



RINA

VERIFICATION/CERTIFICATION REPORT

Final


“Dak Srong 2 Hydropower Project”
in
Viet Nam

Monitoring period: 23/02/2011 to 29/02/2012

Report N°2012-IQ-13-MD

Revision N°1.2

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Project Title: Dak Srong 2 Hydropower Project	Country: Viet Nam	Estimated CERs (tCO₂e): 44,466 annual average
CDM Registration Reference N°: 3389	Monitoring period: 23/02/2011 to 29/02/2012	Certified CERs (tCO₂e): 41,560
Client: Bunge Emissions Holdings Sarl	Client contact: Mr. Alfred Evans	
Report No.: 2012-IQ-13-MD	Revision: 1.2	Date of this report: 14/08/2012
Approved by (Final Report – Decision Maker):  Roberto Cavanna		Date of approval: 20/08/2012

Methodology

Number: ACM0002	Version: 11 of 12/02/2010	Title: Consolidated baseline methodology for grid-connected electricity generation from renewable sources	Scale Large	SS(s): 01
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RINA Services S.p.A. (RINA), commissioned by Bunge Emissions Holdings Sarl, has performed the verification of the greenhouse gas emission reductions reported for the project activity "Dak Srong 2 Hydropower Project" in Viet Nam, CDM Registration Reference No: 3389, for the period 23/02/2011 to 29/02/2012, with regard to the relevant requirements for CDM activities. The verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable CDM requirements in order to be certified.

The project was validated by Korea Energy Management Corporation (validation report No: GHGCC(A) 09-005 issued on 22/11/2010) and it was registered on 23/02/2011 under the CDM registration reference No: 3389.

The GHG emission reductions were calculated on the basis of the approved methodology ACM0002, version 11, Consolidated baseline methodology for grid-connected electricity generation from renewable sources of 12/02/2010 and the monitoring plan included in the registered Project Design Document, version 3.5 of 10/11/2010 and revised PDD, version 3.6 of 19/06/2012.

In conclusion, it is RINA's opinion that the project activity "Dak Srong 2 Hydropower Project" in "Viet Nam" as described in the Monitoring Report version 3.2 of 27/06/2012, meets all relevant requirements for CDM activities and all relevant host Party criteria and correctly applies the baseline and monitoring methodology "ACM0002", "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", version 11 of 12/02/2010. Hence RINA is able to certify that the emission reductions from the project during the monitoring period 23/02/2011 to 29/02/2012 amount to 41,560 tCO₂e.

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Work verified by (Final Report – Authorized office signing for the DOE):


Laura Severino

Keywords:

Climate Change, Kyoto Protocol, Clean Development Mechanism, Verification

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Abbreviations

BE	Baseline Emissions
BM	Back up Meter
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CER(s)	Certified Emission Reduction(s)
CH ₄	Methane
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CRT	Coordination and Technical Control Staff
DCI	Certification Division of RINA Services Spa
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
ER	Emission Reductions
EVN	Viet Nam Electricity
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
HAGL	Hoang Anh Gia Lai
IPCC	Intergovernmental Panel on Climate Change
JSC	Joint Stock Company
kV	Kilo Volt
KW	Kilo Watt
KWh	Kilo Watt hour
LoA	Letter of Approval
MM	Main Meter
MoV	Means of Verification
MR	Monitoring Report
MW	Mega Watt
MWh	Mega Watt hour
NGO	Non-governmental Organization
ODA	Official Development Assistance
PDD	Project Design Document
PE	Project Emission
PP(s)	Project Participant(s)
Ref.	Document Reference
RINA	RINA Services Spa
SS(s)	Sectoral Scope(s)
TEG	Total Electricity Generation of each Generator
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
VVS	Validation and Verification Standard

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1 INTRODUCTION

Bunge Emissions Holdings has commissioned RINA to carry out the verification and certification of emission reductions reported for the registered “Dak Srong 2 Hydropower Project” project in Viet Nam, CDM Registration Reference No: 3389, for the period 23/02/2011 to 29/02/2012.

This report summarizes the findings of the verification of the project, performed on the basis of UNFCCC criteria for CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The objective of the verification is to have an independent review ex post determination by a Designated Operational Entity (DOE) of the monitored reductions in GHG emissions that have occurred as a result of the registered CDM project activity during a defined monitoring period. Certification is the written assurance by the DOE that, during a specific time period, a proposed CDM project activity achieved the reductions in anthropogenic emissions by sources of GHGs as verified.

1.2 Scope

The verification scope is:

- to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- to evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement;
- to verify that reported GHG emission data is sufficiently supported by evidence.

Verification shall ensure that reported emission reductions are complete and accurate in accordance with applicable UNFCCC criteria for CDM in order to be certified.

UNFCCC criteria for CDM refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures and the subsequent decisions by the CDM Executive Board.

Verification is not meant to provide any consultancy towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring.

2 METHODOLOGY

Verification was conducted using RINA procedures in line with the requirements specified in the CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques.

The verification consisted of the following three phases:

- Desk review;
- On-site assessment;
- The resolution of outstanding issues and the issuance of the final verification report and certification.

The following sections outline each step in more detail.

2.1 Desk Review

The monitoring report, version 1.0 of 14/03/2012 **/02/**, the revised monitoring report version 02 of 21/05/2012, version 03 of 19/06/2012 and version 03.2 of 27/06/2012 **/02/**, the emission reduction calculations provided in the form of a spreadsheet titled “Dak Srong 2 ERs (MR ver 3.1)”, version 04 of

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27/06/2012 **/07/**, were assessed as part of the verification. In addition the revised PDD version 3.6 of 19/06/2012 updated for post registration **/01/**, registered Project Design Document (PDD) **/01/** in particular the baseline estimations and the monitoring plan, and the validation report revision 04.4 of 22/11/2010 **/08/** for the project were reviewed.

The monitoring report version 1.0 of 14/03/2012 **/02/** was made publicly available on the CDM UNFCCC website on 19/03/2012.

The following table lists the documentation that was reviewed during the verification.

/01/	Kyoto Energy Pte. Ltd.: CDM-PDD for project activity "Dak Srong 2 Hydropower Project" in Viet Nam, version 3.5 of 10/11/2010 , revised PDD version 3.6 of 19/06/2012
/02/	Kyoto Energy Pte Ltd.: Monitoring report for project activity "Dak Srong 2 Hydropower Project" in Viet Nam, version 1.0 of 14/03/2012, version 02 of 21/05/2012, version 03 of 19/06/2012 and version 03.2 of 27/06/2012 related to the monitoring period 23/02/2011 to 29/02/2012.
/03/	CDM Executive Board: Clean Development Mechanism Project Cycle Procedure, version 02.0 of 02/03/2012
/04/	CDM Executive Board: Clean Development Mechanism Project Standard, version 01.0 of 25/11/2011
/05/	CDM Executive Board: Clean Development Mechanism Validation and Verification Standard, version 02.0 of 25/11/2011
/06/	CDM Executive Board: Baseline and monitoring methodology "ACM0002", "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", version 11 of 12/02/2010
/07/	Kyoto Energy Pte Ltd.: ER calculation sheet titled "Dak Srong 2 ERs (MR ver 3.1)", version 04 of 27/06/2012
/08/	Korea Energy Management Corporation: Validation Report No. GHGCC(A) 09-005 for the project activity " Dak Srong 2 Hydropower Project" in Viet Nam, version 04.4 of 22/11/2010
/09/	Central Power Corporation: Letter dated 30/11/2010 confirming the commercial operation date of Dak Srong 2 Hydropower Project
/10/	HAGL Hydropower JSC: Receipts signed by representatives of EVN, PP and Gia Lai province electricity Authority for the months February 2011 to February 2012
/11/	HAGL Hydropower JSC: Invoices raised for the months February 2011 to February 2012
/12/	East Asia Investment & Construction Consultant JSC: Report on the measurement of Surface area of the reservoir dated March 2012
/13/	HAGL Hydropower JSC: Monthly log book for TEG meter for the months February 2011 to February 2012
/14/	Kyoto Energy Pte Ltd.: Attendance sheet for the training conducted on 25/03/2011
/15/	HAGL Hydropower JSC: Daily log book for the water level in the reservoir for the period 01/02/2011 to 29/02/2012
/16/	HAGL Hydropower JSC: Daily log book for the main meters installed at site for 01/02/2011, 22/02/2011 to 28/02/2011
/17/	Vietcom Bank: Evidence for the payment done by Central Power company to HAGL Hydropower JSC for the electricity exported for the period February 2011 to February 2012
/18/	HAGL Hydropower JSC: Monthly log book in the form of an excel spread sheet for main and back up meter for the months February 2011 to February 2012
/19/	East Asia Investment & Construction Consultant JSC: Invoice dated 31/03/2012 raised to HAGL Hydropower JSC
/20/	Central Electrical Testing Company: Calibration certificates dated 06/10/2010 <ol style="list-style-type: none"> for the main meters with serial number 10020491, 10020492 and 10020493 vide certificate numbers 06105692/BB-ETC-P6, 06105694/BB-ETC-P6 and 06105696/BB-ETC-P6 respectively for the back up meters with serial number 10018220, 10018221 and 10018222 vide

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	certificate numbers 06105693/BB-ETC-P6, 06105695/BB-ETC-P6 and 06105697/BB-ETC-P6 respectively
/21/	Song Da electrical engineering Joint Stock Company: Calibration test certificate for the TEG meters with serial numbers 09090155620006, 09090155620007 and 09090155620008 dated 10/10/2010 vide certificate serial numbers TND/DSR2-01, TND/DSR2-02 and TND/DSR2-03
/22/	HAGL Hydropower JSC: PPA signed with Central Power Company dated 27/05/2010
/23/	Ministry of Science and Technology: Decision No. 25/2007/QĐ-BKHCN published on 05/10/2007 regarding the calibration procedure and frequency
/24/	HAGL Hydropower JSC : Main construction contract no. 14/HD-XD/TDHA dated 25/01/2008 signed with Binh Dinh CONTEXIM company
/25/	Kyoto Energy Pte Ltd.: Training material used for the training of employees at HAGL Hydropower JSC
/26/	Kyoto Energy Pte Ltd.: Summary of the issues raised in the external audit conducted within this monitoring period
/27/	Central Electrical Testing Company: Calibration certificates dated 25/07/2011 <ol style="list-style-type: none"> for the main meters with serial number 10020491, 10020492 and 10020493 vide certificate numbers 06115119/CPC ETC-DL, 06115121/CPC ETC-DL and 06115123/CPC ETC-DL for the back up meters with serial number 10018220, 10018221 and 10018222 vide certificate numbers 06115120/CPC ETC-DL, 06115122/CPC ETC-DL and 06115124/CPC ETC-DL
/28/	Ministry of Industry and Trade: Decision no. 18/2008/QĐ-BCT on Promulgation of Regulation on Avoided Cost Tariff and Standardized Power Purchase Agreement for Small Renewable Energy Power Plants published on 18/07/2008
/29/	Ministry of Industry and Trade: Decision no. 66/QĐ-DTDL on Regulation on Avoided Cost Tariff 2011 published on 31/12/2010
/30/	Ministry of Industry and Trade: Decision no. 06/QĐ-DTDL on Regulation on Avoided Cost Tariff 2012 published on 19/01/2012
/31/	UNFCCC: Monitoring report form (F-CDM-MR), version 02.0 dated 13/03/2012
/32/	UNFCCC: Guidelines for completing the monitoring report form, version 02.0 dated 02/03/2012
/33/	UNFCCC: Implementation plan for the clean development mechanism project standard, validation and verification standard and project cycle procedure, version 01.0 dated 25/11/2011
/34/	UNFCCC: Procedures for notifying and requesting approval of changes from the project activity as described in the registered Project Design Document, version 01 of 17/07/2009
/35/	Department of Meteorology, Hydrology and Climate Change: Final report on " Study, Definition of Viet Nam Grid Emission Factor" published in December 2009
/36/	Elster: Technical specification for the meters with model number A1700 CT metering
/37/	Ministry of Industry: Regulation on "Technical requirements of measurement equipments in the power plant" issued on 09/01/2007
/38/	Wasion Group: Technical specification for the meters with model number DSSD331
/39/	University of New Hampshire Co-operative Extension: http://extension.unh.edu/kmlTools/index.cfm in English Language last retrieved on 14/08/2012

2.2 On-site assessment

On 17/04/2012 to 19/04/2012, RINA, visited the site at Yang Nam, Ya Ma and Dak Hninh communes, Kong Chro District, Gia Lai Province, Socialist Republic of Viet Nam. During the on-site assessment of the project, RINA were able to access all equipment and systems involved in the project activity, assessed the implementation and operation of the proposed project activity, reviewed the information

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flows for generating, aggregating and reporting the monitoring parameters, interviewed key personnel of the plant to confirm the operational and data collection procedures, cross-checked between information provided in the monitoring report and data plant, checked the monitoring equipment including calibration performance, reviewed calculations and assumptions made in determining the GHG data and emission reductions, checked the quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

The key personnel interviewed and the main topics of the interviews are summarized in the table below.

