NEGROS ISLAND SOLAR POWER INC. PROJECT

Renewable Energy from ACEN

Document Prepared by Negros Island Solar Power Inc.

Project Title	*Negros Island Solar Power Inc. Project*
Version	*02*
Report ID	*01*
Date of Issue	*02-October-2023*
Project ID	*1735*
Monitoring Period	*26-Apr-2020 to 25-May-2023*
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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The Negros Island Solar Power Inc. Project (hereafter referred as "the project" involved the installation of 32 MW La Carlota Solar Power Plant which includes two (02) phases of 18 MW and 14 MW, and 48MW Manapla Solar Power Plant. The total installed capacity of the project is 80MW. The Plants are greenfield, stand-alone power plants with a gross peak generation capacity of 32 MWp and 48 MWp DC intended to provide daytime power to the grid throughout the entire year. The design concept is for La Carlota Phase 1, phase 2 and Manapla approximately 70,000 modules, 54,000 modules and 179,000 modules respectively which have been designed to ensure optimum energy efficiency. The project contributes additional peak power to the Visayas grid and assists in stabilizing the power supply in San Carlos City while helping meet the growing energy demand in the region. The average annual exported power generation is expected to be 119,312 MWh. The purpose of the project activity is to generate power using renewable energy source (solar energy) and sell the power generated to the state grid. The project activity is located on Negros Island, within the Cebu-Negros-Panay sub-grid of the Visayas electricity grid.

The Implementation timeline of the projects are as follows:

Activities	La Carlota (32 MW)	Manapla (48 MW)
Date of Construction	03-November-2014	28-May-2015
Commissioning Date	02-March-2016	08-March-2016

Since, the solar power is Greenhouse Gas (GHG) emissions free, the power generated is replacing anthropogenic emissions of greenhouse gases estimated to be approximately 66,039 tCO_2e per year (annual average), thereon displacing 119,312 MWh/year amount of electricity from the generation-mix of power plants connected to the Philippine electricity grid, which is mainly dominated by thermal/ fossil fuel-based power plant. The total estimated emission reductions during the entire crediting period of 10 years will be approximately 660,390 tCO2e.

The purpose of the project activity is to generate electricity by the utilization of renewable solar PV technology and further selling the generated energy to the Visayas Grid. In this process there is no consumption of any fossil fuel and hence the project does not lead to any greenhouse gas emissions. Thus, electricity would be generated through sustainable means without causing any negative impact on the environment. In the Pre- project scenario the entire electricity, delivered to the grid by the project activity, would have otherwise been generated by the operation of grid connected power plants and by the addition of new generation sources (primarily based upon fossil fuels).

Audit Type	**Period**	**Program**	**VVB Name**	**Number of years**
Validation	18-January-2018 – 19-Janaury-2018	Verified Carbon Standard	Carbon Check (India) Private Ltd	–

1st Verification	02-March-2016 – 25-November-2017	Verified Carbon Standard	Carbon Check (India) Private Ltd	1 year, 8 months and 24 days
2nd Verification	26-November-2017 – 25-April-2020	Verified Carbon Standard	LGAI Technological Center S.A. (Applus+ Certification)	2 years and 5 months
3rd Verification	26-April-2020 – 25-May 2023	Verified Carbon Standard	Bureau Veritas (India) private limited	3 years and 1 month
Total	-	–	–	7 years, 2 months and 24 days

1.2 Sectoral Scope and Project Type

The project activity falls under the following sectoral scope and project type:

Sectoral Scope	01 – Energy industries (renewable / no-renewable sources)
Project Type	I – Renewable Energy projects
Methodology	Grid-connected electricity generation from renewable sources (Ver 17.0)

1.3 Project Proponent

Contact information of project proponent as follows:

Organization name	*Negros Island Solar Power Inc.*
Contact person	*Lord Lee Van Burgos*
Title	*Assistance Vice President – Solar Operations*
Address	*Emerald Arcade, F.C. Ledesma St. San Carlos City, Negros Occidental, Philippines*
Telephone	*+632 8311235*
Email	*lordleevan.burgos@acenrenewables.com*

1.4 Other Entities Involved in the Project

Not applicable.

1.5 Project Start Date

The project start date is 02-March-2016 on which the first solar PV plant, i.e. 32 MW La Carlota Solar Power Plant was commissioned.

1.6 Project Crediting Period

Crediting period start date: 02-March-2016

Crediting period end date: 01-March-2026

The project activity adopts renewable crediting period of 10 years period which can be renewed for maximum 02 times.

1.7 Project Location

La Carlota 32MW Solar Power Plant

The City of La Carlota is located at the Southwest part of Central Negros Occidental, bounded on the north by the City of Bago, on the east by the mountain ranges of Kanlaon Volcano, on the southwest by the town of La Castellana, on the south by the town of Pontevedra and on the west by the town of San Enrique. The study area is focused on the eight major catchment of La Carlota City. It lies on geographical coordinates between 122° 56' 5" and 122° 56' 25" East Longitude and 10° 25' 10" and 10° 25' 40" North Latitude.

Manapla 48MW Solar Power Plant

The Municipality of Manapla is situated at 10°57'00" latitude and 123°07'30" longitude. It is approximately 44.7 kilometers away from the city of Bacolod and it is located at the northern part of the province. It is bounded by Cadiz City on the east, by Victorias on the south and Guimaras Strait on the Western and northern portion. The plant is located on Latitude: 10.9° North Latitude and 123.2° East Longitude.

The project location has been highlighted in the map shown below.

Figure 1. Location of La Carlota 32MW Solar Power Plant.

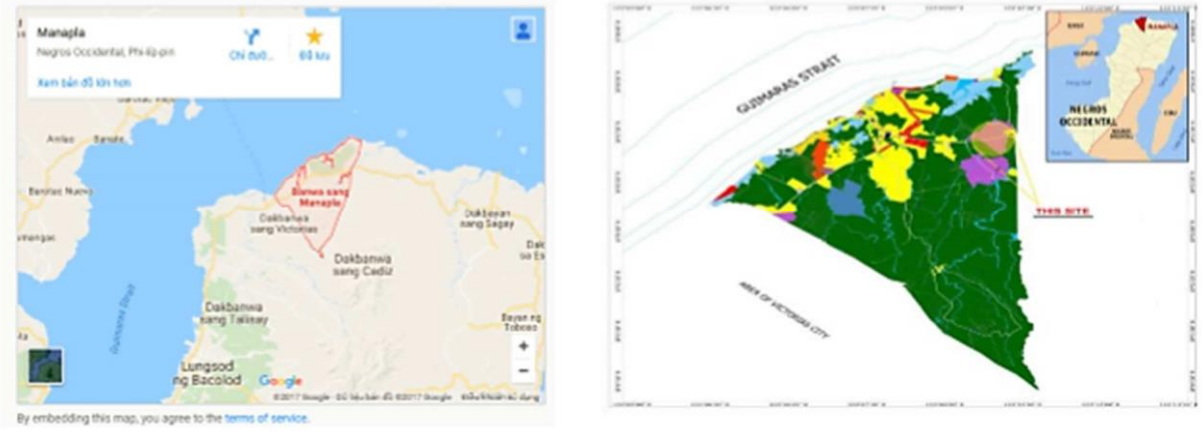


Figure 2. Location of Manapla 48MW Solar Power Plant

1.8 Title and Reference of Methodology

Following baseline and monitoring methodology and tools applied:

Methodology	Approved consolidated baseline methodology ACM0002: Grid-connected electricity generation from renewable sources (Ver 17.0)
Tools	▪ Tool for the Demonstration and Assessment of Additionality[1] (Ver 07.0.0) ▪ Tool to calculate the emission factor for an electricity system[2] (Ver 06.0)

1.9 Participation under other GHG Programs

The project activity has not been registered and is not seeking registration at moment under any other GHG programs.

This project activity is not participating in any other GHG program.

1.10 Other Forms of Credit and Supply Chain (Scope 3) Emissions

The Project has no intend to generate any other form of GHG-related environmental credit for GHG emission reductions or removals other than VCS. It is going to be registered under VCS program and there will not be any double accounting throughout the project lifetime.

1.11 Sustainable Development Contributions

As a renewable energy project, it is actively bringing about both environmental and economic benefits to the local society and contribute to the local sustainable development. The project activity 's contributions to sustainable development are:

- Reducing the dependence on exhaustible fossil fuels for power generation;
- Providing clean electricity to a nation in need of power;

[1] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v7.0.0.pdf
[2] https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v6.pdf

- Reducing air pollution by replacing coal and other fossil fuel fired power plants with clean, renewable power;
- Paving the way for further usage of the country's renewable natural resources by importing technology and creating local capacity;
- Contributing to local economic development through employment creation directly or indirectly.
- Providing additional local income through the taxes that the project proponent will pay to the Local Government Units (LGU)[3]. This additional income can be used by the LGU to fund more locally beneficial projects.
- The installation of the renewable energy projects also led to development of basic infrastructure like roads, communication with the nearby cities etc. which also improved in living standards of the local population.

