



**ENVIRONMENTAL IMPACT  
STATEMENT SUMMARY FOR THE  
PUBLIC (English)  
Proposed Diesel Power Plant Project  
*Brgy. Malaya, Pililla, Rizal***

Submitted to:

Environmental Management Bureau – Central  
Office

Submitted by:

INGRID Power Holdings, Inc.

*2 August 2018*

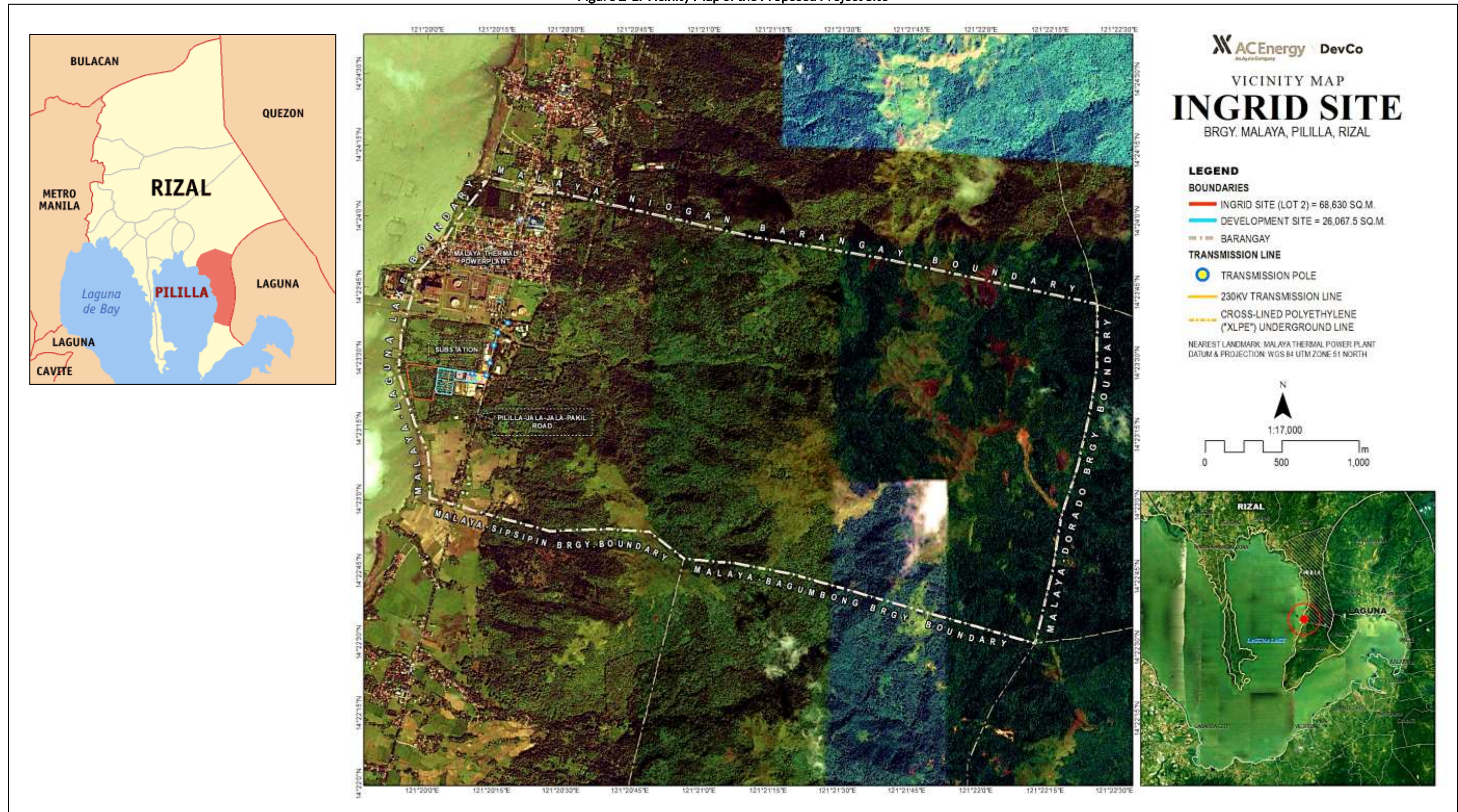
## 1.0 PROJECT DESCRIPTION

<b>Project Name</b>	<b>INGRID Pililla 150-MW Diesel Power Plant Project</b>
<b>Project Type</b>	Thermal Power Plant (Diesel-Fired)
<b>Project Size/Capacity</b>	150 megawatts (MW)
<b>Summary of Project Components</b>	<p><u>Major Components:</u></p> <ul style="list-style-type: none"> <li>• 150 units of 1-MW diesel-fueled engines</li> </ul> <p><u>Auxiliary Facilities:</u></p> <ul style="list-style-type: none"> <li>• Substation (switching and metering station)</li> <li>• Transmission Line (~924-m single-circuit 230-kV line to NGCP Malaya Substation)</li> <li>• Fuel Storage Tanks (2 units of 3,000 m<sup>3</sup> cylindrical tanks)</li> <li>• Instrumentation and Control System (PLC and SCADA system)</li> <li>• Administration Building and Other Site Facilities (containerized)</li> <li>• Service Water System</li> <li>• Fire Protection System</li> </ul> <p><u>Pollution Control Facilities</u></p> <ul style="list-style-type: none"> <li>• Oily Waste Water Treatment System</li> <li>• Septic Tank</li> </ul>
