Environmental Impact Statement (EIS) Summary for the Public (ESP) in English - Batangas Clean Energy (BCE) LNG Terminal and CCGT Power Project

Project Factsheet

Name of Project	Batangas Liquified Natural Gas Terminal and Combined Cycle Gas Turbine Power Project
Project Location	Barangay Pinamucan Ibaba and Pinamucan Proper, City of Batangas, Batangas
Nature of Project	Petroleum and Petrochemical Industry (includes hydrocarbon products such as LNG/CNG, etc.) • LNG product import, storage and refilling Power Plant • Gas-fired thermal power plants Other Transport Facilities • Seaport, causeways, and harbors
Project Components and Size/Scale	LNG Terminal • An LNG jetty with unloading rate of up to 12,000 m^3/hr and reloading rate of up to 2,000 m^3/hr • One Liquified Natural Gas ("LNG") storage tank with a net capacity up to 180,000 m^3 • Regasification facilities with throughput of up to 3.0 million tonnes per annum ("MTPA") • Boil-Off-Gas Handling System • Flare stack • Seawater pumps • Fire/service water storage tank • Fire water pump station • Truck loading station • Electrical building and control room building • Back-up gas fired engine generators up to 15MW • Nitrogen storage tank and regasification Combined Cycle Gas Turbine ("CCGT") Power Plant • Two power blocks with a combined output of up to 1,200 megawatts ("MW") • Cooling water intake pipe and pump station • 500 kV Gas Insulated Switchgear ("GIS") Substation • Cooling water discharge pipe • Electrical building and control room building • Hypochlorite generation system • Service gas system Common Auxiliaries • Reverse Osmosis ("RO") seawater desalination plant • Administration building, workshop and warehouse facilities, and guardhouse • Water storage tanks • Air compressor system Pollution Control Devices • Wastewater treatment plant • Sewage treatment plant • Oily water separators
Total Project Area	Approximate area of 25 hectares of onshore land and 19.44 hectares of foreshore area. Inside the foreshore area is an existing 1.24 hectares of reclaimed land.
Project Capital Cost	Approximately PhP 82,500,000,000.00
Project Proponent	Batangas Clean Energy, Inc. ("BCE")
Proponent Representative	Yari Miralao - President, Batangas Clean Energy, Inc. Administration Building, Himmel Industries, Inc., National Road, Pinamucan Ibaba, Batangas City, Batangas, Philippines | +63 917 110 3890 | ymiralao@gen-x-energy.com

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About the Project

BCE is proposing to develop an integrated LNG import terminal and CCGT power plant (the "Project") in barangays Pinamucan Ibaba and Pinamucan Proper, Batangas City. The Project will be located at the Himmel industrial complex and will include (a) an approximately ~200 meter long LNG unloading/reloading jetty, (b) a full containment LNG storage tank with storage capacity of 180,000 m^3, (c) regasification facilities with throughput capacity of up to 3 million tons per annum (MTPA), and (d) a CCGT power plant with installed capacity of approximately 1,200MW.

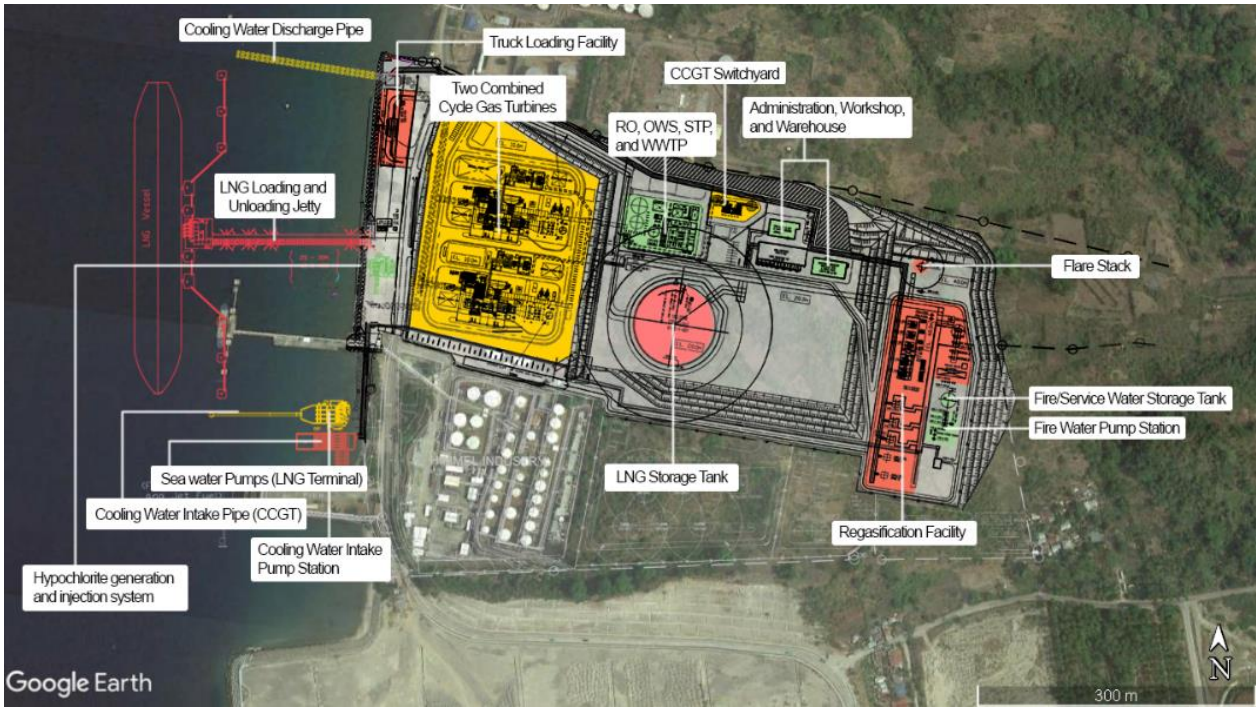
On 30 October 2020, the Department of Energy ("DOE") certified the Project as an Energy Project of National Significance ("EPNS") in line with the policies and specific goals of the Philippine Energy Plan pursuant to Republic Act No. 7638 (Department of Energy Act of 1992) and Executive Order No. 2017-30 (Creating an Energy Investment Coordinating Council in Order to Streamline the Regulatory Procedures Affecting Energy Projects). As an EPNS, the Project will play a critical role in (a) meeting the Philippines' growing demand for power by providing a reliable, affordable, and sustainable source of baseload generation, (b) developing a replacement source of natural gas in preparation for the depletion of the Malampaya Gas Field, (c) ensuring national energy security by developing an LNG import terminal to supply existing and future gas-fired power plants, (d) reducing the country's carbon footprint by diversifying the Philippine generation mix away from coal and diesel fired generation, (e) supporting the integration of Renewable Energy by providing flexible generation to the grid and (f) jumpstarting the development of a downstream natural gas industry in line with the Philippine's investment priorities plan.

