FINAL VALIDATION REPORT
for the CDM Programme of Activities

Philippines Mini-Hydro PoA

Report No. 01 997 9105066669

Version No. 02, 28-11-2012

Designated Operational Entity (DOE)

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I. Programme of Acitivities (PoA) Description:

PoA title: **Philippines Mini-Hydro PoA**

Host Country: **Philippines**

Methodology: AMS-I.D Version 17 ☐ Large Scale ☒ Small Scale

Annual average emission reductions (estimate): Not applicable to the PoA

GHG reducing measure/technology: Hydropower

Party	Project Participants	Party considered a project participant
Philippines (Host)	Public entity: Land Bank of the Philippnes (LBP)	No
Germany (Annex 1)	Public entity: Kreditanstalt für Wiederaufbau (KfW)	No

Generic CPA title	CPA-[add number] [Project Name] under Philippines Mini-Hydro PoA
Real-case CPA title	CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA
Location	Municipality of Sebaste, Province of Antique, Island of Panay
CPA Implementer	Antique Electric Cooperative, Inc. (ANTECO)
To be project participants	Not indicated
Annual average emission reductions (estimate)	2,000 tCO_2e annum with 10-year fixed crediting period

II. Validation:

Contract party: Kreditanstalt für Wiederaufbau (KfW)

Validation Team			Role									
Full name	**Affiliation TÜV Rheinland**	**Appointed for Sectoral Scopes (Technical Areas)**	Team leader	Acting Team Leader	Local Expert	Team Member (Auditor)	Technicla Expert	Acting Tech. Expert	Trainee Auditor	Technical Reviewer	Expert to TR	Trainee TR
Ms. Nelly Yong Tau Lan	Malaysia	1, 5, 11, 12, 13	X									
Mr. Azizan Zakaria	Malaysia	5, 11, 12, 13				X						
Ms. Melody O. Mokamad	Philippines	N/A			X							
Dr. Lixin Li	China	1, 2, 3, 4								X		

Validation Phases:
- ☒ Desk Review
- ☒ Follow up interviews
- ☒ Resolution of outstanding issues

Validation Status:
- ☐ Corrective Actions / Clarifications Requested
- ☒ Full Approval and Submission for Registration
- ☐ Rejected

III. Validation Report:

Report No.:	Current revision No.:	Date of current revision:	Date of first issue:
01 997 9105066669	**02**	**28-11-2012**	**26-11-2011**

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Final approval:	Released on:	Designated Operational Entity (DOE):
☒	**10-12-2012** **By: Mr. Praveen Nagaraje Urs**	**TÜV Rheinland (China) Ltd.** Unit 707, AVIC Building, No. 10B, Central Road, East 3rd Ring Road, Chaoyang District, Beijing 100022, People's Republic of China Tel.: 0086-10-6566-6667 E-mail: ghg-doe@bj.chn.tuv.com

Executive Summary – Validation Opinion

The validation team assigned by the DOE (TÜV Rheinland (China) Ltd.) has performed the validation of "Philippines Mini-Hydro PoA" on the basis of UNFCCC criteria for Clean Development Mechanism (CDM) programme of activities according to Article 12 of the Kyoto Protocol and the subsequent decisions by the COP/MOP and CDM Executive Board with regard to the simplified modalities and procedures for small-scale CDM project activities, the procedures for registration of a programme of activities and the application of approved methodologies. The validation findings are summarized in the validation report and the validation protocol.

The review of the Programme design documentations (i.e. PoA-DD, CPA-DD and real-case CPA-DD) and the subsequent follow-up interviews have provided the DOE with sufficient evidence to determine the fulfilment of stated criteria.

The validation was executed in the following steps so far:

- Desk review of GSP documents:
  - PoA-DD, Version 4 dated 23-09-2011
  - Specific CPA-DD, Version 1 dated 23-09-2011
  - Generic CPA-DD, without version and effective date
- Public stakeholder comment process (01-10-2011 to 30-10-2011)
- On-site visit with stakeholder interviews (25-10-2011 to 27-10-2011)
- Issue of checklist with corrective action requests (CARs) and clarification requests (CLs) and the draft validation report & protocol
- Desk review of revised DDs:
  - PoA-DD, Version 10.0 dated 15-10-2012
  - Specific CPA-DD, Version 10.0 dated 15-10-2012
  - Generic CPA-DD, without version and effective date
- Desk review of revised PoA-DD, CPA-DD and specific CPA-DD (new version)
- Review of proposed corrections and clarifications
- Issue of the final validation report & protocol

According to the web hosted PoA-DD, the programme is a bilateral PoA. The host country is Philippines. The LoA from the Philippines DNA (Department of Environment & Natural Resources), has been received & confirmed the voluntary participation of Land Bank of the Philippines (LBP) in achieving sustainable development. Similarly, the LoA for confirming Kreditanstalt für Wiederaufbau (KfW) as the project participant from the DNA of Germany (German Emissions Trading Authority) has been received as well

The validation did not reveal that the proposed PoA receives public funding from several sources. Supporting information for the public funding /P16/ has been provided to the validation team

The CDM programme activities under the PoA had correctly applied the approved methodology AMS-I.D "Grid Connected Renewable Electricity Generation" Version 17 /B04/ and the following methodology tools were applied:

1. Tool to calculate the emission factor for an electricity system /B05/

For demonstrating the additionality at CPA level, a CPA either applies " Guidelines on the Demonstration of Additionality of Small-Scale Project Activities, Version 09.0, EB 68, Annex 27" /B24/ or "Guidelines For Demonstrating Additionality Of Microscale Projects Activities, Version 03, EB 63, Annex 23" /B23/.

It is demonstrated that the PoA is not a baseline scenario. In the absence of the PoA, the baseline scenario will remain unchanged. Emission reductions attributable to a programme acitivity included to the PoA are hence expected to be additional to any that would occur in the absence of the programme activity provided that the PoA meets the requirements for demonstrating additionality established in the PoA-DD.

Monitoring plan and procedures have been presented in the PoA-DD in accordance with AMS-I.D, Version 17 /B04/. Relevant CDM training will be started before each CPA operation. Training plans and schedules /P17/ about CDM monitoring and technical aspects are available at the time of on site validation.

In summary, all of the corrective action requests and clarification requests have been resolved and reflected in the updated POA-DD, generic CPA-DD & specific case CPA-DD
It is the validation team's opinion that the PoA, "Philippines Mini-Hydro PoA", as described in the PoA-DD, CPA-DD and specific case CPA-DD, meets all the relevant UNFCCC requirements for a PoA under the CDM and relevant host country criteria, and correctly applies the baseline and monitoring methodology AMS-I.D, Version 17 as detailed in the report. The validation team therefore recommends the proposed programme activity to be registered as a CDM Programme of Activities with the UNFCCC

Abbreviations

AMS	Approved Methodology Small scale
BE	Baseline Emission
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CPA	CDM Programme activity
CPA-DD	CDM Programme Activity Design Document
CER	Certified Emission Reduction
CL	Clarification Request
CME	Coordinating / Managing Entity
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DNA	Designated National Authority
DENR	Department of Environment & Natural Resources
DR	Document Review
EB	Executive Board
EIA	Environmental Impact Assessment
ER	Emission Reduction
ERPA	Emission Reduction Purchase Agreement
FAR	Forward Action Request
FSR	Feasibility Study Report
GHG	Greenhouse Gas
GWh	Giga Watt Hours
I	Interview
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
kW	Kilo Watt
kWh	Kilo Watt Hours
L_y	Leakage
LBP	Land Bank of the Philippines
LoA	Letter of Approval
LoE	Letter of Endorsement
MHP	Mini Hydropower Plant
MOA	Memorandum of Agreement
MoV	Means of Verification
MW	Mega Watt
MWh	Mega Watt Hours
NGO	Non Government Organisation
NOx	Nitrogen Oxides
ODA	Official Development Assistance
OSV	On Site Visit
PE	Project Emission
PIN	Project Information Note
PoA	Programme of Activities
PoA-DD	Programme of activities design document
PP	Project Participant
SA	Sensitivity Analysis
SO_2	Sulphur Dioxide
SD	Sustainable Development
t	Tonne
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 INTRODUCTION

KfW had commissioned the DOE, TÜV Rheinland Japan Ltd (now known as TÜV Rheinland (China) Ltd.) to perform a validation of the proposed CDM Programme of Activities (PoA) “Philippines Mini-Hydro PoA”, (hereafter called “the PoA”). This report summarises the findings of the validation of the PoA identified in the PoA Design Document (PoA-DD), the CDM Programme Activity Design Document (CPA-DD) template with generic information relevant to all CDM Program Activities (CPAs) to be included in the PoA, and the associated specific CPA-DD. The validation was performed on the basis of UNFCCC criteria for the PoAs under the CDM, as well as the criteria given to provide for consistent programme operations, monitoring and reporting. The term ”UNFCCC criteria” refers to Article 12 of the Kyoto Protocol, the CDM modalities and procedures, the simplified modalities and procedures for small-scale CDM project /programme activities, the procedures for registration of a programme of activities and the subsequent decisions by the CDM Executive Board.

1.1 Objective

The purpose of a validation is to have an independent third party assess the PoA-DD, CPA-DD template and the associated specific CPA-DD. In particular, the eligibility criteria for inclusion and demonstration of additionality of PoA and associated CPAs, the programme’s baseline determination, monitoring plan, and the programme’s compliance with relevant UNFCCC and host Party criteria are validated in order to confirm that the programme design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all CDM PoAs and is seen as necessary to provide assurance to stakeholders of the quality of the programme and its intended generation of certified emission reductions (CERs).

1.2 Scope

The validation scope is defined as an independent and objective review of the PoA-DD, CPA-DD template and the completed CPA-DDs. The PoA-DD, CPA-DD template and the completed CPA-DDs were reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords, the simplified modalities and procedures for small-scale CDM project/ programme activities, the procedures for registration of a programme of activities as a single CDM project activity and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology AMS-I.D /B04/

The validation team has, based on the recommendations in the Validation and Verification Manual employed a rules-based approach, focusing on the requirements of the EB’s VVM for project implementation and the generation of CERs.

The validation is not meant to provide any consulting towards the coordinating/managing entity and participants of small-scale CDM-PoA. However, stated requests for clarifications, corrective actions, and/or forward actions may provide input for improvement of the programme design.

2 METHODOLOGY

The validation consists of the following four phases:

I a desk review of the PoA-DD, CPA-DD template and the completed CPA-DD;
II global publication of the programme design documents (PoA-DD, CPA-DD and completed CPA-DD) in UNFCCC;
III on-site visit and follow-up interviews with programme stakeholders
IV the resolution of outstanding issues and the issuance of the final validation report and opinion.

The following sections outline each step in more detail.

2.1 Desk Review of the Programme Design Documentation

Table 1: This table outlines the documentation reviewed during the validation

Documents provided by the project participant(s):

/P01/	PoA-PDD [initially published version], Version 4, Date: 23-09-2011 Specific CPA-DD [initially published version], Version 1, Date: 23-09-2011 Generic CPA-DD [initially published version], without version and effective date
/P02/	PoA-PDD [final version], Version 10.0, Date: 15-10-2012 Specific CPA-DD [final published version], Version 10.0, Date: 15-10-2012 Generic CPA-DD [final published version], without version and effective date
/P03/	Host Country Approval / Letter or Approval: Philippines, DNA: Department of Environment & Natural Resources Reference number : EMB [POA-LOA-2012-117-ER038, Date: 23-07-2012
/P04/	Annex 1 Party Letter or Approval: Germany, DNA : German Emissions Trading Authority, Date: 09-08-2012
/P05/	Modalities of Communication, signed on 16 October 2012
/P06/	Financial Calculation Excel Spreadsheet, undated
/P07/	Emission Reduction Calculation Excel Spreadsheet, undated
/P08/	Comprehensive Feasibility Study Final Report, July 2010 http://www.vergel3consult.com/aboutus.htm - website address of the FSR consultant who prepares & calculate the plant load factor
/P09/	Renewable Energy Act of 2008
/P10/	Mini-Hydroelectric Power Incentives Act of 1990 (Republic Act No. 7156)
/P11/	Philippine Power Statistics published by the Philippine Department of Energy, on http://www.doe.gov.ph/EP/Powerstat.htm
/P12/	Grid Emission Factor Calculation Excel Spreadsheet, undated
/P13/	13.1) Application letter submitted by ANTECO to the Department of Environment & Natural Resources (Request for the Issuance of Certificate of Non-Coverage (CNC)) for Carit-an Mini-Hydro Power Project, dated 18 November 2010 13.2) Reply letter received by ANTECO from the OIC-Regional Director of Environmental Management Bureau, regarding request for a Certificate of Non-Coverage (CNC) for Carit-an Mini-Hydro Power Project, dated 28 December 2010
/P14/	Certificate of Non-Overlap, National Commission On Indigenous Peoples Region VI/VII, Republic of the Philippines, dated 11 April 2011
/P15/	Stakeholder consultation attendance list, dated 01 September 2011
/P16/	Certification declaration letter, The Land Bank of Phillippines, dated 9 December 2011
/P17/	Training plan for Clean Development Mechanism (CDM) POA and Project Activity Monitoring System for Minihydro Project
/P18/	Official confirmation letter of the mini hydropower plant owner dated 14 October 2011.
/P19/	Environmental Compliance Certificate ref. no ECC-R6-1202-058-4300 & ECC-R6-1202-059-

	4300 dated 13 March 2012 issued for Upper Carit-an & Lower Carit-an by Department of Environment & Natural Resources, Environmental Management Bureau
/P20/	Presidential Decree No. 1586, Establishing An Environmental Impact Statement System Including Other Environmental Management Related Measures And For Other Purposes (1978)
/P21/	Revised Procedural Manual for the DENR Administrative Order 2003-30 (DAO 2003-30)
/P22/	Memorandum of Agreement For The Intent To Purchase to Purchase and Sell Certified Emissions Reductions from Antique Electric Cooperative Inc's (ANTECO), 2.3 MW Ipayo & Carit-an Mini-Hydropower Projects, signed on 29 September 2011
/P23/	Stakeholder meeting presentation materials for Carit–an Mini-Hydropower Plant, Municipality of Sebaste, dated 01 September 2011
/P24/	Stakeholder minute of meeting / list of stakeholders who raised question for Carit–an Mini-Hydropower Plant, Municipality of Sebaste, dated 01 September 2011
/P25/	Stakeholder meeting invitation letter etc for Carit–an Mini-Hydropower Plant, Municipality of Sebaste
/P26/	Official confirmation from Land Bank of the Philippines, regarding no public funding / ODA received, dated 09 December 2011 Official confirmation from ANTECO, regarding no public funding / ODA received, dated 01 December 2011
/P27/	CPA Inclusion agreement between Land Bank of Philippines & ANTECO dated 09 December 2011
/P28/	Carbon Support Finance Facility dated 24 November 2010
/P29/	Monitoring Manual for Philippines Mini-Hydro PoA For Project Owners, Version 0.8
/P30/	Hydropower Service Contract between Department of Energy and ANTECO, 8 June 2010
/P31/	The FIT report entitled "Representative Hydro Power Project in the Philippines: Financial Model for FIT calculation: Agos-11" prepared by NREB (National Renewable Energy Board)
/P32/	The Energy Regulatory Commission proceeding approval on the FIT report – Petition To Initiate Rule Making for The Adoption Of the Feed-In Tariff for Electricity Generated From Biomass, Ocean, Run of River Hydropower, Solar and Wind Energy Resources, by NREB (National Renewable Energy Board), dated 9 Nov 2011
/P33/	IGES CDM Investment Analysis Database, as of 22-07 2012 CDM Pipeline list in http://cd4cdm.org/ website as 25-06 2012
/P34/	Overview of mini and small hydropower in Southeast Asia, Nathaniel C. Domingo, Fidelpio V. Ferraris, Prof. Rowaldo R. Del Mundo
/P35/	Department Circular No. DC2009-05-0008 Department of Energy, Rules and Regulations Implementing Republic Act No.9513, year 2008
/P36/	Revenue Code of the Municipality of Sebaste - 0.5% local tax rate, Order No. 2008-01
/P37/	Philippines Power Statistics Data supplied by Department of Energy of the Philippines, Year 2010
/P38/	Emission Reduction Purchase Agreement Contract between Land Bank of the Philippines & KfW, dated 20 September 2011
/P39/	Risk Asset Acceptance Criteria (RAAC) Internal Credit Risk Rating System Borrower Risk Rating (BRR) Sheet
/P40/	Overview of mini and small hydropower in Southeast Asia, Nathaniel C. Domingo, Fidelpio V. Ferraris, Prof. Rowaldo R. Del Mundo
/P41/	Philippines Renewable Energy Report, Asian and Pacific Centre for Transfer of Technology Of the United Nations – Economic and Social Commission for Asia and the Pacific (ESCAP)

Background investigation and other referred documents/websites:

/B01/	Clean Development Mechanism Validation and Verification Manual, Version 01.2	
/B02/	/B02.1/	UNFCCC, Small-Scale CDM Programme of Activities Design Document form (CDM-SSC-PoA-DD), Version 01, EB33, Annex 43
	/B02.2/	UNFCCC, Small-Scale CDM Programme Activity Design Document form (CDM-SSC-CPA-DD), Version 01, EB33, Annex 44
/B03/	Web sites referred *www.**ipcc**.ch (for referring Emission factors)* http://cdmdna.emb.gov.ph/cdm/public/cdm-home.php?main=home (for validating the Host Country Approval) http://www.doe.gov.ph *(*for referring to information related to energy plans in Philippines) http://www.dehst.de/EN/Home/home_node.html (for validating the Annex 1 Country approval) http://cdm.unfccc.int (for referring to applicable latest guidelines)	
/B04/	Approved Baseline & Monitoring Methodology: AMS-I.D, "Grid connected renewable electricity generation", Version 17	
/B05/	Tool to calculate the emission factor for an electricity system, Version 02.2.1, EB63, Annex 19	
/B06/	Tool to calculate project or leakage CO2 emissions from fossil fuel combustion", Version 02, EB 41, Annex 11	
/B07/	Glossary of CDM Terms Version 07.0	
/B08/	Guidelines On The Assessment Of Investment Analysis Version 05, EB 62, Annex 5	
/B09/	Tool to determine the remaining lifetime of equipment, Version 01 EB50	
/B10/	Guidelines For The Reporting And Validation of Plant Load Factors, Version 01, EB 48, Annex 11	
/B11/	Guidelines On The Demonstration And Assessment Of Prior Consideration Of The CDM, Version 04, EB 62, Annex 13	
/B12/	General Guidelines to SSC CDM methodologies, EB 61, Annex 21	
/B13/	Guideline on Assessment of Debundling For SSC Project Activities, Version 03, EB 54, Annex 13	
/B14/	Standard For Demonstration of Additionality, Development of Eligibility Criteria and Application of Multiple Methodologies For Programme of Activities, Version 01.0, EB 65, Annex 3 *Remarks: At the time of validation finalization in October 2012 for the PoA-DD, Generic CPA-DD & Specific CPA-DD, this standard is now applicable & the previous version is no longer applicable - see Item B20 below* *However, at the time for submission for registration, in response to EB 70, this standard is no longer applicable – see Item B26 below*	
/B15/	Procedures for Registration of a Programme of Activities as a Single CDM Project Activity and Issuance of Certified Emission Reductions for a Programme of Activities", Version 04.1, EB 55, Annex 38	
/B16/	Clarifications Regarding The Procedures For Registration of a Programme of Activities as a Single CDM Project Activity and Issuance of Certified Emission Reductions for A Programme of Activities, Version 01, EB 60, Annex 26	
/B17/	Procedures for Review of Erroneous Inclusion of a CPA, Version 03, EB 61 Annex 22	
/B18/	Guidelines for Demonstrating Additionality of Renewable Energy Projects =< 5 MW and Energy Efficiency Projects with Energy Savings <= 20 GWH per year, Version 01, EB54, Annex 15.	
/B19/	Non-binding best practice examples to demonstrate additionality for SSC project activities, EB 35, Annex 34	

/B20/	Standard For The Development Of Eligibility Criteria For The Inclusion Of A Project Activity As A CPA Under The PoA, Version 01.0., EB 63 Annex 3
/B21/	General Guidelines For Sampling And Surveys For Small Scale CDM Project Activities, Version 01, EB 50 Annex 30
/B22/	Standard For Sampling And Surveys For CDM Project Activities And Programme Of Activities, Version 03.0, EB 69, Annex 4
/B23/	Guidelines For Demonstrating Additionality Of Microscale Projects Activities, Version 03, EB 63, Annex 23
/B24/	Attachment A of Appendix B, Version 08, Annex 24
/B25/	Guidelines on the Demonstration of Additionality of Small-Scale Project Activities, Version 09.0, EB 68, Annex 27
/B26/	Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70

2.2 Follow-up Interviews with Programme Stakeholders

Table 2: The following table identifies the personnel who have been interviewed and/or provided additional information to the presented documentation:

	Date	Name	Organization	Topic
/I01/	25-10-2011	Prudencio E. Calado III, Department Manager	Land Bank of the Philippines	▪ Management interview - CME: Landbank of the Philippines • Programme description (by the CME) & discussion on the stated goal & policy, voluntary action; general operating & implementing framework of PoA • Review of PoA-DD, CPA-DD template, CPA-DD Case 1 • Project technology description • Baseline determination for a typical CPA & real case CPA of the PoA • Applicability of applied baseline & monitoring technology • Eligibility criteria & inclusion of a typical CPA & real case CPA of the PoA • Additionality justification on PoA level & on typical CPA level including the real case CPA • Monitoring plan assessment (including monitoring equipment, monitoring plan & data recording system / database, record keeping) • Calculation information check & confirmation of baseline emissions & ER amount • Local stakeholder consultation (both on PoA level & real case CPA) • EIA done at CPA level including statutory clearances required for the implementation of CPA • Double counting & de-bundling check
		Josefina A. Ramos Head, Environmental Program Management Unit	Land Bank of the Philippines	
		Jose Pepito B. Gupo, Account Officer	Land Bank of the Philippines	
		April Grace C. Santiago, Accounts Management Specialist	Land Bank of the Philippines	
		Magdalena Sanchez Duran, Project Manager, KfW Carbon Fund	KfW	
		Olga Caday-Asana, Local Expert, KfW Development Bank	KfW	
		Bamshad Houshyani, Consultant	Climate Focus	
		Susana E. Chua, Consultant	Climate Focus	
		Manuel M. Vergel III, Managing Principal and Chief Consultant	Vergel3 Consult	• Feasibility Study Report • Statutory clearances requirements for hydropower project • Plant load factor determination • Competency requirement for 3rd party company preparing feasibility study report

/I02/	26-10-2011	Albert Altarejos Magalang, Head, Climate Change Office	DNA for CDM, Department of Environment and Natural Resources, Environmental Management Bureau, Philippines	▪ LoA ▪ PoA implementation in Philippines ▪ Regulatory requirements / policies • Sustainable development criteria • Philippine Energy Plan • Renewable Energy in Philippines • Calculation of emission factors according to the "Tool to calculate the emission factor for an electricity system"
		Marissa P. Cerezo, OIC – Assistant Director, Renewable Energy Management Bureau	Department of Energy, Energy Center	
		Ronnie N. Sargento, Chief SRS (Science Research Specialist) & Project Manager, UNDP-CBRED	Department of Energy – hydropower & Ocean Energy Management Division	
		Ricardo Yambao, SRSII	Department of Energy	
/I03/	27-10-2011	Ludovico D. Lim, General Manager, ANTECO	Antique Electric Cooperative, Inc. (ANTECO)	▪ Confirmation of site location ▪ Facility check ▪ Project design & process flow ▪ Technology used ▪ Environmental & social impacts ▪ Interview with representative of local villagers for public consultation. ▪ Interview with representative of local villagers living nearby the project site ▪ Representative of local government to interview about local regulations for land acquisition / environment
		Isabelo P. Bulos, Vice Mayor	Municipality of Sebaste	
		Prudencio E. Calado III, Department Manager	Land Bank of the Philippines	
		Josefina A. Ramos Head, Environmental Program Management Unit	Land Bank of the Philippines	
		Roy C. Gonzaga, LBP Account Officer	Land Bank of the Philippines	
		Magdalena Sanchez Duran, Project Manager, KfW Carbon Fund	KfW	
		Bamshad Houshyani, Consultant	Climate Focus	
		Susana E. Chua, Consultant	Climate Focus	
		Romeo Manolo, Village Chief	Punong Barangay Abiera	
		Nelly Baliguat	Local villager	
		Caudekna Aloyado	Local villager	
		Eufnoano A. Casuyong	Local villager	

2.3 Resolution of Outstanding Issues

The objective of this phase of the validation is to resolve any outstanding issues which need be clarified prior to TÜV Rheinland's conclusion on the PoA design. In order to ensure transparency a validation protocol is customised for the programme. The protocol shows in transparent manner criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organises, details and clarifies the requirements a CDM PoA is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The validation protocol consists of three tables. The different columns in these tables are described in the figure below. The completed validation protocol for the PoA is enclosed in Appendix A to this report.

Findings established during the validation can either be seen as a non-fulfilment of CDM criteria or where a risk to the fulfilment of programme objectives is identified. Corrective action requests (CAR) are issued, where:

i) mistakes have been made with a direct influence on programme results;
ii) CDM and/or methodology specific requirements have not been met; or
iii) there is a risk that the programme would not be accepted as a CDM PoA or that emission reductions will not be certified.

A request for clarification (CL) may be used where additional information is needed to fully clarify an issue.

A forward action request (FAR) may be raised to highlight issues related to the PoA implementation that require review during the first verification.

Validation Protocol Table A: Mandatory Requirements for CDM Programme of Activity		
Requirement	***Reference***	***Conclusion***
The requirements the programme must meet.	*Gives reference to the legislation or agreement where the requirement is found.*	*This is either acceptable based on evidence provided (**OK**), a **Corrective Action Request (CAR)** of risk or non-compliance with stated requirements or a request for **Clarification (CL)** where further clarifications are needed.*

Validation Protocol Table B: Requirement checklist				
Checklist Question	***Reference***	***Means of verification (MoV)***	***Comment***	***Draft and/or Final Conclusion***
The various requirements in Table 1 are linked to checklist questions the programme should meet. The checklist is organised in different sections, following the logic of the small-scale PoA-DD/ CPA-DD templates, version 01. Each section is then further sub-divided.	*Gives reference to documents where the answer to the checklist question or item is found.*	*Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.*	*The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.*	*This is either acceptable based on evidence provided (**OK**), or a **corrective action request (CAR)** due to non-compliance with the checklist question (See below). A request for **clarification (CL)** is used when the validation team has identified a need for further clarification.*

Validation Protocol Table C: Resolution of Corrective Action and Clarification Requests				
CL/ CAR No.	***Observations***	***Reference***	***Summary of project owner response***	***Validation team conclusion***
CL/ CAR XX	*If the conclusions from the draft Validation are either a CAR or a CL, these should be listed in this section.*	*Reference to the checklist question number in Table A and B where the CAR or CL is explained.*	*The responses given by the project participants during the communications with the validation team should be summarised in this section.*	*This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table A and B, under "Final Conclusion".*

Figure 1. Validation protocol tables

2.4 Internal Quality Control

The validation report including the validation findings undergo a technical review before requesting registration of the PoA. The technical review will be performed by a technical reviewer qualified in accordance with TÜV Rheinland's qualification scheme for CDM validation and verification.

2.5 Validation Team

Verification Team			Type of Involvement						
Full name	**Affiliation TÜV Rheinland**	**Appointed for Sectoral Scopes (Technical Areas)**	Supervising the work	Desk review	Site Visit + Interview	Report and protocol Writing	Technical Expert Input	Reporting Support	Technical Reviewer
Ms. Nelly Yong Tau Lan	Malaysia	1, 5, 11, 12, 13		X	X	X			
Mr. Azizan Zakaria	Malaysia	5, 11, 12, 13		X	X			X	
Ms. Melody O. Mokamad	Philippines	-			X				
Dr. Lixin Li	China	1, 2, 3, 4							X

3 VALIDATION FINDINGS

The findings of the validation are stated in the following sections. The validation criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A.

The final validation findings relate to the programme design as documented and described in the revised and resubmitted SSC-PoA-DD and SSC-CPA-DD and completed SSC-CPA-DD.

3.1 Approval and Participation

Validation Opinion:

VVM paragraph 44 to 54

According to the PoA-DD, the proposed programme is a bilateral CDM PoA which involves 2 project participants: Land Bank of the Philippines from Philippines which is the host party and Kreditanstalt für Wiederaufbau (KfW) which are from the Annex 1 country.

Land Bank of the Philippines (LBP), which acts as the coordinating / managing entity of the SSC-PoA. The host party, i.e. Philippines meets all relevant participation requirements in CDM.
LoAs from host country & Annex 1 country have been received by the validation team

According to Section A.4.5, Annex 2 of the PoA-DD and the on-site interview with the representative from Land Bank of the Philippines, there is no public funding will be received. A certification letter from LBP dated 09-12-2011 /P16/ confirming there is no public funding received from Annex 1 country & the project will be funded by LBP

Table 4: The below table summarizes the project participant and party involved.

Project participants	Land Bank of the Philippines	Kreditanstalt für Wiederaufbau (KfW)
Parties involved	Philippines (Host)	Germany (Annex I)
APPROVAL	Department of Environment & Natural Resources	German Emissions Trading Authority
LoA received	Yes	Yes
Date of LoA	23-07-2012	09-08-2012
Reference to document	EMB [POA-LOA-2012-117-ER038	Not allotted
LoA received from	PP	PP
Validation of authenticity	The received original copy of the LoAs from the project participants were compared with LoA of those registered CDM projects which have the same DNA. The LoAs were compared on the alignment, the standard format and signatory of the person who issued the letter & confirmed to be same. The validation team has confirmed these LoAs are authentic. The authenticity of the letter of approval issued by Philippines DNA /P03/ have been further cross-checked by referring web site http://cdmdna.emb.gov.ph/cdm/public/cdm-ph-phprojects.php?main=cdmph&sub=phprojects# /B03/, on which the CDM projects approved by Department of Environment & Natural Resources (=DNA of Philippines) is published. The same has been cross checked for German LoA by referring to the German DNA website https://www.jicdm.dehst.de/promechg/pages/project1.aspx /B03/ & found the project is listed The letter(s) of approval was also found to be unconditional with respect to paragraph 45 (a) to (d) of Validation and Verification Manual Version 01.2 EB 55 Annex 1 /B01/. The validation team concluded that these letter(s) are in accordance with paragraphs 45 - 48 of Validation and Verification Manual Version 01.2 EB 55 Annex 1 /B01/	
Validity of LoA	Not specified	Not specified
PARTICIPATION		
Party is party to Kyoto Protocol	Yes, ratified since 20 Nov 2003	Yes, ratified since 31 May 2002
Voluntary participation	Yes	Yes
Diversion of official development aid towards host country	Yes	Yes
Programme contribution to SD	N/A	No

Confirmation of MoC

The project MoC /P05/, was received from the host PP. The validation team confirmed that the authorized signatories in the MoC are the same as in the LoAs /P03, P04/ for host & Annex 1 party respectively. The name of the contact person mentioned in the MoC is also consistent with the final PDDs /P02/.

3.2 Programme of Activities Design Documents

Validation Opinion:

VVM paragraph 55 to 57

The validation team validated that the provided PoA-DD /P01/, generic CPA-DD /P02/ and completed specific case CPA-DD /3/ are based on the currently valid PoA-DD template /B02/ and CPA-DD template /B02/.

