

## RENEWABLE ENERGY PROJECTS

### II. ENVIRONMENTAL IMPACTS AND CLIMATE CHANGE RISK MANAGEMENT PLAN

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		<input checked="" type="checkbox"/> Cost integrated in the construction/ operation cost		
<b>LAND</b>				
<input checked="" type="checkbox"/> Consistency with land use	<p>Current land use w/in 1km radius (as per zoning ordinance):</p> <div style="margin-left: 20px;"> <input type="checkbox"/> Residential  <input type="checkbox"/> Commercial/ Institutional  <input type="checkbox"/> Industrial  <input type="checkbox"/> Agricultural/ Recreational  <input type="checkbox"/> Protected Areas  <input type="checkbox"/> Others, specify                     </div> <p>Actual land uses w/in 1km radius:</p> <div style="margin-left: 20px;"> <input type="checkbox"/> Residential  <input type="checkbox"/> Commercial/ Institutional  <input type="checkbox"/> Industrial  <input type="checkbox"/> Agricultural/ Recreational  <input type="checkbox"/> Protected Areas  <input type="checkbox"/> Others, specify                     </div>	<input checked="" type="checkbox"/> See attached proof of compatibility with land use <input checked="" type="checkbox"/> Limit project activities to what is compatible to the land use <input type="checkbox"/> Others, specify		

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		<input checked="" type="checkbox"/> Cost integrated in the construction/ operation cost		
<input type="checkbox"/> Land tenure / compatibility issue	Identify land tenure / compatibility issues: <input type="checkbox"/> CARP <input type="checkbox"/> CADC/ CADT/ CALC/ CALT <input type="checkbox"/> ROW <input type="checkbox"/> Informal settlers <input type="checkbox"/> Ecologically sensitive or protected area <input type="checkbox"/> Others, specify	<input type="checkbox"/> Obtain the following clearances/ permits from concerned agencies:  <input type="checkbox"/> Resettlement Plan prepared <input type="checkbox"/> Provide relocation/disturbance compensation packages <input type="checkbox"/> Ensure participation of IPs in consultations and dialogues <input type="checkbox"/> MOA prepared/signed <input type="checkbox"/> Provide adequate buffer <input type="checkbox"/> Others, specify	<input checked="" type="checkbox"/> Regularly monitor presence/absence of complaints <input checked="" type="checkbox"/> Regular coordination with LGU or appropriate agencies <input type="checkbox"/> Others, specify	
<input type="checkbox"/> Disturbance to wildlife due to vegetation clearing	Existing vegetation in the area: <input type="checkbox"/> Forestland <input type="checkbox"/> Marshland <input type="checkbox"/> Grassland <input type="checkbox"/> Mangrove <input type="checkbox"/> Wetland <input type="checkbox"/> Others, specify	<input checked="" type="checkbox"/> Comply with conditions of DENR/LGU SLUP, Tree Cutting Permit, ROW, PCA Permit <input checked="" type="checkbox"/> Limit land clearing as much as possible <input checked="" type="checkbox"/> Provide temporary fencing for vegetation that will be retained <input checked="" type="checkbox"/> Promote restoration of damaged or destroyed vegetation where possible (e.g., tree planting); <input type="checkbox"/> Provide adequate buffer zone	<input checked="" type="checkbox"/> Annual inspection of area replanted/ re-vegetated <input type="checkbox"/> Others, specify	