Overall, BCE's goal is to develop, construct, and operate a world-class LNG import terminal and CCGT Power Plant that will (a) position Batangas City as the LNG Hub of the Philippines and (b) contribute to the economic and social development of Batangas province and the country.

3D renderings and the site layout of the Project are shown in the figures below:

Project 3D Renderings

Project Proposed Site Layout



Process Technology

Clean-burning natural gas is a key component in our transition to a carbon-neutral future. Compared to liquid fuel or coal, LNG-to-power solutions have substantially lower CO_2 emissions and have greater than 90% lower Nitrous Oxide ("NO_x"), and almost zero Sulphur Dioxide (SO_2) and particulate matter emissions. Furthermore, LNG-to-power solutions also use up to 50% less water and approximately 75% less land area than coal-fired power plants with comparable installed capacity.

In terms of process, LNG carriers will berth at the Project's LNG jetty where special unloading arms will receive the LNG at extremely low temperatures (-160 °C) and transfer the LNG through cryogenic pipes to the LNG storage tank for storage. From the storage tank, the LNG will go through a regasification process where high pressure pumps are used to push the

LNG through a series of vaporizers that use the heat in sea water to convert the natural gas from its liquid state (-160 ºC) to a gaseous state. Once the natural gas has been converted to its gaseous state it is then used as the primary fuel for the CCGT power plant.

A CCGT power plant uses both a gas and a steam turbine together to produce up to 50 percent more electricity from the same fuel than a simple-cycle plant where only the gas turbine generates power. The exhaust, hot flue gases from the gas turbine is routed through a heat recovery steam generator ("HRSG") where steam is produced. This steam is then sent to the steam turbine to generate extra power. In the CCGT power plant, the gas turbine draws atmospheric air through a filter house, compresses air in a built-in air compressor, mixes it with natural gas in a combustion chamber and burns it at very high temperature (1,600 °C).

The hot combustion product mixture moves through the gas turbine blades, making them spin. The fast-spinning turbine drives a coupled generator that converts the spinning energy into electricity. The HRSG captures the waste heat from the gas turbine exhaust and exits through the exhaust stack. The HRSG generates steam from the gas turbine exhaust heat and delivers it to the steam turbine. The steam turbine rotates the coupled generator, and is converted into additional electricity.

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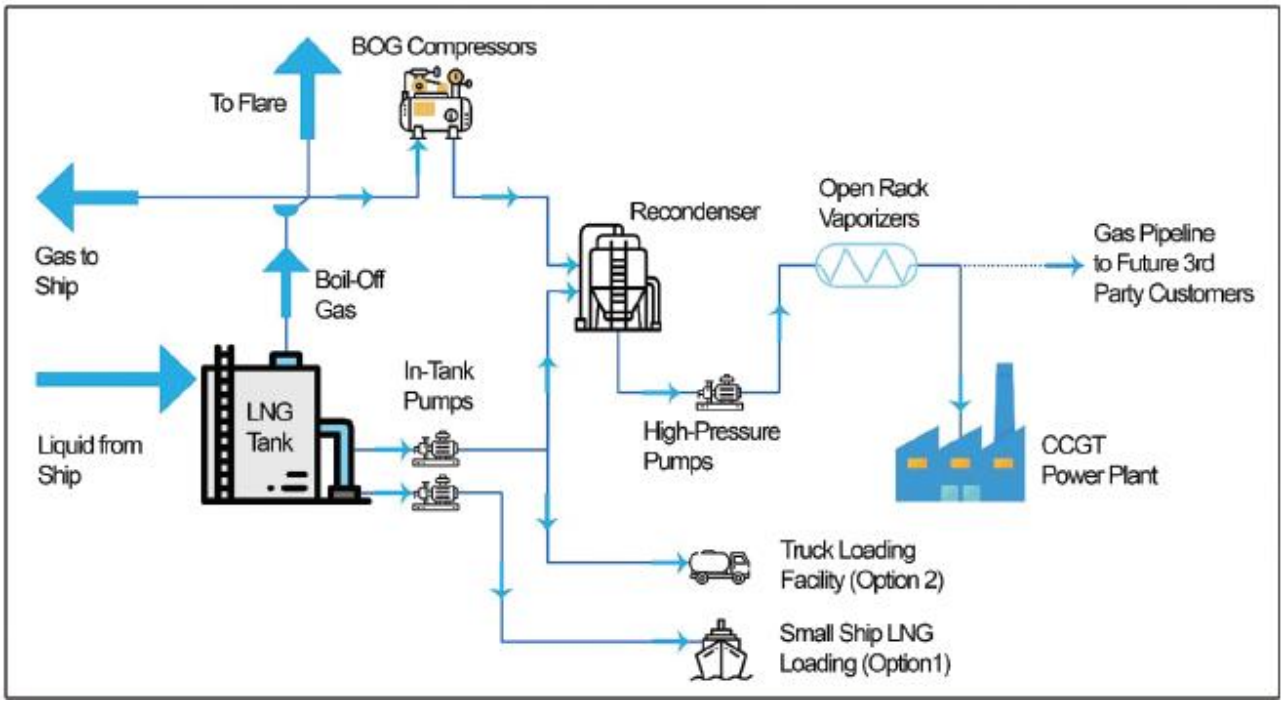
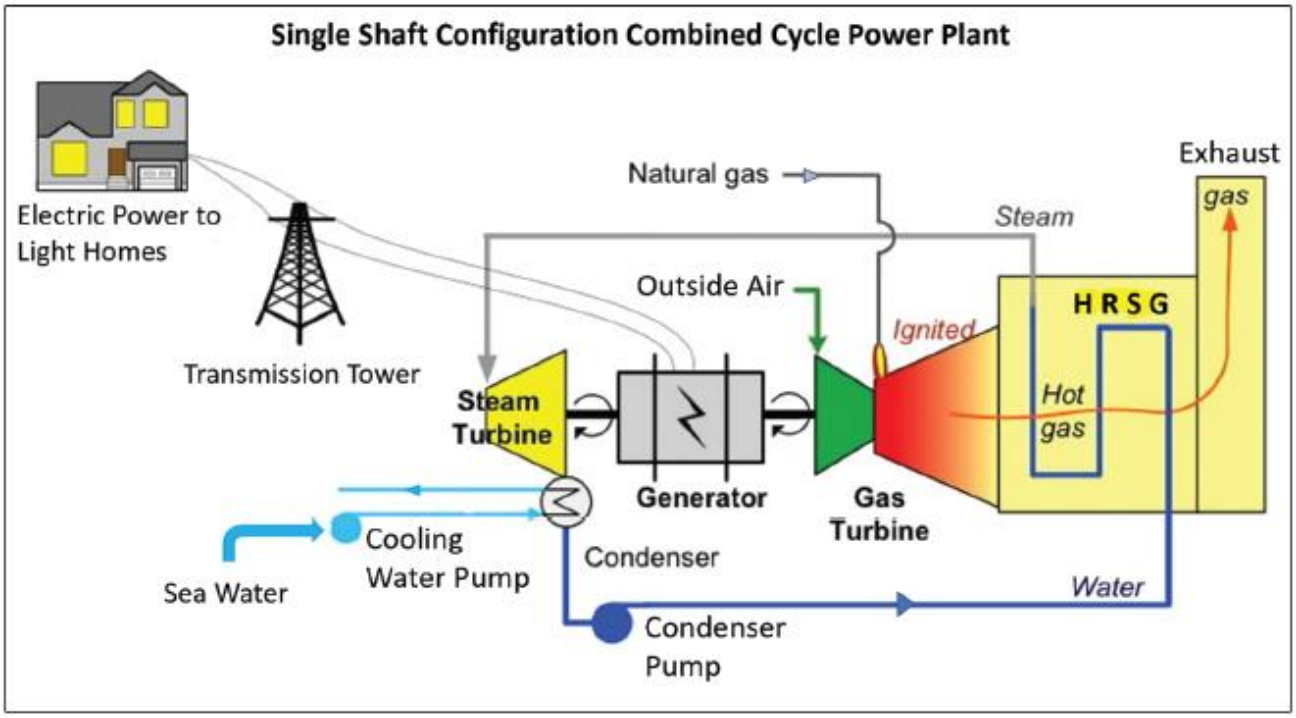
Process **Components and Technology**