3.3 Programme Description

Validation Opinion:

VVM paragraph 58 to 64

The Coordinating/Managing Entity (CME) of the PoA is the Land Bank of the Philippines (LBP), functioned as a commercial bank. According to the PoA-DD Section A.2, the CME supports the programme beyond the coordination of the CDM component, as it also provides financing to participating entities in the form of loans. LBP decision on developing the "Philippines Mini-Hydro PoA" rather than a regular CDM mini-hydro project lies on the fact that a PoA aggregates many small project units over time under a common umbrella. It gives small and dispersed activities and projects, which would not be feasible under the traditional stand-alone approach, a chance to participate and benefit from the CDM in a complete voluntary base. This PoA is part of a voluntary initiative on LBP's side to catalyze clean technology investments in the country through CDM. This initiative was commenced in November 2006 through the establishment of LBP's Carbon Finance Support Facility (CFSF).

According to the PoA-DD, the goal of the "Philippines Mini-Hydro PoA" is to implement small scale hydropower plants in the Philippines and displace fossil-fuel based electricity generation.
Eligibility is size-limited to projects of a maximum of 15 MW. This includes both micro- and mini-scale hydropower plants. This is in-line with the threshold defined under the PoA's eligibility criteria. According to the definition of the Philippine Department of Energy, mini-hydropower plants are in the range of 101 kW – 10 MW, and micro-hydropower plants are 100 kW and below. This is confirmed to be correct upon reviewing the published information in the website i.e. http://www.investphilippines.gov.ph/downloads/sector/Renewable%20Energy.pdf

Based on the document review & on site interviews with the representatives from the DNA for CDM, Department of Environment and Natural Resources, Environmental Management Bureau, Philippines & Department of Energy /I02/, the validation team could confirm that there are no mandatory regulations on the development of small scale hydropower plants in Philippines. The validation team also was able to confirm the statements where currently in Philippines, there is a large potential for the development of mini-hydropower, which is largely untapped due to investment problem. The main barrier to the investment in the hydropower plants is the access to loans.
The validation team was also able to confirm during the interview that in the absence of the CDM, the current regulations in Philippines would not be changed & the CPAs under the PoA cannot be launched. The validation team confirmed during the interview with the representatives from the DNA for CDM, Department of Environment and Natural Resources, Environmental Management Bureau, Philippines & Department of Energy that the PoA implementation would contribute towards sustainable development in Philippines

The location of the PoA is in Philippines. According to the PoA-DD, the database of all plants would be maintained by CME. As shown in the CPA-DD, a unique identification has been allotted to the 1st CPA i.e. CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA". During on site visit, the validation team had decided to abort the plan to visit the planned project site for CPA-1 due to safety reason & no access road available yet in order to reach the project site. It has been confirmed by the validation team via interview with the village head & local villagers that there is no any construction works

started yet. The validation team was able to verify the project site coordinates clearly as stated in the Comprehensive Feasibility Study Final Report, July 2010 /P08/, Chapter 1 – Development Plan. The coordinates verified are as follows:

Location	Latitude	Longitude
Weir site	N 11.5624	E 122.1277
Power House	N 11.5664	E 122.1150

For the technology or measures to be employed by each CPA, the validation team had found that the PoA-DD had mentioned that the technology used in the PoA is run-of-river mini-hydropower plants up to 15 MW installed capacity.

The run-of river hydropower plant will consists of:

1. Dam spillway, to divert a portion of river flow to the powerhouse;
2. Headrace and penstock to convey water-flow to the turbines;
3. Powerhouse to convert water flow into electric power through the use of turbines and generators;
4. Switchyard to connect power generated at the powerhouse to the grid; and
5. Transmission line to connect the switchyard to the grid

According to the PoA-DD, the typical CPA would comprise of one or more hydroelectric power plants/units either with a run-of-river reservoir, an accumulation reservoir that:
(a) Install a new power plant at a site where there was no hydro power plant operating prior to the implementation of the project activity (Greenfield plant);
(b) Involve a capacity addition;
(c) Involve a retrofit of (an) existing plant(s); or
(d) Involve a replacement of (an) existing plant(s).

According to the PoA-DD, the starting date of the PoA is 01 October 2011. The start date of the PoA was determined as the date of publication of the PoA-DD for global stakeholder consultation. The length of the PoA is taken as 28 years.

Specific CPA:

The following description of specific CPA-DD was verified during the on site validation:

Items	Means of validation & conclusion
Project Name	CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA This is consistent with the webhosted specific case CPA-DD & also the FSR /P08/
Project owner / CPA Implementer	Antique Electric Cooperative, Inc. (ANTECO) This is consistent with the webhosted specific case CPA-DD & also the FSR /P08/
Installation capacity	840 kW This is consistent with the FSR /P08/
Location	Municipality of Sebaste, Province of Antique, Island of Panay This is consistent with the FSR /P08/
Geographic Coordinates	Weir structure: N 11.5624 and E 122.1277 Powerhouse: N 11.5664 and E 122.1150

	This is consistent with the FSR /P08/
Type of hydropower project	Grid-connected run-of-river hydropower plant without a reservoir. This is consistent with the FSR /P08/
Project design & equipment	According to the specific case CPA-DD, the project has an installed capacity of 840 kW, consisting of 2*420 kW Impulse (Pelton) turbines. The plant employs a spillway weir of 2.5 m with sluice gates to flush of sediments and function as a secondary spillway. The weir is equipped with a fish pass channel to allow fish migration. The headrace line of the plant is about 1,200m. The plant has a separate powerhouse with a 1.25MVA outdoor substation to step up generator voltage from 0.48 to 13.2 Kv The information contained in the specific case CPA-DD has been confirmed to be consistent with the review of FSR /P08/ and also via interview with the technology provider who prepares the FSR /I01/
Annual power supply to the grid	4,301 GWh/yr This is consistent with the FSR /P08/
Plant load factor	58.6% This is consistent with the FSR /P08/. The FSR has been prepared by qualified 3rd party institute i.e. Vergel3 Consult, which in compliance with the requirements of Guidelines For The Reporting And Validation of Plant Load Factors, Version 01, EB 48, Annex 11 /B10/ According to the review of the 3rd party institute i.e. Vergel3 Consult website /P08/, it was found that it was registered with the Department of Trade and Industry (DTI) and the Bureau of Internal Revenue (BIR) as legally tax-paying engineering consulting firm
CPA starting date	According to the specific CPA-DD, the starting date of the CPA is expected to start on 01 January 2013 by making the investment decision and/or physical implementation. The validation team interviewed with the CPA implementer during on-site visit (OSV) and found that no contract was signed yet. In addition, the starting date is later than the commencement of validation of the PoA (i.e. GSP, 01 Oct 11 - 30 Oct 11) which fulfills the requirement of the procedure for registration of PoA EB 55, Annex 38 /B15/ paragraph 7(d). Thus, the validation team considers the starting date was correctly selected and transparently demonstrated.
Starting date of crediting period	10th January 2013 The starting date of the crediting period of the 1st CPA is 10 January 2013, i.e., the date of its inclusion in the registered PoA or any date thereafter and that the duration of the crediting period shall not exceed the end date of the PoA The expected starting date of crediting period fulfills the procedure for registration of PoA EB 55, Annex 38 /B15/ paragraph 7(c)
Type of crediting period	10 years The specific case CPA-DD mentioned that the duration of crediting period of any CPA shall be limited to the end date of the PoA regardless of when the CPA was added
CPA technical lifetime	The validation team has reviewed the Feasibility Study Report Chapter 8, Section 8.7 /P08/ & confirmed the operational lifetime of the CPA-1 will be 30 years

The information presented in the POA-DD, specific CPA-DDs on the technical design are consistent with the actual planning and implementation of the Programme of Activities as confirmed by the following means:

- An on-site visit has been performed and relevant stakeholder and personnel with knowledge of the project were interviewed.
- Cross checking the information presented in the PoA-DD, specific CPA-DD & the corresponding Feasibility Study Report

PoA-DD

Herewith, the validation team summarizes ***major*** changes between webhosted PoA-DD and final version of PoA-DD for submission as follows:

Subject	Webhosted PoA-DD	Correction to webhosted PoA-DD in the final PoA-DD submission for registration with DOE assessment and reason of acceptance.
PoA-DD (project title / participants involved/ project location /project technology etc.)	Philippines Mini-Hydro PoA	Remains unchanged
Methodologies and tools applied (scope and version numbers)	AMS-I.D Version 17 /B04/	Remains unchanged
CER calculations (formula applied / amount of emission reduction)	Formulae applied consistent with AMS-I.D Version 17 /B04/ The CER amount calculation is demonstrated at specific CPA-DD level	Remains unchanged
Additionality: (benchmark / input values / analysis type / project start date / IRR or NPV values etc.)	Demonstrated & defined as one of the eligibility criteria, as follows: Additionality is demonstrated on CPA-level. Each CPA has to determine additionality depending on its size and characteristics. To this end, the CPAs are classified into micro- and mini-scale projects. A: Micro-scale (≤5 MW) Will be demonstrated according to Guidelines For Demonstrating Additionality Of Microscale Project Activities, V02 B: Mini-scale (>5 MW) Will be demonstrated according to ”Attachment A to Appendix B of the simplified modalities and procedures for small- scale CDM project activities” that requests project participants to provide an explanation to show that the project activity would not have occurred anyway due to the existence of prohibitive barriers. For the demonstration of additionality the Annex 34 of EB 35 “Non-binding best practice examples to demonstrate additionality for SSC	Additionality approach remains unchanged But the guildelines have been updated to reflect the latest update as follows **Guidelines for demonstrating additionality of microscale project activities Version 04.0, EB 68, Annex 26 /B23/** *Remarks: At the time of validation finalization in September 2012 for the PoA-DD, Generic CPA-DD & Specific CPA-DD webhosting, this guideline is now applicable & the previous version is no longer applicable i.e.* Guidelines for demonstrating additionality of microscale project activity”, version 02, Version 02, EB 60, Annex 25 /B23/ **Guidelines on the Demonstration of Additionality of Small-Scale Project Activities, Version 09.0, EB 68, Annex 27 /B25/** *Remarks: At the time of validation*

	project activities" will be also used Benchmark value / Financial indicator , IRR / CPA Start Date = defined specifically in specific CPA-DD	*finalization in September 2012 for the PoA-DD, Generic CPA-DD & Specific CPA-DD webhosting, this guideline is now applicable & the previous version is no longer applicable i.e.* "Attachment A of Appendix B", version 08, Annex 24 of EB 63 /B24/
Monitoring (parameters / frequency)	EG_y $EF_{grid,CM,y}$ TEG_y A_{PJ} CAP_{PJ}	$EG_{BL,y}$ $EG_{export,y}$ $EG_{import,y}$ $EF_{grid,CM,y}$ TEG_y A_{PJ} CAP_{PJ}
Crediting period (type / start date)	This is defined in the Generic CPA-DD Section A.4.3.1 as follows: The crediting period starts on [dd/mm/yyyy] or the inclusion of the CPA, whichever occurs later.	Remains unchanged
Please refer to Appendix A of this report for details of each change between webhosted PoA-DD and the final PoA-DD for submission. The Validation Team has carried out the validation process based on the Webhosted PoA-DD and raised CARs/CLs against the project by issuing the validation protocol. With the updated information and corrections done on final PoA-DD, the PP has addressed all the CARs /CLs that were raised by the Validation Team. It is concluded that the Validation Team has reviewed the project in line with the VVM (version 01.2) and all the evidence, corrections, justifications and updating done on the final PoA-DD with respect to CARs /CLs raised are accepted and closed by the Validation Team, issuing the positive validation opinion for project registration.		

The validation team has confirmed that the project description of the project contained in the PoA-DD of Philippines Mini-Hydro PoA in Philippines to be complete and accurate. The PoA-DD of Philippines Mini-Hydro PoA in Philippines has complied with the relevant methodology, tools, forms and guidance at the time of PoA-DD submission for registration

CPA-DD

Herewith, the validation team summarizes ***major*** changes between webhosted CPA-DD and final version of CPA-DD for submission as follows:

Subject	Webhosted CPA-DD	Correction to webhosted CPA-DD in the final CPA-DD submission for registration with DOE assessment and reason of acceptance.
CPA-DD (project title / participants involved/ project location /project technology etc.)	CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA	Remains unchanged
Methodologies and tools applied (scope and version numbers)	AMS-I.D Version 17 /B04/	Remains unchanged
CER calculations (formula applied / amount of emission reduction)	20,945.8 tCO_{2e}	20,000 tCO_{2e}
Additionality: (benchmark / input values / analysis type / project start date / IRR or NPV	Additionality is demonstrated on CPA-level. B: Mini-scale (>5 MW)	Additionality approach remains unchanged

values etc.)	Will be demonstrated according to "Attachment A to Appendix B of the simplified modalities and procedures for small- scale CDM project activities" that requests project participants to provide an explanation to show that the project activity would not have occurred anyway due to the existence of prohibitive barriers. For the demonstration of additionality the Annex 34 of EB 35 "Non-binding best practice examples to demonstrate additionality for SSC project activities" will be also used Benchmark value = 17% Equity IRR = 15.89% CPA Start Date = The starting date of the CPA would be the implementation starting date of Carit-an MHP plant which will occur after the validation commencement	Benchmark value = 17% Equity IRR = 14.38% CPA Start Date = Expected 1st January 2013
Monitoring (parameters / frequency)	According to the PoA-DD Section E.7.1: EG_y $EF_{grid,CM,y}$ TEG_y A_{PJ} CAP_{PJ}	According to the PoA-DD Section E.7.1: $EG_{BL,y}$ $EG_{export,y}$ $EG_{import,y}$ $EF_{grid,CM,y}$ TEG_y A_{PJ} CAP_{PJ}
Crediting period (type / start date)	The crediting period of this CPA starts upon the registration of the PoA and the inclusion of the CPA whichever occurs later	The starting date of the crediting period of the CPA is 10 January 2013, i.e., the date of its inclusion in the registered PoA or any date thereafter and that the duration of the crediting period shall not exceed the end date of the PoA.
Please refer to Appendix A of this report for details of each change between webhosted PDD and the final PDD for submission. The Validation Team has carried out the validation process based on the Webhosted PDD and raised CARs/CLs against the project by issuing the validation protocol. With the updated information and corrections done on final PDD, the PP has addressed all the CARs /CLs that were raised by the Validation Team. It is concluded that the Validation Team has reviewed the project in line with the VVM (version 01.2) and all the evidence, corrections, justifications and updating done on the final PDD with respect to CARs /CLs raised are accepted and closed by the Validation Team, issuing the positive validation opinion for project registration.		

The validation team has confirmed that the project description of the project contained in the Specific CPA-DD of CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA to be complete and accurate. The CPA-DD of CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA has

complied with the relevant methodology, tools, forms and guidance at the time of CPA-DD submission for registration

3.4 Eligibility Criteria for CPA Inclusion

Validation Opinion:

VVM paragraph 167, 168

According to VVM paragraph 167, *"the DOE shall assess the specified eligibility criteria in the POA-DD in order to determine whether or not these criteria are sufficient to ensure that all CPAs would comply with the CDM requirements applicable to the PoA, these requirements will include inter alia the means of demonstrating the additionality of the CPA and the applicability of the applied methodology. The eligibility criteria represent an essential element of ensuring the smooth functioning or programmatic CDM, therefore the DOE may raise CARs which ensure the ease of application of the eligibility criteria "*

According to EB 65 meeting report paragraph 74, "*DOEs may upload for registration PoA-related PDDs in which the previous guidelines have been applied not later than the calendar day (24:00 GMT) eight months from the publication date of this report*"

Hence, at the time of on site visit, the validation team has assessed the eligibility criteria compliance in accordance to the Standard For The Development Of Eligibility Criteria For The Inclusion Of A Project Activity As A CPA Under The PoA, EB 63 Annex 3, Version 01.0. /B20/ which is still valid

At the time of finalization of the validation, the CME has updated the eligibility criteria compliance according to the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/

The following are the summary of the validation team's opinion for the eligibility criteria assessed in the PoA-DD

Eligibility Criteria No. 1	Each CPA is located in the Philippines. Areas that are ineligible for hydropower development per government decree are excluded.
Documentation to substantiate compliance	Compliance to this criterion shall be verifiable through one or more of the following documents per CPA: – Project design features and location of the plant within the Feasibility Study Report(s); – Technical sheet of the unit(s); – Environmental Impact Assessment report(s); – Other credible documents;
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (a) The CME has already indicated that the geographic boundary of a CPA is within Philippines, consistent to the PoA geographic boundary
Validation opinion – specific case CPA-DD level	**Justifications provided in the specific case CPA-DD:** **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** The location of the plant (Municipality of Sebaste, Province of Antique, Philippines) is documented in ANTECO's Carit-an Mini-Hydro Project Comprehensive Feasibility Study – Final Report dated July 2010. **Validation opinion:** This is confirmed during the meeting with the CPA Implementer plus the local stakeholders (Mr. Romeo Manolo, Village Chief) /I03/. The exact project location has been cross checked in the FSR /P08/ & confirmed to be located in Philippines.

	Conclusion: The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 2	Each CPA can be uniquely identified and defined in an unambiguous manner by providing the geographical coordinates, and the serial number of the turbines and generators at each location.
Documentation to substantiate compliance	Project coordinates as of feasibility study report
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (b)
Validation opinion – specific case CPA-DD level	**Justifications provided in the specific case CPA-DD:** **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** Project coordinates are evidenced in ANTECO's Carit-an Mini-Hydro Project Comprehensive Feasibility Study – Final Report dated July 2010. The serial numbers of the generators and turbines will be known as soon as the design phase of the plant is completed. **Validation opinion:** The exact project location (GPS Coordinates) has been cross checked in the FSR /P08/ & also via Google Earth. This is accepted by the validation team since the project location is uniquely identified by means of GPS coordinates **Conclusion:** The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 3	Each plant listed in the CPA uses hydropower technology with or without a reservoir, and its technical definition meets the requirements and restrictions applicable to SSC methodology AMS-I.D. version 17
Documentation to substantiate compliance	Project design of plants included in the CPA
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (c)
Validation opinion – specific case CPA-DD level	**Justifications provided in the specific case CPA-DD:** **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** Project design of the plant is evidenced in ANTECO's Carit-an Mini-Hydro Project Comprehensive Feasibility Study – Final Report dated July 2010. **Validation opinion:** As evidenced via means of validation in Section 3.3 of this report, the CPA is a grid-connected run-of-river hydropower plant without a reservoir & evidenced via review of the FSR /P08/ Details of the fulfillment of the AMS-I.D applicability conditions are assessed in Section 3.7 **Conclusion:** The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 4	The CPA does not exceed the small scale limits for Type I projects
Documentation to substantiate compliance	Project design of plants included in the CPA
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (k)
Validation opinion – specific case CPA-DD level	**Justifications provided in the specific case CPA-DD:** **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** The project capacity of 840kW which is below the 15 MW small scale limit for Type I projects is evidenced in ANTECO's Carit-an Mini-Hydro Project Comprehensive Feasibility Study – Final Report dated July 2010. **Validation opinion:** As evidenced via means of validation in Section 3.3 of this report, the CPA is a grid-connected run-of-river hydropower plant without a reservoir, installed capacity of 840 kW. This is consistent with the FSR /P08/ **Conclusion:** The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 5	The start date of the CPA (earliest starting date of the first unit) does not occur before the validation commencement
Documentation to substantiate compliance	Starting date evidence of the units within the CPA.
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (d)
Validation opinion – specific case CPA-DD level	**Justifications provided in the specific case CPA-DD:** **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** The project has not started yet. Neither any physical construction on the project site nor investment decisions or financial commitments has been made before the validation commencement. **Validation opinion:** At the time of on-site validation, the validation team had interviewed the CPA Implementer & confirmed no any contract for construction or equipment purchase has started. As stated & evaluated already in Section 3.3 of this report, the starting date of the CPA is expected to start on 01 January 2013 by making the investment decision and/or physical implementation. The validation team interviewed with the CPA implementer during on-site visit (OSV) and found that no contract was signed yet. In addition, the starting date is later than the commencement of validation of the PoA (i.e. GSP, 01 Oct 11 - 30 Oct 11) which fulfills the requirement of the procedure for registration of PoA EB 55, Annex 38 /B15/ paragraph 7(d). **Conclusion:**

	The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 6	Each CPA demonstrates additionality as detailed and elaborated in the CPA-DD document in line with section E.5.1. and E.5.2. of the PoA-DD document.
Documentation to substantiate compliance	Section B.3 of the CPA-DD shall demonstrate the additionality based on credible and verifiable evidence including but not limited to: – Feasibility Study Report(s); – IRR calculation spread sheet(s) without CDM revenue; – Technical sheet of the unit(s); – Environmental Impact Assessment report(s); – Other credible documents
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (f)
Validation opinion – specific case CPA-DD level	**Justifications provided in the specific case CPA-DD:** **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** Section B.3 of the CPA-DD demonstrates the additionality based on the following evidence: – ANTECO's Carit-an Mini-Hydro Project Comprehensive Feasibility Study – Final Report dated July 2010; IRR calculation spread sheet of ANTECO without CDM revenue dated 24/10/2011 **Validation opinion:** The validation team reviewed the FSR /P08/ & also the IRR calculation spread sheet /P06/. The detailed assessment of the additionality fulfilment are indicated in this report, Section 3.8 **Conclusion:** The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 7	The CPA is not registered as a separate CDM project activity, or as a participating CPA under another PoA.
Documentation to substantiate compliance	LBP CFSF Reply Form with confirmation statement by each MHP owner
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (b)
Validation opinion – specific case CPA-DD level	**Justifications provided in the specific case CPA-DD:** **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** Official confirmation letter of the MHP owner dated 14-10-2011. **Validation opinion:** Besides obtaining the official confirmation letter from the CPA Implementer /P18/, the validation team also cross checked the UNFCCC website & UNEP RISOE website. It is confirmed that the CPA is not registered as a separate CDM project activity or participating under another PoA **Conclusion:**

	The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 8	The CPA meets Philippine requirements for social and environmental approval.
Documentation to substantiate compliance	Copy of the application for Environmental Compliance Certificate (ECC) or Certificate of Non-Coverage (CNC)
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (g)
Validation opinion – specific case CPA-DD level	**Justifications provided in the specific case CPA-DD:** **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** Environmental Compliance Certificate (ECC) for the project issued by the DENR-Environmental Management Bureau Region VII dated 13-03-2012 **Validation opinion:** According to the Philippines Law i.e. Presidential Decree No. 1586, Establishing An Environmental Impact Statement System Including Other Environmental Management Related Measures And For Other Purposes (1978) /P20/, and also the Revised Procedural Manual for the DENR Administrative Order 2003-30 (DAO 2003-30) /P21/, it is defined that for hydroelectric plant of sizes between 5 to 30MW, IEE (Initial Environmental Examination) is required to be submitted (not required for hydroelectric plants less than 5 MW. Only Certificate of Non-Coverage is required from the DENR). This is required in order to obtain the ECC (Environmental Clearance Certificate) The validation team reviewed Environmental Compliance Certificate ref. no ECC-R6-1202-058-4300 & ECC-R6-1202-059-4300 dated 13 March 2012 issued for Upper Carit-an & Lower Carit-an by Department of Environment & Natural Resources, Environmental Management Bureau /P19/ & confirmed that this in line with the legal requirements prescribed above **Conclusion:** The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 9	The owners of all hydropower plants listed in the CPA have signed an agreement in which it allows LBP to market the emission reductions from the installation and operation of the plant.
Documentation to substantiate compliance	Signed MOA between LBP and the owner of each MHP plant
Validation opinion – PoA-DD level	This is acceptable since the CME considered that “The provisions to ensure CPA implementer is aware and has agreed the CPA is being subscribed to the PoA”
Validation opinion – specific case CPA-DD level	**Justifications provided in the specific case CPA-DD:** **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** Signed MOA between LBP and the owner of the MHP plant dated 29-09-2011 **Validation opinion:** Checked the signed MoA between LBP & CPA Implementer /P22/ & confirmed that the CPA Implementer has allowed LBP to market the

	emission reductions from the installation and operation of the plant. **Conclusion:** The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 10	The conditions related to sampling requirements for a PoA in accordance with the approved guidelines/standard from the Board pertaining to sampling and surveys;
Documentation to substantiate compliance	There is no sampling/surveys involved in the monitoring plan nor baseline establishment of each CPA
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (i)
Validation opinion – specific case CPA-DD level	**Justifications provided in the specific case CPA-DD:** **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** There is no sampling/surveys involved in the monitoring plan nor baseline establishment of each CPA **Validation opinion:** This is accepted by the validation team since the monitoring plan is established in accordance with the methodology requirements **Conclusion:** The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 11	Each CPA in aggregate meets the small-scale or microscale threshold criteria and remains within those thresholds throughout the crediting period of the CPA; Since AMS-I.D is applied: I. In case the CPA does not apply microscale additionality: the CPA's power capacity in aggregate shall remain below 15MW throughout the crediting period. II. In case the CPA applies microscale additionality: the CPA's power capacity in aggregate shall remain below 5MW throughout the crediting period.
Documentation to substantiate compliance	The aggregated capacity of each CPA shall be verifiable through one or more of the following documents: – Feasibility Study Report(s); – Technical sheet of the unit(s); – Environmental Impact Assessment report(s); – Other credible documents
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (k)
Validation opinion – specific	**Justifications provided in the specific case CPA-DD:**

case CPA-DD level	**CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** The CPA aggregated capacity is 840kW that is well below the small scale capacity threshold of 15MW throughout the crediting period. The aggregated capacity of the CPA is verifiable through the following documents: – ANTECO's Carit-an Mini-Hydro Project Comprehensive Feasibility Study – Final Report dated July 2010; **Validation opinion:** As evidenced via means of validation in Section 3.3 of this report, the CPA is a grid-connected run-of-river hydropower plant without a reservoir, installed capacity of 840 kW, which is well below the limit of 15MW. This is consistent with the FSR /P08/ **Conclusion:** The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 12	The project must have undertaken a stakeholder consultation as outlined in Section D.
Documentation to substantiate compliance	Documentation on the invitation to the stakeholder consultation, list of attendees and minutes of the meeting
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (g)
Validation opinion – specific case CPA-DD level	**Justifications provided in the specific case CPA-DD:** **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** Stakeholders' consultation was conducted at CPA-level on 01-09-2011. See details in Section D. **Validation opinion:** The validation team confirmed this via review of the Stakeholder minute of meeting / list of stakeholders who raised question for Carit–an Mini-Hydropower Plant, Municipality of Sebaste, dated 01 September 2011 /P24/ & confirmed the stakeholder consultation has been conducted. The validation team also interviewed several local stakeholders during the site visit /I02/ & confirmed the details regarding the stakeholder consultation such as participation of people from the affected villages, and also project activity details **Conclusion:** The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 13	Real action on CPA level begins after the start of validation of the PoA.
Documentation to substantiate compliance	Documentation on project implementation
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (d)
Validation opinion – specific	**Justifications provided in the specific case CPA-DD:**

case CPA-DD level	**CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** The project has not started yet. Neither any physical construction on the project site nor investment decisions or financial commitments has been made before the validation commencement. **Validation opinion:** At the time of on-site validation, the validation team had interviewed the CPA Implementer & confirmed no any contract for construction or equipment purchase has started. As stated & evaluated already in Section 3.3 of this report, the starting date of the CPA is expected to start on 01 January 2013 by making the investment decision and/or physical implementation. The validation team interviewed with the CPA implementer during on-site visit (OSV) and found that no contract was signed yet. In addition, the starting date is later than the commencement of validation of the PoA (i.e. GSP, 01 Oct 11 - 30 Oct 11) which fulfills the requirement of the procedure for registration of PoA EB 55, Annex 38 /B15/ paragraph 7(d). **Conclusion:** The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 14	The plants within the CPA are not part of a debundling (debundling check).
Documentation to substantiate compliance	Debundling check has been carried out on CPA level in accordance with the latest "Guidelines on assessment of debundling for SSC project activities".
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (l)
Validation opinion – specific case CPA-DD level	**Justifications provided in the specific case CPA-DD:** **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** Debundling check has been carried out on CPA level under section A.4.6. in accordance with the latest "Guidelines on assessment of debundling for SSC project activities". **Validation opinion:** According to the specific case CPA-DD Section A.4.6, The CPA cannot be a de-bundled component of another project activity as: • Carit-an is the first CPA of the PoA. It is the only project unit within the CPA and the implementer is not involved in any other large scale PoA of the same technology • There is no other project activity within 1 km of the boundary of Carit-an considered to be included within the PoA; This is also confirmed via cross checking the UNFCCC & UNEP RISOE website **Conclusion:** The validation team concluded that the eligibility criteria has been met

Eligibility Criteria No. 15	Conditions to provide an affirmation that funding from Annex I parties, if any, do not result in a diversion of official development assistance.
Documentation to substantiate compliance	Official confirmation from fund providers.
Validation opinion – PoA-DD level	Yes, this is in line with the requirement defined in the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/, paragraph 16 (h)
Validation opinion – specific case CPA-DD level	**Justifications provided in the specific case CPA-DD:** **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** Official confirmation from ANTECO dated 01-12-2011. **Validation opinion:** The validation team reviewed Official confirmation from ANTECO, regarding no public funding / ODA received, dated 01-12-2011 /P26/ & confirmed no public funding from Annex 1 parties or ODA **Conclusion:** The validation team concluded that the eligibility criteria has been met

Conclusion:
In line with the following paragraphs from the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/ for **development of eligibility criteria**, the validation team concluded that:

- **Paragraph 13 & 14:**
  The CME has effectively developed the eligibility criteria for CPA inclusion under PoA according to the listed eligibility criteria in EB 70 (paragraph 16) & has included the eligibility criteria in the PoA-DD. The CME has positively demonstrated the usability of the eligibility criteria to assess the inclusion of the CPA (i.e. CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA) in the generic CPA-DD

- **Paragraph 17**
  The eligibility criteria are verifiable, as evident via usability demonstration to assess the inclusion of the CPA (i.e. CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA), via review of the corresponding supporting evidences & documentations

- **Paragraph 18**
  The eligibility criteria developed are objective and comprehensive to permit the assessment of the CPA inclusion in the PoA

- **Paragraph 19 & 20**
  The CME has demonstrated competencies to check the features of potential CPAs and ensure that each CPA meets all requirements and eligibility criteria before inclusion in the registered PoA. The CME has developed and implemented a management system for CPA inclusion. The summary of the fulfilment of the management system criteria are explained as follows:

Paragraph 19	Validation Opinion
(a) A clear definition of roles and responsibilities of personnel involved in the process of inclusion of CPAs, including a review of their competencies;	The CME has defined clearly the Organizational structure within the LBP (as the CME) for the inclusion of CPAs in the PoA-DD. The validation team considered this to be clearly developed & transparent
(b) Records of arrangements for training and capacity development for personnel;	Training plan for Clean Development Mechanism (CDM) POA and Project Activity Monitoring System for Minihydro Project /P17/ has been established by the CME & the

	validation team considered this to be adequately developed
(c) Procedures for technical review of inclusion of CPAs;	According to PoA-DD, technical review for inclusion of new CPAs will be carried out by the account officers of EPMU (Environmental Program Management Unit) under the supervision of the PoA manager. The tasks for above will include those mentioned in the eligibility criteria. The validation team considered this to be adequate since there is a multi-disciplinary approach is used (i.e. cross functional personnel involved during the CPA inclusion process)
(d) A procedure to avoid double counting (e.g. to avoid the case of including a new CPA that has already been registered either as a CDM project activity or as a CPA of another PoA);	According to PoA-DD, an identification system will be implemented that uniquely identify each power plant under the CPA. This serial numbering system will be used to record baseline and monitoring data on a continuing basis. Besides, it is also mentioned that for each new CPA and involved power plants, existing database & list of project activities under validation or registered in UNFCCC will be cross checked as well As listed already in the PoA-DD, the details information required for this purpose are well defined & hence, are accepted by the validation team
(e) Records and documentation control process for each CPA under the PoA;	According to PoA-DD, each CPA will be assigned with a unique number in the LBP database. Related documents such as the CFSF Reply Form, communication letters and MOA will be kept and maintained by EPMU in folders bearing the same unique number. According to PoA-DD, LBP will keep / archive the monitoring reports in electronic and printed formats. Archived electronic files will be stored in compact discs. In conclusion, the validation team considered the record & documentation control system to be adequate, according to the validation team's own experience auditing ISO 9001 Quality Management System implementation (the team leader is a qualified Lead Auditor for ISO 9001 since year 2002)
(f) Measures for continuous improvements of the PoA management system;	The measures for continuous improvements defined in the PoA-DD are in line with the PDCA cycle concept (Plan-Do-Check-Act concept, defined in ISO 9001 Quality Management System) & is accepted by the validation team
(g) Any other relevant elements.	The remaining elements defined in the PoA-DD are additional to the descriptions provided for each of the management system criteria defined above & are found to be deemed appropriate & relevant. This is accepted by the validation team

- **Paragraph 21**
  The CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA included in the PoA has been positively assessed & confirmed that the eligibility criteria has been fulfilled

- **Paragraph 22**
  Since this PoA developed involved only 1 methodology, hence this paragraph is not applicable for further assessment

3.5 Operational and Management Plan

Validation Opinion:

VVM paragraph 166

Requirements	Validation Opinion
Description of the operational and management arrangements established by the coordinating/managing entity for the implementation of the PoA, including:	As defined in the PoA-DD Section A.4.4.1, the operation & management of the PoA will be led by the Land Bank of Philippines
(i) A record keeping system for each CPA under the PoA	Record keeping system for each CPA under the PoA has been well defined clearly in the PoA-DD Section A.4.4.1 & the validation team considered it to be practical **Specific CPA case: CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** For this specific CPA case, the records maintained as sighted by the validation team are as follows: a) Memorandum of Agreement For The Intent To Purchase to Purchase and Sell Certified Emissions Reductions from Antique Electric Cooperative Inc's (ANTECO), 2.3 MW Ipayo & Carit-an Mini-Hydropower Projects, signed on 29 September 2011 /P22/ b) Carbon Support Finance Facility dated 24 November 2010 /P28/ The remaining records would be made available & continually will be updated by the CME during the crediting period of the PoA & the CPAs. This is accepted by the validation team
(ii) A system/procedure to avoid double accounting e.g. to avoid the case of including a new CPA that has been already registered either as a CDM project activity or as a CPA of another PoA,	As explained in Section 3.4 report above, an identification system will be implemented that uniquely identify each power plant under the CPA. This serial numbering system will be used to record baseline and monitoring data on a continuing basis. For each new CPA and involved power plants, existing database & list of project activities under validation or registered in UNFCCC will be cross checked as well Hence, the validation team considered the system / procedure to avoid double accounting to be deemed appropriate **Specific CPA case: CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** This specific case CPA has been given unique identification number i.e. CPA-1. The validation team has cross checked the GPS coordinates in the FSR /P08/ versus CDM pipeline in UNFCCC (registered project / under validation or CPA for another PoA) It is confirmed that CPA-1 is neither registered / to register as a single CDM project, not a CPA of another PoA
(iii) The SSC-CPA included in the PoA is not a de-bundled component of another CDM programme activity (CPA) or CDM project activity.	PoA-DD Section A.4.4.1 also mentioned that ….."a copy of the letter of confirmation from the CPA operator concerning whether the CPA is a debundled component of another CPA or CDM programme or project activity" The descriptions & evaluation mechanism for SSC-CPA included in the PoA is not a de-bundled component of another

	CDM programme activity (CPA) or CDM project activity, has been defined clearly in the PoA-DD (according to paragraph 8, 9 & 10 of Guidelines On Assessment Of Debundling For SSC Project Activities, Version 03, EB 54, Annex 13 /B13/) Hence, the validation team considered the process of checking the de-bundling component of another CDM programme activity to be deemed appropriate **Specific CPA case: CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** Declaration letter, Official confirmation letter of the mini hydropower plant owner dated 14 October 2011 /P18/ has been provided by the CPA implementer, Antique Electric Cooperative, Inc. to the CME & confirmed that the CPA-1 is not a de-bundled component of another CDM programme activity or any large scale activity Hence, the validation team concluded that the requirement stipulated in the Guidelines On Assessment Of Debundling For SSC Project Activities, Version 03, EB 54, Annex 13 /B13/ are fulfilled
(iv) The provisions to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA;	**Specific CPA case: CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** The validation team checked the 2 supporting evidences provided i.e. a) Memorandum of Agreement For The Intent To Purchase to Purchase and Sell Certified Emissions Reductions from Antique Electric Cooperative Inc's (ANTECO), 2.3 MW Ipayo & Carit-an Mini-Hydropower Projects, signed on 29 September 2011 /P22/ b) CPA Inclusion agreement between Land Bank of Philippines & ANTECO dated 09 December 2011 /P27/ Based on the review of the supporting evidences above, the validation team confirmed that the provisions to ensure that those operating the CPA are aware of and have agreed that their activity is being subscribed to the PoA are fulfilled

Conclusion:
The validation team concluded that the CME had clearly demonstrated the operational and management arrangements for the PoA in the PoA-DD and this complied with the VVM requirement paragraph 166, including the procedure for registration of a PoA /B15/ para 6(i).

3.6 Monitoring Plan

Validation Opinion:

VVM paragraph 122 to 124

The validation team was able to assess the monitoring plan defined in the PoA-DD. Conclusion of the assessments is summarised as follows:

1) Recording requirements has been defined & confirmed the records will be kept for at least 2 years
2) Monitoring & measurements requirements have been defined in the respective procedures such as monitoring procedures, calibration procedure & quality assurance & quality check procedure
3) Reporting & verification requirements have been defined
4) Responsibility for record maintenance at CPA level has been defined

5) Role & responsibility by CME to manage data aggregation, field visits, emission reduction calculation, cross checking CPAs to prevent double counting & training requirements have been defined in the PoA-DD.
6) Monitoring requirements has been identified in accordance with the methodology AMS-I.D /B04/ & the corresponding tools

(i) Description of the proposed statistically sound sampling method/procedure to be used by DOEs for verification of the amount of reductions of anthropogenic emissions by sources or removals by sinks of greenhouse gases achieved by CPAs under the PoA.

The CME has defined the requirements for sampling in accordance with Standard For Sampling And Surveys For CDM Project Activities And Programme Of Activities, Version 03.0, EB 69, Annex 4 /B22/. According to PoA-DD Section A.4.4.2, *"…..All CPAs will be monitored by the project implementers where Monitoring Reports will be recorded by LBP and it will all be made available to the DOE for verification. LBP will be the main interlocutor with the DOE and will take responsibility for making sure all records are being kept by the CPA implementers for all monitored data, and will be in charge of conducting quality checks on the emission reduction estimates for each CPA to be then reported to the DOE"*
Based on the review of the PoA-DD Section E.7 & Monitoring Manual for Philippines Mini-Hydro PoA For Project Owners, Version 0.8 /P29/, the validation team concluded that a transparent system is in place for monitoring including for verification

(ii) In case the coordinating/managing entity opts for a verification method that does not use sampling but verifies each CPA (whether in groups or not, with different or identical verification periods) a transparent system is to be defined and described that ensures that no double accounting occurs and that the status of verification can be determined anytime for each CPA

The CME has defined a transparent system to ensure no double accounting & the status of the verification can be determined for each CPA, via cataloguing of each CPAs

According to the document review in PoA-DD, detailed monitoring procedures, monitoring structure, monitoring items & functions are clearly demonstrated in the PoA-PDD which enable the monitoring plan to implemented feasibly

Interview & on site assessment through physical inspection with the project participant & consultant has allowed the validation team to confirm that the monitoring plan defined in the PoA-DD is feasible to be implemented

3.7 Baseline and Monitoring Methodology

3.7.1 Applicability of the selected methodology

Validation Opinion:
VVM paragraph 65 to 77

The proposed PoA & the subsequent CPAs applies the approved baseline methodology AMS-I.D "Grid Connected Renewable Electricity Generation", Version 17 /B04/, which also refers to the "Tool to calculate the emission factor for an electricity system" /B05/. Its applicability has been justified to the validation team in accordance with the requirements of the methodology. The selected baseline methodology is applicable for the project since the project will generate renewable electricity from hydropower source & displaces the grid electricity. The validation team has performed document review & interview with the project participants. The validation team concludes that the approved methodology has been applied correctly. The summary of the methodology applicability assessment by the validation team are listed as follows:

AMS-I.D Applicability Assessment & Validation Opinion:

Extracted from PoA-DD Section E.2		Means of Validation
Applicability Criteria	**Explanation**	
1. This methodology comprises renewable energy generation units, such as photovoltaic, hydro, tidal/wave, wind, geothermal and renewable biomass: (a) Supplying electricity to a national or a regional grid; or (b) Supplying electricity to an identified consumer facility via national/regional grid through a contractual arrangement such as wheeling.	Only project units that are grid-connected hydropower plants will be eligible under each CPA. Therefore the CPAs will meet the criteria under AMS-I.D.	**Specific CPA case: CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** At specific case level for CPA-1, this applicability condition justification defined at PoA level is in line with CPA-1. According to the review of FSR /P08/, CPA-1 will be implemented as grid connected hydropower plant Hence, the applicability condition is fulfilled
2. Illustration of respective situations under which each of the methodology (i.e. AMS-I.D, AMS-I.F and AMS-I.A) applies is included in Table 2.	-	**Specific CPA case: CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** Only for information
3. This methodology is applicable to project activities that: (a) Install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); (b) Involve a capacity addition; (c) Involve a retrofit of (an) existing plant(s); or (d) Involve a replacement of (an) existing plant(s).	Each project unit under each CPA will be either: (a) Install a new power plant at a site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant); (b) Involve a capacity addition; (c) Involve a retrofit of (an) existing plant(s); or (d) Involve a replacement5 of (an) existing plant(s). Thus the criteria are met.	**Specific CPA case: CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** According to the review of FSR /P08/, CPA-1 involves installation of a new hydro power plant at the site where there was no renewable energy power plant operating prior to the implementation of the project activity (Greenfield plant) Hence, the applicability condition is fulfilled
4. Hydro power plants with reservoirs that satisfy at least one of the following conditions are eligible to apply this methodology: • The project activity is implemented in an existing reservoir with no change in the volume of reservoir; • The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the project emissions section, is greater than 4 W/m^2; • The project activity results in new reservoirs and the power	In relation to hydropower plants with reservoir, only project activities resulting in reservoirs with a power density of more than 4 W/m2 will be eligible under each CPAs. For those with power density between 4 and 10 W/m2, project emissions will be calculated as per the methodology. The criteria are met.	**Specific CPA case: CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** According to the review of FSR /P08/, CPA-1 involves installation of a new hydro power plant which involves no construction of reservoir & hence this criteria is not applicable

Extracted from PoA-DD Section E.2		Means of Validation
Applicability Criteria	**Explanation**	
density of the power plant, as per definitions given in the project emissions section, is greater than 4 W/m^2		
5. If the new unit has both renewable and non-renewable components (e.g. a wind/diesel unit), the eligibility limit of 15 MW for a small-scale CDM project activity applies only to the renewable component. If the new unit co-fires fossil fuel, the capacity of the entire unit shall not exceed the limit of 15 MW.	All the project unit under each CPA will have power capacity below 15 MW for the renewable component of the project and if the unit co-fires any type of fossil fuel the capacity of the entire unit will be under 15 MW. The criteria are met.	**Specific CPA case: CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** According to the review of FSR /P08/, CPA-1 involves installation of a new hydro power plant with installed capacity of 840 kW, consisting of 2 x 420 kW Impulse (Pelton) turbnes. Hence, the eligibility limit of not exceeding 15 MW is fulfilled
6. Combined heat and power (co-generation) systems are not eligible under this category.	Combined heat and power projects are not part of any CPAs under this PoA. The criteria are met.	**Specific CPA case: CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** According to the review of FSR /P08/, CPA-1 involves only installation of a new hydro power plant & hence this applicability condition is not applicable for this CPA-1
7. In the case of project activities that involve the addition of renewable energy generation units at an existing renewable power generation facility, the added capacity of the units added by the project should be lower than 15 MW and should be physically distinct from the existing units.	In case of project units involving capacity addition to an existing unit, the power capacity of the additional unit will be lower than 15 MW and will be physically distinct from the existing units. Thus the criteria are met.	
8. In the case of retrofit or replacement, to qualify as a small-scale project, the total output of the retrofitted or replacement unit shall not exceed the limit of 15 MW.	In case any of the project units under each CPA involve retrofit or replacement, the power capacity of the whole unit will be below 15 MW. The criteria is met.	
Project activity under a Programme of Activities The following conditions apply for use of this methodology in a project activity under a programme of activities: 25. In the specific case of biomass project activities the applicability of the methodology is limited to either project activities that use biomass residues only or biomass from dedicated plantations complying with the applicability conditions of AM0042.	No biomass project is involved in this PoA. Thus the criteria do not apply.	**Specific CPA case: CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** According to the review of FSR /P08/, CPA-1 involves only installation of a new hydro power plant & hence this applicability condition is not applicable for this CPA-1 No biomass project is applicable for this CPA-1
26. In the specific case of biomass	No biomass project is involved in	

Extracted from PoA-DD Section E.2		Means of Validation
Applicability Criteria	**Explanation**	
project activities the determination of leakage shall be done following the general guidance for leakage in small-scale biomass project activities (attachment C of Appendix B of simplified modalities and procedures for small-scale clean development mechanism project activities; decision 4/CMP.1) or following the procedures included in the leakage section of AM0042.	this PoA. Thus the criteria do not apply.	
27. In case the project activity involves the replacement of equipment, and the leakage from the use of the replaced equipment in another activity is neglected because the replaced equipment is scrapped, an independent monitoring of scrapping of replaced equipment needs to be implemented. The monitoring should include a check if the number of project activity equipment distributed by the project and the number of scrapped equipment correspond with each other. For this purpose scrapped equipment should be stored until such correspondence has been checked. The scrapping of replaced equipment should be documented and independently verified.	In case of equipment replacement, the replaced equipment will not be able to generate any emissions if used in other facilities anyway as they do not consist of parts that can involve the use of fossil fuels and/or non-renewable biomass. Thus this criterion is not applicable to this type of PoA.	**Specific CPA case: CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** According to the review of FSR /P08/, CPA-1 involves only installation of a new hydro power plant & hence this applicability condition is not applicable for this CPA-

The project activity produces electricity & supplies to the national grids in Philippines i.e. the Luzon-Visayas & Mindanao grid; which is supplied by several fossil fuel based sources.

The project eligibility to a small-scale project was determined by the validation team through assessment of the eligibility criteria – See Section 3.4 above for further details

All GHG emissions occurring within the CDM project activity boundary as a result of the implementation of the proposed CDM project activity are indicated as the project emissions according to the approved methodology. There will be no other expected GHG emissions which can contribute more than 1 % of the overall expected average annual emissions other that those stated in the approved methodology.

3.7.2 Project Boundary

Validation Opinion:

VVM paragraph 78 to 80

The project boundary was assessed in the context of physical site inspection, interviews & based on supporting evidences & documents submitted for the project design.

PoA-DD has described the project boundary in accordance with AMS-I.D /B04/ paragraph 9 which states that "*The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system10 that the CDM project power plant is connected to*"

In addition to this, it also complies with the requirements stated in the Tool to calculate the emission factor for an electricity system /B05/ which states the followings:

***"A grid/project electricity system** is defined by the spatial extent of the power plants that are physically connected through transmission and distribution lines to the project activity (e.g. the renewable power plant location or the consumers where electricity is being saved) and that can be dispatched without significant transmission constraints.*

***Connected electricity system** is an electricity system that is connected by transmission lines to the project electricity system. Power plants within the connected electricity system can be dispatched without significant transmission constraints but transmission to the project electricity system has significant transmission constraint"*

As indicated in the PoA-DD Section A.4.1.2, the physical / geographical boundary of the PoA is the Philippines

The sources and sinks of greenhouse gas identified in the PoA-DD & specific case CPA-DD are deemed appropriate. The project boundary has been clearly determined in accordance with the methodology (see below table). The validation team assessed the appropriateness of the justifications provided for inclusion / exclusion of the source of gas based on the review of feasibility study report, focusing on the project technical descriptions & equipments proposed for the project /P08/, interview with the third party consultant who prepares the feasibility study report /I01, Mr. Manny, Vergel3 Consult/ & also based on the validation team experience

All assumptions, reference documents and relevant local policies and regulations are correctly quoted and referenced in the PoA-PDD & specific case CPA-DD. A comprehensive overview about all emissions included in the project boundary is provided in the PoA-PDD Section E.3 & specific case CPA-DD Section B.4 for project activity emissions and baseline emissions.

	GHGs involved	Description
Baseline emissions	CO_2	Major emission source
	CH_4	Not included & it is conservative
	N_2O	Not included & it is conservative
Project emissions	CO_2	No supplementary fossil fuel is required for power generation. Project emissions = 0
	CH_4	Possible CH_4 emissions from the reservoir
	N_2O	No N_2O emission is expected
Leakage	No leakage	This is consistent with AMS-I.D version 17 where the project participant does not need to consider leakage as the energy generating equipment is not transferred from another activity

In addition to the above, the CME has defined in the PoA-DD that all CPAs which will be included in the PoA are all located only in the Philippines. The validation team had conducted interviews with the representatives from the DNA for CDM, Department of Environment and Natural Resources,

Environmental Management Bureau, Philippines & Department of Energy. Based on these interviews, the validation team could confirm that there are no mandatory regulations on the development of small scale hydropower plants in Philippines. The validation team noted that there are 2 main regulations issued i.e.

1) Renewable Energy Act of 2008 /P09/
2) Mini-Hydroelectric Power Incentives Act of 1990 (Republic Act No. 7156) /P10/

However, these regulations issued do not mandate the CME to implement the proposed PoA or participating project units to undertake the project activity. The implementation of the PoA remains as a voluntary action & this is being re-confirmed with the DNA of the Philippines

CPA Boundary

The validation team was able to confirm that for **Specific CPA case: CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA,** the exact location of this CPA is indeed within the PoA boundary i.e. Philippines & this has been confirmed via review of the following credible reference document:

a) Comprehensive Feasibility Study Final Report, July 2010 /P08/
b) Environmental Compliance Certificate ref. no ECC-R6-1202-058-4300 & ECC-R6-1202-059-4300 dated 13 March 2012 issued for Upper Carit-an & Lower Carit-an by Department of Environment & Natural Resources, Environmental Management Bureau /P19/
c) Hydropower Service Contract between Department of Energy and ANTECO, 8 June 2010 /P30/ - this constitute the business license / permit for the project

3.7.3 Baseline Identification

Validation Opinion:

VVM paragraph 81 to 88

According to AMS-I.D /B04/, paragraph 10 "*The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid*"

In the PoA-DD, the following baseline scenario has been defined:

"The baseline scenario is the continued electricity generation from power plants connected to the power grids. The current energy mix mainly comprises of coal, natural gas, geothermal, hydropower and oil. Energy statistics show that the share of generated electricity from coal in the energy mix has been relatively constant between 2002 and 2010, while the share of natural gas increased significantly. The shares of geothermal and hydropower dropped by nine and three percentage points respectively. Accordingly, the prevalence of fossil fuels in the energy mix is likely to remain the same"

The validation team was able to confirm the baseline scenario described above to be accurate based on the review of supporting reference document (which is being referenced in the PoA-DD Section E.4), i.e. Philippine Power Statistics published by the Philippine Department of Energy, on http://www.doe.gov.ph/EP/Powerstat.htm /P11/ & also via interview with the representatives from the Department Of Energy, Philippines

During the on-site visit to the CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA, it was verified that within the site no equipment was installed for electricity generation. The access to the project sites are really difficult (by foot track for about 3 hours), as the improvement of the road and the final entrance are not constructed yet. As the project has not even started any construction work yet (such as road clearance etc), it can be confirmed that when the project starts to be implemented, it will replace energy of the existing grid that otherwise will be generated by a mix of other sources (fossil fuel) power plants.

The baseline determination is considered as transparent and reasonable.

The approved baseline methodology applicable to the project - explicit criteria - implicit criteria (e.g. available scenarios, applicability of formulas for BE/PE/LE calculations)	☒ Yes ☐ No	See details above
PDD includes all assumptions and data used by project participants	☒ Yes ☐ No	All assumptions and date defined in the PDD are justifiable and reasonable
All the references and documents used are relevant for establishing the baseline scenario	☒ Yes ☐ No	All references and documents are relevant to determine the baseline scenario.
All the references and documents used are correctly quoted and conservatively interpreted in the PDD	☒ Yes ☐ No	All references and documents are conservative and reasonable to determine the baseline scenario.
All relevant policies / regulations considered are listed in the PDD	☒ Yes ☐ No	All relevant regulations of the Host country have been considered by the project proponent.
Identified potential baseline scenarios reasonably represent what would/could occur in the absence of the proposed project activity	☒ Yes ☐ No	In absence of the project activity, there will be continual of greenhouse gases emission from fossil fuel fired power plant.
The baseline scenario selection is appropriate and determined according to the methodology	☒ Yes ☐ No	As per AMS-I.D version 17
The approved methodology used is applicable to the identified baseline scenario	☒ Yes ☐ No	See details in Section 3.7.1

3.8 Additionality

3.8.1 CDM consideration of the PoA

Validation Opinion:

VVM paragraph 98 to 104

Prior consideration of CDM for PoA is not assessed by the validation team since there are no component of the programme will commence prior to the start date of validation

According to Clarifications Regarding The Procedures For Registration of a Programme of Activities as a Single CDM Project Activity and Issuance of Certified Emission Reductions for A Programme of Activities, Version 01, EB 60, Annex 26, paragraph 3,
"The Board agreed that the .Guidelines for the demonstration and assessment of prior consideration of the CDM. do not apply to PoAs, as at present it is expected that no component of the programme will commence prior to the start date of validation".

Hence, this is applicable & valid for the PoA. Since the CPA-1 has valid starting date (1 January 2013) which is not prior to the PoA webhosting date (i.e. 01 Oct 11 - 30 Oct 11), hence this CPA and all other subsequent CPAs being included to the PoA will have valid starting date which is automatically have met the requirements of CDM prior consideration

3.8.2 Additionality of the PoA

Validation Opinion:

VVM paragraph 94 to 97

The validation team has assessed the additionality of a PoA in accordance with the "Standard for demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities" /B14/ paragraphs 7 to 9
According to EB 65 meeting report paragraph 74, "*DOEs may upload for registration PoA-related PDDs in which the previous guidelines have been applied not later than the calendar day (24:00 GMT) eight months from the publication date of this report*"

Hence, at the time of on site visit, the validation team has assessed the additionality compliance accordance to Standard For The Development Of Eligibility Criteria For The Inclusion Of A Project Activity As A CPA Under The PoA, EB 63 Annex 3, Version 01.0. /B20/ which is still valid

At the time of finalization of the validation, the CME has updated the additionality compliance according to the Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 /B26/ - see below:

Paragraph 7. Additionality shall be demonstrated by establishing that in the absence of CDM, none of the implemented CPAs would occur.

Paragraph 8. PoAs that consist of one or more microscale projects as CPAs shall include eligibility criteria derived from all the relevant requirements of the Guidelines for demonstrating additionality of microscale project activities.

Paragraph 9. PoAs that consist of one or more small-scale projects as CPAs shall include eligibility criteria derived from all the relevant requirements of the "Guidelines for demonstrating additionality of small-scale project activities".

Paragraph 11. Large-scale CPAs (i.e. CPAs that apply one or more large scale and small scale CDM methodologies), small-scale CPAs (i.e. CPA exclusively applying small scale CDM methodologies) and microscale CPAs (i.e. CPAs exclusively comprised of units that comply with microscale thresholds) may be included in the same PoA. The "Guidelines for demonstrating additionality of microscale project activities" may be applied to a large scale or small-scale CPA if all of the units in the CPA are below the thresholds that define microscale project activities. The "Guidelines on the demonstration of additionality of small-scale project activities" may be used for small-scale CPAs only.

Paragraph 13. The CME shall demonstrate that compliance with the additionality-related eligibility criteria set in the PoA design document will ensure that all the relevant additionality-related guidelines, tools or any requirements embedded in the methodologies are met.

Validation opinion:

According to PoA-DD Section E.5.1, the additionality will be demonstrated on CPA-level. CPAs are classified into micro & mini scale projects.

1) Option A: For micro-scale (≤ 5 MW) – It is noted that the micro scale CPAs will be considered to be additional as long it complies with the requirements stated in Guidelines For Demonstrating Additionality Of Microscale Projects Activities, Version 03, EB 63, Annex 23 /B23/.
   Remarks: The PoA-DD further stated that

   "In order to use option A: Micro-scale (≤5 MW) as the additionality evidence, the CPA may choose option d from the above guidelines if they can demonstrate that:

   a) the project activity employs specific renewable energy technologies/measures recommended by the host country DNA and approved by the Board to be additional in the host country, and
   b) the total installed capacity of the technology/measure contributes less than or equal to 3% of the national grid-connected electricity generation capacity.

If corresponding confirmation from the DNA together with an evidence of 3% share of the technology/measure is achieved, CPAs with a total installed capacity of below and equal to 5MW shall be deemed additional per se and do not have to conduct an additionality assessment".

2) Option B: For mini-scale (≥ 5 MW) – additionality will be demonstrated via
Option B1: Investment barrier
Option B2: Access to finance barrier
Option B3: Technological barrier
Option B.4: Other barriers

The validation opirion for each Option B are described as follows:

Option B1: Investment barrier

In summary, the followings key criterias have been considered by the CME for demonstration additionality via investment barrier approach for each CPAs & validation opinion conclusion

No.	Items	Validation opinion
1	Type of investment analysis	According to the PoA-DD Section E.5.1, benchmark anaylsis has been selected The simple cost analysis is not applicable as CPAs generate revenue from the sales of electricity generation other than CDM revenue. The validation team has assessed the baseline scenario which also reveals that the continuation of the current situation - electricity will continue to be imported from the grid, which is outside the direct control of the CPA Implementer. Hence, the choice for the CPA Implementers are restricted to "invest or not to invest". The validation team concludes that the benchmark approach is the most suited as defined in the Guidelines On The Assessment Of Investment Analysis, Version 05 /B08/ paragraph 16
2	Financial indicator	According to the PoA-DD Section E.5.1, the financial indicator selected will be either Project IRR or Equity IRR See below – Type of benchmark
3	Type of benchmark	According to the Guidelines On The Assessment Of Investment Analysis, Version 05 /B08/ paragraph 12, *"Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR. Required/expected returns on equity are appropriate benchmarks for equity IRR"*. The type of benchmark selected by the project participant is a) Project IRR: Local commercial lending rates or the weighted average cost of capital (WACC) b) Equity IRR: Official required/expected returns on equity According to the Guidelines On The Assessment Of Investment Analysis, Version 05 /B08/ paragraph 13, *"In the cases of projects which could be developed by an entity other than the project participant the benchmark should be based on parameters that are standard in the market"*. Therefore the validation team concludes that the benchmark selected is appropriate & conforms to the Guidelines On The Assessment Of Investment Analysis, Version 05 /B08/
4	Investment analysis input parameters	According to the PoA-DD Section E.5.1, it is stated that "*The input data used in the IRR calculation of the project activity needs to refer to the point the investment decision was made"* This is in line with the Guidelines On The Assessment Of Investment Analysis, Version 05 /B08/ paragraph 6 "*Input values used in all investment analysis should be valid and applicable at the time of the*

		investment decision taken by the project participant" and accepted by the validation team .
5	Sensitivity analysis	According to the PoA-DD Section E.5.1, it will be demonstrated & assessed for 4 parameters i.e. 1. Tariff rate 2. Investment cost 3. O & M costs 4. Electricity generation / Plant factor The validation team considered these parameters are appropriate for assessment in line with the Guidelines On The Assessment Of Investment Analysis, Version 05 /B08/ paragraph 20 which states that, *"Only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation….";* and article 21 states that, *"As a general point of departure variations in the sensitivity analysis should at least cover a range of +10% and 10%,……."* The CME has identified these as the most critical assumptions. There are no other expenses or costs which could be subjected to variation as all of them have been considered either directly or indirectly in the sensitivity analysis. This is accepted by the validation team

Option B2: Access to finance barrier
According to PoA-DD, it is stated that

"The main barrier to the investment in hydropower plants is the access to loans. With high investment costs per MW installed, hydropower plants usually apply for large amounts of external finance.

Hydropower projects require loan conditions that differ from other investment projects:
Hydropower plants require longer grace periods and payback periods as that the plants only start generating revenues of up to 6 years after the first expenses are due. This is caused by long planning periods (2~3 years) and long construction periods (2~3 years).
The design of a hydropower plant is based on a thorough assessment of geologic and hydrologic conditions, including yearlong measurement campaigns. Due to this lengthy and costly process, hydropower plants often require loans during the pre-development stage already

LBP is the main lending institution for this PoA. The bank's lending department considers CDM revenues a crucial factor to increase the creditworthiness of projects applying for loans. The evaluation of the applicants is based on the Bank's Risk Asset Acceptance Criteria (RAAC). In addition, the Bank also adopts an Internal Credit Risk Rating System and uses a Borrower Risk Rating (BRR) Sheet to assess creditworthiness of the borrower. The CDM can form an important pillar in the borrower's capacity to repay the loan. Carbon revenues can shorten the payback period to an acceptable level or the ERPA can serve as collateral"

The statements above can be confirmed by the validation team during the cross interview with the representatives from the Department of Energy Philippines & Philippines DNA /I02/
Since LBP, the CME and also the lending institution for the PoA, the validation team also interview the bank representatives from LBP /I01/ & reviewed the evaluation criteria documents for bank loan application /P39/.

The validation team did a cross check in the website to find out further information regarding the access to finance barrier. In the website of the Phillippines Department of Energy (http://www.doe.gov.ph/ER/Hydropower.htm), it is stated that:

"Challenges and Gaps
The capital-intensive nature, long gestation period (average of seven years) and accompanying issues of social acceptability of large hydropower projects remain to be the sector's biggest challenges. On the other hand, micro-hydro development for off-grid electrification is hindered by high upfront costs and the need for government intervention and subsidy."

Another website surveyed: (https://docs.google.com/viewer?a=v&q=cache:ipn1x-9LWgAJ:cd4cdm.org/Asia/Philippines/First%2520National%2520Workshop/SmallScaleHydro.ppt+financial+barrier+hydropower+projects+philippines&hl=en&gl=my&pid=bl&srcid=ADGEESiz7n3su0uFVZy8p6NQE5FAI0bt3aEDtwlw5DaKBMo7_olup61kSGpjJxCcnZOEGGKPXgw5eX5K-ZyWip0JSOhYOPPY6-6ajaR5Xh-WdWTfdd7NpNav_HUgjFF260kJw9ws2Uzf&sig=AHIEtbRuCDGZQVxd09tMj5VCSusMeVqaUw", i.e. "Barriers to Developing Small Scale Hydropower in the Philippines, presentation slide to Climate Change Information Center" which states that the challenges in financing mini hydropower project are:

1. *Long term loans at developmental rates are not available*
2. *Development banks receive foreign loans at developmental rates to help promote the development of mini-hydropower*
3. *And lend to developers at near commercial rates*
4. *Full collateral requirements*
5. *Commercial banks are unfamiliar with hydropower projects*
6. *Uncomfortable taking hydrological risks*
7. *Required parent company guarantee*
8. *More expensive than rates extended by development banks*

This further supported the access to finance barrier which is applicable for future CPAs

Option B3: Technological barrier
According to PoA-DD, it is stated that

"Each CPA may add a list of technological barriers that prevent the implementation of the project if excluded from the PoA. In other words, it should be demonstrated that the CPA can tackle these barriers by becoming part of this PoA. Technological barriers can be of direct or indirect origin. Examples can be lack of MHP experts, lack of O&M knowledge, hydrological and climatic risks on sufficient operation of the MHP plants etc".