The project has definitely had positive influences on sustainable development in the region and in Philippines. The Negros Island Solar Power Inc. Project has enabled the use of local resources for energy production and thus decrease dependency on imported fossil fuels as an energy source. In addition, the project has a significant effect on air quality in the region; directly and indirectly, create new jobs for local inhabitants during the construction and operation phases.

[3] Moneymax.ph, Local Taxes and Tax guide

Table 1: Sustainable Development Contributions

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime
1)	7.2	7.2.1: Renewable energy share in the total final energy consumption	Implemented activities to increase	The project was able to supply the Philippines (Visayas) power grid with 303,598 MWh of clean & green electricity during the reported period by utilizing solar energy. It helps to increase the renewable energy share in the national energy mix.	768,761 MWh of renewable energy supplied to the Philippines (Visayas) power grid over the lifetime of the project.
2)	8.5	8.5.2: Unemployment rate, by sex, age and persons with disability	Implemented activities to decrease	The project has created following jobs related to operation and maintenance: ▪ Direct hires ---8 male & 4 female ▪ Security Personnel --- 44 male ▪ Other Indirect Hires --- 41 male & 3 female	During the operation and maintenance stage, the project has created a total of 100 direct and indirect jobs.
3)	13.0	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	The project has reduced 168,023 tCO_2 through the delivery of 303,598 MWh of renewable energy that in the absence of the project would have been generated by other grid-connected including fossil fuel-based power plants.	Over the lifetime, the project has reduced 425,509 tC02.

2 SAFEGUARDS

2.1 No Net Harm

The IEE studies for the does not identify any significant environmental impacts from the project activity.

The identified impacts are the following:

Issues	Assessment of Impact	Mitigation Measures
Construction Phase		
Land	Vegetation disturbance /Secondary growth sugarcane plant & grasses	▪ Design and implement an appropriate landscape for greening area. ▪ Designate location for equipment, and areas of the site which should be kept free of traffic, equipment, and storage.
	Increased storm water, runoff and soil erosion	▪ Improve existing side drainage channel to absorb surface runoff. ▪ Storm water management that minimizes impervious area infiltration by use of recharge areas and use of detention and/or retention basin with outlet control structure. ▪ Ensure that construction vehicles are restricted to use existing graded roads. ▪ Site excavation works to be planned such that a section is completed and rehabilitated before another section begins. ▪ Interconnected open drains will be provided on site.

Issues	Assessment of Impact	Mitigation Measures
	Soil and Water pollution	▪ Use of an integrated solid waste management system i.e., through a hierarchy of options: ▪ Waste reduction ▪ Reuse and Recycle ▪ Waste processing ▪ Waste disposal (Disposal to LGU landfill) ▪ Provide facilities for proper handling and storage of construction materials to reduce the amount of wastes. ▪ Use of durable, long-lasting materials that will not need to be replaced as often, thereby reducing the amount of construction wastes generated over time. ▪ Provide proper storage for scrap materials. ▪ Use building materials that have minimal or no packaging to avoid the generation of excessive packaging wastes. ▪ Reuse packaging materials such as cartons, cement bags, empty metal and plastic containers to reduce wastes at site. ▪ Dispose waste more responsibly by contracting a registered waste handler who will dispose the wastes at designated sites or landfills only. ▪ Placement of collection bins for segregated wastes to be provided at designated points on site.

Issues	Assessment of Impact	Mitigation Measures
Air	Degradation of ambient air quality	▪ Sprinkle water on graded access routes when necessary to reduce dust generation by construction vehicles; ▪ Wash truck tires to remove dirt and mud before leaving the site; ▪ Ensure strict enforcement of onsite speed limit regulations; ▪ Provision of traffic signages at the entrance and exit of the project site; ▪ Personal Protective equipment to be provided to employees and worn. ▪ Vehicle idling time shall be minimized; ▪ Monitor and brief truck drivers to avoid unnecessary revving engines of stationary vehicles and to switch off engines whenever possible; ▪ Vehicles delivering construction materials to site should be adequately maintained to reduce exhaust emissions. ▪ Only trucks with engines maintained will be permitted to deliver fuel supplies to reduce emissions
	Disturbance to residence	▪ Sensitize construction vehicle drivers and machinery operators to switch off engines of vehicles or machinery not being used. ▪ Sensitize construction drivers to avoid revving of vehicle engines or hooting ▪ Ensure that construction machinery is kept in good condition to reduce noise; ▪ Ensure that all generators and heavy-duty equipment are insulated or placed in enclosures (containers) to minimize ambient noise levels. ▪ The noisy construction works will entirely be planned to be during daytime when most of the neighbors are awake

Issues	Assessment of Impact	Mitigation Measures
Water	Increased water demand	▪ Promptly detect and repair of water pipe and tank leaks. ▪ Briefing to construction workers to conserve water by avoiding unnecessary use of water; ▪ Ensure taps are not running when not in use
	Generation of sewage	▪ Provision of septic tank ▪ Monitor effluent quality regularly to ensure that the stipulated discharge rules and standards are not violated
	Oil spills	▪ Install oil trapping equipment in areas when there a likelihood of oil spillage such during the maintenance of construction equipment. Soil in such an area will be well protected from contamination
People	Accidents and fatalities	▪ Ensure compliance with the Occupational Safety and Health Act (OSHA) provisions e.g., employees to be provided with appropriate PPE
Operational Phase		
Land	Soil and water pollution	▪ Prepare solid waste managmeent plan ▪ Use of integrated solid waste management system i.e., through a hierarchy of options - Source reduction - Recycling - Composting and - Resource recovery - Disposal to land fill ▪ Ensure that wastes generated at the plant are efficiently managed through recycling, reusing and proper disposal procedures.
	Surface and ground water contamination from sewage	▪ Provide adequate and safe means of handling sewage generated at the plant (provision of 3-chamber septic tank) ▪ Ensure regular monitoring of the sewage discharged from the project to ensure that the stipulated sewage/effluent discharge rules and standards are not violated

Issues	Assessment of Impact	Mitigation Measures
	Power resource competition	▪ Switch off electrical equipment, appliances and lights when not being used ▪ Install occupation sensing lighting at various consultant locations such as storage areas which are not in use all the time
	Water resource competition	▪ Install energy saving fixtures within the plant. ▪ Monitor energy use during the operation of the project and set targets for efficient energy use ▪ Brief and train workers to use energy efficiently. ▪ Utilization of solar power for project operation
Air	Dust emission	▪ Enforcement of water conservation policy within the plant ▪ Regular checkup for water leakage ▪ Install water conserving taps that turn-off automatically when water is not being used
People	Increased health and safety impacts (accidents and fatalities)	▪ Implement all necessary measures to ensure health and safety of the plant workers and the public during the operation of the power plant as stipulated in the Occupational Safety and Health Act ▪ Ensure compliance with the Occupational Safety and Health Act provisions e.g., employees to be provided with appropriate PPE.

The above assessments indicate that the project is not expected to cause any significant long term adverse effects to the environment. In addition, the negros island solar power plant has the adopted the following certifications:

- ISO 14001: 2015 is an effective environmental management system can use to enhance the environmental performance as well as commitment to environmental protection
- ISO 45001:2018 is the international standard for occupational health and safety management systems, designed to protect workers and visitors from occupational accidents and illnesses.

2.2 Local Stakeholder Consultation

As a part of continual improvement process, feedback from the associated stakeholders is vital, therefore a dedicated Visitor register cum grievance register has been placed at the project site which is accessible to stakeholders to provide their feedback on the project. It is appropriate publicly accessible location at which local stakeholders can provide their feedback on the project. This location is also conducive to continuous and regular checks for

stakeholder comments. For the global stakeholders, the suggestion and the grievance can be submitted to lordleevan.burgos@acenrenewables.com

Stakeholder meetings were organized at the time of registration of project activity in order to identify the major challenges around the area, stakeholders were invited well in advance through printed invitation, calls, meeting and a notice is placed around the local common areas. Various CSR activities around site are carried out. The local stakeholder are also request to share their experiences and grievances on continuous basis. Log register book is used to records the grievances and feedback.

During the current monitoring period, no negative feedback are received regarding site operation. Also, no grievances received during the current monitoring period and thereby no mitigation measures are required. In case of grievances, the nature of probable resolution is discussed with the plant head office and implemented by the site in-charge. The log register book has been verified by the VVB.

2.3 AFOLU-Specific Safeguards

Not applicable as the project activity is not an AFOLU project activity.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project activity involved the installation of Solar Power Plants in different cities of Negros Occidental, Philippines i.e. La Carlota and Manapla. The total installed capacity of the project is 80 MW.

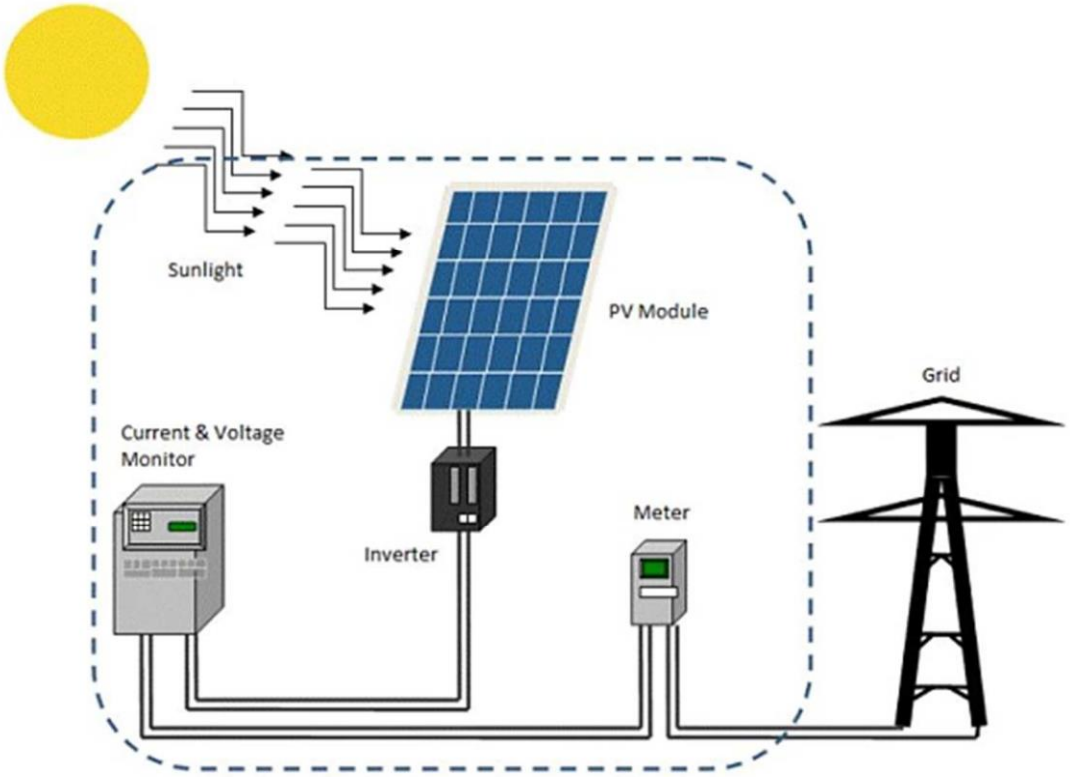
The project activity is a new facility (Greenfield) and the electricity generated by the Project is exported to the Visayas electricity grid. The Project therefore displaced an equivalent amount of electricity which would have otherwise been generated by fossil fuel dominant electricity grid. The Project Proponents plan to avail the VCS benefits for the Project.

In the Pre- project scenario the entire electricity, delivered to the grid by the project activity, would have otherwise been generated by the operation of grid-connected power plants which is mainly dominated by fossil fuels or by the addition of new generation sources.

The project resulted in replacing anthropogenic emissions of greenhouse gases (GHG's) estimated to be approximately 66,039 tCO2e per year, thereon displacing 119,312 MWh/year amount of electricity from the grid.

The main components of the solar farm include the photovoltaic (PV) modules, solar cable connectors, current and voltage controller, and inverter. The modules are equipped with efficient, polycrystalline cells and have a high nominal output of 240 W-260 W at the nominal operating temperature of 43°C +/- 2°. At the rear of each module is a connection box with the connection cables, plug, and socket. The solar modules will be mounted securely using a mounting system that does not require cutting to size or drilling and has a high corrosion resistance. The inverter converts the direct current (DC) to the utilizable alternative current (AC). It is accompanied by a

spacious ventilation system with temperature-controlled fans. The operation conditions of the inverter are -25°C ... +62°C. Cables also connect the inverter directly to the grid.



The project activity is harnessing solar energy through installation of PV with total installed capacity of 80 MW. Solar energy is a pollution-free, infinitely sustainable form of energy. It does not use fossil fuel. It does not produce greenhouse gases, and it does not produce toxic or radioactive waste. Therefore, the technology used for the project activity is environmentally safe and sound.

The project activity is generating power using solar energy, which is a renewable source of energy. The solar PV system mainly consists of PV modules, module mounting structures, junction boxes, Inverters, regulators, monitoring devices etc. The solar PV cells convert solar radiation into DC current. The solar panels are installed in arrays. The modules in each array are connected in parallel and/or series in order to get the preferred current & voltage which match with the rated input parameters of the inverter. The Inverter connected in each array converts the DC current to AC current. The electricity collected from all the inverters in La Carlota and Manapla is stepped up to 13.8 kV through individual inverter stations 13.8kV/405V transformers. The 13.8 kV electricity from the individual inverter stations are stepped up to 69kV through 69kV/13.8 kV transformer of the plant and exported through a transmission line that leads to the substation owned by the National Grid Corp. of the Philippines. The Grid Operator (NGCP) further steps this up from 69 kV to 138 kV and is then supplied to Visayas grid. The operational lifetime of the project activity is 25 years. The commissioning of the project activity has been completed and details are mentioned in section 1.1.

There has been no major downtime of equipment's, overhaul times or exchange of equipment's in the project activity during the current monitoring period. The project underwent scheduled breakdown and maintenance during the monitoring period. The project is in continuous operation since commissioning.

Technical specification of solar PV module and other components installed in the project are tabulated below:

Category	La Carlota (32 MW)	Manapla (48 MW)		
PV Modules				
Module Model	Conergy PH 260P	Conergy PE 265P	Conergy PE 275M	Conergy PE 270M
Module type	Framed	Framed	Framed	Framed
Nominal output	260W	265W	275W	270W
Unit Nom. Power	260 Wp	265 Wp	275 Wp	270 Wp
Number of PV modules	123,096 (Phase 1 18MW: 69,240 modules Phase 2 14MW: 53,856 modules)	92,352	34,632	52,056
Total nomimal Power Output	Phase 1: 18,002 kWp Phase 2: 14,003 kWp	24,473 kWp	9,524 kWp	14,055 kWp
No. of cells	60	60	60	60
Cell dimensions	156x156mm	156x156mm	156x156mm	156x156mm
Cell type	Polycrystalline cell, 3-busbar technology	Polycrystalline, 3-busbar technology	Monocrystalline, 3-busbar technology	Monocrystalline, 3-busbar technology
Module weight	19.5kg	18.2kg	18.2kg	18.2kg
Maximum permissible load	5,400Pa	5,400Pa	5,400Pa	5,400Pa
Max permissible System voltage	1,000V	1,000V	1,000V	1,000V
Inverter				
Inverter model	Sunny Central 850CP XT	Sunny Central 900CP XT		
Operating voltage	568-850V	596-850V		
Unit Nom. Power	850 kWac	900 kWac		

Category	La Carlota (32 MW)	Manapla (48 MW)		
No. of inverter	32 units (Phase 1 18MW: 18 units Phase 2 14MW: 14 units)	23 units	9 units	13 units
Total Power	Phase 1: 15,300 kWac Phase 2: 11,900 kWac	20,700 kWac	8,100 kWac	11,700 kWac
Transformer				
Serial No.	VN01106 3- phase transformer	75660		
No. of transformer	01 set	01 set		
Highest rate power	35/35 MVA	50 MVA		
Voltage	69 ± 8 x 1.25%/13.8 kV	69 ± 8 x 1.25% Steps		
Frequency	60Hz	60 Hz		

3.2 Deviations

3.2.1 Methodology Deviations

No methodology deviation applied during the monitoring period.

3.2.2 Project Description Deviations

No project description deviation applied during the monitoring period.

3.3 Grouped Projects

Not applicable as the project activity is not a grouped project.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	$EF_{grid,OM,y}$

Data unit	tCO_2/MWh
Description	Operating margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of "Tool to calculate the emission factor for an electricity system".
Source of data	Data provided by Department of Energy (DOE) of Philippines[4]
Value applied	0.6032
Justification of choice of data or description of measurement methods and procedures applied	As per the "Tool to calculate the emission factor for an electricity system", version 06.0.0
Purpose of Data	Calculation of baseline emissions
Comments	Value is fixed and ex-ante for the entire crediting period

Data / Parameter	$EF_{grid,BM,y}$
Data unit	tCO_2/MWh
Description	Build margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of "Tool to calculate the emission factor for an electricity system"
Source of data	Data provided by Department of Energy (DOE) of Philippines[5]
Value applied	0.4044
Justification of choice of data or description of measurement methods and procedures applied	As per the "Tool to calculate the emission factor for an electricity system", version 06.0.0
Purpose of Data	Calculation of baseline emissions
Comments	Value is fixed and ex-ante for the entire crediting period

Data / Parameter	$EF_{grid,CM,y}$
Data unit	tCO_2/MWh
Description	Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the latest version of "Tool to calculate the emission factor for an electricity system".

[4] https://www.doe.gov.ph/electric-power/ngef?page=1

[5] https://www.doe.gov.ph/electric-power/ngef?page=1

Source of data	Data provided by Department of Energy (DOE) of Philippines[6]
Value applied	0.5535
Justification of choice of data or description of measurement methods and procedures applied	As per the "Tool to calculate the emission factor for an electricity system", version 06.0.0.
Purpose of Data	Calculation of baseline emissions
Comments	Value is fixed and ex-ante for the entire crediting period

4.2 Data and Parameters Monitored

Data / Parameter	$EG_{facility,y}$
Data unit	MWh/yr
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year y
Source of data	Electricity meter(s)
Description of measurement methods and procedures to be applied	This parameter should be either monitored using bi-directional energy meter or calculated as difference between: (i) The quantity of electricity supplied by the project/unit to the grid ($EG_{export,y}$); and (ii) The quantity of electricity delivered to the project plant/unit from the grid ($EG_{import,y}$). The net supply of power to the grid by the proposed project is calculated based on measured parameters $EG_{export,y}$ and $EG_{import,y}$. These two parameters, import and export to the grid, are measured at the same location near the connection to the grid, through standard electricity metering instrument(s) M_x. The metering instruments will be installed at the grid-connected point to measure the amount of electricity going from and to the grid. The readings of electricity will be continuously measured by metering instrument itself and monthly recorded. The accuracy of the meter(s) will meet the requirements of national standards and regulations shall be of IEC 687 class 0.2. Please refer to Appendix I for more details. Person/entity responsible for the measurements: the project participant (i.e. NISP)

[6] https://www.doe.gov.ph/electric-power/ngef?page=1

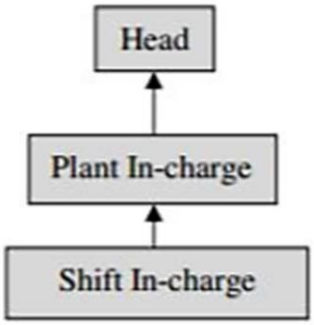
Frequency of monitoring/recording	Continuous measurement and at least monthly recording	
Value monitored	**Monitoring Periods**	**Value**
	26/04/2020 – 31/12/2020	72,605
	01/01/2021 – 31/12/2021	94,257
	01/01/2022 – 31/12/2022	91,337
	01/01/2023 – 25/05/2023	45,399
	Total	**303,598**
Monitoring equipment	The two parameters, import and export to the grid, are measured at the same location near the connection to the grid, through standard electricity metering instrument(s) M_x. The metering	
QA/QC procedures to be applied	instruments are installed at the grid-connected point to measure the amount of electricity going from and to the grid. The readings of electricity is continuously measured by metering instrument itself and monthly recorded. The accuracy of the meter(s) meet the requirements of national standards and regulations shall be of IEC 687 class 0.2. Please refer to Appendix I for more details. Person/entity responsible for the measurements: the project participant (i.e. NISP)	
Purpose of the data	Calculation of baseline emissions	
Calculation method	$EG_{facility,y} = EG_{export,y} - EG_{import,y}$	
Comments	NA	

4.3 Monitoring Plan

The monitoring plan, which is implemented by the PP describes about the monitoring organization, parameters to be monitored, monitoring practices, quality assurance, quality control procedures, data storage and archiving.

The authority and responsibility for registration, monitoring, measurement, reporting and reviewing of the data results with the PP. PP proposed the following structure for data monitoring, collection, data archiving and calibration of equipment for this project activity instances. The team comprises of the following members:

Organisational Structure for Monitoring



PP has assigned the responsibility of operation and maintenance of project activity instances with relevant and authorized O&M contractors. The Plant In-charge and Shift In-Charge would be deployed by O&M contractors.

Responsibilities of Head: Overall functioning and maintenance of the data.

Responsibilities of Plant In-charge: Responsibility for Maintains the data records, ensures completeness of data, and reliability of data (calibration of equipment).

Responsibilities of Shift In-charge: Responsibility for day-to-day data collection and maintains day to day logbook for monitored data.

In the event when the individual verification period dates and billing cycle dates of the project activity does not coincide, then the electricity export will be apportioned based on number of days. The ratio of number of days under monitoring period and total number of days under billing cycle will multiplied to total electricity export to billing cycle.

For project activity which involves solar projects with common metering, apportioning will be followed to determine net electricity export to grid. The apportioning procedure is not under control of PP, thus value of net electricity supplied to grid is available to PP and same is mentioned as monitoring parameter. The value of net electricity supplied to grid is used for ER calculations.

It is to be noted that the metering arrangement, accuracy class of meters, feeder arrangements, calibration frequency of meters are under control of state electricity board and PP do not have any control on it. Thus, any deviation at actual site or during verification is accepted, however no deviation activity occurred during the current monitoring period.

QA & QC Procedures to be followed

Necessary check meters as required would be installed, to operate in standby mode or when the main meters are not working. All meters are calibrated annually. Records of calibration certificates are maintained for verification. Hence, high quality is ensured with the above parameters. The calibration of meters is under purview of state electricity board and CME/ project activity instances owner do not have any control on it.

Data Recording and Storage

For measuring the net energy supplied to grid by the project activity at the interconnection point, one set of Main meter and Check Meter shall be provided. Representatives of both project activity Owner and Philippine Electricity Market Corporation (PEMC) will be present to record the monthly meter readings. The PEMC will prepare the monthly record for the net energy supplied to the grid

and same will be used as a basic document for monitoring and verification of the net energy supplied to the grid. Based on the monthly record, the project activity Owner shall raise an invoice to the PEMC for payment.

The above documents will be kept at safe storage for verification of emission reductions generated from the project activity. The period of data storage will be 2 years beyond crediting period.

Emergency preparedness

The project activity will not result in any unidentified activity that can result in substantial emissions from the project activity. However, in case monitoring equipment get failed or found faulty, they shall be replaced with calibrated meters as quickly as possible. In case main meter get failed or found faulty, the reading of check meter will be considered. The schematic diagram for the plants are as follows:

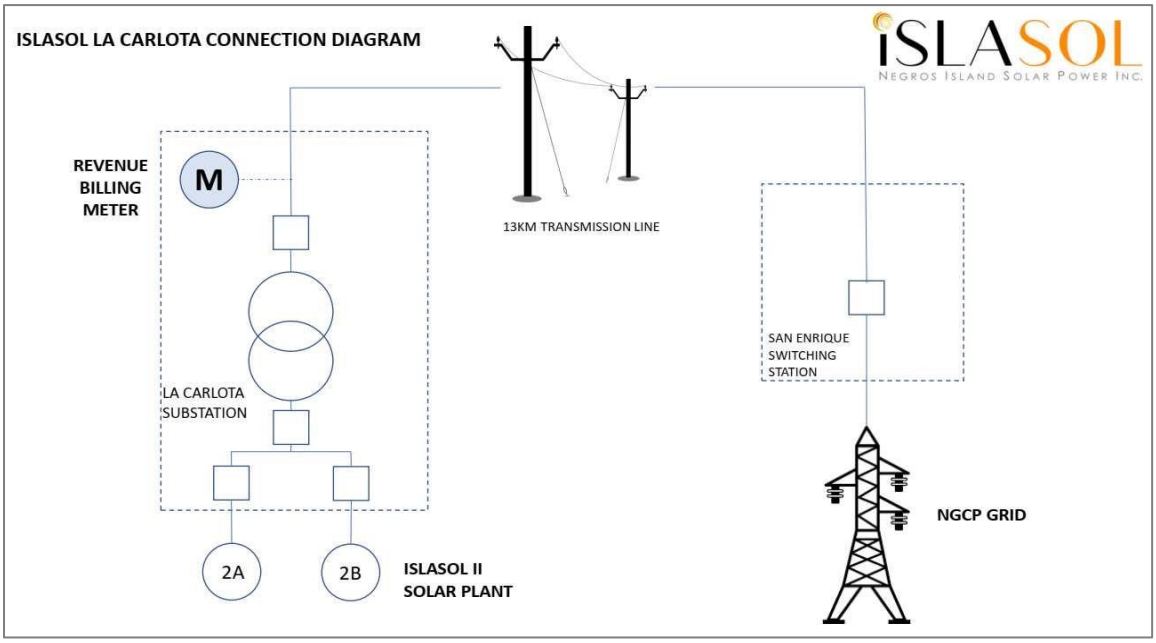


Figure 3. ISLASOL LA CARLOTA Connection Diagram

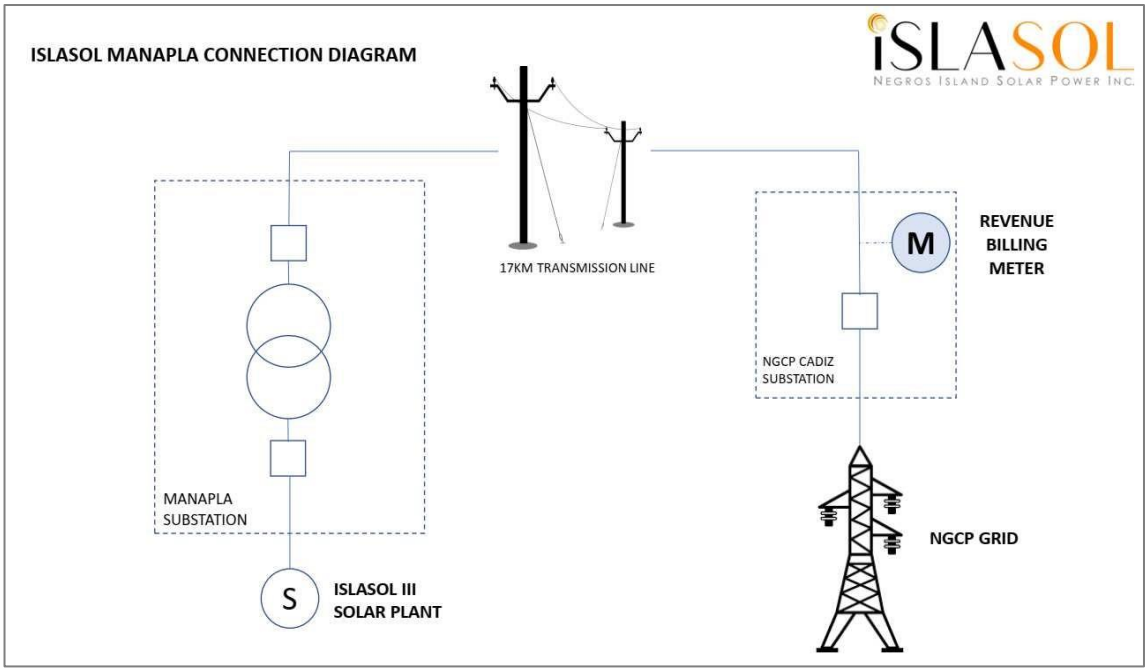


Figure 4. ISLASOL MANAPLA Connection Diagram

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

$BE_y = EG_{facility,y} \times EF_{grid,CM,y}$

Where:

BE_y: Baseline emissions in year y (tCO_2e/yr)

$EG_{facility,y}$: Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the VCS project activity in year y (MWh/yr)

$EF_{grid,CM,y}$: Combined margin CO_2 emission factor for grid connected power generation in year y calculated using the "Tool to calculate the emission factor for an electricity system" version 06 (tCO_2e/MWh).

Then Baseline Emission (BE_y) as follows:

Year	Net electricity generation (MWh)	Combined margin emission factor (tCO_2e/MWh)	Baseline Emission (tCO_2e)

	$EG_{facility,y}$	$EF_{grid,CM,y}$	BE_y
26-April-2020 – 31-December-2020	72,605	0.5535	*40,183*
01-January-2021 – 31-December-2021	94,257		*52,165*
01-January-2022 – 31-December-2022	91,337		*50,549*
01-January-2023 – 25-May-2023	45,399		*25,126*
Total	**303,598**	*0*	***168,023***

5.2 Project Emissions

As per methodology, no project emission considered for renewable energy projects. Hence, PE_y= 0.

5.3 Leakage

As per methodology, no other leakage emission considered for renewable energy projects. Hence, LE_y= 0.

5.4 Net GHG Emission Reductions and Removals

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
26-April-2020 – 31-December-2020	*40,183*	*0*	*0*	*40,183*
01-January-2021 – 31-December-2021	*52,165*	*0*	*0*	*52,165*
01-January-2022 – 31-December-2022	*50,549*	*0*	*0*	*50,549*
01-January-2023 – 25-May-2023	*25,126*	*0*	*0*	*25,126*
Total	***168,023***	***0***	***0***	***168,023***

Ex-ante emissions reductions/removals	Achieved emissions reductions/ removals	Percent difference	Justification for the difference
203,421	168,023	-17.4%	Due to multiple major downtimes and less sunshine hours. In addition, other factors (such as cloud coverage, dust on panels, maintenance, etc) might affect the power generation efficiecny.

APPENDIX 1: METER INFORMATION

Meter and Calibration details for current monitoring period:

1. La Carlota 32MW Solar Power Plant

Meter Type	Serial Number	Make	Accuracy Class	Calibration Date
Main Meter	153475354	LANDIS & GYR	0.2	15-February-2021 22-February-2022 25-Fberaruy-2023
Backup Meter	15882036	ELSTER	0.2	15-February-2021 22-February-2022 25-Fberaruy-2023

2. Manapla 48MW Solar Power Plant

Meter Type	Serial Number	Make	Accuracy Class	Calibration Date
Main Meter	153475770	LANDIS & GYR	0.2	11-February-2021 12-February-2022 16-Fberaruy-2023
Backup Meter	15882102	ELSTER	0.2	11-February-2021 12-February-2022 16-Fberaruy-2023

APPENDIX 2: MAJOR DOWNTIME LOSSES

La Carlota 32MW Solar Power Plant (listed only the losses greater than 50MWh)

Date	Downtime Incident	Outage Type	Outage Hours	Estimated Loss (KWh)
21/06/2020	Scheduled shutdown of the plant at 6:33 due to NGCP scheduled power interruption. At 16:23, all inverters synchronize back to the grid except for Inverter 16A with insulation failure alert.	External Grid Outage	10	119,769
24/10/2020	WO 89885, Scheduled plant shutdown due to maintenance at Bacolod-San Enrique 69KV line. At 16:02, All inverters successfully re-connected to the grid.	External Grid Outage	10	99,266
01/02/2021	Burned Secondary Terminal	HV + MV	23	204,195
11/07/2021	Plant shutdown on 11/07/2021 from (6:09 to 16:46) due to Shutdown of Bacolod - San Enrique 69KV line.	External Grid Outage	21	145,682
25/07/2021	Plant Curtailment Outage on 25/07/2021 from (7:40 to 16:34) due to only one Negros - Cebu submarine cable is in service.	Inverter	8	54,819
19/08/2021	Planned plant shutdown on 19/08/2021 for 7 hours (09:29 to 16:26) due to the maintenance works in the substation. All inverters synchronized back to grid after the activity.	Inverter	14	67,041
30/08/2021	Plant curtailment for 7.1 hours (in between 08:16 to 15:22) due to only one Negros - Cebu submarine cable is in service.	Inverter	12	75,449
12/09/2021	At 6:34, NGCP notified Site team to prepare for isolation of plant and shutdown of Bacolod - San Enrique 69kV transmission line,. At 6:34, Plant shutdown started., At 17:55, Plant energized back to the grid.	External Grid Outage	22	141,802
06/11/2021	On November 6, 2021, plant was curtailed for 6.73hours from 0709H to 1542H. This due to only one (1) Negros - Cebu Submarine Cable is in service	Curtailment Outage	8	52,421
04/12/2021	On December 4, 2021, plant was curtailed for 8.27hours from 0731H to 1547H. This due to only one (1) Negros - Cebu Submarine Cable is in service.	Curtailment Outage	10	66,266
05/12/2021	On December 5, 2021, plant was curtailed for 7hours from 0804H to 1507H. This due to only one (1) Negros - Cebu Submarine Cable is in service.	Curtailment Outage	10	71,181

Date	Downtime Incident	Outage Type	Outage Hours	Estimated Loss (KWh)
23/12/2021	On December 23, 2021, plant was curtailed for 9.4 hours from 0702H to 1643H due. This due to only one (1) Negros - Cebu Submarine Cable is in service.	Curtailment Outage	17	104,215
24/12/2021	On December 24, 2021, plant was curtailed for 9.08 hours from 0704H to 1612H. This due to NGCP Bacolod request. This due to only one (1) Negros - Cebu Submarine Cable is in service.	Curtailment Outage	16	89,664
25/12/2021	On December 25, 2021, plant was curtailed for 7.97 hours from 0809H to 1606H. This due to NGCP Bacolod request. This due to only one (1) Negros - Cebu Submarine Cable is in service.	Curtailment Outage	17	120,394
26/12/2021	On December 26, 2021, plant was curtailed for 8.11 hours from 0702H to 1513H. This due to NGCP Bacolod request.	Curtailment Outage	8	76,564
27/12/2021	On December 27, 2021, plant was curtailed for 9.38 hours from 0704H to 1627H. This due to NGCP Bacolod request.	Curtailment Outage	8	71,596
28/12/2021	On December 28, 2021, plant was curtailed for 9.02 hours from 0707H to 1608H. This due to NGCP Bacolod request.	Curtailment Outage	8	73,262
01/01/2022	On January 1, 2022, plant was curtailed for 8.33 hours from 0822H to 1642H. This due to NGCP Bacolod request.	Curtailment Outage	7	51,957
03/01/2022	On January 3, 2022, plant was curtailed for 8.42 hours from 0654H to 1519H. This due to NGCP Bacolod request.	Curtailment Outage	8	83,115
04/01/2022	On January 4, 2022, plant was curtailed for 8.93 hours from 0713H to 1609H. This due to NGCP Bacolod request.	Curtailment Outage	9	114,566
05/01/2022	On January 5, 2022, plant was curtailed for 8.98 hours from 0708H to 1607H. This due to NGCP Bacolod request.	Curtailment Outage	8	101,014
06/01/2022	On January 6, 2022, plant was curtailed for 8.83 hours from 0703H to 1553H. This due to NGCP Bacolod request.	Curtailment Outage	8	107,861
07/01/2022	On January 7, 2022, plant was curtailed for 9 hours from 0721H to 1621H. This due to NGCP Bacolod request.	Curtailment Outage	7	75,855
08/01/2022	On January 8, 2022, plant was curtailed for 8.73 hours from 0732H to 1605H. This due to NGCP Bacolod request.	Curtailment Outage	6	68,838

Date	Downtime Incident	Outage Type	Outage Hours	Estimated Loss (KWh)
09/01/2022	On January 9, 2022, plant was curtailed for 8.27 hours from 0711H to 1538H. This due to NGCP Bacolod request.	Curtailment Outage	5	50,532
11/01/2022	On January 11, 2022, plant was curtailed for 9.12 hours from 0720H to 1627H. This due to NGCP Bacolod request.	Curtailment Outage	7	99,552
12/01/2022	On January 12, 2022, plant was curtailed for 9.17 hours from 0725H to 1635H. This due to NGCP Bacolod request.	Curtailment Outage	7	91,642
13/01/2022	On January 13, 2022, plant was curtailed for 6.13 hours from 0746H to 1354H. This due to NGCP Bacolod request.	Curtailment Outage	7	78,406
14/01/2022	On January 14, 2022, plant was curtailed for 8.47 hours from 0725H to 1553H. This due to NGCP Bacolod request.	Curtailment Outage	6	56,345
15/01/2022	On January 15, 2022, plant was curtailed for 9.26 hours from 0717H to 16.43H. This due to NGCP Bacolod request.	Curtailment Outage	8	112,579
16/01/2022	On January 16, 2022, plant was curtailed for 9.12 hours from 0715H to 1627H. This due to NGCP Bacolod request.	Curtailment Outage	6	73,507
17/01/2022	On January 17, 2022, plant was curtailed for 8.87 hours from 0734H to 1621H. This due to NGCP Bacolod request.	Curtailment Outage	7	90,571
21/01/2022	On January 21, 2022, plant was curtailed for 8.47 hours from 0723H to 1551H. This due to NGCP Bacolod request.	Curtailment Outage	5	67,582
23/01/2022	On January 23, 2022, plant was curtailed for 8.61 hours from 0736H to 1613H. This due to NGCP Bacolod request.	Curtailment Outage	6	61,837
26/01/2021	On January 26, 2022, plant was curtailed for 6.78 hours from 0725H to 1513H. This due to NGCP Bacolod request.	Curtailment Outage	4	76,564
27/01/2021	On January 27, 2022, plant was curtailed for 6.75 hours from 0758H to 1513H. This due to NGCP Bacolod request.	Curtailment Outage	3	71,596
28/01/2021	On January 28, 2022, plant was curtailed for 8.03 hours from 0743H to 1548H. This due to NGCP Bacolod request.	Curtailment Outage	4	73,262
01/02/2021	On February 1, 2022, plant was curtailed for 4.65 hours from 0737H to 1623H. This due to NGCP Bacolod request.	Curtailment Outage	5	51,957
03/02/2021	On February 3, 2022, plant was curtailed for 8 hours from 0749H to 1549H. This due to NGCP Bacolod request.	Curtailment Outage	8	83,115
04/02/2021	On February 4, 2022, plant was curtailed for 3 hours and 43 minutes from 0819H to 1438H. This due to NGCP Bacolod request.	Curtailment Outage	9	114,566

Date	Downtime Incident	Outage Type	Outage Hours	Estimated Loss (KWh)
05/02/2021	On February 5, 2022, plant was curtailed for 5 hours and 15 minutes from 0952H to 1551H. This due to NGCP Bacolod request.	Curtailment Outage	8	101,014
07/02/2021	On February 7, 2022, plant was curtailed for 6.57 hours from 0757H to 1431H. This due to NGCP Bacolod request.	Curtailment Outage	8	107,861
08/02/2021	On February 8, 2022, Plant did not synchronized to the grid from 0659H to 1738H due to Main VCB tripped.	HV + MV	11	72,623
09/02/2021	On February 9, 2022, Plant did not synchronized to the grid due to Main VCB tripped.	HV + MV	10	110,549
10/02/2021	On February 10, 2022, Plant did not synchronized to the grid due to Main VCB tripped.	HV + MV	10	82,618
11/02/2021	On February 11, 2022, Plant did not synchronized to the grid due to Main VCB tripped.	HV + MV	11	107,504
13/02/2021	On February 13, 2022, plant was curtailed for 8.68 hours from 0720H to 1601H. This due to NGCP Bacolod request.	Curtailment Outage	5	59,482
14/02/2021	On February 14, 2022, plant was curtailed for 8.5 hours from 0746H to 1616H. This due to NGCP Bacolod request.	Curtailment Outage	5	56,993
15/02/2021	On February 15, 2022, plant was curtailed for 9.1 hours from 0746H to 1653H. This due to NGCP Bacolod request.	Curtailment Outage	8	103,499
16/02/2021	On February 16, 2022, plant was curtailed for 7.98 hours from 0812H to 1611H. This due to NGCP Bacolod request.	Curtailment Outage	5	75,624
17/02/2021	On February 17, 2022, plant was curtailed for 8.53 hours from 0719H to 1551H. This due to NGCP Bacolod request.	Curtailment Outage	5	83,175
20/02/2021	On February 20, 2022, plant was curtailed for 6.3 hours from 0725H to 13:48H. This due to NGCP Bacolod request	Curtailment Outage	6	73,292
24/02/2021	On February 24, 2022, plant was curtailed for 8.42 hours from 0805H to 1630H. This due to NGCP Bacolod request	Curtailment Outage	8	108,419
26/02/2021	On February 26, 2022, plant was curtailed for 4.4 hours from 0732H to	Curtailment Outage	6	82,722

Date	Downtime Incident	Outage Type	Outage Hours	Estimated Loss (KWh)
	1553H. This due to NGCP Bacolod request.			
27/02/2021	On February 27, 2022, plant was curtailed for 7.67 hours from 0736H to 1516H. This due to NGCP Bacolod request	Curtailment Outage	5	61,800
01/03/2021	Plant isolated from the grid from 0615H to 1221H due to Replacement of wooden poles at Matugnaw - San Enrique 69kV Transmission Line.	External Grid Outage	6	63,215
02/03/2021	On March 2, 2022, plant was curtailed for 8.8 hours from 0722H to 1610H. This due to NGCP Bacolod request.	Curtailment Outage	8	101,169
03/03/2021	On March 3 2022, plant was curtailed for 8.77 hours from 0722H to 1610H. This due to NGCP Bacolod request.	Curtailment Outage	6	50,153
05/03/2021	On March 5, 2022, Plant was curtailed for 6.03hours from 0742H to 1344H. This due to NGCP Bacolod request.	Curtailment Outage	6	54,997
10/03/2021	On March 10, 2022, plant was curtailed for 7.6 hours from 0809H to 1545H. This due to NGCP Bacolod request.	Curtailment Outage	7	57,023
12/03/2021	On March 12, 2022, plant was curtailed for 5.81 hours from 0715H to 1304H due to NGCP VRE Generation Special Dispatch Advisory with condition of only 1 Negros - Cebu	Curtailment Outage	6	59,478
17/03/2021	On March 17, 2022, plant was curtailed for 9.28 hours from 0713H to 1630H due to NGCP VRE Generation Special Dispatch Advisory with condition of only 1 Negros - Cebu Submarine Cables is in service.	Curtailment Outage	5	51,552
20/03/2021	On March 20, 2022, Plant was curtailed for 5.15 hours from 0745H to 1254H due to NGCP VRE Generation Special Dispatch Advisory with condition of only 1 Negros - Cebu Submarine Cable is in service	Curtailment Outage	7	57,580
15/04/2021	On April 15, 2022, plant was curtailed for 9.4hours from 0705H to 1629H due to NGCP VRE Generation Special Dispatch Advisory with condition of only 1 Negros - Cebu Submarine Cables is in service.	Curtailment Outage	7	74,740
16/04/2021	On April 16, 2022, plant was curtailed for 9.1hours from 0704H to 1610H due to NGCP VRE Generation Special Dispatch Advisory with condition of only 1 Negros - Cebu Submarine Cables is in service.	Curtailment Outage	8	100,705

Date	Downtime Incident	Outage Type	Outage Hours	Estimated Loss (KWh)
17/04/2021	On April 17, 2022, plant was curtailed for 8.9hours from 0700H to 1554H due to NGCP VRE Generation Special Dispatch Advisory with condition of only 1 Negros - Cebu Submarine Cables is in service.	Curtailment Outage	5	64,347
19/04/2021	On April 19, 2022, plant was curtailed for 8.98hours from 0659H to 1558H due to NGCP VRE Generation Special Dispatch Advisory with condition of only 1 Negros - Cebu Submarine Cables is in service.	Curtailment Outage	6	74,887
21/04/2021	On April 21, 2022, plant was curtailed for 9.25hours from 0657H to 1612H due to NGCP VRE Generation Special Dispatch Advisory with condition of only 1 Negros - Cebu Submarine Cables is in service.	Curtailment Outage	5	52,756
05/06/2021	On June 5, 2022, Plant isolated due to NGCP Shutdown of Bacolod - San Enrique 69kV Line scheduled from 0600H to 1800H.	External Grid Outage	11	86,115
03/07/2022	External Outage due to NGCP Shutdown of Bacolod - San Enrique 69kV Line maintenance on July 3, 2022 (Sunday)	External Grid Outage	11	81,965
11/09/2022	On September 11, 2022, Plant was curtailed for 7.7 hours from 0748H to 1530H due to NGCP VRE Generation Special Dispatch Advisory with condition of only 1 Negros - Cebu Submarine Cables is in service.	Curtailment Outage	5	69,561
18/09/2022	On September 18, 2022, Plant was curtailed for 7.28 hours from 0656H to 1413H due to NGCP VRE Generation Special Dispatch Advisory with condition of only 1 Negros - Cebu Submarine Cables is in service.	Curtailment Outage	4	55,669
06/11/2022	On November 6, 2022 from 0606H to 1610H Site team conduct Emergency Replacement of the Main VCB at Substation.	HV + MV	11	108,335
26/11/2022	On November 26, 2022, at 0807H to 2226H Ride on Rectification Of MVSG 1A Main VCB during Scheduled Shutdown of Bacolod - San Enrique 69KV Line	External Grid Outage	9	53,019
29/01/2023	On January 29, 2023, Site team isolate the Plant for NGCP Scheduled Shutdown of Bacolod - San Enrique 69kV Transmission Line from 0626H to 1835H.	External Grid Outage	10	107,195
12/02/2023	On February 12, 2023, Site team isolate the Plant for NGCP Scheduled Shutdown of Bacolod - San Enrique 69kV Transmission Line from 0613H to 1759H.	External Grid Outage	11	179,449

Date	Downtime Incident	Outage Type	Outage Hours	Estimated Loss (KWh)
04/03/2023	On March 4, 2023, Site team isolate the Plant for NGCP Scheduled Shutdown of Bacolod - San Enrique 69kV Transmission Line from 0603H to 1717H.	External Grid Outage	11	131,148
09/03/2023	On March 9, 2023 site team conducted troubleshooting and inspection on Main Transformer and Giga Ohms conducted testing on XLPE Cables, Transformer Oil and Main Transformer.	HV + MV	11	174,931
10/03/2023	On March 10, 2023 site team conducted corrective maintenance on XLPE Cables, VCB Busbar and Main Transformer Terminal Box cover.	HV + MV	5	86,189

Manapla 48MW Solar Power Plant (listed only the losses greater than 50MWh)

Date	Downtime Incident	Outage Type	Outage Hours	Estimated Loss (KWh)
31/08/2020	WO 86380 The Plant was isolated from the grid due to burnt busbar at main VCB. For further testing and rectification. Note: Synch and desynch time are only averaged to compute for the energy loss.	Other Outages	11	159,684
01/09/2020	WO 86380 The Plant was isolated from the grid due to burnt busbar at main VCB. For further testing and rectification. Note: Synch and desynch time are only averaged to compute for the energy loss.	Other Outages	11	240,683
03/10/2020	1. WO 88249 The Plant is curtailed as requested by NGCP due to scheduled shutdown of HVDC, Leyte-Luzon link from 27/09/2020 to 03/10/2020.	Curtailment Outage	3	56,215
05/01/2021	1. WO 94430 The plant was curtailed to 15MW from 8:43 to 16:40 due to Scheduled shutdown of HVDC, Leyte-Luzon link (Line 1 & 2). Restore to full capacity of 40.3MW after the scheduled shutdown.	Curtailment Outage	4	83,222
17/04/2021	1. WO 99610 The Plant was curtailed on 17/04/2021 fro 7.15 hours (8:10 to 15:25) due to schedule shutdown of HVDC, Leyte-Luzon link (line 1&2)	Curtailment Outage	6	99,758
29/06/2021	WO 103351 The Plant is curtailed on 29/06/2021 for 5.47 hours (10:06 to 15:34) due to only one Negros - Cebu submarine cable is in service.	Curtailment Outage	3	57,615

30/06/2021	WO 103390 The Plant is curtailed on 30/06/2021 for 7.28 hours (8:14 to 15:31) due to only one Negros - Cebu submarine cable is in service.	Curtailment Outage	4	78,297
22/07/2021	Plant desynchronized from the grid on 22/07/2021 at 9:05 due to grid issue at 7.56 km from NGCP Cadiz. The Plan still disconnected from the grid and waiting for an update from NGCP for the root caused	External Grid Outage	9	153,280
25/07/2021	Plant desynchronized from the grid on 25/07/2021 for 5.93 hours (10:11 to 16:07) due transmission line fault on phase C at 7.33km from Cadiz substation. The root cause of fault is not yet identified	External Grid Outage	6	117,383
27/07/2021	Plant tripped on 27/07/2021 for 2.4 hours (11:37 to 14:03) and 3.2 hours (14:49 to 18:03) due to grid issue.	External Grid Outage	6	105,134
01/08/2021	Plant Curtailment	Curtailment Outage	4	86,340
02/08/2021	Plant tripped on 02/08/2021 for 6.8 hours (between 11:09 to 17:57) due to grid issue at 7.23km from NGCP Cadiz. At 18:05 All inverters re-connected to the grid.	External Grid Outage	6	122,948
05/08/2021	Plant Curtailment	Curtailment Outage	3	55,552
	Plant Curtailment	Curtailment Outage	4	71,668
15/08/2021	Plant Curtailment	Curtailment Outage	6	113,477
18/08/2021	Plant Curtailment	Curtailment Outage	3	50,534
19/08/2021	Plant Curtailment	Curtailment Outage	5	94,332
	Plant Curtailment	Curtailment Outage	5	71,000
23/08/2021	Plant Curtailment	Curtailment Outage	5	97,753
28/09/2021	Outage was due to plant curtailment as advised by NGCP caused by the unavailability of Negros-Cebu submarine cable line	Curtailment Outage	3	55,691
29/09/2021	Outage was due to plant curtailment as advised by NGCP caused by the unavailability of Negros-Cebu submarine cable line	Curtailment Outage	4	59,745
30/09/2021	Outage was due to plant curtailment as advised by NGCP caused by the unavailability of Negros-Cebu submarine cable line	Curtailment Outage	3	61,678
03/10/2021	Outage was due to plant curtailment as advised by NGCP caused by the	Curtailment Outage	4	75,544

	unavailability of Negros-Cebu submarine cable line			
06/10/2021	Outage was due to plant curtailment as advised by NGCP caused by the unavailability of Negros-Cebu submarine cable line	Curtailment Outage	4	74,882
07/10/2021	1. Outage was due to plant curtailment as advised by NGCP caused by the unavailability of Negros-Cebu submarine cable line.	Curtailment Outage	4	74,250
11/10/2021	3. Outage was due to plant disconnected from the grid due to transmission fault at Zone 1 phase CN 7.43km from NGCP Cadiz Substation.	Other Outages	6	136,317
13/10/2021	Outage was due to plant curtailment as advised by NGCP caused by the unavailability of Negros-Cebu submarine cable line	Curtailment Outage	5	100,886
15/10/2021	Outage was due to plant curtailment as advised by NGCP caused by the unavailability of Negros-Cebu submarine cable line	Curtailment Outage	3	51,095
17/10/2021	Outage was due to plant curtailment as advised by NGCP caused by the unavailability of Negros-Cebu submarine cable line	Curtailment Outage	5	105,964
18/10/2021	Outage was due to plant curtailment as advised by NGCP caused by the unavailability of Negros-Cebu submarine cable line	Curtailment Outage	4	81,030
22/10/2021	Outage was due to plant curtailment as advised by NGCP caused by the unavailability of Negros-Cebu submarine cable line	Curtailment Outage	3	54,091
25/10/2021	Outage was due to plant curtailment as advised by NGCP caused by the unavailability of Negros-Cebu submarine cable line	Curtailment Outage	5	95,453
26/10/2021	Plant Curtailment	Curtailment Outage	5	88,318
29/10/2021	Plant Curtailment	Curtailment Outage	6	111,669
01/11/2021	Plant Curtailment	Curtailment Outage	4	78,072
04/11/2021	Plant Curtailment	Curtailment Outage	4	78,066
06/11/2021	Plant Curtailment	Curtailment Outage	7	149,649
07/11/2021	Plant Curtailment	Curtailment Outage	5	60,139

08/11/2021	Plant Curtailment	Curtailment Outage	5	91,529
14/11/2021	Plant Curtailment	Curtailment Outage	4	61,017
15/11/2021	Plant Curtailment	Curtailment Outage	3	67,871
16/11/2021	Plant Curtailment	Curtailment Outage	4	74,495
18/11/2021	Plant Curtailment	Curtailment Outage	2	50,727
23/11/2021	Plant Curtailment	Curtailment Outage	4	62,182
25/11/2021	Plant Curtailment	Curtailment Outage	4	64,113
26/11/2021	Plant Curtailment	Curtailment Outage	5	68,738
29/11/2021	Plant Curtailment	Curtailment Outage	6	101,144
29/11/2021	Plant Curtailment	Curtailment Outage	3	53,829
04/12/2021	Plant Curtailment	Curtailment Outage	5	84,596
06/12/2021	Plant Curtailment	Curtailment Outage	5	84,596
07/12/2021	Plant Curtailment	Curtailment Outage	4	70,682
11/12/2021	Plant Curtailment	Curtailment Outage	4	51,300
15/12/2021	Plant Curtailment	Curtailment Outage	5	58,280
23/12/2021	Plant Curtailment	Curtailment Outage	8	128,003
24/12/2021	Plant Curtailment	Curtailment Outage	8	105,821
25/12/2021	Plant Curtailment	Curtailment Outage	7	89,876
03/01/2022	Plant Curtailment	Curtailment Outage	8	117,305
04/01/2022	Plant Curtailment	Curtailment Outage	7	87,259
05/01/2022	Plant Curtailment	Curtailment Outage	7	82,768
06/01/2022	Plant Curtailment	Curtailment Outage	8	173,245
07/01/2022	Plant Curtailment	Curtailment Outage	7	98,641
08/01/2022	Plant Curtailment	Curtailment Outage	8	154,005
09/01/2022	Plant Curtailment	Curtailment Outage	6	117,195
10/01/2022	Plant Curtailment	Curtailment Outage	4	79,622

11/01/2022	Plant Curtailment	Curtailment Outage	9	175,588
12/01/2022	Plant Curtailment	Curtailment Outage	8	117,983
13/01/2022	Plant Curtailment	Curtailment Outage	8	163,140
14/01/2022	Plant Curtailment	Curtailment Outage	5	105,367
15/01/2022	Plant Curtailment	Curtailment Outage	5	105,009
16/01/2022	Plant Curtailment	Curtailment Outage	5	88,795
17/01/2022	Plant Curtailment	Curtailment Outage	6	83,846
18/01/2022	Plant Curtailment	Curtailment Outage	5	54,520
20/01/2022	Plant Curtailment	Curtailment Outage	5	86,186
21/01/2022	Plant Curtailment	Curtailment Outage	7	157,244
22/01/2022	Plant Curtailment	Curtailment Outage	7	133,722
23/01/2022	Plant Curtailment	Curtailment Outage	4	70,172
28/01/2022	Plant Curtailment	Curtailment Outage	4	91,430
30/01/2022	Plant Curtailment	Curtailment Outage	4	69,825
01/02/2022	Plant Curtailment	Curtailment Outage	5	85,928
02/02/2022	Plant Curtailment	Curtailment Outage	6	121,859
03/02/2022	Plant Curtailment	Curtailment Outage	3	60,695
04/02/2022	Plant Curtailment	Curtailment Outage	5	64,333
05/02/2022	Plant Curtailment	Curtailment Outage	6	77,488
06/02/2022	Plant Curtailment	Curtailment Outage	6	101,139
07/02/2022	Plant Curtailment	Curtailment Outage	4	84,774
09/02/2022	Plant Curtailment	Curtailment Outage	6	86,762
13/02/2022	Plant Curtailment	Curtailment Outage	5	78,923
15/02/2022	Plant Curtailment	Curtailment Outage	5	108,160
16/02/2022	Plant Curtailment	Curtailment Outage	4	95,729
17/02/2022	Plant Curtailment	Curtailment Outage	5	121,188

18/02/2022	Plant Curtailment	Curtailment Outage	3	53,060
20/02/2022	Plant Curtailment	Curtailment Outage	5	119,606
22/02/2022	Plant Curtailment	Curtailment Outage	4	68,119
24/02/2022	Plant Curtailment	Curtailment Outage	8	162,564
26/02/2022	Plant Curtailment	Curtailment Outage	4	95,995
27/02/2022	Plant Curtailment	Curtailment Outage	7	183,157
01/03/2022	Plant Curtailment	Curtailment Outage	7	162,798
02/03/2022	Plant Curtailment	Curtailment Outage	5	109,839
04/03/2022	Plant Curtailment	Curtailment Outage	4	90,424
05/03/2022	Plant Curtailment	Curtailment Outage	7	171,108
10/03/2022	Plant Curtailment	Curtailment Outage	6	111,630
12/03/2022	Plant Curtailment	Curtailment Outage	5	135,235
13/03/2022	Plant Curtailment	Curtailment Outage	4	83,185
13/03/2022	Rectification of burnt connectors	DC (Modules, SCBs)	0	67,051
15/03/2022	Plant Curtailment	Curtailment Outage	1	59,779
16/03/2022	Plant Curtailment	Curtailment Outage	2	119,921
16/03/2022	Rectification of burnt connectors	DC (Modules, SCBs)	0	63,944
17/03/2022	Plant Curtailment	Curtailment Outage	4	163,740
18/03/2022	Plant Curtailment	Curtailment Outage	2	119,403
20/03/2022	Plant Curtailment	Curtailment Outage	5	129,858
21/03/2022	Plant Curtailment	Curtailment Outage	2	98,114
22/03/2022	Plant Curtailment	Curtailment Outage	4	69,359
24/03/2022	Plant Curtailment	Curtailment Outage	2	109,994
25/03/2022	Plant Curtailment	Curtailment Outage	2	53,060
26/03/2022	Plant Curtailment	Curtailment Outage	4	86,104
18/05/2022	plant curtailment	Curtailment Outage	4	63,514

19/05/2022	plant curtailment	Curtailment Outage	4	75,608
25/05/2022	plant curtailment	Curtailment Outage	2	50,738
05/06/2022	plant curtailment	plant curtailment	5	50,083
07/06/2022	plant curtailment	plant curtailment	3	50,710
10/06/2022	plant curtailment	plant curtailment	3	55,608
12/06/2022	plant curtailment	plant curtailment	3	72,196
13/06/2022	plant curtailment	plant curtailment	4	82,137
26/06/2022	plant curtailment	Curtailment Outage	4	73,062
03/07/2022	plant curtailment	Curtailment Outage	3	58,336
05/07/2022	Plant curtailment	Curtailment Outage	4	69,858
10/07/2022	plant curtailment	Curtailment Outage	6	95,794
13/07/2022	plant curtailment	Curtailment Outage	3	58,376
14/07/2022	plant curtailment	Curtailment Outage	5	87,753
15/07/2022	plant curtailment	Curtailment Outage	5	104,742
19/07/2022	plant curtailment	Curtailment Outage	3	56,377
22/07/2022	plant curtailment	Curtailment Outage	3	50,247
24/07/2022	plant curtailment	Curtailment Outage	4	76,646
03/09/2022	Plant curtailment	Curtailment Outage	4	65,543
04/09/2022	Plant curtailment	Curtailment Outage	4	88,436
08/09/2022	Plant curtailment	Curtailment Outage	3	69,088
10/09/2022	Plant curtailment	Curtailment Outage	2	53,562
18/09/2022	Plant curtailment	Curtailment Outage	4	87,906
19/09/2022	Plant curtailment	Curtailment Outage	3	53,237
21/09/2022	Plant curtailment	Curtailment Outage	5	109,277
22/09/2022	Plant curtailment	Curtailment Outage	5	91,598
23/09/2022	Plant curtailment	Curtailment Outage	4	70,129

24/09/2022	Plant curtailment	Curtailment Outage	3	59,032
25/09/2022	Plant curtailment	Curtailment Outage	5	90,796
28/09/2022	Inverter Outage	Inverter	4	52,218
29/09/2022	Plant curtailment	Curtailment Outage	3	62,780
01/10/2022	Plant curtailment	Curtailment Outage	6	108,581
02/10/2022	Plant curtailment	Curtailment Outage	4	98,284
11/12/2022	On 12/11/2022 from 0632H to 1614H, plant was curtailed due to shutdown of HVDC, Leyte – Luzon link (MEMO-2022-12-0605).	Curtailment Outage	4	82,005
08/04/2023	On 08 Apr 2023 at 1055H, a detached cable single phase line on the 69kV Transmission Line causes the unbalanced of phase voltages and caused the Plant to trip. 1430 H - Plant energized after repairing of 69 KV Tramsission line was completed.	HV + MV	4	51,282
05/05/2023	On 05 May 2023 at 0855H, IslaSol III Plant Tripped verify on the ION meter it indicated the plant has an unbalanced transmission voltage level, NGCP ACC Severino inform the site team that the cause of the plant trip was Zone 1 C-N 11.15 km which appears in NGCP Cadiz relay, O&M Site team immediately mobilize to survey the root cause of plant shutdown. 0944H – O&M Survey team found out the cause of the unbalanced voltage located at Hda. Lao, Brgy. Luna, Cadiz City which is a detached loop ACSR 69 kV Transmission Lines	Other Outages	4	59,613
06/05/2023	On 06 May 2023 at 1210H, The plant undergoes normal shutdown and NONECO performs the replacement and erection of the 69kV Transmission Line Pole. At 1720H NONECO has finished the rectification of the pole, and at 1850H the plant has been energized.	Other Outages	6	95,388
20/05/2023	Shutdown of 138 kV Bacolod-Cadiz line affecting all transmission and sub-transmission lines connected to Cadiz substation on 20 May 2023 (NoSPI-D3Vi-23-110)	External Grid Outage	11	189,583