CCGT Power Plant



Water Requirements

During the four-year construction period, the Project will require approximately 320 m^3 of water per day. The water requirement will initially be sourced from water service providers from in and around the province and the region up until the 9th month of construction when the RO seawater desalination plant is expected to come online (prior to the commencement of major concrete pouring works for, among others, the LNG storage tank foundation). Once operational, the Project will require approximately 2,067,264m^3 of water per day (86,136 m^3 per hour). During operations, the Project's water requirements, which will primarily be used as cooling water for the CCGT power plant, will be pumped from the sea the RO seawater desalination plant and will be re-circulated back to the sea after use. The freshwater requirement during the operation will be met by desalinating the seawater in a reverse osmosis (RO) plant. No groundwater or surface water sources will be used/extracted in either the construction or operational periods of the Project.

Power Requirements

During the four-year construction period, the Project will source its power requirements from the adjacent 69kV transmission line of Meralco and onsite generator sets. Once operational, the Project will draw its power from the CCGT power plant with back-up supply (in cases where the both units of the CCGT power plant are offline) from (a) NGCP's 500kV interconnection and/or (b) small emergency diesel generator sets onsite. This auxiliary power consumed by the (a) various equipment of the CCGT Power Plant will be approximately 26MW and (b) various equipment of the LNG Terminal will be approximately 10 MW.

Fuel Requirements

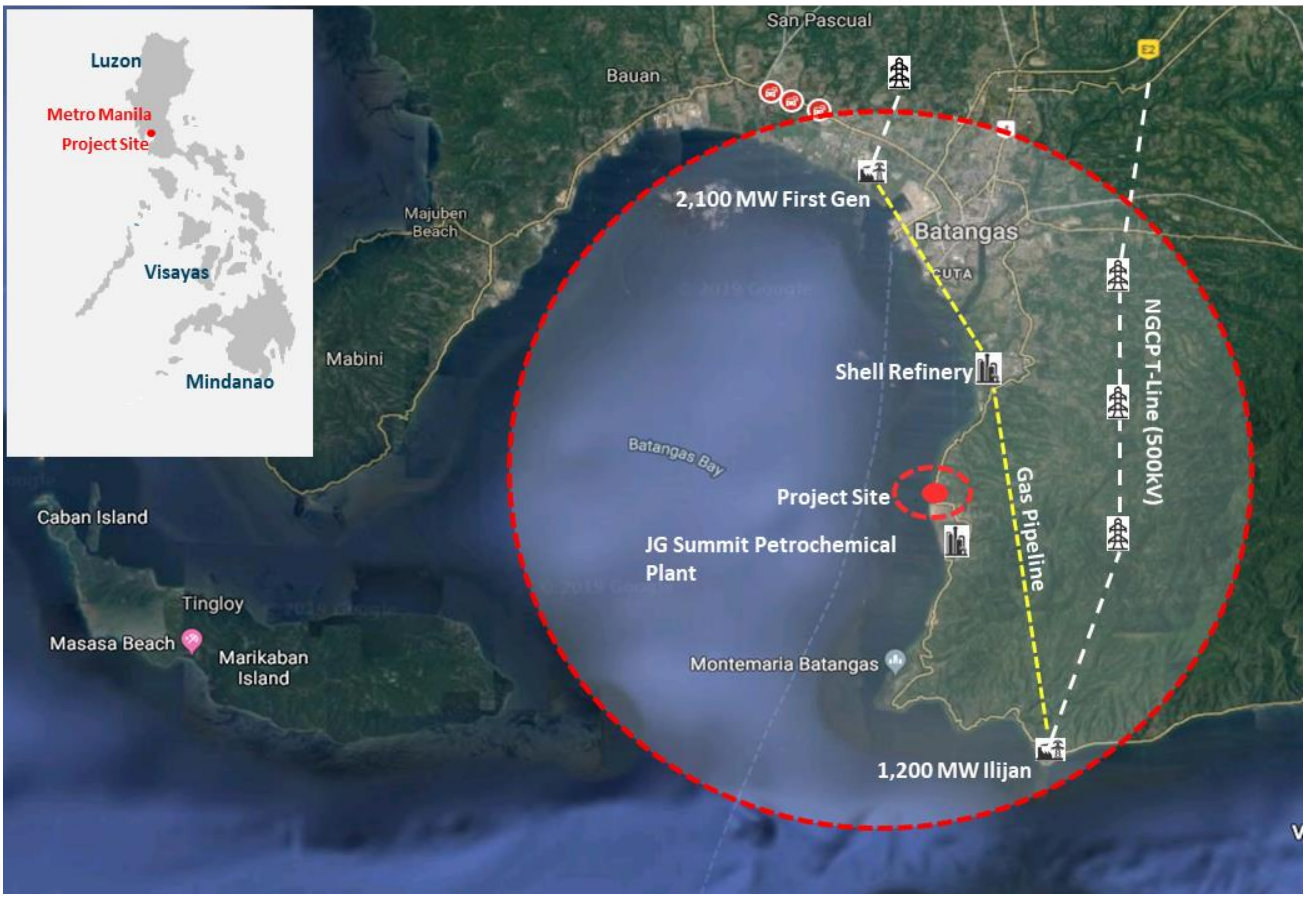
The CCGT power plant will use natural gas as fuel to be supplied from the LNG Terminal. On average, the CCGT power plant is expected to consume approximately 128 tons of natural gas per hour during peak loading at higher ambient temperatures.

