1 PROJECT DESCRIPTION

1.1. Project Information

1.1.1. Project Details

Project Name:	OMCPC San Jose Diesel Power Plant Expansion
Nature of Project:	Other Thermal Power Plants
Total Power Generating Capacity	24 MW
Total Dependable Capacity	21 MW
Proposed Increase in Power Generation Capacity	8.3 MW (3 x 1.6MW; 2 x 1.2 MW and 1 x 1.1 MW)
Total Project Area:	5 hectares (No increase in Project Area)
Site Location:	OccMin Power Compound Sitio Pulang Lupa, Brgy. Central San Jose, Occidental Mindoro

1.1.2. Profile of the Proponent

Name of the Proponent:	Occidental Mindoro Consolidated Power Corporation
Office Address:	Unit 1001 10th floor Galleria Corporate Center EDSA corner Ortigas Ave., Brgy. Ugong Norte Quezon City 1110
Contact Person:	Mr. Calvin Luther R. Genotiva Chief Operating Officer
Contact Details:	+632 88151876; +632 89973007; +632 89973012 clrg@firstbpower.com

1.2. Background of the Project

The **OMCPC San Jose Diesel Power Plant** of Occidental Mindoro Consolidated Power Corporation (OMCPC) was issued with its first Environmental Compliance Certificate (ECC) number ECC-R4B 1510-0095 on October 26, 2015. Previously it was known as "EPI 20 MW Diesel Power Plant Project" of Emerging Power Incorporated (EPI) and managed by its subsidiary OMCPC or OccMin Power during the construction phase. OMCPC was later acquired by First B Power of the Banson Group thus ECC was amended by because of the transfer of ownership from EPI to OMCPC and First B Power.

By September, 2020, OMCPC requested for an ECC Minor Amendment to add fuel storage and oil & water separator. Subsequently a new ECC number ECC-OL-R4B-2020-0161 was assigned to OMCPC last October 14, 2020. Although it has a rated capacity of 24 MW but its current operating capacity is only peg at 21MW if the three (3) units operate although at present only two (2) units operate and the other unit serve as back-up unit in compliance to the ERC pronouncement.

1.3. Project Location and Area

1.3.1. Location

The existing OMCPC San Jose Diesel Power Plant of Occidental Mindoro Consolidated Power Corporation (OMCPC), is a bunker-fired power plant established in Sitio Pulang Lupa, Brgy. Central, San Jose, Occidental Mindoro. The power plant was constructed in 2016 to replace the old NPC Power Plant

which is located inside the Occidental Mindoro Electric Cooperative (OMECO) Compound. The establishment of the power plant boosted the power supply of the whole Occidental Mindoro Province.

The power plant is situated in a 30,000.00 m^2 (approximately 3 hectares) aggregate lot area within the OMECO compound adjacent to the National Road. Figures 1.1 and 1.2 show the location map and vicinity map of the proposed power plant. The project site is bounded on the north and south by rice paddies, on the east by residential community and on the west by the National Road. Opposite of the national road (fronting the project site) is also a residential area. The power plant will be located approximately 10 km northeast of San Jose Municipal Hall, 2.0 km south of Siete Central Elementary School, 1.7 km south of Holy Family Academy and 1.8 km southwest of Central National High School. Presented in Table 1.1.1 are the geographic coordinates of the corner boundaries. Attached as **Annex 1.1** is the lot title of the project site property while **Annex 1.2** is the lease agreement executed by and between OMCPC and OMECO as the property owner. The expansion project will also be located inside the existing project site, located south east of the main power plant near the fuel storage tanks.

Table 1.1. Geographic coordinates of boundaries of OMCPC's project area

Corner	Latitude	Longitude
1	E121° 2'48.48"	N12°26'22.01"
2	E121° 2'47.87"	N12°26'21.91"
3	E121° 2'47.37"	N12°26'22.32"
4	E121° 2'46.55"	N12°26'22.99"
5	E121° 2'45.33"	N12°26'27.20"
6	E121° 2'45.50"	N12°26'27.91"
7	E121° 2'45.80"	N12°26'28.26"
8	E121° 2'46.60"	N12°26'29.17"
9	E121° 2'47.55"	N12°26'30.27"
10	E121° 2'51.94"	N12°26'26.01"

Plate 1.1. Aerial photo of the expansion area

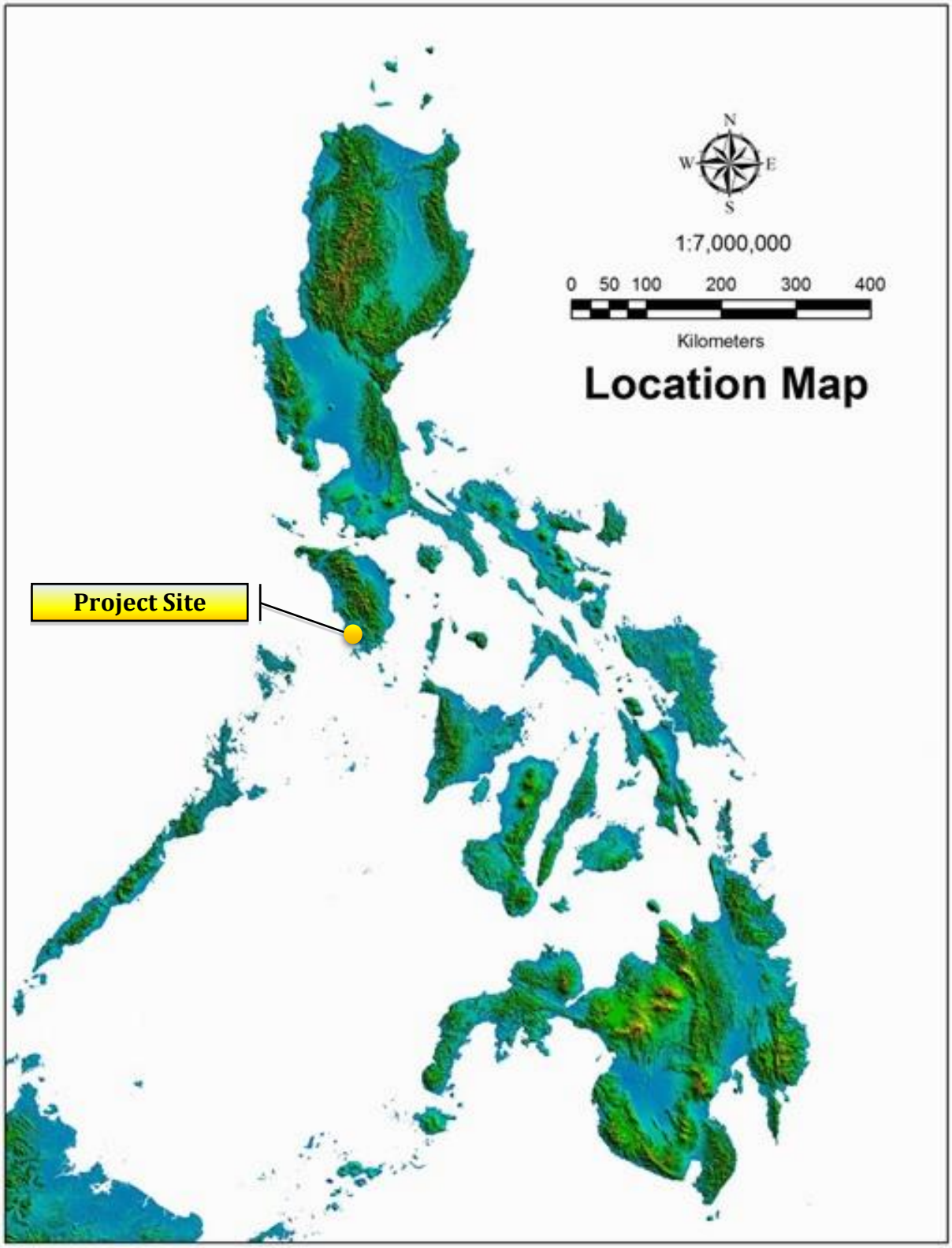

Figure 1.1. Location map of the existing OMCPC San Jose Diesel Power Plant

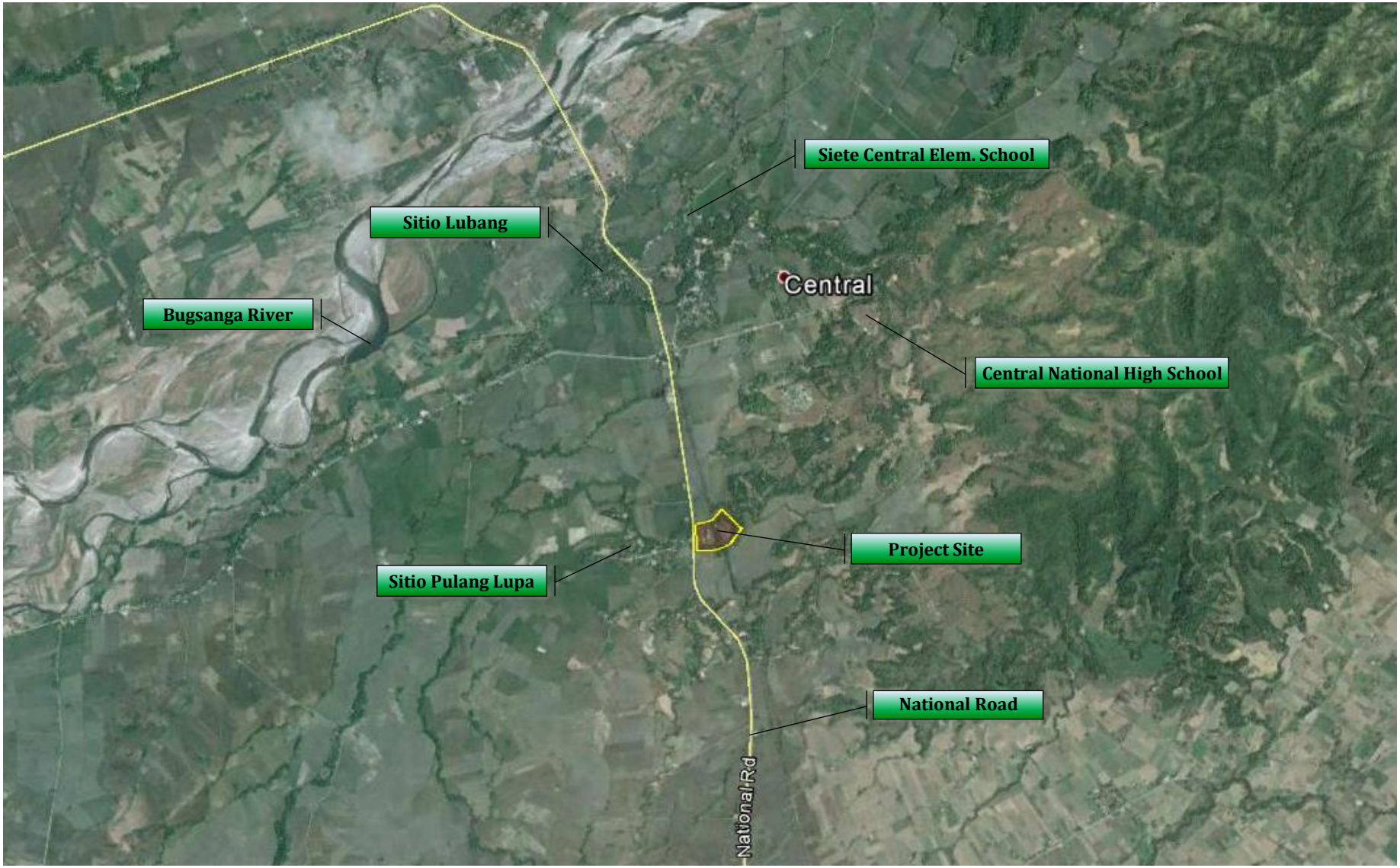

Figure 1.2. Vicinity map of the existing OMCPC San Jose Diesel Power Plant

1.3.2. Accessibility

San Jose, Occidental Mindoro is accessible by plane via San Jose Airport in Bubog Road, San Jose Mindoro or by RoRo vessels from Batangas Port to Abra de Ilog Port or Calapan Port. Travel time from Batangas to Abra de Ilog via RoRo is 4 hours while from Batangas to Calapan is 2 hours by RoRo and about 45 minutes to 1 hour via fastcraft. From Abra de Ilog the site is accessible by any type of vehicle passing thru Abra de Ilog – Mamburao Highway then turning left to the National Highway all the way to San Jose passing through the towns of Santa Cruz, Sablayan, Calintaan and Rizal. Travel time from Abra de Ilog to San Jose is approximately 4 hours. From Calapan City, the project site is also reachable by taking the Strong Republic Nautical Highway, West Philippine Highway, Mindoro East Coastal Highway and San-Jose – Magsaysay Road. From San Jose proper, the site is approximately 10 km away located on the right side of the highway.

1.3.3. Impact Area

Based on the existing plant site and the proposed expansion development plan, the initial assessment on the existing baseline conditions, identifying areas where people and the environment may be affected, the identified initial impact area map is shown below.

Figure 1.3. Preliminary OMCPC Impact Area

The primary impact area of the proposed project is confined only to the project area of OMCPC within the 30,000.00 m^2 (approximately 3 has) aggregate lot area within the OMECO compound in Sitio Pulang Lupa, under the political jurisdiction of Brgy. Central, San Jose, Occidental Mindoro.

The projected impact area from the gaseous emission and noise generation of the powerplant is initially focused on the 500-meter radius area all within Brgy Central. The detailed extent of emission will be fully determined upon the conduct of an air dispersion modelling for both the existing and the proposed expansion.

In terms of socio-economic impact, the host barangay - Central will receive most of the benefits because of employment and development opportunities once the power generation expansion commences operation. The host municipality – San Jose as well as the Province of Occidental Mindoro will also enjoy the financial benefits coming from the project such as taxes and social development projects as well as Corporate Social Responsibility (CSR) projects.

The MIMAROPA Region is the Regional Impact Zone (RIZ) considering the financial and economic benefits that may be brought by OMCPC once it increased its power generation capacity.

1.4. Project Rationale

Occidental Mindoro for a long time has been suffering from daily power outages that stem from the increasing demand for electricity because of the growing economy in the province. The projected power demand of OMECO for the next 5 years is 39 MW with an annual increase in demand of 1-3 MW. The existing contracting level of OMECO for 2022 is 31MW and by 2023 it will be 34 MW. Since OMCPC has a Power Supply Agreement with OMECO, OMCPC needs to increase its power supply by augmenting the dependable base load capacity thus the need to increase its power generation capacity.

With the dependable capacity properly increased, power outages will be a thing of the past with OMECO projecting a 0% MW surplus/deficit this year - 2022. The power project would be a big factor in assuring potential investors of Occidental Mindoro that a reliable and secure source of power is feasible thus encouraging them to invest in the province. More investors mean more jobs, increased revenue and better local economy.

1.5. Project Alternatives

1.5.1. Technology Selection

Several options were considered however, with the burgeoning power outage in the province and the immediate need for power supply, the bunker power plant presented the most optimum solution at present. The main deciding factor in adopting this kind of technology is the diminished negative impacts, especially air pollutant emissions, compared to the conventional thermal-fired power plant.

The existing Caterpillar 16CM32 C Engines have higher output with low fuel consumption as compared to similar ranged engines. Furthermore, to immediately provide power augmentation due to constant increase in power demand Caterpillar 3512B engines are reliable and easy to install to compensate the short-term power need of OMECO. OMCPC envisions that once a big and reliable power plant is established for the long -term power demand projection of OMECO, the proposed project will serve as back-up during preventive maintenance or will augment power supply during peak-hours.

1.5.2. Siting/Location

The existing project site in the OMECO compound has been the host site for power plants of NPC and providing electricity in the southern part of Occidental Mindoro. The proposed expansion will also be located within OMCPC complex.

The strategic location of the project site is based on the proximity to the existing transmission line thereby increasing efficiency of the power transmission as the existing 69 kV transmission line (TL) was already established. The location of the proposed power plant is also strategic as it will be established within the Municipality of San Jose which is one of the municipalities in Occidental Mindoro with high power demand. The location is also sufficient enough to provide optimum length of TL to adjoining municipalities. As stated by the law, transmission costs are pass-on to the consumers. A shorter transmission line will involve less cost as compared to the longer ones. Thus, an optimum length will also translate to an optimum transmission cost that will be included in the consumer's electric bill.

1.6. Project Components

1.6.1. Existing Operation

1.6.1.1. *Technology and Generating Capacity*

The existing OMCPC San Jose Diesel Power Plant consist of three (3) units of 8 MW CATERPILLAR Model 16CM32 C Engines with a total installed capacity of 24 MW and a guaranteed dependable capability of 21 MW. The power generating units uses Heavy Fuel Oil (HFO) and Light Fuel Oil (LFO) or Diesel as main fuel. The power plant is also equipped with radiator cooling system, air intake system, fuel system and exhaust system.

The existing power plant utilizes the CATERPILLAR 16CM32 C Engines. These engines have simple and smart design with high reliability and performance. The existing engine have the following features:

- Designed for reliable operation
  - ✓Intensive cooling of key components including exhaust valves
  - ✓Capable of operation up to 700 cSt/50°C fuel quality
- Minimized mechanical wear
  - ✓Modular design
  - ✓State-of-the-art material ensure long life of components
- Overall economy
  - ✓High availability and long life
  - ✓Low fuel and oil consumption
  - ✓Low maintenance requirements
- Highest quality engine parts
  - ✓Semi dry wear resistant liners with calibration inserts
  - ✓Piston with forged steel crown and aluminum skirt
  - ✓Inlet/outlet valves with armored seats
  - ✓High-efficiency turbocharger
- One-piece dry engine block
  - ✓High strength nodular cast iron with under slang crankshaft and free from cooling water
- Ease of maintenance and reliability
  - ✓Easily removable cylinder heads, quick removable fluid connections
  - ✓Split connecting rods to allow piston removal without disturbing the big end bearing
  - ✓High reliability, modular design and integral construction reduce the number of components by 40% over conventional designs

1.6.1.2. *Existing Major Infra and Support Facilities*

The power plant also has its auxiliary support facilities such as control room, fuel depot, power transformer, auxiliary transformer, switchyard system and noise reducers, maintenance area, warehouse. The power plant's other components are wastewater management facility, solid waste management facility, drainage system and access roads.

Table 1.2 presents the tabulated components of the proposed project.

Table 1.2. OMCPC San Jose DPP project component tabulation

Facilities	No. of Units	Total Capacity	Area (sq.m)	Specification/ Description/ Remarks
1. Power House			977.04	
• Caterpillar 16CM32C Engines	3 x 8MW	24 MW		16CM32 C 16 Cylinders, Vee 320 mm Cylinder Bore 460 mm Stroke 7556 kW
• Switchgear Room	1		55.0	
• Control Room	1		55.0	The operator's main interface shall be through an operating station consisting of LCD's mouse and keyboard with color monitor
• Battery Room	1		12.00	
• Toilet	1		16.00	
2. Ancillary Facilities			661.80	
• Cooling System (Radiator)	4		194.00	
• Air Intake System	4		160.00	
• Exhaust (Smokestack)	1		80.00	
• Power Transformer	2	25MVA	22.00	
• Auxiliary System	1		25.00	
• Switchyard System	1		44.80	
• Noise Reducers	4		136.00	
3. Tank Farm Area			204.00	
• HFO Storage Tank			113.00	
• Diesel Storage Tank			91.00	
4. Admin Building			243.30	
• Admin Office			48.00	
• Lobby			48.30	
• Waiting Area			14.00	
5. Accommodation Area				
• Quarter Room			22.00	
• Canteen			12.50	
• Dining Area			11.00	
• DRESS KIT Room			4.50	
• Comfort Room			17.00	
• Ramp			40.00	
6. Warehouse			26.00	
7. Ramp			40.00	
8. Water Tank			92.00	
9. Wastewater Mgmt. Facility			432.00	

Facilities	No. of Units	Total Capacity	Area (sq.m)	Specification/ Description/ Remarks
10. Solid Waste Mgmt. Facility			664.00	
11. Guard House			12.00	
12. Parking Area			173.00	
13. Access Road			1,836.00	
14. Drainage System			396.00	
15. Perimeter Fence			45.00	
16. Open Space (within plant lay-out)			1,402.00	

Powerhouse

Diesel Engine and Generator

Three (3) units of 8 MW CATERPILLAR 16CM32 C Engines is already installed. Each unit has technical specification of 4 stroke, Vee cylinder configuration, direct injection, modular design, turbocharged and after-cooled aspiration. Each engine has 16-cylinders that will drive the generator to deliver a 7,556 kW continuous rated output, 13.8 kV, 60 Hz at 720 rpm rated speed.

Cooling Water System

The cooling water system consists of a low temperature and high temperature system. HT cooling water pump is engine driven. Both HT cooling water pump and HT thermostatic valve are mounted on engine.

Air Intake and Compressed Air System

A supply of compressed air of maximum 30 bar is required from the starting air reservoir. The compressed air is reduced through a pressure regulating valve for starting the engine by air motor starter. Additional accessories for the air intake and compressed air system are the following:

- Intake mat filter in turbocharge as standard specification
- Air motor starter for engine starting
- Main starting/emergency starting valve
- On-off valve for engine stop

Fuel Oil System

The fuel oil system consists of the following:

- Fuel injection equipment on each cylinder;
- Fuel oil change-over valve
- Fuel oil flow meter for engine inlet and outlet
- Fuel leakage tank with level switch;
- Fuel oil safety filter, duplex manual (50) micron; and
- Pressure control valves on external fuel piping.

Lube Oil System

The lube oil system consists of the following:

- Lube oil pump
- Lube oil cooler
- Temperature control valve
- Lube oil pressure regulating valve

- Lube oil indication filter
- Lube oil filter

Engine Control and Monitoring System

The technical specification for control and monitoring system are the following:

- Hydraulic speed governor
- Local instrument fitted with direct reading thermometer on each piping, direct reading pressure gauges collected together on gauge board and start/stop button with tachometer for turbocharger rpm in staring box

Tank Farm Area

Four (4) bulk storage tanks (HFO settling tank, HFO service tank and 2 HFO storage tanks) was established for the existing power plant for the heavy fuel oil (HFO) storage. The storage tanks are integrated at the tank farm area and piped to support the fuel requirements for the continuous operation of the existing engines. The HFO settling tank has a capacity of 100,000 liters, HFO service tank has a capacity of 81,500 liters while the HFO storage tanks has a capacity of 1,000,000 liters.

One (1) 150,000 liters capacity tank intended for light fuel oil (LFO) storage was also installed at the tank farm for start-up fuel requirements of the engines and continuous operation.
Each storage tank is connected to a respective supply pump that will facilitate fuel transfer from the tank to the engine.

1.6.1.3. *Pollution Control Measures/Devices*

As part of the commitment of DMPC in safeguarding the environment, the following pollution control measures and devices are being implemented in their existing operation:

- The pollution control measures implemented in the power plant covers the strict implementation of OEM maintenance procedures and constant monitoring of equipment operation. During maintenance, OEM parts and accepted supplies are used for optimum engine performance. Regular stack emission testing is implemented to ensure that the equipment is compliant with the Clean Air Act;
- Used oil properly stored in used oil storage tanks and is disposed through DENR-accredited disposal companies;
- Sludge from the fuel oil purification process is stored in a sludge storage tank and is disposed through DENR-accredited disposal companies;
- Oily water is processed through the oil-water separator. Oil that is skimmed is stored together with the sludge; and
- Domestic wastewater is treated using a septic tank.

1.6.2. Proposed Expansion

OMCPC intends to amend its ECC by:

- Amending the Project Name to OMCPC SMRA Diesel Power Plant – in the report submissions to ERC the project is already known as such, thus the request to amend the project name to harmonize project name for both ERC and EMB;

- Request for reduction of total power generation capacity of the existing Caterpillar engines from 24 MW (3 x 8 MW) to 21 MW (3 x 7 MW) based on the Caterpillar – Monark Engine Performance Report (Annex 1.3)
- Increase its power generation capacity by adding 8.3 (3 x 1.6 MW; 2 x 1.2 MW and 1 x 1.1 MW) diesel generator set to increase its total power generation capacity to 29.3 MW. The additional 8.3 MW is part of the commitment of OMCPC to OMECO as indicated in the Power Supply Agreement entered by and between OMCPC and OMECO. As committed, OMCPC will gradually increase its power generation capacity in a span of 6 years and the initial 6MW is the first phase of the gradual increase while the additional 2.3 MW will be attained in two (2) years' time. In the next two or three years, OMCPC is committed to increase the baseload to attain the desired 34 MW as indicated in the PSA with the operation of it's OMCPC MMBO Diesel Power Plant in Mamburao and OMCPC SBYN Diesel Power Plant in Sablayan, Occidental Mindoro.

Powerhouse

Diesel Engine and Generator

Six (6) units of Caterpillar engines (3 x 1.6 MW; 2 x 1.2 MW and 1 x 1.1 MW) will be installed inside a separate powerhouse to be located adjacent to the recently established HFO storage tank. It will be established due south of the main powerhouse.

Each unit has technical specification of V-16 4 stroke cycle diesel, direct injection, modular design, turbocharged and after-cooled aspiration.

In summary, the following are the components of the propose additional diesel power plant:

- Diesel engines;
- Generator assembly;
- Pressure vessels, pumps;
- Fuel oil handling system and storage;
- Lube oil system;
- Compressed air system;
- Cooling system;
- Electrical system;
- Fire protection system; and
- Fuel pipeline.

Figure 1.4 depict the site development plan of the existing OMCPC 24 MW Bunker Fuel Fired Power Plant including the proposed additional genset powerhouse (Figure 1.5).

1.7. Process Technology

1.7.1. Power Generation Technology

OMCPC will utilize Caterpillar diesel engines which were designed and optimized for low emission and low fuel consumption. The gensets were already proven in thousands of applications worldwide with reliable performance. The over-all process flow diagram of the power plant operation is presented in Figure 1.6.

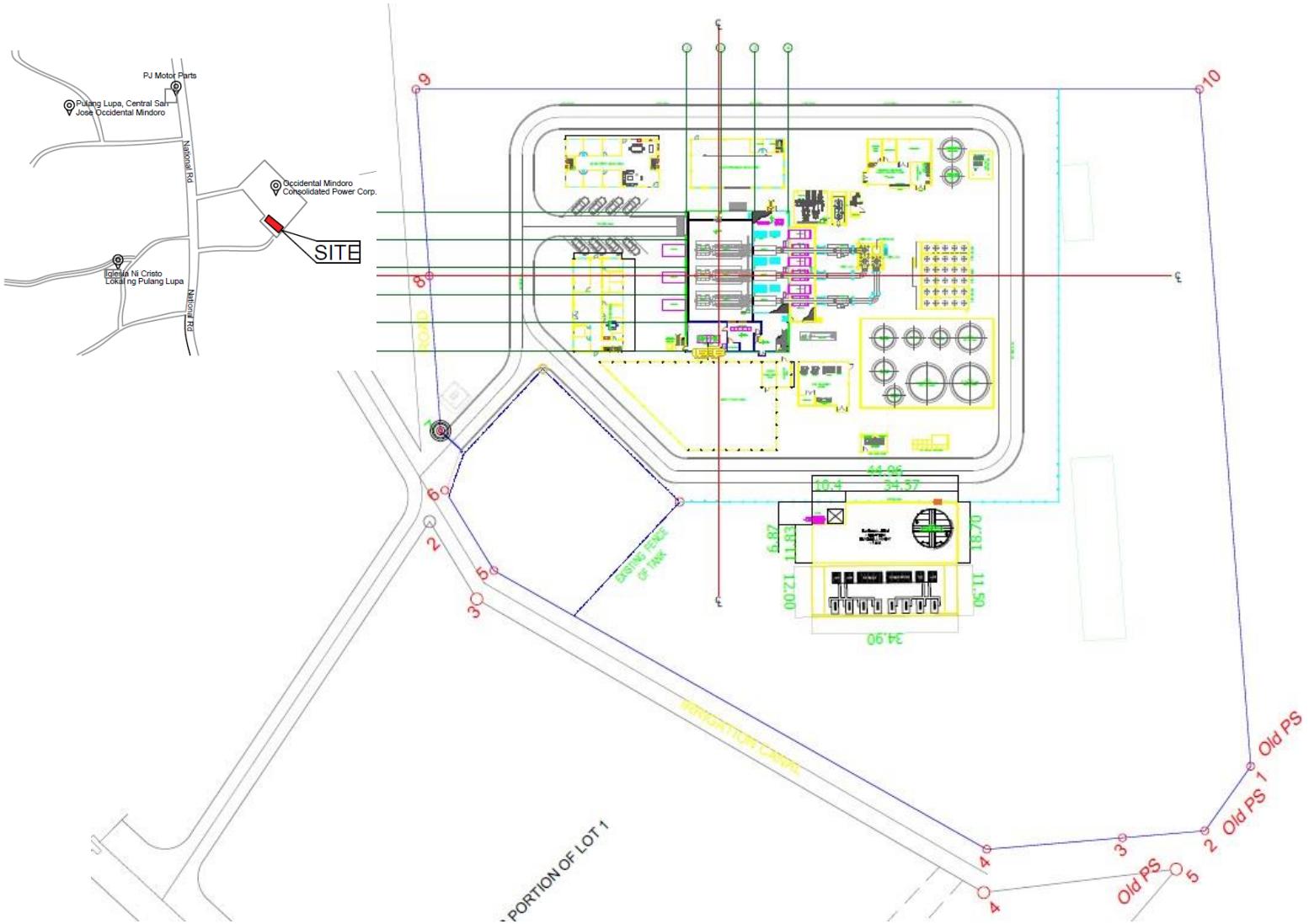

Figure 1.4. Site Development Plan of the existing power plant and the proposed expansion powerhouse

Figure 1.5. Perspective View of the proposed additional powerhouse for high-speed engine

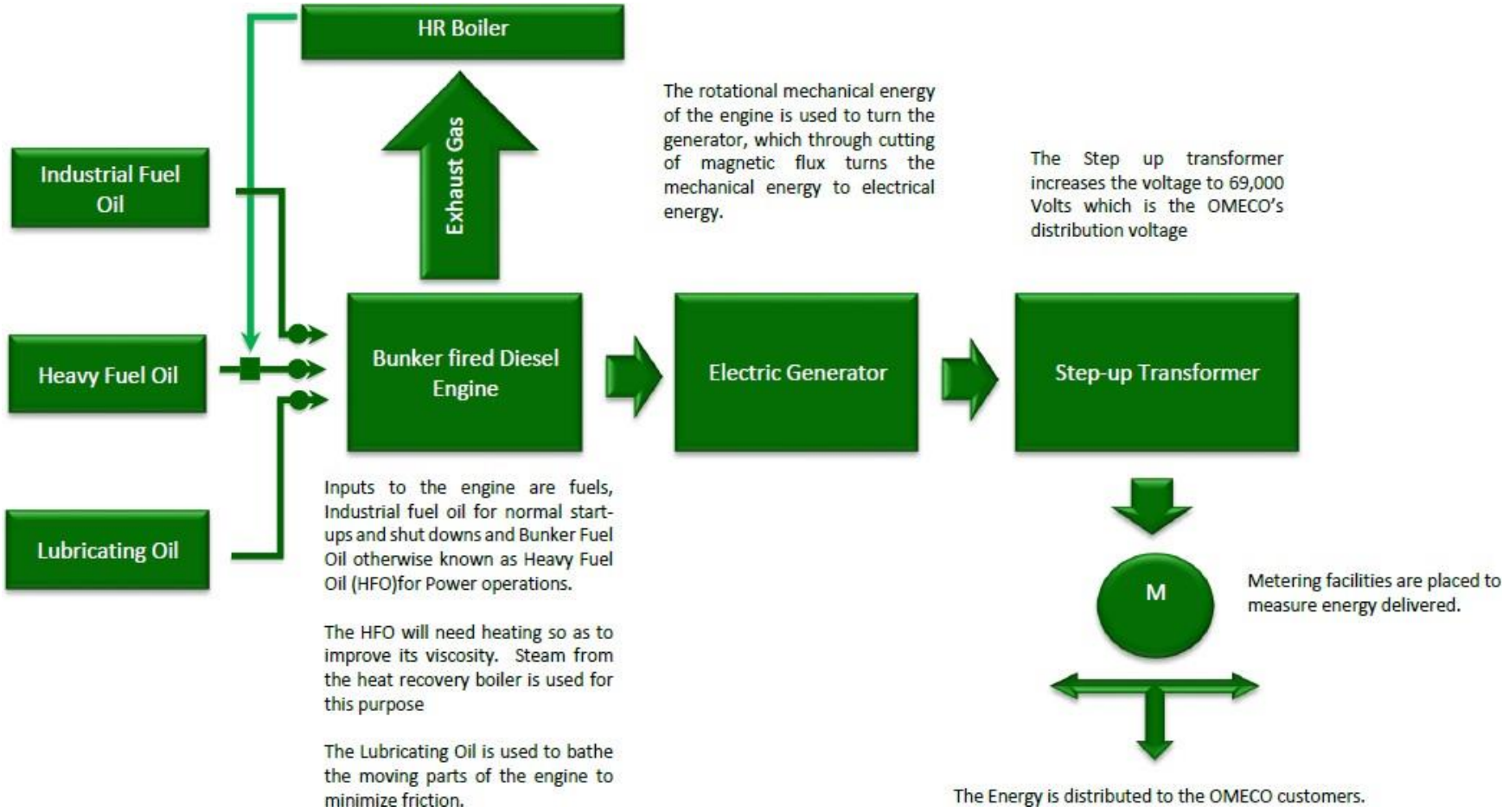

Figure 1.6. Process flow diagram of OMCPC San Jose Diesel Power Plant

1.7.2. Fuel Requirements

The current fuel requirement of the existing power plant is 117,000 liters per month of diesel and 2,300,000 liters per month of bunker fuel (HFO). A fuel contractor delivers on-site the fuel requirements by using fuel tank lorry from Batangas City via Abra de Ilog Port. Fuel lorries deliver diesel and bunker fuel to the site every other day to supply 2 days of operation. Seven (7) fuel tankers are needed to suffice the diesel requirement and bunker fuel requirement. The fuel tanks have approximate capacity ranging from 20,000 liters to 40,000 liters.

1.7.3. Water Supply and Demand

The current water requirement for the operation of the existing diesel power plant is 0.8 m3/day. Water requirement is divided into three (3) categories: plant water for cooling system; industrial water and domestic water. Water is source is from the existing deepwell established by OMCPC solely for the operation of the powerplant.

During the construction of the additional 5MW, it is estimated water requirement is 2.0 m3/day. Water needed by the construction will be provided by the existing deepwell already established on site.

The combined operation of the 24 MW main power plant plus the additional 5MW powerhouse will require 1.0 m3/day. The estimated domestic water supply is 0.5 m3/day for the estimated 38 employees of the plant working in two (2) shifts. The summary of daily water requirements and the water balance matrix is presented in Table 1.2.

1.7.4. Pollution Control and Waste Management

The power plant is designed to meet the emission standards in accordance with RA 8749 – Philippine Clean Air Act by adopting the most stringent standard established and by installation of technological advancement to minimize emissions among power plants. The air emissions control measure is primarily based on the use of low-sulphur content fuel.

Appropriate noise control measures will be implemented so as to ensure that sound level at a distance of one meter from the powerhouse or enclosure outline and height of 1.5 meter from the powerhouse base.

The sludge that will be produced from the operation of the powerplant will come from the oil sump pit, the septic tank and the oily wastewater. Wastes from the settling pit will be transferred/shipped to the allocated containment area or storage facility. Sludge from the septic tank will be regularly siphoned and hauled by a septic tank contractor accredited by DENR. Separated oily wastewater will also be hauled by an accredited contractor with facilities for their disposal or reuse. The existing fuel tanks already bonded to contain oil if untoward incidents such as spillage will occur. Domestic wastewater is coursed through a compartmentalized septic tank while hazardous wastes will be stored in drums for disposal by a DENR-accredited wastewater-treatment company.

The operation of the power plant produces both solid and industrial waste as well as hazardous wastes. The domestic solid wastes will include biodegradables such food wastes from admin office, canteen, vegetation wastes and human wastes, recyclable materials such as paper, cartoon, worn-out wheels, plastic wastes, metal scraps etc. Power plant operation will also produce hazardous wastes such as used oil and sludge, oil contaminated materials, busted bulbs, chemical containers, inks cartridges and used batteries.

Biodegradable wastes produced during the operation will be disposed in a waste dump/compost area already established by the company while scraps and recyclable materials will be segregated in the existing material recovery facility (MRF). Hazardous wastes on the other hand will be kept in a storage area prior to disposal by DENR-accredited wastewater transporter and treater.

1.8. Project Size

The proposed project entails changes in the different aspects of the DMPC plant which is summarized in Table 1.3.

Table 1.3. Summary of the comparative details of the existing and proposed plant

Plant components	Current Operation	Proposed Plant
Technology	Diesel	Diesel
Rated power capacity (MW)	24	8.3
Net generating capacity (MW)	21	7
Total project area (hectares)	3.0	same
Fuel Type	Diesel/Bunker	Diesel
Fuel consumption:		
HFO (Li/hr)	0.26	N/A
Pure Diesel (Li/hr)	0.26	0.26
Water requirement (m^3/day)	0.8	0.2
Manpower requirement (during operation)	38	45

1.9. Development Plan, Description of Project Phases and Corresponding Time Frames

Project implementation is divided into four (4) major phases: pre-construction, construction, operational, and abandonment phases. The pre-construction and construction phases are estimated to last within approximately 12 months. The construction phase will commence after the issuance of all necessary permits including the ECC for the project. The operational phase shall start as soon as the power plant and its supporting facilities have been completed, established and commissioned.

1.9.1. Pre-construction phase

During the pre-construction phase, important activities such as surveying and site assessment of the proposed expansion shall be done by OMCPC. Discussion with OMECO and ERC is also regularly being done regarding the needed permits and agreements. The preparation of the Environmental Performance Report and Management Plan (EPRMP) for the ECC application will also be done as prescribed by the Department of Environment and Natural Resources (DENR).

The project site will be at the existing area of OMCPC. All the required permits, endorsements and certificates will be secured by OMCPC and in accordance with applicable laws and regulations. Other existing standards and regulations pertaining to quality and safety will also be followed to ensure the structural integrity of the proposed project.

1.9.2. Construction phase

1.9.2.1. *Construction Works*

The projected general mobilization at the site will take about 2 to 3 months and is expected to start by June 2022. Construction works will involve the following activities:

- Site clearing and development preparation for the additional coal-fired power plant;

- Construction of staging areas and temporary facilities to house the labor force;
- Tapping from the existing site utilities for water, electricity, illumination, and waste disposal;
- Additional drainage construction and connection to existing system;
- Mobilization of major construction equipment and tools (*e.g.* bulldozers, cranes, trucks; vehicles, diesel generator/s);
- Establish additional site logistics and transport requirements; and
- Delivery of construction supplies.

The main civil construction works will be facilitated by OMCPC Contractor. Civil construction covers a period of approximately 4 to 5 months that include the following activities:

- Excavation of the main foundation areas for the additional powerhouse;
- Forming and pouring of the foundations for equipment and construction of the additional powerhouse; and
- Civil construction and finishing works.