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		<input checked="" type="checkbox"/> Cost integrated in the construction/ operation cost		
<div><input type="checkbox"/> Change in surface landform/ topography/ terrain/slope</div> <div><input type="checkbox"/> Soil Erosion</div>	<div>Slope:</div> <div><input type="checkbox"/> Flat (0-3%)</div> <div><input type="checkbox"/> Gently sloping to rolling (3-18%)</div> <div><input type="checkbox"/> Steep (&gt;18%)</div> <div>Is the project site located in an area identified by MGB/ PAGASA/ PHIVOLCS as hazard prone?</div> <div><input type="checkbox"/> Yes</div> <div><input type="checkbox"/> No</div>	<div><input type="checkbox"/> Employ appropriate soil erosion control and slope protection measures (e.g. contour farming, hedgerow planting, etc.)considering the natural hazards and climate projections in the area</div> <div><input type="checkbox"/> Stabilization of embankment with grasses or other soil cover</div> <div><input type="checkbox"/> Comply with DENR Administrative Order No. 2003-30 and DENR Administrative Order No. 2000-28, Implementing Guidelines on Engineering Geological and Geo-hazard Assessment (EGGA).</div> <div><input type="checkbox"/> Others, specify</div>	<div><input type="checkbox"/> Regular inspection of slope protection measures in erosion-prone areas</div> <div><input type="checkbox"/> Regular inspection for new eroded areas near the site</div> <div><input type="checkbox"/> Others, specify</div>	<div><input type="checkbox"/> Slope/ Erosion Control Cost:</div> <div><input type="checkbox"/> Others, specify</div>
<div>Building of Structure and Improper solid waste disposal leading to</div> <div><input checked="" type="checkbox"/> Impairment of visual aesthetics</div> <div><input type="checkbox"/> Devaluation of land values</div>	<div>Solid Waste Management Scheme in the area:</div> <div><input type="checkbox"/> SLF</div> <div><input type="checkbox"/> MRF</div> <div><input type="checkbox"/> Composting</div> <div><input type="checkbox"/> Regular Collection of Solid Wastes</div>	<div><input checked="" type="checkbox"/> Implement recovery re-use and recycling of waste materials</div> <div><input checked="" type="checkbox"/> Provide receptacles / bins for solid wastes</div> <div><input type="checkbox"/> Composting of Organic Wastes</div> <div><input type="checkbox"/> Coordinate with the municipal / city waste collectors</div>	<div><input checked="" type="checkbox"/> Daily inspection for presence of garbage in the facility</div> <div><input checked="" type="checkbox"/> Weekly inspection of waste accumulated</div> <div><input type="checkbox"/> Regular inspection of landscaping and other beautification activities</div>	

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Remarks														
		<input checked="" type="checkbox"/> Cost integrated in the construction/ operation cost																
	Presence of visually significant landforms/landscape/structures?  <input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Implement landscaping and other beautification measures <input type="checkbox"/> Provide adequate buffer <input type="checkbox"/> Compensate adjacent property owners <input type="checkbox"/> Others, please specify	<input type="checkbox"/> Regular monitoring of buffer zones <input type="checkbox"/> Regularly monitor presence/absence of complaints from adjacent property owners <input type="checkbox"/> Others, specify															
WATER																		
<input type="checkbox"/> Increased siltation due to project activities <input type="checkbox"/> Water quality degradation <input type="checkbox"/> Others, specify	Specify nearest water body:  Distance to nearest water body: <input type="checkbox"/> 0 to less than 0.5 km <input type="checkbox"/> 0.5 to 1 km <input type="checkbox"/> More than 1 km  Classification of nearest water body: <table><tr><td><input type="checkbox"/> Freshwater</td><td><input type="checkbox"/> Marine/ coastal water</td></tr><tr><td><input type="checkbox"/> AA</td><td><input type="checkbox"/> SA</td></tr><tr><td><input type="checkbox"/> A</td><td><input type="checkbox"/> SB</td></tr></table>	<input type="checkbox"/> Freshwater	<input type="checkbox"/> Marine/ coastal water	<input type="checkbox"/> AA	<input type="checkbox"/> SA	<input type="checkbox"/> A	<input type="checkbox"/> SB	<input checked="" type="checkbox"/> Set up proper and adequate sanitary facilities <input type="checkbox"/> Strictly require the contractor and its workers to observe proper waste disposal and proper sanitation <input checked="" type="checkbox"/> Strictly observe proper waste handling and disposal <input type="checkbox"/> Provide wastewater treatment facility (e.g., septic tank, oil and water separator, etc.) <input type="checkbox"/> Set up silt trap/settling ponds to minimize downstream siltation <input type="checkbox"/> Provide ring canals around fuelling tanks/ motor pool/ maintenance areas <input type="checkbox"/> Others, specify	Regular (ocular) inspection of:  <input type="checkbox"/> Drainage/canal systems <input type="checkbox"/> Water treatment facility (i.e., grease trap, septic tank, etc.)  Regular Monitoring of the following: <table><tr><th>Parameter</th><th>Frequency</th></tr><tr><td><input type="checkbox"/> pH</td><td><input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly</td></tr><tr><td><input type="checkbox"/> TSS concentration</td><td><input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly</td></tr><tr><td><input type="checkbox"/> BOD</td><td><input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly</td></tr></table>	Parameter	Frequency	<input type="checkbox"/> pH	<input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly	<input type="checkbox"/> TSS concentration	<input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly	<input type="checkbox"/> BOD	<input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly	
<input type="checkbox"/> Freshwater	<input type="checkbox"/> Marine/ coastal water																	
<input type="checkbox"/> AA	<input type="checkbox"/> SA																	
<input type="checkbox"/> A	<input type="checkbox"/> SB																	
Parameter	Frequency																	
<input type="checkbox"/> pH	<input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly																	
<input type="checkbox"/> TSS concentration	<input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly																	
<input type="checkbox"/> BOD	<input type="checkbox"/> Annual <input type="checkbox"/> Semi-annual <input type="checkbox"/> Quarterly																	

