

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN
ASEP - RURAL NETWORK SOLAR (RNS)
BENGUET ELECTRIC COOPERATIVE, INC. (BENECO)

I. PROJECT DESCRIPTION

The Benguet Electric Cooperative, Inc. (BENECO) was selected by the Department of Energy as one of the seven (7) electric cooperative (EC) recipients for the 1 MW solar project under the European Union – Access to Sustainability Energy Programme (EU-ASEP) for Rural Network Solar (RNS).

The European Union (EU) and the Global Partnership on Output-Based Aid (GPOBA), through the Access to Sustainable Energy Project (ASEP) which is World Bank-assisted Project, provided financial grant to the Philippines to increase access to electricity by putting up renewable energy project. The counterparts of the recipient EC are the lot and the interconnection facilities. The EC shall likewise provide the fence and do the clearing activities at the proposed location of the plant.

The proposed 1MW Tabaan Sur Solar Power Plant will be located at Sitio Bato, Tabaan Sur, Tuba, Benguet as shown in Figure 1 below. The plant will be connected to the 20MVA Transformer at Lamut Substation at La Trinidad, Benguet through Feeder 13 with 23KV line to line, 13.2kV line to ground voltage. The distance from the substation to the Power Plant is approximately 35 km.

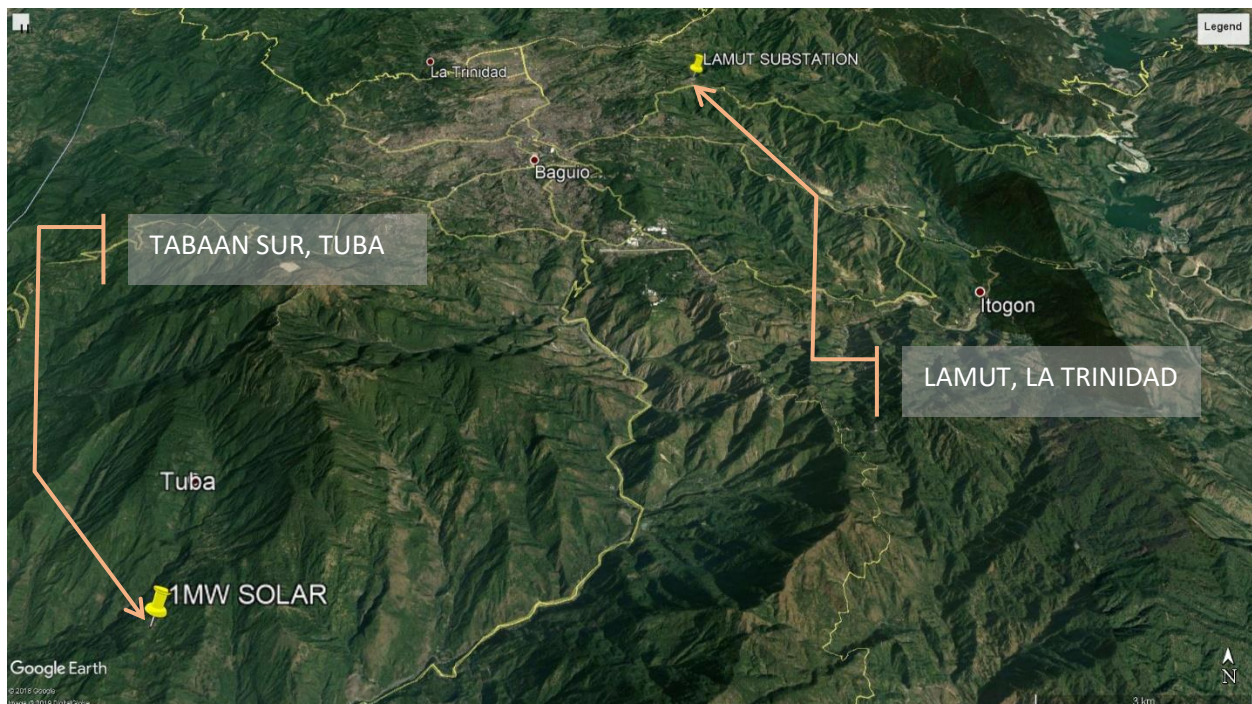


Figure 1: Map Overview

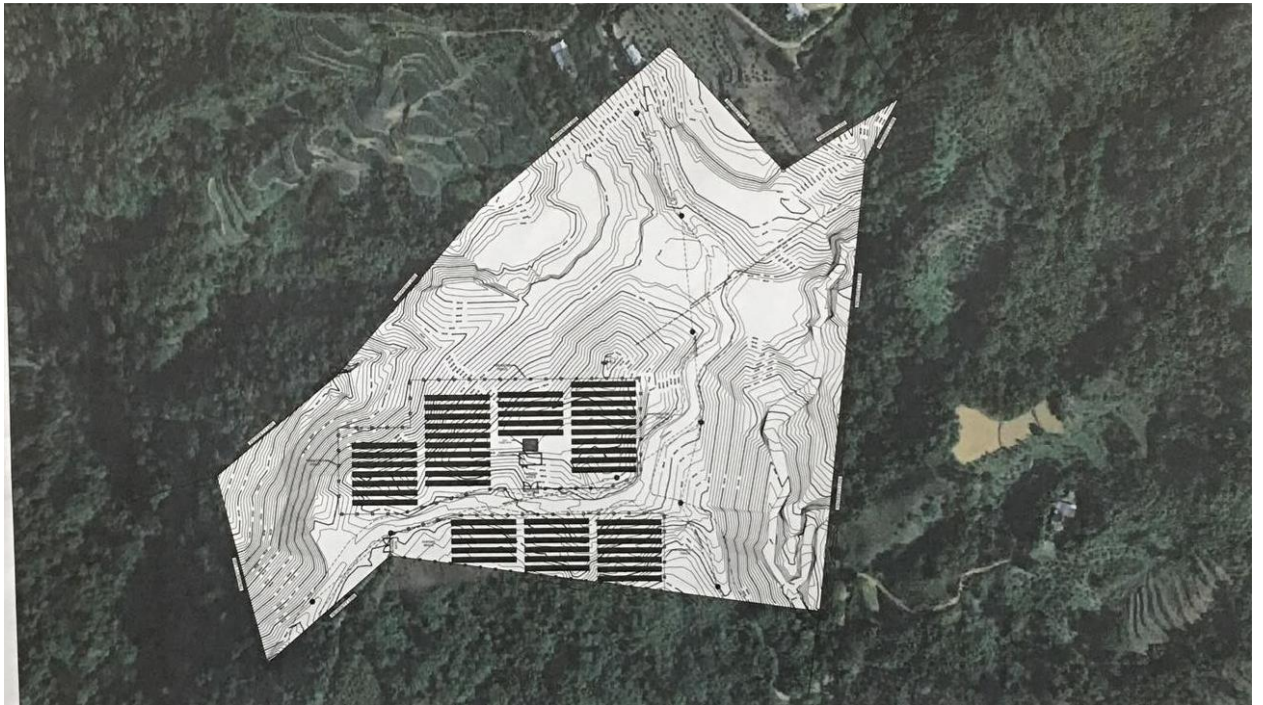


Figure 2: Site Development Plan

The solar power plant will be composed of inverters, solar modules, mounting structures, lightning protection, substation, power transformer and the control room. The solar modules will be installed in the proposed area as shown in Figure 2 above.

A total area of about 1.5 hectares is needed to accommodate all the structures to be constructed or installed to build the solar plant. The 1MW Tabaan Sur Solar Power Plant will be constructed within the 7.45 hectares property of BENEKO that was acquired solely for solar projects.

During rainy season, BENEKO will harvest rain water to be used to clean the solar modules during the dry season. In addition, there is an available water source used by the community for their farming needs. There is also a creek that is about 200 meters away from the proposed plant location. BENEKO will store water during rainy season that there is overflowing supply of water so as not to compete with the community on water supply.

The solar plant will be beneficial to the various stakeholders in terms of the following:

- a. All BENEKO Consumers The actual generation cost, net of all expenses incurred, will be applied to all member-consumer-owners of BENEKO.

Since the solar plant is a grant, the effect would definitely be advantageous by lowering the blended generation cost of BENEKO.

b. LGU/Barangay/Community

BENEKO pay the applicable Real Property Taxes, business tax, franchise tax and ER 1-94 share. BENEKO may also extend Corporate Social Responsibility (CSR) projects to the community/barangay/LGU.

Since the plant is embedded at the farthest end of the existing distribution line, the system loss will likewise be reduced. In the same manner, the quality of power in the surrounding areas will be improved, which will definitely impact on the indigenous people residing in the area.

II. BASELINE CONDITIONS
A. Topography of the site



B. Nearest body of water

There is a creek that is about 200 meters away from the proposed location of the solar plant.

C. Vegetation type at the site

The plants in the area include trees and shrubs.

D. Land use the site and surrounding areas (please mention existence of barangay roads, public water supply system, other structures inside the property)

The site is classified as an agricultural land. Portion of the property bought was cultivated in the previous years prior to its sale to BENEKO. The BENEKO property is traversed by a barangay road that is about 600 meters in length.

Within the BENEKO property is a water tank owned by the National Irrigation Administration. The water supply from this facility is distributed among the farmers to be used in watering their plants.

E. IP groups present in the community

The Indigenous People residing at Taba-an Sur, Tuba are Ibaloi, Kankanaey and Ilocano. The project site, Sitio Bato, Taba-an Sur, are comprised of 13 households.

Number of Households: 332
Number of Population: 1,462
Male: 687
Female: 775

As of January 2020

	ETHNICITY
Ibaloy	260
Kankanaey	24
Ilocano	34
Pangasinan	8
Kalanguya	2
Ifugao	3
Tagalog	1
	332

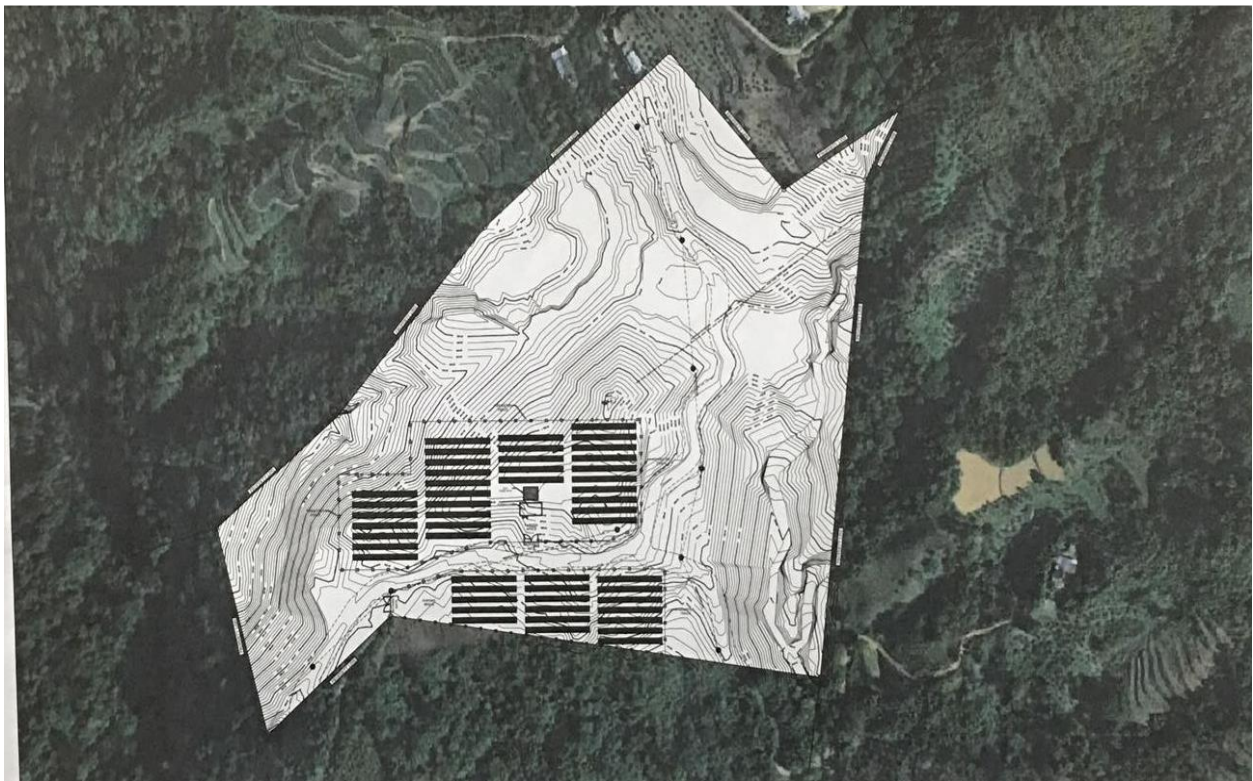
Tribes: Ibaloi, Ilocano, Kankanaey

Sources of Livelihood:

The main source of livelihood for the residents at Tabaan Sur is farming. At present, citrus limon (lemon) is the number one crop, second only to rice, and other cash crops. Hog raising is common too as their source of livelihood.

Other sources of livelihood from the community but in a minimal scale is office / government employee, overseas Filipino Worker and small business enterprise.

Project Site





The aerial shot shows the RNS project site. It is about 500 meters from a residential area and is traversed by the barangay road. BENEKO's property is classified as an agricultural land. Land use conversion of the 1.5-hectare area to be occupied by the solar power plant is being coordinated with DAR by BENEKO.

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN
ASEP-RURAL NETWORK SOLAR
BENGUET ELECTRIC COOPERATIVE, INC.

Project Phase	Activity	Environmental Issues/Potential Impacts	Mitigation Measures	Institutional Responsibility		Accomplishments For the period _____ to _____		
				Implementation	Supervision	Specific Measures Implemented	Date/Period Implemented	Proof of Compliance/ Implementation
PRE-CONSTRUCTION	<ul style="list-style-type: none"> Stakeholder engagement Coordination with regulatory and other government agencies Coordination between EC and Contractor Training/ orientation of Workers by Contractor 	Exposure of proponent's personnel and the community to health risks due to Covid19 virus	<ul style="list-style-type: none"> Minimize face to face interaction. DOH/LGU health protocols must be followed when face to face interaction is inevitable. 	BENECO, Contractor, LGU, government agencies concerned, workers	NPC-PMO			
CONSTRUCTION	<ul style="list-style-type: none"> Land Clearing Perimeter Fencing 	Loss of vegetation due to land clearing and cutting of trees	<ul style="list-style-type: none"> Minimize tree cutting/ removal of vegetation Conduct inventory of trees that need to be cut. Secure tree cutting permit from the DENR/Philippine Coconut Authority, as may be required and ensure compliance with permit conditions. Coordinate with the DENR and IP community leaders/elders on the planting of replacement trees. (such as lemon trees) and donation of felled trees, if any, to the IPs Comply with Tree Cutting Permit conditions 	BENECO	NPC-PMO			

		Soil Erosion	<ul style="list-style-type: none"> To avoid leaving the soil open for a long time, coordinate with the EPC on the implementation schedule/timing of clearing activities. Manage and dispose excess soil materials properly. Proper landscaping to protect natural soil and slope for wind, water ponding and soil erosion. 	Contractor and BENEKO BENEKO	BENEKO and NPC-PMO			
		Increase in airborne dust	<ul style="list-style-type: none"> Spray water or use other dust suppression techniques 	Contractor	BENEKO			
		Exposure of workers to occupational health and safety hazards	<ul style="list-style-type: none"> Strict supervision and implementation of safety measures. Compliance with DOH Health Protocols on Covid-19 	BENEKO and Contractor Workers	BENEKO Safety Officer and NPC-PMO			
		Generation of various types of waste (during site clearing, fencing, site development)	<ul style="list-style-type: none"> Disposal of trash in accordance with local ordinances. Used PPEs (face masks, etc.) and other hazardous wastes to be segregated and disposed of in accordance with regulations 	Contractor and BENEKO	BENEKO's PCO			
		Impact on properties, and cultural and economic activities of neighboring ethnic community (during site clearing, fencing)	<ul style="list-style-type: none"> Coordinate with IP leaders prior to conduct of activities at the site Implement the IP Plan and comply with the IPRA Law 	Contractor and BENEKO	BENEKO and NPC-PMO			

		Disturbance to dwellers in adjacent areas due to noise (during site clearing, fencing)	<ul style="list-style-type: none"> If possible, implement noisy activities at times when these will cause least disturbance. Inform community about possible increase in noise 	Contractor and BENEKO	BENEKO			
		Impact of construction activities (site clearing, fencing) to adjacent lots and use of barangay road by the community	<ul style="list-style-type: none"> BENEKO will implement mitigating measures to ensure that soil and other loose materials will not be released to adjacent areas. BENEKO will coordinate with adjacent lot owners. 	BENEKO and Contractor	BENEKO and NPC-PMO			
			<ul style="list-style-type: none"> BENEKO will not close the barangay road within its property and will coordinate with the barangay on BENEKO's provision of continued access of the community to the said roads. Implement an effective Grievance Redress Mechanism to resolve project-related complaints, issues, grievance of community and other stakeholders. 	BENEKO	NPC-PMO and LGU			
OPERATION	<ul style="list-style-type: none"> Operation and Maintenance Activities of Solar Power Plant 	Competition with community on water supply	<ul style="list-style-type: none"> Use of rainwater harvesting to provide alternate water source for solar panel cleaning 	BENEKO Solar Power Plant Personnel	BENEKO Solar Power Plant Head			
		Exposure of solar plant personnel to health and safety hazards	<ul style="list-style-type: none"> Use of proper PPEs, safety and health training of workers Compliance with DOLE OSH standards/regulations and DOE's RESHERR Compliance with DOH health protocols on Covid-19 	BENEKO Solar Power Plant Personnel	BENEKO Safety Officer			

		Water and Soil Contamination	<ul style="list-style-type: none"> • Coordinate with the LGU for the proper waste collection and disposal • Segregate, store and dispose of hazardous wastes according to DENR regulations • Comply with DOH/DENR standards/regulations on septic tank, wastewater treatment and sludge disposal • Secure Wastewater Discharge Permit from DENR 	BENECO Solar Power Plant PCO	BENECO Solar Power Plant Head			
ABANDONMENT	<ul style="list-style-type: none"> • Disposal of solar panels / materials / equipment / structures 	Occupational health and safety risks	<ul style="list-style-type: none"> • Oversee the project implementation to ensure safety of workers 	BENECO Safety Officer and Contractor	BENECO Solar Power Plant Head			
		Soil Contamination	<ul style="list-style-type: none"> • Proper disposal of dismantled solar panels / materials / equipment / structures 	BENECO PCO and Contractor	BENECO Solar Power Plant Head			

Note: Mr. Jason Wayet, the Safety Officer of BENECO shall be responsible in the implementation, monitoring and reporting of the ESMP.

Prepared by:


OLIVE O. BETE
 ESRCO

Approved by:


MELCHOR S. NOOBEN
 GENERAL MANAGER

MONITORING PLAN
ASEP-RURAL NETWORK SOLAR
BENGUET ELECTRIC COOPERATIVE, INC.

Project Phase	Parameter	Standards	Monitoring Frequency	Location	In-charge of Monitoring
PRE-CONSTRUCTION TO OPERATION	<ul style="list-style-type: none"> Stakeholders engagement 	Engagement with all stakeholders including IPs is conducted by BENEKO to ensure proper information dissemination	<p>All throughout the period of engagement with the stakeholders and during coordination with LGUs/government agencies/supplier</p> <p>For the IPs, monthly meeting with IP leaders</p>	LGU/government offices, barangay hall, project site, training venues	PMO
SITE CLEARING, FENCING, UPGRADING OF POWER LINE BY BENEKO	<ul style="list-style-type: none"> Cutting of trees 	<p>Inventory of trees to be cut (if any) conducted</p> <p>Tree cutting coordinated with DENR/PCA and permit secured, as may be required</p> <p>Replacement trees provided/ planted as agreed with the IP Community</p> <p>Tree Cutting Permit conditions complied</p>	<p>Once during the implementation of the pre-development activities</p> <p>Prior to operation</p> <p>Before and after (as applicable) tree cutting</p>	<p>Project Site</p> <p>BENEKO property, vicinity or site agreed upon with community/DENR</p>	PMO
	Soil Erosion Control	Landscaping undertaken where needed/appropriate	<p>Prior to completion of construction or as soon as practicable</p> <p>Whenever excess soil material is generated</p>	Project Site	<p>PMO</p> <p>PMO, BENEKO</p>

		Excess soil materials managed and disposed of properly by BENECO/contractor			
		Sediments/soil from the project site are not washed by rain onto the barangay road and adjacent properties	As necessary during heavy rains		
	Dust control	Spraying of water on exposed areas undertaken during dry weather	Daily or as needed	Project Site	PMO
	Occupational Health and Safety	PPEs, face masks/shields provided to and used by workers No transmission of Covid-19 at worksite No occurrence of job-related accident in the worksite	Daily Daily Daily	Project Sites (including site for line upgrading)	EC
	Disposal of waste	Wastes generated at the project site including used face masks/shields are properly collected and disposed according to regulations.	Weekly or as needed depending on the schedule of activities	Project Sites (including site for line upgrading)	EC
	Complaints / Issues / Grievances	Complaints, issues or grievances are settled within fifteen (15) days There is no project-related complaint or complaints are few and minor	Weekly	LGU/government offices, barangay hall, project site, community	EC
	Noise	If possible, implement noisy activities at times when these will cause least disturbance. Inform community about possible increase in noise	as needed	Project Sites (including site for line upgrading)	EC

CONSTRUCTION	Submission of required reports by Contractor	Reports on compliance with CESMP, ECoP, Health & Safety Manual, COHSP are submitted by EPC Contractor	Quarterly	Project Site	BENECO's ESMP Focal Person, PMO
	Disposal of sludge & wastewater from portable toilets	EPC Contractor has a signed contract with DENR/DOH accredited sludge transport and treatment firm for the duration of solar power plant construction	Once, prior to construction	N/A	BENECO's ESMP Focal Person, PMO
		Sludge transport and treatment Facility has a valid Environmental Sanitation Clearance from DOH and ECC from the DENR	Once, prior to construction	N/A	
		Sludge transporter firm ensures that the collection/hauling of sludge from the site to the treatment facility is covered by a Manifest	Prior to every desludging activity	N/A	
	Management of hazardous/infectious wastes	Contractor collects, stores and disposes of used masks/shields according to DENR regulations	Daily	Project Site	BENECO's ESMP Focal Person and Safety Officer
	Permits for quarry sites	Contractor secures copy of valid Quarry Permit (issued by the LGU) from the supplier of sand/gravel	Prior to procurement of materials	N/A	BENECO's ESMP Focal Person, PMO
	PPEs	Site workers wear appropriate PPEs	Random inspection	Project Site	BENECO's ESMP Focal Person and Safety Officer
	Safety signages	Signages are placed in appropriate places	Random inspection	Project Site and surrounding area	BENECO's ESMP Focal Person and Safety Officer
	Covid 19 cases	No transmission of Covid 19 at the worksite	Daily	Project Site	BENECO's ESMP Focal Person and Safety Officer


	Training/orientation of personnel	Contractor conducts orientation/training on environmental, health and safety for site workers	Prior to deployment of workers, and as needed during construction phase	Project Site	BENECO's ESMP Focal Person
	Proper housekeeping	Project and accommodation areas are clean and orderly	Random inspection	Work and accommodation areas	BENECO's ESMP Focal Person
	Grievance Management	Copies of records of complaints/grievances received by Contractor are provided to EC/PMO	Quarterly	N/A	BENECO's ESMP Focal Person
OPERATION	Complaints / Issues / Grievances	Complaints, issues or grievances are settled within fifteen (15) days There is no project-related complaint or complaints are few and minor	Weekly	LGU/government offices, barangay hall, project site, community	EC
	Occupational and Community Health and Safety	PPEs, face masks/shields provided to and used by workers No transmission of Covid-19 at the worksite No plant-related accidents involving the workers and the public	Daily Daily Daily	Project Sites	EC
ABANDONMENT	Occupational Health and Safety Risks	Strict supervision and implementation of health and safety measures Compliance with DOH/LGU health protocols for Covid 19	Weekly Continuous during Covid 19 pandemic	Project Site	EC
	Soil Contamination	Proper disposal of dismantled solar panels / materials / equipment / structures	Weekly	Project Site	EC

Note: The Safety Officer of BENECO shall be responsible in the implementation, monitoring and reporting of the ESMP.

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OLIVE O. BETE
ESRCO

Approved by:


MELCHOR S. LICOBEN
GENERAL MANAGER

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BENGUET ELECTRIC COOPERATIVE, INC.
04 South Drive, Baguio City

COST ESTIMATES

1 MW TABAAN SUR SOLAR PLANT

	Activity	Intervention Plan	Cost (Php)/year
1	Cutting of trees	Tree Planting	P100,000.00
	Vegetation removal	Landscaping	P200,000.00
	Use of groundwater	Rainwater harvester	P100,000.00
		Stakeholder Engagement	P100,000.00
2	Capacity Building	<ul style="list-style-type: none">• On the Job training for the plant Health, Safety & Environment (HSE) Officer• On the Job training for the plant Pollution Control Officer (PCO)• PCO Accreditation Fees• BOSH trainings	P75,000.00 P50,000.00 P15,000.00 P15,000.00
3	Occupational Safety (5 personnel)	<ul style="list-style-type: none">• Provision of personal protective equipment (such as safety shoes, hard hats, safety gloves, Ear Muffs, Nose muffs)	P100,000.00
	Total		P755,000.00

Note: Cost of mitigation measures for the impact of solar power plant construction shall be the responsibility of the EPC contractor.

Prepared by:


OLIVEO. BETE
ESRCO

Approved by:


MELCHOR S. LICOBEN
General Manager

ACCESS TO SUSTAINABLE ENERGY PROJECT
Rural Network Solar (RNS)
BENGUET ELECTRIC COOPERATIVE (BENECO)

Scope of Grievance Redress Mechanism

This GRM outlines the process for resolving grievance/problems pertaining to the BENECO's Rural Network Solar Project in a peaceful and timely manner. It covers issues/complaints that may be raised by affected persons, community members and other stakeholders regarding specific project activities, environmental and social performance, unanticipated social impacts resulting from the project activities, and other project related concerns. The GRM flow chart is shown below.

Persons who cannot represent themselves (for example, PWDs) may raise their issues/concerns through their chosen representative. Members of Indigenous Peoples group may seek the assistance of the barangay and/or municipal IP representatives or leaders in the filing of complaints and bringing their concerns to the attention of BENECO. Grievances of IPs shall be resolved in coordination with the IP leaders and in accordance with the IP group's process. Grievances shall be resolved within 15 days. Grievances that cannot be solved within BENECO's level will be elevated to the NPC Project Management Office. The complainant shall be notified about this action.

Channels for Raising Complaints/Concerns

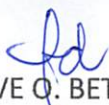
Affected individuals and community members may raise their concerns through the following:

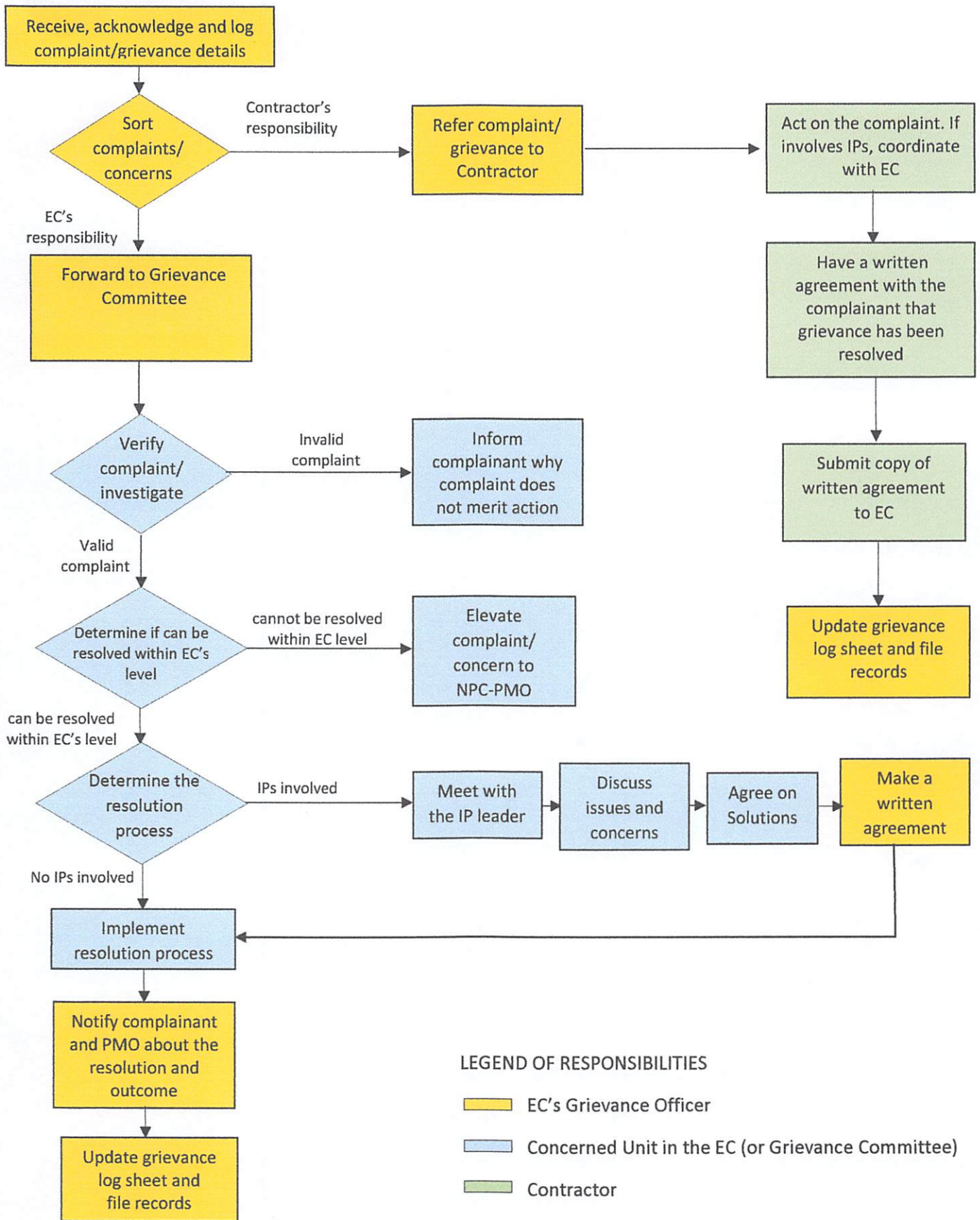
Telephone No	:	<u>(074)637-4400 / 09088657202</u>
Email address	:	<u>info@beneco.com.ph / ogm@beneco.com.ph</u>
FB messenger	:	<u>Beneco – Benguet Electric Cooperative</u>
File at BENECO Office	:	<u>04 South Drive, Baguio City</u>

Composition of the Grievance Committee

Melchor S. Licoben
Olive O. Bete
Delmar O. Carino
Edison P. De Guzman

Name and Designation of Focal Person for the Grievance Redress Mechanism


OLIVE O. BETE
ESRCO



Prepared by:

[Signature]
OLIVE O. BETE
 ESRCO

Approved by:

[Signature]
MELCHOR S. LICOBEN
 General Manager