<b>Resource Utilization</b>	<p><u>Water Requirement</u></p> <ul style="list-style-type: none"> <li>• 100 m<sup>3</sup>/month</li> </ul> <p><u>Fuel Requirement</u></p> <ul style="list-style-type: none"> <li>• 264 L/hour/engine</li> </ul>
<b>Project Cost</b>	PHP 1,500,000,000.00

## 2.0 PROPOSED LOCATION

The proposed project will be utilizing a 6.8-hectare leased industrial lot in Brgy. Malaya in the Municipality of Pililla in the second legislative district of Rizal Province, Region IV-A (CALABARZON). Pililla is bounded in the north by Tanay, Rizal; in the east by Sta. Maria and Mabitac, Laguna; in the west by the Laguna de Bay; and in the south by Jalajala, Rizal. The vicinity map is shown in **Figure 2-1**.

Figure 2-1: Vicinity Map of the Proposed Project Site



NOTE: Map provided by the Proponent

FIGURE NO.: <b>1-1</b>	FIGURE TITLE: <b>Vicinity Map of the Proposed Project Site</b>	
PROJECT PROPONENT: <b>INGRID POWER HOLDINGS, INC.</b>	PROJECT TITLE & LOCATION: <b>INGRID PILILLA 150-MW DIESEL POWER PLANT PROJECT</b> Pililla, Rizal	REPORT PREPARER: <b>LCI ENVI CORPORATION</b>

### 3.0 PROJECT ALTERNATIVES

ALTERNATIVES	ANTICIPATED ENVIRONMENTAL IMPACTS
<p><b>Conventional Thermal Power Plant Design</b></p>	<ul style="list-style-type: none"> <li>• <u>Land</u>: Site preparation and earthworks for a wider tract of land may entail considerable changes in the surface landform/terrain/slope and threat to terrestrial ecology due to vegetation removal and loss of habitat. Solid waste generation may be higher due to use of more resources and employment of more personnel.</li> <li>• <u>Water</u>: Construction and operation of larger facilities may have higher water supply requirement that may, in turn, result to competition in water use and higher wastewater generation.</li> <li>• <u>Air</u>: Due to the nature of the project, greenhouse gases will inevitably be released into the atmosphere, thus affecting the microclimate. Power plant emissions from the engines may also adversely affect ambient air quality in the project area if not properly mitigated.</li> <li>• <u>People</u>: Local benefits from the large-scale project (i.e., increased employment, social and economic activities, tax revenues, and basic social services) may be greater. The thermal power plant may contribute to sustaining the transmission capacity and maintaining the power quality, reliability, and security of the grid. However, power plant emissions may cause adverse health effects to the community and workers if not properly mitigated.</li> </ul>
<p><b>Modular Power Technology (Proposed)</b></p>	<ul style="list-style-type: none"> <li>• <u>Land</u>: Minimal site preparation and earthworks may cause minor changes in the surface landform/terrain/slope and threat to terrestrial ecology. Solid waste generation may be low due to lower resource use and manpower requirement.</li> <li>• <u>Water</u>: Water supply requirement is limited to domestic use and may pose little to no competition in water use. Wastewater generation is expected to be low.</li> <li>• <u>Air</u>: Likewise, greenhouse gases will inevitably be released into the atmosphere, thus affecting the microclimate. Power plant emissions may also adversely affect ambient air quality in the project area if not properly mitigated.</li> <li>• <u>People</u>: Local benefits from the project include increased employment, social and economic activities, tax revenues, and basic social services. The diesel power plant may also contribute to sustaining the transmission capacity and maintaining the power quality, reliability, and security of the grid. However, power plant emissions may also cause adverse health effects to the community and workers if not properly mitigated.</li> </ul>
<p><b>No-Project Scenario</b></p>	<ul style="list-style-type: none"> <li>• <u>Land</u>: The land use in the area will still be allotted for industries, according to the 2017-2026 CLUP of Pililla.</li> <li>• <u>Air</u>: Current ambient condition will remain to be affected by the operation of Malaya Thermal Power Plant and existing traffic. Low levels of air pollutants such as SO<sub>2</sub>, NO<sub>x</sub>, CO, and TSP will still be experienced; changes in the micro-climate will be minimal in the absence of the proposed project.</li> <li>• <u>Water</u>: High levels of fecal coliform will still be observed in Laguna Lake, while elevated levels of Mercury and TPH will remain in the groundwater.</li> <li>• <u>People</u>: The no-project scenario entails loss of local employment and service opportunities. The lack of ancillary services may compromise the sustainability of the transmission capacity and the quality, reliability, and security of the power grid.</li> </ul>

## 4.0 PROJECT PROPONENT

**INGRID Power Holdings, Inc.** (the Proponent), the special purpose vehicle (SPV) formed for the partnership of AC Energy, Inc. (AC Energy) and Marubeni Corporation (Marubeni), is planning to develop a 150-MW diesel engine power plant in Brgy. Malaya, Pililla, Rizal, Region IV-A (CALABARZON).

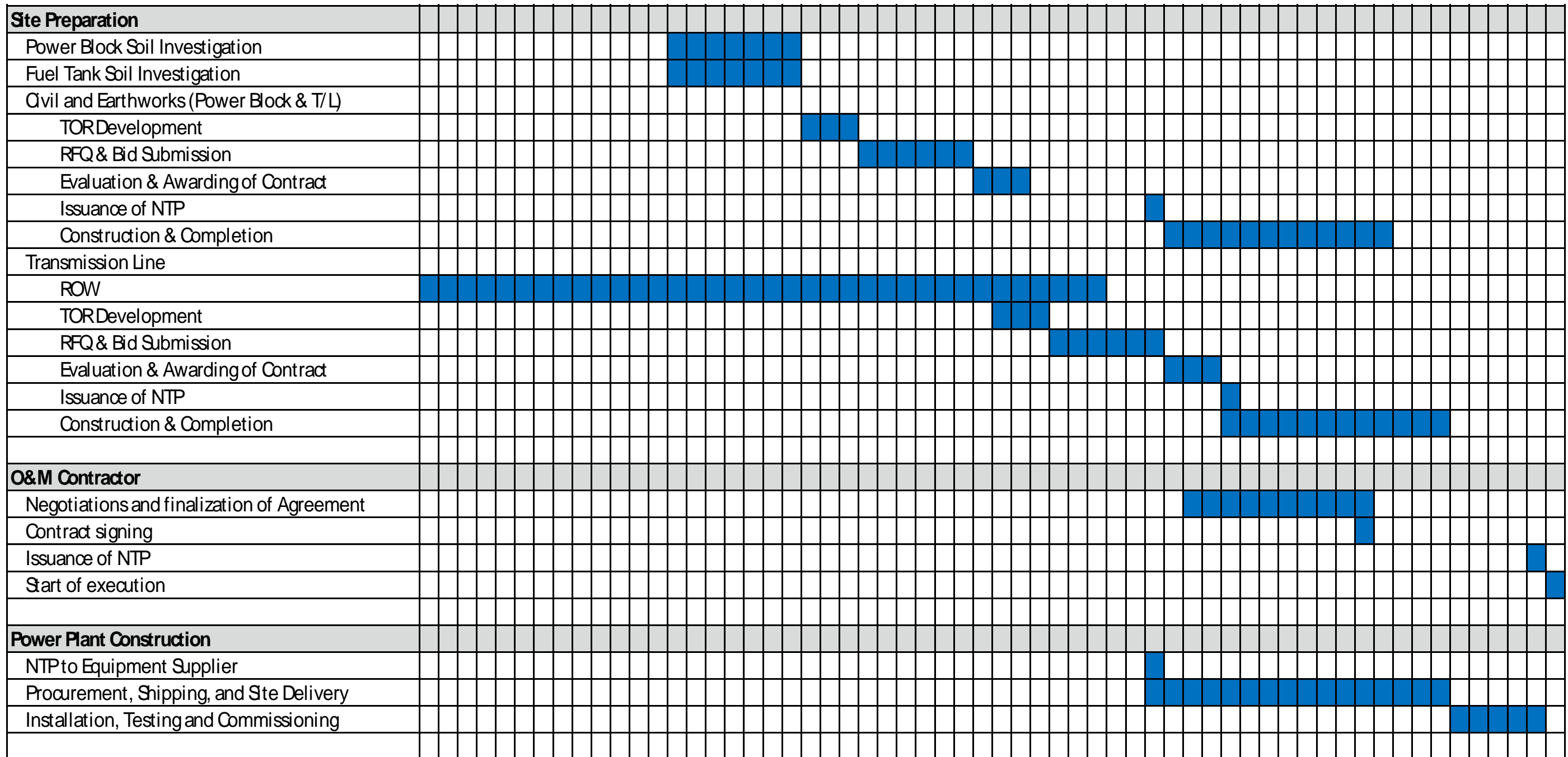
<b>Project Proponent Name, Address, Contact Details, and Authorized Representatives</b>	<b>INGRID Power Holdings, Inc.</b> (an SPV of AC Energy, Inc. and Marubeni Corporation)  Office Address: 4/F, 6750 Office Tower, Ayala Avenue, Ayala Center, Makati City Tel. No.: (02) 730-6300  Authorized Representatives: <b><i>Atty. Dodjie D. Lagazo</i></b> <i>Attorney-in-Fact</i>  <b><i>Ms. Janel M. Bea</i></b> <i>Attorney-in-Fact</i>
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## 5.0 PROJECTED TIMEFRAME OF THE PROJECT IMPLEMENTATION

The tentative project development plan is presented in the next pages. The matrix indicates the expected duration (in weeks) of the different aspects of the proposed project's execution.

INGRID PILILLA 150-MW DIESEL POWER PLANT PROJECT IMPLEMENTATION TIMELINE	2018												2019																																															
	Feb				Mar				Apr				May				Jun				Jul				Aug				Sep				Oct				Nov				Dec				Jan				Feb				Mar				Apr			
	Week	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4							
<b>Equipment Supplier</b>																																																												
Engineering, Tech Specs, and Supply Agreement																																																												
<b>NGCP</b>																																																												
System Impact Study																																																												
Facilities Study																																																												
Accreditation Testing and ASPA Execution																																																												
ERC Filing and PA																																																												
<b>Environment</b>																																																												
Information and Education Campaign																																																												
Public Scoping																																																												
Technical Scoping																																																												
EIA Filing and Approval																																																												
<b>Fuel Supply</b>																																																												
TOR Development																																																												
RFQ & Bid Submission																																																												
Evaluation and Clarification																																																												
Fuel Supply Agreement (Execution Version)																																																												

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## 6.0 SUMMARY OF MAJOR IMPACTS AND RESIDUAL EFFECTS AFTER MITIGATION

MODULE	SUMMARY OF IMPACTS ANALYSIS	MITIGATION/ENHANCEMENT MEASURES	RESIDUAL IMPACTS
<b>LAND</b>			
<b>Land Use and Classification</b>	Solid waste is expected to be produced.	Implementation of a solid waste management plan	Accumulation of solid waste on site will be minimal
<b>Pedology</b>	There may be some soil erosion due to earth movement during site development.	Limitation of earth movement to areas where site development is necessary	Soil erosion will only be limited to areas for site development
	There is a risk of soil contamination due to the maintenance of engines and transfer of diesel fuel.	Installation of oily wastewater treatment facility	Degradation of soil quality will be avoided.
<b>Terrestrial Ecology</b>	Some vegetation must be cleared prior to the installation of the engines.	Limitation of vegetation clearing to areas where project components will be installed or constructed.	Vegetation within the site will be retained.
<b>WATER</b>			
<b>Water Quality</b>	Engine maintenance and fuel transfer may cause accidental oil spills, which may affect groundwater and surface water.	Installation of proper drainage and oily wastewater treatment facility	Effluent from this facility shall be within DAO 2016-08 General Effluent Standards.
	Possible siltation may be observed during site development.	Installation of silt traps	Siltation will be minimized
<b>AIR</b>			
<b>Meteorology</b>	Due to the nature of the project, greenhouse gases, such as carbon, will inevitably be released into the atmosphere, thus affecting the local micro-climate.	Regular and proper maintenance of engines for more efficient fuel combustion, thus reducing carbon emissions  Scaling-up of carbon sequestration through tree planting	Carbon emissions will still be released, but will be mitigated by carbon sequestration.
<b>Ambient Air Quality and Noise</b>	NO <sub>2</sub> emissions from the engines may adversely affect the area.	Possible installation of pollution control devices such as but not limited to catalytic converters to lessen emissions	Efficiencies of various pollution control devices vary. Catalytic converters may reduce emissions by as much as 90%.
	The generators are expected to emit noise. This may affect	Incorporation of silencer in the engine system to	Noise will be minimized, especially since the



MODULE	SUMMARY OF IMPACTS ANALYSIS	MITIGATION/ENHANCEMENT MEASURES	RESIDUAL IMPACTS
	the ambient noise levels in the area.	reduce the noise level within acceptable limits  Maintenance of vegetation surrounding the area to serve as natural noise barriers	generators are housed in containers.
<b>PEOPLE</b>			
<b>Cultural/Lifestyle Change</b>	Increase in income can introduce and expose workers and community to vices that tend to undermine morality.	Coordination with barangay LGUs and PNP to enforce law to avoid vice-related problems in the community  Strict implementation of a drug and alcohol-free work environment  Installation of CCTVs in strategic places	Untoward incidents involving the workers and the community can be minimized.
<b>Threat to Public Health and Safety</b>	Power plant emissions may cause adverse health effects (i.e., respiratory) to the community and workers if not properly mitigated.  Crime incidence may also increase in the local community.	Conduct of medical missions and regular check-ups to workers and host and adjacent barangays.  Coordination with Municipal Health Officer (MHO) and barangay health units to address health-related needs of the community  Coordination with barangay officials to ensure peace and order among workers and community members	Health effects of the proposed project can be monitored.  Health of the community can improve because of the medical missions and regular check-ups.
<b>Generation of Local Benefits from the Project</b>	Generation of additional source of income and livelihood  Additional revenue for the local government  Increased basic social services  Addition and improvement of local residential dwellings	Implementation of social development programs that are responsive to local needs in the impact area	The community will reap the benefits of the project through social development programs and corporate social responsibility projects.
<b>Traffic Congestion</b>	Increase in traffic generation in the area	Coordination with LGU on scheduling and	Traffic due to fuel deliveries will be controlled.

MODULE	SUMMARY OF IMPACTS ANALYSIS	MITIGATION/ENHANCEMENT MEASURES	RESIDUAL IMPACTS
	due to delivery trucks coming in and out of the Plant	handling the flow of traffic near the project area	

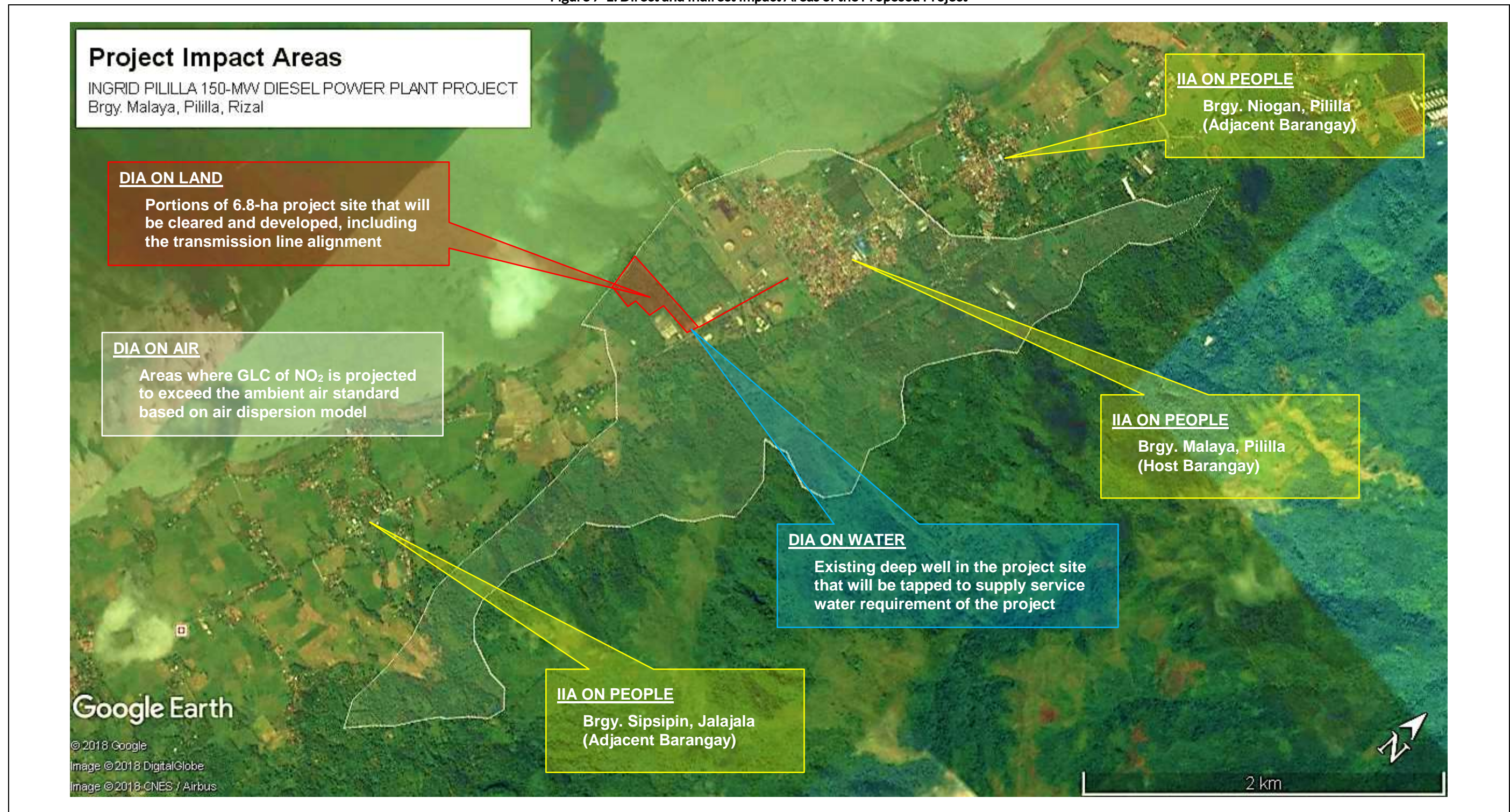
## 7.0 IDENTIFIED STAKEHOLDERS

Initially, the project impact area generally consisted of the 6.8-hectare project footprints as the direct impact area (DIA) and the areas in the immediate vicinity of the project site in Barangay Malaya in the Municipality of Pililla as the indirect impact area (IIA). In accordance with the guidelines provided in DAO 2017-15, after the completion of the EIA study, the delineation of the direct and indirect impact areas was updated as follows:

- For the Land component, the direct impact area (DIA) pertains to the areas that will be cleared and developed for the construction and operation of the proposed project components.
- For the Water component, the DIA refers to the existing deep well within the project site that will be tapped to supply the service water requirement of the project and may be affected by the proposed project activities. The Laguna de Bay, nearby groundwater sources, and barangay irrigation system were considered in the general characterization of the project area.
- For the Air component, the DIA covers the areas within the host barangay of Malaya, where the ground-level concentrations (GLC) of nitrogen dioxide (NO<sub>2</sub>), the criteria pollutant of potential concern, were projected to exceed the ambient standard based on the air dispersion model conducted.
- For the People component, the IIA encompasses the communities in the host Municipality of Pililla, particularly Brgy. Malaya (host barangay) and Brgy. Niogan (north of Malaya), and in the adjacent Municipality of Jalajala, particularly Brgy. Sipsipin (south of Malaya), which are expected to benefit from the employment, business opportunities, taxes, and other potential socio-economic contributions of the project. The IIA coverage may be expanded to include the Province of Rizal, Region IV-A (CALABARZON), and the entire Luzon region, which can also benefit from the ancillary services to be provided by the project to the power grid.

The impact area delineation for the proposed project is graphically presented in **Figure 7-1**.

Figure 7-1: Direct and Indirect Impact Areas of the Proposed Project



NOTES: Map generated by EIA Study Team using Google Earth; Visual delineations are approximate.

FIGURE NO.: <b>7-1</b>	FIGURE TITLE: <b>Direct and Indirect Impact Areas of the Proposed Project</b>	
PROJECT PROPONENT: <b>INGRID POWER HOLDINGS, INC.</b>	PROJECT TITLE & LOCATION: <b>INGRID PILILLA 150-MW DIESEL POWER PLANT PROJECT Pililla, Rizal</b>	REPORT PREPARER: <b>LCI ENVI CORPORATION</b>

## 8.0 STATEMENT OF COMMITMENT AND CAPABILITY TO IMPLEMENT NECESSARY MEASURES

The institutional organization of INGRID Power Holdings, Inc. for the proposed INGRID Pililla 150-MW Diesel Power Plant Project is shown in **Figure 8-1**. The organization is formed to achieve the following:

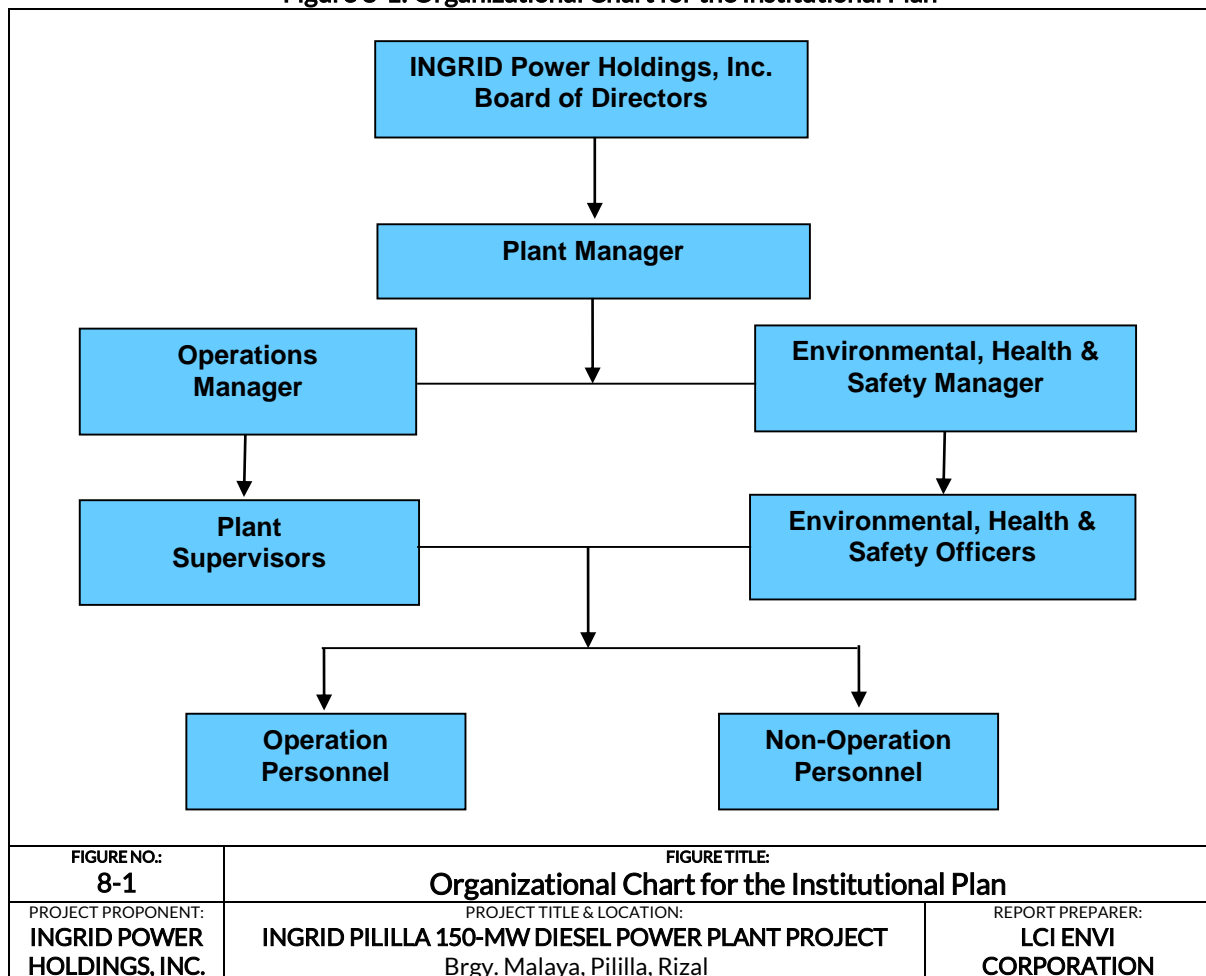
- Economical and safety operations and maintenance of the proposed power plant components;
- Implementation of the company policies;
- Environmental compliance and sustainability; and
- Promotion and enhancement of the social acceptability of the proposed project.

The institutional organization will involve INGRID Power Holdings, Inc.'s top-level management, who is responsible for providing the corporate direction and policies of the company. The policies shall then be disseminated to the power plant department heads and managers for implementation of the company personnel, including those who will be working on the operations of the proposed project.

INGRID Power Holdings, Inc. commits to:

- Comply with the commitments and conditions that will be stipulated in the EIS, ECC, and other related environmental laws;
- Foster mutually beneficial partnership and cooperation with the host community;
- Promote sustainable use and responsible development of resources by adopting appropriate technologies;
- Develop livelihood programs and upgrade skills of host community to contribute and enhance the quality of life;
- Develop training programs for its employees to ensure that they will be continually prepared for the tasks assigned to them; and
- Develop and implement a grievance redress mechanism to be handled by an environmental, health, and safety officer.

Figure 8-1: Organizational Chart for the Institutional Plan



For more information about the project, please contact the following people:

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**DENR-EMB:**           **Mr. Jose Paolo Aragoncillo**  
Case Handler  
Environmental Impact Assessment and Management Division (EIAMD)  
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The full EIS report is accessible in the DENR-EMB Website.