The validation team accepted the justifications since this will be specifically determined at CPA level
Nevertheless the validation team also researched & cross check public internet websites to find out the presence of technological barrier & confirmed that it is applicable for hydropower projects in Philippines

The validation team found the following public published literature titled as follows:

1) "Overview of mini and small hydropower in Southeast Asia, Nathaniel C. Domingo, Fidelpio V. Ferraris, Prof. Rowaldo R. Del Mundo" /P40/ & it also states that ".....*The issue of distance between the hydro energy resource and the load centers, as in the case of Thailand and the Philippines, poses difficulties for SHP development.."*
2) "Philippines Renewable Energy Report, Asian and Pacific Centre for Transfer of Technology Of the United Nations – Economic and Social Commission for Asia and the Pacific (ESCAP)" /P41/ which states that "…….*Another difficulty in the development of renewable energy in the Philippines is the lack of local technical expertise in the field of RE. We have limited technical capacity to design, install, operate, manage and maintain RE-based systems that may be implemented in the country…….Another technical barrier is the site-specific. nature of RE resources. This requires a detailed analysis of specific local conditions that should be considered in adopting foreign RE technologies. With the acquisition of more data on RETs and the knowledge of the local settings, then we can modify and adjust these technologies to suit our needs and purpose. Yet another factor is the lack of domestic manufacturing of RETs, because most of these technologies are still produced in other countries. Moreover, there is a lack of standards for the different renewable energy areas that are being explored in the country"*

Option B.4: Other barriers
According to PoA-DD, it is stated that

"Other barriers may be identified and elaborated in each CPA if found that without the project activity, for a specific reason identified and explained in the CPA (such as institutional barriers or limited information, managerial resources, organizational capacity, financial resources, prevailing practices or capacity to absorb new technologies) emissions would have been higher"

The validation team accepted the justifications since this will be specifically determined at CPA level

Conclusion:
The validation team concluded that the CME has demonstrated "(i) the proposed voluntary measure would not be implemented" under absence of CDM support. The demonstration of additionality was in accordance with the "Procedures for Registration of a Programme of Activities as a Single CDM Project Activity and Issuance of Certified Emission Reductions for a Programme of Activities", Version 04.1, EB 55, Annex 38, para. 6 (e) /B15/ and "Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70 paragraph 7 to 9 and 11 & 13 /B26/.

3.8.3 Approach for demonstrating additionality of CPA under the PoA

Validation Opinion:

VVM paragraph 167

During on site validation, the validation team assessed the approach used to demonstrate the additionality of the specific CPA case i.e CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA.

At the time of on site validation, the additionality of the specific CPA case i.e **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA** is being demonstrated via the use of investment barrier approach
Although for CPA-1, the total installed capacity is less than 5MW, which would mean, Option A shall be selected to demonstrate its additionality; however requirement d-i), elaborated under E.5.1 in the PoA-DD, is not fulfilled at the time of Global Stakeholder Consultation
Hence the CPA will still conduct an additionality analysis according to option B: Mini-scale (>5 MW), i.e. investment barrier via investment analysis
Noted that in CPA-DD specific section B.2 already included the additionality as part of the eligibility criteria & hence the demonstration is also in line with the PoA-DD
Since this is a small scale project activity, the analysis method used to demonstrate the additionality is via investment analysis

The project participant has selected Equity IRR as the financial indicator. The validation team considers this financial indicator selected to be appropriate for the project, since the project will be financed 80% loan & 20% equity capital /P08/. In addition to this, the baseline scenario also reveals that the continuation of the current situation - electricity will continue to be imported from the grid, which is outside the direct control of the project participant. Hence, the choice for the project participant is restricted to "invest or not to invest". The validation team concludes that the benchmark approach is the most suited as defined in the Guidelines On The Assessment Of Investment Analysis, Version 05 /B08/ article 16

In order to assess the claim from the project participant that the project scenario is not economically feasible without benefits from CER sales, the validation team adopted the following approach:

a. Determining the suitability of the benchmark applied for the type of financial indicator presented

According to the Guidelines On The Assessment Of Investment Analysis, Version 05 /B08/ article 12, *"Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR. Required/expected returns on equity are appropriate benchmarks for equity IRR"*.
The type of benchmark selected by the project participant is equity IRR = 17%, which is sourced from National Renewable Energy Board (NREB) report /P31, P32/ for the determination of an appropriate Feed-in-Tariff for renewable energy projects including hydropower in the Philippines.

This report is supported by the Energy Regulatory Commission of the Philippines hence it is judged as an appropriate return for renewable energy projects.
According to the Guidelines On The Assessment Of Investment Analysis, Version 05 /B08/ article 13, *"In the cases of projects which could be developed by an entity other than the project participant the benchmark should be based on parameters that are standard in the market"*. Therefore the validation team concludes that the benchmark selected is appropriate & conforms to the Guidelines On The Assessment Of Investment Analysis, Version 05 /B08/

b. Conducting an assessment of parameters and assumptions used in calculating the financial indicator and determining the accuracy & suitability of parameters.

The project is envisaged to be financed 80% through bank debt & 20% equity. This has been confirmed through review of the FSR /P08/. At the time of the initial validation process, the validation team had confirmed that there is no bank loan contract available yet.

No final investment decision has been taken yet for **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA**. During the time on site validation, this is being cross checked via interview of the project owner who is also the CPA implementer. The project has not started as evident via interview with the CPA Implementer and also via site visit. No signed contracts available yet at the time of on-site validation for construction or equipment purchase.
For the purpose for preparation the investment analysis, the CPA Implementer has decided to use the FSR /P08/ as the basis for input parameters to be used & determination of the Equity IRR

For the purpose of validating the financial input parameters, the validation team has considered the preliminary investment decision date (i.e. using the FSR as the basis) in order to validate the consistency, appropriateness of the input values with this timing & consistency of the listed input values application in the financial calculation spreadsheet

Input values for Equity IRR calculation:

Parameter	Value	Reference Documents / Evidences
Installed capacity	840 kW	**Source of the value & consistency:** The value is consistent with the approved Feasibility Study Report /P08/. The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/ **Validity of input value at the time of investment decision making:** Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is valid at the time of initial investment decision making **Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):** N/A
Total Investment Breakdown of investment capital	**164,199,775.00 PHP**	**Source of the value & consistency:** The value is consistent with the approved Feasibility Study Report /P08/. The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/ **Validity of input value at the time of investment**
Civil Works	*111,534,971.49 PHP*	

Electro-Mechanical Works	*27,703,401.50 PHP*
Detailed Engineering Design & Supervision During Construction	*5,000,000 PHP*
Contingency (5% of Civil Works Cost excluding Access Road)	*3,000,000 PHP*
Right of Way (ROW) for Roads and Plant Sites	*5,088,748.57 PHP*
Interest during Construction	*11,872,653.57 PHP*

decision making:

Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is valid at the time of initial investment decision making

Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):

The validation team will make a further comparison with the total capital invested for this project activity versus other comparable registered CDM project in the same country (small scale projects in Philippines, employing AMS-I.D methodology). These projects are selected based on the survey via *IGES CDM Investment Analysis Database & CDM Pipeline list in http://cd4cdm.org/ website /P33/*.

Note:

In the PoA pipeline, no registered project available yet in Philippines. There is only another 1 project adopting AMS-I.D for hydropower in Philippines, which is currently under validation (PoA: Philippine Small-scale Hydropower PoA, CPA: Philippine Small-scale Hydropower PoA: CPA #1 Upper Siffu)

In the CDM pipeline, only 2 CDM registered projects, AMS-I.D, are available for comparison purpose

CDM - EB Ref	Name of CDM Project Activity	Total capital invested (million PHP)	Installed capacity	Cost per MW
3846	8 MW Cabulig River Mini-Hydroelectric Power Project	729.602 (15.84 million USD)	8.0 MW	91.2
4447	Commonal-Uddiawan Mini-Hydro Power Project	180.000 (3.9 million USD)	1.8 MW	100
	CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA.	164.199 (3.57 million USD)	0.84 MW	195

It shows an approximate range of 180 to 729 million PHP. The total capital invested for this project activity lies well below the range

In terms of cost per MW, it shows an approximate range of 91.2 to 100 million PHP. Cost per MW for the project

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<tr>
<td></td>
<td></td>
<td>activity lies well above this range

Since the investment cost is higher for the project activity, the validation team have conducted further research and refer to an article “Overview of mini and small hydropower in South East Asia” /P34/. In this article it was stated that “...the specific cost per kWh of SHP projects also varies greatly from country to country ranging from USD600/kWh to USD4,000/kWh – USD6,000/kWh”

Assuming the exchange rate at the time of the FSR preparation (June 2010) = 1 USD / PHP = 46.0537 (http://www.oanda.com/currency/historical-rates/)

<table>
<tr><th>CDM - EB Ref</th><th>Name of CDM Project Activity</th><th>Installed capacity</th><th>Cost per kW (USD)</th></tr>
<tr><td>3846</td><td>8 MW Cabulig River Mini-Hydroelectric Power Project</td><td>8.0 MW</td><td>1,980</td></tr>
<tr><td>4447</td><td>Commonal-Uddiawan Mini-Hydro Power Project</td><td>1.8 MW</td><td>2,166</td></tr>
<tr><td></td><td>CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA.</td><td>0.84 MW</td><td>4.250</td></tr>
</table>

Taking the concept of economies of scale ”when the size increases, the cost per unit comes down”, the validation team concludes that due to low capacity of the project activity, the cost is higher to the normal range in the country. Thus the validation team accepts the FSR value.

The cost per kW of the project activity is lies well within the range of the published data provided /P34/ and hence, the validation team concluded that the value applied is valid and correct.</td>
</tr>
<tr>
<td>Loan</td>
<td>131,359,820 PHP</td>
<td>Source of the value & consistency:

The value is consistent with the approved Feasibility Study Report /P08/.

The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/

Validity of input value at the time of investment decision making:

Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is</td>
</tr>
</table>

		valid at the time of initial investment decision making **Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):** At the time of finalization of the validation, no bank loan contract is available yet since the final investment decision has not been taken. Hence this is not applicable at the moment
Annual Electricity Generation	4,301,000 kWh	**Source of the value & consistency:** The value is consistent with the approved Feasibility Study Report /P08/. The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/ **Validity of input value at the time of investment decision making:** Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is valid at the time of initial investment decision making **Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):** N/A since this is specific to the design of the project according to the technical design defined in the FSR /P08/ document

<table>
<tr>
<td>Tariff rate</td>
<td>6.15 PHP / kWh</td>
<td>
Source of the value & consistency:

The value is consistent with the Philippine Energy Regulatory Commission (ERC) Case No. 2011-006 RM, Aug. 2011 /P32/.

The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/

Validity of input value at the time of investment decision making:

Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value should be the tariff taken from the FSR i.e. 6.30 PHP / kWh which is an estimated value. However, since the 3rd party source for tariff rate is available, it would be more reliable & credible source and would be still valid anyway since the final investment decision has not been taken yet by the CPA implementer

Noted that even substituting the higher tariff (6.30 PHP / kWh) into the investment analysis spreadsheet /P06/, the equity IRR = 16.80%m which is still below the benchmark value of 17%

Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):

The validation team conducted a survey of other CDM registered projects (small scale projects in Philippines), employing AMS-I.D methodology) for comparisons of the electricity price

(IGES CDM Investment Analysis Database & CDM Pipeline list in http://cd4cdm.org/ website /P33/)

As can be seen below, the tariif rate used for the CPA-1 is much higher than the registered project & hence, it is conservative

Furthermore, the tariff rate used in the financial calculation spreadsheet /P06/ is already taken from the 3rd party source & hence, is considered to be valid & credible

<table>
<tr><th>CDM-EB Ref</th><th>Name of CDM Project Activity</th><th>Power tariff</th><th>Remark</th></tr>
<tr><td>3846</td><td>8 MW Cabulig River Mini-Hydroelectric Power Project</td><td>2.5277 PHP / kWh</td><td>-</td></tr>
<tr><td>4447</td><td>Commonal-Uddiawan Mini-Hydro Power Project</td><td>N/A</td><td>Using access to financial barrier</td></tr>
<tr><td>-</td><td>CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA.</td><td>6.15 PHP / kWh</td><td>-</td></tr>
</table>
</td>
</tr>
</table>

Annual increase in tariff	1%	**Source of the value & consistency:** The value is consistent with the approved Feasibility Study Report /P08/. The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/ **Validity of input value at the time of investment decision making:** Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is valid at the time of initial investment decision making **Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):** When comparing to the CDM registered project reference #3846, no annual increase in tariff is being applied whereas this is being applied for CPA-1, which is deemed to be conservative. If the annual increase in tariff of 1% is removed from the financial calculation spreadsheet, the equity IRR is lower i.e. 13.42% instead of 15.89% Cross checked the 3rd party source document i.e. "The FIT report entitled "Representative Hydro Power Project in the Philippines: Financial Model for FIT calculation: Agos-11" prepared by NREB (National Renewable Energy Board) "/P31/, it was found that the calculation of financial indicator is based on assumption that the tariff rate is fixed for 20 years & the tariff rate to be applied post 20 years will be at 7 PHP / kWh. This is less conservative approach comparing to the annual escalation approach used by the CPA Implementer Hence, the validation team concluded, the annual escalation application is conservative & valid
Annual O & M Costs	**4,697,000 PHP**	**Source of the value & consistency:** The values is consistent with the approved Feasibility Study Report /P08/. The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/ **Validity of input value at the time of investment decision making:** Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is valid at the time of initial investment decision making **Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):** The validation team conducted a further comparison with the operation & maintenance cost for this project activity versus other comparable registered CDM project in the same country. These projects are selected based on the survey via *IGES CDM Investment Analysis Database &*
Fixed	*2,204,000.00*	
Operator and staff salary	*1,534,000.00*	
Miscellaneous Costs	*670,000.00*	
Variable	*2,493,000.00*	
Civil Works Maintenance Cost	*946,215.74*	
Electro-Mechanical Maintenance Cost	*976,784.26*	
Communication Equipment	*30,000.00*	

<table>
<tr><td>Maintenance Cost</td><td></td><td rowspan="2">CDM Pipeline list in http://cd4cdm.org/ website /P33/.

Based on % of total investment cost, it was found the CPA-1 Annual O & M cost lies well below that project reference #3846 & is also considered to be conservative by the validation team

<table><tr><th>CDM-EB Ref</th><th>Name of CDM Project Activity</th><th>Operation & Maintenance Cost %</th></tr><tr><td>3846</td><td>8 MW Cabulig River Mini-Hydroelectric Power Project</td><td>25,648,000 PHP (3.5% of total investment cost)</td></tr><tr><td>4447</td><td>Commonal-Uddiawan Mini-Hydro Power Project</td><td>N/A</td></tr><tr><td>-</td><td>CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA.</td><td>4,697,000 PHP (2.86% of total investment cost)</td></tr></table></td></tr>
<tr><td>Watershed Protection</td><td>540,000.00</td></tr>
<tr><td>Loan interest rate</td><td>9%</td><td>Source of the value & consistency:

The value is consistent with the approved Feasibility Study Report /P14/.

The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/

Validity of input value at the time of investment decision making:

Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is valid at the time of initial investment decision making

Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):
Cross checked website of World Bank http://data.worldbank.org/indicator/FR.INR.LEND?page=1 and found the trend the of the interest rates in year 2002 to 2006 ranged from 9.1% to 10.2%, followed by in year 2007 to 2011 ranged from 6.7% to 8.8%, where the interest rate has shown decreasing trend starting from year 2009. In year 2011, the interest rate is only 6.7%
Taking the average value of the 10 years interest rate, it is calculated to be 8.92% which is close to the rate used by the CPA Implementer. Hence, the validation team concluded the interest rate used is valid since no actual bank loan contract is secured yet</td></tr>
<tr><td>Loan term</td><td>15 years</td><td>Source of the value & consistency:

The value is consistent with the approved Feasibility Study Report /P08/.

The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/</td></tr>
</table>

		Validity of input value at the time of investment decision making: Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is valid at the time of initial investment decision making **Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):** N.A
Loan grace period	3 years	**Source of the value & consistency:** The value is consistent with the approved Feasibility Study Report /P08/. The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/ **Validity of input value at the time of investment decision making:** Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is valid at the time of initial investment decision making **Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):** N/A
DEBT-SERVICE (Annuity)	16,296,353 PHP	**Source of the value & consistency:** This is a calculated value derived from loan interest rate, loan term & loan amount & the input value has been validated – see details above **Validity of input value at the time of investment decision making:** Since the input values used are derived from FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is valid at the time of initial investment decision making **Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):** N/A
Debt: Equity ratio	80:20	**Source of the value & consistency:** The value is consistent with the approved Feasibility Study Report /P08/. The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/ **Validity of input value at the time of investment decision making:** Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is valid at the time of initial investment decision making **Justification by the validation team according to §113**

		of VVM: (cross checking and comparison as applicable): N/A
Privilege tax rate	1%	**Source of the value & consistency:** The value is sourced from Rule 7, Section 20.A "Government Share", Rules and Regulations Implementing Republic Act 9513 /P35/ which is a published 3rd party source from Department of Energy, Philippines The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/ **Validity of input value at the time of investment decision making:** The reference source published in year 2008 is valid at the time of initial investment decision making **Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):** N/A – see above
Local tax rate	0.5%	**Source of the value & consistency:** The value is consistent with the Revenue Code of the Municipality of Sebaste Order No. 2008-01, a 3rd party source document The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/ **Validity of input value at the time of investment decision making:** The reference source published in year 2008 is valid at the time of initial investment decision making **Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):** N/A – see above
Service lifetime	30 years	**Source of the value & consistency:** The value is consistent with the approved Feasibility Study Report /P08/. The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/ **Validity of input value at the time of investment decision making:** Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is valid at the time of initial investment decision making **Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):** The validation team has also confirmed that the lifetime

		stipulated conforms with the ”Tool to determine the remaining lifetime of equipment, Version 01 EB50” /B09/
Inflation rate	4%	**Source of the value & consistency:** The value is consistent with the approved Feasibility Study Report /P08/. The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/ **Validity of input value at the time of investment decision making:** Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is valid at the time of initial investment decision making **Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):** Cross checked the public website of International Monetary Fund, http://www.imf.org/external/pubs/ft/weo/2012/01/weodata/weorept.aspx?sy=2010&ey=2017&scsm=1&ssd=1&sort=country&ds=.&br=1&c=566&s=PCPI%2CPCPIPCH&grp=0&a=&pr1.x=71&pr1.y=13 And the validation team found that starting from year 2011 onwards, the inflation rate outlook is expected to reduce from 4.761% (2011) to 3.371% (2012), 4.14% (2013) & finally to 4.00% from year 2014 onwards Hence, the validation team considered the 4% inflation rate used in the financial calculation spreadsheet to be appropriate
Plant Load Factor	58.6%	**Source of the value & consistency:** The value is consistent with the approved Feasibility Study Report /P08/. The validation team confirmed the value to be correct & consistent with the CPA-DD & financial calculation spread sheet /P06/ **Validity of input value at the time of investment decision making:** Yes, since FSR /P08/ has been used as the basis for input parameter in the investment analysis, this input value is valid at the time of initial investment decision making **Justification by the validation team according to §113 of VVM: (cross checking and comparison as applicable):** The validation team has cross checked the plant load factor value in accordance with the Guidelines For The Reporting And Validation of Plant Load Factors, Version 01, EB 48, Annex 11 /B10/. The FSR has been prepared by qualified 3rd party institute i.e. Vergel3 Consult, which in compliance with the requirements of Guidelines For The Reporting And Validation of Plant Load Factors, Version 01, EB 48,

		Annex 11 /B10/ According to the review of the 3rd party institute i.e. Vergel3 Consult website /P08/, it was found that it was registered with the Department of Trade and Industry (DTI) and the Bureau of Internal Revenue (BIR) as legally tax-paying engineering consulting firm *Remarks: The validation team conducted survey of other CDM registered projects (small scale projects, employing same methodology, AMS-I.D, located in Philippines)* *The validation team will survey IGES CDM Investment Analysis Database & CDM Pipeline list in http://cd4cdm.org/ website /P33/* As can be seen below, although the plant load factor for the CPA-1 is the lowest compared with the other 2 projects, the validation team accepted the value since it has been calculated by qualified 3rd party institution in line with the Guidelines For The Reporting And Validation of Plant Load Factors, Version 01, EB 48, Annex 11 /B10/, which has considered historical hydrological curves data while determining the plant load factor

CDM Reference	Project Title	Plant Load Factor
3846	8 MW Cabulig River Mini-Hydroelectric Power Project	70.28%
4447	Commonal-Uddiawan Mini-Hydro Power Project	61.00%
-	**CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA**.	58.60%

c) Cross checking the parameters against third party or publicly available sources
See table above

d) Assessing the correctness of computations carried out and documented
The right input values taken from the supporting documents have been cross checked with the financial calculation spreadsheet & confirmed to be correct.

The equity IRR has been computed for a period of 30 years, which is the lifetime of the project & is in conformity with the "Guidelines On The Assessment Of Investment Analysis Version 05" /B08/ & "Tool to determine the remaining lifetime of equipment, Version 01 EB50" /B09/. The equity IRR of the project activity without CDM is 18.59%.

According to "Guidelines On The Assessment Of Investment Analysis Version 05" /B08/, article 20 states that, "Only variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues should be subjected to reasonable variation…."; and article 21 states that, "As a general point of departure variations in the sensitivity analysis should at least cover a range of +10% and 10%,……."
The project developer has identified the followings as the most critical assumptions. There are no other expenses or costs which could be subjected to variation as all of them have been considered either directly or indirectly in the sensitivity analysis.

Sensitivity analysis has been performed by varying the key parameters, as listed below:

1. Tariff rate
2. Investment cost
3. O & M costs
4. Electricity generation / Plant factor

The sensitivity range covered: -10%, +10%. The sensitivity analysis showed that within the sensitivity range covered for the analysis, the IRR still would not reach the benchmark level.

Variation	-10%	+ 10%
Tariff rate	10.97	**17.96**
Investment cost	15.43	13.48
O & M costs	15.20	13.65
Electricity generation / Plant factor	10.91	**17.96**
Benchmark	17.00	17.00

The followings are the summary of the validation team's conclusion with regards to the sensitivity analysis assumptions as stipulated in the PDD

Parameter	**Means of validation & conclusion**
Tariff rate	At +10% variation, the benchmark rate would be crossed. It would require an increase of 7.35% of the power tariff in order to reach the benchmark level. However, the validation team found this to be unrealistic since the electricity tariff has been fixed for 20 years as confirmed through review of the 3rd party source document i.e. "The FIT report entitled "Representative Hydro Power Project in the Philippines: Financial Model for FIT calculation: Agos-11" prepared by NREB (National Renewable Energy Board)" /P31/, it was found that the calculation of financial indicator is based on assumption that the tariff rate is fixed for 20 years & the tariff rate to be applied post 20 years will be at 7 PHP / kWh. This is less conservative approach comparing to the annual escalation approach used by the CPA Implementer Hence the validation team concluded that the electricity tariff will not likely to increase in light of the above
Investment cost	Decrease of 22.3% for the investment cost will results in this parameter crossing the benchmark. The validation team has reviewed the forecasted trends of the inflation rate & confirmed that based on the trend of the inflation rate, the investment cost is unlikely to be reduced to a level which allows the IRR to cross the benchmark level. Cross checked the public website of International Monetary Fund, http://www.imf.org/external/pubs/ft/weo/2012/01/weodata/weorept.aspx?sy=2010&ey=2017&scsm=1&ssd=1&sort=country&ds=.&br=1&c=566&s=PCPI%2CPCPIPCH&grp=0&a=&pr1.x=71&pr1.y=13 And the validation team found that starting from year 2011 onwards, the inflation rate outlook is expected to reduce from 4.761% (2011) to 3.371% (2012), 4.14% (2013) & finally to 4.00% from year 2014 onwards,
O & M costs	The operation & maintenance cost is very unlikely to be reduced to 32.5% (in order to reach the benchmark level, which is highly unrealistic) as confirmed through review of historical trends of inflation rate – see above. Thus the validation concluded that the operation & maintenance cost would not be reduced to a level which allows the IRR to cross the benchmark level.

Electricity generation / Plant factor	At +10% variation, the benchmark rate would be crossed. The validation team has cross checked the plant load factor value in accordance with the Guidelines For The Reporting And Validation of Plant Load Factors, Version 01, EB 48, Annex 11 /B10/. The validation team considered that the plant load factor has been applied correctly as it is determined by a third party contracted by the project participants who conducted the FSR study. Considering the long term hydrological data used as input for the calculation of the plant load factor, the validation team concludes that an increase of 10% in generation is not possible in order to hit the benchmark

Based on the assessment of the conformity of additionality demonstration & benchmark selection to the latest version of the guidance issued by EB on the assessment of investment analysis, plausibility & appropriateness of parameters used & correctness of financial calculations, the validation team concludes that the project is not economically feasible without benefits from the CER sales.

3.9 GHG Emission Reductions from a typical CPA

Validation Opinion:

VVM paragraph 89 to 93

The GHG emission reduction calculations are based on the formulae outlined in the methodology AMS-I.D version 17 /B07/. The validation team has confirmed the calculations are transparently documented & appropriate assumptions regarding the expected amount of electricity generated have been used to determine the emission reductions
For estimating the emission reductions by the project activity, the baseline emission factor (EF) is calculated as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM) factors. This has been calculated according to the stepwise approach, in line with the Tool to calculate the emission factor for an electricity system Version 02.2.1, EB63, Annex 19 /B05/.

For calculating the OM emission factor, simple OM method was selected because the low cost & must run power plants constitute less than 50% of the total grid generation. The OM is calculated according to the "ex-ante" option i.e. a three year generation – weighted average, based on the most recent data available at the time of PDD submission. The electricity outputs & heat rates sourced in 3 years (2008 – 2010) are used to calculate the ex-ante simple OM emission factor.

The validation team has verified the 3 years data sourced from Philippines Power Statistics Data supplied by Department of Energy of the Philippines, Year 2010 /P37/ & confirmed to be the latest officially available data at the time of PDD submission (also confirmed by the validation team during interview with the Department of Energy, Energy Center /I02/

The simple OM emission factor calculated is 0.6291 tCO_2e/MWh (for Luzon-Visayas grid) & 0.3321 tCO_2e/MWh (for Mindanao grid) /P12/.

The BM emission factor was calculated based on Option 1: For the first crediting period, calculate the build margin emission factor ex ante based on the most recent information available on units already built for sample group m at the time of PDD submission to DOE for validation /P12/.
The reference document used for the calculation is the same as the one referenced for OM emission factor calculation /P37/. The BM emission factor calculated is 0.3456 tCO_2e/MWh (for Luzon-Visayas grid) & 0.8168 tCO_2e/MWh (for Mindanao grid) /P12/.

The combined margin baseline emission factor calculated is 0.4874 tCO_2e/MWh (for Luzon-Visayas grid) & 0.5745 tCO_2e/MWh (for Mindanao grid) /P12/.

Baseline Emissions
Hence, according to AMS-I.D methodology paragraph 11,

$$BE_y = EG_{BL,y} * EF_{CO_2,grid,y}$$

Where

Parameter	Description	Value
BE_y	Baseline Emissions in year y (t CO_2)	2,094.58
$EG_{BL,y}$	Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y (MWh).	4,301
$EF_{CO2,grid,y}$	CO2 emission factor of the grid in year y (t CO2/MWh)	0.487

Project Emissions

According to AMS-I.D methodology paragraph 20, for the following categories of project activities, project emissions have to be considered following the procedure described in the most recent version of ACM0002 (for this case, ACM0002 Version 13.0.0 is applicable)

- o Emissions related to the operation of geothermal power plants (e.g. noncondensable gases, electricity/fossil fuel consumption);
- o Emissions from water reservoirs of hydro power plants.

Hence,

$PE_y = PE_{FF,y} + PE_{GP,y} + PE_{HP,y}$

Since the project activity does not involved operation of geothermal plants & does not construct water reservoir, $PE_{GP,y} = 0$, $PE_{HP,y} = 0$, $PE_{FF,y} = 0$

Leakage Emissions

Since no energy generating equipment is transferred from another activity, leakage will not be considered Hence, $LE_y = 0$

Emission reductions are calculated as follows:

$$ER_y = BE_y - PE_y - LE_y$$

Where

ER_y = Emission reductions in year y (t CO_2/year)
BE_y = Baseline emissions in year y (t CO_2/year)
PE_y = Project emissions in year y (t CO_2/year)
LE_y = Leakage emissions in year y (t CO2/year)

Therefore, the emission reductions due to the project activity were estimated ex-ante to be **2,094.58** tCO2e per year (rounded down to 2,000 tCO2e) in the specific CPA case **CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA**. The validation team has to cross check the information presented in the specific CPA case CPA-DD, emission reduction spreadsheet /P07/; reference document used /P37/ in order to confirm that the calculation is correct

The table below summarized the applicability and justification of the project activity's emission reduction:

All assumptions made for estimating GHG are listed in the PoA-PDD	☒ Yes ☐ No	As per PoA-PDD Section E.6.1
All data used by project participants are listed in the PoA-PDD	☒ Yes ☐ No	As per PoA-PDD Section E.6.1 & Grid Emission Factor Excel calculation spreadsheet /P12/
Their references and sources are also listed in the PoA-PDD	☒ Yes ☐ No	As per PoA-PDD Section E.6.1 & Grid Emission Factor Excel calculation spreadsheet /P12/
Formulas, parameters, values are complete,	☒ Yes	As per PoA-PDD Section E.6.1 & Grid

accurate, transparent and conservative	☐ No	Emission Factor Excel calculation spreadsheet /P12/
All the references and documents used are correctly quoted and conservatively interpreted in the PoA-PDD	☒ Yes ☐ No	As per PoA-PDD Section E.6.1 & Grid Emission Factor Excel calculation spreadsheet /P12/
Methodology has been applied correctly to calculate project emissions, baseline emissions, leakage emissions and emission reductions	☒ Yes ☐ No	As per AMS-I.D version 17 /B04/ & methodological tool, "Tool to calculate the emission factor for an electricity system version 02.2.1" /B05/
All the emissions of baseline emissions can be replicated using information provided in the PoA-PDD	☒ Yes ☐ No	The baseline emissions can be replicated using the information in the PDD section E.6.1.

3.10 Monitoring Plan for a typical CPA

Validation Opinion:

VVM paragraph 121 to 124

See also Section 3.6 of this report

The monitoring plan presented in the PoA-PDD Section E.7 complies with the requirements of methodology AMS.I.D "Grid Connected Renewable Electricity Generation", Version 17 /B04/, through cross checking of all parameters stipulated in the monitoring plan.

According to the document review in PoA-PDD, detailed monitoring procedures, monitoring structure, monitoring items & functions are clearly demonstrated in the PDD which enable the monitoring plan to implemented feasibly

Interview with the project participant & consultant has allowed the validation team to confirm that the monitoring plan defined in the PDD is feasible to be implemented.