1.9.2.2. *Genset Installation*

The major components will be delivered to the site 3 months after the start of the construction phase. Generator sets will be shipped by barge or trucks to the project site. Small to medium-size equipment will be containerized or bundled and transported by truck to the project site. Materials will be stored on-site in temporary covered storage facilities or open-air storage.

The major genset installation activities are expected to begin about five (5) months after the start of construction and will be completed in 10 months. The Permit to Operate (PO) for the emission source installation (ESI) will be filed subsequently. The PO is expected to be issued before the pre-commissioning activities.

1.9.2.3. *Commissioning and Pre-operation Checks*

The pre-start up and test operation (commissioning) are expected to begin in December 2023. These activities will primarily involve the inspection and pre-operational check-up of all major parts of the additional powerplant including control logic. Many of these pre-operational checks are conducted in parallel with other construction activities. Generally, pre-operational are expected to be completed when installation of all equipment is also completed. Furthermore, these activities must be accompanied by completion of other plant related activities, such as:

- Electrical high voltage power connection to the step-up transformer;
- Owner's operating staff on site for training; and
- All major plant consumables such as fuel oil and other process materials are transported to and stored at site

1.9.2.4. *Hot Commissioning and Performance Testing*

The hot commissioning will start by February 2024 simultaneous with the commissioning and pre-orientation checks, which will be conducted as soon as they are completed for individual systems. Generally, all major equipment establishment activities and pre-operation will be completed on-site and temporary equipment such as containers and mobile equipment will be removed gradually from the site.

A 72-hour performance test period will start on the 12th month of construction period. During this period, operation of the plant in accordance with performance guarantees will be demonstrated. All major equipment commissioning and pre-operation checks will be completed. All temporary equipment such as containers as well as mobile equipment shall be removed from the site after completion of the additional powerplant.

1.9.3. Operational phase

The commissioning phase of the additional 5MW shall be synchronized with the existing diesel power plant. The component of the additional systems shall be tested individually will require about one (1) month. The plant is expected to commence its commercial operation in July, 2023 and will be in commercial operation for 20 years.

The power plant shall use HFO and diesel as the primary fuel during normal operations. The HFO and diesel shall be delivered by fuel lorry either from Caminawit Port or by land from Abra de Ilog port directly to the power plant's fuel storage area. At a rated capacity and at anticipated average utilization rate, HFO and diesel requirements are estimated at 0.26 l/hour and 0.52 l/hour respectively. Delivery of fuel is done every other day utilizing 7 fuel lorries enough for the power plant to continuously operate for 2 days.

Output from the power plant shall be fed to one (1) step-up transformer rated at 25 MVA, 13.8 kV-delta / 69 kV-wye grounded and one (1) step-down transformer/ 13.8kVdelta/13.2 kV-wye grounded connection. The 13.2 kV wye grounded connection shall be connected to a single bus that shall supply the 13.2 kV loads of OMECO. The 13.8 kV delta and 69 kV transformer wye-windings shall connect the 69kV Mindoro Grid, respectively. The connection of the proposed power plant to the NPC's 69 kV Mindoro Grid shall be accomplished by cutting-in the existing Mamburao – San Jose 69 kV transmission line section that passes through the vicinity of the (NPC) Pulang-Lupa office and the OMECO warehouse stockyard. Each end of the transmission line shall be connected to a two (2) bay one-and-a half breaker switchyard as well as the output from the transformers. In order to maintain a reliable and efficient operation of the power plant, the equipment will have a regular preventive maintenance program based on their Service Meter Reading (SMR) [i.e. 1500SMR, 3750SMR, 5000SMR, 75000SMR, 12000SMR, 15000SMR, 24000SMR, 30000SMR, 36000SMR, 45000SMR, 48000SMR, & 60000SMR] to prevent any catastrophic damages. Relatively, the power plant will have shutdown duration of about 31 days annually for its preventive maintenance servicing (PMS) to ensure efficient and reliable operation of the equipment.

1.9.4. Abandonment phase

The existing project including the proposed expansion is estimated to have an economic life of 20 years. After 20 years of operation (assuming that PSA is renewed), it will be assessed if it is still capable to continue commercial operation or not. In case of abandonment, most of the facilities of the power plant will either be dismantled or demolished. Most of the mechanical equipment installed will be dismantled and sold for scraps.

During the abandonment, the proponent will ensure that all environmental mitigating measures will be adopted and followed to minimize negative impact to the environment.

In the event of project abandonment, the proponent shall prepare an abandonment and rehabilitation plan one (1) year before such scheduled termination for the approval of appropriate government agency.

1.10. Manpower

The current operation of OMCPC employs a maximum manpower of 38 personnel. Table 1.4 shows that tabulated manpower requirement of the company for the operation of the existing OMCPC San Jose Diesel Power Plant.

Table 1.4. Manpower involved in the current operation of OMCPC for the San Jose Diesel Power Plant

Department	Number of Employees
Operations	20
Admin	18
Total	38

The construction and installation of the additional 8.3 MW power generation capacity requires an estimated manpower of 22 workers. Majority of these will be laborers and construction workers needed during the initial phase of construction involving site preparation, earth works, and civil construction. The estimated manpower requirement during construction and installation of the additional genset is shown in Table 1.5.

Table 1.5. Estimated manpower requirement during the construction of the additional diesel generator set powerhouse

Workforce	Average Estimates
Manager/Technical	4
Skilled Labor	5
Unskilled Labor	11
Security Guards	2
Total	22

Once the expanded power plant reached its total power generation capacity of 29.3 MW and become operational, it is estimated that a total of 43 employees will be employed to run and maintain the diesel power plant.

1.11. Project Cost

The addition of 5 x 1MW Caterpillar genset for back-up power generation will require supplementary capital expenses for the construction of the additional generator set. The estimated total capital investment cost for the increase in power generation capacity is PhP 76,900,000.00 million.