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Remarks																		
		<input checked="" type="checkbox"/> Cost integrated in the construction/ operation cost																				
	<table border="1"> <tr> <td><input type="checkbox"/> B</td><td><input type="checkbox"/> SC</td></tr> <tr> <td><input type="checkbox"/> C</td><td><input type="checkbox"/> SD</td></tr> <tr> <td><input type="checkbox"/> D</td><td></td></tr> </table> <p>Current Water Use:</p> <p><input type="checkbox"/> Fishery</p> <p><input type="checkbox"/> Tourist Zone / Park</p> <p><input type="checkbox"/> Recreational</p> <p><input type="checkbox"/> Industrial</p> <p><input type="checkbox"/> Agricultural</p> <p>Distance of project area to the nearest well used:</p> <p><input type="checkbox"/> 0 to less than 0.5 km</p> <p><input type="checkbox"/> 0.5 to 1 km</p> <p><input type="checkbox"/> More than 1 km</p> <p>Use of nearest well:</p> <p><input type="checkbox"/> Drinking/Domestic</p> <p><input type="checkbox"/> Industrial</p> <p><input type="checkbox"/> Agricultural</p>	<input type="checkbox"/> B	<input type="checkbox"/> SC	<input type="checkbox"/> C	<input type="checkbox"/> SD	<input type="checkbox"/> D			<table border="1"> <tr> <td><input type="checkbox"/> Color</td><td><input type="checkbox"/> Annual</td></tr> <tr> <td></td><td><input type="checkbox"/> Semi-annual</td></tr> <tr> <td></td><td><input type="checkbox"/> Quarterly</td></tr> <tr> <td><input type="checkbox"/> Heavy Metals</td><td><input type="checkbox"/> Annual</td></tr> <tr> <td></td><td><input type="checkbox"/> Semi-annual</td></tr> <tr> <td></td><td><input type="checkbox"/> Quarterly</td></tr> </table>	<input type="checkbox"/> Color	<input type="checkbox"/> Annual		<input type="checkbox"/> Semi-annual		<input type="checkbox"/> Quarterly	<input type="checkbox"/> Heavy Metals	<input type="checkbox"/> Annual		<input type="checkbox"/> Semi-annual		<input type="checkbox"/> Quarterly	
<input type="checkbox"/> B	<input type="checkbox"/> SC																					
<input type="checkbox"/> C	<input type="checkbox"/> SD																					
<input type="checkbox"/> D																						
<input type="checkbox"/> Color	<input type="checkbox"/> Annual																					
	<input type="checkbox"/> Semi-annual																					
	<input type="checkbox"/> Quarterly																					
<input type="checkbox"/> Heavy Metals	<input type="checkbox"/> Annual																					
	<input type="checkbox"/> Semi-annual																					
	<input type="checkbox"/> Quarterly																					
<input type="checkbox"/> Competition in water use <input type="checkbox"/> Depletion of water resources	<p>Size of population using the source/s of water for the project:</p> <p><input type="checkbox"/> ≤ 1,000 persons</p> <p><input type="checkbox"/> &gt;1,000 and ≤ 5,000 persons</p> <p><input type="checkbox"/> &gt;5,000 persons</p> <p>Current Use of water source :</p> <p><input type="checkbox"/> Fishery</p>	<p><input type="checkbox"/> Designate alternative fishing area/ navigation lane</p> <p><input type="checkbox"/> Install buoy for buffer zone</p> <p><input type="checkbox"/> Implement rainwater harvesting, community ponds and similar measures as an alternative source of water and/or as options for fish cultivation</p> <p><input type="checkbox"/> Observe water conservation measures</p> <p><input type="checkbox"/> Carefully select project site to avoid</p>	<p><input checked="" type="checkbox"/> Regular monitoring for presence/absence of complaints</p> <p><input checked="" type="checkbox"/> Regular coordination with concerned agencies</p> <p><input checked="" type="checkbox"/> Regular monitoring for occurrences of water shortages</p> <p><input type="checkbox"/> Others, specify</p>																			

