Validation Opinion for Post Registration Changes

Report for:

Central Hydropower Joint Stock Company

CDM project for

A Luoi Hydro Power Project

LRQA Reference	:	A20534-B-PRC
Date	:	23/01/2015

Verification Team Name	Competences
Stewart Niu	Team Leader
Nguyen Tri Thang	Host Country Expert
Xianxin Yan	: Technical Reviewer
Ketan Deshmukh	Decision Maker

Lloyd's Register LRQA

Validation opinion

Lloyd's Register Quality Assurance Limited (LRQA) has been contracted by Central Hydropower Joint Stock Company, the project participant (PP), to undertake the post registration changes validation of the registered project activity A Luoi Hydro Power Project, project reference number 8248 registered as a CDM project activity on 20/11/2012.

LRQA conducted an independent third party assessment of the Post Registration Changes from the project activity as described in the registered PDD following the VVS, section IX E and the PS section XII H for Post Registration Changes.

LRQA identifies in the monitoring report temporary deviations from the registered Monitoring Plan and Monitoring Methodology. LRQA has validated the alternative monitoring proposed by the PPs and confirms that it applied the approved guidance from the EB regarding the deviation from the provisions of the registered Monitoring Plan and Methodology

LRQA has verified that the corrections made by the PPs in the revised PDD comply with the requirements of the PS and accurately reflects the actual project information and the application of the applied methodology and monitoring plan. The corrections identified are summary of the corrections to project information or parameters fixed at validation.

LRQA confirms that the permanent changes from the registered monitoring plan and monitoring methodology reflect the application of the approved guidance of the EB regarding the deviation from the provisions of the MP and Methodology.

LRQA, by means of an on-site inspection and a review of the revised PDD, specifically the revised Monitoring Plan, can confirm that:

(a) the proposed revision of the monitoring plan ensures that the level of accuracy or completeness in the monitoring and verification process is not reduced as a result of the revisions
(b) the proposed revision of the monitoring plan is in accordance with the approved monitoring methodology applicable to the project activity
(c) the proposed revision does not impact the conservativeness of the monitoring and verification process, including the related emission reductions calculations.

LRQA confirms that the information in the PDD, Version 1.6 dated 01/01/2015, using latest form at the time of submission of this report, was materially the same as described in the registered PDD, Version 1.5 dated 22/10/2012. LRQA further confirms that the changes in PDD, Version 1.6 dated 01/01/2015 reflects the changes to the registered project design of a type listed in appendix 1 of the Project standard. LRQA confirmed that the above identified changes are the type of changes that prior approval by the Board is not required as per Appendix 1 of the PS. LRQA therefore requests for acceptance by the CDM EB as part of the request for issuance, of the post registration changes of the project activity as described above, in accordance to the guidance of the EB in the PCP.

Ketan Deshmukh

CDM Quality Manager

26 January 2015

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Findings

1. Description of the corrections to project information, temporary deviation and permanent changes from the registered MP and Methodology

The proposed revision includes correction of the inconsistency information indicated in the registered MP and reflect the actual source of imported electricity from grid.

Proposed changes in the MP	Description in the original PDD	Description in the revised PDD	Assessment Opinion
The type of the turbine in Table A.1: Technical data of the turbine-generator units, section A3. of the registered PDD	QF580-WY-160	TIV-disposal of bucket vertical shaft, 6 spray and 6 break	Through check the main equipment purchase contract, the team confirmed that the correct turbine type should be TIV-disposal of bucket vertical shaft, 6 spray and 6 break, and QF580-WY-160 is the type of inlet globe valve system. The team confirmed that this is just a typo and no any change happened to the on-site equipment. The correct information has been reported in the MR and the PDD was also corrected to reflect the fact.
The description of the Purpose of data EGfacility,y in the Section B.7.1 of the registered PDD	Calculation of project emission reductions	Calculation of project baseline emissions	The error was confirmed a typo. The wrong description on data EGfacility,y was corrected in the revised PDD which is confirmed in line with the applied methodology.
The units of $NCV_{diesel,y}$ and $EF_{CO2,diesel,y}$ in the section B.7.1 of the registered PDD	Unit of $NCV_{diesel,y}$: GJ/m3 Unit of $EF_{CO2,diesel,y}$: tCO_2/GJ	Unit of $NCV_{diesel,y}$: TJ/Gg Unit of $EF_{CO2,diesel,y}$: kgCO2/TJ	The data of the two parameters were sourced from IPCC default values at the upper limit of the uncertainty at a 95% confidence interval as provided in Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories. But the units of the applied data were not consistently presented in the registered PDD. The correction makes the values and the units of the parameters consistent with the source data referenced.
temporary deviation from the registered MP on the monitoring the electricity	The total imported electricity will be calculated monthly as total of imported electricity metered by main meters and import meters installed at the	The construction of power lines to import electricity from the grid for operation of the dam and the intake gate had not been completed until 12/04/2013 and 07/12/2012 respectively.	there were temporary deviation from the registered monitoring plan that the imported electricity were not monitored during 20/11/2012 to 12/04/2013 for dam area and during 20/11/2012 to 07/12/2012 for intake area respectively. As per paragraph 3 in Appendix 1 of the Project