3.10.1 Parameters determined ex-ante

Validation Opinion:

VVM paragraph 122

The following data and parameters were available during the validation and will remain fixed ex-ante throughout the crediting period:

Parameter	Value (PoA-DD)	Value (CPA-1: Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA)	Means of Validation
$EG_{BL,y}$	Determined on project level.	4,301 MWh	Confirmed to be correct acording to the review of FSR /P08/
$EF_{grid,CM,y}$	Calculation on the basis of the latest available data at the time of CPA inclusion	0.487 tCO_2/MWh	Confirmed through review of the reference documents quoted in the CPA-DD Section B.5.1, "Source of data used" /P12, P37/
$EF_{grid,BM,y}$	Calculation on the basis of the latest available data at the time of CPA inclusion	0.346 tCO_2/MWh	Confirmed through review of the reference documents quoted in the CPA-DD Section B.5.1, "Source of data used" /P12, P37/

$EF_{grid,OM,y}$	Calculation on the basis of the latest available data at the time of CPA inclusion	0.629 tCO_2/MWh	Confirmed through review of the reference documents quoted in the CPA-DD Section B.5.1, "Source of data used" /P12, P37/
$EF_{grid,island}$	To be elaborated in each CPA separately	N/A for this CPA-1	N/A for this CPA-1
EF_{Res}	90 $kgCO_2e$/MWh	Same as in PoA-DD	Confirmed in accordance with ACM 0002 requirements
CAP_{PJ}	To be elaborated in each CPA separately	840,000 W	For specific case CPA-1, since no reservoir is to be constructed, this parameter is not applicable
A_{PJ}	To be elaborated in each CPA separately	0	For specific case CPA-1, since no reservoir is to be constructed, this parameter is not applicable

The validation team has verified the value used against the sources & conclude that all relevant parameters to calculate the GHG emissions reductions of the project have been sufficiently considered, real, measurable & conservative.

3.10.2 Parameters monitored ex-post

Validation Opinion:

VVM paragraph 122

The baseline and project emission parameters that are monitored ex-post are indicated in Section E.7.1 of the PoA-PDD and as follows:

1. Net electricity delivered to grid in year y, $EG_{BL,y}$
2. Total amount of electricity exported to grid in year y, $EG_{export,y}$
3. Total amount of electricity imported from grid in year y, $EG_{import,y}$
4. Combined margin CO2 emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system", $EF_{grid,CM,y}$
5. 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
6. Area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full, A_{PJ}
7. Installed capacity of the hydro power plant after the implementation of the project activity, CAP_{PJ}

The monitoring of emission reductions generated by the project activity will be carried out systematically according to the monitoring plan. All relevant parameters are monitored closely as required by methodology throughout the project activity implementation.

All parameters required by the methodology including the accuracy of the measurement have been included in the PoA-PDD Section E.7.1.

All monitoring data will be electronically archived for a period of 2 years after crediting period.

Monitoring of leakage emissions is not required as the project equipments are not transferred from another project activity

3.10.3 Management system and quality assurance

Validation Opinion:

VVM paragraph 123

The DOE validation team has assessed the proposed management system and how does the quality will be assured in the proposed project activity. The outline of the operational procedure was described in the PoA-PDD. The operational procedure will be updated by the project participant as required during the operation of the project activity. The monitoring and recording of the required parameters will be carried out by trained personnel who will be managed by the operator of the power plant

The aspects related to the monitoring plan are addressed as the following:

i) Responsibility & organization
ii) Monitoring
iii) Quality Assurance & Quality Control (QA/QC) which includes also requirements for calibration
iv) Data recording
v) Reporting
vi) Calculation of emission reductions

All measurements will use calibrated measurement equipment that will be maintained regularly and checked for its functioning.

Hence, all indicators of importance for controlling and reporting of projects performance have been incorporated in the monitoring plan as well as indicated in the planned formal set of monitoring protocol and work instructions.
The validation team has also reviewed the process to monitor emission reductions as described in the PoA-PDD Section E.7.2 & confirmed that the designated personnel & their responsibility have been defined clearly with respect to key monitoring features.
The implementation of the aspects related to the monitoring plan will ensure that the subsequent verification of the emission reductions of the specific case CPA and also further inclusion of the new CPAs in future. Relevant CDM training will be started before each CPA operation. Training plans and schedules /P17/ about CDM monitoring and technical aspects are available at the time of on-site validation
The application of the monitoring methodology however is found to be consistent between the descriptions in the PoA-DD & CPA-DD level and the validation team considers the CPA Implementer will be able to implement the monitoring plan effectively

3.11 Sustainable Development

Validation Opinion:

VVM paragraph 125 to 127

The LoA from the Philippines DNA (Department of Environment & Natural Resources), has been received & confirmed the voluntary participation of Land Bank of the Philippines (LBP) in achieving sustainable development. Environmental Impacts (at CPA level)

As for the specific case CPA-1 Carit-an Mini-Hydropower Plant, the sustainable development benefits as stated in the CPA-DD are confirmed to be valid, cross checked during the interview with the representatives from the Philippines DNA /I02/

Validation Opinion:

VVM paragraph 131 to 133

According to the PoA-DD, the environmental analysis will be conducted at CPA-level

Hence, the validation team has assessed the specific case CPA-1 Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA & found these has been identified according to the feasibility study report /P08/, Chapter 2.0

According to the specific case CPA-1 Carit-an Mini-Hydropower Plant, CPA-DD Section C.3, Environmental Compliance Certificate is not required & the CPA owner is required to request for Certificate of Non-Coverage (CNC) from the Department of Environment & Natural Resources.

During the interview with the project owner of CPA-1 Carit-an Mini-Hydropower Plant, the validation team was able to verify the reply letter received from the OIC-Regional Director of Environmental Management Bureau /P13/ which mentioned the status of Certificate of Non-Coverage (CNC) application. Application letter was submitted by ANTECO to the Department of Environment & Natural Resources (Request for the Issuance of Certificate of Non-Coverage (CNC)) for Carit-an Mini-Hydro Power Project, on 18 November 2010

At the time of finalization of the validation, the Certificate of Non-Coverage (CNC) /P19/ has been obtained on 13 March 2012 & confirmed to be valid

3.12 Local Stakeholder Consultation (at PoA level)

Validation Opinion:

VVM paragraph 128 to 130

According to the PoA-DD, the local stakeholder consultation will be conducted at CPA-level. This is accepted by the validation team since each hydropower project would have specific issues raised by the local stakeholder community & also agreed by local expert

Hence, the validation team has assessed the specific case CPA-1 Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA & the summary of the validation opinions will be as follows

The local stakeholder consultation was held on 01-09-2011 as evident via stakeholder meeting attendance list /P15/

The relevant stakeholders have been invited via the local government unit (LGU) of Sebaste, who in turn informed directly to the related people. This was re-confirmed by the validation team during the on-site interview with the Vice Mayor of Municipality of Sebaste. Besides this, the invitation to the stakeholder consultation was also posted at the municipal hall of Sebaste & also via use of banner.

The validation team has confirmed that the relevant stakeholders invited are in line with the definition of stakeholders, according with Glossary of CDM Terms /B07/. The media utilized to invite the stakeholders are appropriate.

There were no adverse comments received from the local stakeholders during the public forum. The validation team was able to verify this during the on site interview with the Vice Mayor of Municipality of Sebaste & interview with the local villagers; Participants did not raise any objections to the project and demonstrated a keen interest in its environmental and social impacts. A summary of the comments has been provided and report on how due account was taken of any comments received are provided in Specific case CPA-PDD Section D.3

Hence, the validation team confirmed that local stakeholder consultation process is conducted adequately & credible

3.13 Comments by Parties, Stakeholders and NGOs

Validation Opinion:

The PoA-PDD [initially published version], Version 4, Date: 23-09-2011 & the Specific CPA-DD [initially published version], Version 1, Date: 23-09-2011 were made publicly available on UNFCCC CDM website:

http://cdm.unfccc.int/ProgrammeOfActivities/Validation/DB/V5E1Y4RTM17JGVNPVYMF1LGF527PF4/view.html

from 01 Oct 11 - 30 Oct 11 in order to invite comments from public stakeholders.

No public comments have been received during that period.

Appendix A

THE VALIDATION PROTOCOL FOR CDM PROGRAMME OF ACTIVITIES

based on CDM Validation and Verification Manual, Annex 1 of EB55 report

Philippines Mini-Hydro PoA

Report No. 01 997 910 5066669
Version No. 00

Table A: Mandatory Requirements for Clean Development Mechanism (CDM) Programme of Activities (PoA)

Requirement	Reference	Conclusion
About Parties		
1. The programme shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art.	Kyoto Protocol Art.12.2	See Table B, Section A.2.3
2. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC.	Kyoto Protocol Art.12.2.	See Table B, Section A.2
3. The project shall have the written approval of voluntary participation from the designated national authority of each Party involved.	Kyoto Protocol Art. 12.5a, CDM Modalities and Procedures §40a	No LoA is obtained from the DNA of host country, Philippines **See CAR 02**
4. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof.	Kyoto Protocol Art. 12.2, CDM Modalities and Procedures §40a	See Table B, Section A.4
5. In case public funding from Parties included in Annex I is used for the project activity, these Parties shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of these Parties.	Decision 17/CP.7, CDM Modalities and Procedures Appendix B, § 2	The proposed PoA did not receive public funding. Supporting information for the public funding has been provided to the validation team **See CL 11, CAR 20**
6. Parties participating in the CDM shall designate a national authority for the CDM.	CDM Modalities and Procedures §29	The designated national authority (DNA) of Philippines is the Department of Environment & Natural Resources)
7. The host Party and the participating Annex I Party shall be a Party to the Kyoto Protocol.	CDM Modalities §30/31a	Philippines ratified the Kyoto Protocol on 20th Nov 2003
8. The participating Annex I Party's assigned amount shall have been calculated and recorded.	CDM Modalities and Procedures §31b	Not applicable.
9. The participating Annex I Party shall have in place a national system for	CDM Modalities and	Not applicable

Requirement	Reference	Conclusion
estimating GHG emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7.	Procedures §31b	
About Design of Programme		
10. The CDM-POA-DD sets a framework for the implementation of the PoA and defines unambiguously a CPA under the PoA.	PoA Procedures § 2	Yes, a framework for the implementation of the PoA has been set.
11. The coordinating/managing entity shall be identified.	PoA Procedures § 2 (a)	See Table B, Section A.2.2
12. The boundary for the PoA in terms of a geographical area (e.g., municipality, region within a country, country or several countries) within which all CPAs included in the PoA will be implemented is defined.	PoA Procedures § 2 (b)	See Table B, Section A.1.3
13. Eligibility criteria are defined for inclusion of a project activity as a CPA under the PoA, which shall include criteria for demonstration of additionality, and the type and/or extent of information (e.g. criteria, indicators, variables, parameters or measurements) that shall be provided by each CPA in order to ensure its eligibility.	PoA Procedures § 2 (g)	**See CAR 05**
14. The length of the PoA is not exceeding 28 years.	PoA Procedures § 2 (h)	Yes, the PoA-DD Section B.2 mentioned clearly as 28 years
15. The operational and management arrangements established by the coordinating/managing entity for the implementation of the PoA is described, including a description of a record keeping system for each CPA under the PoA, a system/procedure to avoid double accounting e.g. to avoid the case of including a new CPA that has been already registered either as CDM project activity or as a CPA of another PoA, the provisions to ensure that those operating the CPA are aware and have agreed that their activity is being subscribed to the PoA.	PoA Procedures § 2 (i)	See Table B, Section A.6
16. The proposed statistically sound sampling method/procedure to be used by DOEs for verification of the amount of emission reductions achieved by CPAs under the PoA is described. In case the coordinating/managing entity opts for a verification method that does not use sampling but verifies each CPA there is a transparent system defined and described that ensures that no double accounting occurs and that the status of verification can be determined anytime for each CPA.	PoA Procedures § 2 (k)	See Table B, Section A.6.4 & **CAR 22**

Requirement	Reference	Conclusion
About small-scale programmes of activities (if applicable)		
17. The CPAs shall meet the eligibility criteria for small scale CDM project activities set out in § 6 (c) of the Marrakech Accords.	Simplified Modalities and Procedures for Small Scale CDM Project Activities §12a,c	See Table B, Section A.5
About additionality		
18. Additionality of the programme as a whole is demonstrated because in the absence of the CDM (i) the proposed voluntary measure would not be implemented, or (ii) the mandatory policy/regulation would be systematically not enforced and that non- compliance with those requirements is widespread in the country/region, or (iii) that the PoA will lead to a greater level of enforcement of the existing mandatory policy/ regulation.	Kyoto Protocol Art. 12.5c, CDM Modalities and Procedures §43 PoA Procedures § 2 (e)	See Table B, Section E.3
19. Additionality of a typical CPA is demonstrated by using the procedure provided in the baseline and monitoring methodology applied.	PoA Procedures § 2 (f)	See Table B, Section E.3
About application of baseline and monitoring methodology		
20. The baseline and monitoring methodology shall be previously approved by the CDM Executive Board.	CDM Modalities and Procedures §37e	See Table B, Section E.1, E.2
21. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances.	CDM Modalities and Procedures §45c,d	See Table B, Section E.1
22. The baseline methodology shall exclude to earn CERs for decreases in activity levels outside the project activity or due to force majeure.	CDM Modalities and Procedures §47	See Table B, Section E.1
23. The monitoring plan for a typical CPA is developed in accordance with the approved monitoring methodology, and identification of the monitoring provisions and data parameters a CPA has is to apply/monitor	PoA Procedures § 2 (j)	See Table B, Section E.9, E.10
24. Provisions for monitoring, verification and reporting shall be in accordance with the modalities described in the Marrakech Accords and relevant decisions of the COP/MOP.	CDM Modalities and Procedures §37f	See Table B, Section E.9, E.10

Requirement	Reference	Conclusion
About forecast emission reductions		
25. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out.	CDM Modalities and Procedures §37c	See Table B, Section C
About stakeholder comments		
26. Comments by local stakeholders shall be invited, a summary of these provided and how due account was taken of any comments received.	CDM Modalities and Procedures §37b	See Table B, Section D
27. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days, and the project design document and comments have been made publicly available.	CDM Modalities and Procedures §40	See Table B, Section D
Other		
28. The project design document shall be in conformance with the UNFCCC CDM-SSC-PoA-DD format.	CDM Modalities and Procedures Appendix B, EB Decision	**See CAR 01**

Table B: Requirement Checklist

(based on § 37 of the CDM Modalities and Procedures and on CDM Validation and Verification Manual, Annex 1 of EB55)
(MoV = Means of Verification, DR= Document Review, I= Interview)

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
A. General Description of Programme Activity **The project design is assessed.**					
A.1 Programme Boundaries *Project/Programme Boundaries are the limits and borders defining the GHG emission reduction project.*					
A.1.1. Are the programme's spatial boundaries (geographical) clearly defined?		DR, I	Yes, the programme's spatial and geographic boundaries are clearly defiined. **See CAR 04**	OK	OK
A.1.2. Are the programme's system boundaries (components and facilities used to mitigate GHGs) clearly defined?		DR, I	Yes, the CPAs under the PoA implement the small scale hydropower plant in Philippines, hence the small scale hydropower plant under the CPA will send the generated electricity to the Philippines National Grid, the whole facilities included in the grid are the programme's boundary. **See CL 12**	OK	OK
A.1.3. Can each CPA under the PoA be clearly identified individually including spatial boundaries (geographical) clearly defined		DR, I	Yes, through the geographic coordinates, the CPA can be clearly identified. **See CAR 16, CAR 17**	OK	OK
A.2 Participation Requirements *Referring to Part A, Annex 1 and 2 of the PoA-DD as well as the CDM glossary with respect to the terms Party, Letter of Approval, Authorization and Project Participant.*					

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
A.2.1 Which Parties and programme participants are participating in the project?		DR, I	2 participants from Philippines & Germany are involved in the PoA **See CAR 02, CAR 03**	OK	OK
A.2.2 Has the coordinating/managing entity of the programme been identified?		DR, I	Yes, Land Bank of the Philippines is the coordinating entity. **See CL02, CL 03, CL 25**	OK	OK
A.2.3 Have all involved Parties provided a valid and complete letter of approval and have all private/public project participants been authorized by an involved Party?		DR, I	Yes, LoAs have been received from host country, Philippines & Annex 1 country, Germany and the private PP have been authorized by the involved party	OK	OK
A.2.4 Do all participating Parties fulfil the participation requirements as follows: - Ratification of the Kyoto Protocol - Voluntary participation - Designated a National Authority		DR, I	Yes, all requirements are fulfilled by the participating parties	OK	OK
A.2.5 Has it been checked that if there is public funding for the programme from Parties in Annex I, this funding shall not be a diversion of official development assistance.		DR, I	Yes, there are no public funding for the programme from Parties in Annex I **See CL 11, CAR 20**	OK	OK
A.3 Technology to be employed *Validation of project technology focuses on the programme engineering, choice of technology and competence/ maintenance needs. The validator should ensure that environmentally safe and sound technology and know-how is used.*					
A..3.1 Does the programme design engineering reflect current good practices?		DR, I	Yes, programme design engineering reflect current good practices **See CAR 15, CL 05, CL06, CL07**	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
A.3.2 Does the programme use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?		DR, I	Yes, the programme use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country **See CAR 15**	OK	OK
A.3.3 Does the programme make provisions for meeting training and maintenance needs?		DR, I	Yes, training & maintenance needs provisions have bene identified **See CL 24**	OK	OK
A.4 Contribution to Sustainable Development *The programme's contribution to sustainable development is assessed.*					
A.4.1 Has the host country confirmed that the programme assists it in achieving sustainable development?		DR, I	Yes, the LoA stated that the PoA will support in achieveing the sustainable development criteria	OK	OK
A.4.2 Will the programme create other environmental or social benefits than GHG emission reductions?		DR, I	During the physical interview conducted between the validation team & the Philippines DNA (Department of Environment & Natural Resources – DENR), it is confirmed that the programme will benefit the development of domestic renewable energy sources since mini hydropower development is still largely untapped	OK	OK
A.5 Small scale programme activity *Is this assessed whether the project qualifies as small-scale CDM project activity*					
A.5.1. Do CPAs under the programme qualify as a small scale CDM project activity as defined in paragraph 6 (c) of decision 17/CP.7 on the modalities and procedures for the CDM?		DR, I	Yes, the CPAs under this PoA are SSC hydropower projects with the installation capacity not higher than 15MW.	OK	OK
A.5.2. Is the small scale project activity not a de-bundled component of a larger project activity?		DR, I	**See CAR 06** **<u>Justifications provided in the specific case CPA-DD</u>** Debundling check has been carried out on CPA level	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
			under section A.4.6. in accordance with the latest "Guidelines on assessment of debundling for SSC project activities". **Validation opinion:** According to the specific case CPA-DD Section A.4.6, The CPA cannot be a de-bundled component of another project activity as: • Carit-an is the first CPA of the PoA. It is the only project unit within the CPA and the implementer is not involved in any other large scale PoA of the same technology • There is no other project activity within 1 km of the boundary of Carit-an considered to be included within the PoA; This is also confirmed via cross checking the UNFCCC & UNEP RISOE website **Conclusion:** The validation team concluded that the eligibility criteria has been met		
A.6 Operational, management and monitoring plan for the programme					
A.6.1. Do the operational and management arrangements established by the coordinating entity include a record keeping system for each CPA under the programme?		DR, I	**See CL 09, CL 10** Yes, record keeping system for each CPA has been defined transparently in the PoA-DD	OK	OK
A.6.2. Do the operational and management arrangements established by the coordinating entity include a system/procedure to avoid including CPAs that have already been registered either as CDM project activity or as a CPA of another PoA?		DR, I	Yes, a procedure has been set up for preventing the double counting issues as described in the PoA-DD.	OK	OK
A.6.3. Do the operational and management arrangements established by the coordinating entity include provisions to		DR, I	Yes, Through the signed agreement between the CME and CPA implementer and, the CPA owner are aware of	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
ensure that CPA implementers are aware and have agreed that their activity is being subscribed to the PoA?			their activities are being subscribed to the PoA **See CL 08**		
A.6.4. Does the monitoring plan include a description of a proposed statistically sound sampling method and procedure to be used by designated operational entities for verification of GHG emission reductions by CPAs under the programme? OR If the programme does not use verification method that applies a statistical method for sampling, has a system been defined to avoid double counting of CERs, and is the system transparent?		DR, I	**See CAR 22** The CME has defined the requirements for sampling in accordance with Standard For Sampling And Surveys For CDM Project Activities And Programme Of Activities, Version 03.0, EB 69, Annex 4 /B22/. According to PoA-DD Section A.4.4.2, "…..All CPAs *will be monitored by the project implementers where Monitoring Reports will be recorded by LBP and it will all be made available to the DOE for verification. LBP will be the main interlocutor with the DOE and will take responsibility for making sure all records are being kept by the CPA implementers for all monitored data, and will be in charge of conducting quality checks on the emission reduction estimates for each CPA to be then reported to the DOE"* Based on the review of the PoA-DD Section E.7 & Monitoring Manual for Philippines Mini-Hydro PoA For Project Owners, Version 0.8 /P29/, the validation team concluded that a transparent system is in place for monitoring including for verification	OK	OK
B. Duration of the Programme of Activities, Crediting Period					
B.1.1. Is the programme starting date and length of the programme clearly defined and evidenced?		DR, I	According to the PoA-DD, the starting date of the PoA is 01 October 2011.	OK	OK
B.1.2. Does the PoA design documentation confirm that the length of the PoA does not exceed 28 years?		DR, I	Yes, 28 years as describe din PoA-DD Section B.2	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
C. Environmental Impacts *Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the validator.*					
C.1.1. Has an analysis of the environmental impacts of the programme been sufficiently described?		DR, I	**See CL 33** According to the PoA-DD, the environmental analysis will be conducted at CPA-level Hence, the validation team has assessed the specific case CPA-1 Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA & found these has been identified according to the feasibility study report /P08/, Chapter 2.0 According to the specific case CPA-1 Carit-an Mini-Hydropower Plant, CPA-DD Section C.3, Environmental Compliance Certificate is not required & the CPA owner is required to request for Certificate of Non-Coverage (CNC) from the Department of Environment & Natural Resources. At the time of finalization of the validation, the Certificate of Non-Coverage (CNC) /P19/ has been obtained on 13 March 2012 & confirmed to be valid	OK	OK
C.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA)?		DR, I	Yes, according to the Philippines Law i.e. Presidential Decree No. 1586, Establishing An Environmental Impact Statement System Including Other Environmental Management Related Measures And For Other Purposes (1978), and also the Revised Procedural Manual for the DENR Administrative Order 2003-30 (DAO 2003-30), it is defined that for hydroelectric plant of sizes between 5 to 30MW, IEE (Initial Environmental Examination) is required to be submitted (not required for hydroelectric plants less than 5 MW. Only Certificate of Non-Coverage is required from the DENR). This is required in order to obtain the ECC (Environmental Clearance Certificate)	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
C.1.3. Will the programme create any adverse environmental effects?		DR, I	PoA-DD mentioned that the environmental impact analysis will be conducted at CPA level. Based on CPA-DD CPA-1 review, list of negative impacts have been identified (sourced from the Feasibility Study Report) & mitigation measures have been identified & defined	OK	OK
C.1.4. Are transboundary environmental impacts considered in the analysis?		DR, I	No, there is no transboundary environmental impacts as per the EIA reports of CPAs.	OK	OK
C.1.5. Have identified environmental impacts been addressed in the programme design?		DR, I	Yes, the PoA-DD and CPA-DD identified and addressed the environmental impacts.	OK	OK
C.1.6. Does the programme comply with environmental legislation in the host country?		DR, I	Yes, the PoA complies the environmental regulations in the Philippines	OK	OK
D. Stakeholder Comments *The validator should ensure that stakeholder comments have been invited with appropriate media and that due account has been taken of any comments received*					
D.1.1. Have relevant stakeholders been consulted?		DR, I	**See CL 34, CL 35** According to the PoA-DD, the local stakeholder consultation will be conducted at CPA-level Hence, the validation team has assessed the specific case CPA-1 Carit-an Mini-Hydropower Plant under Philippines Mini-Hydro PoA & the summary of the validation opinions will be as follows The local stakeholder consultation was held on 01-09-2011 as evident via stakeholder meeting attendance list /P15/ Hence, the validation team confirmed that local stakeholder consultation process is conducted adequately & credible	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
D.1.2. Have appropriate media been used to invite comments by local stakeholders?		DR, I	For CPA-1: Yes, an invitation through posting at the municipal hall of Sebaste & banner. The relevant stakeholders have been invited via the local government unit (LGU) of Sebaste, who in turn informed directly to the related people. This was re-confirmed by the validation team during the on-site interview with the Vice Mayor of Municipality of Sebaste. Besides this, the invitation to the stakeholder consultation was also posted at the municipal hall of Sebaste & also via use of banner. The validation team has confirmed that the relevant stakeholders invited are in line with the definition of stakeholders, according with Glossary of CDM Terms /B07/. The media utilized to invite the stakeholders are appropriate.	OK	OK
D.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?		DR, I	Not applicable because the stakeholder cousultation is not mandatory in Philippines	OK	OK
D.1.4. Is a summary of the stakeholder comments received provided?		DR, I	**See CL 34** There were no adverse comments received from the local stakeholders during the public forum. The validation team was able to verify this during the on-site interview with the Vice Mayor of Municipality of Sebaste & interview with the local villagers, Participants did not raise any objections to the project and demonstrated a keen interest in its environmental and social impacts. A summary of the comments has been provided and report on how due account was taken of any comments received are provided in Specific case CPA-PDD Section D.3	OK	OK
D.1.5. Has due account been taken of any stakeholder comments received?		DR, I	Yes, the validation team had interviewed several local stakeholders such as the village chief, 3 local villagers and also the Vice Mayor during on site visit & confirmed the	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
			due account of the stakeholder comments have been considered		
E. Programme Baseline *The validation of the project/programme baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline*					
E.1. Baseline Methodology *It is assessed whether the project/programme applies an appropriate baseline methodology.*					
E.1.1. Does the project/programme apply an approved methodology and the correct version thereof?		DR, I	**See CAR 08, CAR 09** Yes, approved methodology & correct version of AMS-I.D has been applied in the PoA & CPA level	OK	OK
E.1.2. Are the applicability criteria in the baseline methodology all fulfilled?		DR, I	**See CAR 08, CAR 09** Yes, for the specific case CPA-1, the applicability criteria in the baseline methodology has been fulfilled	OK	OK
E.2. Baseline Scenario Determination *The choice of the baseline scenario will be validated with focus on whether the baseline is a likely scenario, and whether the methodology to define the baseline scenario has been followed in a complete and transparent manner.*					
E.2.1. What is the baseline scenario?		DR, I	The baseline scenario for this the CPAs under this PoA is the continued electricity generation from power plants connected to the power grids, defined in PoA-DD Section E.4.	OK	OK
E.2.2. What other alternative scenarios have been considered and why is the selected scenario the most likely one?		DR, I	The baseline scenario has been identified in accordance to the methodology AMS-I.D Version 17	OK	OK
E.2.3. Has the baseline scenario been determined according to the methodology?		DR, I	See E.2.2	OK	OK
E.2.4. Has the baseline scenario been determined using conservative assumptions where possible?		DR, I	See E.2.2	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
E.2.5. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?		DR, I	See E.2.2	OK	OK
E.2.6. Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced?		DR, I	See E.2.2	OK	OK
E.2.7. Have the major risks to the baseline been identified?		DR, I	See E.2.2	OK	OK
E.3. Additionality of the Programme of Activities *The assessment of additionality will be validated with focus on whether the programme itself is not a likely baseline scenario.*					
E.3.1. Has it been demonstrated that the programme is a voluntary coordinated action that would not be implemented in the absence of CDM?		DR, I	Yes, it has been demonstrated as a voluntary action which will not be implemented in the absense of CDM.	OK	OK
E.3.2. If the programme is implementing a mandatory policy/regulation, has it been demonstrated whether the policy/regulation is being enforced? If it is enforced, has it been demonstrated that the programme will lead to a higher level of enforcement?		DR, I	No mandatory regulations in Philippines This was confirmed with representative of Philippines DNA (Mr. Albert Magalang, CDM Secretariat, DENR) & Department of Energy, Philippines (Mr. Ronnie N. Sargento, Chief SRS & Project Manager; Ms. Atty Manssa P Cerezo, OIC Assistant Director)	OK	OK
E.3.3. Are all assumptions stated in a transparent and conservative manner?		DR, I	Yes, the assumptions stated in the PoA-DD & CPA-DD are transparent & conservative	OK	OK
E.3.4. Is sufficient evidence provided to support the relevance of the arguments made?		DR, I	**See CL 01, CL04** Yes, clear evidences have been provided to support that the arguments presented in the PoA-DD	OK	OK
E.3.5. If the starting date of the project/programme activities is before the date of validation, has sufficient evidence been provided that the incentive from the CDM was seriously considered in the decision to proceed with the programme?		DR, I	**See CAR 07, CAR 18** N/A - the starting date of the PoA is after the date of validation	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
E.4. Additionality of CPAs					
E.4.1. Is the approach described for demonstrating additionality of a CPA in accordance with the using the procedure provided in the baseline and monitoring methodology applied?		DR, I	**See CAR 10** Yes, the approach used by CPA-1 is via investment barrier through investment analysis, in line with the defined requirements in the PoA-DD level	OK	OK
E.4.2. Are specific criteria for demonstrating the additionality of a specific CPA included to the PoA?		DR, I	Yes 1) For micro-scale (≤ 5 MW) – additionality will be demonstrated via use of EB 63 Annex 23, Guidelines for Demonstrating Additionality of Microscale Project Activities, Version 03 2) For mini-scale (≥ 5 MW) – addiitonality will be demonstrated via Investment barrier / access to finance barrier / technological barrier / other barriers	OK	OK
E.4.3. Is the additionality of a typical CPA demonstrated?		DR, I	**See CAR 11, CAR 23, CL 13, CL 14, CL 15, CL 16** Yes, the specific case CPA-1 has been demonstrated via investment analysis	OK	OK
E.5. Calculation of GHG Emission Reductions – Project emissions *It is assessed whether the project emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.*					
E.5.1. Has the procedure to calculate project emissions of an individual CPA been documented according to the approved methodology and in a complete and transparent manner?		DR, I	**See CL 19** Yes, this is demonstrated correctly according to AMS-I.D methodology requirements	OK	OK
E.5.2. Have conservative assumptions been used when calculating the project emissions?		DR, I	**See CL 19** Yes, this is demonstrated correctly according to AMS-I.D methodology requirements	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
E.5.3. Are uncertainties in the project emission estimates properly addressed?		DR, I	Yes, the uncertainties in the project estimates are confirmed to be properly addressed. Since the project emission is zero according to the AMS-I.D. Version 17 and the validation team confirms other sources which will contribute to more than 1% of overall expected average annual emission reductions are not exist.	OK	OK
E.6. Calculation of GHG Emission Reductions – Baseline emissions *It is assessed whether the procedure for calculating baseline emissions is according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified*					
E.6.1. Has the procedure to calculate baseline emissions of an individual CPA been documented according to the approved methodology and in a complete and transparent manner?		DR, I	Yes, the procedure has been clearly documented in the specific PoA-DD.	OK	OK
E.6.2. Have conservative assumptions been used when calculating the baseline emissions?		DR, I	Yes, the conservative assumptions have been used in the baseline emission calculation.	OK	OK
E.6.3. Are uncertainties in the baseline emission estimates properly addressed?		DR, I	Yes, uncertainties in the baseline emission estimates have bene properly addressed	OK	OK
E.7. Calculation of GHG Emission Reductions – Leakage *It is assessed whether the procedure for calculating leakage is according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.*					
E.7.1. Has the procedure to calculate leakage emissions of an individual CPA been documented according to the approved methodology and in a complete and transparent manner?		DR, I	No leakage is considered since there is no transfer of equipments from another activity	OK	OK
E.7.2. Have conservative assumptions been used when determining the procedure to be used to calculate the leakage emissions?		DR, I	See E.7.1	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
E.7.3. Are uncertainties in the leakage emission estimates properly addressed?					
E.8. Emission Reductions *The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change.*					
E.8.1. Does the PoA-DD provide a clear and correct way of calculating the emission reductions from each CPA?		DR, I	Yes, this is correctly demonstrated in the specific CPA-DD. **See CAR 12, CAR 14, CAR 19** **CL 17, CL 18, CL 19, CL 20, CL 21**	OK	OK
E.9. Monitoring Methodology *It is assessed whether the project applies an appropriate monitoring methodology.*					
E.9.1. Is the monitoring plan documented according to the approved methodology and in a complete and transparent manner?		DR, I	**See CAR 13, CL 22, CL 23, CL 24** Yes, the monitoring plan at PoA & CPA level has been defined in accordance to AMS-I.D methodology	OK	OK
E.9.2. 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?		DR, I	Yes, this is defined in the PoA-DD	OK	OK
E.10. Monitoring of Plan *It is established whether the monitoring plan provides for reliable and complete project emission data over time.*					
E.10.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the programme boundary during the crediting period?		DR, I	Yes, the monitoring plan clearly provide for the collection and archiving of all relevant data with in the project boundary during the crediting period.	OK	OK
E.10.2. Are the choices of project GHG indicators reasonable and conservative?		DR, I	Yes, the chosen indicators are based on the methodology, hence it is reasonable and conservative.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
E.10.3. Is the measurement method clearly stated for each GHG value to be monitored and deemed appropriate?		DR, I	Yes, the measurement method are clearly stated for each GHG value to be monitored and deemed appropriate.	OK	OK
E.10.4. Is the measurement equipment described and deemed appropriate?		DR, I	Yes, the measurement euipment described deemed appropriate since relevant national regulations on the meters will be respected in each CPAs.	OK	OK
E.10.5. Is the measurement accuracy addressed and deemed appropriate? Are procedures in place on how to deal with erroneous measurements?		DR, I	**See CL 24** Since there are no any contract signed yet for equipment purchase including monitoring equipments, the procedure will be developed & made available at the time of CPA operation period	OK	OK
E.10.6. Is the measurement interval identified And deemed appropriate?		DR, I	Yes, the measuring interval is identified correctly.	OK	OK
E.10.7. Is the registration, monitoring, measurement and reporting procedure defined?		DR, I	**See CL 24** Since there are no any contract signed yet for equipment purchase including monitoring equipments, the procedure will be developed & made available at the time of CPA operation period	OK	OK
E.10.8. Are procedures identified for maintenance of monitoring equipment and installations? Are the calibration intervals being observed?		DR, I	**See CL 24** Since there are no any contract signed yet for equipment purchase including monitoring equipments, the procedure will be developed & made available at the time of CPA operation period	OK	OK
E.10.9. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)		DR, I	**See CL 24** Since there are no any contract signed yet for equipment purchase including monitoring equipments, the procedure will be developed & made available at the time of CPA operation period	OK	OK
E.11. Monitoring of Sustainable Development Indicators/ Environmental Impacts *It is assessed whether choices of indicators are reasonable and complete to monitor sustainable performance over time.*					

