

# Environment and Social Management Plan

Sultan Kudarat Electric Cooperative, Inc. (SUKELCO)

(EU ASEP Rural Network Solar)

## Project Background

Rural Network Solar (RNS) is one of the component projects under Access to Sustainable Energy Project (ASEP) program funded by European Union. ASEP is a World Bank-assisted program aims to provide assistance to the Philippines in increasing access to electricity in a sustainable manner. The project will facilitate additional private investments into rural electrification and renewable energy through output based subsidies with implementing assistance of the National Power Corporation (NPC).

RNS aims to increase renewable energy production via small, grid connected solar power plants. It is expected that 7 MW of new renewable energy generation capacity will be brought on-line as a result of the project interventions. A capital subsidy buy-down based on a least-cost, competitive approach is expected to level the playing field for grid connected solar vis-à-vis higher polluting alternatives.

SUKELCO was of the seven Electric Cooperatives qualified in the program having passed the initial screening requirements. This is an ideal project for to augment EC's impending supply deficit and currently without long term bilateral power supply contract from renewable energy source. This is a renewable energy supply that will supplement the EC's compliance to Renewable Portfolio Standard (RPS) required by the DOE.

Under the ASEP program, the EU will fund seventy (70%) of the project cost while the remaining thirty (30%) amounting to 22 Million pesos shall be funded by SUKELCO as equity counterpart. Aside from land, EC counterpart shall cover the pre-development costs on site development, step-up transformer, tie-line from solar plant to Kalandagan substation, feasibility studies, and permits acquisition while the EU fund shall cover the Engineering, Procurement and Construction (EPC) cost of the solar plant.

The RNS subproject at Sultan Kudarat will be implemented by the EPC Contractor but pre-construction activities, site preparation (site clearing and perimeter fencing), will be undertaken by SUKELCO. SUKELCO will operate the solar power plant upon its acceptance of the facility from the EPC Contractor. The measures identified in this ESMP are intended to prevent, reduce or mitigate environmental and social impacts of SUKELCO's activities during the pre-construction, site preparation activities, and solar power plant operation. The EPC Contractor shall prepare and implement an ESMP for the Construction Phase. The NPC-Project Management Office (PMO) and SUKELCO will jointly monitor the implementation of the ESMPs but the PMO will be responsible for the overall supervision.

## Project Description

The proposed project is a solar power plant designed to have a total capacity of 1.212MWp (without battery energy storage system). The power plant will be situated at the back of SUKELCO headquarters located at Brgy. Kalandagan, Tacurong City, as shown in the Site map (Figure 1). The project site, which has a total land area of 17,000 sq. m., is carved out of the 47,297 square meter Lot 334 (TCT T-16773) owned by SUKELCO, as reflected in the Location Plan and Sketch Plan. The northeastern boundary of the project site coincides with the boundary of the SUKELCO

property. The whole SUKELCO property is classified as an agricultural land, but this is being applied for conversion to industrial use with the Department of Agrarian Reform.

The output of the Solar plant shall be connected directly to the nearby 5 MVA Kalandagan Substation through a 110 meters 13.2 kV supply tie-line. It is expected to have an annual energy production of 2.12 Million kWh with 20% plant capacity factor. The generated energy shall serve as another power supply of the EC which will benefit the on-grid customers of a cheaper and clean power supply that is estimated to reduce the monthly power cost by P77,448 which will be translated into reduction of retail rate to its customers for a useful life of 25 years.