Summary of Project Alternatives

The Project Site is ideal for an LNG import terminal and CCGT power plant and is strategically located within a 20-kilometer radius of (a) a deep bay for LNG carriers to berth (b) existing gas-fired power plants (First Gen and Ilijan) whose fuel supply from the Malampaya gas field is expected to deplete this decade, (c) gas pipeline infrastructure linking to the existing gas-fired plants, (d) existing 500kV transmission line for evacuation of power onto the grid, (e) large commercial/industrial

customers who could benefit from access to affordable and cleaner natural gas for their production processes, and (f) waterway access to the Visayas and Mindanao for inter-island distribution of natural gas across the country.

A map showing the Project Site's strategic location for the development of an integrated LNG import terminal and CCGT power plant is shown in the figure below.



Several types of technologies and configurations were considered for this Project. The table below summarizes (a) the different technological options and / operational configurations compared with a land-based LNG import terminal and CCGT power plant and (b) why an LNG import terminal and CCGT power plant are the best use of the Project Site in terms of providing the Philippines with a safe, reliable, sustainable and affordable solution for the country's growing energy requirements.

Table 1 Project alternatives – technology selection

Options Considered	Remarks	Advantages of land-based LNG Terminal and CCGT Power Plant Technology
Floating Storage Regasification Unit ("FSRU")	• Ideal as an interim solution in situations where storage capacity must come online in a very short period • Vulnerable to possible disruptions in gas supply during severe weather conditions (storm surges, typhoons, and tsunamis) • Higher hazard for marine traffic and marine navigational lanes • Limited expansion capacity	• Land based storage tanks are the preferred solution for an LNG import terminal over the medium to long-term (similar to those seen in Japan, Korea, and the rest of the world) • Less vulnerable to disruptions in supply due to storm surges, typhoons, and tsunamis • Minimal impact to marine traffic and marine navigational lanes • Ideal for expansion as market demand grows
Coal-Fired Power Plant ("Coal Plant")	• Project Site is too small for a Coal Plant	• Up to 60% less CO_2 emissions than a similar sized Coal Plants

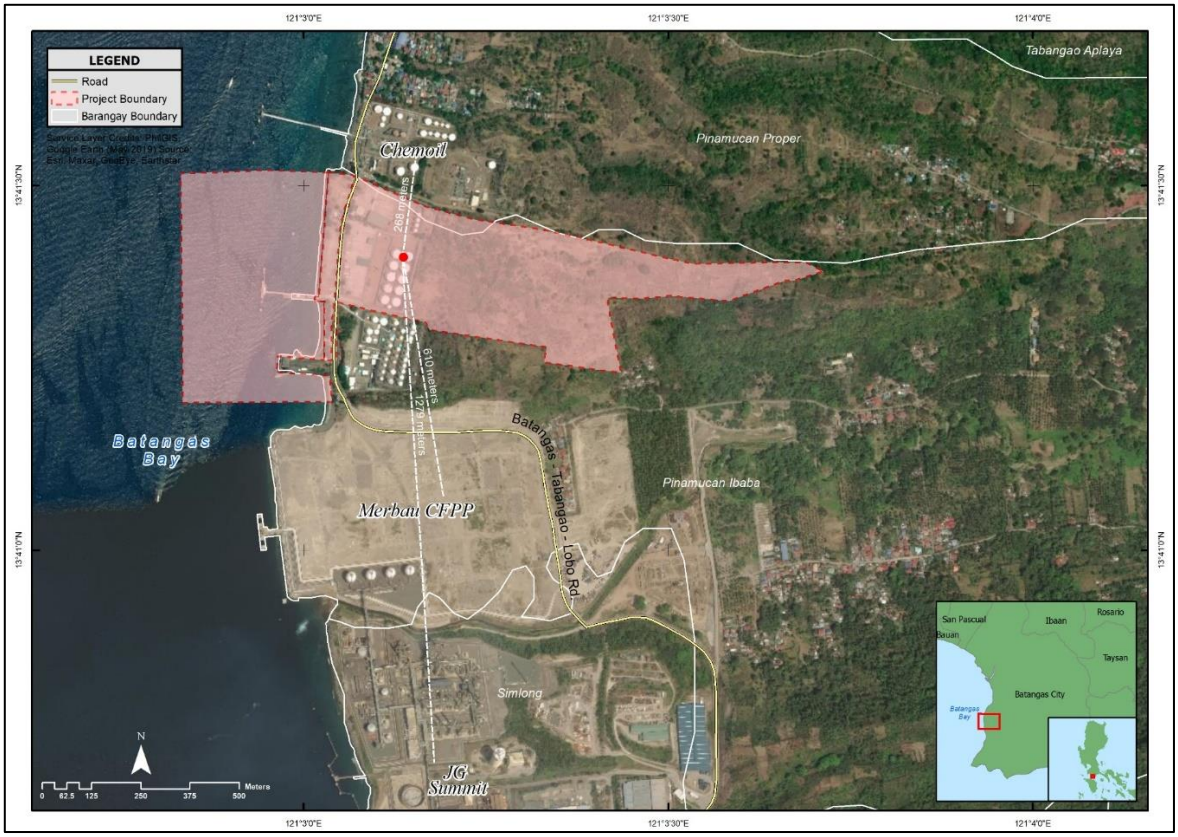
Options Considered	Remarks	Advantages of land-based LNG Terminal and CCGT Power Plant Technology
	• The Department of Energy has issued a moratorium on new Coal Plants • Increased awareness of climate change and changing market perspectives on new coal-fired generation make financing and insuring new Coal Plants very difficult/ expensive • An uncertain regulatory future with respect to possible carbon taxes and increased regulation of emissions and effluents • Does not address the depletion of the Malampaya Gas Field	• Greater than 90% less NO_x emission than a similar sized Coal Plants and almost zero SO_2,and particulate matter emissions. • Significantly lower GHG emissions per kWH of electricity produced (g $CO_{2\,e}$/kWH)[1] • Uses 50% less water than a similar sized Coal Plants • Uses 75% less land than a similar sized Coal Plants • CCGT power plant provides flexible generation (ramp-up and ramp-down rates) critical for increased Renewable Energy integration on to the Luzon grid
Diesel-Fired Power Plant ("Diesel Plant")	• Designed for peaking power and not ideal for baseload generation as required by the Luzon grid • High production costs • Does not address the depletion of the Malampaya Gas Field	• Up to 60% less CO_2 emissions than a similar sized Diesel Plants • Greater than 90% less NO_x emissions than a similar sized Diesel Plants and almost zero SO2 and particulate matter emissions • Better suited to meet the future baseload and mid-merit generation requirements of Luzon grid
Solar Photovoltaic	• Project Site (a) area is too small and (b) topography is too hilly for a solar farm • Power output is intermittent • Does not address the depletion of the Malampaya Gas Field	• Higher energy density/production per square meter of land used • Better suited to meet the future baseload and mid-merit generation requirements of Luzon grid
Wind Turbine	• Project Site (a) area is too small and (b) topography is too hilly for a wind farm • Power output is intermittent • Does not address the depletion of the Malampaya Gas Field	• Higher energy density/production per square meter of land used • Better suited to meet the future baseload and mid-merit generation requirements of Luzon grid
Combustion turbine (natural gas)	• Lower base overnight cost (more $/kW)[2] but lower efficiency (higher capacity-weighted average cost)[3] • Higher operations and maintenance cost ($/MWh)[3]	• Less efficient • Higher base overnight cost (less $/kW)[3] but higher efficiency (lower capacity-weighted average cost)[4] • Lower operations and maintenance cost ($/MWh)[3]
Internal combustion engine (natural gas)	• Lower base overnight cost (more $/kW)[3] but lower efficiency (higher capacity-weighted average cost)[4] • Higher operations and maintenance cost ($/MWh)[3]	• Less efficient • Higher base overnight cost (less $/kW)[3] but higher efficiency (lower capacity-weighted average cost)[4] • Lower operations and maintenance cost ($/MWh)[3]
No Project Option	• Does not address the depletion of the Malampaya Gas Field • Does not meet the future baseload and mid-merit generation requirements of Luzon grid • Failure to meet the depletion of Malampaya Gas Field could result in an energy crisis and massive and	