CHECKLIST QUESTION	Ref.	MoV*	Findings, comments, references, data sources	Draft Concl.	Final Concl.
E.11.1. Is the monitoring of sustainable development indicators/ environmental impacts warranted by legislation in the host country?		DR, I	Not applicable since no regulation of this issue in Philippines	OK	OK
E.11.2. Does the monitoring plan provide for the collection and archiving of relevant data concerning environmental, social and economic impacts?		DR, I	See E.11.1	OK	OK
E.11.3. Are the sustainable development indicators in line with stated national priorities in the Host Country?		DR, I	See E.11.1	OK	OK
E.12. Management System and Quality Assurance for Monitoring and Reporting *It is checked that programme implementation is properly prepared for and that critical arrangements are addressed*					
E.12.1 Is the authority and responsibility of overall project management clearly described?		DR, I	**See CL 24** Yes, this has been defined clearly at PoA & CPA-DDs	OK	OK
E.12.2 Are procedures identified for training of monitoring personnel?		DR, I	**See CL 24** Yes, training plans has been defined & available	OK	OK
E.12.3 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?		DR, I	**See CL 24** Yes, this has been defined clearly at PoA & CPA-DDs	OK	OK
E.12.4 Are procedures identified for review of reported results/data?		DR, I	**See CL 24** Yes, this has been defined clearly at PoA & CPA-DDs	OK	OK
E.12.5 Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?		DR, I	**See CL 24** Yes, this has been defined clearly at PoA & CPA-DDs	OK	OK

Table C: List of Requests for Corrective Action (CAR) and Clarification (CL)						
No.	**CAR/CL**		**Observation (CAR/CL)**	**Reference**	**Summary of project owner response**	**Validation team conclusion**
1.	**X**		**CAR 01** CDM-SSC-PoA-DD & CDM-SSC-CPA-DD (including template CPA-DD) submitted to the validation team was reviewed & found to be inconsistent with the template as published in the UNFCCC website e.g.: a) Tampered header at the cover page b) Missing "box" at Section A of CDM-SSC-PoA-DD c) Annex 1 to Annex 4 of the CDM-SSC-PoA-DD d) Section C.3 of CPA-DD Template & CPA-DD CPA-1	Table A Item 28	Response No. 1 The PoA-DD, CPA-DD CPA-1 and CPA template are updated to be incompliance with the original templates. Response No. 2 The document formatting was checked and inconsistencies were corrected as noticed.	Response No. 1 1) Still detected tampered header at the cover page of the PoA-DD & CPA-DD E.g.: PoA-DD: a) "CDM-Executive Board" text is missing at below the logo on the top left of the header for every single page. Please cross check with the original template b) "Content", "Annexes" – please compare with the original template. Response No. 2 OK, it is now consistent with the template
					The title was checked and corrected. Response No. 3 The tick box has been inserted back in section C.1 of the CPA-DD CPA1	CPA-DD CPA-1 & CPA-DD Template a) Cover page: "NAME/TITLE OF THE PoA:" – please compare with the original template. b) Section C.3 – title inconsistent with the original

						template. Response No. 2 CPA-DD CPA-1 a) Section C.1 – tick box is missing Response No. 3 CPA-DD CPA-1 OK, the missing tick box is now available **Conclusion : CAR is closed**
2.	**X**		**CAR 02** At the time of on-site validation, LoAs are not yet available for both host country & Annex 1 party	A.2.1	Response No. 1 Noted. For the Letter of Approval from the DNA of the Philippines, the documents are currently being packaged for submission to the DNA on or before end-January 2012. Likewise the LoA from Germany will be issued once the Draft Validation Report is presented to them, when other CARs and CLs are closed. Response No. 2 N/A Response No. 3 The application for the Letter of	Response No. 1 Pending Response No. 2 Pending Response No. 3 LoAs from Philippines & Germany has been received, reviewed & accepted by the validation team **Conclusion : CAR is closed**

					Approval from host country was submitted to the Philippine DNA on April 20, 2012. The issuance of the said LoA will depend on when it will be taken up by the Philippine DNA's Steering Committee, which is expected by May 2012. Provided that the LoA of the Philippines and the final Draft Validation Report are available, the German LoA will be requested.	
3.	**X**		**CAR 03** PoA-DD Section A.3, CPA-DD Template & CPA-DD CPA-1 Section A.4.1.1 The name of host party indicated in the table for both host country & Annex 1 party is inconsistent with the official name as published in UNFCCC website Similar inconsistencies were also found in other sections of the PoA-DD such as Section a) A.4.1.1 Government of the Philippines? (including for CPA-DD Template & CPA-DD CPA-1 Section A.4.1.1) b) A.4.1.2 Republic of the Philippines?	A.2.1	Response No. 1 The PoA-DD, CPA-DD CPA-1 and CPA template are updated to match the name of the parties in accordance with those published by UNFCCC.	Response No. 1 Cross checked the PoA-DD, CPA-DD Template & CPA-DD CPA-1 & confirmed all are now updated with the correct consistent host **Conclusion : CAR is closed**

4.	X		**CAR 04** At the time of on-site validation, the Coordinating Managing Entity (CME) has not obtained letters of authorization of its coordination of the PoA from each host party as required according to paragraph 10, EB 55, Annex 38 Procedures For Registration of A Programme of Activities As A Single CDM Project Activity And Issuance of Certified Emission Reductions For A Programme of Activities, Version 04.1	A.1.1	Response No. 1 There is no such authorization procedure within the DNA of the neither Philippines nor Germany. Response No. 2 Yes, the authorization will be included in the LoA letters and not as a separate letter.	Response No. 1 Please clarify whether the authorization will be provided as in the LoA issued by each host party & not as a separate authorization letter Response No. 2 LoAs from Philippines & Germany has been received, reviewed & accepted by the validation team as this includes the authorization from the host party **Conclusion : CAR is closed**
5.	X		**CAR 05** 5.1) PoA-DD Section A.4.2.2 Eligibility criteria for inclusion of a SSC-CPA in the PoA indicated & evaluated in the PoA-DD are not yet in line with EB 63 Annex 3, Standard For The Development Of Eligibility Criteria For The Inclusion Of A Project Activity As A CPA Under The PoA, Version 01.0.	-	Response No. 1 The PoA-DD is revised to meet the mentioned requirements.	Response No. 1 In view of the recent EB 65, the validation team has evaluated the eligibility criteria for inclusion of a SSC-CPA in the PoA according to “Standard For Demonstration Of Additionality, Development Of Eligibility Criteria And Application Of Multiple Methodologies For Programme Of Activities, EB 65, Annex 3, Version 01.0, paragraphs 13 & 14 The following paragraphs are found not yet included as the eligibility criteria in the PoA-DD. Please clarify: a) Paragraph 14 (f)

					Response No. 2 The mentioned paragraphs are now included within the eligibility criteria section in all the documents.	b) Paragraph 14 (j) c) Paragraph 14 (k) Response No.2 Eligibility criteria as stated in the PoA-DD i.e. *a) Criteria: "CPAs meet the requirements pertaining to the demonstration of additionality as specified in Section A above"* Please clarify "Section A". *b) Documentation to substantiate compliance: "Each CPA will demonstrate the additinality on CPA level"* Please specify clearly the expected documentations to demonstrate the compliance. Besides this, "additinality" is incorrectly spelled *c)* Documentation to substantiate compliance: *"Each CPA aggregated capacity is limited to small scale or micro scale additinality threshold if applicable"*

					Response No. 3 The mentioned criteria are now indicating the required documents to verify the compliance of each CPA with the specific criterion;	This is only a statement. What is the **expected documentation to substantiate compliance to the eligibility criteria?** Response No. 3 a) OK, this is now clarified that the additionality will be demonstrated in detail at CPA level according to the PoA requirements stated in PoA-DD Section E.5.1 & E.5.2 b) OK, the PoA DD had specified the expected documentations to demonstrate the compliance i.e. Feasibility Study Report(s); IRR calculation spreadsheet (s) without CDM revenue; Technical sheet of the unit(s); Environmental Impact Assessment report(s); Other credible documents; c) OK, the PoA DD had specified the expected documentations to demonstrate the

						compliance i.e. Feasibility Study Report(s); Technical sheet of the unit(s); Environmental Impact Assessment report(s); Other credible documents; **Remarks: At the time of registration submission, the guideline has been updated according to EB 70 i.e. "Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70". Cross checked the eligibility criteria & found to be still consistent** **Conclusion : CAR is closed**
			5.2) CPA-DD Template & CPA-DD CPA-1 Section B.2 Same comment as above	A.5.2	Response No. 1 Section B.2 of the CPA-DD template and CPA-DD CPA-1 are revised to address the comment. Response No.2: CPA-DD Template & CPA-DD CPA-1 Section B.2 are now consistent.	Response No. 1 5.2) Will be re-checked after closure of item 5.1 above Response No. 2 5.2) Cross checked the CPA-DD Template, CPA-DD CPA-1 Section B.2 versus PoA-DD Section A.4.2.2 & found the following minor inconsistencies: a) For the criteria "*Each CPA is located in the*

						Philippines. Areas that are ineligible for hydropower development per government decree are excluded" mentioned in the PoA-DD, the *Documentation to substantiate compliance* i.e. "*Project design of plants included in the CPA"* is inconsistent with the CPA-DD Template & CPA-DD CPA-1 which states that "*Project design features* ***and location of the plant within the FSR*** *included in the CPA"* b) For CPA-DD CPA-1, the column filled up for *Documentation to substantiate compliance* is incomplete – i.e. the actual document which showed the fulfillment of the eligibility criteria are not yet specified clearly yet e.g. i) Feasibility Study Report – which one? Which version, date etc. ii) Project design of the plant included in the CPA – what is the document name? iii) LBP CFSF Reply Form with confirmation statement by the MHP owner – still refer to PoA-DD? When is the form signed etc.?

						iv) Signed MOA between LBP and the owner of the MHP plant – when is it signed etc.? v) Project coordinates as of FSR – but the criteria mentioned the CPA can be uniquely identified & defined …..by geographical coordinates, serial number of the turbines & generators at each location – so how is this being fulfilled / will be fulfilled? vi) Documentation on the invitation to the stakeholder consultation, list of attendees and minutes of the meeting – please specify clearly the date etc vii) Debundling check.....since this is done in CPA-DD Section A.4.6, it is not yet interfaced to this section to show that it has been assessed & complied viii) Official confirmation from fund providers – date? Who is the fund providers? Remarks: The actual evidences which supports the documentation to substantiate compliance are not yet fully stated in the CPA-DD CPA-1 Response No. 3 5.2)

					Response No.3: CPA-DD Template & CPA-DD CPA-1 Section B.2 has been revised to become consistent and the mentioned remarks regarding the specific documents are now fully addressed in CPA-DD CPA-1 Section B.2. 5.2. b) v) As ANTECO's Carit-an Mini-Hydro Project is still in the design phase there are only specifics of the equipment to be used known. Details like the serial numbers of the generators and turbines will be known not until the project is in the procurement stage. However, the procurement stage can start not before the design phase will be completed. Thus, due to the early stage of the project the serial numbers are not yet available.	a) OK, the generic & specific CPA-DD has been revised for ocnsistency with the PoA DD & the required evidence to demonstrate compliance is being explained clearly b) i to iv – OK, corrections are accepted by the validation team v) Please clarify why «The serial numbers of the generators and turbines will be known as soon as the **design phase of the plant is completed**»? vi) OK, referencing to Section D of the CPA DD is accepted & the required evidences to demonstrate the compliances are stated also in the CPA – DD specific vii) OK, referencing to Section A.4.6 is now stated clearly in the justifiction column viii) OK, the correct objective evidence i.e. official confirmation letter received from CPA implementer, ANTECO dated 1-12-11 confirming that there is no ODA

						Response No. 4 v) OK, the justification is accepted by the validation team **Conclusion : CAR is closed**
6.	**X**		**CAR 06** 6.1) PoA-DD Section A.4.4.1 The descriptions & evaluation mechanism for SSC-CPA included in the PoA is not a de-bundled component of another CDM programme activity (CPA) or CDM project activity, are not yet evident in the PoA-DD (according to paragraph 8, 9 & 10 of EB 54, Annex 13 Guidelines On Assessment Of Debundling For SSC Project Activities, Version 03)	A.5.2	Response No. 1 The PoA-DD document has been revised to meet the requirements.	Response No. 1 6.1) OK, PoA-DD Section A.4.4.1 has been updated to include the evaluation criteria for debundling check according to EB 54, Annex 13 Guidelines On Assessment Of Debundling For SSC Project Activities, Version 03 **Conclusion : CAR is closed**
			6.2) CPA-DD Template & CPA-DD CPA-1 Section A.4.6 Similarly as above, the assessments according to paragraph 8, 9 & 10 of EB 54, Annex 13 Guidelines On Assessment Of Debundling For SSC Project Activities, Version 03 are not yet demonstrated in CPA-DD	A.5.2	Response No. 1 The CPA-DD CPA-1 and CPA-DD template have been revised accordingly.	Response No. 1 OK, CPA-DD Template & CPA-DD CPA-1 Section A.4.6 has been updated to include the evaluation criteria & assessment results for debundling check according to EB 54, Annex 13 Guidelines On Assessment Of Debundling For SSC Project Activities, Version 03 **Conclusion : CAR is closed**

7.	X		**CAR 07** PoA-DD Section B.1 The starting date of the programme of activities (PoA) indicated in the PoA-DD i.e. "01 July 2012 (expected date of registration)" does not meet the definition as stated in the Glossary of CDM Terms It is not clear to the validation team – when is the earliest date at which the implementation / construction or real action of the PoA begin?	B.1.1 E.3.5	Response No. 1 The PoA-DD is updated.	Response No. 1 Noted that for PoA level, no construction is applicable yet. This is accepted by the validation team **Conclusion : CAR is closed**
8.	X		**CAR 08** PoA-DD Section E.1 Applicable methodology tools are not yet determined & indicated in the PoA-DD Section E.1	E.1.1 E.1.2	Response No. 1 The PoA-DD is updated. Response No. 2 The typo is corrected.	Response No. 1 OK, the applicable tool has been included in the PoA-DD. However, minor corrections to the spelling error & version no. of the tool are required *"Tool to calculate emission **facto** of an electricity system version **2.2.1**" to calculate the grid emission factor in the Philippines"* Response No. 2 OK, corrections are completed **Conclusion : CAR is closed**
9.	X		**CAR 09** PoA-DD Section E.2 The methodology, including tools applicability criteria defined in the PoA-	E.1.1 E.1.2	Response No. 1 The PoA-DD is updated. Response No. 2	Response No. 1 9.1) Paragraph 1 & 4 of AMS-I.D descriptions are slightly inconsistent in the PoA-DD

			DD Section E.2 & the justifications on why it is applicable to a SSC-CPA are not evaluated completely (e.g. missing some of the applicable criteria)		The PoA-DD is updated to be consistent with AMS-I.D. paragraphs 1 and 4.	Response No. 2 Paragraph 1 & 4 are now consistent in the PDD versus AMS-I.D requirements **Conclusion : CAR is closed**
					Response No. 2 The PoA does not include biomass project or replacement of appliance/equipment thus the criteria does not apply to the PoA. However the paragraphs were included in the table. Response No. 3 Please see the new text that replaced the old one under section E.2. of the PoA-DD, last row, second column in the table: The new text: *"In case of equipment replacement, the replaced equipment will not be able to generate any emissions if used in other facilities anyway as they do not consist of parts that can involve the use of fossil fuels and/or non-renewable biomass. Thus this criterion is not applicable to this type of PoA"* We believe any replaced equipment from a hydropower plant cannot generate emissions if applied in	Response No 1 9.2) AMS-I.D Version 17 paragraph 25, 26 & 27 which are specifically applicable for project activity under a PoA are not yet included & evaluated in PoA-DD Section E.2 Response No. 2 OK, Paragraphs 25, 26 & 27 have been included & evaluated in PoA-DD Section E.2. However, for the evaluation of paragraph 27 – justifications "*The PoA does not involve appliance / equipment replacement. Thus the criteria do not apply*". This is inaccurate See PoA-DD Section A.4.2 *"A typical CPA would comprise of one or more hydroelectric power plants/units..... (d) Involve a replacement of (an) existing plant(s)"* Please clarify

					another facility, namely a hydro turbine, a magnetic generator connecting to the hydro turbine, pipes and gates etc. None of this equipment has anything to do with emission generation if applied in other facilities.	Response No. 3 This is now clarified & the revision is accepted by the validation team **Conclusion : CAR is closed**
10	**X**		**CAR 10** 10.1) PoA-DD Section E.5.1 The assessment & demonstration of additionality for a typical SSC-CPA for micro-scale projects up to 5 MW are not in line with paragraphs 2a to 2d of EB 63, Annex 23, Guidelines For Demonstrating Additionality Of Microscale Project Activities, Version 03 Furthermore, it was incorrectly stated that "Requirement b) is met as electricity from mini-hydropower constitutes less than **5%** of the 63,558 GWh net power generations in 2010".	E.5.1	Response No. 1 The PoA-DD is updated. Response No. 2 Paragraphs 2 (d) (iii), (iv) & (v) are now included in the PoA-DD.	Response No. 1 10.1.1) Conditions described in the Guidelines For Demonstrating Additionality Of Microscale Project Activities, Version 03, paragraphs 2 (d) (iii), (iv) & (v) are missing from the PoA-DD Section E.5.1 Response No. 2 OK, the missing paragraphs have been added in the PoA-DD **Conclusion : CAR is closed**
					Response No. 2 The sector is updated to meet the conditions and also leave the possibility for the future CPAs to choose this option without needing to demonstrate the evidences right now. Therefore the claim of 3% technology share and DNA evidence is not included anymore.	Response No. 1 10.1.2) The following texts extracted from PoA-DD Section E.5.1 not yet fully substantiated with the corresponding supporting reference *"For this PoA option d from above guidelines is considered as a)* ***the project activity employs specific renewable***

						energy technologies / measures recommended by the host country DNA and approved by the Board to be additional in the host country*, and b) the total installed capacity of the technology / measure contributes less than or equal to 3% to national annual electricity generation.* *Requirement b) is met as electricity from mini-hydropower constitutes* ***less than 3% of the 63,558 GWh net power generation in 2010****"* Response No. 2 OK, the revision in the PoA-DD is accepted by the validation team **Conclusion : CAR is closed**
			10.2) CPA-DD Template & CPA-DD Section B.3 Same comment as above	E.4.1	Response No. 1 Both documents have been revised. Note: CPA-DD CPA-1 is not using the micro-scale additionality.	Response No. 1 OK, noted CPA-DD CPA-1 is not using the micro-scale additionality Reviewed the revised CPA-DD Template & accepted by the validation team **Conclusion : CAR is closed**

11	**X**		**CAR 11** 11.1) PoA-DD Section E.5.1 Guidelines on the Assessment of Investment Analysis, Version 3 used in the PoA-DD is currently no longer valid	E.4.3	Response No. 1 Corrected.	Response No. 1 OK, the PoA-DD has been updated to reflect the latest version of the Guidelines on the Assessment of Investment Analysis i.e. Version 5 **Conclusion : CAR is closed**
			11.2) PoA-DD Section E.5.1 According to the PoA-DD Section E.5.1, the selected benchmark will be either local commercial lending rates or the weighted average cost of capital (WACC) for project IRR & official required / expected return on equity for equity IRR However, in CPA-DD CPA-1, the selected benchmark is sourced from NREB (National Renewable Energy Board)	E.4.3	Response No. 1 The equity benchmark of 17% is the value applied in National Renewable Energy Board (NREB) report for the determination of an appropriate Feed-in-Tariff for renewable energy projects including hydropower in the Philippines. This report is assessed and supported by the Energy Regulatory Commission of the Philippines hence it is judged as an appropriate return for renewable energy projects.	Response No. 1 See below **Conclusion : CAR is closed**
			11.3) CPA-DD Template & CPA-DD CPA-1 Section B.3 Please clarify whether the selected benchmark of project IRR = 13.9% / equity IRR = 17% meets the requirements of paragraph 12 of EB 62 Annex 5, Guidelines On The Assessment Of Investment Analysis, Version 05 In doing so, please provide the supporting evidence to substantiate the benchmark selected	E.4.3	Response No. 1 Supported documents has been provided: - The FIT report entitled "Representative Hydro Power Project in the Philippines: Financial Model for FIT calculation: Agos-11" prepared by NREB (Please	Response No. 1 OK, this is accepted by the validation team. **Conclusion : CAR is closed**

					refer to Item 60b_duration Feed In Tariff); - The Energy Regulatory Commission proceeding approval on the FIT report mentioning the 17% benchmark applied for hydro is actually lower than the ones usually valid for other power plants; confirming that the 17% equity benchmark applied is even conservative. (Please refer to Item 38_PretrialOrder_ERCCase No.2011-006RM_NREB0001);	
			11.4) PoA-DD Section E.5.1, CPA-DD Template Section B.3 & CPA-DD CPA-1 Section B.3 Table 1 The key input parameters to be applied in investment analysis defined are inconsistent.	E.4.3	Response No. 1 The documents have been revised to be consistent.	Response No. 1 OK, this is now consistently reflected in PoA-DD, CPA-DD CPA-1 & CPA-DD Template **Conclusion : CAR is closed**
			11.5) CPA-DD CPA-1 Section B.3 Please clarify whether the Feasibility Study Report (FSR), July 2010 has been the basis input for investment analysis calculation? If yes, please clarify why the applied tariff rate is not taken from the FSR?	E.4.3	Response No. 1 The feed-in tariff has been updated recently. ANTECO has not yet made any investment decision and as soon as the new FIT was introduced in the NREB report, Vergel3 Consult, led by Engr. Manuel Vergel III, the consultant in charge for the FSR, was asked to update the IRR calculations before ANTECO can proceed with their decision.	Response No. 1 OK, this is accepted by the validation team **Conclusion : CAR is closed**

			11.6) CPA-DD CPA-1 Section B.3 Please clarify what is the basis for annual 1% escalation rate applied for the tariff?	E.4.3	Response No. 1 The Republic Act (RA) No. 9513, also known as the Renewable Energy Act of 2008 (Item 56_RA 9513 RE Act of 2008), Feed-in-Tariff (FIT) provisions endorsed by the National Renewable Energy Board (NREB) allows escalation according to Consumer's Price Index (CPI) due to probable inflation changes. However, due to the difficulty of projecting inflation changes in the future, a very modest 1% flat rate is assumed to account for the inflationary changes which according to Vergel3 Consult, as the analyst, are very conservative, considering that the cost of power in the country for the past 10 years escalates by more than this value.	Response No. 1 Cross checked the historical data of inflation rates via website http://www.indexmundi.com/g/g.aspx?c=rp&v=71 from year 1999 to year 2010, the inflation rate was found to be in the range from 3.1 to 9.3%. For year 2011, cross checked http://www.nscb.gov.ph/secstat/d_price.asp website & found the inflation rate is ranging from 3.6 to 5.3% Hence, the validation team concluded that the 1% escalation rate applied for the tariff is conservative & accepted by the team **Conclusion : CAR is closed**
			11.7) CPA-DD CPA 1 Section B.3 Please clarify what is the basis for determination of the privilege tax rate (1%) & local tax rate (0.5%)? The supporting evidences are not yet submitted to the validation team	E.4.3	Response No. 1 The 1% privilege tax is in accordance with the provisions of the Renewable Energy Act of 2008. In the 1989 old RA 7156 – The Mini-hydroelectric Power Incentives Act (Item 57_RA 7156 Minihydroelectric Power Incentives Act of 1990), the provision is 2% of the gross annual income, but the RA 9513 reduces the percentage to only 1%.	Response No. 1 Please clarify which page number of the document showing the privilege tax = 1% (RA 9513 reduces to 1%), could not detect this in the supporting document For local tax rate (0.5%), please clarify if there are any 3rd party source reference document / supporting

					According to Vergel 3 Consult (CAR-11_23-_1_Carit-an Vergel3 reply_ dec 12 '11 CDM Draft Validation), the local tax rate of 0.5% accounts for the annual business permit which the hydro developer has to pay. It varies on the location and the local government unit. For example in Quezon City, a highly urbanized area, the tax is about 1% of the gross income shown on the annual Income Tax return (ITR) filed at the Philippines' Bureau of Internal Revenue (BIR) based on what businesses are paying including the office of Vergel3 Consult. In rural municipalities where most hydro projects are located, the local tax for operation of businesses is about half of the highly urbanized area, such as the amount actually paid by the Cantigas mini-hydro power plant in Sibuyan Island, Province of Romblon. Accordingly, to secure evidence for the percentage paid would be extremely impractical and difficult as these records – the annual ITR and the official receipts (OR) showing the developers' income and amount paid are highly confidential matter for any private firms to open to the	reference available to support the statement? Response No. 2 The supporting reference documents have been received & reviewed by the validation team. It is confirmed that despite the privilege tax rate (1%) & local tax rate (0.5%) is being removed from the financial calculation spreadsheet, the IRR still does not cross the benchmark **Conclusion : CAR is closed**

					public. Further, even without the 1% or 0.5% local taxes, the effect on the calculation of the Internal rate of Return (IRR) is very nil. Response No. 2 The Special Privilege Tax Rate of 2% was based on the Mini-hydroelectric Power Incentive Act of 1990 (Please see Section 10, (1) on page 6 of Item 57_RA 7156 Minihydroelectric Power Incentives Act of 1990.pdf). When the Renewable Energy Act of 2008 (or RA 9513) was issued, the said rate was reduced to 1% and is now referred to as Government Share under the Rule 7, Section 20.A of the Rules and Regulations Implementing Republic Act No. 9513 (refer to page 58 of 107 of Item 56_RA 9513 RE Act of 2008.pdf). The 0.5% local tax rate is based on the taxes mandated by the Municipality of Sebaste, Antique for businesses. Related pages lifted from the Revenue Code of the Municipality of Sebaste were secured as supporting document/basis of 0.5%. (CAR11.7-2_Local Tax Rate.pdf)	