imported for intake gate and dam use	project site.	During the period from 20/11/2012 to these dates, the electricity for operation of the dam and intake gate respectively is imported via third parties, not directly from the grid and the imported amount was not monitored. To estimate the imported amount, paragraph 3 in Appendix 1 of the Project Standard version 7.0 is applied.	Standard Version 7.0, the PP estimated these parameters assuming that the source of the GHG emissions operated at maximum capacity for the full period of the missing data and includes an addition of 10% to account for transmission and distribution losses. The verification team, through checking the design drawing of Consumption capacity of electric equipment at the intake gate and the dam area, confirmed that the listed electricity consumption sources are complete and the calculation is correct. The verification team therefore, confirmed that the requirement in the Appendix 1 of the PS was followed and prior approval by the Board is not required.
The permanent change on the monitoring point	In the registered monitoring plan, the backup electricity for powerhouse is planned to be imported via main export-import lines and import line 1, and monitored by main meters M1a, M1b (backed up by M2a, M2b, M3a, M3b) and meter M4a, respectively. Diesel generator was installed as a backup self-consumption electricity source.	In the revised MP, the import line 1 was removed from the Figure B. 3 Indicative grid connection diagram and it was not used to import electricity from the grid. The imported electricity for the powerhouse is imported via main export-import lines monitored by main meters M1a and M1b (backed up by M2a, M2b, M3a, M3b). Diesel generator was installed as a backup self-consumption electricity source.	The revised arrangement is in line with the PPA for electricity exchange at the powerhouse which was signed on 15/10/2010 and the import line 1 was not used on site. Therefore, no data was monitored from meter M4a. Such permanent change applied for 5(c) of Appendix 1 of the PS, Change of location of meter(s) as per a power purchase agreement (PPA for electricity exchange at the powerhouse), and did not need prior approval;

2. Validation findings for temporary deviation

2.1 Accuracy of the calculation of emission reductions

For the short period of deviation from the MP, the PP estimated these parameters assuming that the source of the GHG emissions operated at maximum capacity for the full period of the missing data and includes an addition of 10% to account for transmission and distribution losses. The verification team, through checking the design drawing of Consumption capacity of electric equipment at the intake gate and the dam area, confirmed that the listed electricity consumption sources are complete and the calculation is correct. Considering that not all equipment need to be in use at the intake gate area and the dam area during normal operation (especially, there are some spare equipment), assuming all equipment on both site in full operation is conservative. The addition of 10% to account for transmission and distribution losses has also been applied. The alternative approach did not reduce the accuracy of the calculation of emission reductions.

2.2 Exact period to which the deviation applies

there were temporary deviation from the registered monitoring plan that the imported electricity were not monitored during 20/11/2012 to 12/04/2013 for dam area and during 20/11/2012 to 07/12/2012 for intake area respectively.

3. Validation findings for permanent changes from the registered Monitoring Plan and/or monitoring methodology

3.1 Level of accuracy and completeness

The permanent change is just to reflect the fact that the proposed line one (proposed meter M4a) was not in existence at the project site and such arrangement is in accordance with the signed PPA. The electricity imported from grid for powerhouse was metered by main meters M1a and M1b, for intake gate site was metered by meter M4b and for dam site was metered by meter M4c. The EDGs were installed in Powerhouse, intake gate and dam area as an emergency source of power supply. Therefore, the level of accuracy was not reduced and completeness was not changed.

3.2 Conformance to approved monitoring methodology

The proposed revision does not change the application of the approved monitoring methodology below and the compliant status is maintained as the original registration.

Methodology:
Approved consolidated baseline and monitoring methodology ACM0002 (Version 13.0.0) "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

Tools referenced in this methodology:

Tool to calculate the emission factor for an electricity system (Version 02.2.1)
Tool for the demonstration and assessment of additionality (Version 06.0.0)
Tool to calculate project or leakage CO_2 emission from fossil fuel combustion (Version 02)

7. Appendix

Appendix 1: List of documents reviewed

Main equipment purchase contract and technical specifications dated 26/02/2009
Power purchase agreement for Powerhouse dated 15/10/2010
Rated power of main equipments at intake gate area and dam area
ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources (version 13.0.0)
Tool to calculate the emission factor for an electricity system (Version 02.2.1)
Tool to calculate project or leakage CO2 emissions from fossil fuel combustion (Version 02)
Tool for the demonstration and assessment of additionality (Version 06.0.0)
The revised registered PDD of A Luoi Hydro Power Project dated 01/01/2015

Appendix 2: List of persons interviewed

Central Hydropower JSC
Ngo Huu Phuong/Deputy Director – A Luoi Hydro Power Plant
Nguyen Van Tung/Operator – A Luoi Hydro Power Plant

Nguyen Ngoc Anh/ Staff of General Department – A Luoi Hydro Power Plant
Pham Thi Nguyet Thuy/ Monitoring Officer
Nguyen Quoc Tuan/ Electric Engineer - A Luoi Hydro Power Plant

Hanam Carbon (CDM Consultant)
Vu Van Hung / Project Manager