	Date	Name and Role	Organization	Topic
/a/	17/04/2012	Mr. Nguyen Le Anh Duy – Director	Dak Srong 2 – HAGL Hydro power Joint Stock Company	Project implementation, commercial operation date of the plant, payment details from EVN
/b/		Mr. Dinh Duy Khoi – Site Supervisor		Monitoring procedures, data recording, training provided, emergency preparedness
/c/		Mr. Pham Manh Hung - Operator		Data management, day to day record handling
/d/	17/04/2012 and 19/04/2012	Mrs. Nguyen Thi Lan – project Manager		Data monitoring, transfer of data, archiving of data, operation and maintenance of the plant, internal and external audit
/e/	17/04/2012, 18/04/2012 and 19/04/2012	Mr. Arijit Paul – Regional Manager	Kyoto Energy Pte Ltd.	Data transfer, ER calculations, monitoring report
/f/		Mr. Nguyen Manh Khuong – CDM Project Executive		Data transfer, ER calculations, monitoring report

2.3 Resolution of outstanding issues

The objective of this phase of the verification is to resolve any outstanding issues which need to be clarified for RINA's positive conclusion on the monitoring report and emission reductions.

To guarantee transparency a verification protocol has been customized for the project. The protocol shows in a transparent manner the requirements, means of verification and the results from verifying the identified criteria.

The verification protocol consists of three tables; the different columns in these tables are described in the figure below (see Figure 1). The completed verification protocol is enclosed in Appendix A to this report.

A corrective action request (CAR) is raised if one of the following occurs:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impair the estimate of emission reductions;
- Issues identified in a FAR during validation to be verified during verification have not been resolved by the project participants.
- A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

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A forward action request (FAR) is raised during verification for actions if the monitoring and reporting require attention and/or adjustment for the next monitoring period.

CARs, CLs and FARs identified are included in the verification protocol in Appendix A of this report.

Figure 1 Verification protocol tables

Verification Protocol, Table 1 - Requirement checklist				
Checklist Question	Ref.	MoV	Comments	Conclusion
The checklist is organized in four different sections.	Makes reference to documents where the answer to the checklist question or item is found.	Explain how conformance with the checklist question is investigated. Examples are document review (DR), interview or any other follow-up actions (I), cross checking (CC) with available information relating to projects, (N/A) means not applicable.	The discussion on how the conclusion is arrived at and the conclusion on the compliance with checklist question so far.	For CAR, CL and FAR see the definitions above. OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM requirements.

Verification Protocol, Table 2 - Resolution of Corrective Action Requests and Clarification			
Corrective action requests and/or clarification requests	Reference to Table 1	Response by project participants	Verification conclusion
The CAR and/or CLs raised in table 1 are repeated here.	Reference to the checklist question number in Table 1 where the CAR or CL is explained.	The responses given by the project participants to address the CARs and/or CLs.	The verification team's assessment and final conclusion of the CARs and/or CLs.

2.4 Internal quality control

All the revisions of the verification report before being submitted to the client were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent RINA instructions.

The technical review was performed by a technical reviewer(s) qualified in accordance with RINA's qualification scheme for CDM validation and verification.

2.5 Verification team and the technical reviewer(s)

The verification team and the technical reviewers consist of the following personnel:

Role	Last Name	First Name	Country
Team Leader CDM	Arokiasamy	Cyril Augustus	India
CDM Verifier, Technical Expert and Team leader under training	Perne Narayanan	Sreeraj	India

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Technical Reviewer	Menon	Rekha	India
Technical Reviewer	Valoroso	Rita	Italy

3 VERIFICATION FINDINGS

The findings of the verification related to the monitoring period from 23/02/2011 to 29/02/2012 as documented and described in the monitoring report version 03.2 of 27/06/2012 **/02/** are stated in the following sections.

The verification requirements, the means of verification and the results from verifying the identified criteria are documented in more detail in the verification protocol in Appendix A.

3.1 Description of the project activity

The main information of the project is summarized in the table below.

Project Participant(s)	Hoang Anh Gia Lai Hydropower Joint Stock Company, Bunge Emissions Holdings Sarl		
Project Title	Dak Strong 2 Hydropower Project		
Location of the project	Yang Nam, Ya Ma and Dak Hninh communes, Kong Chro District, Gia Lai Province, Socialist Republic of Viet Nam		
Methodology(ies)	"ACM0002", "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", version 11 of 12/02/2010 /06/		
Sectoral Scope(s)	1	RINA's Technical Area(s)	1.2
Registered PDD	Revision 3.5 of 10/11/2010		
Date of registration	23/02/2011	CDM Registration Reference N°	3389
Revised monitoring plan	Revision 3.6 of 19/06/2012		
Starting date of the crediting period	23/02/2011		
Project's crediting period	23/02/2011 to 22/02/2018		
Monitoring period	23/02/2011 to 29/02/2012		
Project documentation link	http://cdm.unfccc.int/Projects/DB/KEMCO1265792796.76/view		
Purpose of the project activity	The project activity consists of the installation of three turbine generators of 8000 kW each; resulting a total capacity 24 MW. The purpose of the project activity is to generate electricity from renewable hydro power and exports to the Viet Nameese national grid, thereby leading to the reduction of GHG emissions by displacing the equivalent amount of electricity which would have been generated predominantly from fossil fuel fired power projects connected to the grid as indicated in the registered PDD.		

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3.2 Remaining issues (FARs) from previous validation or verification

As it is the first verification for the project activity, based on the review of validation report there were no FARs that are to be addressed.

3.3 Monitoring Report

The Monitoring Report for the project activity “Dak Strong 2 Hydropower Project” in “Viet Nam”, version 3.2 of 27/06/2012, version 03 of 19/06/2012, version 02 of 21/05/2012 and version 1.0 of 14/03/2012 submitted by the Kyoto Energy Pte Ltd. have been the basis for the verification process **/02/**.

RINA confirms that the above MR is based on the currently valid MR template **/31/** and is completed in accordance with the applicable guidance document **/32/**.

The main changes between the MR version 1.0 of 14/03/2012 published in the UNFCCC website on 19/03/2012 and the MR version 03.2 of 27/06/2012 submitted for registration are the following:

Section of the MR	Description and reason for changing the information in that section
MR revised in new template of VVS track	A deviation had occurred in the actual scenario compared to the monitoring plan in the registered PDD. As the deviation does not affect the parameters as described in para 273 of VVS /05/ , EB needs to be notified on the change in monitoring plan. As per implementation timeline of VVS, post registration changes since May 2012 needs to be done under VVS track /33/ . Hence PP is requested to submit the MR in the VVS track with the revised monitoring plan
A.1	Total electricity generation for this monitoring period has been reduced from 85,944MWh to 85,851 MWh. Accordingly emission reduction has also reduced from 41,613 tCO ₂ e to 41,560 tCO ₂ e. This difference has occurred due to the apportioning procedure followed for the period 23/02/2011 to 28/02/2011 and the conservative value was taken for the ER calculations
B.2	Post registration change occurred in the project activity has been included in the latest version of MR. The details of the changes has been included in section 3.4 of this report.
C	Calibration frequency of the main and back up meters has been changed from 3 years to 2 years as per decision No. 25/2007/QD-BKHCN dated 05/10/2007 /23/ or at the end of the validity period of the calibration result (if specifically mentioned in the calibration certificate) which ever is earlier. Calibration frequency of the TEG meters has been changed from 3 years to 2 years as per decision No. 25/2007/QD-BKHCN dated 05/10/2007 /23/
E.4	Apportioning procedure has been explained in detail for the electricity generation during the period 23/02/2011 to 28/02/2011. Kindly refer section 3.5.3 of this report for more details on the apportioning procedure followed.

3.4 Project implementation

As per the registered PDD version 3.5 of 10/11/2010 and the revised PDD version 3.6 of 19/06/2012 addressing the post registration changes **/01/**, the proposed project activity aims to construct and operate a run-off river hydropower plant utilizing the water resources of the Ba river, which links to Da Nang river and eventually to the East Sea of Viet Nam. The generated electricity is exported to the Viet

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Nam national grid. The project has a small run off reservoir, a weir, a penstock and a power house containing 3 turbines of 8290.2kW each and 3 generators of 8,000 kW each. Verification team conducted the site visit from 17/04/2012 to 19/04/2012 and confirmed that all the above mentioned equipments are in place and is in operation. The capacities of the equipments were also verified by the verification team during the site visit by checking the equipment name plates. The same was also cross verified by cross checking the certificate provided by Central Power Corporation; the Viet Nameese national grid, stating that the plant started its operation since 30/10/2010 **/09/**. Verification team also confirms that the project activity is implemented at one site. All the three turbine/gensets were commissioned at the same time and hence no phased implementation has happened. It was also noted that the plant has operated normally throughout the monitored period. No data or variables in the monitoring report are different from the registered PDD, which could cause an increase in estimates of the emission reductions in the current monitoring period or is highly likely to increase the estimates of emission reductions in the future monitoring periods.

Post registration changes.

During the site visit, verification team noted that one bidirectional energy meter was installed for each turbo generator to monitor the electricity exported to the grid and the electricity imported from grid. A back up meter is also installed to ensure correct functioning of the energy meter. This was not consistent with the registered PDD which stated that one electricity meter would be installed for total generation of the facility and one for electricity consumed from the grid at this facility **/CAR 1/**. Verification team further noted that the actual monitoring plan and installed equipment goes beyond the requirements of the PDD and does not result in decrease in accuracy of monitoring. Moreover the deviation does not affect the parameters as described in paragraph 273 of VVS **/05/**. However EB needs to be notified on the change in monitoring plan. As per implementation timeline of VVS, post registration changes since May 2012 needs to be done under VVS track **/33/**. Accordingly PP has revised the MR in the VVS track with the revised monitoring plan **/02/**. The registered PDD has also been revised accordingly **/01/**. It was further noted by the verification team that the post registration changes comes under point 5(b) of Appendix 1 in the Clean Development Mechanism Project Standard, version 01.0, dated 25/11/2011 **/04/** as the change is in the type of the meter installed (one bi-directional meter in place of two uni-directional meters).

3.5 Methodology for determining Emission Reductions.

According to the applied methodology "ACM0002", "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", version 11 of 12/02/2010 **/06/**, the emission reductions have been calculated based on the following formula:

$$ER_y = BE_y - PE_y - L_y$$

Where,

ER_y : Emission reductions in year y (tCO₂e/yr)

BE_y : Baseline emissions in year y (tCO₂e/yr)

PE_y : Project emissions in year y (tCO₂e/yr)

L_y : Leakage in year y (tCO₂e/yr)

The baseline emissions (BE_y) for the project activity are calculated as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$$

$$EG_{PJ,y} = EG_{facility,y}$$

Where,

$EG_{facility,y}$: Quantity of net electricity generation supplied by the project plant/unit to the grid in year y

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$EF_{grid,CM,y}$: Combined margin emission factor for grid connected power generation in year calculated ex-ante, as 0.5764 tCO₂/MWh **/01/**

Combined margin emission factor was fixed ex-ante at the time of validation. The value was cross checked with the registered PDD and found to be consistent.