			11.8) CPA-DD CPA 1 Section B.3 It was mentioned that the values applied in the investment analysis reflect the market conditions at the time of the investment decision. However, the investment decision date is not indicated yet in the CPA-DD CPA-1	E.4.3	Response No. 1 As ANTECO indicated during the validation visit, they have not finalized their investment decision yet. They decided to finalise their decision after making sure the IRR calculations are the most updated one. At the moment, ANTECO is discussing the issue internally to make a final decision.	Response No. 1 OK, this is accepted by the validation team **Conclusion : CAR is closed**
12	**X**		**CAR 12** PoA-DD Section E.6.1 Tool to calculate the emission factor for an electricity system – incorrect version was used. The steps listed in the PoA-DD are inconsistent with the tool requirements Besides the above, the remaining requirements as listed in the tool page 16, 17 & 18 are found not yet evaluated for methodological choices	E.8.1	Response No. 1 The version number is corrected. The document is updated to be in compliance with the tool pages 16-18. Response No. 2 The descriptions of the mentioned parameters are revised to meet the tool.	Response No. 1 Tool version has been corrected Descriptions below are not consistent with the Tool to calculate the emission factor for an electricity system Version 02.2.1 page 17 (see PoA-DD page 27 Step 5 *"$EF_{grid,BM,y}$ = the build margin emission factor (tCO_2/MWh) in year y,* *$EG_{m,y}$ = the net electricity generated by power plant m in year y,* *$EF_{EL,m,y}$ = the emission factor of a power plant m in year y,* *m = the power plants included in BM sample group,*

						y = the most recent year in which historical data regarding electricity generation is available." Response No. 2 This is now consistent in the PoA-DD **Conclusion : CAR is closed**
13	**X**		**CAR 13** 13.1) PoA-DD Section E.7.1 Description of measurement methods and procedures to be applied defined for each parameter are found to be incomplete & compliance with EB 61 Annex 21 General Guidelines to SSC CDM methodologies, version 17 paragraph 17 are also not yet demonstrated clearly	E.9.1	Response No. 1 The document is updated and revised to meet the conditions mentioned in the guidelines EB 61 Annex 21. Response No. 2 The original parameter from the methodology is $EG_{BL,y}$ and not EG_y thus corrected. The methodology does not account for internal use of electricity at the site nor the amount of imported electricity from the grid. The main parameter it asks for is the net amount of electricity fed into the grid represented as $EG_{BL,y}$. It is expressed in the PoA-DD that the meter shall be bidirectional to avoid any confusion. In case the project opted not to use a bidirectional meter, separate unidirectional meters are needed to be installed to measure the gross amount of electricity produced by	Response No. 1 13.1.1) Parameter EG_y Please clarify what type energy meter will be used (bidirectional ?) If not bidirectional, then EG_{export} & EG_{import} parameter is not yet included for separate monitoring Response No. 2 PoA-DD Section E.7.1 has been updated to include the separate parameters monitored for EG_{export} & EG_{import} in case non bidirectional energy meters are used Requirements for measurement methods and procedures to be applied defined for each parameter according to the EB 61 Annex 21 General Guidelines to SSC CDM methodologies, version

					the project and the internal use of electricity by the project. Hence, the parameters $EG_{export,y}$ & $EG_{import,y}$ are included in the list of parameters to be monitored should unidirectional meters will be used.	17 paragraph 17 has been updated & accepted by the validation team **Conclusion : CAR is closed**
					Response No. 2 TEG_y is representing the total electricity generation (gross generation) from the plant that is included in the monitoring tables. The other parameter is removed from the monitoring plan to avoid any further confusion.	13.1.2) Cross checked PoA-DD Section E.7.2 (page 17) & CPA-DD CPA-1 Section B.6.1 (page 20) & it was mentioned that another meter metering internal loads or gross electricity generation will be installed However, this is not yet included as a monitoring parameter in PoA-DD Section E.7.1 Response No.1 OK, PoA-DD has been revised & accepted by the validation team **Conclusion : CAR is closed**
			13.2) CPA-DD Template & CPA-DD CPA-1 Section B.6.1 Guidelines to SSC CDM methodologies stated in this section (Version 15) is no longer valid version	E.9.1	Response No. 1 The version number is updated from 15 to 17 in both documents.	Response No. 1 OK, the guideline version has been updated in all of the PDDs **Conclusion : CAR is closed**

14	X		**CAR 14** CPA-DD CPA-1 Section A.2 Incorrect annual emission reduction was stated (20,945.8tCO_2e)?	E.8.1	Response No. 1 The figure is corrected.	Response No. 1 OK, the annual ER amount is corrected **Conclusion : CAR is closed**
15	X		**CAR 15** CPA-DD Template & CPA-DD CPA-1 Section A.4 In CPA-DD Template, technical descriptions requirements applicable for each CPA are not yet defined specifically e.g. key technical parameters such as main equipment parameters, installed capacity, annual operating hours, annual power generation by the project, annual power supply to the grid, auxiliary consumption & power lost, plant load factor etc. Project layout diagram is not yet included	A.3.1 A.3.2	Response No. 1 The section is revised and completed in both documents. The requested documents have been uploaded on drop box as commented on the document check list attached. Response No. 2 The sentence “without a reservoir” was included in the CPA-DD CPA-1.	Response No. 1 Cross checked CPA-DD CPA-1 & CPA-DD Template Section A.4 & found the following: a) CPA-DD CPA-1 does not state whether it is a run-of-river hydropower plant **with or without reservoir? a hydropower plant with a dam and a new reservoir? A hydropower plant on an existing reservoir? ….**this is not yet stated consistently as defined in the CPA-DD Template Response No. 2 No reservoir is applicable for CPA-1 & this information has been reflected in the CPA-DD CPA-1 Section A.4 **Conclusion : CAR is closed**
					Response No. 2 The document is now consistent with the PoA-DD section A.4.2.1.	Response No.1 b) Cross checked CPA-DD Template Section A.4, 1st paragraph descriptions versus

					Response No. 3 The PoA-DD section A.4.2.1 and CPA-DD-Anteco section A.4. and CPA-DD-template section A.4. have been revised to become consistent in terms of units, parameters and technology definitions.	PoA-DD Section A.4.2.1 & found it is not fully consistent with the technology that would be employed at CPA level e.g. Greenfield? Addition? Retrofit? Response No. 2 Still showing inconsistencies. Please check Response No.3 The revised CPA-DD Template & CPA-DD CPA-1 are now consistent in Section A.4.2.1, also consistent with PoA-DD **Conclusion : CAR is closed**
16	**X**		**CAR 16** CPA-DD Template & CPA-DD CPA-1 Section A.4.1.2 Sighted in Chapter 1: General Development Plan & Chapter 6 (drawing) of Feasibility Study Report – separate coordinates are specified for the power house & water intake However, only power house coordinates are being specified in the CPA-DD Template & CPA-DD CPA-1 Section A.4.1.2 The coordinates are not yet specified in 4 decimals point	A.1.3	Response No. 1 The geographical coordinates are corrected and the documents are updated. Response No. 2 The values for the longitude of the powerhouse and water intake/weir structure (indicated as weir site in the Development Plan) stated in the CPA-DD CPA-1 are corrected as follows: For powerhouse: 122.1150	Response No. 1 Cross checked the coordinates stated in the Chapter 1: General Development Plan & Chapter 6 (drawing) of Feasibility Study Report & found the conversion value stated in the CPA-DD CPA-1 are incorrect for longitude (both for weir structure & powerhouse) Response No. 2 The coordinates are now correct after cross checking with the GPS converter

					For weir site: 122.1277	**Conclusion : CAR is closed**
17	**X**		**CAR 17** CPA-DD CPA-1 Section A.4.1.2 Page 5 location map is not legible	A.1.3	Response No. 1 Corrected.	Response No. 1 OK, the revised map is accepted by the validation team **Conclusion : CAR is closed**
18	**X**		**CAR 18** CPA-DD CPA-1 Section A.4.2.1 The starting date of the CPA is not yet indicated (dd/mm/yy)	E.3.5	Response No. 1 The CPA has not started yet. There has been no investment decision yet nor any physical construction. However, the starting date is expected to be on 01 January 2013.	Response No. 1 OK, the validation team accepted the revised statement in the CPA-DD CPA-1 **Conclusion : CAR is closed**
19	**X**		**CAR 19** CPA-DD Template & CPA-DD CPA-1 Section A.4.4 Estimated amount of emission reductions **over the chosen crediting period** is not yet specified	E.8.1	Response No. 1 The documents are revised accordingly.	Response No. 1 OK, this is now being specified clearly **Conclusion : CAR is closed**
20	**X**		**CAR 20** CPA-DD CPA-1 Section A.4.5 There is no objective evidence available to confirm that the CPA-1 has not received & will not seek public funding	A.2.5	Response No. 1 File Item 32 (Item-32-cert-public-funding-anteco) has been provided on drop box.	Response No. 1 The validation team reviewed the certification letter dated 01-12-2011 received from the CPA-1 implementer i.e. Anteco, which includes declaration of no public funding that would result in the diversion of ODA etc.

						Conclusion : CAR is closed
21	**X**		**CAR 21** CPA-DD CPA-1 Annex 1 ANTECO is the CPA implementer & hence, wrong contact information on entity / individual responsible for the small scale CPA was stated in Annex 1.	-	Response No. 1 Please note that LBP is the responsible entity for the CPA and not ANTECO. ANTECO is the owner and operator of the 1st plant only but as the CME, LBP is the responsible entity for all the CDM related matters mentioned under the PoA-DD and CPA-DD CPA-1.	Response No. 1 OK, this is accepted by the validation team **Conclusion : CAR is closed**
22	**X**		**CAR 22** PoA-DD Section A.4.4.2 The sampling plan presented is not fully in compliance with paragraph 33 of EB 50 Annex 30, General Guidelines For Sampling And Surveys For Small Scale CDM Project Activities, Version 01	A.6.4	Response No. 1 The section has been revised and is referring to the correct guidelines now. Further details including the simple random sampling equation for verification sampling has been removed. The reason is that if a sampling among monitoring reports is needed, that is part of DOE's task and their sampling approach may not be restricted by CMEs through their PoA-DD documents.	Response No. 1 OK, this is accepted by the validation team This has been also updated to the latest version i.e. Standard For Sampling And Surveys For CDM Project Activities And Programme Of Activities, Version 03.0, EB 69, Annex 4 **Conclusion : CAR is closed**
23	**X**		**CAR 23** **IRR Calculation spreadsheet "03_ANNEX 8-2 a- IRR CARIT-AN WITHOUT CDM"** **Worksheet "Data"** 23.1) Please clarify what it means by "3 years grace"? This is not clearly defined in the spreadsheet	E.4.3	Response No. 1 "3-years grace" means no collection of loan repayment on the principal and interest during the first 3 years of loan schedule/amortization.	Response No. 1 OK, this is accepted by the validation team **Conclusion : CAR is closed**

			Worksheet "Data" 23.2) Please clarify why there is no transmission losses accounted for?		Response No. 1 The transmission lines are provided by ANTECO for the 13.2 KV line and the National Grid Corporation of the Philippines (NGCP) for the 69 KV and above lines. The mini-hydro sub-station, which has the power transformer that steps up the voltage from the lower generator voltage to the higher transmission line voltage, is located adjacent to the power house including the meter that record the kilowatt-hours (kWh) dispatch, thus, there is no loss due to length of lines. Response No. 2 Drawings on typical powerhouse equipment layout is shared through dropbox (CAR 23.2_10_PHP & PHE - ELECTRO-MECH _Carit-an FS.xls), which shows the location of powerhouse relative to the generator. This means that the exported electricity is delivered to the grid right at the spot and there will be no transmission loss between the generator and the meter as they are all located in one site.	Response No. 1 Please provide supporting evidences to support the justifications Response No. 2 OK, the supporting evidence has been reviewed & clarified that the transmission losses are not applicable in this case **Conclusion : CAR is closed**
			Worksheet "Data" 23.3) Project costs presented in the spreadsheet are not transparent. The validation team could not verify the cost breakdown for the project cost since the		Response No. 1 The costs are actually transparent since a detailed structure-by-structure; component-by-	Response No. 1 Kindly note the findings statement: *"Project costs **presented in the spreadsheet** are not*

			values for construction, engineering & admin finance & contingencies are not shown clearly in the spreadsheet		component, facilities-by–facilities and work item-by-item cost estimates are shown and presented in the feasibility study (FS) book for the Carit-an project. The financial spread sheet is a post- cost estimate line activity of the entire project study and the cost details are presented very clearly and comprehensively in Chapter 7 of the FS. Both hard and soft copies are available and the soft copy has been shared through drop box. Response No. 2 Worksheets on detailed estimates showing the breakdown of the project costs found in the FSR are included in the excel file. The excel file is shared through the dropbox (REV 03_ANNEX 8-2 a- IRR CARIT-AN WITHOUT CDM with project cost summary breakdown.xls) Response No. 3 The reference source document for each input values are now stated in the spreadsheet as noted. (CAR 23_IRR Spreadsheet rev1_04272012. xls)	*transparent"* The validation team noted that the detailed breakdown are provided in the FSR, however the same information are not reflected in the spreadsheet The reference source document for each input values stated in the spreadsheet are not stated yet for traceability reasons Response No. 2 The reference source document for each input values stated in the spreadsheet are not stated yet for traceability reasons Response No. 3 OK, the reference source documents have been stated clearly in the spreadsheet & traceable However, the IRR value with CDM in the spreadsheet = 17.22% but in the CPA-DD

					Response No. 4 The value in the CPA-DD CPA-1 is now amended to represent the correct value (IRR of 17.22%).	CPA-1 = 18.99%? Response No. 4 OK, this has been corrected in the revised CPA-DD CPA-1 **Conclusion : CAR is closed**
			Worksheet "Data" 23.4) O & M costs presented in the spreadsheet are not transparent. The validation team could not verify the cost breakdown for operator & staff salary, civil works & electro-mechanical maintenance cost, miscellaneous cost – values are not stated		Response No. 1 The O&M costs are transparent since a detailed O&M cost estimates are shown and presented in the feasibility study (FS) book for the Carit-an project. The cost details are presented very clearly and comprehensively in Chapter 8 – Financial Viability Analysis, of the FS. Both hard and soft copies are available and the soft copy has been shared through drop box. Response No. 2 Worksheet showing the breakdown of the O & M costs found in the FSR is included in the excel file. The excel file is shared through the dropbox (REV 03_ANNEX 8-2 a-IRR CARIT-AN WITHOUT CDM with project cost summary breakdown.xls) Response No. 3 The reference source document for each input values are now stated in	Response No. 1 Same comment as item 23.3) Input values in cells I63 to I69 cannot be traced to the FSR / reproducible Response No. 2 Same comment as Response No. 2, above 23.4) Response No. 3 OK, the reference source documents have been stated clearly in the spreadsheet &

					the spreadsheet as noted. (CAR 23_IRR Spreadsheet rev1_04272012. xls)	traceable **Conclusion : CAR is closed**
			Worksheet "Data" 23.5) What is the basis for taxes (1% of gross sales)? Please provide the supporting evidence See Cell O71 – please clarify why it is being calculated as 2% of gross sales instead of 1%?		Response No. 1 23.5) this comment has been replied under 11.7. For the second part of the comment, please see revised financial spreadsheet after some incorrect items have been discovered by ANTECO. The file is shared through drop box. (Item-39_ REV 03_ANNEX 8-2b - IRR CARIT-AN WITH CDM, Item-39_REV 03_ANNEX 8-2 a- IRR CARIT-AN WITHOUT CDM and Item-39_2_lettert & SUMMARY WITH & W.0 CDM) Response No. 2 The description is now corrected as "taxes (1% of gross sales)".	Response No. 1 23.5) This is not stated transparently in the spreadsheet Cell O71 – OK, corrected for excel sheet file name "Item-39_REV 03_ANNEX 8-2 a-IRR CARIT-AN WITHOUT CDM" But please check excel sheet file name "Item-39_ REV 03_ANNEX 8-2b - IRR CARIT-AN WITH CDM" – cell B71 still mention as 2% Response No. 2 OK the taxes has been calculated as 1% of gross sales **Conclusion : CAR is closed**
			Worksheet "Data" 23.6) What is the basis for inflation rate 4% Please provide the supporting evidence		Response No. 1 It is the current rate now in the Philippine setting. The daily newspapers published this figure. It can be found in the business section of major dailies. It usually fluctuates -0.4 to +2% over the years and a	Response No. 1 For investment analysis calculation, all reference source used for each input parameters shall be traceable with the specific reference document stated clearly in the

					conservative average of 4% is assumed. Response No. 2 Based on the available data from the Philippine National Statistics Office, the annual average of inflation rates of 2009 and 2010 is 3.95% (or ≐4.0%). Please refer to latest data found at http://www.census.gov.ph/data/pressrelease/2011/cp1111tx.html (last accessed January 30, 2012). The screenshot file is shared through drop box. (CAR23.6_inflation rate.jpg) Response No. 3 The reference source document for each input values are now stated in the spreadsheet as noted. (CAR 23_IRR Spreadsheet rev1_04272012. xls)	spreadsheet This not traceable yet in the spreadsheet. Please submit the corresponding supporting evidence / website referred for the input value (inflation rate) Response No. 2 Previous comments remains pending – reference source to each input values stated in the spreadsheet not yet indicated in the spreadsheet Response No. 3 OK, the reference source documents have been stated clearly in the spreadsheet & traceable **Conclusion : CAR is closed**
			Worksheet "Data" 23.7) What is the basis for annual energy escalation rate of 1%? Please provide the supporting evidence		Response No. 1 This comment has been replied under 11.6 Response No. 2 As previously mentioned, a very modest 1% flat rate is assumed to	Response No. 1 Same comment as 23.6) Response No. 2 Same comment as 23.6) 1% escalation rate applied is conservative. However, the reference source document

					account for the inflationary changes. Based on the historical rate charges of ANTECO from 2008 to 2010, the energy price annual escalations average to 6.60%. Hence, the 1% escalation rate applied is conservative. (CAR23.7-1_ANTECO Monthly Rates 2008-2010.pdf, CAR23.7-2_ANTECO Escalation Rate.pdf) Response No. 3 The reference source document for each input values are now stated in the spreadsheet as noted. (CAR 23_IRR Spreadsheet rev1_04272012. xls)	not yet stated clearly in the spreadsheet Response No. 3 OK, the reference source documents have been stated clearly in the spreadsheet & traceable **Conclusion : CAR is closed**
			Worksheet "Data" 23.8) Please clarify what is CWP? (see cell B77)		Response No. 1 CWP is "Consumers Willingness to Pay". It will be used if economic analysis is conducted but since financial analysis was done in the investor's point of view, CWP was not inputted. Response No. 2 Marked the pertinent cell with "N/A".	Response No. 1 OK, this is accepted, but the cell is still left blank. If not applicable, please state the status clearly in the excel sheet Response No. 2 OK, this has been corrected **Conclusion : CAR is closed**

			Worksheet "Data" 23.9) Please clarify why row 80 to 96 are included in the spreadsheet? Sighted it is being prepared to calculate for NPV, however it is not being used		Response No. 1 Please see revised financial spread sheet after some incorrect items have been discovered by ANTECO. The file is shared through drop box. Response No. 2 Rows 80 to 96 of the spreadsheet were deleted Response No. 3 a) The "Demand Growth" was not used in the calculations. For clarity, it was deleted from the spreadsheet. b) The inflation rate is corrected as 4%, as explained in 23.6) above.	Response No. 1 Not yet revised Response No. 2 OK, this has been removed Please clarify: a) Cell B35 = Demand growth = 5%. What is this? b) Cell O87 of "REV 03_ANNEX 8-2b - IRR CARIT-AN WITH CDM with proj cost summary breakdown-2" – why inflation rate is 3.8%? and not 4%? Response No. 3 OK, the reference source documents have been stated clearly in the spreadsheet & traceable The demand growth and wrong inflation rate has been corrected **Conclusion : CAR is closed**
			Worksheet "Data" 23.10) Cell R103, R105 – showing the breakdown of loan releases as 30% &		Response No. 1 This mistake in calculations was the reason that ANTECO asked Vergel3	Response No. 1 Now both spreadsheets are consistently reflecting the

			50% (1st year & 2nd year of construction), however it is inconsistent with the other spreadsheet "03_ANNEX 8-2b - IRR CARIT-AN WITH CDM_231011" where it showed the breakdown as 35% & 35% Please clarify what is the basis for the breakdown?		Consult for another revision of the investment analysis and IRR calculations in October 2011 after the first draft of the PoA documents were ready. The communication evidence between ANTECO and Vergel3 Consult is available upon request. The new version of the IRR calculation is available for review which is shared through drop box. Response No. 2 The basis of loan releases, i.e., 30% of project cost on the first year and 50% on the second year, is in accordance with the assumption (per FSR Chapter 8.0, 8.9.2) that the construction of the mini-hydro plant is 2 years and the total project cost will be divided into 2, hence, 50% in each year. As such, the breakdown of loan releases are as follows: First year: 20% - coming from owner's equity 30% - coming from bank loan 50% - Total Second year: 50% - coming from bank loan Additional revenue from the sale of	correct breakdown for the loan releases. However, what is the basis for the breakdown. Please provide the supporting evidence Besides, please clarify why the loan payback period is not the same for both spreadsheets? 6 or 7 years? (see cell O121) Response No. 2 OK, the justifications are accepted & reflected in the FSR **Conclusion : CAR is closed**

					CERs is the differentiating factor why the loan payback period is not the same. Loan payback period is shorter at 6 if with CDM due to CERs sale proceeds which the CPA can use for debt servicing.	
			Worksheet "Data" 23.11) In the Feasibility Study Report, the tariff rate used is 6.30 PHP/kWh. Please clarify why 6.15 PHP/kWh is used in the IRR calculation spreadsheet?		Response No. 1 The Php 6.30 per kWh figure then used was merely overtaken by events that happened in the proceedings of the National Renewable Energy Board (NREB), the body created by the provisions of the RA 9513. Moreover, the rate of Php 6.30/kWh was being eyed by NREB when the Carit-an FS was conducted, but at the conclusion of the NREB proceedings, Php 6.15 / kWh were finally endorsed.	Response No. 1 OK, this is accepted by the validation team **Conclusion : CAR is closed**
			Worksheet "FIRR" 23.12) Please clarify why repeated values are presented in Column Q (Annuity Debt Service) – same comment applicable for the other spreadsheet "03_ANNEX 8-2b - IRR CARIT-AN WITH CDM_231011",		Response No. 1 It is the amortization or the debt payment expense, so it should have equal annual payments. Please see "Amorsked" calculation in the Excel spread sheet model. We are attaching again the same spread sheet which was submitted before. Response No. 2 The column with repeated values is deleted	Response No. 1 Please click the entire spreadsheet & unhide the columns / rows Please confirm why column P (for both spreadsheets) showing same values as column Q Response No. 2 The unused cells & columns have been removed from the spreadsheet

						Conclusion : CAR is closed
			Worksheet "FIRR" 23.13) Column R – Cell R35 to row R67 (Total cost) – formulae applied are inconsistent. Please clarify		Response No. 1 There was no inconsistency in the formula being used in the calculation of the total cost. Only the cells with values were considered in the summation of costs. However, for the easy analysis of the reviewer, Vergel3 Consult did a consistent formula for the entire cell which also gives the same results. We are attaching again the same spread sheet which was submitted before.	Response No. 1 OK, this is corrected **Conclusion : CAR is closed**
			Worksheet "FIRR" 23.14) According to the EB 62 Annex 5 Guidelines On The Assessment Of Investment Analysis, Version 05 paragraph 9 "The cost of financing expenditures (i.e. loan repayments and interest) should not be included in the calculation of project IRR" Please clarify why this is being included in the spreadsheet - see cell Z65 to Z67		Response No. 1 The financial spread sheet model used and presented is from the investor's point of view or the "equity IRR" so the financing cost should be included and return on investment or the equity is considered. Response No. 2 The said guidelines were complied since the net cash outflows (i.e., costs) computed in the spreadsheets do not include the portion of investment costs financed by the loan. This can be validated from the formula used in the	Response No. 1 In this case, since equity IRR is selected, please clarify how is the EB 62 Annex 5 Guidelines On The Assessment Of Investment Analysis, Version 05 paragraph 10 being complied *"10. Guidance: In the calculation of equity IRR only the portion of investment costs which is financed by equity should be considered as the net cash outflow, the portion of the investment costs which is financed by debt should not be considered a cash outflow."*

					columns “Net Expenses” and “TOTAL COST”.	Response No. 2 OK, this has been clarified **Conclusion : CAR is closed**
			Worksheet “FIRR” 23.15) See cell AQ 33 (NPV = 15.89%). Please clarify if this is correct? (Project IRR or Equity IRR?)		Response No. 1 It is the equity IRR. Response No. 2 It is stated as NPV because the values under such columns are net present values run at different rates, i.e., trial and error method. By interpolation, IRR at NPV=0 was determined. For clarity, the column headings are revised. Also, the description “Equity IRR at NPV=0” and its corresponding value were indicated under the table.	Response No. 1 Please clarify why it is stated as NPV? Response No. 2 OK, this has been clarified **Conclusion : CAR is closed**
			Worksheet “FIRR” 23.16) The calculation has been carried out starting from year 2012, however in the other spreadsheet “03_ANNEX 8-2b - IRR CARIT-AN WITH CDM_231011”, it was calculated starting from year 2010. Please clarify		Response No. 1 The base year for the financial calculation is 2011, 2012 and 2013 are the construction time and 2014 is when the first amortization of the 80% loan is remitted. Response No. 2 The years stated in both spreadsheets were checked and corrected (i.e., 2011 to 2042) as	Response No. 1 Please re-check the spreadsheets (2010 to 2042, 2010 to 2043?) Response No. 2 OK, the year has been corrected & consistent for both spreadsheets **Conclusion : CAR is closed**

					noted.	
			IRR Calculation Spreadsheet "03_ANNEX 8-2b - IRR CARIT-AN WITH CDM_231011" **Worksheet "Data"** 23.17) Cell Q123 Emission Reduction Rate = 0.44 Kg/KWh & Q127 Price / kg CO_2 save = 551.79 PhP/ton – please clarify what is the basis for these values & provide supporting evidences		Response No. 1 The figure that was used in the analysis was outdated. LBP provided the latest Emission Reduction Rate = 0.487 Kg/kWh and Price/Ton = 469.68 (8 Euros/Ton with Foreign Exchange Rate 1 Euro = Php 58.71). Response No. 2 The grid emission factor (EF) of 0.487 Kg/kWh (which is dimensionally equivalent to 0.487 tCO2e/MWh) is based on the calculated grid EF of Luzon-Visayas grid in the CPA-design document. Based on the published Dec 2012 CER price for September 27, 2011 at the www.theice.com/marketdata/reports/ReportCenter.shtml (last accessed February 2, 2012), the carbon credit price was EUR 8.10/ton, hence, the excel file is revised. (CAR 23.17_THEICE 27-09-2011.jpg) Meanwhile, the published foreign exchange rate for September 27, 2011 at the http://www.oanda.com/currency/historical-rates/ (last accessed February	Response No. 1 Same as earlier comment – please provide supporting evidence & the reference source document are not yet stated clearly in the spreadsheet Response No. 2 The reference source document are not yet stated clearly in the spreadsheet Response No. 3 OK, the reference source documents have been stated clearly in the spreadsheet & traceable **Conclusion : CAR is closed**

					2, 2012) was PhP58.70 = EUR1, hence, the excel file is revised. (CAR 23.17_exchangerate 27-09-2011-oanda.jpg) With these changes, the equity IRR for "with CDM" scenario is now 17.22%. Response No. 3 The reference source document for each input values are now stated in the spreadsheet as noted. (CAR 23_IRR Spreadsheet rev1_04272012. xls)	
			Worksheet "FIRR" 23.18) Bank loan amount stated in cell E36 & E37 differs from the amount as stated in the other spreadsheet "03_ANNEX 8-2 a- IRR CARIT-AN WITHOUT CDM"		Response No. 1 As per observation of the reviewer, the loan amount stated in the comment was checked and was already corrected as presented on the revised financial analysis.	Response No. 1 OK, this has been corrected & consistent now **Conclusion : CAR is closed**
			Worksheet "FIRR" 23.19) O & M cost calculation (cell L39 to L67) are inconsistent with the other spreadsheet "03_ANNEX 8-2 a- IRR CARIT-AN WITHOUT CDM"		Response No. 1 The inconsistency of the O&M calculations was already corrected and is being presented in the revised financial analysis. Response No. 2 The spreadsheets are checked and corrected as noted.	Response No. 1 Please check the spreadsheets – the O & M cost started in year 2014, in another spreadsheet – started at year 2013 Response No. 2 OK, this is corrected & consistent **Conclusion : CAR is closed**

			Worksheet "FIRR" 23.20) Column W – Margin 13%: what is this for? Calculation error was shown		Response No. 1 According to Vergel3 Consult, this was referred from the old spreadsheet when the modified Energy Regulatory Commission (ERC) capital recovery method was one of the methods used in addition to the FIT rate method. However, in the revised financial analysis, since the FIT of Php 6.15 per kWh feed-in-tariff (FIT) rate was already endorsed by NREB, this figure was solely used. Response No. 2 The column under Margin is now deleted	Response No. 1 Still unchanged. The column is still present & inconsistent with the other spreadsheet Response No. 2 OK, the spreadsheet has been corrected & the unused column has been removed **Conclusion : CAR is closed**
			Overall spreadsheet 23.21) Input values in the spreadsheet are found to be without reference to any reference source. This is not transparent. Please provide all reference sources / supporting evidences for each input values as stated in the spreadsheet		Response No. 1 The comprehensive FS of Carit-an project which was submitted shows the backup details, as explained by Vergel3 Consult. Other inputs are difficult to secure due to high confidentiality, as explained under 11.7. Response No. 2 Revised excel files are shared through dropbox (REV 03_ANNEX 8-2 a- IRR CARIT-AN WITHOUT CDM with project cost summary breakdown.xls, REV 03_ANNEX 8-	Response No. 1 According to EB 62 Annex 5 Guidelines On The Assessment Of Investment Analysis, Version 05 paragraph 8 *"8. **Guidance:** Project participants should supply spreadsheet versions of all investment analysis.* *All formulas used in this analysis are readable and all relevant cells are viewable and unprotected. The spreadsheet will be made available to the Executive Board, UNFCCC*

					2b - IRR CARIT-AN WITH CDM with proj cost summary breakdown-2.xls) Response No. 3 The spreadsheet is now revised based on the DOE's comments and on the requirements of EB 62 Annex 5 Guidelines On The Assessment Of Investment Analysis	*secretariat and others contracted to assess the request for registration on behalf of the Board including assigned members of the Registration and Issuance Team. In cases where the project participant does not wish to make such a spreadsheet available to the public an exact read-only or PDF copy shall be provided for general publication. In case the PP wishes to black-out certain elements of the publicly available version, a clear justification for this shall be provided to the UNFCCC secretariat by the DOE when requesting registration.* ***Rationale:*** *Paragraph 6 of Step 2 of the Tool for the demonstration and assessment of additionality (version 4) requires that investment analysis be presented in a transparent manner, to the extent that the reader can reproduce the results."* Please state clearly in the spreadsheet & provide all reference sources / supporting evidences for each input values as stated in the

						spreadsheet Response No. 2 Remains pending Response No. 3 The IRR spreadsheet contains external links – see worksheet "DATA", cell G43 Response No. 4 External links has been removed from the spreadsheet **Conclusion : CAR is closed**
24	**X**		**CAR 24** Emission factor calculation spreadsheet "Philippines grid EF calculations 30Aug2011_final"		Response No. 1 The grid EF spreadsheet has been provided. Response No. 2 CL20.	Response No. 1 See CL 20 Response No. 2 See CL 20 **Conclusion : CAR is closed**
25		**X**	**CL 01** PoA-DD Section A.2 Please clarify further the goal & why is the project activity to be implemented as a PoA? Please provide the milestone showing the development of the project activity implementation as PoA	E.3.4	Response No. 1 The document is revised and further text is added to address the comment. Response No. 2 a) Footnote 1 inserted to the dropbox as a pdf file: Footnote 1	Response No. 1 a) Footnote 1 link (http://www.investphilippines.gov.ph/downloads/sector/Renewable%20Energy.pdf) in the PoA-DD is not accessible b) Please submit the supporting evidence "Signing of Memorandum