[1] (Moomaw, et al., 2011)
[2] (U.S. Energy Information Administration, 2020)
[3] (U.S. Energy Information Administration, 2017)

Options Considered	Remarks	Advantages of land-based LNG Terminal and CCGT Power Plant Technology
	prolonged power outages on Luzon grid starting in 2024	

Project Location

The Project Site is located within the boundary of two barangays - Barangay Pinamucan Ibaba and Pinamucan Proper in Batangas City, Philippines and will have an approximate area of 25 hectares of existing onshore land and 19.44 hectares of foreshore area. Inside the 19.4 hectares of foreshore area are an existing 1.24 hectares of reclaimed land. The Project Site vicinity and nearby facilities is shown in the figure below.



Project Vicinity Map

Project Proponent

The Project is a joint development between Gen X Energy LLC ("Gen X") and LCT Energy & Resources, Inc. ("LCT") through BCE (a company duly incorporated under the laws of the Philippines).

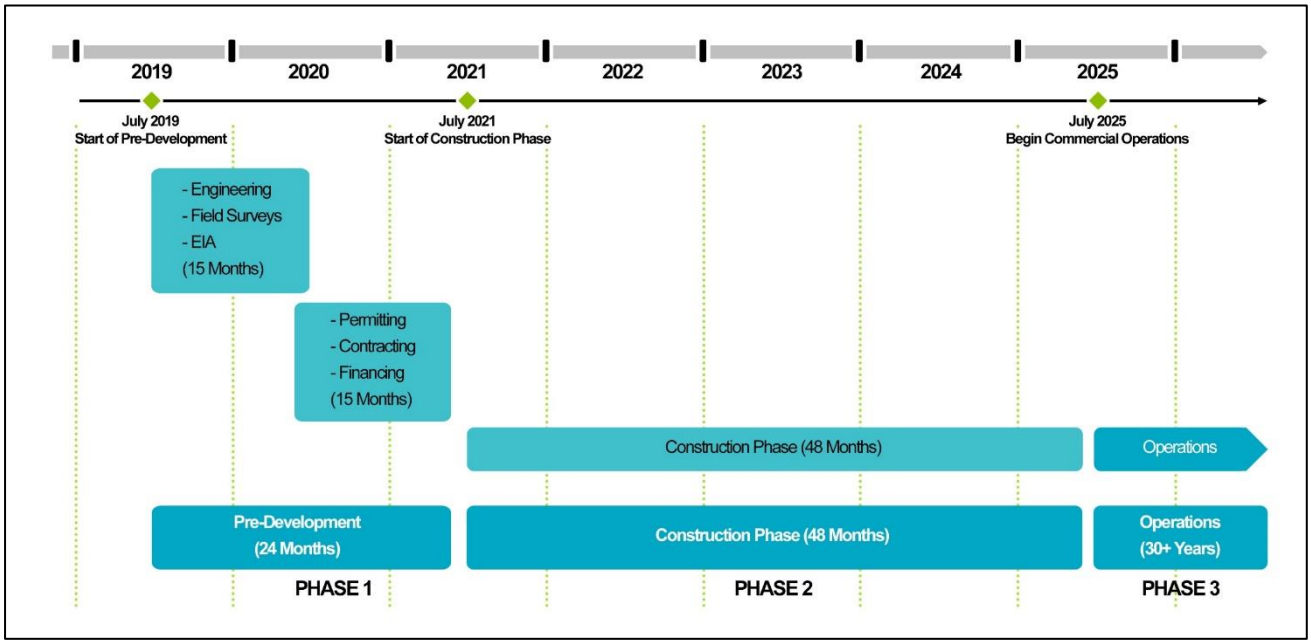
BCE is a wholly owned subsidiary of Gen X Energy LLC ("Gen X"). Gen X is a Blackstone portfolio company with the sole objective of making investments in energy projects in Asia. Blackstone is listed on the New York Stock Exchange and is one of the world's leading private equity funds with a proven track record of making investments in the energy sector.