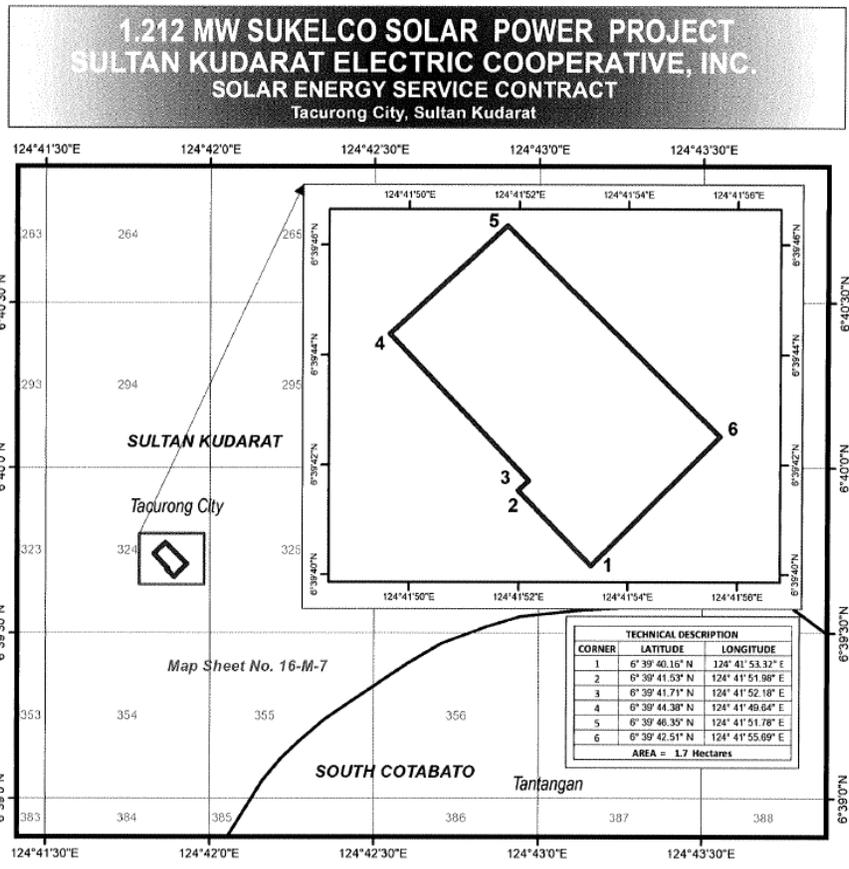


Figure 1 - Site Map

## Project Benefit

Use of renewable energy from Solar is well known to have environmental and health benefits through generating energy that produces no greenhouse gas emissions from fossil fuels. For utility scale solar project like RNS, the benefits were magnified and extended the impact not only to the EC but more importantly to the Host Community and all customers within the EC franchise.

Similar to other renewable energy project, residents of the host community will be given preference in employment during construction and the EC will undertake the development and training of employees for labor and staff positions needed in the operations. The EC is also required to undertake corporate social responsibility projects in coordination with Host LGUs focused on education and training of qualified and deserving beneficiaries. Finally, the EC will remit to DOE the equivalent amount of one centavo per kWh of energy generated by the plant in compliance to Energy Regulation (ER 1-94) wherein Host LGUs can tap the generated amount to fund their proposed electrification, development and livelihood, and environmental enhancement projects.

As to the benefits of EC customers within its franchise area, the use of solar technology will ensure a sustainable power and reduce the dependence on imported fuels (i.e. diesel and coal). With majority of its capital cost funded by grant from EU-ASEP, this will eventually result to a cheaper generation cost of the EC that is estimated to reduce the monthly power cost by P77,448 which will be translated into reduction of retail rate to its customers. In addition, RNS will aid the EC in its compliance to Renewable Portfolio Standards (RPS) which requires additional 1% of power supply every year shall be taken from renewable energy source. This will ensure a sustainable source of renewable energy for RPS compliance with stable rate compared to securing compliance energy from supply contracts with other renewable energy developers.

## Baseline Condition

Barangay Kalandagan is the entry point of Tacurong City when travelling from Koronadal City, South Cotabato via the Pan Philippine Highway. It is located at the southern part of the City of Tacurong and is 6.6 kilometers away from Poblacion proper. This hilly barangay has a total land area of 2,533 hectares—one of the largest barangays in the city. Any form of transportation can reach the barangay because it is situated along National Highway going to the Province of South Cotabato. Only a small portion, or about 1.2% of the land in Kalandagan is built-up area (residential, school). About 62% of the land are forest and grass land while about 36% are agricultural lands.

Description	Area in Hectares	Percentage from Total Land Area
Agricultural	721.50	28.48
Residential	25.00	0.99
Orchard	200.00	7.90
Forest Area	880.00	34.74
School Site	5.00	0.20
Swamp	5.00	0.20
Inland Fishpond	0.25	0.01
Grass land	691.50	27.30
<b>Total</b>	<b>2,533.0</b>	<b>100%</b>

Most of the early settlers in the barangay belong to the Islam faith. However, most of them left the area when a conflict emerged with Christian migrants in the early 70's. Today, Christian settlers dominate the barangay household population. Christians comprise almost 77.90% of the

household population—71.08 % of which is Ilongo; 2.57% is Ilocano; and others 1.47%. Maguindanaons comprises 21.30% of the total population.

The SUKELCO property where the project site is situated is within an Industrial Zone, as certified by the Office of the City Planning and Development Coordinator. However, the property is classified as an agricultural land, and is currently being applied for conversion to industrial land. It is bounded by the National Road, a palm plantation, rice fields and an open area. The portion of the property/project site near the rice fields has a slightly sloping terrain. Shallow ground depressions where water accumulates during rains are also found in this area, but there has been no occurrence of flooding. Soil can be considered as Sandy Loam made up of sand, silt and clay. The nearest body of water that can be found is the Lake Buluan which is 10.18 kilometers from the plant site.



RNS  
PROJECT  
SITE

Figure 2 –Aerial View of the RNS Project Site

No IP community is present within or in the neighbouring areas around the plant site however there are IP communities that are living in the franchise area of SUKELCO which can benefit from the RNS project. In Sultan Kudarat province, about 46.92 percent of the household population classified themselves as Hiligaynon/Ilongo. Others classified themselves as Ilocano (17.17 percent), Cebuano (9.21 percent), Manobo/Ata Manobo (5.37 percent) and the rest belonged to other ethnic groups (8.41 percent). About 113 ethnic groups were identified in the province in the 2000 Census. Aside from the Hiligaynons, who settled in Sultan Kudarat around the 17th to 18th centuries along with the Karay-as, other ethnic groups in the province include the Maguindanaons (who constitute the majority of the provincial Muslim population), as well as the Manobos, Tedurays and Blaans, the three autochthonous ethnic groups of the province.

## Environment and Social Management & Monitoring Plan

### (EU-ASEP Rural Network Solar)

Project Phase	Project Activity	Potential Impacts	Mitigation Measures	Institutional Responsibilities		Accomplishments For the period _____ to _____		
				Implement	Supervise	Specific Measures Implemented	Date/ Period Implemented	Proof of Compliance/ Implementation
<b>PRE-CONSTRUCTION</b>	Stakeholder Engagement  Securing of permits/ clearances  Coordination with Contractors  Orientation/ Training of workers	Exposure of proponent's/ contractors'/ government's personnel and the community to health risks due to Covid-19 virus	<ul style="list-style-type: none"> <li>Minimize face to face interaction/meetings</li> <li>If face to face is necessary, comply with basic pre-cautionary measures; wearing of face mask, proper hygiene/disinfection, practice of physical distancing, and restriction of an individual showing symptoms of Covid-19 virus.</li> </ul>	SUKELCO  SUKELCO and Contractors	NPC-PMO			
<b>SITE PREPARATION</b>	Site Clearing, Perimeter Fencing	Soil erosion/sediment run off which can affect drainage systems/adjacent properties	<ul style="list-style-type: none"> <li>Minimize area to be stripped of vegetation</li> <li>Implement appropriate soil erosion control measures, as necessary</li> <li>Locate stockpiles/excavation spoils away from drainage systems to prevent clogging/ obstruction of water flow due to high load of sediment</li> <li>Undertake proper landscaping, as soon as possible, for natural soil</li> </ul>	SUKELCO and Contractor (Fencing/ Site Clearing)  SUKELCO	NPC-PMO and SUKELCO  NPC-PMO			

			and slope protection from strong winds, water ponding and soil erosion.					
<b>SITE PREPARATION</b>	Site Clearing, Perimeter Fencing	Loss of vegetation due to land clearing and cutting of trees	<ul style="list-style-type: none"> <li>• Avoid cutting of trees as much as possible; transplant/do earth balling, if applicable</li> <li>• Conduct inventory of trees to be cut and secure tree cutting permit from the DENR/Philippine Coconut Permit, as may be required</li> <li>• Plant trees (native species) within the project site surrounding area, if possible, or within an area identified by local DENR to replace those that were removed.</li> </ul>	SUKELCO	NPC-PMO			
		Localized increase in airborne dust which can affect site workers and people working on the site	<ul style="list-style-type: none"> <li>• Spray water over areas of concern during dry weather</li> <li>• Ensure that site workers use PPEs (face mask, goggles) properly</li> <li>• Remove debris from the site periodically and dispose of these properly. There should be no burning of debris/wastes.</li> </ul>	SUKELCO and Contractor (Fencing/ Site Clearing)	NPC-PMO and SUKELCO			
		Solid and hazardous wastes generated from the construction and workers' activities can contaminate soil and	<ul style="list-style-type: none"> <li>• Collect, segregate and dispose of garbage/construction debris according to regulations</li> <li>• Segregate, store in a hazardous waste storage facility, label and</li> </ul>	SUKELCO and Contractor (Fencing/ Site	NPC-PMO			

		water resources	dispose of hazardous wastes (used oils, used light bulbs, etc) in accordance with DENR regulation (RA 6969)	Clearing)				
		Safety and health risks to workers	<ul style="list-style-type: none"> <li>• Ensure that site workers observe good housekeeping and sanitation practices</li> <li>• Provide appropriate sanitation facilities to site workers</li> <li>• Conduct safety orientation, provide PPEs and strictly implement proper wearing by workers</li> <li>• Comply with Environmental Code of Practice (ECOP)/ Environmental Safeguards Guidelines for Small Civil Works</li> <li>• Follow DPWH/World Bank guidelines on civil works during Covid19 situation and strictly implement DOH/LGU health protocols at worksite and workers' camp (if any)</li> <li>• Collect and dispose of used face masks/face shields in accordance with regulations</li> </ul>	SUKELCO and Contractor (Fencing/ Site Clearing)	NPC-PMO			
		Complaints/issues of stakeholders/community pertaining to project (nuisance, misconduct of workers, etc)	<ul style="list-style-type: none"> <li>• Resolve complaints/issues through SUKELCO's established Grievance Redress Mechanism</li> </ul>	SUKELCO project personnel	SUKELCO Grievance Officer and PMO			

<b>OPERATION</b>	Ground maintenance/weeds management	Safety risk to workers tasked to trim/remove weeds	<ul style="list-style-type: none"> <li>• Refrain from using pesticides</li> <li>• Conduct safety orientation to workers, provide and require them to use PPEs</li> </ul>	Plant Personnel and Safety Officer	PCO  DOE, DOLE			
	Solar panel maintenance	Use of groundwater for cleaning of solar panels can reduce groundwater level	<ul style="list-style-type: none"> <li>• Implement water conservation measures</li> <li>• Secure Water Permit from the NWRB</li> </ul>	Plant Personnel PCO	NWRB			
	Operation and maintenance of solar PV system	Safety and health risks to facility workers	<ul style="list-style-type: none"> <li>• Comply with Renewable Energy Safety, Health and environment Rules and Regulations (RESHERR or DOE DC2012-11-0009)</li> <li>• Follow DOLE/DTI Interim Guidelines on Workplace Prevention and Control of COVID-19 and DOH/LGU health protocols</li> </ul>	Plant Personnel	Safety Officer, DOE  DOLE, DOH, LGU			
		Solid and hazardous wastes generated from the operation and workers' activities can contaminate soil and water resources	<ul style="list-style-type: none"> <li>• Collect, segregate, store and dispose according to regulations</li> <li>• Segregate, store, label and dispose of hazardous wastes (used oils, used light bulbs, etc) in accordance with DENR regulation (RA 6969)</li> </ul>	Plant Personnel	PCO, DENR			
<b>DECOMMISSIONING/ ABANDONMENT</b>	Dismantling, removal from site, disposal of solar panels and associated equipment/facilities	Soil and water contamination due to hazardous materials from the solar PV/equipment	<ul style="list-style-type: none"> <li>• Preparation and implementation of decommissioning plan, including collection of used PV cells, proposed disposal methods, and recycling opportunities</li> </ul>	Plant Personnel, Decommissioning Contractor	Solar Power Plant Head, Safety Officer, PCO and PCO			

The implementation and monitoring of this ESMP shall be carried out by ENGR. MICHAEL JAY LEBANAN as Project In-charge, ENGR. LEO O. FONTANILLA as Safety Officer (SO) and MR. JIMMY FEGARIDO as Pollution Control Officer (PCO) for this project.

Prepared by:



**JOEMAR G. SEVILLANO**  
*Corplan Manager*

Approved by:



**CLAUDIA A. PONDALES**  
*General Manager*

**MONITORING PLAN**  
**ASEP – RURAL NETWORK SOLAR PROJECT**

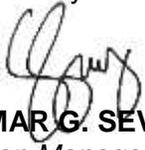
**PROPONENT: SULTAN KUDARAT ELECTRIC COOPERATIVE, INC.**

<b>Project Phase</b>	<b>Parameter to Monitor</b>	<b>Standards</b>	<b>Frequency</b>	<b>Location</b>	<b>Responsibility for monitoring</b>
Pre-construction to Abandonment	Stakeholder engagements	Coordination with LGUs is made by SUKELCO and information dissemination about the project is conducted or the community and other stakeholders	At least once during pre-construction  As needed during construction up to abandonment	LGU offices, government offices, community near project site	NPC-PMO
Site Preparation (Site clearing and perimeter fencing)	Cutting of trees	Cutting of trees is coordinated by SUKELCO with local DENR/PCA and Permit to Cut is secured, if required, prior to cutting	As needed	Solar power plant project site	NPC-PMO
Site preparation and construction	Possible runoff of sediment/silt from disturbed areas towards drainage canals/adjacent properties	Appropriate soil erosion control measures, such as silt fencing, diversion drains, etc., are implemented by SUKELCO and EPC Contractor	As needed	Disturbed/ exposed areas, earthworks site	SUKELCO, NPC-PMO
	Dust	Exposed soil and unpaved roads are sprayed with water by SUKELCO and EPC Contractor during dry weather, and stock piles of soil/loose materials are covered when not in use	As needed	Construction site	SUKELCO, NPC-PMO
	Construction wastes, domestic garbage, hazardous wastes management	Construction debris, domestic garbage and used face masks/shields are collected, segregated and disposed of in accordance with regulations/guidelines  Hazardous wastes are segregated and stored by SUKELCO and EPC Contractor in accordance with regulations  Hazardous wastes are disposed of by SUKELCO and EPC Contractor through DENR-accredited TSD/Transporter	Weekly  As hazardous waste is generated  Once, upon completion of construction, or as needed during construction	Construction site and workers' accommodation	SUKELCO, NPC-PMO
Construction	Disposal of sludge and wastewater from portable toilets by the EPC Contractor	EPC Contractor has a contract with a DENR/DOH permitted firm for the regular collection, transport and treatment of domestic sludge and wastewater for the duration of solar power plant construction	Once prior to construction	Construction site and workers' accommodation	NPC-PMO, SUKELCO

		Sludge collection/treatment/disposal service firm/s has/ have valid Environmental Sanitation Clearance from DOH and ECC from the DENR	Once, prior to construction	N/A	
		Sludge collection/treatment/disposal service firm/s properly fills out the required Manifest Form, ensures that it is completely signed and provides copy to the EPC Contractor	Every sludge collection/hauling activity	N/A	
	Source of gravel/sand/backfill materials	EPC Contractor's source of gravel/sand/backfill materials has a valid Quarry Permit from the LGU/MGB	Prior to procurement of gravel/sand/material/backfill materials	N/A	NPC-PMO, SUKELCO
	Submission of required reports by Contractor	Reports on compliance with CESMP, ECoP, Health & Safety Manual, COHSP are submitted by the EPC Contractor	Quarterly	Project Site	NPC-PMO, SUKELCO
Construction and Operation	PPEs	EPC Contractor's and SUKELCO's personnel wear appropriate PPEs	Random site inspection	Project/Solar Power Plant Site	NPC-PMO, SUKELCO
	Safety signage	Sufficient signages are installed at appropriate places by EPC Contractor and SUKELCO	Random site inspection	Project/Solar Power Plant Site	NPC-PMO, SUKELCO
	Covid19	No personnel working at the project site/solar power plant is infected with Covid19	Daily	Project/Solar Power Plant Site	NPC-PMO, SUKELCO
	Training/orientation of personnel	EPC Contractor and SUKELCO conducts orientation/training on environmental, health and safety for the project/solar power plant workers	Prior to deployment of workers, and as needed, during construction and operation	Project/Solar Power Plant Site	NPC-PMO, SUKELCO
Construction and Operation	Proper housekeeping	Work and accommodation areas are clean and orderly	Random site inspection	Work and accommodation areas	NPC-PMO, SUKELCO
Construction and post construction	Landscaping/planting of replacement trees	Disturbed/exposed areas are re-vegetated  Trees of native species are planted, in the vicinity of project site if possible, or in a DENR-identified area to replace removed trees	As soon as practicable	Project site, vicinity or DENR-identified site	
	Grievances/Complaints	No or few and minor project-related complaints; Complaints are resolved within 15 days; Contractor provides records of complaints received to SUKELCO	Weekly	All locations	EC's Grievance Officer, PMO