					PoA-DD.pdf b) The Memorandum of Understanding signed between LBP and KfW dated December 28, 2008 is shared through dropbox for your reference (CL 01-b_KfW MOU.pdf)	of Understanding between LBP and KfW for the development of PoA, including PIN development and PDD preparation, dated 28-12-2008" for review Response No. 2 Footnote 1 document & supporting evidence "Signing of Memorandum of Understanding between LBP and KfW for the development of PoA, including PIN development and PDD preparation, dated 28-12-2008" has been reviewed by the validation team. This supports the statements in the PoA –DD concerning the milestone of PoA development **Conclusion : CL is closed**
26		**X**	**CL 02** PoA-DD Section A.3 It is not clearly indicated whether the managing entity (Landbank) & KfW are belong to the private or public entity (ies) Please clarify	A.2.2	Response No. 1 The document has been revised to satisfy the comment.	Response No. 1 OK, PoA-DD Section A.3 has been updated & both parties are indicated as public entities **Conclusion : CL is closed**
27		**X**	**CL 03** PoA-DD Section A.3 & Annex 1 Please clarify why the name of the	A.2.1	Response No. 1 The name of the managing entity is	Response No. 1 OK, cross checked the name of the managing entity in all

			managing entity indicated in the PDD Section A.3 (LANDBANK of the Philippines) is inconsistent with Annex 1 (Land Bank of the Philippines)		corrected as "Land Bank of the Philippines"	PDDs & confirmed has been corrected & all are now consistent **Conclusion : CL is closed**
28		**X**	**CL 04** PoA-DD Section A.2 The following statements are not yet substantiated with the supporting reference documents: a) *"The large potential for the development of mini-hydropower in the Philippines is still largely untapped.* *The potential of MHP in the Philippines is estimated at ~1,850 MW. However, to date, only 65 MW of MHP capacity are operational. The Government of the Philippines (GoP) is trying to accelerate the investment in mini-hydropower, especially from the private sector. To this end, the government has put a* *variety of incentives into place. However, despite these incentives, the mini-hydropower sector only slowly gains momentum"* 2) Page 4: "*In addition, the plant operator is required to invest into local livelihood projects, such as community-based employment programmes or ecological rehabilitation"*	-	Response No. 1 The document is revised and updated. The references work now.	Response No. 1 OK, supporting reference documents has been provided & consistent with the descriptions in the PoA-DD. Irrelevant statements have been removed & updated **Conclusion : CL is closed**
29		**X**	**CL 05** PoA-DD Section A.4.2 Please clarify whether a typical CPA	A.3.1	Response No. 1 The issue has been clarified further within the document.	Response No. 1 OK, PoA.-DD Section A.4.2 has been updated to include

			would also include newly constructed hydropower plant? Comprise of an addition? Retrofit? Replacement activity in existing hydropower plant? This are not being clarified clearly in the PoA-DD Section A.4.2			more options as per AMS-I.D requirements for a typical CPA i.e. *A typical CPA would comprise of one or more hydroelectric power plants/units either with a run-of-river reservoir, an accumulation reservoir that: (a) Install a new power plant at a site where there was no hydro power plant operating prior to the implementation of the project activity (Greenfield plant); (b) Involve a capacity addition; (c) Involve a retrofit of (an) existing plant(s); or (d) Involve a replacement of (an) existing plant(s)* **Conclusion : CL is closed**
30		**X**	**CL 06** PoA-DD Section A.4.2.1 Please clarify further what are the technical design parameters (including main equipment's specifications) applicable for this project activity Currently, PoA-DD Section A.4.2.1 does not explain clearly whether the project would construct any reservoirs & what are the applicable main equipment's for the project	-	Response No. 1 This section has been revised to address the issues raised through the comment.	Response No. 1 OK, clearer expected technical design parameters & also applicability of reservoirs construction have been defined **Conclusion : CL is closed**
31		**X**	**CL 07** PoA-DD Section A.4.2.1 Besides, the following sentence stated in the PoA-DD Section A.4.2.1 requires	-	Response No. 1 The text has been revised to eliminate any confusion.	Response No. 1 Text revision has been cross checked & accepted by the validation team

			further clarification: "*It is anticipated that all participants will connect to the grid".*			**Conclusion : CL is closed**
32		**X**	**CL 08** Evidence for demonstrating that those operating the CPA are aware of and have agreed that their activity is being subscribed to PoA are not yet provided to the validation team	A.6.3	Response No. 1 Documents are shared through drop box. Files item 16 and 17. (Item-17-Prospective-MOA-between-LBP&PP and Item-11+17-Anteco-Confirmation-of-CPA-inclusion) Response No. 2 The 2.3MW total capacity of Ipayo and Carit-an MHPs is based on initial rough estimates of MHP capacities prior to the preparation of Feasibility Study. Hence, the said figure was also adapted in the MOA. Moreover, initial negotiations on CDM with ANTECO involved Ipayo and Carit-an MHPs. However, ANTECO decided to pursue Carit-an MHP as its first CPA, while Ipayo MHP will be included to POA at a later time.	Response No. 1 The validation team checked the 2 supporting evidences provided i.e. a) Memorandum of Agreement For The Intent To Purchase to Purchase and Sell Certified Emissions Reductions from Antique Electric Cooperative Inc's (ANTECO), 2.3 MW Ipayo & Carit-an Mini-Hydropower Projects, signed on 29-09-2011 b) CPA Inclusion agreement between Land Bank of Philippines & ANTECO dated 09-12-2011 However, the Memorandum, of Agreement includes for Ipayo Mini-Hydropower project & the document title mentioned as "2.3 MW". Please clarify Response No. 2 OK, this is clarified & accepted by the validation team **Conclusion : CL is closed**

33		X	**CL 09** PoA-DD Section A.4.4.1 The operational & management plan descriptions in the PoA-DD are currently not fully in line with the required contents as specified in the PoA-DD template Besides that, it is unclear who are the representatives from the CME, defined functional roles within the CME appointed in order to manage the required activities as defined in the operational & management plan	A.6.1	Response No. 1 This section has been updated accordingly to meet and satisfy the issues raised. Response No. 2 Section A.4.4.1 of the PoA-DD was updated to meet the new criteria by EB65 Annex 3 paragraph 17. Response No. 3 Section A.4.4.1. of the PoA-DD is updated to address the comment.	Response No. 1 OK, PoA-DD Section A.4.4.1 has been updated In view of the recent EB 65, the validation team has evaluated the "Standard For Demonstration Of Additionality, Development Of Eligibility Criteria And Application Of Multiple Methodologies For Programme Of Activities, EB 65, Annex 3, Version 01.0, paragraph 17 versus PoA-DD Section A.4.4.1 & not all requirements have been specified clearly. Please update the PoA-DD (in view of grace period given as only 8 months from the date of EB 65 meeting for the previous guideline) Response No. 2 a) For paragraph 17a) the requirements clearly stated that "*A clear definition of roles and responsibilities of personnel* ***involved in the process of inclusion of CPAs****, including a review of their competencies*;" However, PoA-DD described about responsibilities related to monitoring

						b) For paragraph 17e), the requirement i.e. "*Records and documentation control process for each CPA under the PoA;"* is not accurately described Please clarify clearly how will the records & documentation **process be established?** Response No. 3 OK, the PoA –DD has been corrected & descriptions for paragraph 17a) & 17e) are now clarified clearly in the PoA-DD **Remarks: At the time of registration submission, the guideline has been updated according to EB 70 i.e. "Standard Demonstration of additionality, development of eligibility criteria and application of multiple methodologies for programme of activities Version 02.0, EB 70". Paragraph 17 a) to 17 g) are now replaced with Paragraph 19 a) to 19 g)** **Conclusion : CL is closed**
34		**X**	**CL 10** PoA-DD Section A.4.4.2 Please clarify who is DOA?	A.6.1	Response No. 1 Corrected.	Response No. 1 OK, this has been corrected as the DOE **Conclusion : CL is closed**

35		X	**CL 11** PoA-DD Section A.4.5 Objective evidence / reference source to substantiate that there is no public funding at the level of the PoA is not yet provided or stated in the PoA-DD	A.2.5	Response No. 1 The file is shared through drop box. (Item-28 LBP-Certification (Public Funding)	Response No. 1 OK, sighted the certification letter from LBP dated 09-12-2011 confirming there is no public funding received from Annex 1 country & the project will be funded by LBP **Conclusion : CL is closed**
36		X	**CL 12** PoA-DD Section E.3 Please clarify what is the flow diagram of the project boundary & baseline boundary?	A.1.2	Response No. 1 The boundary has been defined through a schematic figure including relevant parameters.	Response No. 1 OK, this has been updated in the PoA-DD Section E.3 **Conclusion : CL is closed**
37		X	**CL 13** PoA-DD Section E.5.1 page 15 Please clarify further what does the statement means: *"While the additionality argument on CPA-level follows the same steps, the assessment **might include aspects not listed** in the PoA-DD"* The aspects not listed as mentioned above is unclear to the validation team	E.4.3	Response No. 1 The sentence was not structured well enough to convey the message. It has been revised to avoid further confusion.	Response No. 1 OK, this has been removed as it is irrelevant **Conclusion : CL is closed**
38		X	**CL 14** PoA-DD Section E.5.1 page 15 Please clarify why is "IRR benchmark" is applicable according to the "Tool for the Demonstration and Assessment of Additionality"?	E.4.3	Response No. 1 Please note that the PoA-DD document mentions IRR analysis as one of the options to assess the additionality, but it does not enforce the project participants to use IRR analysis. This option is derived directly from the additionality tool.	Response No. 1 The justifications are accepted by the validation team. The "IRR benchmark" has been revised as "benchmark" in the PoA-DD to avoid confusions **Conclusion : CL is closed**

					Furthermore, IRR analysis can be appropriate since future MHPs generate financial benefits through electricity sales. This benchmark represents the minimum IRR that is required for the project to be financially viable and attractive as mentioned within the PoA-DD.	
39		**X**	**CL 15** PoA-DD Section E.5.1 page 18 *"Any other relevant key parameters are also to be included in the assessment"* – please clarify what are the other relevant key parameters to be included?	E.4.3	Response No. 1 The text has been revised and examples of extra parameters are given.	Response No. 1 OK, the other relevant key parameters have been specified clearly in the PoA-DD i.e. electricity generation, O&M costs and Plant Load Factor **Conclusion : CL is closed**
40		**X**	**CL 16** PoA-DD Section E.5.2 page 19 B1 : Investment barrier In this section, it was mentioned that *"This indicator can be the financial or equity IRR of the project, Net Present Value or another applicable indicator"* However in Section E.5.1, only IRR was indicated to be considered. Please clarify	E.4.3	Response No. 1 The confusing text has been removed to be in consistent with section E.5.1.	Response No. 1 PoA-DD has been revised & the texts has been removed **Conclusion : CL is closed**
41		**X**	**CL 17** PoA-DD Section E.6.1 Please clarify whether the Philippine DNA has published any delineation of the project electricity system & connected electricity systems?	E.8.1	There is no such publication by DNA of the Philippines. A sentence has been added to clarify this issue.	Response No. 1 OK, this has been explained clearly in the PoA-DD & accepted by the validation team

						Conclusion : CL is closed
42		**X**	**CL 18** PoA-DD Section E.6.1 Step 3 – please clarify what it means by simple average OM?	E.8.1	Response No. 1 The sentence has been corrected to address the right term. Response No. 2 The sentence has been revised to read clearer. Response No. 3 The language has been corrected in section E.6.1. of the PoA-DD. The word "simple average OM" is corrected to "average OM".	Response No. 1 OK, this has been revised However, kindly review the sentence below – Step 3 page 26 "For the calculation operating margin emission factor, the simple OM method and the **simple** average OM method are chosen" Response No.2 Still not yet corrected the mistake – see above text (in bold font" Response No. 3 The error has been corrected **Conclusion : CL is closed**
43		**X**	**CL 19** Please provide the Excel Sheet for the emission reduction calculation of specific CPA	E.5.1 E.5.2	Response No. 1 The file has been shared through drop box.	Response No. 1 OK, emission reduction calculation is done via CPA-DD directly & no separate calculation spreadsheet is needed **Conclusion : CL is closed**

44		X	**CL 20** PoA-DD Section E.6.1 Step 3 - Please provide the reference source document to substantiate the low-cost / must-run resources information – for calculation based on the weighted average using data sets from the most recent 3 years (ex-ante option)	E.8.1	Response No. 1 The data is included in the spreadsheet. (Item-62_PHIL Grid Gross Gen_2003-2010, Item-62_PHIL Grid Net Gen_05-10.CDM, Item-62_Power Statistics.2010.final and Item-62_Recently Built Power plants.for CDM2010) Response No. 2 The grid emission factor was calculated based on the aggregated generation data (which were shared through dropbox in our earlier response) provided by the Philippine Department of Energy thru email. The email evidence is available for your reference. (CL20_DOE email1.pdf, CL20_DOE email2.pdf)	Response No. 1 The validation team has reviewed all of the supporting evidences, however the validation team could not verify whether these documents are official documents received, according to AMS-I.D Version 17 paragraph 17 *"Calculations shall be based on data from an official source (where available)[12] and made publicly available.* *[12] Plant emission factors used for the calculation of emission factors should be obtained in the following priority:* *1. Acquired directly from the dispatch center or power producers, if available; or* *2. Calculated, if data on fuel type, fuel Emission Factor, fuel input and power output can be obtained for each plant;* *If confidential data available from the relevant host Party authority are used, the calculation carried out by the project participants shall be verified by the DOE and the CDM-PDD may only show the resultant carbon emission factor and the corresponding list of plants;"* Response No. 2 Ok, confirmed that the generation data are obtained directly from Power Planning

						and Development Division, Electric Power Industry Management Bureau, Department of Energy, as evident via email correspondences with LBP **Conclusion : CL is closed**
45		**X**	**CL 21** PoA-DD Section E.6.2 Please clarify why Option B was stated in the PoA-DD, EF calculation spreadsheet reviewed showed Option A was selected instead.	E.8.1	Response No. 1 The text has been corrected and revised.	Response No. 1 OK, Option A is selected & this has been stated correctly in the PoA-DD **Conclusion : CL is closed**
46		**X**	**CL 22** PoA-DD Section E.6.3 Table 1 – Please clarify why there are missing rows from 7 to 14?	E.9.1	Response No. 1 The missing rows were related to unnecessary data that has been removed previously. The row numbers have been corrected.	Response No. 1 OK, this has been corrected & accepted by the validation team **Conclusion : CL is closed**
47		**X**	**CL 23** PoA-DD Section E.7.1 For parameter TEG_y, please clarify the following statement: “Any comment: Only applicable if the power density is below 10W/m2 and above 4 W/m2. Data will be kept for two years after the end of the crediting period”?	E.9.1	Response No. 1 The text was not correct and has been removed.	Response No. 1 OK, this has been corrected & accepted by the validation team **Conclusion : CL is closed**
48		**X**	**CL 24** PoA-DD Section E.7.2 48.1) Please clarify whether	A.3.3 E.9.1	Response No. 1 The organizational chart has been included.	Response No. 1 OK, this has been included in PoA-DD & also in CPA-DD

			organization chart for monitoring process has been defined?	E.10.5 E.10.7 E.10.8 E.10.9 E.12.1 to E.12.5		**Conclusion : CL is closed**
			48.2) Please clarify what are the responsibilities defined for each assigned monitoring personnel as listed & defined in the organization chart?	A.3.3 E.9.1 E.10.5 E.10.7 E.10.8 E.10.9 E.12.1 to E.12.5	Response No. 1 The responsibilities have been defined.	Response No. 1 OK, this has been included in PoA-DD & also in CPA-DD **Conclusion : CL is closed**
			48.3) Please clarify who are the assigned function / job title of personnel involved in monitoring plan implementation as described in the PoA-DD Section E.7.2 (LBP & operator of power plant)	A.3.3 E.9.1 E.10.5 E.10.7 E.10.8 E.10.9 E.12.1 to E.12.5	Response No. 1 Functions of the responsible people have been defined and added to the section.	Response No. 1 OK, this has been included in PoA-DD & also in CPA-DD **Conclusion : CL is closed**
			48.4) Please clarify what are the contingency plans & corrective actions to be implemented in case of emergencies such as electricity meter damaged, power plant shut down etc.?	A.3.3 E.9.1 E.10.5 E.10.7	Response No. 1 This has been added to the section.	Response No. 1 OK, this has been included in PoA-DD & also in CPA-DD **Conclusion : CL is closed**

				E.10.8 E.10.9 E.12.1 to E.12.5		
			48.5) Please clarify what are the monitoring equipments to be used for the monitoring plan execution, including the technical specification, accuracy class, applicable international / national standard & calibration / re-calibration requirements	A.3.3 E.9.1 E.10.5 E.10.7 E.10.8 E.10.9 E.12.1 to E.12.5	Response No. 1 The monitoring equipment and meters are not yet clear as ANTECO has not yet entered into any contract for implementation and construction. This will be clarified as soon as possible and the document shall be updated thereafter. Response No.2 N/A Response No. 3 The project developer has done their best to prepare the final engineering design. However, this process is very time consuming and the final selection of the monitoring equipment and their detail technical specifications are not yet final. The main reason for this is the fact that the first CPA cannot start before the validation commencement and few months is not enough to complete the complex task of engineering design and equipment selection. The CME believes this can be the	Response No. 1 OK, this is accepted & will be re-checked before issuance of final validation report Response No. 2 OK, this will be verified during the verification stage **Conclusion : CL is closed**

					common issue for many first CPAs with starting date right after the validation, particularly for hydroelectric projects that need much more time to prepare their detail engineering design. Therefore the CME would like to seek other possibilities from the DOE to close this issue now and avoid further delay in preparing the validation report.	
			48.6) Comments a) to e) above are also applicable for CPA-DD Template & CPA-DD CPA-1 Section B.6.1. The validation team found some of the descriptions in the monitoring plan are redundant e.g. at page 19 to 21.	A.3.3 E.9.1 E.10.5 E.10.7 E.10.8 E.10.9 E.12.1 to E.12.5	Response No. 1 The section has been updated in both documents.	Response No. 1 OK, this has been updated & revised accordingly in CPA-DDs **Conclusion : CL is closed**
			48.7) CPA-DD Template & CPA-DD CPA-1 Please clarify what is the layout diagram of the monitoring equipment's to be installed for the project	A.3.3 E.9.1 E.10.5 E.10.7 E.10.8 E.10.9 E.12.1 to E.12.5	Response No. 1 The layout of the monitoring equipment is not ready yet as ANTECO has not contracted any consultant for the implementation of the monitoring equipment. This will be coordinated with ANTECO and a proper monitoring layout shall be included shortly. The estimated date of having the monitoring equipment layout is February 2012.	Response No. 1 OK, this is accepted & will be re-checked before issuance of final validation report Response No. 2 OK, this electrical single line diagram has been reviewed & the position of the electric meters are specified clearly **Conclusion : CL is closed**

					Response No.2 N/A Response No. 3 The electrical single line diagram (lifted from the FSR), which shows the position of the electric meters in the project, is shared through the drop box. (CL 48.7_LAYOUT.pdf)	
			48.8) Please provide information for the necessary training plans and schedule for the implementation of monitoring plan for each CPA	A.3.3 E.9.1 E.10.5 E.10.7 E.10.8 E.10.9 E.12.1 to E.12.5	Response No. 1 The document is shared through drop box.	Response No. 1 OK, training plan has been reviewed & accepted by the validation team **Conclusion : CL is closed**
49		**X**	**CL 25** PoA-DD Annex 1 Please clarify the correct address & contact details of the CME as stated in Annex 1 (incomplete)	A.2.2	Response No. 1 The table has been completed and updated. Response No. 2 The inconsistencies are lifted. Response No. 3 The tables in Annex 1 are now identical.	Response No. 1 Slight inconsistencies are still detected in Annex 1 of PoA-DD & CPA-DD CPA-1 Response No. 2 Inconsistencies are still detected Response No. 3 OK, all are now consistent **Conclusion : CL is closed**

50		X	**CL 26** CPA-DD CPA-1 versus CPA-DD template Section A.2 Please clarify why the 1st paragraph descriptions are inconsistent with the template descriptions?	-	Response No. 1 The documents are revised. Response No. 2 The inconsistencies are lifted.	Response No. 1 It is still inconsistent Response No. 2 It is now consistent & corrected **Conclusion : CL is closed**
51		X	**CL 27** CPA-DD CPA-1 Section A.3 Please clarify clearly whether ANTECO is the CPA implementer? What are the supporting evidences?	-	Response No. 1 Further text has been added to clarify this issue. The FSR is ordered by ANTECO, there are further evidences that can be provided once requested.	Response No. 1 OK, this has been explained clearly in the CPA-DD. **Conclusion : CL is closed**
52		X	**CL 28** CPA-DD CPA-1 Section A.4.2.2 It was stated that the expected operational lifetime of the CPA-1 as 30 years. Please provide the supporting evidence to the validation team for review	-	Response No. 1 Please refer to Chapter 8, Section 8.7 of the Feasibility Study Report.	Response No. 1 OK, the validation team has reviewed the Feasibility Study Report Chapter 8, Section 8.7 & confirmed the operational lifetime of the CPA-1 will be 30 years **Conclusion : CL is closed**
53		X	**CL 29** CPA-DD CPA-1 Section A.4.3.1 Please clarify what is the starting date of the crediting period (dd/mm/yy) for CPA-1	-	Response No. 1 An anticipated date has been added.	Response No. 1 OK, this has been added & accepted by the validation team **Conclusion : CL is closed**
54		X	**CL 30** CPA-DD Template & CPA-DD CPA-1	-	Response No. 1 The file item 19 has been provided	Response No. 1 The letter has been reviewed

			Section A.4.7 For CPA-DD CPA-1, please clarify specifically what is the official letter available from the project implementer		through drop box. (Item 19_Confirmation letter from ANTECO)	& the project implementer has declared that Carit-an Mini-hydropower Plant is neither registered as a CDM project nor part of another PoA **Conclusion : CL is closed**
55		**X**	**CL 31** CPA-DD Template & CPA-DD CPA-1 Section B.4 Please clarify what is the flow diagram of the project boundary?	-	Response No. 1 The diagram has been added.	Response No. 1 OK, this is added & accepted by the validation team **Conclusion : CL is closed**
56		**X**	**CL 32** CPA-DD Template & CPA-DD CPA-1 Section B.6.1 The descriptions in this section also refers to Section E.7.1, but this is not found within the CPA-DD. Please clarify	-	Response No. 1 It meant to be section E.7.1. in the PoA-DD document. The text has been revised. Response No. 2 It is changed now to “E.7.1. of the PoA-DD”.	Response No. 1 Not yet revised, remains unchanged Response No. 2 It is now consistent & corrected **Conclusion : CL is closed**
57		**X**	**CL 33** CPA-DD Template & CPA-DD CPA 1 Section C.3 Please clarify whether the CPA owner will request for a Certificate of Non-Coverage (CNC) from the Department of Natural Resources (DENR), as mentioned in the PoA-DD Section C.3?	-	Response No. 1 The process is underway and the document shall be provided during the validation period. The contract of the consultant who will prepare the Initial Environmental Examination report is about to be approved by the ANTECO Board by 3rd week of December 2011. Response No. 2	Response No. 1 OK, this accepted & will be re-checked upon receipt of the supporting documents Response No. 2 Reviewed the Environmental Compliance Certificate ref. no ECC-R6-1202-058-4300 & ECC-R6-1202-059-4300 dated 13 March 2012 issued for Upper Carit-an & Lower Carit-

					N/A Response No. 3 The CPA was able to secure the Environmental Compliance Certificates for the project from the DENR. (CL33 ECC Upper Carit-an.pdf, CL33 ECC Lower Carit-an.pdf)	an by Department of Environment & Natural Resources, Environmental Management Bureau Please clarify why for Lower Carit-an, the certificate mentioned "….Environmental Compliance Certificate (ECC) for **4.301 MW** Lower Carit-an Mini Hydroelectric Power Plant Project"? Why 4.301 MW? Besides, the project title mentioned in the certificate is not consistent with the CPA-1 project title i.e. "Mini Hydroelectric Power Plant" versus "Mini-Hydropower Plant" Response No. 3 OK, the validation team received the clarification letter from ANTECO dated 29-5-2012 & confirmed that the project with title CPA-1 project title i.e. "Mini Hydroelectric Power Plant" versus "Mini-Hydropower Plant" – has been confirmed as "……Mini-Hydropower Plant" Please clarify why for Lower Carit-an, the certificate mentioned "….Environmental

						Compliance Certificate (ECC) for **4.301 MW** Lower Carit-an Mini Hydroelectric Power Plant Project"? Why 4.301 MW? Response No. 4 The corrected ECC dated 12 May 2012 has been received & for Lower Carit-an Mini Hydroelectric Power Plant Project, the value has been corrected to 840kW capacity **Conclusion : CAR is closed**
58		**X**	**CL 34** CPA-DD CPA-1 Section D.2 58.1) Please clarify the venue & the date when the local stakeholder meeting was conducted? The date was not indicated in the CPA-DD CPA-1	D.1.1 D.1.4	Response No. 1 Further text has been added to clarify the date and place of the meeting. Both documents have been updated.	Response No. 1 Cross checked the attendance list which indicated the date of local stakeholder meeting & the location & these information have been updated in the CPA-DD **Conclusion : CL is closed**
			58.2) Please clarify how many stakeholders have attended the meeting? The supporting evidence for the stakeholder meeting minutes (original copy) & participants list are not yet provided to the validation team (original scanned copies)	D.1.1 D.1.4	Response No. 1 Original scanned documents (attendance sheets, minutes) have been uploaded in the dropbox. (Item 54_1_list of attendees-SC-Abiera, Item 54_2_list of attendees-SC-guest)	Response No. 1 Original attendance list has been reviewed & representations for the meeting are adequate **Conclusion : CL is closed**

59		X	**CL 35** CPA-DD CPA-1 Section D.3 Please clarify clearly which ”local lady” & ”another lady” resident who raised the comments during	D.1.1	Response No. 1 The ladies who raised the comments during stakeholders meeting were Ms. Polly Baliguat & Ms. Marietta Manalo. These are added to CPA-DD CPA-1	Response No. 1 This has been updated in the CPA-DD CPA-1 & accepted by the validation team **Conclusion : CL is closed**
60		X	**CL 36** CPA-DD CPA-1 Section D.3 Please clarify whether the design & location of the power house had taken into consideration the water will go back for irrigation?	-	Response No. 1 Further clarification has been added to the table.	Response No. 1 The additional clarification has been reviewed & accepted by the validation team **Conclusion : CL is closed**

Appendix B

CERTIFICATES OF COMPETENCE

Qualification

Yong, Tau Lan (Nelly) /

Emission Trading
United Nations Framework Convention on Climate Change

Auditor No.: (AuditorenRegNr)			
Appointed: (Zugelassen)	☒ Ja	Qualification Level: (Qualifikationsstufe)	Lead Auditor
External: (Externer)	☐ Ja	Add. reviewer: (Zusätzlicher Prüfer)	☐ yes
EAC Scopes: (EAC Branchen)	CDM 01 - Energy industries (renewable - / non-renewable sources) CDM 05 - Chemical industry CDM 11 - Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride CDM 12 - Solvents use CDM 13 - Waste handling and disposal		
Add. qualification: (zus. Qualifikation)			
First Appointment: (Erstberufung)	10/28/2010	Valid to: (Gültig bis)	10/27/2013

Remarks:	TA 1.2 - renewable energies TA 5.1 / 11.1 / 12.1 - Chemical Industries TA 13.1 - Waste handling and disposal
Languages:	English malay Indonesian Mandarin

Experience Exchange

Date	Location	Remarks	Accreditation(s)

Monitoring

Latest Monitoring: (letzte Beurteilung)

Next Monitoring: (nächste Beurteilung)

Remarks:

View / Edit Monitoring

History of scope allocation

Date:
Change:
By:
Reason:

Date:
Change:
By:
Reason:

Date: 2010-10-31
Change: EAC CDM, CDM, CDM, CDM added
By: Manfred Brinkmann
Reason: TA 1.2 - renewable energies

History

Created:	10/26/2007 10:43:44 PM	Nelly Yong/MY/TUV
Modified:	04/27/2011 11:52:48 AM	Nelly Yong/MY/TUV
	11/23/2010 03:40:13 PM ZE9	Manfred Brinkmann/Jpn/TUV
	11/16/2010 02:20:46 PM ZE9	Manfred Brinkmann/Jpn/TUV
	11/04/2010 08:57:58 AM ZE9	Manfred Brinkmann/Jpn/TUV
	10/31/2010 09:23:50 PM ZE9	Manfred Brinkmann/Jpn/TUV
	10/31/2010 09:23:41 PM ZE9	Manfred Brinkmann/Jpn/TUV
	10/26/2007 10:44:04 PM	Nelly Yong/MY/TUV

Qualification

Zakaria, Azizan /

Emission Trading
United Nations Framework Convention on Climate Change

Auditor No.: (AuditorenRegNr)			
Appointed: (Zugelassen)	☒ Ja	Qualification Level: (Qualifikationsstufe)	Lead Auditor
External: (Externer)	☐ Ja	Add. reviewer: (Zusätzlicher Prüfer)	☐ yes
EAC Scopes: (EAC Branchen)	CDM 05 - Chemical industry CDM 11 - Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride CDM 12 - Solvents use CDM 13 - Waste handling and disposal		
Add. qualification: (zus. Qualifikation)			
First Appointment: (Erstberufung)	25/09/2011	Valid to: (Gültig bis)	24/09/2014

Remarks: Valid for TA 5.1/11.1/12.1
TA 13.1

Languages:

Experience Exchange

Date	Location	Remarks	Accreditation(s)

Monitoring

Latest Monitoring: (letzte Beurteilung)

Next Monitoring: (nächste Beurteilung)

Remarks:

History of scope allocation

Date: 2012-03-29
Change: EAC CDM added

By:	Praveen Urs
Reason:	
Date:	2011-09-26
Change:	EAC CDM, CDM, CDM added
By:	Manfred Brinkmann
Reason:	Valid for TA 5.1/11.1/12.1

History

Created:	24/08/2011 11:42:34 AM	Azizan bin Zakaria/MY/TUV
Modified:	29/03/2012 07:50:57 PM	Praveen Urs/Chn/TUV
	26/09/2011 11:50:36 AM ZE9	Manfred Brinkmann/Jpn/TUV
	24/08/2011 11:42:54 AM	Azizan bin Zakaria/MY/TUV

Qualification

Li, Lixin /

Emission Trading
United Nations Framework Convention on Climate Change

Auditor No.: (AuditorenRegNr)			
Appointed: (Zugelassen)	☒ Ja	Qualification Level: (Qualifikationsstufe)	Lead Auditor
External: (Externer)	☐ Ja	Add. reviewer: (Zusätzlicher Prüfer)	☒ yes
EAC Scopes: (EAC Branchen)	CDM 01 - Energy industries (renewable - / non-renewable sources) CDM 03 - Energy demand CDM 02 - Energy distribution CDM 04 - Manufacturing industries		
Add. qualification: (zus. Qualifikation)			
First Appointment: (Erstberufung)	06/09/2010	Valid to: (Gültig bis)	05/09/2013

Remarks: Appointed as Technical Reviewer for TA 1.1, 1.2, 2.1, 2.2, 3.1
TA 4.5

Languages:

Experience Exchange

Date	Location	Remarks	Accreditation(s)
2010-12-21	Beijing	GC CDM Auditor Experience Exchange, Beijing, 2010-12-21to23 United Nations Framework Convention on Climate Change	

Monitoring

Latest Monitoring: (letzte Beurteilung)

Next Monitoring: (nächste Beurteilung)

Remarks:

History of scope allocation

Date: 2012-03-10
Change: EAC CDM, CDM added

By:	Praveen Urs
Reason:	
Date:	
Change:	
By:	
Reason:	
Date:	
Change:	
By:	
Reason:	
Date:	2010-11-08
Change:	EAC CDM, CDM added
By:	Manfred Brinkmann
Reason:	Appointed as Technical Reviewer for

History

Created:	13/08/2010 11:09:24 AM	Lixin Li/Bj/Chn/TUV
Modified:	06/07/2012 04:55:01 PM	Praveen Urs/Chn/TUV
	10/03/2012 08:33:44 PM	Praveen Urs/Chn/TUV
	12/02/2012 06:12:39 PM	Praveen Urs/Chn/TUV
	15/11/2010 04:02:03 PM	
	15/11/2010 04:01:56 PM	
	08/11/2010 09:36:09 AM ZE9	
	08/11/2010 09:28:17 AM ZE9	
	08/11/2010 09:28:07 AM ZE9	
	08/11/2010 09:27:39 AM ZE9	
	13/08/2010 11:09:41 AM	

Export to ICMS

Last Export: