels exceed the CAA acceptable levels, SCR may also be installed

5.2 TECHNOLOGY SELECTION

5.2.1 Supercritical Technology

5.2.1.1 Higher Plant Efficiency

A Supercritical plant differs from traditional coal power plants because the water running through it works as a supercritical fluid, meaning it is neither a liquid nor a gas. This occurs when water reaches its critical point under high pressures and temperatures, specifically at 22 MPa and 374°C.

As a liquid approaches its critical point, its latent heat of vaporization begins to decrease until it reaches zero at the critical point. This means that the amount of energy needed to change the water into steam becomes less and less, and eventually the water's vaporization phase change is instant. This reduces the amount of heat transfer to the water that is normally needed in a conventional coal plant, therefore, less coal is used to heat the same amount of water. This increases the plant's thermal efficiency by a considerable amount.

5.2.1.2 Low Emission Rates

Due to lower coal consumption rate, quantities of combustion products and wastes such as carbon dioxides (CO2), carbon - monoxide (CO), sulphur oxides (SOx), nitrogen oxides (NOx), and particulate matters also decrease resulting in net reduction of air emissions and ash generation. When SOx and NOx emissions are controlled, consumptions of reagents for SOx control (Limestone, lime or seawater) and reagent for NOx control (ammonia or urea) are also reduced due to reduction of SOx and NOx production.

5.2.1.3 Lower Operating Cost

Since supercritical plant consume less coal than subcritical plant, this result in significant fuel cost saving. This also results in lower amount of combustion wastes such as ash. Therefore, annual cost for handling of solid wastes like ash also decreases.

5.2.2 Pulverized Coal Technology

The pulverized coal (PC) combustion is the most widely used technology in coal-fired power plants globally. The technology's developments in the past decades have primarily involved increasing plant thermal efficiencies by raising the steam pressure and temperature. Based on the differences in temperature and pressure, the technology is categorized into three tiers: subcritical, supercritical (SC) and ultra-supercritical (USC).

The supercritical technology yields higher thermal efficiency compared to sub-critical types, hence the environment impact would be lessened in comparison to less efficient sub-critical unit of same output. The Supercritical Pulverized Coal (SPC) technology uses super critical pressure of 24. Mpa and higher main steam temperature which mostly ranges from 538 to 566°C.

The Ultra-supercritical technology works within a range higher than Supercritical condition of about 25Mpa and 600°C. This technology has even higher efficiencies than Supercritical but is relatively being less deployed because of the limited commercial availability of the special steels for boiler tubes and turbine blades.

The NO_x formation in the furnace of a PC boiler is controlled using low NO_x burners or a combination of combustion optimization systems (low NO_x burners, Flue Gas Recirculation, and Over-fire air) depending on the target furnace concentration. Sulfur dioxide is efficiently removed using a post combustion standalone Flue Gas Desulfurization system.

It is likely that the PC will continue to be strongly considered when looking at today's plant requirements in the supercritical class and High Efficiency Low Emission (HELE) technologies and will continue to be favoured when

the supply of steam-quality coal is readily available in long-term contracts within the defined limits of heating values, ash content, moisture content, sulphur content, and especially ash fusion temperatures.

5.2.3 Circulating Fluidized Bed Technology

The circulating fluidized bed (CFB) technology generates lower emissions and improves performance while minimizing maintenance cost. It is also capable of burning a wide range of fuels from biomass, low grade coal, and high-grade coals.

CFB is available in the market in subcritical class but boiler units larger than 300MW, however, are in the demonstration stage or limited commercial basis. The advantage of CFB boiler technology is that it has pollution controls built right into the combustion process, reducing or eliminating the need to use the equipment (e.g. scrubbers) that typical coal plants require to capture criteria pollutants. In comparison with typical coal plants, CFB boilers produce 90% less emissions by combining limestone with coal, resulting in the removal of sulfur oxides (SO_x) in the boiler. Also, the formation of nitrous oxides (NOx) is minimized because of low fuel burning temperature in the boiler.

5.2.4 Pulverized Coal Supercritical Boiler

Pulverized Coal (PC) supercritical boiler with variable pressure, has a once-through, spirally wound tube wall & vertical tube wall furnace with steam separators, superheater, reheater, attemperator, economizer, coal pulverizer, low NOx burners and overfire air, outdoor type components.

The steam generator design proposed is of supercritical pressure, single reheat, once-through, balanced draft, designed for firing the specified pulverized coal as main fuel to achieve the required steam flow capacities and parameters. The firing system will employ a direct feed pulverized coal system, with burners arranged on opposed furnace walls. The furnace dimensions are designed to provide a generous volume and plan area considering slagging and fouling properties of the specified coals.

The furnace walls are of completely water-cooled membrane construction with spirally wound tubes used in the high heat absorption zones. The superheater consists of pendant type secondary and final superheaters in the high temperature zones, and a horizontal type primary superheater in the low temperature zone. The reheater consists of a pendant section and a horizontal section. The superheated steam temperature is controlled by feed water / fuel ratio and multi-stage spray type attemperators. The reheat steam temperature is controlled by parallel flow gas biasing dampers. Combustion air is distributed by the primary and secondary air system. Secondary air is preheated in the air heater, and then routed to the burners through the secondary air ducts. Primary air is pressurized by the primary air fan to obtain sufficient pressure required for passing through the air preheaters, pulverizers and pulverized coal piping to the burners. Flue gas from the boiler outlet is directed to the air heater by way of connecting ductwork. Raw coal from the coal bunkers is discharged through coal feeders to the pulverizers. Pulverized coal is transported by primary air to the burners through the pulverized coal piping.

5.3 FUEL

5.3.1 Coal Specifications

For this Project the main fuel will be Lignite A coal and Sub-Bituminous Coal that will be sourced from other countries such as Australia and Indonesia. Each boiler unit (355MW) will consume approximately 173 tons of coal per hour at full load, amounting to about 1.09 Million tons of coal used per year at 80% capacity factor. At 1,420MW, approximately 692 tons of coal per hour or 4.3 Million tons per year at 80% capacity factor will be consumed.

Table PDS-3 provides the coal specifications as received.

Table PDS-3
Coal Specification

Item	Coal Range
Components (ARB)	
Gross calorific value, HHV	4,158 ~5,164
Net calorific value, LHV	3,662 kcal/kg
Volatile matter, %	31.20~34.70
Fixed Carbon, %	29.80~37.30
Surface Moisture (recommended)	≤ 14%
Total water, %	33.96
Ash, %	2.60~6.00
Carbon, %	64.85~71.07
Hydrogen, %	4.89~5.44
Nitrogen, %	0.60~1.44
Sulfur, %	0.11~0.82
Oxygen, %	17.16~22.18

5.3.2 Coal Handling System

Coal will be delivered by ships of Capesize/ Panamax size of about 170,000/ 70,000 DWT from supply points such as Australia, Indonesia and other countries. One (1) Capesize/ panamax-sized vessel will deliver the coal to the power plant monthly to supply the coal requirement of a 355-megawatt unit. Once the power plant operates at 1,420-megawatt capacity, four (4) Capesize or seven (7) panamax vessels will be berthing and unloading coal to the pier and jetty every month. The receiving facility will include two (2) ship unloaders with an unloading capacity of 1,500 tons per hour (TPH) each. A designated area with sufficient draft for berthing will be provided for the ship anchorage. The unloading of coal, which normally takes 5 to 7 days to complete, will be done by a ship unloader. Coal is then transferred by conveyors and stored in the enclosed type coal yard equipped with stacker-reclaimers.

A dust suppression system will be provided to spray an optimized amount of water. Suitable systems will be adopted to reduce problems like choking or jamming of the moving parts. Closed-Circuit Television camera (CCTV) monitoring will also be provided for the conveyor system.

The following measures will be considered in the design of the belt conveyor:

- Dust Cover – The belt conveyor from the pier head to the transfer tower and from the transfer tower to the coal storage area is equipped with a hood cover. The conveyor segments are fully covered, and the covers are hinged with a retaining bar to allow the cover to be held in an open position to permit inspection and repairs, simplifying maintenance.

- Belt Loading – The amount of dust generated at the belt conveyor transfer points depends on the way the material is loaded onto the belt. To reduce dust generation, the material will be loaded onto the center of the belt. The material and the belt will travel in the same direction at the same speed, whenever possible.

- Impact at Loading Point – A momentary deflection of the belt between two adjacent idlers may result when the coal strikes the belt during unloading. As a result, a puff of dust may leak out under the skirting rubber seal. To prevent dust emissions at the loading point, adequately spaced impact idlers will be located at transfer points. These will absorb the force of impact and prevent deflection of the belt between the idlers, thus preventing dust leakage under the rubber seal.

- Dust collectors will be installed on the pier head and transfer tower to control dust at the receiving and transfer points. Dust-collection systems capture fugitive dust that would otherwise escape from the perimeter of equipment areas.

5.3.3 Coal Storage, Preparation and Feeding System

The coal storage area will have an initial storage capacity of 500,000 tons to supply the coal requirements of the 4x355 MW units of CLPPC and the 2x355 MW units of LETI (Lumiere Energy Technologies Inc. which is a sister company co-located within the Dewsweeper leased property). This coal yard can sustain a maximum operation of 30 days.

The coal yard will be divided into active and passive sections. The active section will be where coal will be taken from on a daily basis while the passive section will be used mainly for reserves and emergency requirements. Both sections will be formed and compacted by a stacker and will be provided with equipment for moistening the coal to prevent self-ignition and dust dispersion.

The coal stockyard will be covered to prevent coal from being washed away during rain events. Accumulated dust will be removed or swept regularly, and the area will be watered after sweeping. For the coal yard, roadways will be cemented and will be provided with clearly marked entry and exit points.

From the coal stockpile, the coal will be reclaimed and moved through the conveyor belt to the crushing and screening room within the boiler building. A dust suppression system and dust collectors will likewise be provided at the coal crusher structure.

5.3.4 Crushing and Screening Facility

Coal sufficient for fifteen (15) hours of operation will be stored in the coal silo. After crushing, the coal will pass through the screens to ensure particles are within a restricted range of sizes and particle size distribution before entering the boiler. In this process, a vacuum system and a fully enclosed crushing facility is used to ensure recovery of coal and reduction in particulate emissions.

The coal handling system includes a 500,000-ton storage yard with stackers, bridge and full portal reclaimers, crusher system, and a 2-conveyor system to transfer coal to the day-silo inside Boiler Island. The crushing plant reduces the coal to ~50 mm size before being transported to the pulverizer. The Coal crusher system is fitted with de-dusting accessories i.e. exhaust fan, bag filter at the transfer towers to minimize dust dispersion.

The coal handling system is controlled from its own control room adjacent to the transfer house. The overall control is programmable by a logic controller system. The control board including the controls, graphic display, and annunciator sections enables remote operation of the coal handling system.

5.3.5 Start-up Fuel

Initial commissioning and start-up of the boiler of the plant requires industrial diesel fuel oil. **Table PDS-4** shows the specifications of the diesel fuel to be used. The power plant will have 30 days of maintenance per year and at least 1 cold start per year. Two (2) tanks having a capacity of 500,000 liters each will be constructed to store diesel oil.

Table PDS-4
Fuel Oil Analysis

Type			No. 1 Fuel Oil	No. 2 Fuel Oil
Gravity API at 15.5°C, min.			32	36.5
Density at 15.5°C, kg/L			0.82-880	0.86
Kinematic Viscocity at 37.8°C, cSt			1.6	2.68
Flash Point, °C, min.			55	-
Pour Point, °C			-	10
Cloud Point, °C	-	10		
Ash	Max. 0.01%	100 ppm		
Sulfur, wt% max.	0.3% wt.	0.5% wt.		
Bottom sediment and water, % max. by vol.	0.1	0.1		
Water content (by distillation), % max. by vol.	-	0.1		
Calorific Value, HHV	19,600 Btu/lb (10,889 Kcal/kg)			
Calorific Value, LHV	18,400 Btu/lb (10,221 Kcal/kg)			

5.4 ASH DISPOSAL SYSTEM

Ash is a major waste product from the combustion of coal and requires the setting-up of a designated disposal area and method. The expected total ash generated for each boiler is about 216 tons per day. Once the final configuration (4x355MW) is made operational, the combined amount of ash generated will be at 864 tons per day.

5.4.1 Ash Handling System

The combustion process will generate two types of ash: fly ash and bottom ash. Fly ash can range from 80 to 90 percent of the total ash and comprise the fine particulates that rise with the flue gases. The fly ash generated will be hauled out from the plant and sold to the cement firms and brick makers. Bottom ash makes up the balance of the total ash and is taken from the furnace bottom and cooled in an ash cooler, before being sent to the bottom ash silo, which has a 5 to10-day storage capacity. From the ash silo, ash shall be delivered by truck to the ash disposal area. The ash disposal area for this facility shared with LETI will occupy a 40-hectare area at the northeast and south are of the property.

5.3.2 Ash Pond Linear System

The plant's ash disposal area will have a double lining system consisting of a compacted layer of silty sand topped with a geo-membrane (HDPE liner) or in-situ clay material. Two (2) groundwater monitoring wells representing the upstream and downstream sections will be installed to detect if leaks are present in the ash disposal area which will be built to handle a storage capacity of 25 years.

5.4.3 Leachate Collection and Treatment

The ash disposal area will be equipped with perforated pipes for leachate collection and to prevent overflow. The collected leachate shall be pumped to the leachate treatment facility for neutralization and treatment.

5.4.4 Reutilization of Ash

CLPPC will dispose of the reusable components of the ash to reduce the amount of ash disposed at the Ash Disposal Area (ADA). The fly ash waste from the power plant can be used in a variety of structural and low strength fill applications. It can be used as mineral filler for paints, shingles, carpet backing and other products. It can also be used in manufacturing bricks, blocks, mortars and stuccos. Other possible uses of fly ash are in

the neutralization and processing of human sludge waste into fertilizer and in the stabilization of sewage and toxic sludge.

The largest application of fly ash, however, is in the production of concrete. Concrete is the most common building material and is primarily a mixture of gravel, sand, cement and water. Compounds in the cement react with water to form glue that binds the sand and rock into a hardened mass. When fly ash is added to the concrete mix, some of the cement can be eliminated. Mechanically, fly ash particles are small and spherical – allowing them to fill voids and provide a "ball-bearing" effect that allows less water to be used. Chemically, fly ash reacts with excess lime that is created when cement is mixed with water, creating more of the durable binder that holds concrete together. The result is concrete that is more durable and stronger over time, than concrete made with cement alone.

Other benefits of using fly ash in concrete include: 1) decreased permeability, 2) reduced damage from heat of hydration, and 3) increased resistance to sulfate and other chemical attack. Thus, using fly ash in concrete and other building products eliminates the need to dispose them in landfills (Pring, 2011).

The bottom ash normally has limited reuse potential and is usually used as grading material and filling material. It is thus mainly bottom ash that will be stored at the ash disposal area since the fly ash component will be sold.

5.5 Emission Control Devices

To significantly reduce emissions, the power plant facility will be equipped with Low NOx burners, FGD, and an electrostatic precipitator (ESP). Emission control facilities are designed to emit less gaseous emissions than the Clean Air Act and World Bank Standards as follows:

Table PDS-5
Emission Standards

Parameter	CAA (mg/Ncm)	World Bank (mg/Ncm)	Expected CLPPC Emissions (mg/Ncm)
SOx, calculated	700	1,000	200
NOx, calculated	1,000	650	450
Particulates	150	50	50
CO	500	No Standard	500

5.5.1 Low NOx Burner & Over-fire Air

To achieve extremely low NOx emissions, CLPPC adopted a two-stage combustion system with Low NOx burners and Over-Fire Air Ports (OFA). Features of two-stage combustion are shown in **Figure PDS-9.**

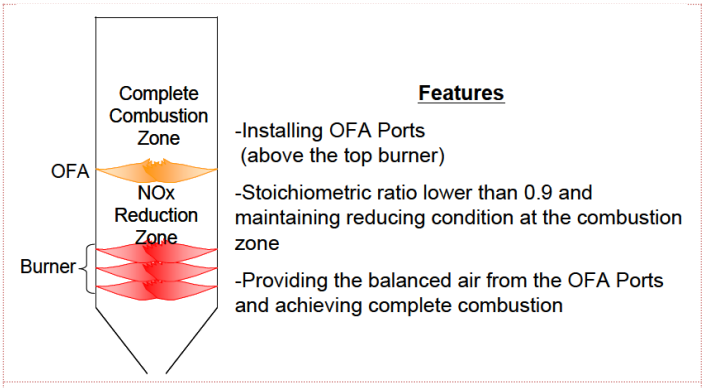


Figure PDS-9. Two-stage Combustion Features.

CLPPC will include a Low NOx burner to achieve extremely low NOx with complete combustion and with control of furnace slagging and superheater fouling. It will apply the concept of In-Flame NOx Reduction and has been achieving considerable NOx reduction with no adverse effects or decreased flame temperature. As a result, the trade-off of NOx reduction and increased unburned loss has been improved.

In-Flame NOx Reduction is achieved by control of individual flame structure by the flame stabilizing ring and the guide sleeve. This reduction method is effective in rendering coal contained organic nitrogen compounds, transformed promptly to gas phase and providing easier reaction. Also, the flame is maintained at a high temperature making it possible to prevent unnecessary delayed combustion from occurring.

5.5.2 Electrostatic Precipitator

CLPPC will install a dry horizontal flow Electrostatic Precipitator, capable of providing 99% removal of particulate emissions. An electrostatic precipitator (ESP) is a particle control device that uses electrical forces to move the particles out of the flowing gas stream and onto collector plates using the force of an induced electrostatic charge. Electrostatic precipitators are highly efficient filtration devices that minimally impede the flow of gases through the device and can easily remove fine particulate matter such as dust and smoke from the air stream (**Figure PDS-10**).

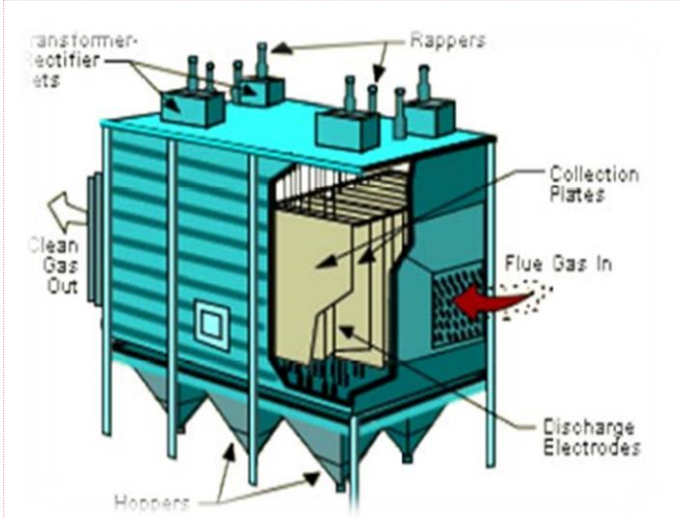


Figure PDS-10. Electrostatic Precipitator Diagram

Several high-power discharge electrodes are placed inside the collector. The incoming gases pass by the first set of discharging electrodes (ionizing section) that give the particles a negative charge. The now ionized particles pass the next set of electrodes (the collection section) that carry a positive charge. The positively charged plates attract the negatively charged particles causing them to collect on the plates. Cleaning is accomplished by vibrating the electrodes either continuously, or at timed intervals, causing the captured dust to fall off into a hopper below. All of this can be done while the system is operating normally.

The use of EPs has the following advantages:

- Very high efficiency, even for smaller particles
- Ability to handle very large gas flow rates with low pressure losses
- Ability to remove dry, as well as, wet particles
- Temperature flexibility in design

5.5.3 FGD – Flue Gas Desulfurizer

The Project will utilize Seawater Flue Gas Desulfurizer (SWFGD) technology to control SOx emissions, utilizing the ability of seawater to absorb and neutralize SOx in untreated flue gas.

SWFGD is an attractive technology for SO2 removal at power stations in particular as the medium for desulphurization is seawater which is abundant at the power stations from a condenser and the effluent seawater can be released to the sea without affecting the oceanic environment. Flue gas treated at an absorber is released to the atmosphere through a stack installed thereafter. Spent seawater is sent to a seawater treatment system (SWTS) for oxidizing HSO3 and improving DO and pH. With no use of chemical additives, a SWFGD plant produces no by-product nor harmful wastes and, it is free from any scaling problem which can be often seen in the conventional FGD plants under limestone or caustic soda processes.

As an alternative a Gas Suspension Absorber (GSA) system may be used. Fresh alkali sorbent is injected into the flue gas stream to react with acid gases present in vaporous form contained within the particulate contaminated flue gas. The reactor chamber actively encourages the mixing of the agents in a turbulent zone. The resultant interaction of the alkali sorbents with the vaporous acid gases produces a highly efficient de-acidification reaction of SOx, HF and HCL, with the formation of salts as the product. The dust concentration inside the GSA system reactor is typically 50 to 100 times higher compared to conventional reactors, providing a high stoichiometric ratio of alkali to acid.

The next step is the cyclone, where most of the dust is removed. Dust is completely removed by the ESP or Bag Filter later in the process so that only clean air is released into the atmosphere.

The reaction products and dust captured in the cyclone are recycled to the reactor and used as an absorbent. This means lower operating costs due to the reuse of alkaline chemicals. The GSA system can be run at minimal cost according to the target discharge rate if it is linked up to an acid gas monitoring system.

5.5.2 Wastewater Treatment Facilities

5.5.2.1 Wastewater Treatment

An industrial wastewater treatment plant will be constructed to treat the wastewater that will be generated from the demineralization plant. The expected amount of wastewater generated by the plant 400 cubic meter per hour or 9600 cubic meter per day.

Wastewater from the boiler area, firefighting and filter flushing will be discharged to a preliminary basin for temporary storage. Water from the drainage system will be discharged to a special retention basin. Water quality of the combined discharges will be analyzed and treated in the Wastewater Treatment Plant (WWTP) to ensure compliance with Clean Water Act guidelines.

5.5.3 Sewage Treatment Plant

Sewage in the area of the power plant will be conveyed through a separate network and treated in a Sewage Treatment Plant (STP). The STP is to be operated on the basis of the activated sludge process with common sludge stabilization. The single-basin sewage technique will be used for the biological sewage treatment. Generally, the planned sewage plant consists of the biological reactor, the sludge silo and the auxiliary plants and facilities. The expected amount of sludge generated by the treatment plant will be 360 kilograms per day. The STP is to be designed as a compact plant that aims at BOD degradation, nitrogen elimination and sludge stabilization in an odorless mode of operation. The sludge will be mineralized and properly disposed of. Considering the standard effluent limits for COD (<200 mg/l) and BOD (<100 mg/l), the biological purification stage will be required, if a connection to the drainage system is not available. Treated effluents will drain into Pagbilao Bay.

5.5.4 Solid Waste Management

Apart from ash, solid wastes to be generated by the Project shall consist of:

- Household waste consisting of bio-degradable waste materials from food and non-biodegradable materials such as plastics, wrappers, crates or boxes used as food packaging material.
- Debris and other materials from construction activities.
- Industrial solid wastes, such as wasted conveyor belts and barrels, damaged vehicle and equipment parts, etc.

First aid waste materials will be disposed of following the Medical Wastes Control Regulations of the Philippines.

Other wastes generated will be classified as biodegradable, non-biodegradable and recyclable. These will then be properly disposed of based on their classification. The plant will endeavor to comply with disposal regulations stipulated in the Solid Waste Management Act.

The Solid Waste Management Plan (SWMP) of the Project will employ the "3 Rs": reduce, reuse, and recycle. This is to extract maximum benefits from waste products in order to generate the minimum amount of waste.

The SWMP will involve the following:

- Provision of compost pits for biodegradable waste. Compost may be supplied to the residents for use as fertilizer for vegetable gardens.
- Recycling or recovery of solid waste materials such as papers, refuse from repair shops, tires, batteries, for other alternative uses and to be sold to prospective buyers from the nearby barangays.
- Provision of garbage disposal sites for wastes that cannot be recycled or cannot be composted.
- Hazardous wastes (hazwastes) generated during the construction and operation phases will be disposed of in compliance with RA 6969. Some of the hazwastes generated and their storage and disposal methods are provided in **Table PDS-6.**

Table PDS-6
Hazardous Wastes Associated with Power Plant Operations

Hazardous Wastes	Handling Method	Treatment
Oil	Above ground tank storage	Re-used as fuel for boiler
Vegetable oil	Above ground tank storage	-
Chlorobenzene	Stored in the chemical laboratory in safety cans and bottles	-
Acetone		-
Heptane		-
Karl Fisher		-
Grease trap waste	Stored in drums	Re-used as fuel for boiler
Lead compounds (lead acid batteries)	Stored in hazardous wastes storage facility	Neutralization of battery fluid in neutralization basin of WTP
Mercury compounds from busted lamps		-
Empty paint containers; thinner		-
Medical wastes; expired medicines	Stored in hazardous wastes storage facility, will be encapsulated cans; bottle containers	-

6.0 PROJECT PHASES, KEY ENVIRONMENTAL ASPECTS, WASTES, ISSUES, BUILT-IN MEASURES

6.1 DEVELOPMENT PLAN AND DESCRIPTION OF PROJECT PHASES

6.1.1 Pre-Construction

Activities included for the pre-construction phase of the Project will include:

1. Land Acquisition – The Project site will be leased by CLPPC
2. Preliminary Engineering Studies – This includes cadastral, topographic, hydrographic surveys and soil investigation study
3. Access Road and Drainage Construction
4. Earthworks
5. Other activities during the pre-construction phase include:
    - Finalization of engineering designs – The final layout of the various facilities of the power plant
    - Contractor selection
    - Identification of sources for manpower and materials
    - Application of local government permits necessary for construction

6.1.2 Construction Phase

This phase will mainly see to the construction of the major as well as the ancillary facilities of the power plant. Construction activities include:

- Vegetation Clearing
- Earthworks
- Delivery of construction materials to and from the site
- Laydown of construction materials
- Pilling, foundation and other civil tasks
- Erections of steel, and all mechanical & electrical equipment
- Commissioning
- Start-up activities of installed equipment

During the construction, power requirements will be organized by the selected Engineering, Procurement and Construction (EPC) contractor through Local Power Distribution Company or Gensets. The temporary construction power line and a transformer with a switchgear will be furnished and installed to supply the power needs for construction machinery, the office and the staff barracks. The EPC contractor shall also furnish an environment management program that includes water management and waste management systems that will be approved by CLPPC and the LGU. CLPPC will also coordinate with the local water district and private water contractors for the water supply during construction phase.

In the commissioning phase, power requirement will be initially accommodated by National Grid Corporation of the Philippines (NGCP). However, after the units pass the initial single equipment commissioning stage and unit start-up tests, units can generate power to satisfy in house demand, which means no external power supply is needed most of time at this stage.

While coal is used in all generation test, diesel fuel and an auxiliary boiler is used during unit start-up attempts and steam blowing which is universal requirement to clean up all debris and deposits left inside high-pressure steam pipes during construction. Emission during test and commissioning will be managed through air pollution control device as much as technology allows, however, by nature upset condition will happen more often than any other operating stages due to unstable condition, but all upset conditions will be governed by local Environmental

Management Bureau (EMB) through and special emission permit shall be obtained prior to commissioning stage, furthermore, all emission guarantee test will be certified by DENR authorized third party.

6.1.3 Operation Phase

The plant shall be designed and constructed for flexible operation. It is anticipated that the plant will operate at base load for approximately 330 days a year. The power plant will undertake planned unit overhauls during periods of lower power demand.

The main activities during the operation phase, described in detail in previous sections of the Project Description, are listed below:

a. Electricity generation – The proposed Project will generate electricity in phases. A 1x355MW generation unit will be installed initially while the succeeding three (3) units will be operational one after the other after every four (4) months. The electricity generated will be transmitted to the Luzon grid.
b. Sourcing of coal – coal will be sourced from Indonesia and will be delivered to site via coal carriers.
c. Disposal of Ash – Daily operation of the power plant for all 4 boiler units will result in ash estimated at 864 tons per day. Fly ash can be sold to cement firms (fly ash) or to brick makers. Unsold ash will be stored in a lined ash disposal area on site.
d. Abstraction of freshwater for domestic plant use – Daily freshwater requirements of the plant is estimated at 7,200 cubic meters per day and will be drawn from the Palsabangon River or produce by a desaliniation facility.
e. Abstraction of seawater for cooling purposes – The power plant will obtain 158 cubic meters per second of seawater from Pagbilao Bay and return this as heated effluent.
g. Treatment of wastewater from various plant process sources – Control of effluents from the operations of the power plant are described in detail in Section the Project Description.

The plant shall be designed and constructed for flexible operation. It is anticipated that the plant will operate at base load for approximately 330 days a year. The power plant will undertake planned unit overhauls during periods of lower power demand.

6.1.4 Abandonment Phase

The CLPPC plant is expected to be operational for 25 years. A detailed decommissioning or abandonment plan will be prepared in the unlikely event that the power plant is no longer viable to operate and maintain. The plan will specify studies to be undertaken such as site assessment and remediation activity if the site is considered contaminated, the equipment to be recovered or disposed and alternatively and use of the abandoned area.

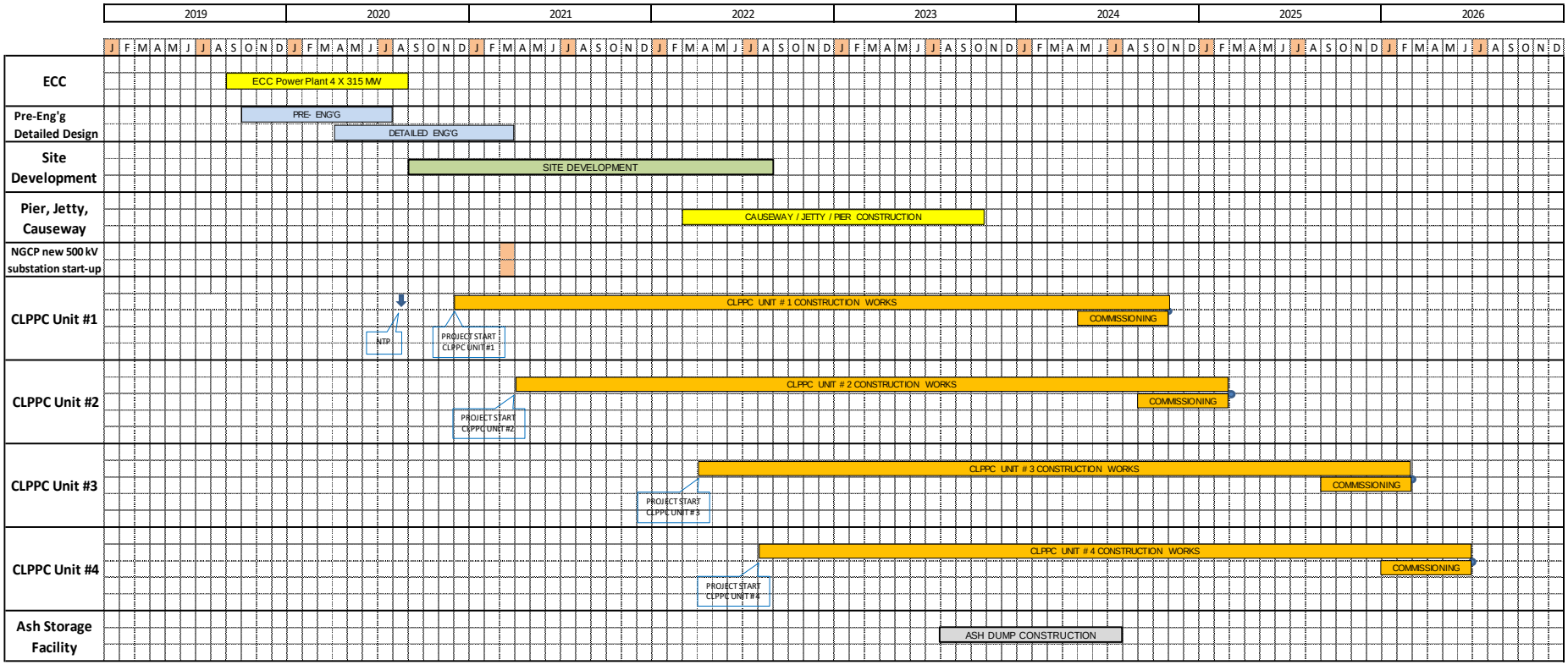


Figure PDS-11. CLPPC Power Plant Project Schedule.

6.2 MAJOR ENVIRONMENTAL IMPACTS AND MANAGEMENT MEASURES

The predicted impacts and corresponding mitigation measures of the Project at various stages are tabulated in **Table PDS-7**.

Table PDS-7
Predicted Environmental Impacts and Management Measures

Impact	Options for Prevention or Mitigating Measures
I. CONSTRUCTION PHASE	
A. Land	
Long term commitment of land resource to a specific use	• Compatibility with the land use plan of the municipality.
Change in landform/topography	• Landscaping after Project construction. • Proper siting of the pier to minimize impacts of scouring and erosion on bottom topography.
Stripping of all unsuitable soil near-surface	• Other than disposing of unsuited excavated soil as fill material, some may be retained for landscaping the site.
Loss of vegetation. Disturbance of habitat will result to displacement of wildlife	• Trees will be balled and transferred. • Open and unused areas within the plant site will be replanted as soon as practicable. • Develop a carbon sink program and provision of a forest nursery of native and indigenous tree species. • Maintaining a buffer zone.
B. Water	
Generation of sewage and solid wastes	• Placement of regulations on proper waste disposal. • Provide proper waste disposal and toilet facilities.
C. Air	
Fugitive dust resulting from ground clearing operations and structure erection	• Regular spraying if water where earthwork activities are considered. • Replacement of vegetation in non-structure area. • Compacting of exposed soil and immediate hauling of spoils.
SOx and NOx emissions from heavy equipment	• Regular maintenance of heavy equipment and motor vehicles.
Increased sound levels from construction activities	• Regular maintenance of motor vehicle mufflers. • Proper scheduling of noisy activities during daytime. • Inform community when activities will generate excessive noise.
II. OPERATION PHASE	
A. Land	
Dumping and storage of ash and its associated impacts	• Establish properly built lined ash pond to prevent leaching and erosion. • Utilization for other purposes by prospective buyers.
B. Water	
Local ponding or flooding	• Drainage system will be established and maintained. • Silt traps along drainage-ways will be installed.
Leakage of leachate in the ash pond to the local groundwater system	• Provide linings for on-site ash and sludge landfill. • Regular groundwater monitoring will be conducted to determine any breach in the lined ash disposal area. • Coal stock yard will be provided with peripheral drain canal going to a sedimentation basin. • Lining of coal yard with an impervious material.
Effluent discharges	• Effluents treatment, if to be re-used. Effluents discharged to Pagbilao Bay will comply with DENR effluent standards.

Impact	Options for Prevention or Mitigating Measures
Disturbance of benthic, coral, and fish communities with the construction of the jetty and the outfall	• Jetty and discharge pipe foundation will be carefully designed to avoid shallow coral formations off the Project site.
Effects on the marine environment by thermal effluents and delivery of coal by cargo ships	• The cooling facility will be designed to meet the DENR standards. Updated charts will be provided to all barge captains to make them aware of the remaining coral and fish communities at the shallows. • Delivery ships will be made to comply with the code of practice for unloading.
Thermal pollution	• Release of cooling effluents offshore where water is deep and there is strong water mixing. • Conduct thermal dispersion modeling studies for different monsoonal seasons. • Locate the effluent outfall offshore, away from coral reef areas.
Coal spillage	• Provision of coal catchments and conveyor belts with skirts. • Avoid coal transfers during inclement weather. • Hire highly trained and experienced crane operators.
Impingement of marine organisms in the intake structure	• Construction of exclusion devices to prevent the entry of fauna in the intake structures. • Conduct personnel training on rescue protocol of important marine organisms.
Disturbance of dugong and marine turtle nesting area	• Establish a buffer zone around dugong and marine turtle feeding and nesting grounds and enhance nesting areas by beach nourishment and turning lights away from nesting sites. • Develop a rescue plan for important marine species.
C. Air	
Fugitive dust emissions	• Dust management measures, such as water spraying to dry areas, will be imposed. • Maintain vegetation around the area to serve as dust curtain.
Noise emissions	• Provision of noise barriers and mufflers.
SOx and NOx emissions and other greenhouse gases from coal combustion	• Installation, proper operation and maintenance of necessary pollution control devices to comply with the stipulations of the Clean Air Act and other applicable environmental laws. • Installation of Continuous Emission Monitoring System (CEMS) for real-time monitoring of plant emissions.
Particulates from operation of coal yard and ash handling	• Provision of wind barriers covers for trucks and conveyors and dust suppression system. • Closed system for transport and storage.
D. People	
Positive impacts to the local economy and on the public sector	
Possible growth of population because of employment opportunities	• Planning for this impact will be initiated by CLPPC in coordination with the LGUs.
Stimulate growth of power-dependent industrial and business activities. Help boost the local economy as well	
Financial benefits from payment of taxes	
Adverse public health impacts (if any)	• Conduct of an Environmental Risk Assessment (ERA)

Information, Education and Communications (IEC) activities have been conducted in Pagbilao to gather issues and concerns from major stakeholders affected by the installation of CLPPC Project which will be considered for the project planning and implementation. A detailed documentation report is provided in **Annex B** for the IECs. CLPPC is aware of concerns raised during the IECs on the impacts of the Project to the community. SMC will work with the Local Government Unit (LGU), barangay councils and other relevant organizations prior to the implementation of the Project to further engage with the community and address these concerns. **Table PDS-8** summarized the IECs conducted.

Table PDS-8
List of IECs Conducted

Date of IEC	Venue	No. of Participants	Participants Profile	
7 January 2020 (Tuesday)	Ibabang Polo Covered Court	85	• Barangay chairperson • Other barangay officials • Senior citizens	• Barangay health workers • Fisher folk community
7 January 2020 (Tuesday)	Ilayang Polo Covered Court	153	• Barangay chairperson • Other barangay officials • Barangay health workers	• *4Ps* • Senior citizens
8 January 2020 (Wednesday)	Pagbilao Session Hall	20	• Municipal councilors • Municipal department heads/ representatives	

An Initial Household Survey (IHS) was conducted on 17 to 20 January 2020 with 324 no. of households in Barangays Ibabang Polo and Ilayang Polo to assess the effectivity of the conducted IECs and determine the baseline knowledge of stakeholders regarding the CLPCC Project. The results of the Initial Household Survey are presented as **Annex C** in which 85% are already aware of the proposed CLPPC and LETI Projects of SMC.

6.3 WASTES AND BUILT-IN MANAGEMENT MEASURES

Wastes and other pollutants generated by the proposed power plant will be given serious consideration in the context of integrated waste management. Low-sulfur and ash content coal, either local or imported, will be used as fuel source for the power plant. Design of the proposed power plant will be carefully studied to ensure that gaseous emissions of the plant are compliant with the Clean Air Act and other applicable environmental laws.

The following pollution control devices will be installed:

- Electrostatic precipitator
- Flue gas scrubber/desulphurizer
- Bag filter system
- Appropriate stack height

As regards the plant effluent discharges, the following treatment facilities will be constructed to conform to DENR standard.

- Wastewater treatment plant for effluents from plant operations
- Ash removal and lined ash pond
- Sewage treatment

In compliance with the Solid Waste Management Act, "reduce, reuse and recycle "(3 R's) will be strictly imposed. Specifically, proper handling, storage and disposal of solid wastes will involve the following:

- Provision of compost pits for biodegradable waste and to be used to supply the residents with fertilizer for vegetable gardens.
- Recycling, recovery and segregation of waste materials at source.
- Provision of garbage disposal sites for compostable wastes.

7.0 MANPOWER

CLPPC will prioritize qualified residents from Barangay Ibabang Polo and Municipality of Pagbilao.

8.0 INDICATIVE PROJECT COST

The estimated total capital cost of the Project is Php 140 Billion.

Annex A – Aerial Photos of the Project Site

Annex A. Aerial Photos of the Project Site

Plate 1. Pagbilao Power Plant site (taken on 11 February 2020.

Plate 2. Plant Area Photo facing East (taken on 11 February 2020).

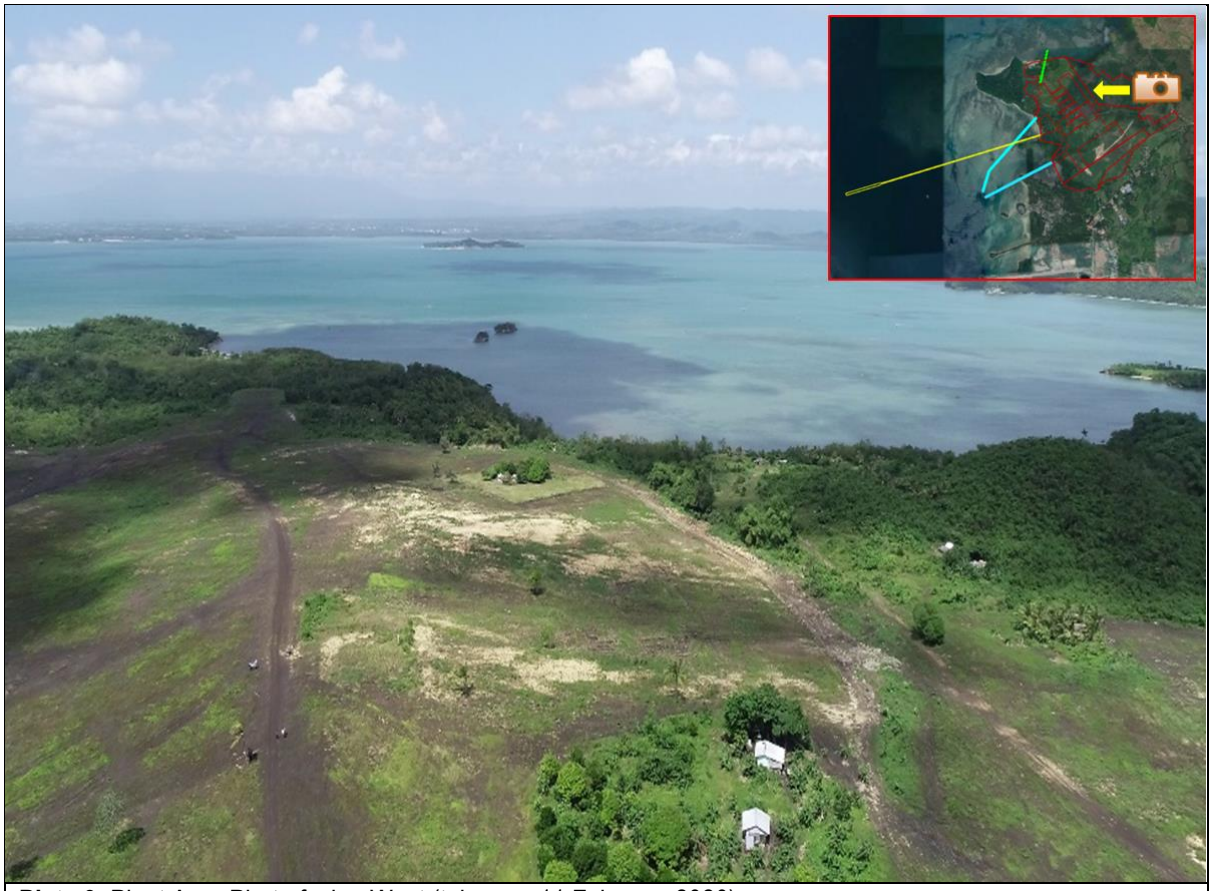


Plate 3. Plant Area Photo facing West (taken on 11 February 2020).

Plate 4. Plant Area Photo facing South (taken on 11 February 2020).

Plate 5. Plant Area and Transmission Line Route facing Northeast (taken on 11 February 2020).

Plate 6. Plant Area and Transmission Line Sub Station Photo Top View (taken on 11 February 2020).

Plate 7. Plant Area, Sea Water Intake Pump & Jetty Photo facing South (taken on 11 February 2020).

Plate 8. Plant Area, Pump Station and Sea Water Discharge Channel (taken on 11 February 2020).

Annex B – IEC Documentation Report

INFORMATION, EDUCATION AND COMMUNICATION (IEC) DOCUMENTATION REPORT

PROPOSED SMC PAGBILAO POWER PLANT PROJECTS

4X355MW Pagbilao Power Plant Project of CLPPC
2X355MW Pagbilao Power Plant Project of LETI

JANUARY 2020 | **PAGBILAO, QUEZON**

SMC GLOBAL POWER

aperçu CONSULTANTS INC.

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LIST OF ATTACHMENTS

1.0 INTRODUCTION

As part of the environmental impact assessment (EIA) process -- in accordance with DENR-EMB Administrative Order 2003-30 -- Information, Education and Communication (IEC) campaigns were held for the proposed Pagbilao Power Plant Projects of SMC Global Power Holding Corporation (SMC) through its wholly owned subsidiaries:

- Central Luzon Premiere Power Corp (CLPPC) 4x355MW Pagbilao Power Plant Project
- Lumiere Energy Technologies Inc. (LETI) 2x355MW Pagbilao Power Plant Project

A total of three (3) IEC sessions were conducted covering two (2) barangays in the Pagbilao Isla Grande (Barangay Ilayang Polo and the host barangay - Ibabang Polo) in the Municipality of Pagbilao and one (1) IEC campaign with the municipal LGU of Pagbilao. Various stakeholders attended the IEC activities consisting of municipal government officials, barangay officials, and representatives from various sectors such as the academe, youth sector, senior citizens, TODA group and the farmers and fisherfolk community.

The IEC activities were conducted mainly because of these objectives: (1) to provide an update on the Pagbilao Power Plant Project of SMC (4X355MW Pagbilao Power Plant Project under CLPPC and 2X355MW Pagbilao Power Plant Project under LETI) from the previous proposed project in 2016 ; (2) to inform about the EIA process to be conducted for the two (2) power plant projects; and (3) to gather concerns, comments and recommendations from the stakeholders regarding the project and its possible impacts to the environment and the community.

This report presents the results and outputs of the IEC campaign. This report has two (2) sections: the first section presents the overall program flow and method used in the IEC activities and the second section summarizes the results of the IEC campaign. Photo-documentation and attendance sheets are included as **Attachments A** and **B1 – B3**, respectively while the presentation material on the proposed Project and EIA process used during the IEC activities are included as **Attachment C**.

2.0 IEC PROGRAM AND METHOD

The flow of the IEC program was formatted according to the table below (**Table 1**). Each IEC campaign had a registration desk to account for the number of participants and to know which stakeholder sectors were represented. The activities were formally initiated with an opening prayer led by a representative from the LGU.

Table 1
IEC Program Flow

Program of Activities	Person Responsible
Registration	APERCU
Opening prayer	LGU
Opening remarks	LGU
Introduction of the Project Team (SMC and Apercu)	SMC and APERCU
Presentation of the EIA process	APERCU
Presentation of the proposed project	SMC
Open forum and raising of issues to be addressed by the EIA Study	SMC and APERCU
Closing remarks	SMC and LGU

This was followed by the welcome remarks from an official where he/she acknowledged the presence of the representatives from SMC and Aperçu, as well as, the rest of the attendees. Afterwards, the emcee formally introduced the SMC and Apercu representatives and briefed the audience on the coming presentations.

Aperçu team presented the EIA process based on the DENR-EMB Revised Procedural Manual. The definition of EIA, its legal basis, what an Environmental Compliance Certificate (ECC) is, and the EIA process flow chart were explained thoroughly.

After Aperçu, SMC representatives then presented the description of the project. They presented the project's rationale, location and timeline. They also presented the benefits that the project will offer.

At the end of the presentations, Apercu facilitated open forums to gather concerns, feedback, or questions from the participants. Some of the participants wrote their concerns, clarifications, and recommendations on the sheets of paper distributed; while others raised their reactions vocally.

Once all the issues were noted and/or settled, a summary was presented to gain confirmation from the attendees. Afterwards, a representative from SMC and LGU delivered their messages for the program's closing remarks.

3.0 IEC OPEN FORUM RESULTS

3.1 SESSION 1 – IBABANG POLO

The first IEC session was held on 7 January 2020 from 10:00am – 1:00pm in the host barangay (Barangay Ibabang Polo) covered court. There were eighty-five (85) participants consisting barangay officials and various stakeholders (see **Table 5** for general stakeholder composition and **Attachment B1** for the attendance sheet). **Table 2** indicates the issues and concerns raised by the stakeholders and the responses of the proponent during the open forum.

Table 2
Session 1 Issues, Concerns and Recommendations with Proponent's Response

Issues and Concerns	Response of Proponent
PROJECT DESCRIPTION	
What type of coal will be used in the power plant? Based on our experience with the other plants in the area, during the rainy season, spontaneous combustion occurs. Moreover, foul smell is emitted by the plant at night. They claimed that they will be using Australian Washed Coal, however their suppliers brought Indonesia coals. We hope that you use quality coals for your power plant.	**SMC:** We will be using Indonesia Coal. As long as proper operational procedures are followed, we do not find any reason for foul smell to emanate from the plant. Coal in itself has no odor. These coals will be covered in the storage and transport conveyor systems. Spontaneous combustion can be prevented by compacting and proper material handling.
Does the project have a go-signal from the LGUs? If so, when will the project start?	**SMC**: The Environmental Compliance Certificate (ECC) has to be approved by the DENR. Supposing we have the ECC released by June, construction may start by the 3rd or 4th quarter of the year.
WATER	
What type of water will be used by the plant: freshwater or salt water?	**SMC**: The plant will use fresh water; but only in proportionately smaller quantities (compared to seawater). On the other hand, the plant will use larger amount of seawater which will be used for condenser cooling of the turbine in the power plant. Upon the return of the water back to the sea, its temperature should be almost the same as its intake temperature.
What can be the expected effects of the project to the fishermen?	**SMC**: The water discharge will have no effect whatsoever to the fishes. The condenser cooling system is a once-through flow of the seawater. The temperature of the water that will be released back to the sea will almost be the same as the temperature of the water when it was taken from the sea. The plant will not emit anything that will be harmful to marine life.

Issues and Concerns	Response of Proponent
There have been incidents of fish kill in our waters in Padre Burgos. We are not sure if this is caused by the plant nearby. No water testing has been conducted. Can SMC assist us on this?	**SMC**: Fish kill can be caused by many factors: human factors, fish cages and feeds, polluted waters, low oxygen content, etc. A fish inspector needs to be engaged to study this phenomenon.
Will the ash have any impact on the water?	**SMC**: A separate ECC in previous project was secured for the storage of the ash. The soil where the ash will be placed, will be studied: If the soil requires a lining, one will be installed to prevent leachate from going into the ground. This lining is impermeable and leachate will not seep down to contaminate the water table. A system for the operation of the ash storage will be designed and followed by the plant.
AIR	
The community in Sitio Capalos is down-wind. How will the foul smell from the plant be controlled?	**SMC**: Foul smell will be emitted if proper process and procedures are not followed. The proposed power plant will use the latest technology (in equipment, system, and procedures) and will therefore not emit any foul smell.
PEOPLE	
If possible, can trainings for basic occupational safety officer or first-aider be included in SMC's training/ livelihood program tie-ups with TESDA? Especially since DOLE mandates these skilled personnel for companies.	**SMC**: Yes, safety officers are required by DOLE. As a matter of fact, trainings like community-based first aider with certification are being done by the company in its Masinloc project area. The community may expect this here as well, especially since it is mandated.
The fishing area of the fisher folks in the barangay is getting smaller especially since the plants in the area are prohibiting fishermen from fishing in some parts of the municipal waters. What livelihood can be provided to senior fishermen and senior citizens?	**SMC**: We have partners that can aide us in possible livelihoods for the seniors and fishermen in the barangay. With these partners, we can identify programs for the upland and the coastal areas.
The senior citizens in the barangay cannot be hired as labor for the power plant. What types of livelihood can the company offer for the senior citizens so that we can benefit from the project as well? The government' support for the senior citizens is insufficient. They are in need of maintenance medicines and medical consultations.	**SMC**: The Corporate Social Responsibility (CSR) interventions of SMC are complimentary to the projects of the government. We will partner with the Local Government Units (LGU) and national government agencies to assess the needs of the community. SMC will only fill-in the gaps. This will ensure that there will be no duplication of projects. We will conduct a baseline study in the community for this purpose.
We suggest that scholarship programs be offered to the barangay. The graduates of these scholarships should then be prioritized when it comes to hiring. Moreover, the locals should be prioritized when hiring. At present about 70 to 80% of the constituents of the barangay are college graduates.	**SMC**: The company offers scholarships under the ENGINE program. There are Indigenous People (IP) and non-IP scholars. These scholars are prioritized in hiring.
May I be hired as a security guard?	**SMC**: Applications will be handled by the contractor.

Issues and Concerns	Response of Proponent
Fishermen should not be prohibited by land guards from fishing the area. Especially since there are many fishes below the structures. The fisher folks should be free to fish in the municipal waters	**SMC**: The company will apply for Foreshore and Miscellaneous Lease to include use of some portions of the sea. The fisherfolks are also not prohibited from fishing in the ocean. However, when a shipment is arriving, they are advised to keep their distance from the ships to avoid accidents. Furthermore, it is not recommended to fish below the structures. The big waves clashing below the structures is a safety hazard. In fact, an accident of the same nature has happened before.

3.2 SESSION 2 – ILAYANG POLO

The second IEC session was held on 7 January 2020 from 3:00pm – 5:00pm at the Barangay Ilayang Polo covered court. There were one hundred fifty-three (153) participants consisting barangay officials and various stakeholders (see **Table 5** for the general stakeholder composition and **Attachment B2** for the attendance sheet). **Table 3** indicates the issues and concerns raised by the stakeholders and the responses of the proponent during the open forum.

Table 3
Session 2 Issues, Concerns and Recommendations with Proponent's Response

Issues and Concerns	Response of Proponent
PROJECT DESCRIPTION	
After the TESDA training, how can we be assured that we will be hired by the project? Based on our previous experiences, locals are hired as non-skilled workers. I would like to note that many of the youth in the barangay are well educated and skilled (first aider, scaffolder, etc.).	**SMC**: For the training with TESDA, we will have a MOA indicating the obligations of the parties involved. The LGU will select who'll undergo the training. In our project Site in Masinloc, the PESO Manager recruits the trainees. In terms of hiring, we will follow the minimum number local hiring. These locals will be trained and will be endorsed to contractors for possible employment.
Will the plant provide us with free electricity?	**SMC**: The plant to be constructed and operated is authorized to produce electricity but not to distribute electricity. We can supply only to NGCP. However, electricity in the barangay may be subsidized, following the provisions of DOE on subsidization and prioritization.
Will the plant produce potable water?	**SMC:** The plant will purchase or produce water enough for operation. The options are to install a seawater desalination plant or purchase water from a company that will distribute water from Palsabangon river. The plant which is an electric producer does not sell water.
I would like to note that there are many NC II holders in the barangay. Is it possible for these NC II holders and other TESDA graduates, to directly work for SMC? Can SMC arrange this with TESDA?	**SMC**: The contractor decides on who to prioritize in hiring. However, you may provide us with a list of NC II holders and we will forward it to our contractors.

Issues and Concerns	Response of Proponent
Do you have environmental programs?	**SMC**: We have 747 programs: 7 million trees in 4,000 ha, in 7 Key Provinces. The Municipality of Pagbilao is one of the planting sites. This is a long-term engagement which involves tree planting, upland and mangrove plantation, capacity building for People's Organizations, and livelihood initiatives. Sample projects: mangrove plantation, coral reef rehabilitation, and aqua silviculture. A study still needs to be done to identify the needs of the community. We will be happy to work with you in identifying projects for the environment, health, and income generation projects.
If we, the fishermen's association, create a resolution requesting projects from SMC, will you oblige us?	**SMC**: It all depends on what project is requested. You may provide us with a resolution of your requested projects. These will be subject to evaluation.
If the barangay has a list of projects we want, can we create a resolution asking such projects from SMC?	**SMC**: SMC is open to your requests. These requests will be evaluated by management whether they are aligned with the company goals.
A concerned citizen should be involved during the study to assure its integrity. The potential dangers of the power plant should be studied: health hazards, air pollution, dust dispersion, etc. By products/potential pollutants should be managed/utilized to avoid pollution	**Apercu**: During the process of the EIA, Apercu will update the community of the results of the study. A copy of the draft result of the study for DENR approval will be provided to the LGUs. Indicated in this document are the commitments of the client. The Public Hearing will involve the community. The results of the study will be presented; including the impacts of the project There will be a multi-partite monitoring team composed of stakeholders. This team will monitor the compliance of SMC to the ECC. They will be familiar with all of the contents of the EIA.

3.3 SESSION 3 – PAGBILAO LGU

The third IEC session was held on 8 January 2020 at the Pagbilao Session Hall in the host municipality of Pagbilao. There were twenty (20) participants mainly consisting city officials such as Sangguniang Bayan members, municipal councilors and city department heads (see **Attachment B3** for the full list of attendees). **Table 4** indicates the issues and concerns raised by the stakeholders and the responses of the proponent during the open forum.

Table 4
Session 3 Issues, Concerns and Recommendations with Proponent's Response

Issues and Concerns	Response of Proponent
PROJECT DESCRIPTION	
What does "supercritical" mean?	**SMC:** A supercritical boiler produces steam that is above than the critical point (in temperature and pressure) of water. In this state, water which is in a plasma state will not need additional heat to convert from liquid to steam. Thus, less coal will be needed to produce the steam. The only limitation in the technology is the heat resistance of the steel used because of the higher steam temperature and pressure.
Does "supercritical" refer to the coal or the technology?	**SMC:** It refers to the technology used. Use of supercritical technology means complying with High Efficiency Low Emission or HELE requirements of our customer. Essentially, this means produce more output with less input.
Compared to other technologies, will this plant produce more wastes/emissions? Are there different technologies with the same HELE?	SMC: For producing electricity this plant will use less coal for every kwhr of power produced compared to other technologies because of the supercritical state of the steam. Less coal means less wastes/emissions.
If the sulfur is managed by the technology, where will it go?	**SMC:** Sulfur in the power plant's emission can be controlled by different technologies and the technology to be used is under evaluation. These technologies will ensure that emissions will follow DENR emission standards. Options include: 1. Sea Water Flue Gas Desulfurizer. Sea water will absorb the sulfur gas, then corrected for acidity using additional seawater. This is then returned back to sea because the Sulfate produced is a normal component of seawater. 2. Gas Suspension Absorber Technology which uses Limestone to convert the sulfuric gas into gypsum. Gypsum is used for making gypsum boards.
What effect on the marine life can be expected if the output of the sea water desulfurizer is released back to the ocean?	**SMC**: A conversion machine will be used for the seawater desulfurizer. No sulfuric acid will be released back into the ocean. The output of this option will be normal sea water.

Issues and Concerns	Response of Proponent
	The discharge will be tested before it is released back into the sea.
There should be a regular check-up on the environment for all of the barangays; Especially since air pollutants travel beyond administrative borders.	**Apercu**: The model of the plant will determine the extent of potential impacts on the air and water. There will be a list of proposed monitoring sites for approval of the LGUs.
Who will review the data gathered?	**Apercu**: The Review Meetings will be facilitated by the DENR. DENR will also form the review committee. The Mayor, MENRO, MPDO, DOE and other concerned agencies will also be part of the review committee.
Can the constituents take part in the review committee?	**Apercu**: The barangays will have a copy of the draft of the EIA.
What technologies will be used to eliminate pollution and other negative impacts?	**SMC**: We will concentrate on the usual complaints on the smell, ash, coal in the ocean, etc. Following proper process and common sense can eliminate these impacts. Technologies to be used for air pollutants are Electrostatic Precipitators and Desulfurizer technologies. To manage the NOx, SCR technology may be used.
Will the steam boiler use fresh water or salt water? The permit to use the municipal waters should be within the jurisdiction of the Municipal Government. There are two (2) marine sanctuaries in the Municipality. Even a 1-degree deviation of the ocean temperature can cause coral bleaching. It will be devastating to marine life. Please take this into consideration.	**SMC**: The boiler uses freshwater. Two source options are possible: 1. Sea Water desalination 2. Piped water from Palsabangon During normal operation, this fresh water will just be condensed for recirculation. Little amounts of fresh water will be used during operation. Sea water will also be used by the plant for the condenser cooling for the boiler. Before releasing seawater back to the ocean, it should be within 3 degrees of the temperature it was initially taken. We have secured the commitment of our contractors that this will be followed.
May we request for programs for the fishermen: scholarship, health, cooperatives, livelihood support (*alimasag/tahong* culture)	**SMC**: We will develop projects for the community based on baseline study. We will partner with government agencies such as DENR/ BFAR for our projects.
Please provide full scholarship for the youth.	**SMC**: Scholarship program is one of the education programs of SMCGP Foundation in all its host communities.
One of the needs of Brgy. Ibabang Polo is water. Is it possible for the plant to desalinate water for household use?	**SMC**: Hopefully, the need for water will be identified in the study on the needs of the community. CSR projects will be based on the baseline study.
Trees cut during the construction should be replaced. SMC should follow the ratio set by DENR.	**SMC**: We have Adopt a River Program under the 747 Program. There is already an initial commitment to adopt about 100 ha. of Palsabangon River as well as upland and mangrove

Issues and Concerns	Response of Proponent
	rehabilitation
Is there an identified intake point in Palsabangon River?	**SMC**: The potential intake point is about 19km away from the project site. However, this option for freshwater is still being studied for its economic feasibility.
There is an ordinance dictating that coal yards should be covered? Is this the case for the plan for the power plant?	**SMC**: We will use covered coal yard.
There may be duplication in the developmental projects and the CSR of the company. Are you planning for resettlement? The LGU is considering socialized housing projects. Can you talk with the other plants to also work with us?	**SMC**: At present, it is difficult to commit if we will be doing resettlement programs. We will align our project to the LGU initiatives. The company aligns its CSR initiatives with the SDG. We will brainstorm with the LGU on the gaps and needs in the community. SMC will not replace the government in its mandate for social development. We will only fill-in these gaps and complement the efforts of the government. We suggest that the LGU to spearhead in coordination between the power plant companies in Pagbilao with regards to avoidance of duplication of CSR initiatives
When will construction start?	**SMC**: Approximately June 2020. Once the proposal is approved and signed by the Boss; and the ECC is approved by the DENR.
What will happen to the ash accumulated by the plant? Will SMC open a cement factory in Pagbilao? If the ash will be sold outside of Pagbilao, we would like to mention that the LGU will not benefit through taxes from this option.	**SMC**: The fly ash will be sold. About 30% of the total ash is bottom ash will be put in a land fill. If the ash will not be sold, it will be placed in an ash pond. This ash pond is already proposed for an ECC from the DENR. The land and soil in the area will be studied for appropriate design of the storage system. The team is not in a position to answer this. The concern of the team is the power plant and not the potential cement plant.
Will the relocation of the communities be part of the CSR? May we request that you partner with the LGU for the socialized housing program? The houses to be offered to the community are not free or at least are on soft-loan-basis. Can we meet with the department in SMC that is in charge of this? We would like to arrive at a certain vision for the project, so that it won't be a dole-out.	**SMC**: A resettlement plan is not part of the CSR Flagship of the Company but if there will be a social component it will form part of the CSR of the company. It will take into consideration the economic deprivation of the community. We will write a correspondence for a meeting with the LGU.
Are the existing CSR programs of SMC a separate initiative from the mandates of the EPIRA Law, ER- 1-94?	**SMC**: The fund for ER-1-94 is separate from the CSR initiatives of SMC. We go beyond compliance.
May I verify that the location for the site is in Brgy. Ibabang Polo. The area is visible feom the sea,	**SMC**: I believe that area is initially supposed to be for the cement plant. But as of now, we

Issues and Concerns	Response of Proponent
and it is already cleared. But I'm sure you will comply with all of the paperworks.	have the go signal to use that cleared space.
Will the production and efficacy of the plant decrease over time due to wear and tear (caused by high temperatures), such that it will eventually be only as efficient as regular coal-powered power plants?	**SMC**: The boiler is designed to withstand high temperatures and pressure and we expect to maintain its integrity over time. The steam will be flow freely through the boiler tubes on its way to the turbine and is called a once thru design. The plant will implement a maintenance program for the plant. Every year, the power plant will be shut down for 30 days; and every 5 years 2 months of shutdown. The expected life of the power plant is 25 years. The boiler is expected to be working efficiently during the life of the plant when following the required maintenance program.
Are the mitigating measures for hazards, considering climate change? The conveyor is especially vulnerable since it is out at sea and vulnerable to typhoons and storm surges.	**SMC**: During the review of the technical proposal of the plant, the project will be designed for basic site condition of rainfall, storm surges, and earthquakes. The 2015 updated standards will be followed.
Will SMC itself buy the coal? Based on our experience, other plants make excuses for bad coal-use since they have no choice in the coal supplied by their suppliers.	**SMC**: We will be buying our coals.
How much is the total project cost? Please be consistent on this. The declared value should be the same for publication purposes and tax purposes.	**SMC**: Project cost is about 1.9 M USD per MW but will verify this amount later.

4.0 SUMMARY OF IEC RESULTS

4.1 PARTICIPANTS

Table 5 presents a summary of the number of participants and a list of stakeholders who attended the series of IEC activities.

Table 5
IEC Summary of Attendance

Session/ Location	Date and Time	No. of Participants	Stakeholders
1st / Barangay Ibabang Polo Covered Court	7 January 2020 (Tuesday), 10:00 am – 1:00 pm	85	• Barangay chairperson • Other barangay officials • Senior citizens • Barangay health workers • Fisher folk community
2nd / Barangay Ilayang Polo Covered Court	7 January 2020 (Tuesday) 3:00 pm – 5:00 pm	153	• Barangay chairperson • Other barangay officials • Barangay health workers • *4Ps* • Senior citizens
3rd / Pagbilao Session Hall, Municipal Hall of Pagbilao	8 January 2020 (Wednesday) 9:00 am – 11:00 am	20	• Municipal councilors • Municipal department heads/ representatives

4.2 SUMMARY OF ISSUES, CONCERNS AND RESPONSES

Table 6 shows a summary of the issues and concerns raised during the IEC campaigns by the participants and stakeholder representatives distributed into different categories.

Table 6
Summary of Issues, Concerns and Recommendations Raised

Category	Issues and Concerns
Project Description	• What type of coal will be used in the power plant? We hope that you use quality coals for your power plant. • Does the project have a go-signal from the LGUs? If so, when will the project start? • Will the plant provide us with free electricity? • Will the plant produce potable water? • What does "supercritical" mean? • Does "supercritical" refer to the coal or the technology? • Compared to other technologies, will this plant produce more wastes/emissions? Are there different technologies with the same HELE? • If the sulfur is managed by the technology, where will it go? • Will the steam boiler use fresh water or salt water? Even a 1-degree deviation of the ocean temperature can cause coral bleaching. It will be devastating to marine life. Please take this into consideration. • Is it possible for the plant to desalinate water for household use? • Is there an identified intake point in Palsabangon River? • There is an ordinance dictating that coal yards should be covered? Is this the case for the plan for the power plant? • Can you talk with the other plants to also work with us? • What will happen to the ash accumulated by the plant?

Category	Issues and Concerns
	• Will the production and efficacy of the plant decrease over time due to wear and tear (caused by high temperatures), such that it will eventually be only as efficient as regular coal-powered power plants? • Will SMC itself buy the coal? • How much is the total project cost? • What type of water will be used by the plant: freshwater or salt water?
CSR & Other Projects	• Do you have environmental programs? • If we, the fishermen's association, create a resolution requesting projects from SMC, will you oblige us? • If the barangay has a list of projects we want, can we create a resolution asking such projects from SMC? • May we request for programs for the fishermen: scholarship, health, cooperatives, livelihood support (*alimasag/tahong* culture). • Will the relocation of the communities be part of the CSR? May we request that you partner with the LGU for the socialized housing program? Can we meet with the department in SMC that is in charge of this? • Are the existing CSR programs of SMC a separate initiative from the mandates of the EPIRA Law, ER- 1-94? • If possible, can trainings for basic occupational safety officer or first-aider be included in SMC's training/ livelihood program tie-ups with TESDA? • We suggest that scholarship programs be offered to the barangay. • May I be hired as a security guard?
Project Impacts	• What effect on the marine life can be expected if the output of the sea water desulfurizer is released back to the ocean? • There should be a regular check-up on the environment for all of the barangays; Especially since air pollutants travel beyond administrative borders. • Are the mitigating measures for hazards, considering climate change? • What can be the expected effects of the project to the fishermen? • There have been incidents of fish kill in our waters in Padre Burgos. We are not sure if this is caused by the plant nearby. No water testing has been conducted. Can SMC assist us on this? • Will the ash have any impact on the water? • The community in Villa Kapalos is down-wind. How will the foul smell from the plant be controlled? • Fishermen should not be prohibited by land guards from fishing the area. Especially since there are many fishes below the structures. The fisher folks should be free to fish in the municipal waters.
Training and Liveihood	• After the TESDA training, how can we be assured that we will be hired by the project? • Is it possible for these NC II holders and other TESDA graduates, to directly work for SMC? Can SMC arrange this with TESDA? • What livelihood can be provided to senior fishermen and senior citizens? • What types of livelihood can the company offer for the senior citizens so that we can benefit from the project as well? The government' support for the senior citizens is insufficient. They are in need of maintenance medicines and medical consultations. • The graduates of the scholarships should then be prioritized when it comes to hiring.
Review Process	• A concerned citizen should be involved during the study to assure its integrity. • Who will review the data gathered? • Can the constituents take part in the review committee?
Other Permits	• Trees cut during the construction should be replaced. SMC should follow the ratio set by DENR. • The area is visible from the sea, and it is already cleared. But I'm sure you will comply with all of the paperworks.

Attachment A. Photo documentation

IEC Session 1 – Barangay Ibabang Polo	
	
IEC Session 1 Venue: Barangay Ibabang Polo Covered Court	A representative from barangay leading the opening prayer.
	
IEC Session 1 Venue: Barangay Ibabang Polo Covered Court	Apercu presenting the EIA Process

IEC Session 1 – Barangay Ibabang Polo	
	
SMC representative presenting the Power Plant Projects	Participant raising his concern regarding the projects.
	
Participant raising his concern regarding the projects.	SMC representative answering the concern of the participants.

IEC Session 2 – Barangay Ilayang Polo	
	
IEC Session 2 Venue: Barangay Ilayang Polo Covered Court	Participants registering on the provided attendance sheets for the IEC session
	
Apercu leading the introduction for the IEC Session	SMC representative presenting the Power Plant Projects

IEC Session 2 – Barangay Ilayang Polo	
	
Apercu presenting the EIA Process.	Apercu facilitating the open forum.
	
Participant from Brgy. Ilayang Polo raising his concern regarding on the projects.	SMC representative answering issues/ questions/ concerns from the participants.

IEC Session 3 – Pagbilao LGU	
	
IEC Session 3 Venue: Pagbilao Session Hall	SMC representatives and participants from during opening prayer.
	
Apercu leading the introduction for the IEC Session.	Apercu presenting the EIA Process.

IEC Session 3 – Pagbilao LGU	
	
SMC representative presenting the Power Plant Projects.	Participant from Pagbilao MLGU raising his concern regarding on the projects.
	
Apercu answering the issues/ questions/ concerns from the participant.	SMC representative answering the concerns from the participant.

Attachment B1. Ibabang Polo IEC Attendance Sheet

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
LETI 2x355MW Supercritical Pulverized Coal Power Plant Project
Attendance Sheet

SMC GLOBAL POWER HOLDINGS CORPORATION

Venue: Ibabang Polo Covered Court
Date: January 7, 2020 (Tuesday)
Time: 10:00am – 1:00pm

aperçu CONSULTANTS INC.

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
1	AJ Tolibas	✓		0927 486 9506	Sauyo, QC	[illegible]
2	noreta catalag	[illegible]	✓	0910 690 8881	Sitio Tubahin	[illegible]
3	natalla Florido	[illegible]	✓		Sitio Tubahin	natalla
4	Amelia P. Abanilla		✓	09077489662	Sitio Little Batangas	[illegible]
5	NENITA RAMOS		✓	09197047705	TULAY BUHANGIN	[illegible]
6	ROLLY TABOY	✓			CAPALGS	[illegible]
7	ROSENDO BATOCABE			09996745280	TUBAHIN	[illegible]
8	PANCHITO ALBUERO	✓		09300137973	LTEL BTAGAS	[illegible]
9	JOSE LAPARAN SR	✓		09122465574	IBA - POLO	[illegible]
10	Dioscoro Pinilla	✓			St. Paitoc Iba. Polo	[illegible]
11	Felipe Ruiz	✓			little Batangas	[illegible]
12	Eduardo Porte	–			BALESAN	[illegible]
13	ROLANDO AMANDY	—			BALEGAN	[illegible]
14	Mary Jane Pona		✓	09097001317	Polo Pagbilao, Quezon -	[illegible]
15	Fidelina Jadulan		✓	09613977005	Brgy. Polo	[illegible]

SMC GLOBAL POWER HOLDINGS CORPORATION

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
LETI 2x355MW Supercritical Pulverized Coal Power Plant Project
Attendance Sheet

Venue: Ibabang Polo Covered Court
Date: January 7, 2020 (Tuesday)
Time: 10:00am – 1:00pm

aperçu CONSULTANTS INC.

No.	NAME	GENDER		CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
		M	F			
16	Lourdes O. Malinas		✓		Sitio Capalos Iba Polo	Sm
17	Angelina Maranga		F		San Roque	[illegible]
18	JHANNET MENDOZA ALMARIO		✓	09300138083	SITIO LITTLE BATGS IBA. POLO	[illegible]
19	Nemesio P. Monteroso	✓			" SCHOOL IBA. POLO	Nemesio
20	Adelina M. Manalo		✓		Sitio Little Batgs Brgy Iba	[illegible]
21	JETLIE BAÑARES	✓		09469008779	Sitio Capalos	[illegible]
22	JOSE LAPARAN JR.	✓		09122465574	Sitio Capalos	[illegible]
23	EPIFANIA CATAMIO		✓	09106806616	SITIO PALITOE IBA. POLO	E. Catamio
24	D. Regino	✓				[illegible]
25	Enely Zalite	✓			TULAY	[illegible]
26	RAQUITO J. Eulin	✓		09303525315	Sitio Capalos	[illegible]
27	ROLANDO ZAFRA	✓		09184317241	SITIO SCHOOL	[illegible]
28	ROWENA G. MARTINEZ		✓	09296400248	SITIO CAPALOS BRGY IBA. POLO	[illegible]
29	Veromedia P Robles		✓	09465700726	Capalos Polo	V. Robles
30	Abigail M. Delos Santos		✓	09386660183	Sitio Manggo	A. Delos Santos

Information, Education and Communication (IEC) Campaign
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Attendance Sheet

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Venue: Ibabang Polo Covered Court
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aperçu CONSULTANTS INC.

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
31	Gemelita Gato		✓		Iba Iba Polo - Banlisan	G. Gato
32	Amorliza Tiosan		✓	09463145557	Ibaba Polo - Banlisan	[signature]
33	AIZA S. SERRANO		✓		IBA. Polo	[signature]
34	TIMOTIO Pedincuay	✓			Iba. Polo	[signature]
35	Susan Abat		✓		Makata	[signature]
36	May Lauron		✓	09501674294	Mompas	M. Lauron
37	Marubel Carmona		✓		St Vincent	M. Carmona
38	Benito A. Alvorena	✓		09282695285	[illegible]	[signature]
39	EXEQUIEL P. MERLE	✓		09502342455 (TNT)	ILA. IBAGUMBUNGAN	[signature]
40	FLORANTE R MENDIOLA	✓		09498605877	KINAGUNAN IBABA	[signature]
41	REYNALDO TANEX	✓		09993482679	ST. VINCENT	[signature]
42	Ana-Flor Malunin			09389337307		[signature]
43	Kotelgna Terit			09077528563	ST. Tubahin	[signature]
44	Ma. Flora Inoc			09123067388	ST. CaPolos	Ma. Flora Inoc
45	Sandra INOC			09123067388	ST. CaPalos	Sandra Inoc

Information, Education and Communication (IEC) Campaign
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SMC GLOBAL POWER HOLDINGS CORPORATION

Venue: Ibabang Polo Covered Court
Date: January 7, 2020 (Tuesday)
Time: 10:00am – 1:00pm

aperçu

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
1	Agustina T Petallar		✓	09484515715	San Roque	APetallar
2	Editha M Inoc		✓	09515235281	Sitio San Roque	Inoc
3	Marissa L Tradio		✓		Sitio San Roque	MarissaLTradio
4	Crispina M. Lauren		✓	09300125578	Sitio San Roque	C. Lauren
5	Jose Justares Sr	✓			Sitio Pantok	[signature]
6	Francisco Gerida	✓		09483241489	Sitio Martin Heru	[signature]
7	HENRY Roperez	✓			//	[signature]
8	Nicolas M. Inoc	✓		09473813310	// Sitio Capalos	[signature]
9	VIVIAN F. PORTOCAB		✓		Sitio Manega	[signature]
10	FE CATANDO		✓		Sitio M. Daunera	[signature]
11	Estrella Cotihan		✓	0946 920 3393	Little Banggas	ERC
12	Marie Inoc		✓	0998-224-4418	Sitio Ibaba. Polo.	[signature]
13	Berbie Kimbo		✓	0923672 7990	Sitio Little Batangas	[signature]
14	Miraluna Molaluna		✓	09303673595	Sitio Capalos Iba. Polo	[signature]
15	Desdado Santin	✓			" " "	[signature]

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
LETI 2x355MW Supercritical Pulverized Coal Power Plant Project
Attendance Sheet

SMC GLOBAL POWER HOLDINGS CORPORATION

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Date: January 7, 2020 (Tuesday)
Time: 10:00am – 1:00pm

aperçu CONSULTANTS INC.

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
16	VIRGILIO M. CALIZO SR	✓		09206365783	PANTOC	[illegible]
17	ROSITA M. MINJARES		✓	09611055425	BANLISAN	[illegible]
18	KIM ANGELO P. JAYAG	✓		0920 275 9596	CAPALOS	[illegible]
19	Filomena A. Limpot		✓	09109435917	Pantoc	[illegible]
20	ABUNDIO O. ALZULA	✓		0985 8842 542	Brgy. Sta. Catalina Atimonan Quezon	[illegible]
21	LUCITA S. ORIEL		✓	0935 2116218	Brgy. Sta. Catalina Atimonan, Quezon	[illegible]
22	Ricardo C. Fabie	✓		09303981627	San Vicente P.B.Q	[illegible]
23	Lea C. PORTE		✓	09953758689	Little Batangas	[illegible]
24	AVELINA M. ABADILLA		✓	09501342975	School	[illegible]
25	ABELARDO GONZAGA	✓		091A2H63X	School	[illegible]
26	Gregorio Catamic	✓		09560723190	Sitio Tabakin	[illegible]
27	Criselda P. Amandy		✓	09484039296	Sitio Banlisan	[illegible]
28	ALICE GEMINA			09197331686		[illegible]
29	Ronalin BATOCANE		✓	0912 3992689	sitio School	[illegible]
30	ROPEL O. JACA	✓		09297699271	SITIO TUBAHIN	[illegible]

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
LETI 2x355MW Supercritical Pulverized Coal Power Plant Project
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SMC GLOBAL POWER HOLDINGS CORPORATION

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aperçu CONSULTANTS INC.

No.	NAME	GENDER		CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
		M	F			
31	Isidro G. Bartin	✓		09091291285	Iba. Polo. Pag. Quezon sitio mangga	[signature]
32	Risel R. Maglasang		✓		Iba Polo sitio Pag Quezon mangga	
33	Pedrito Tiosan	✓		09105132544	Palsabangon Pag Que	[signature]
34	AMELITO ESCAMILLAS	✓		09481045153	P. BURGOS QUE.	[signature]
35	Joan Limpot			09123067388	St. Capalos	
36	ERIC EDUARTE	✓		09079895939	IBA. POLO CAPALOS	EDUARTE
37	Lorna Wagwag	✓	✓	09502383644	ibang-Pulo - capalos	[signature]
38	ELMER Z CALIXAO	✓		09496511574	SITIO TULAY BUNAKAN	[signature]
39	TESS A. DACUNO		✓	09991969681	SITIO SCHOOL IBABA POLO	[signature]
40	GILBERT DACUNO	✓		09493337020	SITIO SCHOOL IBABA POLO	[signature]
41						
42						
43						
44						
45						

Attachment B2. Ilayang Polo IEC Attendance Sheet

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
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SMC GLOBAL POWER HOLDINGS CORPORATION

Venue: Ilayang Polo Covered Court
Date: January 7, 2020 (Tuesday)
Time: 3:00pm – 5:00pm

aperçu CONSULTANTS INC.

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
1	Nenifa Lustado		✓		Sitio Maulawin	N.L
2	Marina de pata		✓	09081760581	Sitio Maulawin	[signature]
3	Aileen P. Calucin		✓	09302301369	" "	[signature]
4	Liberato L. Dulapa	✓		09485517843	Maulawin	[signature]
5	Julio T. Martinez	✓		09122938150	Kulase	[signature]
6	Josefina Atienza				Maulawin	[signature]
7	Rosalie Paghubasan	"			Maulawin	[signature]
8	Ricardo Paghubasan	"			"	[signature]
9	Nely Paghubasan		✓	09394528584	"	[signature]
10	Janice Jamac		✓	09120269397	Sitio Maulawin	[signature]
11	Rose A Segarino		✓		"	Segarino
12	Nestor Pastorete	✓			"	N Pastorete
13	Lidia B Quezon		✓		Resettlement	Lydia
14	Marilyn D. Abaya		✓	09122119985	"	Marilyn
15	Myrna Sorod		✓			Myrna Sorod

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
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Attendance Sheet

SMC GLOBAL POWER HOLDINGS CORPORATION

Venue: Ilayang Polo Covered Court
Date: January 7, 2020 (Tuesday)
Time: 3:00pm – 5:00pm

aperçu CONSULTANTS INC.

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
16	Jose Atienza	✓			Manlawin - ILA POLO	[signature]
17	Josephine Atienza		✓		4/Ps - Kalipi - Manlawin ILA Polo	[signature]
18	Erlinda Orea		✓		Manlawin ILA POLO	Erlinda Orea
19	Ofelia Sagarino		✓		"	[signature]
20	Eloisa Katio		✓		"	[signature]
21	AMELITO ESCAMILLAS	✓			P. BURGOS QUE	[signature]
22	Pedito Tusan	✓			Ka. Palsabangon Pag Que	[signature]
23	Benito R. Alcoreza	✓			Brgy Binolaan P.Q.	[signature]
24	Ricardo C. Fabie	✓		09303981527	Brgy. San Vicente	[signature]
25	Florante Mendoza	✓		0949 860 5827	KINAGUNAN P.B.Q	[signature]
26	BRENDA ABLAY		✓		BRGY ILAYANG POLO	[signature]
27	EMELITA ABEGUELA		✓		" " "	[signature]
28	Danica A. Mercantina		✓	09503471759	" "	[signature]
29	Gemma R. Arcipe		✓	09107541106	BRGY. ILA. POLO	[signature]
30	Excelena V. Mireca		✓	09091063875	BRGY Ila Polo	[signature]

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
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SMC GLOBAL POWER HOLDINGS CORPORATION

Venue: Ilayang Polo Covered Court
Date: January 7, 2020 (Tuesday)
Time: 3:00pm – 5:00pm

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
31	Adelina Mendoza		✓	09467051922	ILA Polo, Pagbilao	
32	Mary Joy Fordaliza		✓	09090436[illegible]020	ILA Polo. Maulawin	Mary Joy
33	Eusebio Mendoza Sr.	✓		09467051922	"	
34	Eusebio Mendoza Jr.	✓			"	
35	Gina Mendoza		✓	0950 240 8244	"	
36	DOMINADOR OLO	✓		09082889729	ILA. POLO - PAGBILAO	
37	BUTALID JOSI M.	✓		09182068725	ILA. POLO. PAG-BILAO	
38	Jing Jing M. Flores		✓	09503473120	Resettlement	
39	DOMINGO ZOLETA JR.	✓		09469200150	ILA. POLO	
40	Alice C. Estrope	✓		09988661030	ILA POLO	
41	ERWIN J DUMADA	✓		09289655908	ILA POLO	
42	Real Santos		✓	09502700844	Ila Polo	
43	Lorelie Valdez		✓	09462979622	Ila. Polo Resettlement	
44	Marivic B. Darias		✓	09564ie27848	Maulawin	
45	Marilyn P. Magbaluyo		✓	09076900473	Maulawin	

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
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aperçu CONSULTANTS INC.

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
46	Rosemarie T. Mangsat		✓	09467049200	Sitio Kulasi	[signature]
47	Eden R. Batocabe		✓	09447028371	" Kulasi	[signature]
48	Angelyn P. Bontilao		–	09380614942	Sitio Kulasi	[signature]
49	Maria Fe Batocabe		–		Sitio Kulasi	[signature]
50	Marites Yopyop		✓	09469007584	Sitio Kulasi	[signature]
51	Rechelle R. Calaluan		✓	09506758048	Sitio Kulasi	[signature]
52	Angelica D. Luna		✓	09123067590	Sitio Kulasi	[signature]
53	Judy Ann Luna		✓	09463089150	Sitio Kulasi	[signature]
54	Reysel Trocay		–	09503472431	Sitio Kulasi	[signature]
55	Joan Y Luna		✓	09481056091	Sitio Kulasi	[signature]
56	Lerma Luna		✓		Sitio Kulasi	[signature]
57	Alacias Vilela	–		09504309358	Sitio Kulasi	[signature]
58	Jing Jing Luna		✓	0938420827	Sitio Kulasi	[signature]
59	Ron Aldo Lopez	✓			Aisit ul mo	[signature]
60	Rodolfo de Paz	✓			Resettlement	[signature]

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
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aperçu CONSULTANTS INC.

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
1	JULIE F. MOLLEJON JR	/		09094372679	SITIO MAULAWIN	
2	ALLAN A. NACIONAL	/			SITIO MAULAWIN	
3	Evalyn V Betaudo	**	V	09306959783	Sitio Maulawin	
4	Roselyn C. Rafla		V	09481853144	Sitio Maulawin	Roselyn
5	Shirley de Dios		F		Sitio Maulawin	
6	[illegible]		-		Sitio Maulawin	
7	George Rafallo	V		09207441984	Sit 11	
8	Letacio Mollejon	✓			11 Polo	
9	Rodrigo Y. Luna Jr.	✓		09090433897	Sitio Maulawin Brgy. Ibabang Polo	
10	Flora dePala		✓		Sitio Maulawin	
11	Rosita E. Sapul		✓	09506747863	Sitio Maulawin	R. Sapul
12	M					
13	Renato Guevarra	/		~~09058842542~~	Sitio Litogan	
14	EDIONICIO O. DEZILLA	/		09058842542	Sta Catalina, Atimonan Que	
15	EXEQUIEL R. MERLE	✓		09502342455	ILA. BAGUMBUNGAN P.Q	

Information, Education and Communication (IEC) Campaign
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LETI 2x355MW Supercritical Pulverized Coal Power Plant Project
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aperçu CONSULTANTS INC.

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
16	LITO G. ABLAY	✓		09127901014	ILA. Polo MAULAWIN	[signature]
17	REGINO MIRAYUAM		✓	09079752502	ILA. POLO MAULAWIN	[signature]
18	MARINEL ESTROPE		✓	09124416248	ILA. POLO MAULAWIN	[signature]
19	SONNY ESTROPE	✓		"	ILA. POLO MAULAWIN	[signature]
20	Neonie P. De Guzman		✓	0919-9530026	Ilayang Polo Maulawin	[signature]
21	Baby Jean E Mendoza		✓	09484038886	Ilayang Polo Maulawin	BabyJean
22	Darren E. Gadia		✓	09121506639	Ilayang Polo Resettlement	[signature]
23	ZENAIDA A. PUREZA		✓	09467028866	" " "	[signature]
24	Rina O. Bertis		✓		" " "	[signature]
25	Belen V. Colonioso		✓	09461123382	" " "	[signature]
26	Jessica Mercantin		✓	09484784497	Ila. Polo	[signature]
27	Alicia Calderon		✓	09483225701	Ilaya Polo Maulawin	[signature]
28	Mildred C. Reymoro		✓	09106811973	Ila. Polo	[signature]
29	Nida M. Batalla		✓	0930704625	" "	[signature]
30	Carmen Mercadejas			09099081415	" "	[signature]

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
LETI 2x355MW Supercritical Pulverized Coal Power Plant Project
Attendance Sheet

SMC GLOBAL POWER HOLDINGS CORPORATION

Venue: Ilayang Polo Covered Court
Date: January 7, 2020 (Tuesday)
Time: 3:00pm – 5:00pm

aperçu CONSULTANTS INC.

No.	NAME	GENDER		CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
		M	F			
31	Romeliza D. Pureza		✓	09079670898	Sitio Maulawin	[illegible]
32	Abigail P. Prames		✓	09465396108	Sitio Kulasi	[illegible]
33	Jienit Tamon		✓	0948-353-9916	Sitio Kulasi	[illegible]
34	Maritess D. Norbe		✓	09502468395	Sitio Maulawin	[illegible]
35	Evelyn E Puraya		✓		S Kulasa	Evelyn Puraya
36	Eunica T. Masiera		✓	09120272177	S Kulasi	[illegible]
37	Concita E Tinamisan		✓	09120272177	S Kulasi	c Tinamisan
38	Marilou B. Red		✓	09109981882	Sitio PIÑA	[illegible]
39	Marilyn B. Alvarado		✓		"	Marilyn
40	Cinalyn Peramo		✓	09367866758	"	[illegible]
41	Mary Jane Apaya		✓	09126688378	"	m.apaya
42	Gloria Pureza	✓			"	Gloria Pureza
43	ESPERIDIONA FLORES	✓			"	[illegible]
44	MARY FLOR QUIZON		✓	09389092876	SITIO MAULAWIN	[illegible]
45	[illegible]					[illegible]

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
LETI 2x355MW Supercritical Pulverized Coal Power Plant Project
Attendance Sheet

SMC GLOBAL POWER HOLDINGS CORPORATION

Venue: Ilayang Polo Covered Court
Date: January 7, 2020 (Tuesday)
Time: 3:00pm – 5:00pm

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
1	Nardita Orizon	✓			Ilay. Polo Resettlement	
2	Oriculo C. Egot Jr.	✓			IL. Polo	
3	Danny Pagtubasan	✓			IL Polo	
4	Reno D. Biatiola	✓			IL. Polo	
5	ARIEL ESTROPE	✓		0912,7967,295	" "	
6	Bonifacio Pagtubasan	✓		09077919914	" "	
7	MICHAEL JACA	✓		09674445775	" "	
8	Wilfredo Francisco	✓		09[illegible]1762	IL Polo	
9	Kanny Estrope	✓		09108051762	" "	
10	Richard MARAPAO Timamisan	✓		09288762 8334	BRGY ILA Polo Pagbilao QUEZON	
11	PAGTUBASAN ELITE P.		✓	09503972831	ILAYANG POLO PAGBILAO C. QUEZON	
12	MELYDA BOrnale		✓		" "	
13	John Paul A. Ablay	✓		09502773018	Stio - Resettlement	
14	Lucio Mallijan	✓		09502773018	Stio - Resettlement	
15	LUCITA S. ORIEL		✓	09352116218	Sta. Catalina Atimonan, Quezon	

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
LETI 2x355MW Supercritical Pulverized Coal Power Plant Project
Attendance Sheet

SMC GLOBAL POWER HOLDINGS CORPORATION

Venue: Ilayang Polo Covered Court
Date: January 7, 2020 (Tuesday)
Time: 3:00pm – 5:00pm

aperçu CONSULTANTS INC.

No.	NAME	GENDER		CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
		M	F			
16	Gerlie Pastorete		/	0912 41995215	Brgy Ilayang Polo Resettlement	D. Pastorete
17	Amie Joven		/	09122937738	Brgy. ILA. POLO. Sitio. Manlauin	Ajuven
18	Ma. Elena Garcia		/	09384203298	Brgy Ila. Polo	Ma. Elena Garcia
19	[illegible]	/		09462978415	Brgy ILA POLO	[illegible]
20	JON JON PORTE	/		0930 195 9261	BRGY ILA POLO	[illegible]
21	Cezel Estoque		/	09462478415	Brgy ILA POLO	[illegible]
22	Jeremy Mendoza		/	09612755790	Brgy ILA Polo	[illegible]
23	Kanul Luna	/		09277017145	" "	[illegible]
24	ROBERT ATIENZA	/		09150 520 1149	" "	[illegible]
25	ABELARDO F. PUREZA	/			" "	[illegible]
26	Jonathan D. Porte	/	/	0948 804 1278	ILA. POLO	[illegible]
27	Genie M. Peñaflorida		/	09 46 247 9968	Ila. Polo	[illegible]
28	Zorada P. Enla		✓	09077434511	Ila. Polo	[illegible]
29	Eulalia A. Luna		✓	09193703823	" "	E. Luna
30	JAIME O. MORADILLO		/	09265849015	ILA.	J. Moradillo

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Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
LETI 2x355MW Supercritical Pulverized Coal Power Plant Project
Attendance Sheet

SMC GLOBAL POWER HOLDINGS CORPORATION

Venue: Ilayang Polo Covered Court
Date: January 7, 2020 (Tuesday)
Time: 3:00pm – 5:00pm

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
31	Renato Ola	✓		09462905421	Sitio Kulaki	
32	Akili Tolentino		–	09083355832	Sitio Kulaki	
33	Natalia Tolentino		–	09197062652	Sitio Kulaki	
34	Rejia Melendrez		✓		Sitio Piña	
35	Catalina Bal		–	09106431585	Sitio Piña	
36	angelica [illegible]		✓	09463645837	Sitio Kulaki	
37	Lucinita Daňuz		✓		SITIO KULAKI	
38	Digna Merluza		✓		Sitio Piña	
39	Nachie D. Abela		✓	09469643963	Sitio Resettlment	
40	Nida Mecantina		✓		Sitio Resettlment	
41	Jennifer Quezon		✓	09301871688	Sitio Resettlment	
42	Rosalyn P. Ogol		–		[illegible]	
43	Ruben Tiburcio	✓			Sitio Kulaki	
44	Eugenia Enriquez	✓			Sitio Kulaki	
45	PANCHO P. CONCEPCION	✓		09503473135	SITIO LITLITAN	

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
LETI 2x355MW Supercritical Pulverized Coal Power Plant Project
Attendance Sheet

SMC GLOBAL POWER HOLDINGS CORPORATION

Venue: Ilayang Polo Covered Court
Date: January 7, 2020 (Tuesday)
Time: 3:00pm – 5:00pm

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	SECTOR/ BARANGAY/ PUROK	SIGNATURE
46	HIDEZ ALBUERO	✓		09102553771	SITIO KULOT	
47	ALBERT PORNGIA	/			SITIO KULOT	
48	NELSON De Villa	-			SITIO KUBASI	
49						
50						
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Attachment B3. Pagbilao LGU IEC Attendance Sheet

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
LETI 2x355MW Supercritical Pulverized Coal Power Plant Project
Attendance Sheet

SMC GLOBAL POWER HOLDINGS CORPORATION

Venue: Pagbilao Session Hall
Date: January 8, 2020 (Wednesday)
Time: 9:00am – 11:00am

aperçu CONSULTANTS INC.

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	POSITION	SIGNATURE
1	AJ Tolibas	✓		09274869506	intern	
2	Eleanor G. Atienza		✓	09224058027		
3	JAIME B. PEÑALOZA	✓		0939 484 9103		
4	MARK MORIN O. PARNASDORO	✓		0966-386-0134	Admin Asst. II	
5	Darwin Mabingi	✓		0998-465-2295	Admin Aide II	
6	CARLO MAGNO R. AYATON	✓		797-0937	EXECUTIVE ASST. I	
7	Shermay C. Nuelan		✓	09106658972	Clerk	
8	Jane M. [illegible]		✓	09477464857	HORRMO II	
9	ALBERT S. REYES	✓		09188912380	SMC Consultant	
10	Bernardita D. Ayaton		✓	0946-271-3778	SB member Educ. and Cult.	
11	INSP RANDY G BACOLAWAN	✓		0948-1291-4721	BFP-FIRE MARSHAL Family Women Empowerment	
12	Manuel Luna	✓		09338539799	SB Member	
13	JOSEPH Manuel G. Luce	✓		09298984221	SB / SK	
14	Ian Pollicpic	✓		09475444111	Admin	
15	RYAN J. TOLENTINO	✓		09322871979	ME	

Information, Education and Communication (IEC) Campaign
CLPPC 4x355MW Supercritical Pulverized Coal Power Plant Project
LETI 2x355MW Supercritical Pulverized Coal Power Plant Project
Attendance Sheet

SMC GLOBAL POWER HOLDINGS CORPORATION

Venue: Pagbilao Session Hall
Date: January 8, 2020 (Wednesday)
Time: 9:00am – 11:00am

aperçu CONSULTANTS INC.

No.	NAME	GENDER M	GENDER F	CONTACT DETAILS	POSITION	SIGNATURE
16	APOLINAR R. MARTINEZ				SBM	
17	JACINTO A. PINON	✓			SBM	
18	AILEEN M. LUCILA		✓		A.O. I	
19	Judith G. Gloria		✓		Admin Aide V	
20	JEROME R. DE RAMA	✓		09493558836	SB SECRETARY	
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

Annex C – Initial Household Survey Report

INITIAL HOUSEHOLD SURVEY (IHS) REPORT

PROPOSED SMC PAGBILAO POWER PLANT PROJECTS

4X355MW Pagbilao Power Plant Project of CLPPC
2X355MW Pagbilao Power Plant Project of LETI

JANUARY 2020 | **PAGBILAO, QUEZON**

SMC GLOBAL POWER

aperçu CONSULTANTS INC.

TABLE OF CONTENTS

1.0 INTRODUCTION

Following the Information, Education, and Communication (IEC) efforts for the SMC 4X355MW Pagbilao Power Plant Project (CLPPC Project) and the SMC 2X355MW Pagbilao Power Plant Project (LETI Project) as well as per DENR Administrative Order 2017-15 (DAO 2017-15) guideline, an Initial Household Survey (IHS) was conducted on 17 to 20 January 2020 in Barangay Ibabang Polo and Ilayang Polo, Pagbilao. The objective of the IHS was to assess the baseline knowledge of the stakeholders regarding the project and gather concerns/questions about the description of the project alternatives and concerns about the environmental impacts of the project.

2.0 SCOPE OF INITIAL HOUSEHOLD SURVEY (IHS)

As detailed in the Project Description for Scoping (PDS) of the proposed power plant Projects, Barangay Ibabang Polo in the Pagbilao Grande Island is the host barangay and, is considered the direct impact area (DIA) since it is where the power plant project will be situated and where construction and operation activities will take place. Barangay Ilayang Polo was considered as Indirect Impact Area (IIA) since it is adjacent to the host barangay and is also located in the Pagbilao Isla Grande.

The survey instrument covers the following: (1) awareness of the respondent regarding the Projects; (2) how he/she prefers to be informed about the Project; (3) perceived positive and negative effects of the Project; and (4) whether or not they would like the Project to push through. Using purposive sampling, a total of three hundred twenty-four (324) respondents were surveyed: two hundred thirty-four (234) from Barangay Ibabang Polo and ninety (90) from Barangay Ilayang Polo.

3.0 RESULTS OF THE IHS

3.1 DISTRIBUTION OF RESPONDENTS

The sample size was distributed between the barangays based on their respective population sizes. Of the total of 324 respondents, 234 were taken from Barangay Ibabang Polo, while the other 90 were taken from Barangay Ilayang Polo.

All the inhabited sitios in Barangay Ibabang Polo were surveyed. A larger portion of the sample size were taken from households in the designated site for the Projects – Sitio Tubahin. All the households in Sitio Tubahin were visited by the enumerators. However, there were a few empty households during the time of the survey. Adjacent to Sitio Tubahin are Sitios Capalos Hilaga, School, Pantok and Little Batangas.

Likewise, all the sitios of Barangay Ilayang Polo were covered. The expected impact of the Project will be on the households living along the access road going to Barangay Ibabang Polo. As such, the survey focused on those households.

The enumerators covered randomly selected households (at least two (2) households apart) in all the puroks/sitios in both barangays. The table below shows the distribution of the sample size per sitio per barangay.

Table 1
Distribution of Respondents, Pagbilao, Quezon

Barangay and Sitio	Sample
Ibabang Polo	
Banlisan	5
Capalos Hilaga	37
Capalos Timog	5
Little Batangas	20
Pantoc	20
School	22
Tubahin	120
Tulay Buhangin	5
Subtotal	**234**
Ilayang Polo	
Anday	5
Kulasi	26
Lagyo	15
Litungan	20
Maulawin	14
Pena	5
Resettlement	5
Subtotal	**90**
Total	**324**

3.2 RELATIONSHIP TO HOUSEHOLD HEAD

Majority of the interviewees were the spouses of their respective household heads. However, a significant number of the respondents were also household heads themselves.

Table 2
Respondent's Relationship to the Household Head, Pagbilao, Quezon

Relationship to Household Head	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
Household Head	92	14	106	32.72
Spouse	137	67	204	62.96
Son/Daughter	4	8	12	3.7
Parent	1	1	2	0.62
Total	**234**	**90**	**324**	

3.3 NUMBER OF HOUSEHOLD MEMBERS

The 324 households surveyed in Pagbilao had an average household size of 4.27. The average household size of Barangay Ibabang Polo (4.27) is slightly lower than that of Barangay Ilayang Polo (4.28). The table below shows the household sizes of the surveyed households.

Table 3
Household Size per Barangay, Pagbilao, Quezon

Household Size	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
1 to 3	89	31	120	37.04
4 to 6	113	47	160	49.38
7 to 9	24	9	33	10.19
Above 9	4	1	5	1.54
Not Indicated	4	2	6	1.85
Total	**234**	**90**	**324**	

3.4 SEX

Of the 324 households interviewed, 68.52% were female, while 31.48% were male. The dominance of female respondents compared to male respondents are the same for both barangays.

Table 4
Sex of Respondents per Barangay, Pagbilao, Quezon

Sex	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
Male	86	16	102	31.48
Female	148	74	222	68.52
Total	**234**	**90**	**324**	

3.5 AGE

The bulk of the respondents are aged between 26 and 35. This is followed by the respondents aged between 36 and 45.

Table 5
Respondent's Age per Barangay, Pagbilao, Quezon

Age	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
Below 26	26	4	30	9.26
26 to 35	59	24	83	25.62
36 to 45	51	23	74	22.84
46 to 55	49	14	63	19.44
56 to 65	28	21	49	15.12
Above 65	21	2	23	7.1
Not Indicated	0	2	2	0.62
Total	**234**	**90**	**324**	

3.6 OCCUPATION

The table below shows the occupation of the 324 respondents in Pagbilao. Majority of the respondents interviewed were housewives. Moreover, there is a notable number of respondents who operate their own businesses (*sari-sari stores)*.

The table below shows the distribution of the respondents with respect to their occupation. Other occupations of those interviewed include: vendors, launderers, handicraft-makers, coal-makers, *jueteng kubradors.*

Table 6
Occupation per Barangay, Pagbilao, Quezon

Occupation	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
None	4	5	9	2.78
Farmer	15	4	19	5.86
Fisherman	19	0	19	5.86
Construction Worker	21	1	22	6.79
Driver	6	0	6	1.85
Business	25	12	37	11.42
Government Employee	5	2	7	2.16
Private Sector Employee	18	5	23	7.1
OFW	1	0	1	0.31
Elected Barangay Official	0	1	1	0.31
Housewife	113	55	168	51.85
Student	2	1	3	0.93
Others	4	3	7	2.16
Not Indicated	1	1	2	0.62
Total	**234**	**90**	**324**	

3.7 RELIGION

The predominant religion for both areas are Roman Catholic, followed by Iglesia ni Kristo. The table below show the distribution of the respondents with respect to religion. Other religions indicated are Born Again, Baptist, and Lutheran.

Table 7
Religion per Barangay, Pagbilao, Quezon

Religion	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
Roman Catholic	203	59	262	80.86
Islam			0	0
Seventh Day Adventist	2		2	0.62
Methodist			0	0
Iglesia ni Cristo	11	26	37	11.42
Aglipay		1	1	0.31
Esperitista			0	0
Others	18	4	22	6.79
Total	**234**	**90**	**324**	

3.8 AWARENESS OF THE PROJECT

The table below shows the number of households already informed about the project. Majority of the respondents, for both barangays, are already aware of the project. In general, 84.57% of the respondents knew of the project, while only 15.43% were not. The table below shows details per barangay.

Table 8
Awareness of the Project, Pagbilao, Quezon

Barangay	Aware	Not Aware	Total
Ibabang Polo	215	19	234
Ilayang Polo	59	31	90
Total	**274**	**50**	**324**
Percentage (%)	**84.57**	**15.43**	

Majority of the 274 respondents who knew of the project learned about it from barangay assemblies (165 individuals/ 60.22%). This is followed by the 86 respondents, comprising 31.39% of those who were aware of the project, who learned about the project from their neighbors.

Table 9
Source of Information, Pagbilao, Quezon

Source	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
Radio	1		1	0.36
Parish Priest	1		1	0.36
Family Member	5	4	9	3.28
Neighbor	56	30	86	31.39
Barangay Assembly	143	22	165	60.22
Barangay/Municipal Officials	8	3	11	4.01
Project Employees	1		1	0.36
Total	**215**	**59**	**274**	

Note: Percentage computed based on the total number of respondents who were aware of the project (274 households).

3.9 PREFERRED FORM OF COMMUNICATION

All of the respondents were further asked if they were interested to learn more about the project, and if so, by which means of information dissemination would they be interested in. The table below shows the responses of the households.

Majority of the 324 individuals indicated barangay assemblies as their preferred means of information dissemination.

Table 10
Preferred Means of Communication, Pagbilao, Quezon

Source	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
Television	2	0	2	0.62
Parish Priest	1	0	1	0.31
Family Member	3	3	6	1.85
Neighbor	13	1	14	4.32
Barangay Assembly	192	76	268	82.72
Barangay/Municipal Officials	13	4	17	5.25
Project Employees	9	6	15	4.63
Others	1	0	1	0.31
Total	**234**	**90**	**324**	

3.10 OVERALL PERCEPTION

The households were asked about their perceived positive and negative effects of the project.

The positive perception of the households regarding the project is shown in the table below. Only five (5) percent of the respondents claimed that the project will not have any positive effect. Majority of the respondents believed that the project will provide employment opportunities for the locals and will be an additional source of revenue for the LGUs. A notable number of respondents also believed that the project will assist in community development and promote the industrialization of the community.

Table 11
Perceived Positive Effects, Pagbilao, Quezon

Positive Impact	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
None	10	7	17	5.25
Employment for some local residents	209	79	288	88.89
Industrialization of the community	31	18	49	15.12
Revenue to the barangay/municipality/province	145	41	186	57.41
Assisting community projects/development	76	24	100	30.86
Community solidarity	13	0	13	4.01
Flood mitigation	6	0	6	1.85
Increase fish catch	4	0	4	1.23
Improve tourism	25	0	25	7.72

Note: Percentage computed is based on the total number respondents (324 households)

On the other hand, the table below shows the perceived negative effects of the project. There were 14 respondents who perceived no negative effect from the project (4.32%). However, majority of the respondents believe that the project will bring air pollution and will be a health hazard. A notable number of households also stated that the project will decrease their fish catch, be a source of noise pollution, and disrupt peace and order in the community. The table below shows other potential negative impacts the respondents believe might happen.

Table 12
Perceived Negative Effects, Pagbilao, Quezon

Negative Impact	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
None	2	12	14	4.32
Decrease fish catch	123	33	156	48.15
Decrease in farm harvest	61	7	68	20.99
Decrease in black sand	23	1	24	7.41
Soil Erosion	34	1	35	10.80
Flooding	21	0	21	6.48
Decrease ground water resources	69	1	70	21.60
Health Hazard	159	37	196	60.49
Peace and Order Hazard	78	2	80	24.69
Water Pollution	152	10	162	50.00
Air Pollution	192	32	224	69.14
Noise Pollution	81	3	84	25.93
Traffic Congestion	12		12	3.70

Note: Percentage computed is based on the total number respondents (324 households)

All in all, the general opinion of the respondents from Pagbilao is provided in the table below. 48.46% believe that the project will help the community, but not much. This is followed by the 43.21% who think that the project will be able to help the community a lot. 18 respondents (5.56%) said that the project will be detrimental to the community; while 9 more believed that the project will not help the community at all.

Table 13
Opinion of the Project, Pagbilao, Quezon

Opinion	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
Will help the community and residents a lot	99	41	140	43.21
Will be able to help but not much	112	45	157	48.46
Will not help the community at all	6	3	9	2.78
Will be detrimental to the community	17	1	18	5.56
Total	**234**	**90**	**324**	

Note: Percentage computed is based on the total number respondents

3.11 ASPIRATIONS

3.11.1 EMPLOYMENT OPPORTUNITIES

The households were asked if they are willing to work for the project should it push thorough. The table below shows the households' responses. Majority of the interviewees answered "yes", they will allow their family members to engage in employment opportunities from the project.

Table 14
Opportunity to Work for the Project, Pagbilao, Quezon

Response	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
Will work	212	87	299	92.28
Will not work	3	1	4	1.23
Undecided	19	2	21	6.48
Total	**234**	**90**	**324**	

The 299 respondents who were willing to work for the project should it push through mostly said yes because this will be an opportunity for them to be employed, augment their income which will be a means to alleviate them and their families from poverty and improve their living conditions. A few households claimed that this opportunity will allow them to afford food for their families. Moreover, working in their barangay means that they will no longer need to work far from their homes and families.

On the other hand, 1.23% or four (4) of the respondents said that they were not willing to work for the project should it push through. Reasons for this include: the potential health hazards that the project possesses; they, or their family members are already employed; or they do not have any family members who can work for the plant.

There were 21 interviewees who were uncertain whether or not they were willing to work for the project should it push through. According to the respondents, not everyone can work for the company, even if they applied, especially since the plant will favor migrants over locals. A respondent further claimed that he is sure that the project will not push through.

3.11.2 COMMUNITY DEVELOPMENT PROJECTS

The respondents were asked what community development projects are needed in their barangays. The dominant project for the two (2) barangays pertained to the barangays' need for a source of water. Below are the suggested community-development projects for each barangay:

Barangay Ibabang Polo

- Source of Water
- Free Electricity
- Streetlights and Road Improvement
- Health Programs: Medical Missions, Establishment of a Hospital, Free medicine
- Training and community training center (welder, scaffolder, first-aider, etc.)
- Livelihood Programs (Livestock-raising, etc.)
- Housing and resettlement
- Scholarship programs

Barangays Ilayang Polo

- Source of water
- Affordable or free electricity

- Health Programs: Free medicine
- Scholarship programs
- Access to Market
- Livelihood Programs (mini store, etc.)
- Establishment of a Cooperative
- Road improvement and streetlights

3.12 PROJECT APPROVAL

The table below shows whether or not the households surveyed approve of the project or not. There were 276 respondents who approved of the project, nine (9) who did not approve of the project, 37 who were uncertain, and two (2) who did not respond. It is notable that there were no households in Barangay Ilayang Polo that will not approve of the project.

Table 15
Number of HH Who Approve of the Project, Pagbilao, Quezon

Response	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
Will Approve	197	79	276	85.19
Will not approve	9	0	9	2.78
Uncertain	26	11	37	11.42
No Response	2	0	2	0.62
Total	**234**	**90**	**324**	

85.19% of the respondents approved of the project. Many of the respondents, especially form Sitio Tubahin in Barangay Ibabang Polo, claimed that they do not have ownership of their home lots and have no choice in the matter. They added that even if they object, they cannot stop the project. On the other hand, households also believed that the project will be a source of employment and consequently, an additional source of income for the community. Locals also will need not work far from home. The plant will be good for local businesses and will be helpful to the barangay. A few also added that as long as the proponent can provide water for the community and the company remains true to its community programs for health and education, they will support the project.

On the other hand, the 2.78 percent who did not approve of the project were weary because of their perceived negative impacts of the project. They believe that the project will be detrimental, or even fatal to their health, the environment, and the community. A household further added that it would lose its farms to the development.

There were 37 respondents who were undecided of their approval of the project. According to them, the project might be bad for the environment and might be detrimental to the community's health, especially the children. Moreover, based on their experience with the existing plants, the locals might not be hired by the plant. A respondent also indicated that the project will affect his farm harvest. They further added that no matter what their opinion may be, the project will still push through. The households need more information about the project. They suggest that further dialogues need to be done to discuss community benefits and relocation.

Finally, there were two (2) respondents from Barangay Ibabang Polo who did not respond to this question.

Those who did not approve of the project and those who were uncertain (46 households) were further asked if they will approve of the project should the negative effects be mitigated, eliminated, or at least minimized. Only 18 respondents approved of the project should the negative effects be abated; five (5) respondent said they would still not approve of the project; 19 respondents said they are still uncertain, while another 4 did not answer the question.

Table 16
Approval of the Project Upon Abatement, Pagbilao, Quezon

Response	Ibabang Polo	Ilayang Polo	Total	Percentage (%)
Will Approve	15	3	18	39.13
Will not approve	5	0	5	10.87
Uncertain	13	6	19	41.3
No Response	2	2	4	8.7
Total	**35**	**11**	**46**	

Note: Percent is computed against the total of respondents who do not approve of, or were uncertain about the project (46 households)

Those who answered "Yes", will approve of the project if the proponent can mitigate the negative impacts of the project to the health and the environment. A respondent suggested that the project be moved near the sea, far from their source of living. A few more approved of the project thinking that their disapproval is useless and that whatever their political leaders decide will be followed anyway.

The respondents who will still not approve of the project even after the abatement of the negative effects believe that the project will be detrimental to their health, their farms, and the community.

There were those who were still not sure on their approval, because they are still uncertain about the effects of the project and the compensation for the households affected: community projects and resettlement. They might be evicted from their homes and the negative impacts might not be manageable. Moreover, they believe that they are powerless in the approval of the project; the elected officials in their area will decide on this matter.

Four (4) households did not answer this question.

Annex D – Draft Invitation Letter for Public Scoping

(INSERT DENR-EMB CENTRAL OFFICE LETTERHEAD)

XX February 2020

Name
Designation
Office
Address

Subject: **Invitation to attend the Public Scoping for the Proposed 4x355MW Pagbilao Power Plant Project on 25 March 2020**

Dear _____:

Central Luzon Premiere Power Corp. (CLPPC) is a wholly owned subsidiary of SMC Global Power Holdings Corp. (SMCGPHC) and is proposing to develop a 1,420MW (4x355MW) coal-fired power plant (CLPPC Project or Project) in Pagbilao, Quezon. The Project will be located within Barangay Ibabang Polo in Isla Grande, Pagbilao in the Municipality of Pagbilao.

CLPPC is applying for an Environmental Compliance Certificate (ECC) with the Department of Environment and Natural Resources (DENR) Environmental Management Bureau (EMB) – Central Office for the proposed 4x355MW CLPPC Project. Information, Education and Communication (IEC) activities were conducted on January 2020 to inform various stakeholders, especially the host LGUs and heads of the concerned organization, about the proposed Project and the upcoming environmental impact assessment (EIA) activities. In line with this, we are pleased to invite to attend the **Public Scoping** scheduled on 25 March 2020 (Wednesday) at 9:00AM *(registration starts at 8:00am)* at the **Barangay Ibabang Polo Covered Court, Isla Grande, Pagbilao, Quezon.**

The Public Scoping will be conducted in compliance with the Philippine Environmental Impact Statement System (PEISS) in relation to CLPPC's application for an ECC.

For more details, you may contact the DENR-EMB Central Office (contact details). Should there be any questions or clarifications, please do not hesitate to contact CLPPC's environmental consultant Aperçu Consultant's Inc. through email at +63 917 305 4302/ anaconjares@apercu.biz.ph.

Thank you very much and we look forward to your participation in this Project.

Sincerely Yours,

Engr. Esperanza A. Sajul
Chief, Environmental Impact Assessment
and Management Division (EIAMD)
Department of Environment and
Natural Resources (DENR) Environment
Management Bureau

Annex E – Draft Project Presentation for Public Scoping

WELCOME TO THE
PUBLIC SCOPING
for the proposed Pagbilao Power Plant Project

SMC 4x355MW Pagbilao Power Plant Project (CLPPC)

SMC GLOBAL POWER

Central Luzon Premiere Power Corp.

March 25, 2020
(Wednesday)

Pagbilao, Quezon

aperçu CONSULTANTS INC.

Public Scoping Programme:

(insert Public Scoping programme)

PUBLIC SCOPING PRESENTATION FLOW

1	EIA PROCESS OVERVIEW
2	LETI POWER PLANT PROJECT
3	OPEN FORUM

1 EIA PROCESS OVERVIEW

(insert DENR-EMB presentation material: EIA Process Overview)

3 PAGBILAO POWER PLANT PROJECT

PROJECT DESCRIPTION

Proposed Pagbilao Power Plant Project

Barangay Ibabang Polo, Pagbilao Quezon

SMC GLOBAL POWER
HOLDINGS CORPORATION

Central Luzon Premiere Power Corp.

Project Information

PROJECT NAME	**SMC Pagbilao Power Plant**
PROPONENT	SMC Global Power Holdings Corp through its wholly owned subsidiaries 1. **Central Luzon Premiere Power Corp. (CLPPC)** 2. Lumiere Energy Technologies Inc. (LETI)
PROJECT LOCATION	Barangay Ibabang Polo, Pagbilao, Quezon
CAPACITY	1. **CLPPC – 1,420 MW (710 MW per phase w/ Phases 1 & 2)** 2. LETI – 710 MW
TYPE OF POWER PLANT	Supercritical Pulverized Coal Power Plant

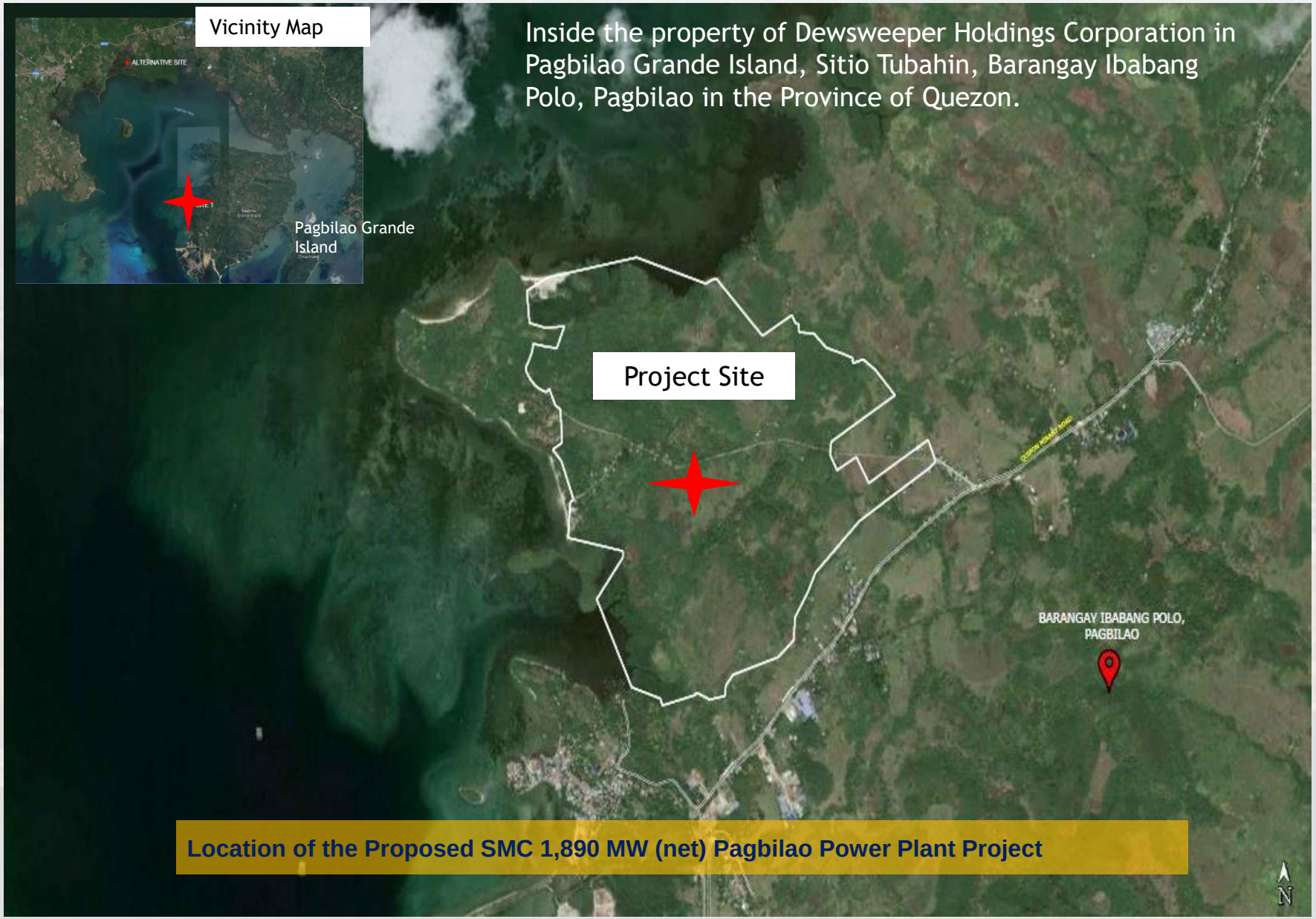
Project Proponent

Project Proponent

Name of Companies	**1. Central Luzon Premiere Power Corp. (CLPPC)** 2. Lumiere Energy Technologies Inc. (LETI)
Business Activity	CLPPC and LETI are subsidiaries of SMC Global Power Holdings Corp.(SMCGPHC) SMCGPHC is one of the largest power companies in the Philippines with a diversified portfolio utilizing a mix of coal, natural gas, and hydroelectric plants. These power assets are under Independent Power Producer Administrator (IPPAs) Agreements with PSALM, or are owned / under joint-venture (JV) agreements and are classified as Independent Power Provider (IPPs). It has eight operational power plants and one (1) greenfield power plant in the pipeline.
Address	SMPC Bldg., St. Francis Street, Ortigas Center, Mandaluyong City
Nationality	100% Filipino-Owned

Project Location

Project Location



Location of the Proposed SMC 1,890 MW (net) Pagbilao Power Plant Project

Previous IEC Campaign Activities

Conducted initial briefing with Mayor Shierre Ann Palicpic and the investment team.

IEC Campaign at Brgy. Ilayang Polo

IEC Campaign with Pagbilao LGU and Department Heads

IEC Campaign at Brgy. Ibabang Polo

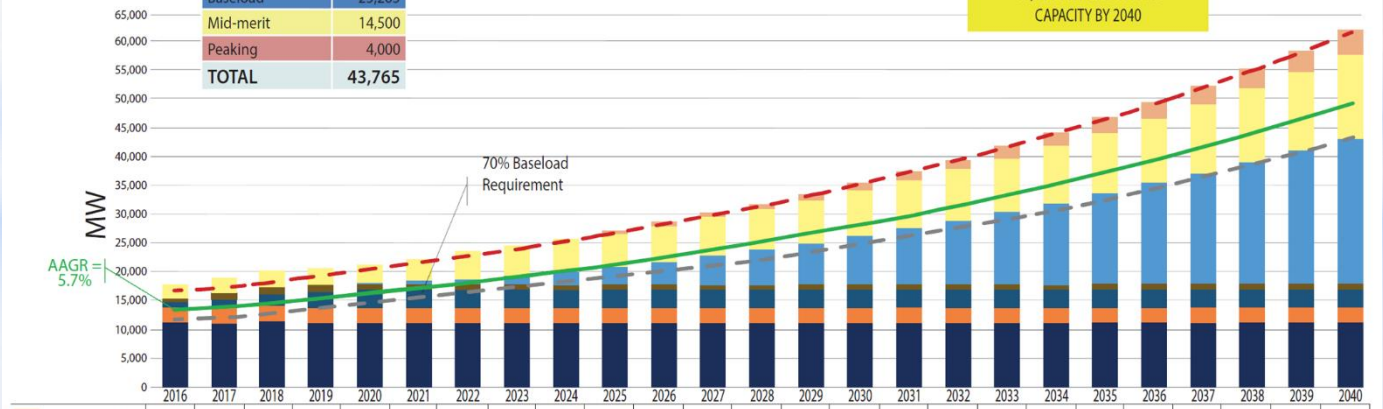
Required Plant Capacity

Required Plant Capacity

The projected power demand of the Philippines until 2040 would require a large capacity power plant (see DOE projections). Thereby, the need to install an additional 1,890 MW net capacity Power Plant

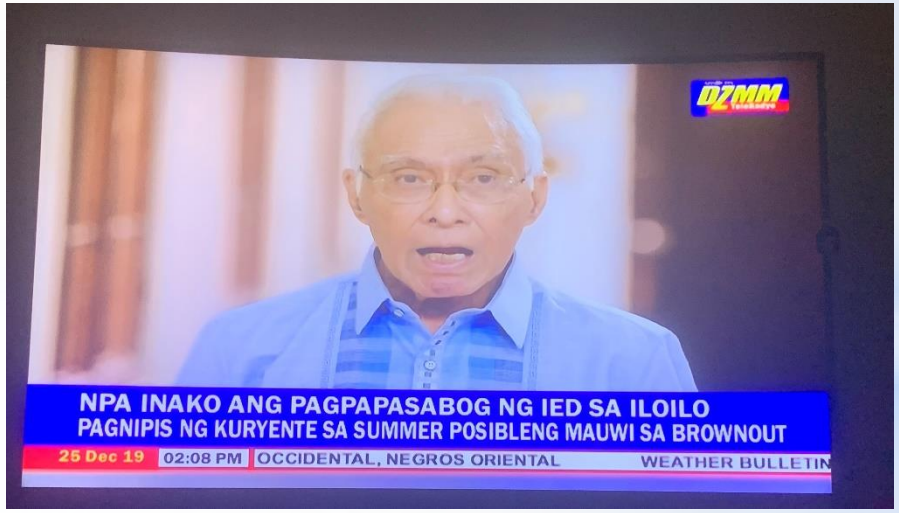
Capacity Addition	MW
Baseload	25,265
Mid-merit	14,500
Peaking	4,000
TOTAL	43,765

THE PHILIPPINES WILL NEED **43,765 MW** ADDITIONAL CAPACITY BY 2040



	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Capacity Addition - Peaking	0	0	0	0	0	0	150	250	300	450	450	550	650	950	1,150	1,250	1,550	1,900	2,100	2,400	2,650	2,950	3250	3600	4,000
Capacity Addition - Midmerit	2,500	2,600	2,700	2,700	2,900	3,600	4,400	5,000	5,400	5,700	6,200	6,600	7,000	7,300	7,800	8,300	8,800	9,300	10,000	10,500	11,200	12,000	12,700	13,500	14,500
Capacity Addition - Baseload	105	105	105	187	269	538	807	1,234	2,043	2,957	3,953	5,002	6,021	7,152	8,388	9,759	11,130	12,583	14,059	15,752	17,445	19,220	21,235	23,250	25,265
Committed Peaking	37	66	77	110	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111
Committed Midmerit	402	876	876	876	876	876	876	876	876	876	876	876	876	876	876	876	876	876	876	876	876	876	876	876	876
Committed Baseload	850	1,383	2,343	2,683	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091	3,091
Existing Peaking	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600
Existing Midmerit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Existing Baseload	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277	11,277
Reserve Requirement	3,347	3,445	3,644	3,855	4,081	4,305	4,543	4,795	5,063	5,346	5,646	5,965	6,302	6,660	7,039	7,441	7,867	8,318	8,795	9,301	9,837	10,405	11,007	11,645	12,322
System Peak Demand	13,390	13,778	14,575	15,422	16,323	17,221	18,173	19,182	20,251	21,384	22,585	23,859	25,209	26,640	28,158	29,765	31,467	33,270	35,180	37,204	39,348	41,620	44,028	46,581	49,287
70% baseload Reqt	11,716	12,056	12,753	13,494	14,282	15,069	15,901	16,784	17,720	18,711	19,762	20,876	22,057	23,310	24,638	26,044	27,534	29,111	30,783	32,553	34,429	36,418	38,525	40,758	43,126

Required Plant Capacity



Source: ABS-CBN news broadcast on December 25, 2019

DOE : MAGTIPID SA PAGGAMIT NG KURYENTE

PAGNIPIS NG KURYENTE SA SUMMER POSIBLENG MAUWI SA BROWNOUT

Required Plant Capacity

October 2019

To support the country's power needs through the Department of Energy (DOE), SMC Global Power will construct Supercritical Pulverized Coal Power Plants through the following subsidiaries:

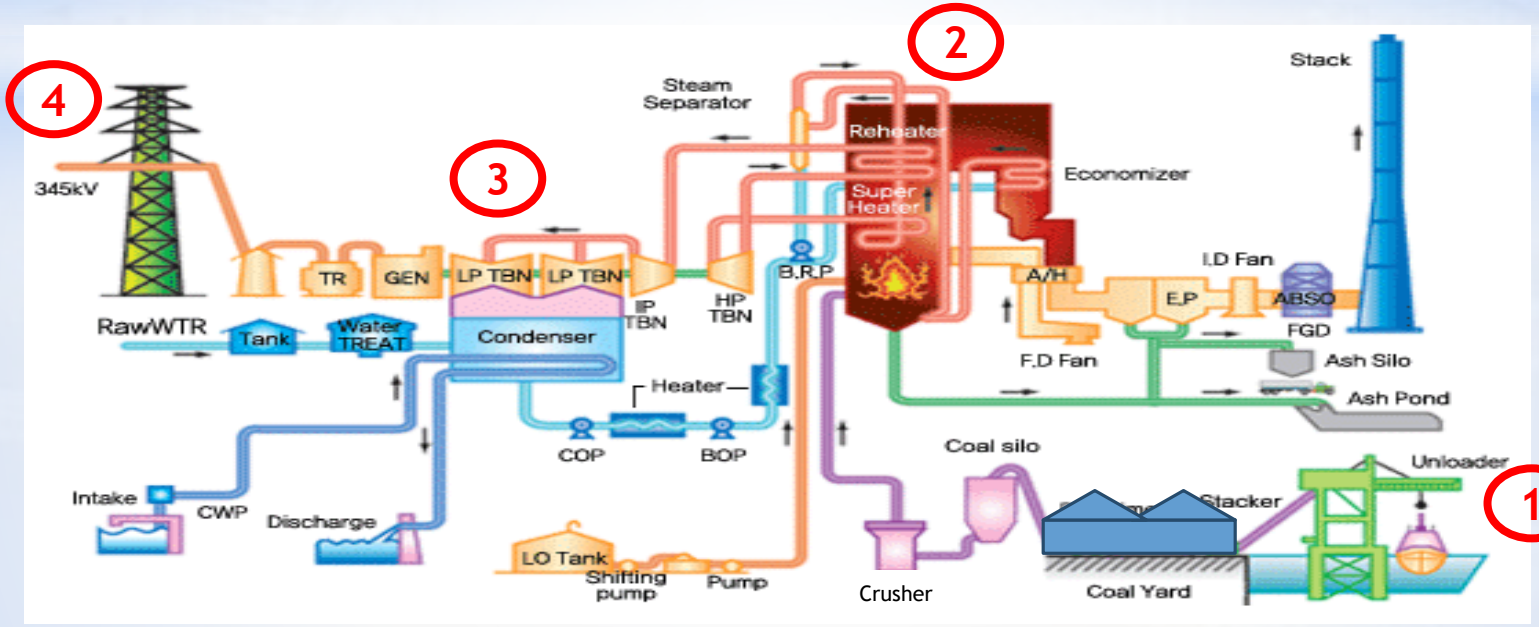
1. Central Luzon Premiere Power Corp. (CLPPC)
   - Phase 1 – 710 MW (gross) by March 2025
   - Phase 2 – 710 MW (gross) by June 2026

2. Lumiere Energy Technologies Inc. (LETI) – 710 MW (gross) by October 2025

The Supercritical Power Plants will comply with the HELE requirement for new coal fired power plants. HELE is High Efficiency Low Emission technologies.

How Will the Project Generate Power (Kuryente)?

1. Coal will be delivered and unloaded from shipping vessels via ship unloader and conveyed to the covered coal yard for storage prior to use.
2. The coal will then be conveyed and used as fuel to fire the boiler. The boiler in turn will generate high pressure steam which will then be directed to the turbines.
3. Since the turbine is directly coupled to a generator, the mechanical energy that is exerted causing the turbines to spin will generate the electricity.
4. The electricity produced from the generator will then be distributed via transmission lines



Project Components

Project Components
Power Plant – Boiler & TG

SMC Davao Power Plant

Project Components
Pier, Jetty, & Ship Unloader

SMC Davao Power Plant

Project Components

Covered Belt Conveyors and Coal Yard

Project Components
Ash Silo & Transport

PLANT INSPECTION OF DENR SECRETARY CIMATU AND PENRO AT SMC MALITA POWER PLANT LAST OCT. 14

Secretary Roy Cimatu and company inspection at the jetty/ pier area

Inside the control room

Planting of seedling to promote the conservation of the environment & as a remembrance of the Sec. visit

Project Impacts and Mitigations

Project Compliance to Philippine Standards

Emission Standards			
	SO_2	Particulate Matter	NO_2
Philippine/ DENR Std.	700 mg / Nm3	150 mg / Nm3	1,000 mg / Nm3
World Bank Std.	2,000 mg / Nm3	50 mg / Nm3	650 mg / Nm3

Expected Emission			
	SO_2	Particulate Matter	NO_2
Supercritical Pulverized Coal-fired Power Plant	**≤ 200 mg / Nm3**	**≤ 50 mg / Nm3**	**≤ 450 mg / Nm3**

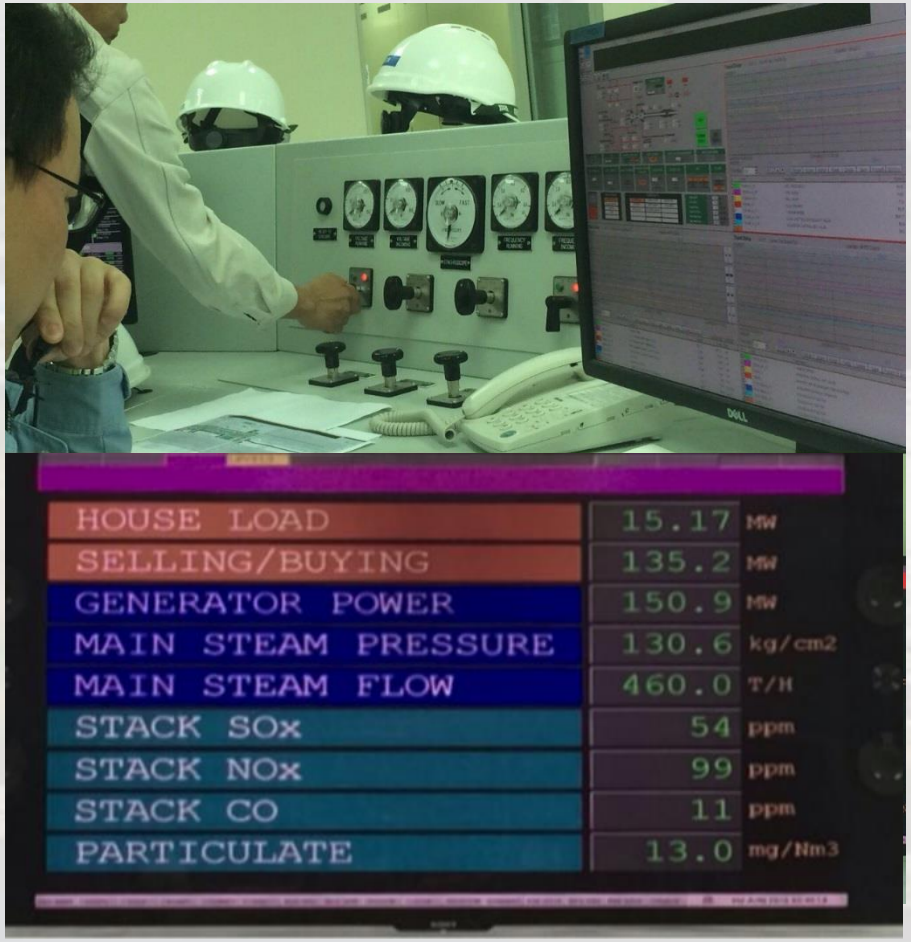
71% lower than DENR std.

67% lower than DENR std.

55% lower than DENR std.

SMC Malita Davao Coal-Fired Power Plant

Project Compliance to Philippine Standards

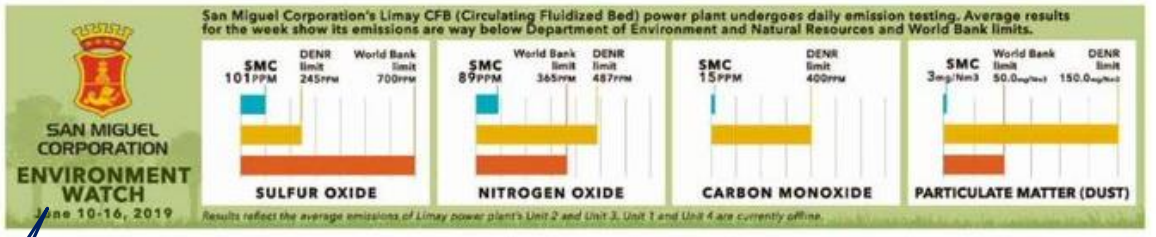


- Actual SOx, NOx, and Particulate emission levels of our newly operational (1st -150 MW unit) 300 MW SMC Malita Davao Power Plant.

	DENR Std	SMC
SOx	245 ppm	54 ppm
NOx	487 ppm	99 ppm
CO	400 ppm	11 ppm
Particulate	150 mg/Nm3	13.0 mg/Nm3

SMC Limay Coal-Fired Power Plant

Project Compliance to Philippine Standards



- Actual SOx, NOx, and Particulate emission levels of our 600 MW SMC Limay, Bataan Power Plant regularly published in leading newspapers
- Sample: INQ June 10-16 ave actual reading

	DENR Standards	SMC
SOx	245 ppm	101 ppm
NOx	487 ppm	89 ppm
CO	400 ppm	15 ppm
Particulate	150 mg/Nm3	3 mg/Nm3

Project Impacts & Mitigating Measures (Power Plant)

Dust

- We use **covered coal yard**
- We transport the coal in **covered conveyors**
- We **use dust suppression and vacuum systems**

Effects on Water

- All wastewater shall be treated to conform with DENR standards prior to re-use or discharged to the nearest body of water

Project BENEFITS

GEOSPHERE Technologies, Inc.
Engineering and Environment

BENEFITS

- **Contribution to Local Economy**

1. **Income Generation to host LGU and the Province** :

- Payment of Local Tax and Real Estate Tax
- Payment of Permits during construction

2. **Employment and Livelihood Opportunities**

- Employment of skilled/non-skilled local workers
- Purchase of supplies (const. materials, office, etc.)
- Creation of business opportunities

3. **Benefits according to DOE - ER 1-94** (Local project funding paid for by funds from 1 centavo per kW-hr of electricity sales)

BENEFITS

Benefits to Host Communities in pursuant to DOE ER 1-94

One-Centavo per Kilowatt-hour (P0.01/kWh) of the Electricity Sales

- **Electrification Fund (EF)**
  at 50% of one-centavo per kWh (P0.005/kWh)

- **Development and Livelihood Fund (DLF)**
  at 25% of one-centavo per kWh (P0.0025/kWh)

- **Reforestation, Watershed Management, Health and/or Environment Enhancement Fund (RWMHEEF)**
  at 25% of one-centavo per kWh (P0.0025/kWh)

BENEFITS

Benefits to Host Communities in pursuant to DOE ER 1-94

One-Centavo per Kilowatt-hour (P0.01/kWh) of the Electricity Sales

- DOE Department Circular 2018-08-0021 – Providing for the Amendments to Rule 29 of the IRR of RA 9136

- Through DOE Department Circular 2018-08-0021, power generation companies can now directly download the ER 1-94 fund to their host communities. Streamlining the release of funding will ease the process of implementing projects that benefit the host communities

SAMPLE PROJECTS

Energy Regulation 1-94

Sample Projects

Streetlight

Public Market

Paved Road

This project will benefit the host LGUs and residents as directed under DOE ER 1-94. The funds can be used to construct projects like: Street lighting, Construction and/or refurbishment of existing Public Market, and paving existing roads or construction of new roads.

SAMPLE PROJECTS

Energy Regulation 1-94

Sample Projects

Public Drainage

School Building

Sanitary Landfill

SAMPLE PROJECTS

Energy Regulation 1-94

Sample Projects

Waste Management Facility

Sports and Recreation Facility

SOCIAL DEVELOPMENT

Has always been a major consideration in areas where San Miguel operates.

4. Social Development Projects

- Livelihood projects
- Education
- Health
- Environment

CSR for Expansion Project (Pagbilao)

Balik Eskwela

SMC GLOBAL POWER
FOUNDATION

Balik Eskwela - Donation of School Kits at Polo South and North Elementary School

Barangay Ibabang Polo, Pagbilao, Quezon

September 2, 2019

SMC GLOBAL POWER
FOUNDATION

CSR Projects

Balik Eskwela 2019
Barangays Ibabang Polo, Pagbilao, Quezon

CSR for Expansion Project (Pagbilao)

Health - Medical and Dental Mission

SMC GLOBAL POWER FOUNDATION

SMCGP Foundation Thrust
HEALTH
"Good Health to Celebrate Life"

MEDICAL MISSION FOR PAGBILAO

To provide public health services through delivery of free medical check-ups, medicines and dental services to the respective electric cooperatives, RES and host communities of the business.

Barangays Ilaya and Ibabang Palsabangon, Pagbilao, Quezon

Barangay Ilayang Polo, Pagbilao, Quezon

Barangay Ibabang Polo, Pagbilao, Quezon

SMC GLOBAL POWER
FOUNDATION

CSR for Expansion Project (Pagbilao)

Environment – Tree Planting at Ibabang Palsabangon

SMCGP Foundation Thrust
Environment

Ridge to Reef Conservation Program

TREE PLANTING AT IBABANG PALSABANGON

SMCGP Philippines Power Foundation, Inc. continues its advocacy campaign on reforestation by actively participating in the DENR National Arbor tree planting activity held on June 25, 2019 at Ibabang Palsabangon, Pabilao, Quezon.

The activity was initiated by SMCGP Foundation and with the support of Katipunan ng Samahang Mamamayan para sa Kalikasan sa Quezon Inc. (KASAMAKA Quezon), UPLB Students and Barangay Government Unit. A total of 65 volunteers participated in the tree planting activity. In Ibabang Palsabngon River, some 2500 assorted indigenous seedlings were planted along the river.

The event aimed to empower people to become active agents of sustainable development, which promote an understanding that communities are pivotal to changing attitudes towards environmental issues.






CSR for Expansion Project (Pagbilao)

Environment - Ibabang Polo Coastal Clean-Up Activity

SMC GLOBAL POWER FOUNDATION

SMCGP Foundation Thrust
Environment

Ridge to Reef Conservation Program

IBABANG POLO COASTAL CLEAN-UP ACTIVITY

SMCGP Philippines Power Foundation Inc. together with the Barangay Council and local communities of Ibabang Polo, Pagbilao, Quezon facilitated the Coastal Clean-up activity, in celebration of the Environment Month. This was held on June 27 at Barangay Ibabang Polo, Pagbilao Quezon. The intention of clean-up activity was to respond to the urgent need to engage local communities to remove trash and debris from beaches and waterways, to identify the sources of the litter, and to change the behaviors that cause pollution.. A total of 4.5 tons of garbage were collected along the coastal line of Ibabang Polo with a total of 250 volunteers participated.









SMC Eco-Park in Malita

One of SMC's recently inaguarated Power Plant in Davao showcasing its Eco-friendly Ecopark

Butterfly enclosure

Vegetation inside the Eco-park

Production of Caterpillars and Butterflies inside the Eco-park

SAN MIGUEL CORPORATION

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San Miguel Brewery Inc.

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Cerveza Negra · San Miguel Premium · San Mig ZERO · San Miguel Flavored Beer · Red Horse Beer · San Mig LIGHT · San Miguel PALE PILSEN · San Miguel SUPER DRY

Ginebra San Miguel, Inc.

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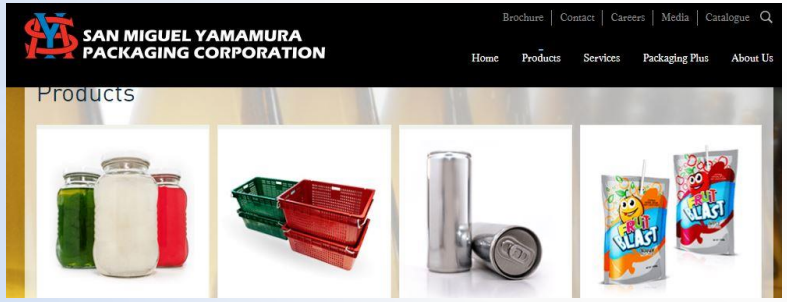
G.S.M. BLUE Light Gin · Ginebra San Miguel · AÑEJO GOLD MEDIUM RUM · PRIMERA LIGHT Brandy · ANTONOV VODKA · VINO KULAFU



Maraming Salamat !

3 OPEN FORUM

(insert DENR-EMB presentation material: Open Forum Guidelines)