As per the methodology, for hydro power project activities that result in new reservoirs, project proponents shall account for CH₄ and CO₂ emissions from the reservoir if the power density of the project activity (PD) is greater than 4 W/m² and less than or equal to 10 W/m².

Accordingly PP has calculated the power density based on the following equation as provided in the applied methodology:

Where,

PD : Power density of the project activity

Cap_{PJ} : Installed capacity of the hydropower plant after the implementation of the project activity

Cap_{BL} : Installed capacity of the hydropower plant before the implementation of the project activity (W). For new hydropower plants, this value is zero

A_{PJ}: Area of the reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoirs are full

A_{BL}: Area of the reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoirs are full (m²). For the new reservoir, this value is zero

Power density is thus calculated to be 5.57W/m² which is in between 4W/m² and 10W/m². Thus PP has calculated the project emissions as follows:

Where,

PE_{HP,y} : Emission from reservoir expressed as tCO₂e/year

EF_{Res} : The default emission factor for emissions from reservoirs in kg CO₂e/MWh

TEG_y : Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads in year y expressed in MWh/yr

As per the methodology and the registered PDD, the project does not need consider leakage.

Hence $ER_y = BE_y - PE_y$

3.5.1 Compliance of the monitoring plan with the monitoring methodology and applicable methodological tools

As per the applied methodology, ACM0002, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", version 11 of 12/02/2010 **/06/**, monitoring shall consist of metering the quantity of net electricity generation supplied by the project plant/unit to the grid in the year y ($EG_{facility,y}$), Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y (TEG_y), Installed capacity of the hydro power plant after the implementation of the project activity (Cap_{PJ}) and Surface area of the reservoir measured after the implementation of the project activity, when the reservoir is full (A_{PJ}). As per the monitoring plan of the registered PDD, version 3.5 of 10/11/2010 **/01/**, all the above mentioned four parameters are included as a monitoring parameter. Hence, the monitoring plan included in the registered PDD is in accordance with the applied methodology.

3.5.2 Compliance of monitoring with monitoring plan

As discussed in section 3.4 of this report, project activity involves a post registration change which falls under point 5(b) of Appendix 1 in the Clean Development Mechanism Project Standard, version 01.0,

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dated 25/11/2011 **/04/** as the change is in the type of the meter installed (one bi-directional meter in place of two uni-directional meters). Hence this change does not require prior approval from the board. As per implementation timeline of VVS, post registration changes since May 2012 needs to be done under VVS track **/33/**. Accordingly PP has revised the MR in the VVS track with the revised monitoring plan. The registered PDD has also been revised accordingly **/01/**.

The following parameters have been monitored in accordance with the monitoring plan in the registered PDD and final revised PDD **/01/** and the monitoring report **/02/**.

3.5.2.1 Data and parameters fixed ex-ante or at renewal crediting period

DATA/PARAMETER Unit	Source of data	Reported value for the project period	Assessment/Observation
Combined margin CO ₂ emission factor for grid connected power generation as calculated in DNA issued "Study, Definition of Viet Nam Grid Emission Factor, 2009" (EF _{grid,CM,y})	As per the "Tool to calculate the emission factor for an electricity system".	0.5764 tCO ₂ /MWh	The verification team has verified the value with the report published by DNA in December 2009 /35/ and registered PDD /01/ and found to be correct and consistent. Hence accepted.
Default emission factor for emission from reservoirs (EF _{Res})	Decision by EB 23	90 kg CO ₂ /MWh	The verification team has verified the value with the registered PDD /01/ and the methodology applied /06/ and found to be correct and consistent. Hence accepted.
Global warming potential of methane valid for the relevant commitment period (GWP _{CH4})	IPCC	21 tCO ₂ e/tCH ₄ for the first commitment period	The verification team has verified the value with the registered PDD /01/ and found to be correct and consistent. Hence accepted.

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3.5.2.2 Data and parameters monitored ex-post

	Assessment																																			
Data/Parameter	EG _{facility,y}																																			
Data Unit	MWh																																			
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid during the current monitoring period																																			
Source of data to be used	MM1, MM2, MM3; BM1,BM2, BM3 in case of the MM failure																																			
Value of monitored parameter for the monitoring period	85,851																																			
Monitoring equipment	<p>The monitoring equipments used for the three turbo generators are bi directional digital meters as seen at site and the details of the meters are as follows.</p> <table><tr><th>Meter</th><th>Tag</th><th>Meter No.</th><th>Model</th><th>Manufacturer</th></tr><tr><td>Main meter</td><td>MM 1</td><td>10020491</td><td>A1700</td><td>Elster</td></tr><tr><td>Main meter</td><td>MM 2</td><td>10020492</td><td>A1700</td><td>Elster</td></tr><tr><td>Main meter</td><td>MM 3</td><td>10020493</td><td>A1700</td><td>Elster</td></tr><tr><td>Back Up Meter</td><td>BM 1</td><td>10018220</td><td>A1700</td><td>Elster</td></tr><tr><td>Back Up Meter</td><td>BM 2</td><td>10018221</td><td>A1700</td><td>Elster</td></tr><tr><td>Back Up Meter</td><td>BM 3</td><td>10018222</td><td>A1700</td><td>Elster</td></tr></table> <p>As per the monitoring report, version 03.2 of 27/06/2012 /02/ and the monitoring plan of the final revised PDD /01/, the energy meters of each unit measures the export and import of the electricity generated. The representatives from EVN (Viet Nam national grid; Central Power Corporation), PP and Gia Lai province electricity company take down the monthly reading on first day of every month. This is then recorded in the EVN receipt and is signed by these representatives. Invoices are raised by PP based on these receipts and accordingly payment is done by EVN. EVN further cross checks the main meter reading with back up meter reading so as to ensure that the reading recorded from the main meter is correct. Verification team during the site visit checked the same and confirms that the same procedure is followed at site.</p>	Meter	Tag	Meter No.	Model	Manufacturer	Main meter	MM 1	10020491	A1700	Elster	Main meter	MM 2	10020492	A1700	Elster	Main meter	MM 3	10020493	A1700	Elster	Back Up Meter	BM 1	10018220	A1700	Elster	Back Up Meter	BM 2	10018221	A1700	Elster	Back Up Meter	BM 3	10018222	A1700	Elster
Meter	Tag	Meter No.	Model	Manufacturer																																
Main meter	MM 1	10020491	A1700	Elster																																
Main meter	MM 2	10020492	A1700	Elster																																
Main meter	MM 3	10020493	A1700	Elster																																
Back Up Meter	BM 1	10018220	A1700	Elster																																
Back Up Meter	BM 2	10018221	A1700	Elster																																
Back Up Meter	BM 3	10018222	A1700	Elster																																
Accuracy of the monitoring equipment	0.2s and 0.5s for Main and back up meters respectively. The same was confirmed by the verification team during the site visit and by cross checking and verifying the calibration certificates /20//27//36/ . The accuracy class was selected by the PP based on the regulation No. 02/2007/QD-BCN on “Technical requirements of measurement equipments in the power plant” issued by Ministry of Industry on 09/01/2007 /37/ .																																			
Measuring/Reading/Recording frequency	Continuous measuring and Monthly recording. The same is in line with the methodology requirement and is hence accepted.																																			
Calcualtion method (if applicable)	Not applicable																																			
Calibration																																				

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Calibration frequency/interval Is the calibration interval in line with the monitoring plan of the PDD?	Meters will be calibrated once in 2 years as per decision No. 25/2007/QD-BKHCHN dated 05/10/2007 /23/ or at the end of the validity period of the calibration result (if specifically mentioned in the calibration certificate) whichever is earlier. No frequency has been mentioned in the monitoring plan of the registered PDD.
Does the calibration cover the monitoring period? Has the calibration frequency been respected?	The initial calibration test for both main and back up meters were conducted on 06/10/2010. As the test certificate provided a validity of 1 year, subsequent calibration was conducted on 25/07/2011. Verification team had checked the certificates and found appropriate /20//27/ . It was also noted that the meters are well within their accuracy limit.
Calibration certificates	PP had provided the calibration test certificates for the main and back up meters. Verification team had checked the certificates and found appropriate /20//27/ .

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	Assessment																				
Data/Parameter	TEG _y																				
Data Unit	MWh																				
Description	Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y																				
Source of data to be used	TEG 1, TEG 2 and TEG 3																				
Value of monitored parameter for the monitoring period	88,053																				
Monitoring equipment	<p>The monitoring equipments used as seen at site are as follows.</p> <table><tr><th>Meter</th><th>Tag</th><th>Meter No.</th><th>Model</th><th>Manufacturer</th></tr><tr><td>TEG meter</td><td>TEG 1</td><td>09090155620006</td><td>DSSD331</td><td>Wasion</td></tr><tr><td>TEG meter</td><td>TEG 2</td><td>09090155620007</td><td>DSSD331</td><td>Wasion</td></tr><tr><td>TEG meter</td><td>TEG 3</td><td>09090155620008</td><td>DSSD331</td><td>Wasion</td></tr></table> <p>As per the monitoring report, version 03.2 of 27/06/2012 /02/ and the monitoring plan of the final revised PDD /01/, the total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y is monitored by installing an electricity meter at project activity site. A monthly log book is maintained at site in order to record the measurements displayed at these meters /13/. Verification team has confirmed the same during the site visit.</p>	Meter	Tag	Meter No.	Model	Manufacturer	TEG meter	TEG 1	09090155620006	DSSD331	Wasion	TEG meter	TEG 2	09090155620007	DSSD331	Wasion	TEG meter	TEG 3	09090155620008	DSSD331	Wasion
Meter	Tag	Meter No.	Model	Manufacturer																	
TEG meter	TEG 1	09090155620006	DSSD331	Wasion																	
TEG meter	TEG 2	09090155620007	DSSD331	Wasion																	
TEG meter	TEG 3	09090155620008	DSSD331	Wasion																	
Accuracy of the monitoring equipment	0.5s. The same was confirmed by the verification during the site visit and by cross checking and verifying the calibration certificates. The same accuracy class was also mentioned in the technical specification provided by manufacturer /21//38/ .																				
Measuring/Reading/Recording frequency	Continuous measuring and Monthly reading and recording. The same is in line with the methodology requirement and is hence accepted.																				
Calculation method (if applicable)	It is the summation of the values displayed in the three meters. i.e; TEG _y = TEG 1 + TEG 2 + TEG 3																				
Calibration																					
Calibration frequency/interval Is the calibration interval in line with the monitoring plan of the PDD?	Meters will be calibrated once in 2 years as per decision No. 25/2007/QD-BKHCN dated 05/10/2007 /23/ . No frequency has been mentioned in the monitoring plan of the registered PDD.																				
Does the calibration cover the monitoring period? Has the calibration frequency been respected?	The initial calibration test was conducted on 10/10/2010 and as the frequency is fixed for once in 2 years as the government rule, these meters are not calibrated in this monitoring period. Verification team had checked the certificates and found appropriate /21/ . It was also noted that the meters are well within their accuracy limit.																				
Calibration certificates	PP had provided the calibration test certificates for the TEG meters																				

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	Verification team had checked the certificates and found appropriate /21/.
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	Assessment
Data/Parameter	Cap _{PJ}
Data Unit	W
Description	Installed capacity of the hydro power plant after the implementation of the project activity
Source of data to be used	Project site
Value of monitored parameter for the monitoring period	24,000,000
Monitoring equipment	Not applicable
Accuracy of the monitoring equipment	Not applicable
Measuring/Reading/Recording frequency	Yearly. The same is in line with the methodology requirement and is hence accepted.
Calculation method (if applicable)	Not applicable
Calibration	
Calibration frequency/interval Is the calibration interval in line with the monitoring plan of the PDD?	Not applicable
Does the calibration cover the monitoring period? Has the calibration frequency been respected?	Not applicable
Calibration certificates	Not applicable

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	Assessment
Data/Parameter	A_{PJ}
Data Unit	m^2
Description	Surface area of the reservoir measured after the implementation of the project activity, when the reservoir is full (m^2).
Source of data to be used	Project site
Value of monitored parameter for the monitoring period	4,306,000
Monitoring equipment	Water level gauge on the side of the reservoir
Accuracy of the monitoring equipment	Not applicable as by water level gauge it means a scale marked in the wall of the reservoir
Measuring/Reading/Recording frequency	Yearly measuring, daily reading and recording. The same is in line with the methodology requirement and is hence accepted.
Calculation method (if applicable)	Calculation of the surface area of the reservoir was verified by a third party consultant appointed by PP. Verification team has checked the report provided by the consultant and found appropriate /12/ .
Calibration	
Calibration frequency/interval Is the calibration interval in line with the monitoring plan of the PDD?	Not applicable
Does the calibration cover the monitoring period? Has the calibration frequency been respected?	Not applicable
Calibration certificates	Not applicable

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3.5.3 Assessment of data and calculation of emission reductions

Availability of the data

Quantity of net electricity generation supplied by the project plant/unit to the grid is measured with the help of the bidirectional meter installed at site for each turbo generators. Representatives from EVN (Viet Nam Electricity; Central Power Corporation), PP and Gia Lai province Electricity Company take down the monthly reading on first day of every month. This is then recorded in the EVN receipt and is signed by these representatives. Invoices are raised by PP based on these receipts and accordingly payment is done by EVN. Emission reduction is calculated based on the readings taken from the main meter and recorded in the EVN receipt. Verification team has checked the same and found to be in order. Hence it is confirmed that the calculation method is proper as the readings are sourced from a document approved by EVN who is the buyer of the electricity generated. EVN further cross checked the main meter reading with back up meter reading and ensured that the reading recorded from the main meter is correct and accordingly payment was released as per the invoice raised by PP. Verification team has checked the ER calculation and confirmed that the values are correctly taken from the EVN receipts.

As the current monitoring period starts from 23/02/2011 and the EVN receipt consists of data for the month of February, project participant applied data apportioning procedures for the period 23/02/2011 to 28/02/2011 based on the following three approaches.

Option 1: Average daily generation from EVN monthly receipt of the corresponding month has been multiplied by the number of days (6) which falls in the monitoring period.

Option 2: The ratio of total generation for the days (6) which falls within this monitoring period as per the daily records from the site and the total generation for the whole month obtained from the daily records from the site has been multiplied by the total monthly generation as given in EVN monthly receipts.

Option 3: The total generation for the number of days (6) which falls within the monitoring period taken from the daily records from the site

The team verified the three options considered by the project participant for data apportioning and found that it is applied correctly and conservative estimates are considered for the calculations. Hence the same was accepted.

CO₂ emission factor has been taken as 0.5764 tCO₂/MWh. The verification team has verified the value with the report published by DNA in December 2009 /35/ and registered PDD /01/ and found to be correct and consistent. The baseline emissions thus calculated to be 49,484 tCO₂e.

As the power density is 5.57W/m² which is in between 4W/m² and 10W/m², project emission is involved in the project activity and is calculated to be 7,925 tCO₂e/year.

As per the methodology and the registered PDD, the project does not need consider leakage.

Thus the emission reduction is calculated to be 41,560 tCO₂e for this monitoring year /07/.

Cross-check reported data

The net electricity exported to grid was cross checked with the copies of invoices raised by the PP to EVN; the grid and the evidence of payment received from EVN /11//17/. It was confirmed by the verification team that the value mentioned in the invoice raised, payment done and EVN receipt are consistent.

As a matter of precaution, The value of A_{PJ} has been cross checked using Google Earth. This was done by fixing the location of the site and dam as per geographical coordinates available in the

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registered PDD in the Google Earth, a contour of the reservoir is developed. Further fixing the altitude of the reservoir which is taken from the report prepared by East Asia Investment & Construction Consultant JSC for the measurement of surface area **/12/**, the area of the reservoir has been calculated using the KML tool **/39/**. This tool has been developed by University of New Hampshire Cooperative Extension. It helps users of Google Earth to apply geo processing analysis to the map layers created. Thus it helps in calculating the area of the reservoir that has been developed in Google Earth with the help of the co-ordinates of the project site, dam and altitude of the reservoir. The value thus calculated comes to 4258495.64m². As this value comes closer to the value calculated by the third party report, verification team concluded that the value considered by the PP is appropriate.

3.5.4 Accuracy of emission reduction calculations

The emission reduction calculations provided in the spreadsheet **/07/** have been verified to be correct and in line with the registered PDD **/01/**. The default values/emission factors considered by PP for the emission reduction calculation has been checked by the verification team and found to be appropriate and in line with the registered PDD **/01/**.

The emission reductions from the project for the monitoring period as reported in the monitoring report revision 03.2 of 27/06/2012 **/02/** is equivalent to 41,560 tCO_{2e}. The reported emission reductions are 6.54% lower than the estimated emission reduction of 44,466 tCO_{2e} for the period as per the registered PDD **/01/**.

The data presented in the monitoring report **/02/** were assessed by reviewing in detail project documentation, collection of monitored data, observation of established monitoring and reporting practices and assessment of the reliability of monitoring equipment. Sufficient evidence was presented and verified by RINA for the reported emission reductions as listed in the above Section 3.5.3.

3.5.5 Management system and quality control

Verification team has done the site visit from 17/04/2012 to 19/04/2012 and cross-checked the procedures being followed at site in monitoring and calculating the electricity generation exported to the grid. The team confirmed that PP follows the procedures as mentioned in the registered PDD **/01/**. 3 main meters are installed at site so as to monitor the net electricity exported to grid by the project activity. This is then cross checked with the back-up meter readings installed at site so as to ensure the correctness of the data. Further all these meters will be calibrated once in 2 years as per decision No. 25/2007/QD-BKHCHN dated 05/10/2007 **/23/** or at the end of the validity period of the calibration result (if specifically mentioned in the calibration certificate) whichever is earlier. As the calibration test certificate submitted by PP for the main and back up meters specifies a validity of one year, subsequent calibration was conducted by PP in this monitoring period so as to ensure the proper working of the meters **/20/27/**. Verification team has checked the monthly log book maintained at site for the energy meters and calibration certificates and confirmed that proper measures were taken by PP to ensure the appropriateness of the value considered in the ER calculation **/18/20/27/**. Further PP had conducted a review internally and made sure that there were no major data inconsistencies for this particular monitoring period. Accordingly no corrective/preventive action was taken. An external audit was also conducted by Kyoto Energy Pte Ltd monthly and noted that no major findings was raised in the audit. PP had also conducted training on 25/03/2011 to introduce the staff to the monitoring plan requirements. Verification team had checked the attendance sheet and found to be appropriate. Hence verification team concluded that PP has a proper management system so as to ensure the correct recording and reporting of data used for the emission reduction calculations.

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4 VERIFICATION AND CERTIFICATION OPINION

RINA Service Spa (RINA) has performed verification of the emission reductions reported for the project activity "Dak Srong 2 Hydropower Project" in Viet Nam, CDM Registration Reference N° 3389, for the period 23/02/2011 to 29/02/2012, with regard to the relevant requirements for CDM activities.

The project participants of the "Dak Srong 2 Hydropower Project" project are responsible for:

- the preparation of greenhouses gas emissions data and the reported greenhouse gas emission reductions from the project on the basis set out in the monitoring plan contained in the registered project design document version 3.5 of 10/11/2010 and revised PDD version 3.6 of 19/06/2012
- the development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of greenhouse gas emission reductions of the project

It is the responsibility of RINA to express an independent verification opinion about the project's conformity with the requirements of paragraph 62 of the CDM modalities and procedures and on the reported greenhouse gas emission reductions from the project.

Based on documented evidence and corroborated by an on-site assessment RINA can confirm that:

- the project has been implemented and operated as per the revised registered PDD;
- the monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable CDM requirements;
- the monitoring is in place as per the applied baseline and monitoring methodology;
- the monitoring complies with the monitoring plan in the registered PDD;
- the monitoring plan in the registered PDD is as per the applied baseline and monitoring methodology.

It is RINA's opinion that the GHG emission reduction stated in the monitoring report version 03.2 of 27/06/2012 for the "Dak Srong 2 Hydropower Project" project in Viet Nam for the period 23/02/2011 to 29/02/2012 are fairly stated. The GHG emission reductions were calculated correctly on the basis of the approved monitoring methodology "ACM0002", "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", version 11 of 12/02/2010 and the monitoring plan contained in the latest PDD.

Hence RINA is able to certify that the emission reductions from the project during the monitoring period 23/02/2011 to 29/02/2012 amount to 41,560 tCO_{2e}.

Chennai, 14/08/2012



Cyril Augustus Arokiasamy
CDM Team Leader
RINA India Pvt. Ltd.

Genova, 20/08/2012



Laura Severino
Authorized officer signing for the DOE
RINA Services S.p.A.

APPENDIX A

VERIFICATION PROTOCOL

TABLE 1 REQUIREMENTS CHECK LIST

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
A Description of Project Activity						
A.1	Title of the project activity, revision number and date of Monitoring Report	/01//02/	DR/CC	Title of the project activity is "Dak Srong 2 Hydropower Project" version number 1.0 dated 14/03/2012. Title of the project activity mentioned in the monitoring report was checked with the registered PDD and found to be consistent.		OK
A.2	Is the actual implementation and operation of the proposed project activity in accordance with the project activity in the registered PDD?	/01/	DR/ I	As per the registered PDD, the project activity is a run-off river hydro power plant which utilizes the hydrological resources of Ba river which is located in the central highland province which joins with the Da Rang river to run into the East Sea. The project involves the installation of three turbo generator of 8 MW each totalling to 24 MW which was confirmed by the verification team by checking the name plate fixed in the equipments at site. The electricity thus generated will be exported to Viet Nam national grid. Verification team has conducted a site visit on 17/04/2012, 18/04/2012 and 19/04/2012 and were accessible to all the locations of the hydro power plant without facing any barriers. Thus confirmed that the turbo generators has been commissioned and started operational since 30/10/2010. The same was cross checked with the letter provided by Central Power Corporation (CPC- a part of EVN).	CL-1	OK

¹ MoV: DR document review, I interview, CC cross checking

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				<p>Further it was confirmed that all the machines are in operation and are in accordance with that mentioned in the registered PDD.</p> <p>However monitoring report is not clear on the following:</p> <ol style="list-style-type: none"> 1. Description on installed technology and equipments. 2. Construction start date 3. The type of turbine and generator mentioned in table 1; key technologies utilised under section A.4 of the monitoring period is not consistent with the registered PDD 		
A.3	Methodology applied for the registered project activity	/01//02//04/	DR/CC	<p>Project activity applies the methodology ACM 0002, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", version 11 of 12/02/2010. This methodology is applicable to the project activity as it involves the installation of a new hydro power unit with a small run off river reservoir and the power density of the power plant is greater than 4W/m².</p>		OK
B Monitoring						
B.1 Monitoring plan						
B.1.1	Does the monitoring plan included in the registered CDM project activity comply with the applied methodology?	/01//04/	DR/CC	<p>As per the applied methodology, monitoring shall consist of metering the net electricity generation supplied to the grid by the project plant, total electricity produced by the project activity, including the electricity supplied to grid and the electricity supplied to the internal loads, installed capacity of the</p>		OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				hydro power plant after the implementation of the project activity and the area of the reservoir measured in the surface of water , after the implementation of project activity, when the reservoir is full. The monitoring plan of the registered PDD is transparent in monitoring the above mentioned parameters and hence the registered PDD is in accordance with the applied methodology.		
B.1.2	Does the monitoring comply with the monitoring plan in the registered PDD?	/01//02/	DR/CC /I	<p>As per the monitoring plan of the registered PDD, the net electricity supplied to the grid will be monitored with the help of two meters installed at site; one for total generation of the facility and one for electricity consumed from the grid at this facility. The cross-check of the measurement results will be done with records for sold and purchased electricity. Verification team conducted the site visit on 17/04/2012, 18/04/2012 and 19/04/2012 and noted that only one bidirectional energy meter was installed for each turbo generator to monitor the electricity exported to the grid and the electricity imported from grid. A check meter is also installed to ensure correct functioning of the energy meter.</p> <p>This is not consistent with the registered PDD, Further it is also not transparent on how total energy produced – electricity imported from the grid is equal to energy exported – total energy imported. PP is requested to clarify the same with evidences.</p> <p>Further as per the registered PDD, total</p>	CAR-4 CL-1	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				<p>electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y will be monitored by installing another electricity meter at project activity site. The same is followed at site and is hence in line with the registered PDD.</p> <p>. The main and back up meters belong to EVN and hence the readings from these meters are taken for the emission reduction calculations. A daily log book is maintained at site in order to record the main meter readings which consist of both export and import to grid. The main meter reading will be compared with the back-up meter reading so as to ensure the accuracy of the meters. PP is requested to demonstrate with evidence that the difference between the readings of these meters where within the acceptable limits.</p> <p>PP is requested to provide the commissioning certificates for the energy meters installed at site.</p>		
B.2 Data and parameters that are available at validation and that are not monitored						
B.2.1	Which parameters were available at validation and how were they verified?	/01//02/	DR/CC	<p>The parameters that were available at the time of validation where $EF_{grid,CM,y}$, EF_{Res} and GWP_{CH4}. The CO_2 emission factor of grid was calculated as per the “tool to calculate emission factor for an electricity system” and the values are sourced from the report published by the DNA of Viet Nam “Study, Definition of Viet Nam Grid Emission Factor, 2009”. Emission factor of reservoir is taken as the default value based on the decision by EB 23. GWP_{CH4} is the</p>	CAR-2 CL-2	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				<p>default value taken from IPCC. Verification team checked the values mentioned in the monitoring report with that indicated in the registered PDD and confirmed to be appropriate. However PP is requested to clarify the following:</p> <ol style="list-style-type: none"> 1. The description and source of data referred for the parameter $EF_{grid,CM,y}$ in the monitoring report is not consistent with the registered PDD. 2. The parameter GWP_{CH_4} is missing in the monitoring report and is hence not in line with the registered PDD. 		
B.3 Data and parameters monitored						
B.3.1	Data/Parameter monitored / Data unit / Description / Source of data to be used / Value data for the monitoring period.	/02//05//08/ /09//10//11/	DR/CC /1	<p>Data/ Parameter monitored: $EG_{facility,y}$ quantity of net electricity generation supplied by the project plant/unit to the grid in year y in MWh/yr. This value is monitored from 3 main meters installed at site and the value for this monitoring period is 85,944MWh/yr. The value is sourced from the EVN receipt prepared based on the monthly reading taken from the main meters installed at site. The same was cross checked by the verification team by comparing the monthly log book maintained at plant and copies of invoices raised by the PP to EVN; the grid and the evidence of payment received from EVN. However it is noted from the EVN receipt that the net export to grid is calculated based on the difference of export and import and further multiplying with a factor of 1.22%. PP is requested to clarify the</p>	CAR-3 CL-3	OK

Checklist Question	Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
			<p>reason for using the factor and further justify on not considering this factor for ER calculations. It was also noted that the values in the ER sheet are not exactly matching with that in the EVN receipt. PP is requested to clarify the reason for the same.</p> <p>Data/ Parameter monitored: TEG_y; Total electricity produced by the project activity, including the electricity supplied to the grid and the electricity supplied to internal loads, in year y measured in MWh/yr. This value is taken from the energy meters installed just after the each generator. The value for this monitoring period is 88,053MWh/yr. The reading recorded from the individual meter are as follows: TEG1: 31,963.7MWh/yr TEG2: 28,353.8Mwh/yr TEG3: 27,735.1MWh/yr The same was cross checked and confirmed by comparing the log book maintained at plant.</p> <p>Data/ Parameter monitored: A_{PJ}; Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full in m². The value for this monitoring period is 4,306,000m². The value was calculated by an external consultant based on the water level measurements taken by PP with the help of a water level gauge installed in the reservoir. Verification team has confirmed that PP is recording</p>		

Checklist Question	Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
			<p>the water level daily in a log book. The report submitted by the external consultant was also verified and confirmed that the maximum level indicated throughout the monitoring period is considered for calculating the reservoir area.</p> <p>However PP is requested to clarify the following:</p> <ol style="list-style-type: none"> 1. Unit mentioned for the parameters $EG_{\text{facility},y}$ and TEG_y in the monitoring report are not consistent with the registered PDD and applied methodology. 2. As per the MR, Cap_{BJ} is indicated as a monitoring parameter. Whereas the same is not in line with the registered PDD and the applied methodology. 3. PP is requested to make it transparent in the MR on the apportioning procedure adopted for 23/02/2011 to 28/02/2011 out of billing cycle as available in the generation report and demonstrate that the same is conservative. 4. The description provided for EG_y in section E.1 of the MR is not matching within the monitoring period. <p>PP is also requested to submit the following:</p> <ol style="list-style-type: none"> 1. Evidence for the payment received from EVN to the PP 		

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				2. Evidence to cross check the grid import 3. The contract signed with the external consultant for conducting the surface area measurement of the reservoir 4. Evidence for the invoice raised/ payment done to the external consultant for conducting the surface area measurement of the reservoir		
B.3.2	Is the measurement equipment described? Is the accuracy of the measurement equipment addressed and deemed appropriate?	/02/	DR/CC /I	The details such as the serial number, manufacturer, model, accuracy class, date of calibration and its frequency of the main meters, back up meters and the meters installed after the generators are provided in the monitoring report. All the main and back up meters are of model A1700 manufactured by Elster. The accuracy class of main meters are 0.2s and that of back up meter and the TEG meter which are the meters installed after the turbine generators are of 0.5s. TEG meters are manufactured by Wasion and are of model DSSD331. Date of calibration for main and back up meters are 06/10/2010 and for TEG meter, it is 10/10/2010. Calibration frequency has been selected as 3 years for all the meters. The serial numbers of all meters are as follows: Main meter 1 (MM1) : 10020491 Main meter 2 (MM2) : 10020492 Main meter 3 (MM3) : 10020493 Back up meter 1 (BM1) : 10018220 Back up meter 2 (BM2) : 10018221 Back up meter 3 (BM3) : 10018222 TEG meter (TEG1) : 09090155620006	CL-4	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				<p>TEG meter (TEG2) : 09090155620007 TEG meter (TEG3) : 09090155620008</p> <p>Verification team has checked all the details excluding date of calibration and its frequency during the site visit and confirmed to be appropriate. PP is requested to justify the reason for selecting the calibration frequency as once in 3 years and how it is in accordance with PPA signed.</p>		
B.3.3	Are the requirements for maintenance and calibration of measurement equipment described and deemed appropriate?	/01//02/	DR//CC	<p>The registered PDD is not transparent about the calibration of meters. The monitoring report defines the calibration frequency to be once in three years. However MR is not clear on the following:</p> <ol style="list-style-type: none"> 1. The reason for selecting the calibration frequency as once in 3 years and how it is in accordance with PPA signed. 2. Entity responsible for conducting the calibration <p>Further PP is also requested to submit copy of the PPA signed with EVN and a English translated copy of the same</p>	CL-4	OK
B.3.4	Is the monitoring frequency adequate for all monitoring parameters? Is it in line with the registered monitoring plan?	/01//02/	DR/I	<p>The monitoring frequency for EG_{facility.y} and TEG_y is continuous. The monitoring for the parameter Cap_{PJ} is conducted yearly. The same was confirmed by the verification team during the site visit and is in line with the registered monitoring plan. However as per the MR, A_{PJ} is measured continuously which is not consistent with the registered PDD. Also verification team was not able to notice the continuous measurement</p>	CAR-2	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				during the site visit. Further the parameter Cap _{PJ} is not included as a monitoring parameter in the MR which is contradicting with the registered PDD.		
B.3.5	Is the recording frequency adequate for all monitoring parameters? Is it in line with the registered monitoring plan?	/01//02/	DR/I	The recording frequency for EG _{facility.y} and TEG _y is monthly. The same was confirmed by the verification team during the site visit and is in line with the registered monitoring plan. However as per the MR, A _{PJ} is recorded daily which is not consistent with the registered PDD. Also verification team was not able to notice the daily recording during the site visit.	CAR-2	OK
B.3.6	Does data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions?	/01//02//05/ /08//09//11/	DR// CC	PP maintains a daily log book to record the main meter readings. Representatives from EVN (Viet Nam Electricity; Central Power Corporation), PP and Gia Lai province electricity company take down the monthly reading on first day of every month. This is then recorded in the EVN receipt and is signed by these representatives. Invoices are raised by PP based on these receipts and accordingly payment is done by EVN. Emission reduction is calculated based on the readings mentioned in the receipt. Verification team has checked the same and found to be in order. Hence it is confirmed that the calculation method is proper as the readings are sourced from a document approved by EVN who is the buyer of the electricity generated. EVN further cross checks the main meter reading with back up meter reading so as to ensure that the reading recorded from	CAR-3 GL-4	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				<p>the main meter is correct. However these details are not transparent in the monitoring report.</p> <p>Further 3 meters are installed after the generators in order to monitor the total electricity generated by the plant. A log book is maintained to record the monthly generation from these meters. Verification team has checked the same during site visit and found to be in place. Hence it was confirmed by the verification team that PP has a proper data management to ensure correct transfer of data and reporting of emission reductions.</p> <p>Verification team further noted that the export value mentioned in the ER sheet for the back-up meter unit 2 and 3 for the month of March 2011 and June 2011 respectively are not consistent with the monthly log book.</p>		
B.4 Monitoring of sustainable development indicators/environmental impacts						
B.4.1	Is the monitoring of sustainable development indicators/ environmental impacts warranted by legislation in the host Country?	/01/	DR/CC	As per the LoA received by the PP from host party DNA, PP is not required to monitor the sustainable development indicators/ environmental impacts. However it was noted from the registered PDD that project owner has voluntarily agreed to donate 2% of the CER revenue from the project towards sustainable development initiatives. PP is requested to clarify whether any action plan is prepared for the same. If yes, PP is requested to provide the details on the same.	CL-5	OK
B.4.2	Does the monitoring report provide for the collection and	/01/	DR/CC	Kindly refer section B.4.1	CL-5	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
	archiving of relevant data concerning environmental, social and economic impacts?					
B.5 Management, quality assurance and quality control						
B.5.1	How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design?	/01//02/	DR// CC	Verification team has conducted the site visit on 17/04/2012, 18/04/2012 and 19/04/2012 and checked the procedures followed at site in monitoring and calculating the net electricity exported to the grid. PP is requested to refer section B.1.2 of this report.	CAR-1 CL-4	OK
B.5.2	Are procedures identified for day-to-day record handling (including what records to keep, storage area of records and how to process performance documentation)?	/02/	DR// CC	MR is not clear on the procedures followed for day-to-day record handling	CL-4	OK
B.5.3	Are the data management and quality assurance and quality control procedures sufficient to ensure that the emission reductions achieved by/resulting from the project can be reported ex post and verified?	/02//12/	DR// CC	Yes. The data management, quality assurance and quality control procedures followed at site ensure that the emission reductions achieved by/resulting from the project can be reported ex post and verified. PP had conducted a review internally and made sure that there were no major data inconsistencies for this particular monitoring period. Accordingly no corrective/preventive action was taken. However MR is not clear on these details and information on the details of the internal and external audit conducted. Further it is noted that the personnel/entity responsible for the preparation of the MR is contradicting in section C.5 and A.8 of the MR. PP is also requested to refer section B.3.1 of this report. PP had also conducted training on 25/03/2011 to introduce the staff to the monitoring plan requirements. Verification team had checked the	CAR-3 CL-4	OK

Checklist Question		Reference	MoV ¹	Comments	Draft Conclusion	Final Conclusion
				attendance sheet and found to be appropriate. However PP is required to provide the copies of training materials used. Further as per the MR, it is mentioned that staff training record is shown in Annex 2. Verification team was not able to identify the same in MR.		
B.5.4	Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later?	/02/	DR// CC	Yes. PP is archiving all the monitored data records such as daily log books for main meter, EVN receipts which consists of monthly reading of main and back up meter, daily log book for recording the water level and monthly log book for TEG meters of all the months from the date of registration of the PDD till date. PP has also confirmed that all these documents will be archived up to two years after the end of the crediting period or last issuance of this project activity whichever comes later.		OK

TABLE 2 RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
<p>CAR 1</p> <p>1. Verification team conducted the site visit on 17/04/2012, 18/04/2012 and 19/04/2012 and noted that separate only one bidirectional energy meter was installed for each turbo generator to monitor the electricity exported to the grid and the electricity imported from grid. A check meter is also installed to ensure correct functioning of the energy meter. This is not consistent with the registered PDD, Further it is also not transparent on how total energy produced – electricity imported from the grid is equal to total energy exported – total energy imported. PP is requested to clarify the same with evidence.</p>	B.1.2, B.5.1	<p>1st response</p> <p>1. Verification is correct, there is one main meter (MM) and backup meter (BM) per turbine and genset which measures import and export of electricity. The backup meters are not check meters per se, their main function is to be ready for use in billing if the main meter fails. Whilst verification team is correct in that the setup does not mirror the PDD section B7, the FVR for registration was finished and PDD submitted to the UNFCCC on in April 2010 whereas the project was finally commissioned in October 2010 (at which time the final monitoring arrangements were finalised). The monitoring plan and equipment now goes beyond the requirements of the PDD and does not result in decrease in accuracy of monitoring (in fact there is more monitoring). Please note that the total energy produced – imported electricity is not exactly equal to total energy exported – total energy imported. All the evidences regarding the above parameters can be checked in submitted support documents from SD02c and SD03a.</p> <p>2nd response to point no.1</p> <p>The MR is updated as per the new standard. Section B.7.1 of the PDD is also revised to be consistent with the actual monitoring system implemented in the project activity.</p>	<p>1st response</p> <p>1. It is noted that there is a deviation in the monitoring plan against the one in the registered PDD. As the deviation does not affect the parameters as described in paragraph 273 of VVS. EB needs to be notified on the change in monitoring plan. As per implementation timeline of VVS, post registration changes since May 2012 needs to be done under VVS track. Hence PP is requested to submit the MR in the VVS track with the revised monitoring plan.</p> <p>2nd response to point no.1</p> <p>PP has revised the MR and registered PDD accordingly. However the following were noted by the verification team in the revised MR.</p> <ul style="list-style-type: none"> The version number mentioned in the first page of MR has been changed from 2.0 to 3.0. However the same should not be changed as it is the version number of the template. PP has to include the revised version number only in the table of the first page. Table included in D.1 and D.2 are not inline with the latest template. Section B.2.3 of the revised MR states that for further details please refer section B.2 and C.1. However verification team was not able to find any details provided in section B.2. Also PP needs to provide more details in section B.2.3 of the MR on the changes

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
<p>2. PP is requested to demonstrate with</p>		<p>3rd response to CAR 1.1</p> <p>The mistake in the version number of the MR template has been corrected, the format for the tables included in section D.1 and D.2 has been updated as per the latest MR template, section B.2.3 has been further revised to provide more details on the change in monitoring system as compared to the registered PDD.</p> <p>Response to 4th bullet of DOE's 2nd response to point number 1:</p> <p>The tariff received by the PP for this project is determined by a regulation called Avoided Cost Tariff regulation, which was introduced in 18th of July 2008 by Ministry of Industry and Trade, Government of Viet Nam. This tariff was introduced after the decision to invest in the project activity which was on 30th October 2007. In addition it is to be further noted that this new tariff was not only after the time when the decision to invest in the project activity was taken but also after start date for the project activity which was on 25th of January 2008. Thus the present tariff was not known to the PP both at the time of decision making and also when the PP made its first financial commitment to construct the project activity and hence need not be taken into account.</p> <p>2. There are no prescribed guidelines</p>	<p>occured by comparing the scenario at project site and what was mentioned in the registered monitoring plan.</p> <ul style="list-style-type: none"> It was also noted that the tariff considered in the registered PDD does not match with the actual tariff received by the PP for this monitoring period. Hence PP is requested clarification. <p>3rd response to point no.1</p> <p>PP has revised the version number of the MR accordingly and is now appropriate.</p> <p>Table in D.1 and D.2 has also been revised as per the latest template and is hence accepted.</p> <p>PP has provided more details in section B.2.3 and is accepted.</p> <p>Further justification for the difference in tariff has also been accepted as the revised tariff is because of the policy that had come in 18/07/2008 which is after the decision making and start date of the project activity. Further it can be treated as an E- policy and is hence excluded.</p> <p>Thus this part of CAR is closed.</p> <p>2. The justification provided by PP is accepted. Verification team has checked EVN receipts and details of the payments received and confirmed that the payments has been done based on the</p>

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
evidence that the difference between the readings of the main and back up meters were within the acceptable limits		regarding the acceptability of range of deviation between main and back up meter. It is entirely at the discretion of EVN. For this project during the monitoring period EVN have always accepted the deviation figures as permissible and made payment for sale of electricity accordingly to the project participants.	readings displayed by main meter which demonstrates that the difference in the reading of main and back up meters were within their acceptable limit. Thus this part of CAR is closed. Since all the issues are closed, CAR 1 is also closed.
<p>CAR 2</p> <p>1. It is noted that the parameter GWP_{CH4} is missing in the monitoring report and is hence contradicting with the registered PDD.</p> <p>2. As per the MR, Cap_{BJ} is indicated as a monitoring parameter. Whereas the same is not in line with the registered PDD and the applied methodology.</p> <p>3. As per the MR, A_{PJ} is measured continuously which is not consistent with the registered PDD. Also verification team was not able to notice the continuous measurement during the site visit.</p>	B.2.1, B.3.4, B.3.5	<p>1. The parameter GWP_{CH4} was not included in the MR because it was not used for the calculation. However for the sake of consistency with the registered PDD, this parameter was added back to the MR.</p> <p>2. The spelling mistake of Cap_{BJ} (instead of Cap_{PJ}) was rectified, as well as the parameter definition, now in line with the registered PDD.</p> <p>3. A_{PJ} is measured indirectly via water level measurements. These measurements are performed with a level gauge, which continuously displays a value. Daily records are taken and the maximum of these records is selected on an annual basis to determine the maximum surface area of the reservoir. This monitoring frequency therefore satisfies and goes beyond the provisions of the registered PDD.</p> <p>The MR was updated accordingly. The frequency of measurement of A_{PJ} has been revised to yearly</p>	<p>1st response</p> <p>1. PP has revised the MR accordingly and is now in line with the registered PDD. Hence this part of CAR is closed.</p> <p>2. PP has revised the MR accordingly and is now in line with the registered PDD and the applied methodology. Hence this part of CAR is closed.</p> <p>3. Justification provided by PP on continuous measurement is acceptable. Verification team accepts that water level gauge displays a value continuously. However it is not measured continuously. PP is requested to revise the MR accordingly.</p> <p>2nd response for point no.3 PP has revised the MR accordingly and is now in line with procedure followed at site. The revised MR is now consistent with the registered PDD. Hence accepted. Thus this part of CAR is closed.</p>

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
<p>4. Further the parameter Cap_{PJ} is not included as a monitoring parameter in the MR which is contradicting with the registered PDD.</p> <p>5. As per the MR, A_{PJ} is recorded daily which is not consistent with the registered PDD. Also verification team was not able to notice the daily recording during the site visit.</p>		<p>4. As explained in bullet 2 above, the description mistake underlined by the DOE were rectified and Cap_{PJ} is now included in the MR.</p> <p>5. Further to the description given in bullet 3 above, water level records are taken on daily basis and the overall A_{PJ} assessment is performed on yearly basis. These monitoring frequencies therefore satisfy and go beyond the provisions of the registered PDD. Internal A_{PJ} records are logged on the site computer and provided as SD02c.</p>	<p>4. PP has revised the MR accordingly and is now in line with the registered PDD. Hence this part of CAR is closed.</p> <p>5. Justification provided by PP is accepted. Verification team has checked the daily log book and confirmed to be appropriate. Hence this part of CAR is closed.</p> <p>Since all issues are closed, CAR 2 is closed.</p>
<p>CAR 3</p> <p>1. PP is requested to make it transparent in the MR on the apportioning procedure adopted for 23/02/2011 to 28/02/2011 out of billing cycle as available in the generation report and demonstrate that the same is conservative.</p>	<p>B.3.1, B.3.6, B.5.3</p>	<p>1st response</p> <p>1. The calculation of emission reductions for the first month is based on internal daily records provided as SD02b. This approach is the most accurate option in case of partial month of data. Related explanations were added in the MR and ER spreadsheet in order to improve transparency. The calculation of emission reductions for the first month based on the monthly record (EVN receipt and internal TEG) using the proportional factor (7/28) gives a result of 237 CERs, while the calculation used the daily record yields 202 CERs. Hence the proposed calculation using the daily record is more conservative.</p> <p>2nd response on point no.1</p> <p>The MR was provided description of 3 options how to calculate the CER for the first month of the monitoring period, then use the smallest</p>	<p>1st response</p> <p>1. Still the MR is not clear on the apportioning procedure followed and how conservativeness is ensured for the value during the period 23/02/2011 to 28/02/2011. PP is requested to make it transparent in the ER sheet on the calculation done in both the approaches.</p> <p>2nd response on point no.1</p> <p>PP has revised the MR and ER sheet accordingly and has selected the conservative value out of the three approaches considered. The approach considered by PP is acceptable to the verification team. However it is noted that in option 2, PP has not considered the transmission line lost from metering point to EVN national grid. PP is required to consider the same and recalculate the emission reduction.</p> <p>Further it was noted that the baseline emissions mentioned in the second table under section E.4 of the revised MR is contradicting with the ER sheet. This part of CAR is still open.</p>

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
<p>2. It is noted from the EVN receipt that the net export to grid is calculated based on the difference of export and import and further multiplying with a factor of 1.22%. PP is requested to clarify the reason for using the factor and further justify on not considering this factor for ER calculations. It was also noted that the values in the ER sheet are not exactly matching with that in the EVN receipt. PP is requested to clarify the reason for the same.</p>		<p>value to calculate the Emission Reduction. Also, the ER sheet was shown the detail of three options. Please see the MR revised and ER sheet updated.</p> <p>3rd response on CAR 3.1 Please note the transmission and distribution loss factor is already included in the ER calculation for option 2. However, for the sake of transparency the same is shown explicitly in the calculation. It has no impact on the final value of emission reduction calculated.</p> <p>2. The factor is the transmission line lost from metering point to EVN national grid. In fact, the meters of the project is located at the powerhouse, which is 10.2km far to the EVN national grid (An Khe 110Kv transmission line). That factor is calculated by EVN and the PO together (depend on the length of line, type of line, average temperature, pressure condition . of the site), and the result of the factor is shown on the PPA. The translated PPA is provided as SD18. In addition please note this factor is indeed considered in the ER calculation since, the value considered for ER calculation is after this factor is used to take into account the transmission and distribution loss. The small difference is due rounding off error. Since the difference is much less than 2% of the total generation figures, this can be considered negligible following the materiality guidelines published at CMP 7.</p> <p>These guidelines on materiality were</p>	<p>3rd response on point no.1 PP has revised the ER sheet and MR accordingly and is now appropriate. Thus this part of CAR is closed.</p> <p>2. Justification provided by PP for considering the multiplication factor is accepted by the verification team. Team has checked the PPA signed and confirmed to be appropriate. It was also confirmed by the verification team that the factor has been considered for the calculation of ER.</p> <p>Further, verification team has noted that the submitted materiality guideline is in draft stage. Hence PP is requested to submit the implemented guideline.</p> <p>2nd response for point no.2 Verification team has checked the final report and found appropriate. Hence this part of CAR is closed.</p>

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
3. Export value mentioned in the ER sheet for the back-up meter unit 2 and 3 for the month of March 2011 and June 2011 respectively are not consistent with the monthly log book		<p>adopted as decision 9 of the CMP7 meeting in Durban. The final report is publicly available here: http://unfccc.int/resource/docs/2011/cmp7/eng/10a02.pdf</p> <p>3. The identified typos were duly rectified in the ER spreadsheet. (BM2 export of March, and BM3 export of June) This rectification however resulted in no change in the monthly and total values of emission reductions. The ERs sheet was updated accordingly. The ER was corrected accordingly.</p>	<p>3. PP has revised the ER sheet accordingly and is now in line with the EVN receipt. Hence this part of CAR is closed.</p> <p>Since all the issues are closed, CAR 3 is closed.</p>
<p>CL 1 Monitoring report is not clear on the following:</p> <p>1. Description on installed technology and equipments.</p> <p>2. Construction start date</p>	A.2, B.1.2	<p>1st response</p> <p>1.The description of installed technology is elaborated on in MR Section A4.</p> <p>A brief description of the installed technology has been added section A.1 of the MR.</p> <p>2nd response to CL1.1</p> <p>The point (b) in section A.1 was updated in the last submitted MR. Brief description of the technology such as key component of the power plant like power house, penstock etc were included. Kindly confirm if the same is sufficient.</p> <p>2. The date of first construction contract has been added to the MR. Please see the relevant support document SD15_Main Construction</p>	<p>1st response</p> <p>1. As per the MR guidelines, section A.1 of the MR should have a brief description of the installed technology and equipments. Revised MR is not clear on the same. PP is requested to included further details as required. This part of CL is still open.</p> <p>2nd response on point no.1</p> <p>Verification team was not able to find any further details added in the revised MR on installed technology and equipments. This part of CL is still open.</p> <p>3rd response on point no.1</p> <p>PP has provided further details in section A.1 of the MR and is hence accepted. Thus this part of CL is closed.</p> <p>2. PP has included the construction start date in the revised MR. Verification team has checked the same and cross verified with the</p>

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
<p>3. The type of turbine and generator mentioned in table 1; key technologies utilised under section A.4 of the monitoring period is not consistent with the registered PDD</p> <p>4. PP is requested to provide the commissioning certificates for the energy meters installed at site.</p>		<p>contract.</p> <p>3. There was a missing number for the parameter "Turbine Type", i.e. a missing number "6". "HLA551C-LJ-17" is now corrected to "HLA551C-LJ-176" in the updated MR. The same for "Generator Type", there was a missing "0". Here, " SF 8,000-20/325" is updated to "SF 8,000-20/3250"</p> <p>4. All 3 main and 3 backup meters of the projects were installed on 06/10/2010, and the commercial operation date of the project was on 30/10/2010. It is evident that the meters were installed and had the calibration certificate before the commissioning. Please refer to SD16 and SD11 as evidence for commercial operation date confirmation and calibration for the meters.</p> <p>2nd response on point no.1</p> <p>As can be seen in the calibration certificates with additional text highlights, the calibration took place in the power plant, at the metering points 131, 132, and 133 respectively. This shows that these meters were actually installed and operational at the date of calibration. Commissioning certificate is available for the commissioning of the whole plant but not for individual meters. The support document for the commissioning of the plant is already provided as SD01 COD Proof.</p> <p>3rd response on point no.1</p>	<p>evidence provided and found to be appropriate. Thus this part of CL is closed.</p> <p>3. PP has revised the MR accordingly and is now in line with the registered PDD. The details were also cross verified during site visit. Hence this part of CL is closed.</p> <p>4. PP's justification is not accepted. Calibration certificate of the meter doesn't state that the meters were installed on 06/10/2010. PP is requested to clarify whether any commissioning certificate was provided for installing meters. This part of CL is still open.</p> <p>2nd response on point no.4 Verification team is not clear on the metering points 131,132 and 133. This part of CL is still open.</p> <p>3rd response on point no.4 Justification provided by PP is accepted. Thus this part of CL is closed.</p> <p>Since all the issues are closed, CL 1 closed.</p>

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
		Metering point 131 is the position name of the main and the backup meters which record the electricity generation delivered by the Unit 1 turbine –generator set. Similarly the points 132 and 133 refer to the locations of the main and back up meters recording the generations of Unit 2 and Unit 3 turbine generator sets. In addition to calibration certificates, these locations are specified in all EVN receipts. EVN receipts were provided as SD03a and calibration certificates were provided as SD11. The same documents are provided again with additional translation to clearly identify the locations of the meters. These new support documents are referred to as SD24 providing additional translation of EVN receipts and SD25 providing additional translation of calibration certificates.	
CL 2 1. The description and source of data referred for the parameter $EF_{grid,CM,y}$ in the monitoring report is not consistent with the registered PDD.	B.2.1	1. The description and source of data referred for the parameter $EF_{grid,CM,y}$ in the monitoring report was made in line with the registered PDD.	1st response PP has revised the MR accordingly and is now in line with the registered PDD. Hence CL 2 is closed.
CL 3 PP is requested to clarify the following: 1. Unit mentioned for the parameters $EG_{facility,y}$ and TEG_y in the monitoring report are not consistent with the registered PDD and applied methodology. 2. The description provided for EG_y in section E.1 of the MR is not matching	B.3.1,	1. The original unit of the parameters $EG_{facility,y}$ and TEG_y was MWh/year, but it was changed to MWh since the monitoring period was not equal to a whole year. The unit MWh/year (homogeneous to power) could be understood as the mean generation power over a whole year, hence it was changed to MWh (homogeneous to energy) to alleviate confusion. 2. The description provided for EG_y in section E.1 of the MR was updated as per the	1st response 1. Justification provided by PP is accepted. This part of CL is closed. 2. As per the registered PDD and methodology, $BE_y = EG_{PJ,y} * EF_{grid,CM,y}$ whereas

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
<p>within the monitoring period.</p> <p>PP is also requested to submit the following:</p> <ol style="list-style-type: none"> Evidence for the payment received from EVN to the PP Evidence to cross check the grid import 		<p>monitoring period (23/02/2011 – 29/02/2012)</p> <p>The parameter name in section E1 of the MR was rectified in line with the registered PDD. The parameter description in section D.2 of the MR was made in line with the description in section E.1.</p> <p>2nd response to CL3.2:</p> <p>The description of the $EG_{facility,y}$ has been updated in section E.1 and D.2 to make it consistent with the registered PDD and CDM methodology applied.</p> <p>1. The EVN invoices of payment are provided as SD07.</p> <p>2. The internal monthly record are provided as</p>	<p>$EG_{P,J,y} = EG_{facility,y}$</p> <p>However section E.1 of the revised monitoring report states that $BE_y = EG_y * EF_{grid,CM,y}$.</p> <p>Further the description provided for EG_y in section E.1 of the revised MR is net quantity of electricity generated and delivered to the grid by the hydropower in year y whereas the same is not consistent with the description provided in D.2 of the revised MR.</p> <p>2nd response for point no.2</p> <p>PP has revised the equation in MR accordingly and is now in line with the registered PDD. However the description provided for $EG_{facility,y}$ in section E.1 and D.2 of the revised monitoring report is not in line with the registered PDD and the methodology applied. Hence this part of CL is still open.</p> <p>3rd response for point no.2</p> <p>PP has revised the description of $EG_{facility,y}$ and is now in line with the registered PDD and methodology. Thus this part of CL is closed.</p> <p>1. PP has provided the evidence for the payment received. Verification team has checked the same with the invoice raised and found to be appropriate. This part of CL is closed.</p> <p>2. PP is requested to submit the scanned</p>

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
<p>3. The contract signed with the external consultant for conducting the surface area measurement of the reservoir</p> <p>4. Evidence for the invoice raised/ payment done to the external consultant for conducting the surface area measurement of the reservoir</p>		<p>SD09</p> <p>The original document at the site is an excel workbook, there is no paper log book. Translation of the excel workbook is provided as SD20 (Translation keys are in the first sheet)</p> <p>2nd response to point number 2:</p> <p>For the sake of convinience the PP keeps the internal monthly records in the same format as it is in the EVN receipts. This helps them to keep the data in a format consistent with the EVN receipts. The values in these files are entered by the operators working at the site. Hence these excel work sheets can be used to cross check the final values in officially issued EVN receipts.</p> <p>3. The scope of work for A_{PJ} report preparation and billed amount was deemed too small for a specific contract. Please see below for the related invoice.</p> <p>Please refer to response provided in point number 4 below.</p> <p>4. Please find the related invoice as SD10.</p> <p>The PP confirms that the payment has been made to the consultant who have checked the surface area of the reservoir during this moinitoring period. However, please note the payment has been made through internet banking system. However the online transfer of money does not refer to this specific payment in</p>	<p>copy of the log book maintained at site for recording the monthly data. Further, the excel sheet submitted has to be translated in English.</p> <p>2nd response for point no.2</p> <p>It is noted that the document submitted is the excel format of the EVN receipt. Verification team has to cross verify the import reading mentioned in the EVN receipt. Hence PP is requested to provide an appropriate evidence to cross check the same. This part of CL is still open.</p> <p>3rd response for point no.2</p> <p>Justification provided by PP is accepted and hence this part of CL is closed.</p> <p>3. Justification provided by PP is accepted. However PP is requested to refer point number 4 of this CL.</p> <p>2nd response for point no.3</p> <p>Since point number 4 of this CL is closed, this part of CL is also closed.</p> <p>4. PP has submitted the invoice and found appropriate. However PP is also requested to provide the evidence for payment made against the submitted invoice.</p> <p>2nd response for point no.4</p> <p>Justification provided by PP is accepted. This part of CL is closed.</p>

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
		the system since this payment has been clubbed with a number of other payments made to the same consultant in one single transaction.	Since all issues are closed, CL 3 is closed.
<p>CL 4</p> <p>MR is not clear on the following:</p> <ol style="list-style-type: none"> The reason for selecting the calibration frequency as once in 3 years and how it is in accordance with PPA signed. 	<p>B.3.2, B.3.3, B.3.6, B.5.2, B.5.3</p>	<p>1. No specific recommendation was given by the manufacturer, as it can be seen in instrument user manual provided as SD08. The PPA referred to general regulations which require a recalibration every 2 years. (See SD13) Although not from the manufacturer, and rather legal than technical in nature, this 2-years frequency is adopted since more conservative. Annex 1 of the MR was accordingly rectified.</p> <p>The MR was revised and is now self-consistent as regards the calibration frequency. It was shown that the PPA refers to the legal decisions which require a calibration frequency of 2 years. Please refer to the SD13</p> <p>2nd response to CL 4.1</p> <p>The calibration test certificates for the main meters and the back up meters does not indicate any frequency, however, the same mentions a validity period of one year for the result of the calibration test. But the calibration certificates for the TEG meters does not specifically mention any validity period for the calibration test, Keeping in mind this variation in the reporting of the validity of the calibration test, the frequency of calibration for the main and back up meters have been corrected to one year to be consistent with the validity period as mentioned in the calibration certificate and for TEG meters it is kept at 2 years to conform with the relevant regulation. The relevant support document number SD11_Meter calibration has been now updated to include the translation of</p>	<p>1st response</p> <ol style="list-style-type: none"> Justification provided by PP is accepted. However the revised MR is contradicting within itself in the calibration frequency. Section C.4 of the revised MR states that the calibration will be conducted once in three years whereas annex 1 of the MR states that it will be conducted once in 2 years. PP is requested to clarify. Further PP to clarify whether the calibration test certificate or PPA states any frequency. This part of CL is still open. <p>2nd response for point no.1</p> <p>Still section C.4 of the revised MR states a calibration frequency of atleast every 3 years. PP is requested to thoroughly check the MR. Further PP is yet to respond for the query whether the calibration test certificate states any calibration frequency or due date. This part of CL is still open.</p> <p>3rd response for point no.1</p> <p>Justification provided by PP is accepted. MR has also been revised accordingly and is now appropriate. Thus this part of CL is also closed.</p>

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
<p>2. Entity responsible for conducting the calibration</p> <p>3. Further PP is also requested to submit a translated copy of PPA signed with the EVN.</p>		<p>the portions of the certificate which mentions the validity period of the certificate. Please see the updated support document SD25_Meter calibration. In addition please also refer to the SD28, which provides the latest available calibration certificates for the main and back up meters.</p> <p>2. The calibration of the 3 main meters and 3 backup meters were conducted by the Central Electrical Testing Company which is a subsidiary of EVN. The calibration of the 3 TEG meters conducted by Song Da electrical engineering Joint Stock Company, which holds business lines is installing, testing, maintaining, and upgrading telecommunication system, electric stations, grids, transformer stations and technological lines. (Link here) This clarification was added to section C4 of the MR.</p> <p>3. The translated copy of the relevant sections of the PPA is provided as SD18</p> <p>The PPA is provided the procedures to be followed at the time of meter failures as the SD23</p> <p>Second response to point number 3</p> <p>The PPA included Article 8, point 3 is provided as SD27.</p>	<p>2. Justification provided by PP is accepted. MR has been revised accordingly. Hence this part of CL is closed.</p> <p>3. PP has provided the translated document of PPA. However PP is requested to clarify whether PPA does not provide the procedures to be followed at the time of meter failures.</p> <p>2nd response for point no.3</p> <p>PP has provided translated document of PPA. However it is noted that the procedure to be followed at time of meter failures as mentioned in page 12 of the PPA refers to a requirement in article 8, point 3. PP is requested to translate the same too. Further PP to revise the MR as per the PPA for the procedures to be followed at the time of meter failure. Thus this part of CL is still open.</p>

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
<p>4. Procedure followed at site for day-to-day record handling and the preparation of EVN receipt</p> <p>5. MR is not clear on the details of the internal and external audit conducted.</p>		<p>4. The daily internal record procedure is as follows: Everyday at midnight the operator on duty takes the current reading of the 3 main meters and inputs these values into the excel logfile on the site computer. The preparation of the EVN receipt is as follows: At the beginning of every month a representative of Hoang Anh Gia Lai hydropower company and of Central Power Company come to the site. The meters keep in their memory the values recorded at the end of the last day of previous month, so that they can take a joint reading and prepare the receipt together. This clarification was added to section C5 of the MR.</p> <p>The procedure given in section C5 of the MR was extended with details regarding the readings from the backup meter and the steps until the payment.</p> <p>5. External audit consist in collecting the monitored data on monthly basis and evaluating the resulting ERs to check for any obvious anomalies and ensure timely calibration. The results of the audit are contained in the Monitoring Issue Summary. Please see SD14.</p> <p>The external audits are provided by Kyoto Energy. The name of the SD14 was wrong</p>	<p>3rd response for point no.3 PP has provided the translated document for the article 8, point 3. Further MR has also been revised accordingly. Thus this part of CL is closed.</p> <p>4. PP is requested ot provide the details of record handling for back up meters and how it is ensured that the reading dispalyed in main meters are correct or not. Further the explanation provided for the preparation of EVN receipt is not complete. PP is requested to provide the procedures followed till the payment is done by the grid.</p> <p>2nd response for point no.4 PP has revised the MR accordingly and is now appropriate. This part of CL is closed.</p> <p>5. Justification provided by PP states that external audit is conducted. PP is requested to mention the entity who had conducted the same. Further the document submitted states that it is internal audit. Further the document submitted is also not clear on the entity who had conducted the audit. Further the MR is not clear whether any internal/external audit was conducted in this monitoring period or not.</p>

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
<p>6. Further it is noted that the</p>		<p>indeed, it was changed to "External audit summary". Please see the renamed document as SD21.</p> <p>The MR section C.5 was revised to mention about the external audits conducted in the monitoring period.</p> <p>2nd response to point number 5:</p> <p>The support document for the external audit performed has been updated to include the name of the entity who has performed the external audit. Please see SD26_External audit summary for reference. Please note the conclusion drawn from the dates of reported information of last two events identified in the support document on external audit is not correct. The support document provided only capture the outcome of the monthly external audit conducted but does not show the frequency of external audit. Indeed the external audit is performed on monthly basis and only the findings are recorded in the file a copy of which has been submitted as the support document. Between 09/05/2011 and 12/01/2012 the external audit resulted in no new findings and hence the same is not reported in the file. Regarding internal audit, please refer to table 4 of the MR where it is clearly mentioned that internal audit is only limited to the management review of the monitoring report to be performed by the representative of the project owner. The same has been performed by the representative of the project owner and no issues were identified by the responsible entity for performing this internal audit.</p> <p>6. The MR was found not in line with the</p>	<p>2nd response for point no.5</p> <p>Still the submitted document is not clear on the entity who had conducted the audit. Further revised MR states that external audit is performed on a monthly basis. However as per the submitted evidence, an audit was conducted in 09/05/2011. Subsequent audit was performed in 12/01/2012 which is contradicting to the statement provided in the revised MR. Further PP to provide the outcome of internal/external audit performed for the current monitoring period in the MR. This part of CL is still open.</p> <p>3rd response for point no.5</p> <p>The document submitted now for the evidence of external audit is clear on the entity who had conducted the audit. Revised MR is also clear on the details of internal/external audit conducted. The justification for the frequency of audit is also accepted by the verification team. Thus this part of CL is closed.</p> <p>6. PP has revised the PDD accordingly and is now consistent with the registered PDD.</p>

Corrective action and/ or clarification requests	Reference to Table 2	1st Response by project participants	Verification Conclusion
<p>personnel/entity responsible for the preparation of the MR is contradicting in section C.5 and A.8 of the MR.</p> <p>7. PP is required to provide the copies of training materials used. Further as per the MR, it is mentioned that staff training record is shown in Annex 2. Verification team was not able to identify the same in MR</p>		<p>registered PDD regarding the allocation of responsibilities. The table of section C5 was made in line with the PDD and no longer conflicts with the information of section A.8.</p> <p>7. Deleted the sentence “Staff training record is shown in Annex 2” in the MR. The record is provided DOE as a supported document. Please refer to SD17</p> <p>The training material date was typo mistake, it was changed as per the date on the MR. Please see the SD22.</p>	<p>Hence this part of CL is closed</p> <p>7. PP has revised the MR accordingly and is now appropriate. Further PP has submitted the presentation used for training. However it states that training is conducted on 25/03/2010 whereas the same is contradicting with the date mentioned in MR. This part of CL is still open.</p> <p>2nd response for point no.7 PP has provided the document as appropriate. Thus this part of CL is closed.</p> <p>Since all the issues are closed, CL 4 is closed.</p>
<p>CL 5</p> <p>It was noted from the registered PDD that project owner has voluntarily agreed to donate 2% of the CER revenue from the project towards sustainable development initiatives. PP is requested to clarify whether any action plan is prepared for the same. If yes, PP is requested to provide the details on the same.</p>	B.4.1, B.4.2	<p>At the moment there is no plan for how to donate 2% of the PPs net CER revenue for sustainable development initiatives as CERs have not yet been realised. Request the DOE to raise a FAR for the time being so this can be confirmed upon second verification.</p>	<p>1st response</p> <p>Justification provided by PP is accepted. As this is the first verification a FAR need not be raised. Thus CL5 is closed.</p>



RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra:

A. Cyril Augustus Arokiasamy

We declare that Mr/Mrs/Ms:

è qualificato come¹:
is qualified as:

**CDM-TEC, CDM-VAL, CDM-VER, CDM-TL, CDM-FIN-EXP,
GS-VAL, GS-VER, GS-TL, SCS-VAL, SCS-VER, SCS-TL**

per le seguenti aree tecniche:
for the following technical areas:

1.1, 1.2, 2.2, 3.1, 4.5, 4.10, 5.1, 11.1, 13.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.1	Thermal energy generation from fossil fuel and biomass including thermal electricity from solar	1
1.2	Energy generation from renewable energy sources	1
2.2	Heat Distribution	2
3.1	Energy Demand	3
4.5	Rubber and Plastics	4
4.10	Fuel switching and/or energy efficiency and/or waste heat/gas/pressure recovered and utilization for power generation at manufacturing industries	4
5.1	Chemical process industries	5
11.1	Chemical process industries	11
13.1	Waste Handling and Disposal	13

in accordo alle istruzioni della Divisione Certificazione.

in accordance with the instructions of the Certification Division.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	30-06-2010	-
1	18-10-2010	Changes in certificate module
2	17-03-2011	Changes due to new accreditation standard
3	13-05-2011	Changes due to updating of qualification to TL
4	06-06-2011	Annual Revision
5	23-08-2011	Changes due to updating of qualification to verifier
6	11-04-2012	TA 1.3 has been deleted and substituted by TA 1.1
7	08-06-2012	Updating qualification in TA 1.2

Il Resp. QPT
Head of QPT

¹ Legend:

VAL: Validator
VER: Verifier
TEC: Technical Expert
TL: Team Leader
FIN-EXP: Financial Expert
DET: Determiner

CDM: Clean Development Mechanism
VCS: Verified Carbon Standard:
GS: Gold Standard
SCS: SocialCarbon Standard
JI: Joint Implementation

RINA Services S.p.A. è accreditato da UNFCCC, quale Entità Operativa Designata (DOE), per condurre la Validazione e la Verifica di Progetti CDM, da VCSA per condurre la Validazione e la Verifica di Progetti VCS, da GS Foundation, per condurre la Validazione e la Verifica di Progetti GS, da Ecologica Institute per condurre la Validazione e la Verifica di rapporti SCS

RINA Services S.p.A. is accredited by the UNFCCC, as Designated Operational Entity (DOE), to carry out Validation and Verification of CDM Projects, by the VCSA, to carry out Validation and Verification of VCS Projects, by the GS Foundation, to carry out Validation and Verification of GS Projects and by the Ecologica Institute, to carry out Validation and Verification of SCS Reports



RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra:

Sreeraj Perne Narayanan

We declare that Mr/Mrs/Ms:

è qualificato come¹:
is qualified as:

**CDM-TEC, CDM-VAL, CDM-VER, VCS-VAL, VCS-VER, GS-VAL,
GS-VER, SCS-VAL, SCS-VER, CDM-FIN-EXP**

per le seguenti aree tecniche:
for the following technical areas:

1.2

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Energy generation from renewable energy sources	1

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	09-11-2010	-
1	17-03-2011	Changes due to new accreditation standard
2	06-06-2011	Annual Revision

Il Responsabile di Schema
Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

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RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra:

Rekha Menon

We declare that Mr/Mrs/Ms:

è qualificato come¹:
is qualified as:

CDM-TEC, CDM-VAL, CDM-VER, CDM-TL, CDM-FIN-EXP, VCS-VAL, VCS-VER,
VCS-TL, GS-VAL, GS-VER, GS-TL, SCS-VAL, SCS-VER, SCS-TL

per le seguenti aree tecniche:
for the following technical areas:

1.2, 13.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Energy generation from renewable energy sources	1
13.1	Waste Handling and Disposal	13

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	06-03-2008	-
1	04-05-2009	Annual revision
2	14-12-2009	Changes in module structure
3	22-03-2010	Annual revision
4	18-10-2010	Changes in certificate module
5	17-03-2011	Changes due to new accreditation standard
6	06-06-2011	Annual Revision

Il Responsabile di Schema
Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

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RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

Si attesta che il sig./sig.ra:
We declare that Mr/Mrs/Ms:

Rita Valoroso

è qualificato come¹:
is qualified as:

CDM-TEC, CDM-VAL, CDM-VER, CDM-TL, CDM-FIN-EXP
VCS-VAL, VCS-VER, VCS-TL
GS-VAL, GS-VER, GS-TL
SCS-VAL, SCS-VER, SCS-TL

per le seguenti aree tecniche:
for the following technical areas:

1.2, 13.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Energy generation from renewable Energy sources	1
13.1	Waste Handling and Disposal	13

in accordo alle istruzioni della Divisione Certificazione.
in accordance with the instructions of the Certification Division.

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	18-01-10	-
1	03-05-10	Annual Revision
2	18-10-10	Changes in certificate module
3	04-01-11	Removed TAs taken through the ETS/EPD verifications/validations
4	17-03-11	Changes due to new accreditation standard
5	14-07-11	Annual Revision

Il Responsabile di Schema
Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

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