LCT is a wholly owned company of Lucio C Tan Sr. and his immediate family. Lucio C. Tan Sr. and his family are majority shareholders of some of the Philippines' largest and most respected conglomerates with interests in aviation, banking, property development, beverages, distilled spirits, and tobacco. Lucio C. Tan Sr. and his family is (a) the owner of the Project Site through a wholly owned company Dominium Realty & Construction Corp. ("Dominium"), and (b) owner and operator of Himmel Industries, Inc. ("Himmel"), Total Bulk Corporation ("Total Bulk"), and Tanduay Distillers, Inc. ("Tanduay").

To facilitate development and siting of the Project, BCE has entered into a contract of lease with Dominium and Himmel, which grants BCE the right to develop the Project on the Project Site. Himmel is also applying for the expansion of its Foreshore Lease Agreement (FLA) area from 81,786 sqm to 181,786 sqm with the Department of Environment and Natural Resources (DENR) – Community Environment and Natural Resources Office (CENRO) in order to accommodate the requirements of Himmel's partner / affiliate, BCE.

Projected timeframe of the project implementation

The projected timeframe of the different Project phases is shown in the figure below. At present, the Project is in pre-construction, which include, among others, the EIA process, completing engineering and design, and conducting field surveys and technical studies. The Project is expected to achieve financial close and start construction in July 2021. The construction period is expected to last 48 months and will include site preparation, plant construction and commissioning. It is anticipated that the Project will begin its commercial operations by July 2025 and will be operational for 50 years or longer.



Project timeframe

Summary of the major impacts and residual effects after mitigation

The integrated summary of the Project's main impacts and residual effects after mitigation is shown in **Table 2**.

Project proponent's statement of commitment and capability to implement necessary measures to prevent adverse negative impacts

The responsible parties for the environmental management of the Project are BCE, its contractors, the Barangay LGU, Batangas City LGU, PESO and the DENR.

The Environmental Management Plan ("EMP") and Environmental Monitoring Program ("EMoP") as well as the conditions that will be included in the Environmental Compliance Certificate ("ECC") will provide guidance to these parties in the management of the Project activities during the pre-construction, construction, and operational phases of the Project, ensuring that all measures to address potential impacts are in accordance with the laws, policies, guidelines and standards applied to the corresponding environmental component. The target efficiency/performance is also provided in the matrix to guarantee that the employed measures meet the requirements of the Project.

BCE will establish an organizational structure that will effectively monitor the implementation of the commitments that will reinforce the relationship between BCE and its stakeholders. BCE will appoint its Safety, Health and Environment Officer to continually monitor compliance with the EMP and to be responsive to actual Project impacts from current Project activities. Upon issuance of the Environmental Compliance Certificate (ECC), the proponent will ensure that the contractors during the construction and operation phases will also comply with the approved EMP and EMoP. The Environmental, Health, and Safety Officer will regularly report to Environmental Management Bureau (EMB) through the submission of a Compliance Monitoring Report (CMR) and a Self-Monitoring Report (SMR).

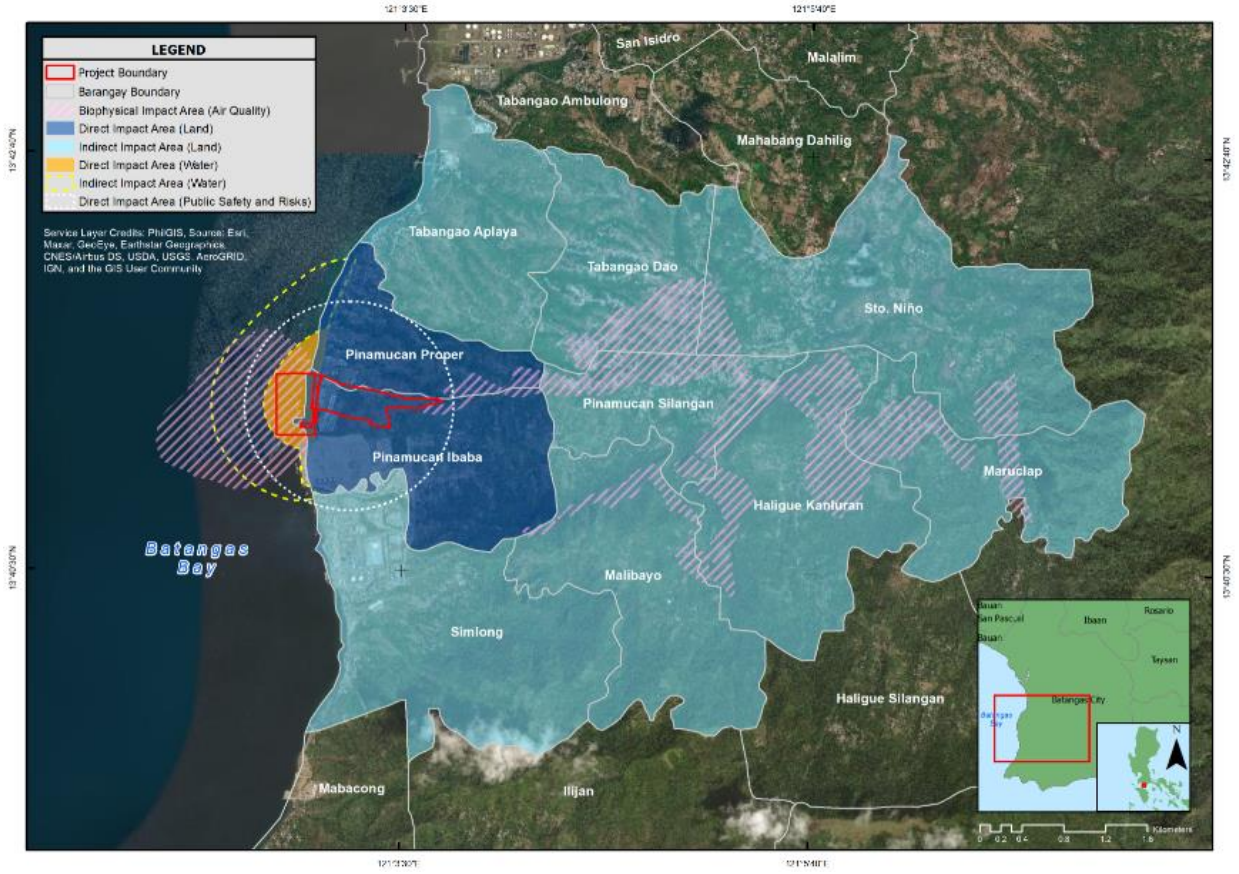
Table 2 Integrated Summary of the Main Impacts (Major, long-term and irreversible) and Residual Effects After Mitigation

