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ECO SECURITIES

Members of the CDM Executive Board
UNFCCC Secretariat
Martin-Luther-King-Strasse 8
D-53153 Bonn
Germany

Dear CDM Executive Board,

RE: Response to Request for Review – Uruba Renewable Irrigation Project (0761)

Please find our answers to the requests for review for the Uruba Renewable Irrigation Project below.

1. **"It is not clear whether the project activity is a replacement of old diesel fuel based motors with new electricity based motor for pumps or an addition of these new electricity based motors for the irrigation expansion purpose. More clarity should be provided, particular regarding lifetime of the replaced devices and leakage due to the operations on the irrigation purposes."**

Answer: Expansion of the current irrigation system is required at the site. The prevailing practice is use of diesel-powered irrigation pumps. The project activity involves the installation of bagasse-fired cogeneration, and electricity lines, to power new electric irrigation pumps in the fields. The project activity will not replace the existing diesel fuelled pumps, but will meet the needs of expansion requirements.

The project participants would be very willing to make modifications to the PDD in order to clarify this if required.

2. **Methodology AMS I.A. should have been used instead of AMS I.B. that is applicable in cases for which the renewable energy is transformed into mechanical energy for the user (case of wind-powered pumps, water mills and wind mills). For this project, the renewable energy (biomass residues) is transformed into electricity for the user.**

Answer: The project participants believe that the project activity is more applicable to AMS I.B, than AMS I.A for the reasons discussed below.

The applicability criteria for AMS I.B, and a description of how the project meets those applicability criteria is contained in the table below:

	Applicability Criteria from AMS I.B	**Description of how the Applicability Criterion is Met**
1	This category comprises renewable energy generation units that supply individual households or users with a small amount of mechanical energy. These units include technologies such as hydropower, wind power, and other technologies that provide mechanical energy, all of which is used on-site by the household or user, such as wind-powered pumps, solar water pumps, water	As the project activity comprises renewable energy generation (biomass residues based electricity) to supply users with a small amount of mechanical energy (irrigation devices or pumps), the project activity fits this applicability criteria.

	mills and wind mills.	
2	Where generation capacity is specified, it shall be less than 15MW. If the generation capacity is not specified, the estimated diesel-based electricity generating capacity that would be required to provide the same service or mechanical energy shall be less than 15 MW. In the case of irrigation where diesel fuelled pumps are used directly, the cumulative rating of diesel-fuelled pumps shall not exceed 15 MW. The size of a diesel-based generator or a diesel pump that would be required shall be justified.	This applicability condition is significant for 2 reasons. Firstly the project activity satisfies the requirement that *"the estimated diesel-based electricity generating capacity that would be required to provide the same service or mechanical energy shall be less than 15 MW"*. The generation capacity of the project (5 MW bagasse cogeneration plant + electricity lines + electricity based irrigation pumps) is known and is 5 MW (i.e. the generation capacity of the bagasse cogeneration plant, which is lower than the 15 MW threshold, therefore this applicability criteria is met. Also worth noting is the fact that **this applicability criteria explicitly refers to diesel-fuelled irrigation pumps**. This reference is not found in the applicability conditions in AMS I.A which would suggest that this methodology, AMS I.B, is the one intended to be used in this type of project situation.
3	If the unit added has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15MW for a small-scale CDM project activity applies only to the renewable component. If the unit added co-fires [non-] renewable biomass and fossil fuel, the capacity of the entire unit shall not exceed the limit of 15MW.	As noted above the total capacity of the renewable component is 5 MW, therefore this applicability criteria is met.
4	Project activities adding renewable energy capacity should consider the following cases: 1) Adding new units; 2) Replacing old units for more efficient units. To qualify as a small scale CDM project activity, the aggregate installed capacity after adding the new units (case 1) or installed capacity of the more efficient units (case 2) should be lower than 15 MW	As noted above the total capacity of the renewable component is 5 MW, therefore this applicability criteria is met.

Applicability conditions for AMS I.A are largely the same as those for AMS I.B, but with one major exception. There is no mention of applicability to diesel-fuelled irrigation pumps in the applicability conditions of AMS I.A. Given that this is explicitly mentioned in AMS I.B it would seem reasonable to assume that this type of project (replacing diesel-fuelled irrigation pumps with renewable electricity powered irrigation pumps) fits better within AMS I.B.

It is also important to note that only mechanical energy is generated in baseline scenario, therefore, as no electricity would be used in baseline scenario, in a strict analysis, the formulae provided in AMS I.A would not be applicable to the project activity.

In addition the monitoring requirements, as set out in the PDD, have also been undertaken in accordance with AMS I.B. This means that number of irrigation pumps, the annual operation hours and the installed capacity of each electric irrigation pump is monitored. The total power requirement of the electric irrigation pumps is multiplied with an emissions factor for diesel fuelled irrigation pumps. AMS-I.A would specify metering the electricity generated by the 5 MW bagasse cogeneration plant and using this parameter to determine emission reductions. However, the project also includes the installation of electricity lines in fields to power the new electric pumps, and it would be expected that there would be some transmission losses. These transmission losses are not taken into account if

monitoring is undertaken in accordance with AMS I.A (i.e. due to transmission losses the electricity generated by the 5 MW bagasse cogeneration plant is larger than the actual electricity consumption of the electric irrigation pumps. Therefore applying AMS I.A, rather than AMS I.B, would result in a less conservative estimate of emission reductions, as shown in the table below.

Unit	Serial number	Installed capacity CV	Installed capacity MW	working hour/year	Emission Factors for diesel generator systems (tCO_2e/KWh)	Emissions Arising From	Average technical distribution losses according to AMS I.A.[1]	Emission Reductions according to AMS I.B (tCO2e/y)	Emission Reductions According to AMS I.A (tCO2e/y)
-	-	-	A	B	C/1000	-	D	A*B*C	(A*B*C) / (1-D)
Uruba	309001	100 CV	0.0746	4992	0.001	2001	20%	372	466
Uruba	309002	100 CV	0.0746	4992	0.001	2001	20%	372	466
Uruba	309003	100 CV	0.0746	4992	0.001	2002	20%	372	466
Uruba	309004	100 CV	0.0746	4992	0.001	2002	20%	372	466
Uruba	309005	100 CV	0.0746	4992	0.001	2002	20%	372	466
Uruba	309006	100 CV	0.0746	4992	0.001	2002	20%	372	466
Uruba	309007	100 CV	0.0746	4992	0.001	2002	20%	372	466
Uruba	309009	100 CV	0.0746	4992	0.001	2002	20%	372	466
Uruba	309010	100 CV	0.0746	4992	0.001	2002	20%	372	466
Uruba	309011	100 CV	0.0746	4992	0.001	2002	20%	372	466
Uruba	309014	100 CV	0.0746	4992	0.001	2002	20%	372	466
Uruba	309008	100 CV	0.0746	4992	0.001	2005	20%	372	466
Uruba	309012	100 CV	0.0746	4992	0.001	2005	20%	372	466
Uruba	309013	100 CV	0.0746	4992	0.001	2005	20%	372	466

For these reasons it is hoped that the CDM Executive Board will agree that AMS I.B has been appropriately applied in this case.

If you require any further information, or clarification on any of the information contained within, we would be very happy to discuss further.

Yours sincerely,

B. Kinkead

Belinda Kinkead
Head of Implementation

[1] As provided in AMS I.A, a reasonable default value for distribution losses on low voltage rural distribution grid could be 20%.