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		<input checked="" type="checkbox"/> Cost integrated in the construction/ operation cost		
	<div><input type="checkbox"/> Tourist Zone / Park</div> <div><input type="checkbox"/> Recreational</div> <div><input type="checkbox"/> Industrial</div> <div><input type="checkbox"/> Agricultural</div> <div>Available/nearest water source.</div> <div><input type="checkbox"/> Deep well</div> <div><input type="checkbox"/> Water district/LGU</div> <div><input type="checkbox"/> Surface water</div> <div><input type="checkbox"/> Others, specify</div>	<div>disruption of traditional water uses</div> <div><input type="checkbox"/> Obtain Water Permit from NWRB</div> <div><input type="checkbox"/> Improve efficiency of water supply and distribution system</div> <div><input type="checkbox"/> Increase, when practical, storage capacities of water supply structures for resilience to greater climate variations and extremes</div> <div><input type="checkbox"/> to prevent water logging, erosion and leaching</div> <div><input type="checkbox"/> Others, specify</div>		
<div><input type="checkbox"/> Increased occurrence of flooding</div>	<div>Is the project site located in an area identified by MGB/ PAG-ASA as flood prone?</div> <div><div><input type="checkbox"/> Yes</div><div><input type="checkbox"/> No</div></div>	<div><input type="checkbox"/> Use appropriate design for project facilities</div> <div><input type="checkbox"/> Implement appropriate drainage system</div> <div><input type="checkbox"/> Regularly remove debris and other materials that may obstruct water flow</div> <div><input type="checkbox"/> Others, specify</div>	<div><input checked="" type="checkbox"/> Regular monitoring for presence/absence of complaints</div> <div><input checked="" type="checkbox"/> Regular coordination with concerned agencies</div> <div><input checked="" type="checkbox"/> Regular monitor of increased frequency of flooding</div> <div><input type="checkbox"/> Others, specify</div>	
AIR / NOISE				

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Remarks				
		<input checked="" type="checkbox"/> Cost integrated in the construction/ operation cost						
<div><input type="checkbox"/> Impact on air quality</div> <div><input type="checkbox"/> Nuisance due to generation of obnoxious/unpleasant odor</div>	<div>Distance to nearest community:</div> <div><input type="checkbox"/> 0 to less than 0.5 km</div> <div><input type="checkbox"/> 0.5 to 1 km</div> <div><input type="checkbox"/> More than 1 km</div> <div>Is the wind direction blowing towards the nearest community most of the year?</div> <div><input type="checkbox"/> Yes</div> <div><input type="checkbox"/> No</div>	<div><input type="checkbox"/> Properly operate and maintain all emission sources (e.g. vehicles, pumps, generator, etc.)</div> <div><input type="checkbox"/> Install appropriate air pollution control device/s</div> <div><input type="checkbox"/> Strictly enforce good housekeeping practices</div> <div><input type="checkbox"/> Control vehicle speed to lessen suspension of road dust</div> <div><input type="checkbox"/> Provide adequate buffer and/or planting of trees</div> <div><input type="checkbox"/> Others, specify</div>	<div><input checked="" type="checkbox"/> Regular monitoring for presence/absence of complaints</div> <div>Regular (ocular) inspection of:</div> <div><input type="checkbox"/> Absence of white or black smoke from vehicles, heavy equipment and generator</div> <div><input type="checkbox"/> Absence of fugitive dust emission from milling operation</div> <div><input type="checkbox"/> Presence of truck cover during deliveries</div> <div><input type="checkbox"/> Regular monitoring of the following:</div> <table><tr><th>Parameter</th><th>Frequency</th></tr><tr><td><input type="checkbox"/> TSP</td><td><div><input type="checkbox"/> Annual</div><div><input type="checkbox"/> Semi-annual</div><div><input type="checkbox"/> Quarterly</div></td></tr></table>	Parameter	Frequency	<input type="checkbox"/> TSP	<div><input type="checkbox"/> Annual</div> <div><input type="checkbox"/> Semi-annual</div> <div><input type="checkbox"/> Quarterly</div>	
Parameter	Frequency							
<input type="checkbox"/> TSP	<div><input type="checkbox"/> Annual</div> <div><input type="checkbox"/> Semi-annual</div> <div><input type="checkbox"/> Quarterly</div>							

Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		<input checked="" type="checkbox"/> Cost integrated in the construction/ operation cost		
<input type="checkbox"/> Nuisance due to noise generation	Distance to nearest community:  <input type="checkbox"/> 0 to less than 0.5 km <input type="checkbox"/> 0.5 to 1 km <input type="checkbox"/> More than 1 km	<input type="checkbox"/> Properly operate and maintain all noise sources (e.g. vehicles, boiler, generator, etc) <input type="checkbox"/> Install the appropriate noise control device/s (e.g., mufflers, silencer, sound barriers, etc.) <input type="checkbox"/> Implement appropriate operating hours <input type="checkbox"/> Provide adequate buffer and/or planting of trees <input type="checkbox"/> Others, specify	<input checked="" type="checkbox"/> Regularly monitor presence/absence of complaints <input type="checkbox"/> Regular monitoring of buffer zones	

## PEOPLE

<input type="checkbox"/> Displacement of residents including indigenous people (if any) in the project site and within its vicinity <input type="checkbox"/> Enhanced employment and/or livelihood opportunities <input type="checkbox"/> Reduced employment and/or livelihood opportunities <input type="checkbox"/> Increased revenues for LGU <input type="checkbox"/> Disruption/Competition in delivery of public services (e.g., education, peace	Size of population of host barangay/s: <input type="checkbox"/> ≤ 1,000 persons <input type="checkbox"/> >1,000 and ≤ 5,000 persons <input type="checkbox"/> >5,000 person Classification of host barangay: <input type="checkbox"/> Urban <input type="checkbox"/> Rural Employment/Livelihood Opportunity Rate in the host Municipality: <input type="checkbox"/> High <input type="checkbox"/> Low Description:	<input type="checkbox"/> Provide relocation/disturbance compensation packages <input checked="" type="checkbox"/> Prioritize local residents for employment <input checked="" type="checkbox"/> Promptly pay local taxes and other financial obligations  <input checked="" type="checkbox"/> Regular coordination with LGU <input type="checkbox"/> Conduct prior consultation and coordination to minimize disruption of daily domestic activities and to ensure respect for IP rights and cultural practices <input type="checkbox"/> Ensure participation of IPs in consultations and dialogues	<input checked="" type="checkbox"/> Presence/Absence of complaints <input checked="" type="checkbox"/> Regular coordination with LGU <input type="checkbox"/> Others, specify	
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--



Possible Environmental/ Social Impacts	Baseline Environment	Preventive/ Mitigating Measures	Monitoring Parameters/ Implementation	Remarks
		<input checked="" type="checkbox"/> Cost integrated in the construction/ operation cost		
<div>and order, etc.)</div> <div><input type="checkbox"/> Enhanced delivery of public services (e.g., education, peace and order, etc.)</div> <div><input type="checkbox"/> Increase in traffic volume and worsening of traffic flow</div>	<div>Available services within/near the host barangay:</div> <div><input type="checkbox"/> Schools (e.g. elementary, high school, college)</div> <div><input type="checkbox"/> Health facilities (e.g., clinics, hospitals, etc.)</div> <div><input type="checkbox"/> Peace and order (e.g., police outpost, Brgy. Tanod, etc.)</div> <div><input type="checkbox"/> Recreation and sports facilities</div> <div><input type="checkbox"/> Others, specify</div>	<div><input type="checkbox"/> Provide alternative traffic route</div> <div><input type="checkbox"/> Establish buffer zones</div> <div><input type="checkbox"/> Provide appropriate traffic/warning signs, lighting, etc.</div> <div><input type="checkbox"/> Others, specify</div>		
<div><input type="checkbox"/> Destruction/disturbance of physical cultural resources.</div> <div>(✓ if project site has been identified to have such by NM, NHCP, NCAA and LGUs)</div>	<div>Physical Cultural resources within the vicinity of the project site:</div>	<div><input type="checkbox"/> Implement appropriate protocols based on NM, NHCP, NCAA and LGU guidelines including those for chance finds (if any). Specify:</div>	<div><input type="checkbox"/> Regular coordination with NM, NHCP, NCAA and LGU</div>	