Project Activities	Project Phase / Envi. Aspect	Potential Impact	Options for Prevention, Mitigation or Enhancement	Target Efficiency/ Performance	Residual Effects
Pre-construction Phase					
The Project Site is classified as a heavy industrialized zone and is occupied by Lucio C. Tan Sr.'s wholly-owned businesses. The Project Site is uninhabited. All regulatory permits will be secured prior to the construction and operation of the Project. BCE will also comply with the DAO 2017-15 guidelines on the public consultations. There are no major, long-term and irreversible impacts during the pre-construction phase.					
Construction Phase					
Site Preparation – land clearing	The Land – Terrestrial Ecology	Vegetation removal of approximately 18.50 ha (or 70.5% of the total Project Site inland area) will lead to habitat loss, fragmentation, edge effects and potential impacts on the presence of wildlife and vegetation species (native, endemic and threatened species)	• Perform 100% tree inventory (all trunks with ≥10 cm DBH) of areas to be cleared. • Secure all statutory requirements relating to vegetation clearing (e.g. Tree Cutting Permit) from the DENR prior to any clearing operations. BCE will establish offsets in lieu of areas cleared of vegetation. • Development of a pre-clearing plan prior to construction • Clearly identify and demarcate the extent of vegetation removal or disturbance both on the plans and on the ground prior to construction. Surrounding patches of vegetation (not included in the inland development area) will be retained and protected to serve as vegetation corridor to reconnect surrounding fragmented habitats. • Implement a strictly no hunting and/or collecting policy of any wildlife and/or forest products for all workers (applies to both direct hires and subcontractors). • Importance of wildlife conservation will be included as part of the environmental IEC programs of the Project for both the stakeholders and all workers. • Restricted access to the Project Site during operation will provide protection to remaining threatened and/or endemic species. • Progressive rehabilitation of Temporary Development areas (utilized during construction phase only).	• 100% adherence to Tree Cutting Permit requirements (tree plantation, survival rate, etc). • 100% compliance that BCE will establish offsets in lieu of areas cleared of vegetation.	Unavoidable impact due to land clearing activities
Construction of offshore facilities and nearshore facilities - pile type jetty - pipeline - intake - outfall	The Water - Marine Ecology	Physical damage to the fringing reef in the foreshore area which could result to loss of coral cover (0.29 ha with an average HCC of 42%)	• Relocation of corals that will be displaced during the construction in artificial reefs, coral nursery or fringing reefs adjacent to the Project Site ***(see Section 2.2.5.4.3.1 of the EIS - Coral rehabilitation plan for more details)***	• 100% implementation of coral rehabilitation plan. Regular monitoring of the coral relocation areas (artificial reefs, coral nursery of nearby fringing reefs). The coral rehabilitation aims to increase the hard coral cover and fish biomass in the potential rehabilitation sites within the first three years of implementation.	Unavoidable impact due to construction of offshore components
			• The distance between the jetty piles that will be placed at depths of 1.5 to 4 m water will be maximized to reduce the area of the coral that will be directly impacted during the erection. • Relocation of corals that will be displaced during the construction in artificial reefs, coral nursery or fringing reefs adjacent to the Project Site. In addition, BCE will implement various coral rehabilitation efforts in several locations within Batangas City ***(see Section 2.2.5.4.3.1 of the EIS - Coral rehabilitation plan for more details).***	• 100% implementation of coral rehabilitation plan. Regular monitoring of the coral relocation areas (artificial reefs, coral nursery of nearby fringing reefs). The coral rehabilitation aims to increase the hard coral cover and fish biomass in the potential rehabilitation sites within the first three years of implementation. Survival rate of relocated corals at 80%.	
General construction works and construction of horizontal structures - access road network inside the Project Site - drainage systems - water distribution - piping and instrumentation - LNG tank and CCGT facilities - building and warehouse	The Air – Ambient Air Quality/ The People	Degradation of air quality due to fugitive dusts such as wheel entrained dusts, storage and handling of materials, and stockpiles of construction equipment and combustion of construction vehicles and heavy equipment	• Implementation of dust suppression activities (e.g. water sprinkling) of access and haul roads including other exposed soils and stockpiles will be implemented during dry weather (2 times in the morning and 2 times in the afternoon or more frequent if needed). • Dust suppression activities especially during the dry season along dusty road stretches will be implemented. • Implementation of 20 km/ hr vehicle speed limit, speed limit signages and provision of truck cover. • Workers will be provided with the appropriate personal protective equipment pursuant to BWC-DOLE Occupational Safety and Health Standards to protect them from disease associated with dusts. Standard occupational health and safety practices will be implemented pursuant to BWC-DOLE Occupational Safety and Health Standards. • Requiring subcontractors to demonstrate compliance with government vehicle emission tests prior to contract award. • Exhaust fumes from vehicles, construction equipment, and other fuel burning equipment will be managed by using of low sulphur fuel where possible. • Traffic management guidelines will be incorporated in worker's and subcontractor's induction seminar. Guidelines will include control in vehicle speed and spraying of water on road routes and work sites as well as transport routes near the host communities. • Fuel efficiency will be maximized through scheduling of vehicle and equipment movements in order to minimize both idle time and distances travelled.	• 100% adherence to DAO 2000-81 "IRR of the Philippine Clean Air Act of 1999" and RA 8749 "Philippine Clean Air Act of 1999" • 100% compliance to EMoP – air quality monitoring.	Unavoidable but impacts may be lessened if mitigating measures are properly implemented