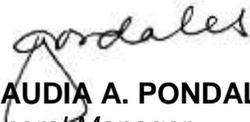
Decommissioning	Hazardous and solid wastes	All wastes are disposed of in accordance with regulations		Solar power plant site and	EC
	Occupational health and safety	Contractor's Safety Officer designated, workers wear PPEs, OHS standards are complied	Weekly	Solar power plant site and	EC
	Site restoration	Soil cavities resulting from structure removal are backfilled and soil properly compacted; disturbed areas are re-vegetated	Weekly, as applicable to schedule of works	Solar power plant site	EC

Prepared by:



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Corplan Manager

Approved by:



**CLAUDIA A. PONDALES**  
General Manager

**MITIGATION COST  
ASEP – RURAL NETWORK SOLAR PROJECT**

**PROPONENT: SULTAN KUDARAT ELECTRIC COOPERATIVE, INC.**

ASPECT		MITIGATION ACTION	COST (PhP)	RESPONSIBILITY
1	Health and Safety	PPEs for Covid19 (face masks, face shield, etc.), disinfectant PPEs during site clearing/fencing (hard hat, gloves, etc.)	40,000.00	SUKELCO
2	Information campaign	Leaflets, posters, billboards, etc. (as applicable) Meeting with LGUs (as applicable)	5,000.00	SUKELCO
3	Soil erosion due to site clearing/ grading/ earthworks	Landscaping Tree planting (replacement for trees that were cut, as applicable)	10,000.00	SUKELCO
4	Trainings	<ul style="list-style-type: none"> <li>• BOSH Training for Safety Officer (SO)</li> <li>• Basic Pollution Control Officer's (PCO) Training</li> </ul>	25,000.00	SUKELCO
5	Hazardous wastes generation	<ul style="list-style-type: none"> <li>• Disposal of hazardous wastes through DENR-accredited transport/treatment/recycling firm/s</li> </ul>	50,000	SUKELCO
6	Permitting requirements	<ul style="list-style-type: none"> <li>• SO accreditation fees (DOLE-BWC)</li> <li>• PCO accreditation fees (as applicable) (DENR-EMB)</li> <li>• Water Permit application fees (NWRB)</li> <li>• CNC fees</li> <li>• Development Permit fees</li> <li>• Locational Clearance fees</li> <li>• CNO fees</li> <li>• Land Use Conversion cost</li> </ul>	5,000.00 500.00 7,200.00 1,240.00 10,000.00 5,000.00 2,000.00 100,000.00	SUKELCO
Total			260,940.00	

Prepared by:



**JOEMAR G. SEVILLANO**  
Corplan Manager

Approved by:



**CLAUDIA A. PONDALES**  
General Manager

**ACCESS TO SUSTAINABLE ENERGY PROJECT**  
**Rural Network Solar (RNS)**  
**SULTAN KUDARAT ELECTRIC COOPERATIVE, INC.**

**Scope of Grievance Redress Mechanism**

This GRM outlines the process for resolving grievance/problems pertaining to the SUKELCO'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 SUKELCO. Grievances shall be resolved within 15 days. Grievances that cannot be solved within SUKELCO'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 : 064.200.2040/3155  
Email address : sukelco\_1975@yahoo.com.ph  
FB messenger : SUKELCO  
File at SUKELCO's Office : SUKELCO Bldg, Kalandagan, Tacurong City

**Name and Designation of Focal Persons for the Grievance Redress Mechanism**

MICHAEL JAY P. LEBANAN, REE – RNS Project In-charge  
JOEMAR G. SEVILLANO, PEE – Grievance Officer

Prepared by:



**JOEMAR G. SEVILLANO, PEE**  
*Corplan Manager*

Approved by:



**CLAUDIA A. PONDALES, CPA**  
*General Manager*

## GRIEVANCE REDRESS MECHANISM FLOW CHART