Project Activities	Project Phase / Envi. Aspect	Potential Impact	Options for Prevention, Mitigation or Enhancement	Target Efficiency/ Performance	Residual Effects
			• Vehicles and construction equipment will be regularly maintained in order to increase efficiency, reduce fuel use, and help reduce costs associated with equipment downtime. • Equipment dispatch will be monitored closely in order to eliminate unnecessary use and to increase efficiency of use.		
Ingress and egress of workers and mobilisation of vehicles and heavy equipment	People	Traffic during peak hours (6:00 am to 8:00 pm | 11:00 to 1:00 PM and 4:00 to 7:00 PM)	• Preparation and implementation of Traffic Management Plan (TMP) which include road closures, traffic rerouting, provision of temporary diversion lane, vehicle scheduling, speed limit, safety signages, traffic aides, waiting areas for vehicles, parking and road maintenance) in coordination with BLGUs.	• 100% implementation of TMP in coordination with the LGUs.	Unavoidable but impacts may be lessened if traffic management measures are properly implemented
		Road safety and vehicular accidents	• Inclusion of TMP, driving safety and protocols in the Health and Safety Orientation of the contractor's workers. • Development and implementation of response plan to road and vehicular accidents.	• 100% implementation of TMP in coordination with the LGUs. • 100% implementation of ERPs.	
Operation Phase					
Discharge of cooling water /Thermal plume from the outfall	The Water - Marine Ecology	The coral reef area will experience a 1.5-2.0°C increase in sea surface temperature (SST) during the operation of the outfall under normal wind conditions. Increase in sea temperature is detrimental to the existing marine environment especially the coral reef. High temperature increase can cause coral bleaching and negative physiological effects to reef fish.	• Implementation of various coral rehabilitation efforts in several locations within Batangas City. If coral bleaching because of the thermal plume will occur, BCE will try to replace or offset the area of hard corals lost to bleaching through the coral rehabilitation projects. ***(see Section 2.2.5.4.3.1 Coral rehabilitation plan of the EIS for more details).***	90% Adherence to DAO 2016-08 Water Quality Guidelines (WQG) and General Effluent Standards (GES). Value considers baseline parameter exceedances. Semi-annual monitoring of the coral reef stations. The results will be compared to the baseline data.	Unavoidable impact

Identified stakeholders (Direct and Indirect Impact Areas)

The direct and indirect impact areas for this Project are shown in the figure and table below. The direct impact areas (DIA) are the two barangays on which the Project is located, Barangay Pinamucan Ibaba and Pinamucan Proper, both in Batangas City. Potential additional DIA during operation is Barangay Simlong in terms of Public Safety and Risks - only in case of accidental release due to loss of containments. Indirect impact areas (IIA) include a wider area of the host barangays and adjacent barangays which are close to the Project Site. Section 10 of DAO 2017-15 were used as reference in the identification of direct and indirect impact areas for the Project. A total of 10 barangays were included in the study which comprised of two barangays considered as DIAs, two barangays considered as IIAs only during construction, three barangays considered as IIAs only during operation and three barangays considered as IIAs both during construction and operation. The IIAs identified during construction and operation are not the same considering the difference of environment during construction and operation.



Direct and Indirect Impact Areas

Table 3 - EIA Study Areas (Direct and Indirect Impact Areas)

Impact areas	Remarks
Direct Impact Areas (DIA)	*In terms of biophysical impact:* The area within the Project Site boundary, comprising the existing jet fuel and chemical tank operations areas, vegetated area to the east and the adjacent coastal area in the west. 1. Pinamucan Ibaba (97% of Inland area of the Project Site) 2. Pinamucan Proper (3% of Inland area of the Project Site)
	In terms of socio-economic impact: Barangay Pinamucan Ibaba and Barangay Pinamucan Proper being the direct impact areas in terms of the Project and priority for potential socio-economic benefits. 1. Pinamucan Ibaba 2. Pinamucan Proper
	Potential thermal plume impacts in the coastal waters during operation: 1. Pinamucan Ibaba 2. Pinamucan Proper

Impact areas	Remarks
	Note that Thermal Plume modelling results for both monsoons confirm that the temperature rise around the proposed outfall is below 3.0°C. The high temperature (2.5-3.0°C) increase will only be limited to areas immediately around the proposed outfall affecting only 0.3 ha.
	In terms of Public Safety and Risks (only in case of accidental release due to loss of containment) Potential impacts of accidental release of LNG, gas and fire on the Project Site on the community can extends up 1 km radius from the Project Site as shown in various loss of containment (LOC) scenario except from the LNG Tank. 1. Pinamucan Ibaba 2. Pinamucan Proper 3. Simlong The risk contour line of 10^6 per average year for Location Specific Individual Fatality Risk (LSIFR) stays mostly within the Project Site boundary and extends to neighbouring industrial sites on the north and south to some extent but does not extend up to residential populations.
Indirect Impact Areas (IIA)	*In terms of biophysical impact:* • Potential *traffic impacts during construction: 1. Tabangao Aplaya 2. Pinamucan Proper 3. Pinamucan Ibaba 4. Simlong • Potential **air quality impacts during operation: 1. Pinamucan Silangan 2. Malibayo 3. Sto. Nino 4. Haligue Kanluran 5. Maruclap • Potential ***thermal plume impacts in the coastal waters during operation: 1. Pinamucan Ibaba 2. Pinamucan Proper *Based on community consultations, these barangays are prone to traffic and road accident especially during peak hours due to ongoing construction of neighbouring facilities. **Air dispersion modelling predicted that the emission of the Project would reach these barangays especially during SW monsoon. However, predicted highest pollutant concentrations are all below the relevant criteria. ***Thermal Plume modelling results for both monsoons in the indirect impact areas are predicted to be around 1 to 2°C which is below the DAO 2016-08 GES criteria of 3.0°C.
	In terms of socio-economic impact: Adjacent and nearby barangays that will benefit at a provincial and regional level from potential livelihood and employment opportunities, revenue and taxes generated from the Project: 1. Pinamucan Ibaba 2. Pinamucan Proper 3. Tabangao Aplaya 4. Tabangao Dao 5. Pinamucan Silangan 6. Malibayo 7. Simlong

Construction phase	Operation phase
Direct Impact Areas • Pinamucan Ibaba • Pinamucan Proper **Indirect Impact Areas** • Tabangao Aplaya • Simlong • Pinamucan Silangan • Tabangao Dao • Malibayo	**Direct Impact Areas** • Pinamucan Ibaba • Pinamucan Proper • Simlong (Potential DIA in terms of Public Safety and Risks (only in case of accidental release due to loss of containment)) **Indirect Impact Areas** • Pinamucan Silangan, Malibayo, Haligue Kanluran, Maruclap Sto. Nino, and Tabangao Dao

Information on where to get a copy of the EIS for further information

Download the full version of the EIS at http://eia.emb.gov.ph/ and click the Notice of Public Hearing/Consultation banner then look for Batangas Clean Energy LNG Terminal and CCGT Power Project. A printed copy of the EIS can be viewed at Barangay Pinamucan Ibaba and Pinamucan Proper Hall, as well as in Batangas City Hall (Admin Office). You may also request a download link to Patrick Caddarao at Patrick.Caddarao@aecom.com / +639988433669.