VALIDATION REPORT
VIETNAM CARBON ASSETS LTD

VALIDATION OF THE
SONG BUNG 5 HYDROPOWER PROJECT

REPORT NO. VIETNAM-VAL/0009/2011

REVISION NO. 02

BUREAU VERITAS CERTIFICATION

62/71 Boulevard du Château
92571 Neuilly Sur Seine Cdx - France

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Client:	**Client ref.:**
Vietnam Carbon Assets Ltd	Renat Heuberger

Summary:

Bureau Veritas Certification has made the validation of the Song Bung 5 hydropower project of Power Engineering Consulting Joint Stock Company 1 (PECC1) located in Ma Cooih Commune, Dong Giang District and Thanh My Town, Nam Giang District, Quang Nam Province, Vietnam on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the validation process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology ACM0002, version 12.2.0 and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

Report No.:	Subject Group:
VIETNAM-val/0009/2011	CDM

Project title:

Song Bung 5 Hydropower Project

Work carried out by:

Tran Viet Hoang, Lead Verifier
Nguyen Hong Linh, Verifier
Sushil Budhia, Financial Expert

Internal Technical Review carried our by:

Ashok Mammen, Technical Reviewer

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Work approved by:

Flavio Gomes, Global Product Manager

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Abbreviations change / add to the list as necessary

BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO_2	Carbon Dioxide
DNA	Designated National Entity
DOE	Designated Operational Entity
DR	Document Review
EIA	Environmental Impact Assessment
ERPA	Emission Reductions Purchasing Agreement
EVN	Electricity Vietnam Group
FSR	Final the Basic Design Report
GHG	Green House Gas(es)
I	Interview
IETA	International Emissions Trading Association
IRR	Internal Rate of Return
LoA	Letter of Approval
MoV	Means of Verification
MP	Monitoring Plan
NGO	Non Government Organization
ODA	Official Development Assistance
PCF	Prototype Carbon Fund
PDD	Project Design Document
PECC1	Power Engineering Consulting Joint Stock Company 1
PP	Project Proponent (Project owner)
PPA	Power Purchase Agreement
PPC	People Provincial Committee
RI	Report Issuance
SV	Site visit
UNFCCC	United Nations Framework Convention for Climate Change
VND	Vietnamese Dong (Vietnamese Currency)
VNEEC	Energy and Environment Consultancy Joint Stock Company
VNEG	Vietnamese National Electricity Grid
VVM	Validation and Verification Manual
WACC	Weighted Average Cost of Capital

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1 INTRODUCTION

Vietnam Carbon Assets Ltd has commissioned Bureau Veritas Certification to validate its CDM project Song Bung 5 Hydropower Project (hereafter called "the Project") of Power Engineering Consulting Joint Stock Company 1 at Ma Cooih Commune, Dong Giang District and Thanh My Town, Nam Giang District, Quang Nam Province, Vietnam

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

1.1 Objective

The validation serves as project design verification and is a requirement of all projects. The validation is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design, as documented, is sound and reasonable, and meet the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The validation is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 Validation team

The validation team consists of the following personnel:

FUNCTION	NAME	CODE HOLDER*	TASK PERFORMED
Lead Verifier	Tran Viet Hoang	☒Yes ☐ No	☒DR ☒SV ☒RI
Verifier	Nguyen Hong Linh	☐Yes ☒ No	☒DR ☐SV ☒RI
Technical Specialist	N/A	☐Yes ☐ No	☐DR ☐SV ☐RI
Financial Specialist	Sushil Budhia	☐Yes ☒ No	☒DR ☐SV ☒RI
Internal Technical Reviewer (ITR)	Ashok Mammen	☒Yes ☐ No	☒DR ☐SV ☒RI
Specialist supporting ITR	N/A	☐Yes ☐ No	☐DR ☐SV ☐RI

*DR = Document Review; SV = Site Visit; RI = Report issuance

2 METHODOLOGY

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a validation protocol was customized for the project, according to the version 01.2 of the Clean Development Mechanism Validation and Verification Manual, issued by the Executive Board at its 55th meeting on 30/07/2010. The protocol shows, in a transparent manner, criteria (requirements), means of validation and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project 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 completed validation protocol is enclosed in Appendix A to this report.

Figure 1: Validation Protocol Tables

Validation Protocol Table 1: Requirement Checklist			
Checklist questions	**Reference**	**Comment**	**Draft and/or Final Conclusion**
The various requirements in Table 1 are linked to checklist questions the project would meet. The checklist is organized in several sections. Each section is then further sub – divided. The lowest level constitutes a checklist questions.	Gives reference documents where the answer to the checklist question or item is found.	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). Clarification Request (CL) is used when the validation team has identified a need for further clarification

Validation Protocol Table 2: Resolution of Corrective Action and Clarification Request			
Report Clarification and Corrective Action Requests	**Ref. to checklist questions in tables 1**	**Summary of project owner response**	**Validation Conclusion**
If the conclusions from the Validation are either a Corrective Action Request or Clarification Request, these should be listed in this section	Reference to the checklist question number in Table 1 where the Corrective Action Request or Clarification Request is explained.	The responses given by the Client or other project participants during the communications with the validation team should be summarized in this section	This section should summarize the validation team's responses and final conclusions. The conclusions should also be included in Table 1, under "Final Conclusion"

2.1 Review of Documents

The Project Design Document (PDD) **/Ref-1/** submitted by VNEEC and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for Completing the Project Design Document (CDM-PDD), Approved methodology, Kyoto Protocol, Clarifications on Validation Requirements to be Checked by a Designated Operational Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests VNEEC revised the PDD and resubmitted it on 15th July 2011

The validation findings presented in this report relate to the project as described in the PDD version 2.3 **/Ref-2/**.

2.2 Follow-up Interviews

On 28/05/2011, Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Power Engineering Consulting Joint Stock Company 1 (PECC1) were interviewed (see section **6 - References**). The main topics of the interviews are summarized in Table 1.

Table 1: Interview topics

Interviewed organization	Interview topics
Power Engineering Consulting Joint Stock Company 1 (PECC1) (Project Owner)	➢ Project background and CDM consideration ➢ Project technology, operation, maintenance and monitoring capability ➢ Project monitoring and management plan ➢ Stakeholder consultation process ➢ Project approval status (EIA, FSR, …) ➢ Hydro electric power development in Quang Nam Province ➢ Government policies related to hydro electric power projects development
Local Stakeholder (Representative of People Committee, local people affected by Project)	➢ Project background in details ➢ Stakeholder comments on project development ➢ Social and environment impact of the project
VNEEC (Project Participant)	➢ Applicability of selected methodology ➢ Baseline scenario identification ➢ Emission reductions calculation ➢ Emission reductions monitoring plan ➢ Investment analysis for additionality of the project

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the project design.

Corrective Action Requests (CAR) is issued, where:
(a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
(b) The CDM requirements have not been met;
(c) There is a risk that emission reductions cannot be monitored or calculated.

The validation team may also use the term Clarification Request (CL), if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix **A**.

2.4 Internal Technical Review

The validation report underwent an Internal Technical Review (ITR) before requesting registration of the project activity.

> The ITR is an independent process performed to examine thoroughly that the process of validation has been carried out in conformance with the requirements of the validation scheme as well as internal Bureau Veritas Certification procedures.
>
> The Lead Verifier provides a copy of the validation report to the reviewer, including any necessary validation documentation. The reviewer reviews the submitted documentation for conformance with the validation scheme. This will be a comprehensive review of all documentation generated during the validation process.

When performing an Internal Technical Review, the reviewer ensures that:

The validation activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.

The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs, CLs and FARs during the validation exercise, review of sample documents.

The reviewer compiles clarification questions for the Lead Verifier and Validation Team and discusses these matters with Lead Verifier.

After the agreement of the responses on the 'Clarification Request' from the Lead Verifier as well as the PP(s) the finalized validation report is accepted for further processing such as uploading on the UNFCCC webpage.

3 VALIDATION CONCLUSIONS

In the following sections, the conclusions of the validation are stated.

The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are described in the Validation Protocol in Appendix **A**.

The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Appendix **A**. The validation of the Project resulted in **20** Corrective Action Requests (CARs) and **07** Clarification Requests (CLs).

The CARs and CLs were closed based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.

The number between brackets at the end of each section correspond to the VVM paragraph

3.1 Approval (49-50)

The letters of approval (LoAs) have been received and the following support documentation has been verified by Bureau Veritas Certification:

- The DNA of Vietnam has issued a Letter of Approval on 31st January 2012 (No: 06/2012/DMHCC-BCD), authorizing Power Engineering Consulting Joint Stock Company 1 and Energy and Environment Consultancy Joint Stock Company as the Project Participants and confirmed that the Project contributes to Vietnam's sustainable development **/Ref-3/**
- The Switzerland's DNA has issued a Letter of Approval on 23rd Aug 2011 (Reference: G514-3487), authorizing Vietnam Carbon Assets Ltd as the Project Participant for the Project **/Ref-4/**

The LoAs indicate that Vietnam and Switzerland are Parties of the Kyoto Protocol and moreover the participations in Song Bung 5 hydropower Project are voluntary.

The LoAs do not contain a specific version of the PDD and the validation report. The title and contents of the letters of approval refer to the precise proposed CDM project activity title in the PDD being submitted for registration.

Bureau Veritas Certification received these letters from the PPs and does not doubt the letters' authenticities. Bureau Veritas Certification considers the letters of approval are in accordance with para. 45 – 48/VVM.

Complying with para.49 – 50/VVM, Bureau Veritas Certification recognizes that the Project is helpful to fulfil the host country's objectives of promoting sustainable development. The Project is expected to be in line with Vietnam's sustainable development because of:

- GHG emission reductions: The Project will help reduce the Greenhouse gas emissions by reducing the electricity generation from the fossil-fuel fired power plants,
- Employment opportunities: The conducting of the proposed project activity will create employment opportunities during the construction phase and operational period
- Economic improvement: For socio-economic well-being, the Project will construct new roads and improve existing roads as a part of Project's construction. During construction and operation of the Project, local people will be employed.

The validation did not reveal any information that indicates that the Project can be seen as a diversion of official development assistance (ODA) funding towards the host country

3.2 Participation (54)

The participation for each project participant has been approved by a Party of the Kyoto Protocol.

Complying with para.54/VVM, Bureau Veritas Certification concluded this by referring to the information on UNFCCC website
http://maindb.unfccc.int/public/country.pl?country=VN and
http://maindb.unfccc.int/public/country.pl?country=CH

3.3 Project design document (57)

Complying with para.57/VVM, Bureau Veritas Certification hereby confirms that the PDD complies with the latest "Project Design Document Form (CDM – PDD)" Version 03 and "Guidelines for completing the Project Design Document (CDM-PDD)" Version 07 **[1]**.

3.4 Changes in the Project Activity

During the site visit following changes were observed in project as compared to details mentioned in web hosted PDD:

1. Estimated annual gross power generation (net): In the PDD, as description, estimated annual gross power generation (net) is 228,036.6 MWh. Actually, estimated annual gross power generation (net) is 226,884.9 MWh

2. Technical specifications of turbines and generator:

Items	PDD v1.0 description	Actual conditions
Efficiency of Turbine	NA	93.1%
Efficiency of Generator	NA	97%
Capacity coefficient cosφ	NA	0.9
Annual river flow	117.9m^3/s	118.13m^3/s

Details of justifications are available in the Validation protocol

The final PDD version 2.3 has following changes as compared to PDD version 1.0 that was web-hosted.

3.5 Project description (64)

The Project is located in Ma Cooih Commune, Dong Giang District and Thanh My Town, Nam Giang District, Quang Nam Province, Vietnam.
The Project has coordinates as below:

Dam:	15^o 48’ 31.12”	Northern latitude
	107^o 44’ 43.74”	Eastern longitude

The total installed capacity of the Project is 57 MW with 02 turbines which are imported from China. The Project activity involves the construction of a dam, powerhouse, electricity distribution station and a reservoir with a power density of 33.9 W/m^2. A discharge channel is also built to convert potential flowing energy from Bung River into clean electrical energy. Electricity generated from the Project will be supplied to the national grid through 110kV transmission line. At the connection point, the digital and bi-directional power meter systems will be installed to measure import and export electricity of the hydropower plant.

The process undertaken by Bureau Veritas Certification to validate the accuracy and completeness of the project description including the documentation check; cross – check with Final the Basic Design Report **/Ref-5/**; Equipment Supply Contract **/Ref-8/**

Complying with para.64/VVM, Bureau Veritas Certification hereby confirms that the Project description in the PDD **/Ref-2/** is accurate and complete in all respects and the final PDD version 2.3 has following changes as compared to PDD version 1.0 that was web hosted. Details of justifications are available in the Validation protocol

3.6 Baseline and monitoring methodology

3.6.1 General requirement (76-77)

The project uses the approved consolidated baseline and monitoring methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” Version 12.2.0 **[2]**

The assessment of the relevant information contained in the PDD against each applicability conditions is described below:

- The Project is a grid – connected renewable power generation project
- The Project is a new hydro electric power plant
- The Project is not a capacity addition, retrofit or replacement of an existing power plant
- The project activity results in a new reservoir and the power density of the power plant is greater than 4 W/m^2.

Bureau Veritas Certification hereby confirms that the selected baseline and monitoring methodology, tool and other methodology component are previously approved by the CDM Executive Board, and is applicable to the project, which complies with all the applicability conditions therein.

By the mean of review the FSR of the Project, Bureau Veritas Certification found that the power density of this hydro electric power project is 33.9 W/m^2 (greater than 10 W/m^2). Based on the on – site assessment, Bureau Veritas Certification hereby confirms that, as a result of the implementation of proposed CDM project activity, there are no GHG emissions occurring within the proposed project boundary, which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology **/Ref -5/**.

3.6.2 Project boundary (80)

The spatial extent of the Project boundary is clearly defined in line with the ACM0002, version 12.2.0 as the physical, geographical site of Project and all other power plants connected physically to the Vietnamese National Electricity Grid (VNEG).

Complying with para.57/VVM, Bureau Veritas Certification hereby confirms that the identification of the Project boundary and the sources and gases selected is in line with the delineation of grid boundaries as provided in the "Calculation emission factor of Vietnamese Electricity Grid issued by DNA of Vietnam, dated on 26th March 2010" **/Ref-9/**.

During on-site visit, by observing of physical site, based on the above assessment Bureau Veritas Certification hereby confirms that the identified boundary and the selected sources and gases are justified for the Project.

3.6.3 Baseline identification (87-88)

The steps taken to assess the requirement given in paragraph 81 and 82 of the VVM are described below:

As the Project is the installation of a newly built and grid – connected renewable power plant that delivers the generated electricity to the grid, hence, according to methodology ACM0002, the baseline scenario is properly determined as:

> "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 a new generation sources, as reflected in the combined margin (CM), calculations described in the "Tool to calculate emission factor for an electricity system" version 2.2.1 **[3]**"

Currently, in Vietnam, only EVN exclusively operates the national electricity grid which is the unique transmission and distribution line. All power plants in Vietnam are physically connected to the line, is project electricity system.

Therefore, baseline scenario of the proposed project is determined as the delivery of equivalent amount of annual power output from the Vietnam national grid which connected to the proposed project.

Complying with para.87 and 88/VVM, Bureau Veritas Certification hereby confirms that:

a) All the assumptions and data used by the project participants are listed in the PDD, including their references and sources
b) All documentation used and relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD
c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidences and can be deemed reasonable
d) Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD
e) The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed project activity

3.6.4 Algorithms and/or formulae used to determine emission reductions (92-93)

The steps taken to assess the requirement outlined in the paragraph 89 of the VVM are described below:

According to the baseline methodology ACM0002 Version 12.2 **[2]** and "Tool to calculate emission factor for an electricity system" Version 2.2.1 **[3]**, the baseline emission factor was calculated as following 06 steps. In addition, the calculation in the PDD refer the latest "Calculation emission factor of Vietnamese Electricity Grid" **/Ref-9/** published by Vietnam's DNA on 26th March 2010 which is most recent information available at the time of CDM-PDD submission to Bureau Veritas Certification for validation.

As per "Tool to calculate emission factor for an electricity system" version 2.2.1 **[3]**, 06 steps herein are conducted to calculate the emission factor

Step 1: Identify the relevant electricity systems

- VNEG was selected as the electric power system of the Project as per "Calculation emission factor of Vietnamese Electricity Grid" issued by Vietnam's DNA at the time of start this validation. VNEG is the connected electricity system. Option B, Weighted Average Operation Margin is selected to calculate the emission factors for net electricity imports from VNEG.
- Bureau Veritas Certification is able to confirm that the identified electric power system of the Project is consistent with "Calculation emission factor of Vietnamese Electricity Grid". The geographical extent of the Project activity system has been documented transparently and all grid power plants connected to the system have been identified

Step 2: Choose whether to include off-grid power plant in the project electricity system

- Option I (only grid power plants are included in the calculation) provided in "Calculation emission factor of Vietnamese Electricity Grid" is selected to calculate the operating margin and build margin emission factor.

Step 3: Select a method to determine the operating margin (OM)

- For calculation of the operating margin emission factor, the simple OM emission factor calculation method is selected because low-cost/must-run projects constitute less than 50% of the total grid generation during the last 5 years.
- Only grid power plants are included in the calculation. Bureau Veritas Certification has checked the calculation for low-cost/must-run constitution of the total grid generation and confirmed the calculation is correct. Therefore, simple OM emission factor calculation method is selected reasonably. A 5-year generation weighted average, based on the most recent data from "Report of Power plants in Vietnam power system" 2004 – 2008 according to CV4680/BCT-NL 2009 and CV 7533/BCT-NL, issued in July 2009 by Ministry of Industry and Trade, which are the data available at the time of submission of the CDM-PDD to the Bureau Veritas Certification for validation, has been applied and calculated correctly.

Step 4: Calculate the operating margin emission factor according to selected method

- Option B, based on data on the total net electricity generation of all power plants serving the system and fuel types and the total fuel consumption of the project electricity system, is used to calculate simple OM emission factor. The data on electricity generation and auxiliary electricity consumption are obtained from the "Report of Power plants in Vietnam power system" 2004 – 2008 according to CV4680/BCT-NL 2009 and CV 7533/BCT-NL, issued in July 2009 by Ministry of Industry and Trade. The data on different fuel consumption for power generation and the net caloric values of the fuels are obtained also from "Report of Power plants in Vietnam power system" 2004 – 2008.
- The renewable crediting period is adopted for the Project and the OM will be fixed for the first crediting period.
- The data source are deemed reasonable and Bureau Veritas Certification confirms that the calculation can be replicated using the data and parameter provided in the PDD.

Step 5: Calculate the build margin (BM) emission factor

- The set of power capacity additions in the electricity system that comprise 20% of the system generation (in MWh) and that have been built more recently (option b) is adopted properly for the Project.
- Considering data availability, deviation accepted by EB was used in the PDD i.e
  1/ Use of capacity additions during the last 1 – 3 years for estimating the build margin emission factor for grid – connected electricity.
  2/ Use of weights estimated using installed capacity in place of annual electricity generation.
- The BM emission factor of the power grid is calculated by multiplying the emission factor of the thermal power with the share of the thermal power in the most recently added approach to 20% of total installed capacity. The emission factor for thermal power is determined based on the most advanced and commercially available technology endorsed by Vietnam's DNA.
- Bureau Veritas Certification hereby confirms that the data sources are deemed reliable and calculation is appropriate.

Step 6: Calculate the Combined margin (CM) emission factor:

- According to "Tool to calculate emission factor for an electricity system" version 2.2.1 **[3]**, the default weights w_{OM} = 0.5 for Operating margin and w_{BM} = 0.5 for Build margin in the first crediting period of hydropower projects are adopted.
- As per baseline methodology ACM0002, version 12.2.0 **[2]** and "Tool to calculate emission factor for an electricity system" version 2.2.1 **[3]**, the baseline emission sources considered are the emission reduction ERy during the crediting period is the difference between baseline emissions, project emissions and leakage emissions. There are:

  1/ Baseline emissions: BE_y (tCO_2) are equal to baseline emission factor $EF_{grid,CM,y}$ (tCO_2/MWh) times the net electricity supplied to the grid EG_y (MWh).
  With the reference to "Tool to calculate emission factor for an electricity system" version 2.2.1 **[3]**, the simple OM emission factor ($EF_{grid,OM,y}$) of VNEG is calculated as 0.6465 tCO_2e/MWh. Similarly, the BM emission factor ($EF_{Grid.BM,y}$) of VNEG is calculated as 0.5064 tCO_2e/MWh.
  Therefore the combined baseline emission factor is determined ex-ante will remain fixed during the first crediting period
  $EF_{Grid,CM,y}$ = 0.6465 x 0.5 + 0.5064 x 0.5 = 0.5764 tCO_2e/MWh
  The net electricity supplied to the grid in the FSR determined by the qualified party is 226,884.9 MWh per year
  Therefore, the baseline emissions of the Project are:
  $BE_y = EF_{Grid,CM,y} \times EG_y$ = 226,884.9 x 0.5764 = 130,776 tCO_2e

2/ Project Emissions: the Project is a newly built hydro project with reservoir, the project emissions from water reservoirs are calculated as per ACM0002 version 12.2.0 **[2]**:
Firstly, determining the power density of the Project:
$PD = Cap_{PJ} / A_{PJ}$
Where:
PD = power density of the Project activity (W/m2)
Cap_{PJ} = installed capacity of the hydropower plant (W)
A_{PJ} = the area of the reservoir measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m^2)
The installed capacity of the Project is 57 MW, and the area of the reservoir of the Project determined in the FSR is 1.68 km^2, therefore the power density of the Project is:
$PD = (57 \times 106) \div (1.68 \times 106) = 33.9\ W/m^2$
Since the Power density is greater than 10 W/m2, the project emissions = 0. Thus, $PE_y = 0$

3/ Leakage emissions: no leakage has to be considered as per methodology. Thus, $LE_y = 0$

4/ Emission reductions:
$ER_y = BE_y – PE_y – LE_y = 130{,}776\ tCO_2e$

The estimated annual emission reductions of the Project is 130,776 tCO_2e during the first crediting period represents a reasonable estimation using the assumptions given by the Project.

Complying with para 92 and 93/VVM, Bureau Veritas Certification hereby confirms that:

a) All assumptions and data used by the project participants are listed in the PDD, including their references and sources;
b) All documentation used by project participants as the basis for assumptions and source for data is correctly quoted and interpreted in the PDD
c) All values used in the PDD are considered reasonably in the context of the proposed Project activity
d) The baseline methodology ACM0002, version 12.1 and “Tool to calculate emission factor for an electricity system” version 2.2.0 has been applied correctly to calculate the baseline emissions, project emissions, leakage emissions and emission reductions
e) All estimates of the baseline emissions can be replicated using the data and parameter values in the PDD

3.7 Additionality of a project activity (97)

The steps taken and sources of information used, to cross – check the information contained in the PDD on this matter is described below:
"Tool for Demonstration and Assessment of Additionality" Version 6.0.0 (here after called "Tool – Additionality") **[4]** has been employed for demonstrating and assessing the additionality of the Project.

The additionality of the Project has been carefully checked, in doing so Bureau Veritas Certification has put the main focus on the following issues:

3.7.1 Prior consideration of the clean development mechanism (104)

The start date of the Project identified in the PDD is 21/12/2009 on which the contract for construction signed, **/Ref-10/** prior to the PDD submitted to Bureau Veritas Certification for validation. The PDD has addressed the serious consideration on the incentives from CDM prior to the Project implementation as per the "Guidelines on the demonstration and assessment of prior consideration of the CDM" Version 04, hereafter called "Guidelines Prior – Consideration" **[5]**.

Complying with para.102/VVM, Bureau Veritas Certification verified this issue which was considered much related to the additionality of the Project and can conclude that the serious consideration under the context of the project has been addressed appropriately in accordance with above guidelines, consequently, the chronological events described with the relevant documented evidences can form the objective basis of the validation opinions of Bureau Veritas Certification.

Bureau Veritas Certification has checked all physical documents mentioned above and was able to verify that all documents are substantial at that situation in the Host Country. From the table above, Validation team confirms that the starting date of project activity is 21/12/2009 (the date on contract for construction was signed), which is the earliest date at which the implementation or construction or real action of the Project activity began.

According to calculation with reliable sources, the Project is financially unfeasible as the project IRR of the Project is 8.54%, lower than the benchmark (12.21%) without CDM revenue. Therefore, the PP finally made the investment decision of the Project based on serious consideration on the incentives of CDM and then commenced the CDM development prior to the implementation of the Project

By assessing the material actions taken by the PP, Bureau Veritas Certification confirmed that the PP considered seriously the incentives from CDM in the context of the Project before taking its real actions to secure CDM status for the Project in parallel with its implementation, which is in accordance with the requirements in "Guidelines Prior – Consideration" **[5]**. Because the Project is a new project, appropriate notifications were already conducted and sent to EB and DNA of Vietnam

Pursuant to latest version (version 05) of Glossary of CDM terms, EB47 **[6]**, Bureau Veritas Certification was able to verify that the starting date of the Project of 21/12/2009 identified in the PDD is appropriate

The assessment of the Prior Consideration of the project activity is conducted by consulting the UNFCCC website, and the Bureau Veritas Certification hereby confirms that the Period for Comments related to this project activity is from 11th May 2011 to 09th Jun 2011, and that the CDM benefits were considered necessary in the decision to undertake the project as a proposed CDM project activity.

Based on the above assessment, the Bureau Veritas Certification hereby confirms that the proposed CDM project activity complies with the requirements of the latest version of the Guidance on prior consideration of CDM.

3.7.1.1 Historical information on project timeline

It has been demonstrated by timeline of events of the Project that the CDM revenues was seriously considered in the decision to proceed with the Project prior to start of the Project, notification from Project participants to EB and Vietnamese DNA and, the continuing and real action taken to secure CDM status for the Project in parallel with its implementation

Table 2: Timeline of Prior Consideration of CDM

Actions taken	Date	Document verified with date
Environmental Impact Assessment Report (EIA)	Feb 2008	**/Ref-6/** ✔
Approval of EIA report	21st Feb 2008	**/Ref-7/** ✔
Final the Basic Design report (FSR)	Feb 2009	**/Ref-5/** ✔
Investment license of the Project	11th May 2009	**/Ref-11/** ✔
Official letter from Project owner to Quang Nam PPC requests to support and verify the Project	20th Aug 2009	**/Ref-12/** ✔

Notification from Project Participants to DNA of Vietnam to inform about the Project activity	20th Aug 2009	**/Ref-13/** ✔
Decision of Management board to develop the Project as CDM project	14th Sep 2009	**/Ref-14/** ✔
Construction contract	21st Dec 2009 (start date of project activity)	**/Ref-10/** ✔
Official letter from Quang Nam PPC to DNA of Vietnam requests to support and verify the Project	06th Jan 2010	**/Ref-15/** ✔
Notification of the Project to EB and DNA	07th Jun 2010	**/Ref-16/** ✔
Confirmation from EB to receive notification of Project activity	07th Jun 2010	**/Ref-17/** ✔
Confirmation from DNA of Vietnam to receive notification of Project activity	01st Jul 2010	**/Ref-18/** ✔
Equipment Supply Contract	19th Aug 2010	**/Ref-8/** ✔
Submission of PDD for public stakeholders comment on UNFCCC website	11th May 2011	**/Ref-1/** ✔ **UNFCCC website**
Approval of FSR	30th May 2011	**/Ref-19/** ✔

3.7.2 Identification of alternatives (107)

Subsequently, Bureau Veritas Certification validated the additionality as addressed in the PDD of the Project.

The plausible and credible alternatives to the Project were identified as per the "Tool for demonstration and assessment of additionality" Version 6.0.0 and ACM0002, version 12.2.0.

1/ The proposed project activity without CDM
2/ Continuation of the current situation (The proposed project will not be built and the power will be supplied only from the National grid)

Complying with para.105/VVM, Bureau Veritas Certification considers the listed alternatives to be credible and complete. Hence step 1 of "Tool – Additionality" was applied appropriately.

3.7.3 Investment analysis (114)

Considering the baseline scenario as above identified, the Benchmark Analysis was applied in the Investment Analysis as per the sub – step 2b of Step 2 of "Tool – Additionality"

Bureau Veritas Certification verified the applicability of the benchmark that WACC of 12.21% used in the Project and can confirm that the data source mentioned in the PDD.

In accordance with Guidelines on Assessment of Investment Analysis, Version 05 ("Guidelines – Analysis" [7]), the selected benchmark is WACC. WACC is calculated as below formula:

$WACC = E * R_e + D* R_d * (1 – T_c)$

Where:

R_e	:	cost of equity for electricity generation project type
R_d	:	cost of debt
E	:	average industry equity ratio
D	:	average industry debt ratio
T_c	:	average enterprise tax rate

By checking document and relevant regulation, Bureau Veritas Certification confirms that the benchmark was selected suitably with "Guidelines – Analysis") and the formula was applied appropriately with Decision 2014/QD-NDLK, on promulgation of temporary regulation on contests of Investment Financial – Economic Analyses and Price frame for Electricity Sale and Purchase from Power Generation Projects, issued by Ministry of Industry on 13th June 2007 **/Ref-20/**.

R_d is determined at the time of making investment decision (14th Sep 2009) as the Commercial lending rate, which is identified compliantly with Civil Code of Vietnam No. 33/2005/QH11 **/Ref-21/**. Pursuant to this Civil Code, Commercial lending rate is not more than 1.5 times of Prime rate. At the time of decision making, Prime rate is 7% according to State Bank of Vietnam.

Thus Commercial Lending rate = 1.5 * 7% = 10.5%

Pursuant to sources from International Monetary Fund (IMF) (Report No.10/281), Commercial lending rate in 2009 is 12.7%. Bureau Veritas Certification can confirm that the selected value is reliable at the time of investment decision, which is in line with para.112/VVM.

R_e is determined as expected return of the Project. It is calculated through the below formula:

$R_e = R_f + \beta * (R_m - R_f)$

Where:

R_e	:	Expected return (cost of equity)
R_f	:	Risk free rate return
β	:	Beta of the security for electricity generation project type
R_m	:	Expected market return
$R_m - R_f$	:	Market risk premium

With local expertise, Validation confirms that the formula, to calculate "Expected return", is appropriately applied.

R_m is determined as expected market return accordingly with CAPM formula.

($R_m - R_f$): market risk premium. Through CAPM calculation, the market risk premium is approximated by calculating the difference between average return on stocks and the risk free rate return. The average return on stocks is determined as the compounded annual return.

The initial index of Vietnamese Stock Market (VN Index) was defined as 100 (on 28th July 2000). At the time of decision making (14th Sep 2009) VN index was 548.00. Therefore, Expected market returns after nearly 9.13 years (since 28th July 2000 to 14th Sep 2009) is 20.47% calculated as followings:

$$R_m = (EndingValue / BeginningValue)^{(1/Numbersofyears)} - 1$$

This formula is applied as Compound Annual Growth Rate (CAGR) – The year-over-year growth rate of an investment over a specified period of time. This formula is available in the website:

http://www.investopedia.com/terms/c/cagr.asp#ixzz1QSm8ixSy

Via cross-checking with sources of VN index and provided formula to calculate expected market return, Validation team confirms that "Expected market return – R_m" was accurately calculated.
R_m = 20.47%

R_f is identified as government bond rate at the date of making decision. Via accessible and reliable link, Validation team confirms that the government bond rate at the date of making decision was 16% for long-term credit. In Vietnam, the Project is assed as long-term project (more than 15 years). Therefore, risk free rate return was properly applied.
R_f = 16%

Beta indicator determines the sensitivity of the company to the market risk factors. The approached method to identify the Beta value of an investment is a regression of returns on investment against returns on a market index. Therefore, in order to identify the Beta value of PECC1, beta values of publicly listed companies, which have business in power generation (similar to the proposed Project), will be referred.

Beta value applied for CDM projects shall be adjusted because the capital structure Debt/ Equity (D/E) of companies mentioned below and PECC1. Thus, Beta value applied for CDM projects will be identified as 3 steps:

(1) Identification of Levered betas of hydropower companies published in Vietnamese stock market with its own capital structure.

By checking reliable sources, Validation team confirms that 8 companies published daily data on Vietnamese stock market at that time. They are

1 / Vinh Son Song Hinh Hydropower Company
2/ Ry Ninh II Hydropower JSC
3/ Thac Ba Hydropower Company
4/ Na Loi Hydropower JSC
5/ Nam Mu Hydropower JSC
6/ Can Don Hydropower JSC
7/ Thac Mo Hydropower JSC
8/ Mien Trung Power Investment and Development JSC

By using published data, Validation team confirms that

- D/E of Vinh Son Song Hinh Hydropower Company = 0.12
  And levered beta with this ratio = 0.97
- D/E of Ry Ninh II Hydropower JSC = 0.79
  And levered beta with this ratio = 0.66
- D/E of Thac Ba Hydropower Company = 0.15
  And levered beta with this ratio = 1.08
- D/E of Na Loi Hydropower JSC = 0.52
  And levered beta with this ratio = 1.10
- D/E of Nam Mu Hydropower JSC = 3.95
  And levered beta with this ratio = 0.92
- D/E of Can Don Hydropower JSC = 1.91
  And levered beta with this ratio = 0.82
- D/E of Thac Mo Hydropower JSC = 0.98
  And levered beta with this ratio = 0.38
- D/E of Mien Trung power Investment and Development JSC = 1.59
  And levered beta with this ratio = 0.57

(2) The beta identified at step 1 would be unlevered to identify the beta value without debt. By using proper formula:
- Unlevered beta of Vinh Son – Song Hinh = 0.89
- Unlevered beta of Ry Ninh II = 0.42
- Unlevered beta of Thac Ba = 0.79
- Unlevered beta of Na Loi = 0.79
- Unlevered beta of Nam Mu = 0.23
- Unlevered beta of Can Don = 0.34
- Unlevered beta of Thac Mo = 0.22
- Unlevered beta of Mien Trung power = 0.26

(3) Unlevered beta value will be used to calculate the Beta value applied for CDM projects. D/E of PECC1 will be used to identify the Average Levered Beta for CDM projects.
D/E of PECC1 = 7/3 =2.33
Thus, levered beta for CDM projects is calculated = 1.42

Following the above formula:
$R_e = R_f + \beta * (R_m – R_f) = 0.16 + 1.42 * (0.2047 – 0.16) = 0.2233$

By checking provided sources (accessible links, documents), Bureau Veritas Certification confirms that the Re was determined properly at the time of investment decision, which is in line with para.112/VVM.

E is determined as 30%, thus D is 70% (as defined in the Credit Contract, signed between PECC1 and Vietnam Joint Stock Commercial Bank for Industry and Trade - VietinBank) **/Ref-35/**. . According to Decision 709/QD-BCN issued on 13th April 2004 by Ministry of Industry **/Ref-22/**, the investment capital of project equity in the project must be accounted at least 30% of the total investment cost. Therefore D and E is applied correctly.

The project participant calculated the T_c based on lifetime of the Project and relevant regulation regarding to incoming tax for enterprises and resources tax. By document cross – checking, Validation team hereby confirms that the T_c was calculated adequately **/Ref-23/**.

Furthermore, Bureau Veritas Certification reviewed the IRR calculation sheet and cross – checked the relevant regulations / laws / evidences and confirmed that:
- The tariff used was determined based on Final the Basic Design (FSR) **/Ref-5/**. By cross-checking FSR and approval of FSR **/Ref-19/**, Bureau Veritas Certification confirms that the tariff used for investment analysis was properly selected.

- Based on FSR and Investment License, Bureau Veritas Certification can confirm that Gross capacity, Annual net electricity generation, Total investment cost, preparation period of pre-construction and construction period were correctly applied.
- By checking relevant regulations, Bureau Veritas Certification can confirm that Income tax and Resources tax are appropriately. Resources tax is 2% for water used for hydropower projects **/Ref-24/**, **/Ref-25/**. Income tax was applied in accordance with Government Decree 124/2008/NDCP **/Ref-23/**. According to this legislation, business revenue tax applied is 25%. Thus, business revenue tax for the Project would be determined as below

  From year 1 to year 38: 25%

Based on above conclusion, Bureau Veritas Certification reviewed the IRR calculation and found that the calculation is correct and in accordance with "Tool – Additionality". As it shows, without CDM revenue, the project IRR of the Project is 8.54%, which is lower than the benchmark (12.21%).

In the step of Sensitivity analysis, three financial indicators, which constitute more than 20% of total investment cost were identified with a variation range over + 10% for evaluation:

(1)Annual amount of electricity generated to the national grid
(2)Investment costs
(3)Feed in price set by EVN

As it shows, the IRR will remain below the benchmark of 12.21%. Bureau Veritas Certification reviewed the sensitivity analysis in the FSR and confirmed that the indicators identified and the variation range employed in the PDD are consistent with the approved FSR. Validation team reproduced the calculation based on the IRR spreadsheet and worked out the same outcomes as it shows.

An elaboration was presented in the PDD to show the variables range so as to the IRR of the Project could reach the benchmark. As it shows, when all of three indicators fluctuate within the range from -10% to +10%, the IRR will not reach the benchmark 12.21%. Furthermore, Bureau Veritas Certification analyzed the possibility of fluctuation beyond the range (±10%) for these indicators

(1)Annual amount of electricity generated to the national grid

In case of annual amount of electricity generated to the national grid increase 10%, Project IRR would be 9.49%, which is still lower than Benchmark of 12.21%. Therefore, Validation team confirms that annual amount of electricity generated to the national grid would not increase over 10%

(2) Investment costs

In case of Investment costs reduce 10%; Project IRR would be 9.56%, which is still lower than Benchmark of 12.21%. Hence, Validation team confirms that investment costs would not decrease over -10%

(3) Feed in price set by EVN

In case of electricity price increase 10%, Project IRR would be 9.52%, which is still lower than Benchmark of 12.21%. Therefore, Validation team confirms that the tariff of the Project is unlikely to increase by more than 10%.

Accordingly Bureau Veritas Certification summarized as table below and raised 03 Corrective Action Requests and 01 Clarification Request for submission of the corresponding documented evidences.

Table 3: Validation of Input Values of Financial Analysis

Parameter	Unit	Value	Document verified with date	Validation method and opinion
Gross capacity	MW	57	/Ref-5/ /Ref-19/	The applied value is also cross-checked with FSR and FSR approval, which was issued by local government.
Annual net electricity generation (net)	MWh	226,884.9	/Ref-5/	This can be calculated by: Annual electricity generatin*(1-parasitic and load loss) = 230,340*(1-1.5%) = 226,884.9. It is considered correction.
Operating time	Hrs	4,041	/Ref-5/ /Ref-34/	This value is determined based on hydrological cycle of river basin. The hydrological study was conducted based on long term measurements of rain data, river fow and river basin. Furthermore, the operational hours stated in the FSR has been approved by Ministry of Industry and Trade. Hence, the value has been checked and confirmed. Comparing with the registered projects, the value is within normal range (from 3076 to 5150). So the applied value is valid and appropriate.
Currency exchange rate VND-USD		17,833	http://www.sbv.gov.vn/vn on 14th Sep 2009	By cross-checking the link, this value is considered to be valid.
Currency exchange rate VND-EUR		26,705	http://www.sbv.gov.vn/vn on 14th Sep 2009	By cross-checking the link, this value is considered to be valid.

Enterprise revenue tax	%	25 (year1 – year38)	/Ref-23/	This value is checked to be consistent with the local regulation Decree No.124/2008/ND-CP dated 11 December 2008 of the Government.
Resources tax	%	2	/Ref-24/ /Ref-25/	The value is checked to be consistent with the local regulations Circular No.45/2009/TT-BTC dated 11/03/2009 of the Ministry of Finance and Decision No.720/QD-BTC dated 09/04/2009 of the Ministry of Finance, which provide a resource tax rate for hydropower plants. The resource tax will be calculated as the net electricity outputs supplied to the national electricity grid x 940 VND x 2%.
Investment cost	VND	1,297.989 billion	/Ref-5/	It shows that the total investment cost is 1,297.989 billion VND, consisting of construction cost 473.737 billion VND, equipment cost 512.766 billion VND, compensation cost 20.712 billion VND, management cost 10.718 billion VND, consultancy cost 43.111 billion VND, other cost 154.558 billion VND, and contingency cost 82.384 billion VND. The FSR is the basis of the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed. The unit investment cost for the proposed project is 22.77 billion VND/MW, which is within the range of 11 to 28.49 billion VND/MW for local registered projects. Thus the total investment for the proposed project is within normal range. Therefore, the total investment of the proposed project is assessed to be credible.
Total O&M cost	VND	12.97989 billion	/Ref-20/ /Ref-34/	This has been verified by Decision No.2014/QD-BCN dated 13 June 2007 of the Ministry of Industry providing temporary guidelines for conducting the economic, financial and investment analysis and the purchasing – selling price frame for power generation projects, the O&M cost per year for power plants which are equal/exceed 30 MW is 0.5% to 1.0% of total

<table>
<tr><td></td><td></td><td></td><td></td><td>investment cost. PP has considered a cost of 1.0%.

This value is within the normal range of other local registered projects, so the applied value is valid and appropriate.</td></tr>
<tr><td>Electricity tariff</td><td>VND</td><td>714</td><td>/Ref-5/</td><td>The hydropower plant had not received any Power Purchase Agreement (PPA). The electricity price is based on the estimation in the FSR.

The selling price of the electricity applied in the financial analysis of the proposed project is 714 VND/kWh (4 US cent), which was compared with that given in the Government Decisin No.2014/QD-BCN on providing temporary guidelines for conducting the economic, financial and investment analysis and selling price fram or power generation projects that regulates the tariff for dry season is from 2.50 to 5.00 US cent/kWh and for rainy seaso is from 2.00 – 4.7 US cent/kWh.

The validation team compared the tariff with other recently registered CDM projects.
<table>
<tr><td>Project ID</td><td>Installed capacity (MW)</td><td>VND/kWh</td></tr>
<tr><td>3711</td><td>82</td><td>603</td></tr>
<tr><td>3843</td><td>34.5</td><td>607</td></tr>
<tr><td>4259</td><td>19.5</td><td>608</td></tr>
<tr><td>4537</td><td>114</td><td>630</td></tr>
<tr><td>4577</td><td>18.6</td><td>599</td></tr>
<tr><td>4765</td><td>16.2</td><td>637.2</td></tr>
<tr><td>4823</td><td>80</td><td>746</td></tr>
<tr><td>Project activity</td><td>57</td><td>714</td></tr>
</table>
The tariff of the proposed project is higher than most of projects listed in the above table. Hence, the applied tariff is considered reasonable.

A 10% increase in the tariff sensitivity analysis has been conducted. However, the IRR of the project activity with a 10% increase in tariff (9.52%) is still much lower than the applied benchmark. In order to reach the benchmark, the tariff needs to be increased by 41.16%. Such increase will be unknown to project proponent.</td></tr>
</table>

				Hence the assumption is not reliable. The validation team concluded that the tariff applied by the proposed participant is appropriate.
Plant load factor	%	46.1	/Ref-5/	The PLF is calculated based on the estimated operational hours of the hydropower plant as follow: PLF = 4041.1/8760 = 46.1%. Considering the decision in EB 48, Annex 11, clause 3 the PLF is assessed as applicable and valid. The FSR of the project activity has been completed by an independent entity, which was assessed to be competent by cross-checking its business registration certificate issued by national authority. Hence, the FSR designer would have a certain expertise in determining the values in the FSR. The validation team compared the PLF of the project activity with those recently registered CDM projects that are located near the project activity location. The PLF of the project activity is within the range of those registered CDM projects. The validation team concluded that PLF applied by the PP is appropriate.
Period of financial assessment	year	38	/Ref-5/ /Ref-34/	According to the design in the FSR which is approved by national authority, the operation period of the proposed project is 38 years, the financial analysis of the proposed project was conducted accordingly. This is within normal range of other local registered projects (from 21 to 41 years), so the appied period of financial assessment is considered appropriate.
Depreciation period for construction	year	20	/Ref-5/	The cost of depreciation for the construction applied is consistent with the FSR and is in accordance with national regulation Decision No.206/2003/QD-BTC issued on 12/12/2003.
Depreciation period for equipment	year	10	/Ref-5/	The cost of depreciation for the equipment appied is consistent with the FSR and is in accordance with national regulation Decision 206/2003/QD-BTC issued on 12/12/2003.
Fair value		0	/Ref-5/	The cost of depreciation for the construction and equipment applied is in accordance with Decision No.206/2003/QD-BTC issued on

				12/12/2003 which requires a linear depreciation in 20 years for construction and 10 years for equipment. Full value of assets has been completely depreciated thus no fair value remains at the end of the assessment period (fair value is zero). The validation team concluded that the investment analysis of the project activity has been determined according to the technical lifetime of the project activity. Hence, the fair value is not necessary to be included in the investment analysis. The validation team considered it to be rational.
Parasitic and loss load	%	1.5	/Ref-5/ /Ref-34/	During the site visit, the validation team has confirmed the same from the approved FSR. The parasitic and loss load of the proposed project has been cross-checked with the registered CDM projects of Viet Nam, and concluded that this value is within the normal range (from 1% - 3.2%) and validated as appropriate.
Project IRR	%	8.54	IRR calculation spreadsheet	The project IRR without CERs revenue for the proposed project is 8.54% the detailed input values and calculation process in the IRR calculation spreadsheet is checked to be correct.

Operating lifetime of the Project, Plant Load Factor and Operation & Maintenance Cost (O&M costs) are defined in the FSR /Ref-5/, which is made by PECC1 and approved by Quang Nam PPC. This organization is authorized to approve Feasibility Study Report of this kind of Power Project (hydropower projects), consistently with Vietnamese regulation. By means of document checking, Validation team confirms that the FSR is made and approved compliantly.

Complying with para.112/VVM, Bureau Veritas Certification, based on the assessment result by the financial expert engaged, hereby confirms that the underlying assumptions are appropriate and the financial calculations are correct.

3.7.4 Barrier analysis (118)

The step 3 **Barrier analysis** was not applied for the Project.

3.7.5 Common practice analysis (121)

The Common practice analysis was addressed as per Step 4 of "Tool – Additionality" and latest rules issued by EB

The Project is a newly built 57 MW hydro power plant in Quang Nam province, Vietnam. Validation team has reviewed the "Government Decree No.45/2001/ND-CP on power generation and consumption", issued on 02nd Aug 2001 **/Ref-26/**. Based on this decree, not only State-owned entities but also other entities were allowed to invest in and generate electricity. Before the issuance of this decree, only State-owned companies were permitted to invest and operate hydropower projects.

Besides, Vietnam Construction code – TCXDVN 285: 2002 – "Irrigation projects – Major standards on designing" **/Ref-27/**; Decision No 176/2004/QD-TTg on legal entities against project scales **/Ref-28/**; Decision No 3454/QD-BCN to approve the development of hydropower projects from 1MW to 30MW **/Ref-29/** had been checked by Validation team. Hydropower projects in Vietnam are classified as 6 groups below, pursuant this Construction code:

- Group A: with installed capacity equal and larger than 300 MW
- Group B: with installed capacity smaller than 300 MW, but larger than 100MW
- Group C: with installed capacity equal and smaller than 100 MW, but equal and larger than 50 MW
- Group D: with installed capacity smaller than 50 MW, but larger than 30 MW
- Group E: with installed capacity equal and smaller than 30 MW, but equal and larger than 5 MW
- Group F: with installed capacity up to 5 MW

Because the installed capacity of the Project is 57 MW, the Project falls into group C.

Therefore, in accordance with "Tool – Additionality", Bureau Veritas Certification considered that the activities similar to the Project should be the hydro power plants located in Vietnam, started the construction activities post August 2001, with installed capacity falling into Group C.

By checking the list of hydropower plants provided by Institute of Energy, it is found that in Vietnam, 02 hydropower projects falls into Group C: Quang Tri and Srok Phu Mieng

- Quang Tri hydropower project was invested by State budget.
- Srok Phu Mieng was invested and constructed by IDICO, which is a State-owned enterprise.

Validation team confirmed that Srok Phu Mieng hydropower project was developed by State-owned organisation and Quang Tri hydropower project was invested by State budget. Hence, Validation team determines that these 2 hydropower projects are excluded from the common practice.

Complying with para.119/VVM, based on above demonstration that in accordance with "Tool – Additionality" and supported by reliable data sources, Bureau Veritas Certification hereby confirms that the proposed CDM project activity is not common practice.

3.8 Monitoring plan (124)

The Project uses the approved consolidated monitoring methodology ACM0002, version 12.2.0 for grid connected electricity generation from renewable sources.

Applicability of this methodology is justified in PDD as it involves grid connected renewable power generation using hydro power. Refer discussions on the validity of the methodology at section 3.5.1 above.

The combined margin emission factor is determined ex – ante based on the most recent information available. Accordingly the monitoring plan includes quantity of electricity exported to and quantity of electricity imported from the grid by the Project. The area of reservoir measured in the surface of the water and the installed capacity of the Project after the implementation of the Project.

According to ACM0002 version 12.2.0, no leakage need to be considered for the Project because no energy generating equipment is transferred from or to the site, thus $LE_y = 0$.

Operational management for the Project activity is comprehensively detailed in the PDD and this includes description of the responsibility, training, procedure reference, equipment details, calibration frequency maintenance needs are clearly mentioned. Archiving of the records was indicated and Validation team is of opinion that the retrievability of the CDM project activity records is pro-actively considered satisfactorily.

Meters systems of the Project include 2 systems: Main system and back up system. 2 meter systems will be installed at the connected point of the Project.

Validation team confirms that the data from these meters is properly taken into account. And in case of emergency where not sufficient electricity for power house, the Project will import electricity from grid via this connection.

Both the electricity exported and imported by the Project will be continuously measured and recorded on a monthly basis, and doubled checked by receipts.

Accuracy class of main and backup meters above are no less than 0.2s and 0.5s, respectively. They are subjected to periodic calibration by authorized third parties in accordance with relevant regulation **/Ref-30/**.

The area of the reservoir measured in the surface of the water will be calculated based on relevant maps by supplied party after the implementation of the Project activity when the reservoir is full; the installed capacity of the Project will be checked by the nameplate of the generators.

Monitoring of sustainable development indicators is not required for such Projects in Vietnam in the light of minor environmental impacts.

Complying with para.122/VVM, Bureau Veritas Certification hereby confirms that the Project participants are able to implement monitoring plan.

3.9 Sustainable development (127)

The host Party's DNA confirmed the contribution of the project to the sustainable development of the host Party. Refer to item 3.1 of this report.

3.10 Local stakeholder consultation (130)

The steps to invite local stakeholder consultation were implemented accordingly with the regulation on development of CDM projects in Vietnam.

Local stakeholders were invited to join the official meeting with project owner to provide comments on 02nd and 03rd March 2009. During the meeting, social – economic and environmental impacts of the project were demonstrated to local stakeholders including: representatives of communes' people councils, committees and villages **/Ref-31/**, **/Ref-32/**.

Subsequently, other meetings were held internally in local communes.

In Jan 2010, the proposed project was informed to DNA Vietnam and requested to be supported to develop by People Provincial Committee of Quang Nam **/Ref-15/**. Besides, the People Provincial Committee had approved the general plan for compensation and resettlement of the Project **/Ref-33/**.

The survey showed that the proposed project would impact positively to social-economic, environmental protection. The proposed project would be strongly supported by local people. Validation team conducted interview the local stakeholders during on-site visit of the validation process and received consistent responses.

Complying with para.128/VVM, Bureau Veritas Certification hereby confirms that the process of local stakeholder consultation is observed to be adequate.

3.11 Environmental impacts (133)

The validation team ensured that the Environmental Impact Assessment Report was carried out in Feb 2008 and approved by Ministry of Natural Resources and Environment on 21st Feb 2008 **/Ref-6/**; **/Ref-7/**.

The environmental impact results from the Project have been identified and analyzed in the PDD. By means of checking EIA report and approval, Validation team is able to ensure that the environmental impacts occur mainly during the construction time due to waste water, dust, exhaust gases, noise pollution and solid waste. All above impacts would be within an acceptable limit by carrying out corresponding mitigation measures as per statement of the EIA.

Complying with para.131/VVM, Bureau Veritas Certification hereby confirms environmental impacts of the Project (for construction and operation stage) were assessed approved legally.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

The PDD using methodology ACM0002, version 12.2.0 was web-hosted on the UNFCCC for global stakeholders' comments as per CDM requirements. The project was web hosted from 11th May 2011 to 09th Jun 2011.

Comments were received from 02 persons. The project participant provided response to these comments. Validation team took due account of these comments and the respective responses while making the validation opinion. The details of the comments received, responses by the project participants and the explanation of how due account of these is taken by the validation team are attached as Appendix **B** with this validation report.

5 VALIDATION OPINION

Bureau Veritas Certification has performed a validation of the Song Bung 5 hydropower project in Vietnam. The validation was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

Project participants used the latest "Tool for Demonstration and Assessment of Additionality" Version 6.0.0 and "Guidelines on the demonstration and assessment of prior consideration of the CDM" Version 04 to demonstrate the additionality of the Project. In line with this tool, the PDD provides analysis of investment barriers to determine that the project activity itself is not the baseline scenario.

By synthetic description of the project, the project is likely to result in reductions of GHG emissions partially. An analysis of the financial barriers demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the PDD (version 2.3) and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project correctly applies the baseline and monitoring methodology ACM0002, version 12.2.0 and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

Bureau Veritas Certification thus requests registration of Song Bung 5 Hydropower Project as CDM project activity.

6 REFERENCES

Category 1 Documents:
Documents provided by Type the name of the company that relate directly to the GHG components of the project.

/Ref-1/	PDD version 1.0, dated on 25th Apr 2011
/Ref-2/	PDD version 2.1, dated on 15th Jul 2011
/Ref-3/	LoA from DNA of Vietnam (host country), dated on 31st January 2012
/Ref-4/	LoA from DNA of Switzerland, dated on 23rd Aug 2011
/Ref-5/	Final the Basic Design Report (FSR) in Feb 2009
/Ref-6/	Environmental Impact Assessment (EIA) in Feb 2008
/Ref-7/	Approval of Environmental Impact Assessment Report, issued by Ministry of Natural Resources and Environment, dated on 21st Feb 2008
/Ref-8/	Equipment Supply Contract signed between Hydrochina Zhongman-Zhefu and PECC1, dated on 19th Aug 2010
/Ref-9/	Calculation emission factor of Vietnamese Electricity Grid issued by DNA of Vietnam, dated on 26th March 2010
/Ref-10/	Construction contract between project owner and constructor, signed on 21st Dec 2009
/Ref-11/	Investment license of the Project, issued by Quang Nam PPC, dated on 11th May 2009
/Ref-12/	Official letter from Project owner to Quang Nam PPC, dated on 20th Aug 2009
/Ref-13/	Prior consideration form issued by Project Participants to inform Vietnamese DNA about the Project, dated on 20th Aug 2009
/Ref-14/	Decision of Management board to develop the Project as CDM project, dated on 14h Sep 2009
/Ref-15/	Official letter from Quang Nam PPC to DNA of Vietnam, dated on 06th Jan 2010
/Ref-16/	Notification of the Project to EB and DNA, dated on 07th Jun 2010
/Ref-17/	Confirmation from EB to receive notification of Project activity, dated on 07th Jun 2010
/Ref-18/	Confirmation from DNA of Vietnam to receive notification of Project activity, dated on 01st Jul 2010
/Ref-19/	Approval of FSR, issued by Quang Nam PPC, dated on 30th May 2011
/Ref-20/	Decision 2014/QD-NDLK, issued by Ministry of Industry on 13th June 2007
/Ref-21/	Civil Code No. 33/2005/QH11, issued by Vietnamese Parliament, dated on 14th Jun 2005
/Ref-22/	Decision 709/QD-BCN issued by Ministry of Industry, dated on 13th April 2004
/Ref-23/	Decree 124/2008/ND-CP issued by Government on Incoming tax for enterprises, dated on 11th December 2008
/Ref-24/	Circular No 45/2009/TT-BTC, issued by Ministry of Finance, dated on 11th March 2009
/Ref-25/	Decision No. 720/QD-BTC, issued by Ministry of Finance, dated on 09th April 2009
/Ref-26/	Government Decree No.45/2001/ND-CP on power generation and consumption, dated on 02nd August 2001
/Ref-27/	Vietnam Construction code – TCXDVN 285 : 2002, Major standards on designing
/Ref-28/	Decision 176/2004/QD-TTg, approved by Prime Minister, dated on 05th Oct 2004
/Ref-29/	Decision No 3454/QD-BCN, issued by Ministry of Industry, dated on 18th Oct 2005
/Ref-30/	Decision 65/2002/QD-BKHCNMT on promulgation “The list of meter equipment must be calibrated and verified and the verification procedures” issued by Ministry of Science, Technology and Environment, dated on 19th August 2002
/Ref-31/	Meeting minutes between Project owner and local stakeholders in Thanh My town, Nam Giang district, dated on 02nd March 2009
/Ref-32/	Meeting minutes between Project owner and local stakeholders in Ma Cooih commune, Dong Giang district, dated on 03rd March 2009
/Ref-33/	Compensation plan for people, households affected by the Project
/Ref-34/	Vietnam registered hydropower projects
/Ref-35/	Credit contract between PECC1 and VietinBank

Category 2 Documents:
Background documents related to the design and/or methodologies employed in the design or other reference documents.

[1]	Guidelines for completing the Project Design document (CDM-PDD) – Version 07, EB 41, Annex 12
[2]	ACM0002 - Consolidated baseline methodology for grid-connected electricity generation from renewable sources – Version 12.2.0, EB 65, Annex 16
[3]	Tool to calculate the emission factor for an electricity system – Version 2.2.1, EB 63, Annex 19
[4]	Tool for the demonstration and assessment of additionality – Version 6.0.0, EB 65, Annex 21
[5]	Guidelines on the demonstration and assessment of prior consideration of the CDM – Version 04, EB 62, Annex 13
[6]	Glossary of CDM terms – Version 05, EB 47
[7]	Guidelines on the assessment of investment analysis, version 05, EB 62, Annex 05

Persons interviewed:
List persons interviewed during the validation or persons that contributed with other information that are not included in the documents listed above.

/1/	Mr. Vu Van Quang, Project Manager of VNEEC
/2/	Ms. Tran Tuyet Huong, Project Manager of VNEEC
/3/	Mr. Tran Trong Viet, Project Manager of VNEEC
/4/	Ms. Dang Thi Hong Hanh, Deputy Excutive Director of VNEEC
/5/	Mr. Nguyen Tien Hai, Project Manager of VNEEC
/6/	Ms. Nguyen Anh Thu, Project developer
/7/	Ms. Nguyen Hong Loan, Project developer
/8/	Mr. Ho Huu Toan, Project Manager of PECC1
/9/	Mr. Dang Huu Minh Tuan, Technical Manager of PECC1
/10/	Mr. Nguyen Van Hoang, Representative of Forest Management Committee
/11/	Mr. A Lang An, Local people, affected by the Project
/12/	Mr. A Lang Trach, President of People Committee of Ma Cooih Commune
/13/	Ms. Bhonuoch Chien, President of People Committee of Nam Giang District

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7 CURRICULA VITAE OF THE DOE'S VALIDATION TEAM MEMBERS

Include CV of Team Leader, Team Members, Experts, Internal technical Reviewer

Mr. Tran Viet Hoang	Team Leader, CDM Lead verifier	He has been working in Bureau Veritas Certification for 2 year as Lead Auditor of ISO 9001; ISO 14001; OHSAS 18001. He has attended training courses and obtained certificate of CDM lead verifier and ISO 14064 for Greenhouse Gases Accounting. He has involved in 35 CDM projects validation / verification activities.
Mr. Nguyen Hong Linh	Team member, CDM Verifier	He has been working in Bureau Veritas Certification for 6 months as CDM Verifier and auditor of ISO 9001; HACCP. He has received the training and obtained certificate of CDM verifier.
Mr. Sushil Budhia	Financial expert	He has been practicing as Chartered Accountant for 25 years and he has very wide experience on project finance, taxation and financial auditing. He has undergone training on Clean Development Mechanism and has conducted verification of financial indicators like IRR for more than 70 CDM projects.
Mr. Ashok Mammen	Technical Reviewer	He has PhD (Oils & Lubricants), Masters (Analytical chemistry). He has over 20 years of exper ience in petrochemical sector. Dr. Mammen is a lead auditor and tutor for environment, safety and quality management systems and a CDM lead verifier and lead tutor for GHG projects. He has been involved in the validation and verification processes of more than 100 CDM, JI and other GHG projects.

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APPENDIX A: VALIDATION PROTOCOL

Table 1 Validation requirements based on the Clean Development Mechanism Validation and Verification Manual (Version 01.2) and methodology ACM0002 (Version 12.2.0) – "Consolidated baseline methodology for grid-connected electricity generation from renewable sources"

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
1. Approval			*COUNTRY A (Vietnam)*	*COUNTRY B (Switzerland)*		
a. Have all Parties involved approved the project activity?	VVM	44	CAR-1 was issued CAR-1: The Letter of Approval from Vietnam is not available in this stage of validation.	CAR-2 was issued CAR-2: The Letter of Approval from Switzerland will be provided before submission for registration.	CAR-1 CAR-2	
b. Has the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval? (If yes, provide the reference of the letter of approval, any supporting documentation, and specify if the letter was received from the project participatn or directly from the DNA)	VVM	45	Pending on close CAR-1	Pending on close CAR-2	Pending	
c. Does the letter of approval from DNA of each Party involved:	VVM	45			OK	OK
i. confirm that the Party is a Party of the Kyoto Protocol?	VVM	45.a	Vietnam has ratified the Kyoto Protocol on 25th Sep 2002	Switzerland has ratified the Kyoto Protocol on 09th July 2003	OK	OK
ii. confirm that participation is voluntary?	VVM	45.b	Pending on close CAR-1	Pending on close CAR-2	Pending	
iii. confirm that, in the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country?	VVM	45.c	Pending on close CAR-1	Pending on close CAR-2	Pending	
iv. Refers to the precise proposed CDM project activity title in the PDD being submitted for registration?	VVM	45.d	Pending on close CAR-1	Pending on close CAR-2	Pending	

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
d. Is(are) the letter(s) of approval unconditional with respect to (i) to (iv) above?	VVM	46	Yes, it is unconditional in Vietnam	Yes, it is unconditional in Switzerland	OK	OK
e. Has(ve) the letter(s) of approval been issued by the respective Party's designated national authority (DNA) and is valid for the CDM project activity under validation?	VVM	47	Pending on close CAR-1	Pending on close CAR-2	Pending	
f. Is there doubt with respect to the authenticity of the letter of approval?	VVM	48	Pending on close CAR-1	Pending on close CAR-2	Pending	
g. If yes, was verified with the DNA that the letter of approval is authentic?	VVM	48	Pending on close CAR-1	Pending on close CAR-2	Pending	
2. Participation			*PP1 (Power Engineering Consulting Joint Stock Company 1 – PECC1)* *PP2 (Energy and Environment Consultancy Joint Stock Company – VNEEC)*	*PP3 (Vietnam Carbon Assets Ltd)*		
a. Have all project participants been listed in a consistent manner in the project documentation?	VVM	51	Yes	Yes	OK	OK
b. Has the participation of the project participants in the project activity been approved by a Party to the Kyoto Protocol?	VVM	51	Pending on close CAR-1	Pending on close CAR-2	Pending	
c. Are the project participants listed in tabular form in section A.3 of the PDD?	VVM	52	Yes, relevant sections in the PDD have been checked. No deviation has been found.	Yes	OK	OK
d. Is the information in section A.3 consistent with the contact details provided in annex 1 of the PDD?	VVM	52	Yes	Yes	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS		Draft Concl	Final Concl
e. Has the participation of each of the project participants been approved by at least one Party involved, either in a letter of approval or in a separate letter specifically to approve participation? (Provide reference of the approval document for each of the project participants)	VVM	52	Yes	Yes	OK	OK
f. Are any entities other than those approved as project participants included in these sections of the PDD?	VVM	52	No		OK	OK
g. Has the approval of participation issued from the relevant DNA?	VVM	53	Pending on close CAR-1	Pending on close CAR-2	Pending	
h. Is there doubt with respect to (g) above?	VVM	53	Pending on close CAR-1	Pending on close CAR-2	Pending	
i. If yes, was verified with the DNA that the approval of participation is valid for the proposed CDM project participant?	VVM	53	Pending on close CAR-1	Pending on close CAR-2	Pending	
3. Project design document						
a. Is the PDD used as a basis for validation prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website?	VVM	55	Yes, the latest version of the PDD template has been used. This has been cross – checked with the format provided in the UNFCCC website		OK	OK
b. Is the PDD in accordance with the applicable CDM requirements for completing the PDD?	VVM	56	Yes		OK	OK
c. In CDM-PDD section A.1 are the following provided?	EB 41	Ann 12				
i. Title of project	EB 41	Ann 12	Yes, title of project has been addressed sufficiently as Song Bung 5 hydropower Project		OK	OK
ii. Current version number and date of document	EB 41	Ann 12	Version of PDD (version 2.3) and date of that (03/10/2011) were addressed adequately		OK	OK
d. In CDM-PDD section A.2 are following provided (max. one page)?	EB 41	Ann 12			OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. A brief description ot the project activity covering purpose which includes the scenario existing prior to the start or project, present scenario and baseline scenario	EB 41	Ann 12	Yes, in the section A.2, the scenario existing prior to the implementation of the proposed project activity has been described. It has been also considered as baseline scenario The purpose of the proposed project activity is to utilize the waters of the Bung river in order to generate about 226,884.9 MWh (net) of hydro electric per year, which will be exported to the Vietnamese Electricity grid via a new constructed transmission line The baseline scenario is the same as the scenario existing before the implementation of the proposed project CAR-3, CL-1 were issued CAR-3: In the PDD version 1.0, the parasitic and loss load is 1%. However, in the excel spread sheet, the applied parasitic and loss load is 1.5%. Therefore, the emission reductions in the excel spread sheet is inconsistent with the PDD CL-1: Information of the distance of the transmission line is not available in the PDD version 1.0	~~CAR-3 CL-1~~	OK
ii. Explanation on how the GHG emission reductions are effected	EB 41	Ann 12	Yes The Project is to utilize the hydropower resource for power generation which will be supplied to Vietnam national electricity grid and displace the power from fossil fuel fired power plants	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. The PP's vies on the contribution of project activity to sustainable development	EB 41	Ann 12	Yes The contribution to sustainable development is included in section A2 of the PDD. Validation team checked and confirmed by document checking (FSR)	OK	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12	1. Estimated annual net power generation changed from 228,036.6 MWh to 226,884.9 MWh 2. Distance of transmission line (13km) is provided in the PDD latest version 2.1 3. Expected CO_2 emission reduction change from 920,080 tCO_2 to 915,432 tCO_2 for 1st crediting period of 7 years	OK	OK
e. In CDM-PDD section A.3 are following provided in the tabular format?	EB 41	Ann 12		OK	OK
i. List of project participants and parties	EB 41	Ann 12	Yes. The private entities involved in the project activity are sufficiently listed at section A3 of the PDD.	OK	OK
ii. Identification of Host Party			Host Party (Vietnam): Power Engineering Consulting Joint Stock Company 1 (PECC1) Energy and Environment Consultancy Joint Stock Company (VNEEC) Annex I Party (Switzerland): Vietnam Carbon Assets Ltd	OK	OK
iii. Indication whethre the Party wishes to be considered as project participant	EB 41	Ann 12	All Parties do not wish to be considered as Project Participant	OK	OK
f. In CDM-PDD section A.4.1 are following provided?	EB 41	Ann 12			

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. Technical description, location, host party(ies) and address as required	EB 41	Ann 12	Yes Ma Cooih Commune, Dong Giang District and Thanh My Town, Nam Giang District, Quang Nam Province, Vietnam	OK	OK
ii. Detailed physical location with unique identification of the project activity (eg. Longitude/latitude) – not to exceed one page	EB 41	Ann 12	Yes Longitude and latitude are provided. The geographical coordinates of dam: Longitude: $107^{0}44'43.74"$ East Latitude: $15^{0}48'31.12"$ North	OK	OK
iii. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12	There is no change or modifications compared with web hosted PDD, version 1.0	OK	OK
g. In CDM-PDD section A.4.2 is the list of categoreis of project activities provided?	EB 41	Ann 12	Category of project activities has been provided in relevant section: Sectoral scope 1: Energy Industries (Renewable / Non – renewable sources)	OK	OK
h. In CDM-PDD section A.4.3 are following provided?	EB 41	Ann 12			

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. A description of how environmentally safe and sound technology, and know-hoe, is transferred to the Host Party(ies)	EB 41	Ann 12	Yes. The turbines are imported from China. The project owner selected the suppliers for turbines and alternators through tender. They satisfied Vietnamese standard. CAR-4, CAR-5 were issued CAR-4: In the PDD version 1.0, section A.4.3, table 1 provided main technical parameters of the Project. However, some main technical parameters as Efficiency of Generator, Efficiency of Turbine are not available. Table 1 stated that the annual river flow is 117.9m^3/s. However, by cross – checking provided documents, Validation team found that the annual river flow is 118.13m^3/s CAR-5: In the PDD version 1.0, section A.4.3 stated that the main equipment will be imported via tender. This information and supporting documents do not justify the description of how environmentally safe and sound technology and know-how to be used	~~CAR-4~~ ~~CAR-5~~	OK

<table>
<tr><th>CHECKLIST QUESTION</th><th>Ref.</th><th>§</th><th>COMMENTS</th><th>Draft Concl</th><th>Final Concl</th></tr>
<tr><td>ii. Explanation of purpose of project activity with scenario existing prior to the start of project, scope or present activities and the baseline scenario</td><td>EB 41</td><td>Ann 12</td><td>The project is a newly built hydro electric power plant
The baseline scenario is the scenario existing prior to the implementation of the proposed project activity
Presently, prior to the implementation of the proposed project activity would have been generated by the operation of grid – connected power plants and by the addition of other new generation sources</td><td>OK</td><td>OK</td></tr>
<tr><td>iii. List and arrangement of the main manufacturing/production technologies, systems and equipments involved</td><td>EB 41</td><td>Ann 12</td><td>Refer the specification listed in Table 1 in the section A.4.3 of the PDD
Pending on closing CAR-4 and CAR-5</td><td>~~Pending~~</td><td>OK</td></tr>
<tr><td>iv. The emissions sources and GHGs involved</td><td>EB 41</td><td>Ann 12</td><td>Yes, the project is to reduce greenhouse gas emissions of CO_2 produced in Vietnamese national electricity grid</td><td>OK</td><td>OK</td></tr>
<tr><td>v. Are there any changes/modifications compared to the webhosted PDD?</td><td>EB 41</td><td>Ann 12</td><td>Technical specifications of turbines and generator:
<table><tr><th>Items</th><th>PDD v1.0 description</th><th>Actual conditions</th></tr><tr><td>Efficiency of Turbine</td><td>NA</td><td>93.1%</td></tr><tr><td>Efficiency of Generator</td><td>NA</td><td>97%</td></tr><tr><td>Capacity coefficient cosφ</td><td>NA</td><td>0.9</td></tr><tr><td>Annual river flow</td><td>117.9m^3/s</td><td>118.13m^3/s</td></tr></table>
Detail information of equipment imported from China and Manufacturer’s name were provided sufficiently</td><td>OK</td><td>OK</td></tr>
</table>

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. In CDM-PDD section A.4.4 is the estimation of emission reductions provided as requested in a tabular format?	EB 41	Ann 12	Renewable crediting periods were chosen: Approximate emission reductions are provided. Annual emission reductions of 130,776 tonnes CO_2e are estimated for the first crediting period Pending on close CAR-3 CAR-6 was issued CAR-6: In the PDD version 1.0, section A.4.4 and B.6.4 calculated Emission Reductions for full year 2012 and 2019. However, emission reductions of these 2 years are incorrect with other years (2013 – 2018)	~~CAR-6 Pending~~	OK
j. In CDM-PDD section A.4.5 is Information regarding Public funding provided?	EB 41	Ann 12	Yes Information provided: no public funding from Annex I parties is involved of this project	OK	OK
k. In CDM-PDD section B.1 are following provided?	EB 41	Ann 12		OK	OK
i. The approved methodology and version number	EB 41	Ann 12	In the PDD for public comments, the applied methodology is ACM0002, “Consolidated baseline methodology for grid – connected electricity generation from renewable sources”, version 12.2.0	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. Any methodologies or tools which the above approved methodology draws upon and their version noumber	EB 41	Ann 12	Yes. Below tools were used: - Tool to calculate the emission factor for an electricity system (version 2.2.1) - Tool for the demonstration and assessment of additionality (version 5.2.1) CAR-7 was issued CAR-7: In the PDD version 1.0 (dated 25th Apr 2011); the version of "Tool to calculate the emission factor for an electricity system" (version 2) is not latest version. Version 2.1 of that tool was already issued on 15th Apr 2011	~~CAR-7~~	OK
l. In CDM-PDD section B.2 are following provided?	EB 41	Ann 12		OK	OK
i. Justification ot the choice of methodology that the project activity meets each of the applicability conditions	EB 41	Ann 12	Yes	OK	OK
ii. Documentations with references that had been used. This can be provided in Annex 3 instead	EB 41	Ann 12	Yes	OK	OK
m. In CDM-PDD section B.3 are following provided?	EB 41	Ann 12		OK	OK
i. Description of all sources and gases included in the project boundary in the table	EB 41	Ann 12	Yes. Only emission of CO2 is considered	OK	OK
ii. A flow diagram of the project boundary physically delineating the project activity	EB 41	Ann 12	Yes	OK	OK
iii. The flow diagram with all equipments, systems and flows of mass and energy etc	EB 41	Ann 12	Yes	OK	OK
n. In CDM-PDD section B.4 are following provided?	EB 41	Ann 12		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. Explanation how the most plausible baseline scenario is identified in accordance with the selected baseline methodology	EB 41	Ann 12	Yes. Baseline scenarios are identified plausible with ACM0002, version 12.2.0	OK	OK
ii. Justification of key assumptions and rationales	EB 41	Ann 12	No	OK	OK
iii. Transparent illustration of all data used to determine the baseline scenario (variables, parameters, data sources, etc.)	EB 41	Ann 12	Yes	OK	OK
iv. A transparent and detailed description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed project activity	EB 41	Ann 12	Yes	OK	OK
v. Are there any changes/modifications compared to the webhosted PDD?	EB 41	Ann 12	There is no change or modifications compared with web hosted PDD, version 1.0	OK	OK
o. In CDM-PDD section B.5 are following provided?	EB 41	Ann 12		OK	OK
i. Explanation of how and why this project activity is additional and therefore not the baseline scenario in accordance with the selected baseline methodology	EB 41	Ann 12	Yes. Investment analysis is used for demonstration of the additionality	OK	OK
ii. Justification of key assumptions and rationales	EB 41	Ann 12	All indicators are from FSR, decision on approving invest, legislation By document checking, validation team can confirm all source data are correct	OK	OK
iii. Transparent illustration of all data used to determine the baseline scenario (variables, parameters, data sources etc)	EB 41	Ann 12	Yes	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iv. Evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity, if the starting date of the project activity is before the date of validation	EB 41	Ann 12	By considering the definition indicated in the CDM Glossary of terms, the starting date is the date of construction contract signed (21/12/2009). Thus, the starting date is prior to the date of validation.	OK	OK
p. In CDM-PDD section B.6.1 are following provided?	EB 41	Ann 12		OK	OK
i. Explanation as to how the procedures, in the approved methodology to calculate project emissions, baseline emissions, leakage emissions and emission reductions are applied to the proposed project activity	EB 41	Ann 12	Complying with ACM0002, the "Tool to calculate the emission factor for an electricity system", version 2.2.1 is used Pending on close CAR-7	~~Pending~~	OK
ii. Equations used in calculating emission redutions	EB 41	Ann 12	Yes $ER_y = BE_y – PE_y - LE_y$	OK	OK
iii. Explanation and justification for all relevant methodological choices, including different scenarios or cases, options and default values	EB 41	Ann 12	Yes As per the ACM0002, version 12.2.0, leakage emission of this project is not considered. In the PDD, these emissions sources are neglected The steps and equations applied are consistent with the "Tool to calculate the emission factor for an electricity system", version 2.2.1 and ACM0002, version 12.2.0	OK	OK
q. In CDM-PDD section B.6.2 are following provided?	EB 41	Ann 12		OK	OK
i. A compilation of information on the data and parameters that are not monitored throughout the crediting period but that are determined only once and thus remains fixed throughout the crediting period AND that are available when validation is undertaken	EB 41	Ann 12	Yes. Accordance with "Calculation emission factor of Vietnamese Electricity Grid", the necessary official data of power grid published by DNA of Vietnam are available and determined during validation stage	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. The actual value period	EB 41	Ann 12	Simple Operating Margin Emission Factor for the Vietnamese national electricity grid * $EF_{grid,OM\ simple,y}$ = 0.6465 (tCO_2/MWh) Build Margin Emission Factor for the Vietnamese national electricity grid * $EF_{grid,BM,y}$ = 0.5064 (tCO_2/MWh) Baseline Emission Factor for the Vietnamese national electricity grid * $EF_{grid,CM,y}$ = 0.5764 (tCO_2/MWh) CAR-8 was issued CAR-8: In the PDD version 1.0, section B.6.2, the description of $EF_{grid,BM,y}$ and $EF_{grid,CM,y}$ are incorrect	~~CAR-8~~	OK
iii. Explanation and justification for the choice of the source of data	EB 41	Ann 12	The official data "Calculation emission factor of Vietnamese Electricity Grid" were based on the data of Reports of Power Plants in Vietnamese Power System in July 2009, Emission Factor of CO2 pursuant to IPCC	OK	OK
iv. Clear and transparent references or additional documentation in Annex 3	EB 41	Ann 12	Yes	OK	OK
v. Where values have been measured, a description of the measurement methods and procedures (e.g. which standards have been used), indicated the responsible person/entity having undertaken the measurement, the date of measurement(s) and the measurement results	EB 41	Ann 12	It is not applicable in this case as the emission factor is determined ex-ante as per the options in ACM0002	OK	OK
r. In CDM-PDD section B.6.3 are following provided?	EB 41	Ann 12		OK	OK
i. A transparent *ex ante* calculation of project emissions, baseline emissions (or, where	EB 41	Ann 12	Yes. The calculation process is in line with the steps	~~CL-2~~	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the approved methodology			taken prescribed in the "Calculation emission factor of Vietnamese Electricity Grid" and addressed in the section B.6.3 of the PDD and Annex 3 CL-2 was issued CL-2: In section B.6.3, PDD version 1.0 did not stated calculation of Project Emissions (PE_y)		
ii. Documentation how each equation is applied, in a manner that enables the reader to reproduce the calculation	EB 41	Ann 12	Yes The emission reductions calculation spreadsheet have been provided and checked by validation team	OK	OK
iii. Additional background information and or data in Annex 3, including relevant electronic files (i.e. spreadsheets)	EB 41	Ann 12	Yes	OK	OK
s. In CDM-PDD section B.6.4 are the results of the *ex ante* estimation of emission reductions for all years of the crediting period, provided in a tabular format?	EB 41	Ann 12	Yes. Data of emission reductions estimated from 01st Jul 2012 to 30th Jun 2019 Pending on close CAR-6	~~Pending~~	OK
t. In CDM-PDD section B.7.1 are following provided?	EB 41	Ann 12		OK	OK
i. Specific information on how the data and parameters that need to be monitored would actually be collected during monitoring for the project activity	EB 41	Ann 12	Yes. $EG_{y,export}$: Electricity supplied by the proposed project to the national grid CAR-9 was issued CAR-9: In section B.7.1, PDD version 1.0, Parameters of "Installed capacity" and "Area of reservoir" are not available	~~CAR-9~~	OK
ii. For each parameter the following below information, using the table provided:	EB 41	Ann 12			

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
a. The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics). Where several sources may be used, explain and justify which data sources should be preferred.	EB 41	Ann 12	Not applicable because no other outside sources of data should be used	-	-
b. Where data or parameters are supposed to be measured, specify the measurement methods and procedures, including a specification which accepted industry standards or national or international standards will be applied, which measurement equipment is used, how the measurement is undertaken, which calibration procedures are applied, what is the accuracy of the measurement method, who is the responsible person/entity that should undertake the measurements and what is the measurement interval; (i) A description of the QA/QC procedures (if any) that should be applied; (ii) Where relevant: any further comment. Provide any relevant further background documentation in Annex 4.	EB 41	Ann 12	Digital meters will be installed at the connecting point. Data from meters will be monthly recorded including electricity imported and exported.	OK	OK
u. In CDM-PDD section B.7.2 are following provided?	EB 41	Ann 12		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. A detailed description of the monitoring plan	EB 41	Ann 12	Yes, a procedure for monitoring emission reduction was provided. In this, training, monitoring, reporting activities were described. Besides, responding plan for emergency cases were also addressed. Responsibilities were appropriately determined	OK	OK
ii. The operational and management structure that the project operator will implement in order to monitor emission reductions and any leakage effects generated by the project activity	EB 41	Ann 12	Yes. CDM monitoring responsibilities with clear positions, responsibilities and routines of report are sufficiently provided	OK	OK
iii. The responsibilities for and institutional arrangements for data collection and archiving	EB 41	Ann 12	Yes	OK	OK
iv. Indication that the monitoring plan reflect good monitoring practice appropriate to the type of project activity	EB 41	Ann 12	Information given in the PDD is sufficient that arrangements can be properly implemented. During interview, it was confirmed that procedures as described roughly in the PDD will be implemented.	OK	OK
v. Relevant further background information in Annex 4	EB 41	Ann 12	CAR-10 was issued CAR-10: In the PDD version 1.0, accuracy class of meter system is not available as per requirements of Vietnamese Technical Standards	~~CAR-10~~	OK
v. In CDM-PDD section B.8 are following provided?	EB 41	Ann 12			
i. Date of completion of the application of the methodology to the project activity study in DD/MM/YYYY	EB 41	Ann 12	Date of completion of the baseline study was determined 30th March 2011	OK	OK
ii. Contact information of the person(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity	EB 41	Ann 12	Yes, VNEEC is responsible for the application VNEEC is also the project participant which is sufficiently addressed in Annex 1 of the PDD	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. Indication if the person/entity is also a project participant listed in Annex 1	EB 41	Ann 12	Yes	OK	OK
w. In CDM-PDD section C.1.1 are following provided?	EB 41	Ann 12		OK	OK
i. The starting date of a CDM project activity, which is the earliest of the date(s) on which the implementation or construction or real action of a project activity begins/has begun (EB33, Para 76/CDM Glossary of terms/EB47)	EB 41	Ann 12	Yes. The starting date is the actual date of construction contract was signed	OK	OK
ii. A description of how this start date has been determined, and a description of the evidence available to support this start date	EB 41	Ann 12	By checking on – site and reviewing document, validation team confirms that the starting date was properly chosen	OK	OK
iii. If this starting date is earlier than the date of publication of the CDM-PDD for global stakeholder consultation by a DOE, description in Section B.5 contain a of how the benefits of the CDM were seriously considered prior to the starting date (EB41, Para 68).	EB 41	Ann 12	Yes. Management board of project owner considered the benefits of CDM then held a meeting with CDM consultant. Thus, a decision for developing the Project as CDM project was made on 14th September 2009 (prior to date of publication of PDD – 11th May 2011) By document checking and interviewing, BV validation team confirm that the evidences substantiated appropriately the CDM consideration http://cdm.unfccc.int/Projects/Validation/DB/TIP6F1KP94H6EW3JXK19SX9SC0NMD1/view.html	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
x. In CDM-PDD section C.1.2 is the expected operational lifetime of the project activity in years and months provided?	EB 41	Ann 12	Yes. Operational lifetime of the Project is expected in 38 years CAR-11 was issued CAR-11: In the PDD version 1.0, section C.1.2, the source to substantiate the expected operational lifetime of the Project is not available	~~CAR-11~~	OK
y. In CDM-PDD section C.2 is it stated whether the project activity will use a renewable or a fixed crediting period and is C.2.1 or C.2.2 completed accordingly?	EB 41	Ann 12	Yes Renewable crediting period will be applied	OK	OK
z. In CDM-PDD section C.2.1 is it indicated that each crediting period shall be at most 7 years and may be renewed at most two times, provided that, for each renewal, a designated operational entity determines and informs the Executive Board that the original project baseline is still valid or has been updated taking account of new data where applicable?	EB 41	Ann 12	Yes. 07 years 0 month	OK	OK
aa. In CDM-PDD section C.2.1.1 are dates in the following format: (DD/MM/YYYY) provided?	EB 41	Ann 12	Yes. 01/01/2012 CAR-12 was issued CAR-12: In the PDD version 1.0, section C.2.1.1, the starting date of the first crediting period is required to add the information of registration date	~~CAR-12~~	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
bb. In CDM-PDD section C.2.1.2 is the length of the first crediting period in years and months provided?	EB 41	Ann 12	Yes. 07 years 0 month	OK	OK
cc. In CDM-PDD section C.2.2 is the fixed crediting period at most ten (10) years provided?	EB 41	Ann 12	Not applicable	-	-
dd. In CDM-PDD section C.2.2.1are the dates provided in the following format: (DD/MM/YYYY)?	EB 41	Ann 12	Not applicable	-	-
ee. In CDM-PDD section C.2.2.2 is te length of the crediting period in years and months Provided?	EB 41	Ann 12	Not applicable	-	-
ff. In CDM-PDD section D.2 are the conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the Host Party, if environmental impacts are considered significant by the project participants or the Host, provided?	EB 41	Ann 12	Yes The conclusion stated. The support documents have been provided during desk review assessment	OK	OK
gg. In CDM-PDD section E.1 are the following provided?	EB 41	Ann 12		OK	OK
i. The process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilities comments to be received from local stakeholders and allows for a reasonable time	EB 41	Ann 12	Yes. Representatives of local People Committees, local people in the affected areas were interviewed to join the meeting in order to consult and comment on the proposed project on 02nd and 03rd Mar 2009	~~CAR-13 CL-3~~	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
for comments to be submitted.			CAR-13, CL-3 were issued CAR-13: In section E.1, PDD version 1.0 stated that the Project owner informed to Provincial People Committee and DNA about the proposed project activity on 20th Aug 2008. However, by cross – checking with relevant documents and key milestones in B.5, this documents was issued on 20th Aug 2009 CL-3: In section E.1, PDD version 1.0 stated that "On 02nd – 03rd March 2009, meetings between the project owner and the following representatives of the local people was held in order to consult local people on the social-economic and environment impacts of the proposed project in order to develop this project as a CDM activity". However, no substantiation of how the invitation was done		
ii. The project activity is described in a manner, which allows the local stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM modalities and procedures.	EB 41	Ann 12	Yes By collecting comments from local authorities and people	OK	OK
iii. The local stakeholder process has been completed before submitting the proposed project activity to the DOE for validation.	EB 41	Ann 12	Yes. Completed in 03rd Mar 2009	OK	OK
hh. In CDM-PDD section E.2 are following provided?	EB 41	Ann 12		OK	OK
i. Identification of local stakeholders that have made comments	EB 41	Ann 12	Yes. Local people organized internal meeting and comments on proposed project	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. A summary of this comments.	EB 41	Ann 12	Please see the demonstration in the PDD, section E.2	OK	OK
ii. In CDM-PDD section E.3 is the explanation of how due account have been taken of comments received from local stakeholders provided?	EB 41	Ann 12	Yes. The local stakeholders are all supportive of the proposed project. Hence, it is unnecessary to modify the project design according to comments received CAR-14 was issued CAR-14: In PDD version 1.0, section E.3 do not provide sufficiently the actions was taken of comments received on negative impacts of the Project	~~CAR-14~~	OK
jj. In CDM-PDD Annex 1 are the following provided?	EB 41	Ann 12		OK	OK
i. Contact information of project participants	EB 41	Ann 12	Yes	OK	OK
ii. For each organisation listed in section A.3 the following mandatory fields: Organization, Name of contact person, Street, City, Postfix/ZIP, Country, Telephone and Fax or e-mail	EB 41	Ann 12	Yes	OK	OK
kk. In CDM-PDD Annex 2 is information from Parties included in Annex I on sources of public funding for the project activity which 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 those Parties provided?	EB 41	Ann 12	Yes No public funding from Annex I parties is involved in the proposed project activity	OK	OK
ll. In CDM-PDD Annex 3 is the background information used in the application of the baseline methodology provided?	EB 41	Ann 12	Yes	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
mm. In CDM-PDD Annex 4 is the background information used in the application of the monitoring methodology provided?	EB 41	Ann 12	Yes Pending on close CAR-10	~~Pending~~	OK
4. Project description					
a. Does the PDD contain a clear description of the project activity that provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation?	VVM	58	Yes	OK	OK
b. Is the description of the proposed CDM project activity as contained in the PDD:	VVM	59		OK	OK
i. sufficiently covering all relevant elements?	VVM	59	Yes	OK	OK
ii. acurate?	VVM	59	Yes	OK	OK
iii. providing the reader with a clear understanding of the nature of the proposed CDM project activity?	VVM	59	Yes	OK	OK
iv. Are there any changes/modifications compared to the webhosted PDD?	VVM	59	There is no change or modifications compared with web hosted PDD, version 1.0	OK	OK
c. Is the proposed CDM project activity in existing facilities or or utilizing existing equipments?	VVM	60	No. The project is a newly built hydro electric power plant	OK	OK
d. Is the CDM project activity one of the following types:	VVM	60		OK	OK
i. Large scale?	VVM	60	Yes. The installed capacity of the Project is 57 MW	OK	OK
ii. Non-bundled small scale projects with emission reductions exceeding 15,000 tonnes per year?	VVM	60	No	OK	OK
iii. Bundled small scale projects, each with emission reductions not exceeding 15,000 tonnes?	VVM	60	No	OK	OK
e. If yes to (c) and (d) above, was a physical site	VVM	60	Yes. The site – visit was conducted by BV	OK	OK

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inspection conducted to confirm that the description in the PDD reflects the proposed CDM project activity, unless other means are specified in the methodology?			validation team on 28th May 2011		
f. If yes to (d.iii) above, was the number of physical site visits base on samping?	VVM	60	Not applicable	-	-
g. If yes is the sampling size appropriately justified through statistical analysis?	VVM	60	Not applicable	-	-
h. For other individual proposed small scale CDM project activities with emission reductions not exceeding 15,000 tonnes per year, was a physical site inspection conducted?	VVM	61	Not applicable	-	-
i. For all other proposed CDM project activities not referred to in paragraphs 59 – 61, was a physical site inspection conducted?	VVM	62	Not applicable	-	-
j. If no, was it appropriately justified?	VVM	62	Not applicable	-	-
k. Does the proposed CDM project activity involve the alteration of an existing installation or process?	VVM	63	No	OK	OK
l. If yes, does the project description clearly state the differences resulting from the project activity compared to the pre-project situation?	VVM	63	Not applicable	-	-
5. Baseline and monitoring methodology					
a. General requirement					
a. Do the the baseline and monitoring methodologies selected by the project participants comply with the methodologies previously approved by the CDM Executive Board?	VVM	65	Yes	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
b. Is the selected methodology applicable to the project activity?	VVM	66	Refer to (5.b.a) below	-	-
c. Had the PP correctly applied the selected methodology?	VVM	66	Refer to (5.b.d) below	-	-
d. Had the selected methodology been correctly applied with respect to project boundary?	VVM	67	Refer to (5.c) below	-	-
e. Had the selected methodology been correctly applied with respect to baseline identification?	VVM	67	Refer to (5.d) below	-	-
f. Had the selected methodology been correctly applied with respect to Algorithms and/or formulae used to determine emission reductions?	VVM	67	Refer to (5.e) below	-	-
g. Had the selected methodology been correctly applied with respect to additionality?	VVM	67		OK	OK
i. Has the additionality of the project activity been demonstrated and assessed using the latest version of the "Tool for the demonstration and assessment of additionality" agreed by the Board, which is available on the UNFCCC website?	ACM	0002 v.12.2 .0	Yes, the latest version was correctly applied (version 5.2.1, EB 62, 11th Aug 2011) in the PDD	OK	OK
h. Had the selected methodology been correctly applied with respect to monitoring methodology?	VVM	67	Refer to (7.g), (7.h), (7.i), (7.j) and (7.k) below		
b. Applicability of the selected methodology to the project activity					
a. Is the selected baseline and monitoring methodology, previously approved by the CDM Executive Board, applicable to the project activity? Is the used version valid?	VVM	68		OK	OK
i. This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a	ACM	0002 v.12.2 .0	Yes. The project is a Greenfield plant	OK	OK

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site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plants); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).					
b. Has the DOE applied specific guidance provided by the CDM Executive Board in respect to the applicable approved methodology?	VVM	69	Yes	OK	OK
c. Is the methodology correctly quoted?	VVM	70	Yes. In the PDD, the applied methodology is ACM0002, "Consolidated baseline methodology for grid – connected electricity generation from renewable sources", version 12.2.0	OK	OK
d. Are the applicability conditions of the methodology met?	VVM	71		OK	OK
i. The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit	ACM	0002 v.12.2 .0	Yes. The Project is a new installation of a hydropower plant	-	-
ii. In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use Option 2: on page 10 to calculate the parameter $EG_{PJ,y}$): the existing plant started commercial operation prior to the start of a minimum historical reference period of five years, used for the calculation of baseline	ACM	0002 v.12.2 .0	Not applicable	-	-

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
emissions and defined in the baseline emission section, and no capacity expansion or retrofit of the plant has been undertaken between the start of this minimum historical reference period and the implementation of the project activity.					
iii. In case of hydro power plants, one of the following conditions must apply: - The project activity is implemented in an existing reservoir, with no change in the volume of reservoir; or - 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/m2; or - The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m2.	ACM	0002 v.12.2 .0	The project activity results a new reservoir with a power density of greater than 4 W/m^2. It could be confirmed by checking the reservoir design and the expected installed capacity	OK	OK
iv. The methodology is not applicable to the following conditions. Please confirm - Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity - Biomass fired power plants; - Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m2.	ACM	0002 v.12.2 .0	Project activity is a new installation of new hydro power plant. Thus, it does not involve switching from fossil fuels to renewable energy sources at the site; not switching from biomass fired power plants and the power density of power plant is higher than 4 W/m^2 as checked	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
v. In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation, i.e. to use the power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance".	ACM	0002 v.12.2 .0	Not applicable	-	-
e. Is the proeject activity expected to result in emissions other than those allowed by the methodology?	VVM	71	No. Only CO_2 is considered as emission	OK	OK
f. Is the choice of the methodology justified?	VVM	71	Yes. Justification and explanation provided sufficiently in the PDD	OK	OK
g. Have the project participants shown that the project activity meets each of the applicability conditions or the approved methodology?	VVM	71	Refer to (5.b.d) above	-	-
h. Have the project participants shown that the project activity meets each of the applicability conditions of any tool or other methodology component referred to the methodology?	VVM	71		OK	OK
i. Are each of the applicability conditions of the "Tool to calculate the emission factor for an electricity system" met?	EB 50	Ann 40	Yes. Complying with ACM0002, the "Tool to calculate the emission factor for an electricity system", version 2.2.1 is used	OK	OK
ii. Are each of the applicability conditions of the "Tool for the demonstration and assessment of additionality" met?	EB 39	Ann 10	Yes. "Tool for the demonstration and assessment of additionality", version 6.0.0 is used	OK	OK
iii. Are each of the applicability conditions of the "Combined tool to identify the baseline scenario and demonstrate additionality" met?	EB 28	Ann 14	Not applicable	-	-

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iv. Are each of the applicability conditions of the "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion" met?	EB 41	Ann 11	Yes. "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion", version 2 is used	OK	OK
i. Is the DOE, based on local and sectoral knowledge, aware that comparable information is available from sources other than that used in the PDD?	VVM	71	Yes	OK	OK
j. If yes, was the PDD cross checked agains the other sources to confirm that the project activity meets the applicability conditions of the methodology? (provide the reference to these choices)	VVM	71	Yes	OK	OK
k. Can a determination regarding the applicability of the selected methodology to the proposed CDM project activity be made?	VVM	72	Yes	OK	OK
l. If no, clarification of the methodoloy was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	72	Not applicable	-	-
m. If answer to (5.b.d) above is "no", revision or deviation from the methodology was requested, in accordance with the guidance provided by the CDM Executive Board?	VVM	73	Not applicable	-	-
n. If yes to (5.b.l) and (5.b.m) above, a request for registration was submited before the CDM Executive Board has approved the proposed deviation or revision?	VVM	74	Not applicable	-	-
c. Project boundary					
a. Does the PDD correctly describe the project boundary, including the physical delineation of the proposed CDM project activity included within	VVM	78		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the project boundary for the purpose of calculating project and baseline emissions for the proposed CDM project activity?					
i. Does the extent of the project boundary, as described in the PDD, includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to?	ACM	0002 v.12.2 .0	Yes The project boundary includes water retaining structure with auxiliary facilities; power house with auxiliary facilities and the grid into which the electricity will be connected	OK	OK
ii. Are the greenhouse gases and emission sources that are included in or excluded from the project boundary shown in a table format as per applicable methodology?	ACM	0002 v.12.2 .0	Yes. Only emission of CO_2 is considered A table in section B.3 was provided properly	OK	OK
b. Is the delineation in the PDD of the project boundary correct and include identification of all locations, processes and equipment including secondary equipment and associated processes such as logistics etc.?	VVM	79	Yes	OK	OK
c. Does the delineation in the PDD of the project boundary meet the requirements of the selected baseline?	VVM	79	Yes	OK	OK
d. Have changes been made to the project boundary in comparison to the webhosted PDD. If yes please comment on the reason for the changes.	VVM	79	There is no change or modifications compared with web hosted PDD, version 1.0	OK	OK
e. Have all sources and GHGs required by the methodology been included within the project boundary?	VVM	79	Yes	OK	OK
f. Does the methodology allow project participant to choose whether a source or gas is to be included within the project boundary	VVM	79	Yes. For hydropower plant, CH_4 can be included as gas. However, because of power density of the reservoir is greater than 10 W/m^2. CH_4 is neglected	OK	OK

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g. If yes, have the project participants justified that choice?	VVM	79	Yes	OK	OK
h. If yes, is the justification provided reasonable? (provide reference to the supporting documented evidence provided by the project participants)	VVM	79	Yes	OK	OK
d. Baseline identification					
a. Does the PDD identify the baseline for the proposed CDM project activity, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed CDM project activity?	VVM	81	Yes. The baseline scenario was clearly identified in the section B.4 of the PDD in accordance with ACM0002, version 12.2.0 that "Electricity delivered to the Grid by the Project would have otherwise been generated by the operation of grid – connected power plants and by the addition of new generation sources"	OK	OK
b. Has any procedure contained in the methodology to identify the most reasonable baseline scenario, been correctly applied?	VVM	82		OK	OK
i. If the project activity is the install a new grid-connected renewable power plant/unit (greenfield plant), is the baseline scenario identified appropriately in accordance with the ACM0002 ver.12.2.0?	ACM	0002 v.12.2 .0	Yes. As per methodology ACM0002, version 12.2.0, the baseline scenario is prescribed and no further analysis required. Thus, there is no need to take steps to identify the baseline scenarios	OK	OK
ii. If the project activity is a capacity addition to existing grid-connected renewable power plant/unit, is the baseline scenario identified appropriately in accordance with the ACM0002 ver. 12.2.0? And is the point of time at which the generation facility would likely be replaced or retrofitted (DATE Baseline Retrofit) reasonably defined?	ACM	0002 v.12.2 .0	Not applicable	-	-

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iii. If the project activity is the retrofit or replacement of existing grid-connected renewable power plant/unit, is the baseline scenario identified following the step-wise procedure in accordance with the ACM0002 ver.12.2.0?	ACM	0002 v.12.2 .0	Not applicable	-	-
iv. Are the realistic and credible alternative baseline scenarios for power generation appropriately identified following the Step 1 of the "Combined tool to identify the baseline scenario and demonstrate additionality"? (Step 1)	ACM	0002 v.12.2 .0	Yes. Alternative identified accordingly with step 1 of "Combined tool to identify the baseline scenario and demonstrate additionality"	-	-
v. Are the realistic and credible alternative baseline scenarios i.e. P1, P2 and P3 appropriately applied ***Barrier analysis*** following the Step 2 of the "Combined tool to identify the baseline scenario and demonstrate additionality"? (Step 2)	ACM	0002 v.12.2 .0	Not applicable	-	-
vi. If more than one alternative is remaining after Step 2, is ***Investment analysis*** appropriately applied (apply an Investment Comparison as per step 3 of the "Combined tool to identify the baseline scenario and demonstrate additionality" or a Benchmark Analysis as per step 2b of the "Tool for the demonstration and assessment of additionality")? (Step 3)	ACM	0002 v.12.2 .0	Yes. Investment analysis is applied	OK	OK
c. Does the selected methodology require use of tools (such as the "Tool for the demonstration and assessment of additionality" and the "Combined tool to identify the baseline scenario and demonstrate additionality") to establish the	VVM	82	Yes, selected methodology require to use "Tool for the demonstration and assessment of additionality" was used in accordance with ACM0002, ver.12.2.0	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
baseline scenario?					
d. If yes, was the methodology consulted on the application of these tools? (In such cases, the guidance in the methodology shall supersede the tool.)	VVM	82	Yes. Pursuant to ACM0002, v.12.2.0, the additionality of the Project shall be demonstrated and assessed using the latest version of the "Tool for the demonstration and assessment of additionality"	OK	OK
e. Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	VVM	83	Yes	OK	OK
f. If yes, are all scenarios that are considered by the project participants and are supplementary to those required by the methodology reasonable in the context of the proposed CDM project activity?	VVM	83	Yes. 2 alternatives are identified sufficiently based on ACM0002, v.12.2.0	OK	OK
g. Has any reasonable alternative scenario been excluded?	VVM	83	No	OK	OK
h. Is the baseline scenario identified reasonably supported by:	VVM	84		OK	OK
i. Assumptions?	VVM	84	No. All evidences to identify baseline scenario are clearly for the determination of validation team	OK	OK
ii. Calculations?	VVM	84	No. All evidences to identify baseline scenario are clearly for the determination of validation team	OK	OK
iii. Rationales?	VVM	84	No. All evidences to identify baseline scenario are clearly for the determination of validation team	OK	OK
i. Are the documents and sources referred to in the PDD correctly quoted and interpreted?	VVM	84	Yes.	OK	OK
j. Was the information provided in the PDD cross checked with other verifiable and credible sources, such as local expert opinion, if available? (idendify the sources)	VVM	84	Yes. All document and source links provided were sufficiently checked by validation team and confirmed	OK	OK
k. Have all applicable CDM requirements been taken into account in the identification of the	VVM	85	Yes	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
baseline scenario for the proposed CDM project activity?					
l. Have all relevatn policies and circumstances been identified and correctly considered in the PDD, in accordance with the guidance by the CDM Executive Board?	VVM	85	Yes	OK	OK
m. Does the PDD provide a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity?	VVM	86	Yes	OK	OK
e. Algorithms and/or formulae used to determine emission reductions					
a. Do the steps taken and equations applied to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected baseline and monitoring?	VVM	89	Yes	OK	OK
b. Have the equations and parameters in the PDD been correctly applied with respect those in the select approved methodology?	VVM	90		OK	OK
i. Are the Project emissions appropriately calculated?.	ACM	0002 v.12.2 .0	Yes. The project emission is determined as zero per the ACM0002, version 12.2.0	OK	OK
ii. Are the Baseline emissions appropriately calculated specifically for (a)greenfield plants or (b) retrofit and replacements or (c) capacity additions?	ACM	0002 v.12.2 .0	Yes. For Greenfield plants	OK	OK

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iii. Are the Leakage appropriately calculated?	ACM	0002 v.12.2 .0	Yes As per the ACM0002, version 12.2.0, leakage emission of this project is not considered. In the PDD, these emissions sources are neglected	OK	OK
iv. Are the Emission reductions appropriately calculated?	ACM	0002 v.12.2 .0	Yes $ER_y = BE_y – PE_y - LE_y$	OK	OK
c. Have project participants prepared as part of the CDM-PDD an estimate of likely emission reductions for the proposed crediting period? This estimate should, in principle, employ the same methodology as selected for the calculation of emission reductions. Where the grid emission factor (EFCM,grid,y) is determined ex post during monitoring, project participants may use models or other tools to estimate the emission reductions prior to validation.	ACM	0002 v.12.2 .0	Yes. Approximate emission reductions (from year 01st Jul 2012 to year 30th Jun 2019) are provided. Annual emission reductions of 130,776 tonnes CO_2e are estimated for the first crediting period Pending on close CAR-6	~~Pending~~	OK
d. Does the methodology provide for selection between different options for equations or parameters?	VVM	90	Yes. Options in Step 1, step 2 and step 3 in the methodology were used	OK	OK
e. If yes, has adequate justification been provided (based on the choice of the baseline scenario, context of the proposed CDM project activity and other evidence provided)?	VVM	90	Yes. Relevant justifications in step 1, step 2 and step 3	OK	OK
f. If yes, have correct equations and parameters been used, in accordance with the methodology selected?	VVM	90	Refer to (5.e.b) above	-	-

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g. Will data and parameters be monitored throughout the crediting period of the proposed CDM project activity?	VVM	91	Yes. Via validating the monitoring plan, relevant procedures, validation team confirm that parameters and data will be properly monitored by responsible persons of the Project	OK	OK
h. If no, and these data and parameters will remain fixed throughout the crediting period, are all data sources and assumptions:	VVM	91		OK	OK
i. Appropriate and correct?	VVM	91	Not applicable	-	-
ii. Applicable to the proposed CDM project activity?	VVM	91	Not applicable	-	-
iii. Resulting in a conservative estimate of the emission reductions?	VVM	91	Not applicable	-	-
i. Will data and parameters be monitored on implementation and hence become available only after validation of the project activity?	VVM	91	Yes. Because at the time of validation stage, the Project has not commissioned yet.	OK	OK
j. If yes, are the estimates provided in the PDD for these data and parameters reasonable?	VVM	91	Yes. Estimated data are sufficiently provided in the PDD	OK	OK
6. Additionality of a project activity					
a. Does the PDD describe how a proposed CDM projet activity is additional?	VVM	94	Yes	OK	OK
b. Does the CDM-PDD state the latest version of the additionality tool being used?	ACM	0002 v.12.2 .0	Yes, the latest version of the additionality tool was addressed in the PDD for utilizing. Version 5.2.1 of “Tool for the demonstration and assessment the additionality”	OK	OK
c. Were the following steps of the tool to assess additionality used:	EB 39	Ann 10		OK	OK
i. Identification of alternatives to the project activity?	EB 39	Ann 10	Yes	OK	OK

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ii. Investment analysis to determine that the proposed project activity is either: 1) not the most economically or financially attractive, or 2) not economically or financially feasible?	EB 39	Ann 10	Yes	OK	OK
iii. Barriers analysis?	EB 39	Ann 10	No	OK	OK
iv. Common practice analysis?	EB 39	Ann 10	Yes	OK	OK
d. In step 1 (i) have all the sub-steps as below been followed?	EB 39	Ann 10		OK	OK
i. Sub-step 1a: Define alternatives to the project activity	EB 39	Ann 10	Yes Alternative 1: the proposed project will be undertaken without CDM registration Alternative 2: Continuation of current situation is alternative of the Project	OK	OK
ii. Sub-step 1b: Consistency with mandatory laws and regulations	EB 39	Ann 10	Yes All 2 alternatives are consistent with mandatory laws and regulations By checking Vietnamese and Local laws and regulations, Validation team confirm that the Project activity (without CDM registration) complies with Laws and regulations	OK	OK
e. Have the following alternatives been included while defining alternatives as per sub-step 1a?	EB 39	Ann 10		OK	OK
i. (a) The proposed project activity undertaken without being registered as a CDM project activity;	EB 39	Ann 10	Yes, alternative 1	OK	OK
ii. (b) Other realistic and credible alternative scenario(s) to the proposed CDM project activity scenario that deliver outputs services or	EB 39	Ann 10	No	OK	OK

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services with comparable quality, properties and application areas, taking into account, where relevant, examples of scenarios identified in the underlying methodology;					
iii. (c) If applicable, continuation of the current situation (no project activity or other alternatives undertaken).	EB 39	Ann 10	Yes, alternative 2	OK	OK
f. Has the project participant included the technologies or practices that provide outputs or services with comparable quality, properties and application areas as the proposed CDM project activity and that have been implemented previously or are currently being introduced in the relevant country/region?	EB 39	Ann 10	Yes	OK	OK
g. Has the outcome of Step 1a: Identified realistic and credible alternative scenario(s) to the project activity done correctly? Please briefly mention the outcome.	EB 39	Ann 10	Yes. Alternative 1: The proposed project undertaken without the CDM Alternative 2: Continuation of the current situation. Pursuant to ACM0002, version 12.2.0, validation team confirm that alternatives are correctly identified	OK	OK
h. Is the alternative(s) in compliance with all mandatory applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution.?	EB 39	Ann 10	All alternatives are compliance with all mandatory applicable legal and regulatory requirements for electricity generation in Vietnam. Thus, the realistic alternative is definitely compliance	OK	OK
i. If an alternative does not comply with all mandatory applicable legislation and regulations, has it been shown that, based on an examination of current practice in the country or region in which the law or regulation applies, those	EB 39	Ann 10	Because all alternatives are compliance as mentioned above. Thus, this section is no applicable	-	-

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applicable legal or regulatory requirements are systematically not enforced and that noncompliance with those requirements is widespread in the country?					
j. Has the outcome of Step 1b: Identified realistic and credible alternative scenario(s) to the project activity that are in compliance with mandatory legislation and regulations taking into account the enforcement in the region or country and EB decisions on national and/or sectoral policies and regulations done correctly? Please state the outcome.	EB 39	Ann 10	2 alternatives are all consistent with laws in Vietnam By checking investment license of the project, validation team can confirm.	OK	OK
k. Has PP selected Step 2 (Investment analysis) or Step 3 (Barrier analysis) or both Steps 2 and 3?	EB 39	Ann 10	Project Participants have already selected step 2 only	OK	OK
l. In step 2, have all the sub-steps as below been followed?	EB 39	Ann 10		OK	OK
i. Sub-step 2a: Determine appropriate analysis method;	EB 39	Ann 10	Yes	OK	OK
ii. Sub-step 2b: Option I. Apply simple cost analysis;	EB 39	Ann 10	Because the proposed project activity will receive revenue from the sale of electricity thus simple cost analysis would not be considered CL-4 was issued CL-4: No supporting information to justify that the option I of Investment analysis (Simple cost analysis) is not applicable	~~CL-4~~	OK
iii. Sub-step 2b: Option II. Apply investment comparison analysis;	EB 39	Ann 10	Because the alternative is receiving electricity from the national grid rather than new project, thus option III, benchmark analysis were selected	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iv. Sub-step 2b: Option III. Apply benchmark analysis;	EB 39	Ann 10	Because the alternative is receiving electricity from the national grid rather than new project, thus option III, benchmark analysis were selected	OK	OK
v. Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III);	EB 39	Ann 10	Yes	OK	OK
vi. Sub-step 2d: Sensitivity analysis (only applicable to Options II and III).	EB 39	Ann 10	Yes	OK	OK
m. In sub-step 2a has the determination of appropraite method of analysis done as per the guidance as below?	EB 39	Ann 10		OK	OK
i. Simple cost analysis if the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income (Option I).	EB 39	Ann 10	Not applicable	-	-
ii. Otherwise, use the investment comparison analysis (Option II) or the benchmark analysis (Option III). Specify option used with justification.	EB 39	Ann 10	Because the alternative is receiving electricity from the national grid rather than new project, thus option III, benchmark analysis were selected	OK	OK
n. Has the below guideline followed for sub-step 2b Option I. Apply simple cost analysis? Document the costs associated with the CDM project activity and the alternatives identified in Step1 and demonstrate that there is at least one alternative which is less costly than the project activity.	EB 39	Ann 10	Because the option III was chosen, this section is not applicable	-	-
o. Has the below guideline followed for sub-step 2b Option II. Apply investment comparison analysis? Identify the financial indicator, such as IRR, NPV, cost benefit ratio, or unit cost of service most suitable for the project type and decision-making context. Please specify	EB 39	Ann 10	Because the option III was chosen, this section is not applicable	-	-

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p. Has the below guideline followed for Sub-step 2b: Option III. Apply benchmark analysis?	EB 39	Ann 10		OK	OK
i. Identify the financial/economic indicator, such as IRR, most suitable for the project type and decision context.	EB 39	Ann 10	The project developer selected the WACC as a benchmark for this project IRR pursuant to "Guidelines on Assessment of Investment Analysis" version 05, Annex 05, EB62	OK	OK
ii. When applying Option II or Option III, the financial/economic analysis shall be based on parameters that are standard in the market, considering the specific characteristics of the project type, but not linked to the subjective profitability expectation or risk profile of a particular project developer. Only in the particular case where the project activity can be implemented by the project participant, the specific financial/economic situation of the company undertaking the project activity can be considered.	EB 39	Ann 10	Yes	OK	OK
iii. Discount rates and benchmarks shall be derived from: (a) Government bond rates, increased by a suitable risk premium to reflect private investment and/or the project type, as substantiated by an independent (financial) expert or documented by official publicly available financial data; (b) Estimates of the cost of financing and required return on capital (e.g. commercial lending rates and guarantees required for the country and the type of project activity concerned), based on bankers views and private equity investors/funds' required return on comparable projects; (c) A company	EB 39	Ann 10	Yes. Lending rates is appropriately selected and applied for the investment analysis (accordingly with decision making the project developer) Average industry equity ration was defined 30%, consistently with Vietnamese conditions By checking document, relevant records and cross – checking with information at the time of decision making, validation team confirm that all data are correctly applied	OK	OK

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internal benchmark (weighted average capital cost of the company), only in the particular case referred to above in 2. The project developers shall demonstrate that this benchmark has been consistently used in the past, i.e. that project activities under similar conditions developed by the same company used the same benchmark; (d) Government/official approved benchmark where such benchmarks are used for investment decisions; (e) Any other indicators, if the project participants can demonstrate that the above Options are not applicable and their indicator is appropriately justified. Please specify benchmark and justify.					
q. Has the below guideline followed for Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III)?	EB 39	Ann 10			

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i. Calculate the suitable financial indicator for the proposed CDM project activity and, in the case of Option II above, for the other alternatives. Include all relevant costs (including, for example, the investment cost, the operations and maintenance costs), and revenues (excluding CER revenues, but possibly including inter alia subsidies/fiscal incentives, ODA, etc, where applicable), and, as appropriate, non-market cost and benefits in the case of public investors if this is standard practice for the selection of public investments in the host country.	EB 39	Ann 10	Yes. CAR-15, CAR-16, CAR-17 were issued CAR-15: In the PDD version 1.0, section B.5, table 5 indicated "the Levered Beta for CDM project" with Can Don Hydropower JSC is 092. However, by cross – checking with relevant sources, this data is 0.92 CAR-16: In section B.5, PDD version 1.0 stated that the electricity price for Investment analysis is 714 VND/kWh (as expected in the Feasibility Study Report). However, the FSR is not approved yet. CAR-17: In the PDD version 1.0, in the investment analysis, the resources tax is 2%. However, no source to substantiate the application of the resources tax.	~~CAR-15~~ ~~CAR-16~~ ~~CAR-17~~	OK
ii. Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the CDM-PDD, or in separate annexes to the CDM-PDD.	EB 39	Ann 10	Yes The spread excel sheet for IRR calculation has been appropriately provided Pending on close CAR-15, CAR-16, CAR-17	~~Pending~~	OK
iii. Justify and/or cite assumptions.	EB 39	Ann 10	All indicators are from FSR, decision on approving invest, legislation By document checking, validation team can confirm all source data are correct Pending on close CAR-15, CAR-16, CAR-17	~~Pending~~	OK
iv. In calculating the financial/economic indicator,	EB	Ann	Yes.	OK	OK

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the project's risks can be included through the cash flow pattern, subject to project-specific expectations and assumptions.	39	10	Relevant costs are included		
v. Assumptions and input data for the investment analysis shall not differ across the project activity and its alternatives, unless differences can be well substantiated.	EB 39	Ann 10	Not applicable as option III was used	-	-
vi. Present in the CDM-PDD a clear comparison of the financial indicator for the proposed CDM activity.Please specify details for above.	EB 39	Ann 10	As calculated, the IRR without revenue from CER is 8.54% which is lower the selected benchmark 12.21% Pending on close CAR-15, CAR-16, CAR-17	~~Pending~~	OK
r. Has the below guideline followed for Sub-step 2d: Sensitivity analysis (only applicable to Options II and III)? Include a sensitivity analysis that shows whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions.	EB 39	Ann 10	Yes Three main variable factors are identified for sensitivity analysis of the project including Annual amount of electricity exported to the national grid; Investment Costs; Feed in price with variation range from -10% to +10% CL-5 was issued CL-5: In the Sensitivity analysis PDD version 1.0, the statement to excluded total O&M cost is not available	~~CL-5~~	OK
s. Has the outcome of Step 2 clearly mentioned with justification?	EB 39	Ann 10	Yes. It concludes that: the project is not financially attractive without CER revenue	OK	OK
t. In step 3: Barrier analysis have all the sub-steps as below been followed?	EB 39	Ann 10			
i. Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project activity;	EB 39	Ann 10	Because Barrier analysis was not selected. This section will be not applicable	-	-
ii. Sub-step 3 b: Show that the identified barriers	EB	Ann	Because Barrier analysis was not selected. This	-	-

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would not prevent the implementation of at least one of the alternatives (except the proposed project activity).	39	10	section will be not applicable		
u. Has the below guideline followed for Sub-step 3a: Identify barriers that would prevent the implementation of the proposed CDM project?	EB 39	Ann 10			
i. (a) Investment barriers: For alternatives undertaken and operated by private entities: Similar activities have only been implemented with grants or other non-commercial finance terms. No private capital is available from domestic or international capital markets due to real or perceived risks associated with investment in the country where the proposed CDM project activity is to be implemented, as demonstrated by the credit rating of the country or other country investments reports of reputed origin.	EB 39	Ann 10	Because Barrier analysis was not selected. This section will be not applicable	-	-
ii. (b) Technological barriers: Skilled and/or properly trained labour to operate and maintain the technology is not available in the relevant country/region, which leads to an unacceptably high risk of equipment disrepair and malfunctioning or other underperformance; Lack of infrastructure for implementation and logistics for maintenance of the technology, Risk of technological failure: the process/technology failure risk in the local circumstances is significantly greater than for other technologies that provide services or outputs comparable to those of the proposed	EB 39	Ann 10	Because Barrier analysis was not selected. This section will be not applicable	-	-

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CDM project activity, as demonstrated by relevant scientific literature or technology manufacturer information, The particular technology used in the proposed project activity is not available in the relevant region.					
iii. (c) Barriers due to prevailing practice: The project activity is the "first of its kind".	EB 39	Ann 10	Because Barrier analysis was not selected. This section will be not applicable	-	-
iv. (d) Other barriers, preferably specified in the underlying methodology as examples.	EB 39	Ann 10	Because Barrier analysis was not selected. This section will be not applicable	-	-
v. Has the outcome from Step 3a clearly mentioned in PDD?	EB 39	Ann 10	Because Barrier analysis was not selected. This section will be not applicable	-	-
w. Has the below guideline followed for Sub-step 3 b: Show that the identified barriers would not prevent the implementation of at least one of the alternatives (except the proposed project activity)?	EB 39	Ann 10			
i. If the identified barriers also affect other alternatives, explain how they are affected less strongly than they affect the proposed CDM project activity. In other words, demonstrate that the identified barriers do not prevent the implementation of at least one of the alternatives. Any alternative that would be prevented by the barriers identified in Sub-step 3a is not a viable alternative, and shall be eliminated from consideration.	EB 39	Ann 10	Because Barrier analysis was not selected. This section will be not applicable	-	-
ii. Provide transparent and documented evidence, and offer conservative interpretations of this documented evidence, as to how it demonstrates the existence and significance of the identified barriers and whether alternatives	EB 39	Ann 10	Because Barrier analysis was not selected. This section will be not applicable	-	-

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are prevented by these barriers.					
iii. The type of evidence to be provided should include at least one of the following: (a) Relevant legislation, regulatory information or industry norms; (b) Relevant (sectoral) studies or surveys (e.g. market surveys, technology studies, etc) undertaken by universities, research institutions, industry associations, companies, bilateral/multilateral institutions, etc; (c) Relevant statistical data from national or international statistics; (d) Documentation of relevant market data (e.g. market prices, tariffs, rules); (e) Written documentation of independent expert judgments from industry, educational institutions (e.g. universities, technical schools, training centres), industry associations and others. Please specify.	EB 39	Ann 10	Because Barrier analysis was not selected. This section will be not applicable	-	-
x. Has the outcome from Step 3 clearly mentioned in PDD?	EB 39	Ann 10	Because Barrier analysis was not selected. This section will be not applicable	-	-
y. In step 4: Common practise analysis have all the sub-steps as below followed?	EB 39	Ann 10		OK	OK
i. Sub-step 4a: Analyze other activities similar to the proposed project activity;	EB 39	Ann 10	Yes	OK	OK
ii. Sub-step 4b: Discuss any similar Options that are occurring.	EB 39	Ann 10	Yes	OK	OK
z. Has the below guideline followed for Sub-step 4a: Analyze other activities similar to the proposed project activity? Provide an analysis of any other activities that are operational and that are similar to the proposed project activity. Other CDM project activities are not to be included in this	EB 39	Ann 10	Yes. 02 hydropower projects are identified for common practice analysis - Quang Tri with installed capacity of 64 MW - Srok Phu Mieng installed capacity of 51 MW	OK	OK

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analysis. Provide documented evidence and, where relevant, quantitative information. On the basis of that analysis, describe whether and to which extent similar activities have already diffused in the relevant region.					
aa. Has the below guideline followed for Sub-step 4b: Discuss any similar Options that are occurring? If similar activities are identified, then it is necessary to demonstrate why the existence of these activities does not contradict the claim that the proposed project activity is financially/economically unattractive or subject to barriers. This can be done by comparing the proposed project activity to the other similar activities, and pointing out and explaining essential distinctions between them that explain why the similar activities enjoyed certain benefits that rendered it financially/economically attractive (e.g., subsidies or other financial flows) and which the proposed project activity cannot use or did not face the barriers to which the proposed project activity is subject. In case similar projects are not accessible, the PDD should include justification about non-accessibility of data/information.	EB 39	Ann 10	Yes. CAR-18 and CL-6 were issued CAR-18: In Common practice analysis, PDD version 1.0. justifications to exclude Quang Tri hydropower project and Srok Phu Mieng hydropower project did not substantiate sufficiently the provided information CL-6: In the Common practice, the justification of load factor of the Project is not available	~~CAR-18~~ ~~CL-6~~	OK
bb. Has the outcome from Step 4 clearly mentioned in PDD?	EB 39	Ann 10	Yes. The Project is not common practice in Vietnam	OK	OK
cc. Has it been proved that the porject is additional?	EB 39	Ann 10	Yes. By means of checking relevant evidences, validation team confirm that the Project is additional	OK	OK

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a. Prior consideration of the clean development mechanism					
a. Is the project ativity start date prior to the date of publication of the PDD for stakeholder comments?	VVM	98	Yes The date of publication of the PDD for stakeholders comment is 11th May 2011 and the starting date of the Project is 21st Dec 2009	OK	OK
b. If yes, were the CDM benefits considered necessary in the decision to undertake the project as a proposed CDM project activity?	VVM	98	Yes. Additional support from CDM was suggested to make the Project to be financial attractive Supporting evidences includes: - Management board meeting minutes - Document submitted by Local People Committee to DNA of Vietnam and EB - Equipment purchased contract - Construction contract CAR-19, CAR-20 were issued CAR-19: In section B.5, PDD version 1.0 stated that the Investment License of Song Bung 5 hydropower project was issued on 05th Apr 2010. However, by cross – checking with relevant documents, this Investment License was issued on 11th May 2009 CAR-20: During the Validation stage, no evidence of approval of Feasibility Study Report of the Project	~~CAR-19~~ ~~CAR-20~~	OK
c. Is the start date of the project activity, reported in the PDD, in accordance with the "Glossary of	VVM	99	Yes	OK	OK

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CDM terms", which states that "The starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins."?					
d. Does the project activity require construction, retrofit or other modifications?	VVM	99	The project activities require construction of new hydro power plant	OK	OK
e. If yes, is it ensured that the date of commissioning cannot be considered as the project activity start date?	VVM	99	At the time of validation, the project has not commissioned yet. Thus, the commissioning date will not be considered as project activity start date	OK	OK
f. Is it a new project activity (a project activity with a start date on or after 02 August 2008) or an existing project activity (a project activity with a start date before 02 August 2008)?	VVM	100	Based on above explanation, the starting date of this project is after 02nd Aug 2008. Thus, this is a new project activity	OK	OK
g. For a new project, for which PDD has not been published for global stakeholder consultation or a new methodology proposed to the CDM Executive Board before the project activity start date, had PPs informed the host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status? (Provide reference to such confirmation from host Party DNA and UNFCCC secretariat).	VVM	101	Yes By checking document submitted by project owner to DNA and EB, validation team can confirm	OK	OK
h. For an existing project activity, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, are the following evidences provided:	VVM	102	Not applicable	-	-
ii. evidence that must indicate that awareness of	VVM	102	Not applicable	-	-

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the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project, including, inter alia:					
a. minutes and/or notes related to the consideration of the decision by the Board of Directors, or equivalent, of the project participant, to undertake the project as a proposed CDM project activity?	VVM	102	Not applicable	-	-
iii. reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation, including, inter alia:	VVM	102	Not applicable	-	-
a. contract with consultants for CDM/PDD/methodology services?	VVM	102	Not applicable	-	-
b. Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds)?	VVM	102	Not applicable	-	-
c. evidence of agreements or negotiations with a DOE for validation services?	VVM	102	Not applicable	-	-
d. submission of a new methodology to the CDM Executive Board?	VVM	102	Not applicable	-	-
e. publication in newspaper?	VVM	102	Not applicable	-	-
f. interviews with DNA?	VVM	102	Not applicable	-	-
g. earlier correspondence on the project with the DNA or the UNFCCC secretariat?	VVM	102	Not applicable	-	-
h. Has the chronology of events including	VVM	102	Not applicable	-	-

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time lines been appropriately captured and explained/detailed in the PDD?					
b. Identification of alternatives					
a. Does the approved methodology that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required?	VVM	105	Yes It has prescribed the baseline scenario as per ACM0002	OK	OK
b. If no, does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	VVM	105	Not applicable	-	-
c. Does the list of alternatives given in the PDD esure that:	VVM	106		OK	OK
i. the list of alternatives includes as one of the options that the project activity is undertaken without being registered as a proposed CDM project activity?	VVM	106	Yes. Alternative 1 is the proposed project activity undertaken without CDM registration	OK	OK
ii. the list contains all plausible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the outputs or services that are to be supplied by the proposed CDM project activity?	VVM	106	Yes	OK	OK
iii. the alternatives comply with all applicable and enforced legislation?	VVM	106	Yes	OK	OK
c. Investment analysis					
a. Has investment analysis been used to demonstrate the additionality of the proposed CDM project activity?	VVM	108	Yes	OK	OK
b. If yes, does the PDD provide evidence that the proposed CDM project activity would not be:	VVM	108		OK	OK

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i. the most economically or financially attractive alternative?	VVM	108	Not applicable	-	-
ii. economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs)?	VVM	108	Yes. The project IRR without CER revenue is 8.54% versus the selected benchmark 12.21% Pending on close CAR-15, CAR-16, CAR-17	~~Pending~~	OK
c. Was this shown by one of the following approaches?	VVM	109			
i. The proposed CDM project activity would produce no financial or economic benefits other than CDM-related income. Document the costs associated with the proposed CDM project activity and the alternatives identified and demonstrate that there is at least one alternative which is less costly than the proposed CDM project activity.	VVM	109	Not applicable	-	-
ii. The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative.	VVM	109	Not applicable	-	-
iii. The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.	VVM	109	Yes. The project IRR without CER revenue is 8.54% versus the selected benchmark 12.21% Pending on close CAR-15, CAR-16, CAR-17	~~Pending~~	OK
d. Is the period of assessment limited to the proposed crediting period of the CDM project activity?	EB 62	Ann 05	The project participant chose a lifetime of 38 years to assess the cash flows for the project IRR. The chosen period of 38 years for financial assessment is deemed to be appropriate. The project owner chose a linear depreciation over 20 years period. No fair value remains.	OK	OK
e. Does the project IRR and equity IRR calculations	EB	Ann	Yes. Project IRR are calculated for 38 years	OK	OK

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reflect the period of expected operation of the underlying project activity (technical lifetime), or - if a shorter period is chosen - include the fair value of the project activity assets at the end of the assessment period?	62	05	Spread excel sheet is provided		
f. Does the IRR calculation include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment?	EB 62	Ann 05	Yes. Operation and Maintenance cost are included accordingly with Vietnamese laws	OK	OK
g. Do the project participants justify the appropriateness of the period of assessment in the context of the underlying project activity, without reference to the proposed CDM crediting period?	EB 62	Ann 05	Yes. Accordingly with EB50, Annex 15, hydro turbines have default value for technical lifetime 150,000 hours. Operation time of the Project is estimated 4,041 hours (based on capacity). Thus, technical lifetime of the Project is about 38 years Pending on close CAR-11	~~Pending~~	OK
h. Does the cash flow in the final year include a fair value of the project activity assets at the end of the assessment period?	EB 62	Ann 05	The depreciation of the fixed asset investment is linear over the 20 years assessment period. Thus after 20 years the fair value is 0.	OK	OK
i. Has the fair value been calculated in accordance with local accounting regulations where available, or international best practice?	EB 62	Ann 05	Yes. It is in accordance with international best practice and thus assessed as OK.	OK	OK
j. Does the fair value calculations include both the book value of the asset and the reasonable expectation of the potential profit or loss on the realization of the assets?	EB 62	Ann 05	The investment is completely depreciated. Thus no fair value remains.	OK	OK
k. Was depreciation, and other non-cash items related to the project activity, which have been deducted in estimating gross profits on which tax is calculated, added back to net profits for the purpose of calculating the financial indicator (e.g.	EB 62	Ann 05	Yes. Pending on close CAR-15, CAR-16, CAR-17	~~Pending~~	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
IRR, NPV)?					
l. Has taxation been included as an expense in the IRR/NPV calculation in cases where the benchmark or other comparator is intended for post-tax comparisons?	EB 62	Ann 05	Yes. Resources tax, Corporation income tax are included for investment analysis. By means of checking documentation, application of relevant Vietnamese laws, validation team confirm that taxation are properly included Pending on close CAR-17	~~Pending~~	OK
m. Are the input values used in all investment analysis valid and applicable at the time of the investment decision taken by the project participant?	EB 62	Ann 05	Yes. By checking document, validation team confirm that input values are correctly applied Pending on close CAR-17	~~Pending~~	OK
n. Is the timing of the investment decision consistent and appropriate with the input values?	EB 62	Ann 05	Yes Pending on close CAR-17	~~Pending~~	OK
o. Are all the listed input values been consistently applied in all calculations?	EB 62	Ann 05	Yes. Pending on close CAR-17	~~Pending~~	OK
p. Does the investment analysis reflect the economic decision making context at point of the decision to recomence the project in the case of project activities for which implementation ceases after the commencement and where implementation is recommenced due to consideration of the CDM?	EB 62	Ann 05	The input values for the investment were derived from the FSR, which was finished in Feb 2009. The decision to invest in the project was taken in 14th Sep 2009 during the Board meeting of the management. It took about half year between issuance of FSR and the management decision. The DOE can confirm that the period is assessed as short enough so that material changes to the input values are unlikely. This assessment is based on the issuance of the investment license by the Vietnamese government in May 2009, where the same values were confirmed.	OK	OK
q. Have project participants supplied the spreadsheet versions of all investment analysis?	EB 62	Ann 05	Yes. Unprotected spreadsheets of calculation are provided	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
r. Are all formulas used in this analysis readable and all relevant cells be viewable and unprotected?	EB 62	Ann 05	Yes	OK	OK
s. In cases where the project participant does not wish to make such a spreadsheet available to the public has the PP provided an exact read-only or PDF copy for general publication?	EB 62	Ann 05	Not applicable	-	-
t. In case the PP wishes to black-out certain elements of the publicly available version, is it justifiable?	EB 62	Ann 05	Not applicable	-	-
u. Was the cost of financing expenditures (i.e. loan repayments and interest) included in the calculation of project IRR?	EB 62	Ann 05	Yes	OK	OK
v. In the calculation of equity IRR, has only the portion of investment costs which is financed by equity been considered as the net cash outflow?	EB 62	Ann 05	Not applicable	-	-
w. Has the portion of the investment costs which is financed by debt been considered a cash outflow in the calcualtion of equity IRR? (this is not allowed)	EB 62	Ann 05	Not applicable	-	-
x. Was a pre-tax benchmark be applied?	EB 62	Ann 05	No	OK	OK
y. In cases where a post-tax benchmark is applied, is actual interest payable taken into account in the calculation of income tax?	EB 62	Ann 05	Yes. Income tax is appropriately applied. By checking of relevant document, validation team confirm that income tax is correctly applied by the Project participant Pending on close CAR-17	~~Pending~~	OK
z. In such situations, was interest calculated according to the prevailing commercial interest rates in the region, preferably by assessing the	EB 62	Ann 05	Yes	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
cost of other debt recently acquired by the project developer and by applying a debt-equity ratio used by the project developer for investments taken in the previous three years?					
aa. In cases where a benchmark approach is used is the applied benchmark appropriate to the type of IRR calculated?	EB 62	Ann 05	Yes. Project IRR was calcualted	OK	OK
bb. Has local commercial lending rates or weighted average costs of capital (WACC) selected as appropriate benchmarks for a project IRR?	EB 62	Ann 05	WACC is selected as benchmark for a project IRR, accordingly to “Tool for the demonstration and assessment for additionality”	OK	OK
cc. Has required/expected returns on equity selected as appropriate benchmark for an equity IRR?	EB 62	Ann 05	Yes	OK	OK
dd. In case benchmarks supplied by relevant national authorities selected is it applicable to the project activity and the type of IRR calculation presented?	EB 62	Ann 05	Yes	OK	OK
ee. In the cases of projects which could be developed by an entity other than the project participant is the benchmark applied based on publicly available data sources which can be clearly validated?	EB 62	Ann 05	Because the Project will not be developed by another entity, this section will be not applicable	-	-
ff. Have internal company benchmarks/expected returns (including those used as the expected return on equity in the calculation of a weighted average cost of capital - WACC) been applied in cases where there is only one possible project developer?	EB 62	Ann 05	Yes	OK	OK
gg. In such cases, have these values been used for similar projects with similar risks, developed by the same company or, if the company is brand new, would have been used for similar projects in	EB 62	Ann 05	Yes	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
the same sector in the country/region?					
hh. Has a minimum clear evidence of the resolution by the company's Board and/or shareholders been provided to the effect as above?	EB 62	Ann 05	Yes	OK	OK
ii. Has a thorough assessment of the financial statements of the project developer - including the proposed WACC - to assess the past financial behavior of the entity during at least the last 3 years in relation to similar projects been conduted?	EB 62	Ann 05	Yes.	OK	OK
jj. Does the risk premiums applied in the determination of required returns on equity reflect the risk profile of the project activity being assessed, established according to national/international accounting principles? (It is not considered reasonable to apply the rate general stock market returns as a risk premium for project activities that face a different risk profile than an investment in such indices.)	EB 62	Ann 05	Yes	OK	OK
kk. Has an investment comparison analysis and not a benchmark analysis used when the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services?	EB 62	Ann 05	Yes	OK	OK
ll. Have variables, including the initial investment cost, that constitute more than 20% of either total project costs or total project revenues been subjected to reasonable variation (positive and negative) and the results of this variation been presented in the PDD and be reproducible in the	EB 62	Ann 05	Yes	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
associated spreadsheets?					
mm. Have a corrective action been raised for a variable to be included in the sensitivity analysis which constitute less than 20% and have a material impact on the analysis ?	EB 62	Ann 05	No	OK	OK
nn. Is the range of variations selected is reasonable in the project context?	EB 62	Ann 05	Yes	OK	OK
oo. Dos the variations in the sensitivity analysis at least cover a range of +10% and -10%, unless this is not deemed appropriate in the context of the specific project circumstances?	EB 62	Ann 05	Yes	OK	OK
pp. In cases where a scenario will result in the project activity passing the benchmark or becoming the most financially attractive alternative, is an assessment done of the probability of the occurrence of this scenario in comparison to the likelihood of the assumptions in the presented investment analysis, taking into consideration correlations between the variables as well as the specific socio-economic and policy context of the project activity?	EB 62	Ann 05	No	OK	OK
qq. Was the plant load factor defined ex-ante in the CDM-PDD according to one of the following options:	EB 48	Ann 11		OK	OK
i. The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval?	EB 48	Ann 11	Not applicable	-	-
ii. The plant load factor determined by a third party contracted by the project participants	EB 48	Ann 11	Yes. The load factor of plant defined in the Feasiblity Study report	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
(e.g. an engineering company)?					
rr. Was a thorough assessment of all parameters and assumptions used in calculating the relevant financial indicator, and determine the accuracy and suitability of these parameters using the available evidence and expertise in relevant accounting practices conducted?	VVM	111	Yes	OK	OK
ss. Were the parameters cross-checked agains third-party or publicly available sources, such as invoices or price indices?	VVM	111	Yes. All reliable sources were cross-checked by Validation team and confirmed	OK	OK
tt. Were feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants reviewed?	VVM	111	Yes	OK	OK
uu. Was the correctnes of computations carried out and documented by the project participants assessed?	VVM	111	Yes	OK	OK
vv. Was the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions assessed?	VVM	111	Yes. 3 parameters were analysed (annual amount of electricity exported to the national grid; Investment costs and feed-tariff set by EVN) with ± 10% variations. Validation team confirm that Sensitivity analysis is correctly conducted Pending on close CL-5	~~Pending~~	OK
ww. Is the type of benchmark applied is suitable for the type of financial indicator presented?	VVM	112	Yes. WACC was applied appropriately	OK	OK
xx. Do any risk premiums applied determining the benchmark reflect the risks associated with the project type or activity?	VVM	112	No	OK	OK
yy. To determine this, was it assessed whether it is	VVM	112		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
reasonable to assume that no investment would be made at a rate of return lower than the benchmark by:					
i. assessing previous investment decisions by the project participants involved?	VVM	112	Because the Project is the first project invested by PECC1 therefore this section will be not applicable	-	-
ii. determining whether the same benchmark has been applied?	VVM	112	Yes	OK	OK
iii. determining if there are verifiable circumstances that have led to a change in the benchmark?	VVM	112	Yes	OK	OK
zz. Did the project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed CDM project activities?	VVM	113	Yes	OK	OK
xx. If yes:	VVM	113		OK	OK
i. has the FSR been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed?	VVM	113	Yes	OK	OK
ii. Are the values used in the PDD and associated annexes fully consistent with the FSR?	VVM	113	Yes. By document checking, Validation team confirm that all values used in the PDD are consistent with the FSR sources	OK	OK
iii. If not, was the appropriateness of the values validated?	VVM	113	Not applicable	-	-
iv. On the basis of its specific local and	VVM	113	Yes. By cross – checking with all relevant	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
sectoral expertise, is confirmation provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision?			sources, with respect to time fo decision making, Validation team confirm that all input value from the FSR are correct and properly applied		
d. Barrier analysis					
a. Has barrier analysis been used to demonstrated the additionality of the proposed CDM project activity?	VVM	115	No	OK	OK
b. If yes, does the PDD demonstrate that the proposed CDM project activity faces barriers that:	VVM	115		OK	OK
i. prevent the implementation of this type of proposed CMD project activity?	VVM	115	Not applicable	-	-
ii. do not prevent the implementation of at least one of the alternatives?	VVM	115	Not applicable	-	-
c. Are there any issues that have a clear direct impact on the financial returns of the project activity, other than: risk related barriers, for example risk of technical failure, that could have negative effects on the financial performance; or barriers related to the unavailability of sources of finance for the project activity? {If yes, these issues cannot be considered barriers and shall be assessed by investment analysis. [Refer to (6.c) above]}	VVM	116	Not applicable	-	-
d. Were the barriers determined as real by:	VVM	117		-	-
i. asssing the available evidence and/or undertaking interviews with relevant individuals (including members of industry associations, government officials or local	VVM	117	Not applicable	-	-

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
experts if necessary) to determine whether the barriers listed in the PDD exist?					
ii. ensuring that existence of barriers is substantiated by independent sources of data such as relevant national legislation, surveys of local conditions and national or international statistics?	VVM	117	Not applicable	-	-
iii. Is existence of a barrier substantiated only by the opinions of the project participants? (If yes, this barrier cannot be considered as adequately substantiated)	VVM	117	Not applicable	-	-
e. Were the barriers determined as preventing the implementation of the project activity but not the implementation of at least one of the possible alternatives by applying local and sectoral expertise to judge whether a barrier or set of barriers would prevent the implementation of the proposed CDM project activity and would not equally prevent implementation of *at least one of* the possible alternatives, in particular the identified baseline scenario?	VVM	117	Not applicable	-	-
e. Common practice analysis					
a. Is this a proposed large-scale, or first-of-its kind small-scale project activity?	VVM	119	Yes. It is a large scale project. The installed capacity is 57 MW	OK	OK
b. If yes, was common practice analysis carried out as a credibility check of the other available evidence used by the project participants to demonstrate additionality?	VVM	119	Yes. Common practice was conducted appropriately by project participant	OK	OK
c. Was it assessed whether the geograpphical scope (e.g. defined region) of the common	VVM	120	Yes. Similar projects are projects with installed capacity larger and equal than 50 MW and smaller	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type? (For certain technologis the relevatn region for assessment will be local and for others it may be transnational/global.			than 100 MW; started construction post August 2001, not developed by State – owned organization in the entire Vietnam country		
d. Was a region other than the entire host country chosen?	VVM	120	No. The entire Vietnam was selected for Common practice	OK	OK
e. If yes, was the explanation why this region is more appropriate assessed?	VVM	120	Not applicable	-	-
f. Using official sources and local and industry expertise, was it determined to what extent similar and operational projects (e.g., using similar technology or practice), other than CDM project activities, have been undertaken in the defined region?	VVM	120	Yes	OK	OK
g. Are similar and operational projects, other than CDM project activities, already "widely observed and commonly carried out" in the defined region?	VVM	120	No. The proposed project is not common practice in Vietnam Pending on close CAR-18, CL-6	~~Pending~~	OK
h. If yes, was it assessed whether there are essential distinctions between the proposed CDM project activity and the other similar activities?	VVM	120	Not applicable	-	-
7. Monotoring plan					
a. Does the PDD include a monitoring plan?	VVM	122	Yes	OK	OK
b. Is this monitoring plan based on the approved monitoring methodology applied to the proposed CDM project activity?	VVM	122	Yes	OK	OK
c. Were the list of parameters required by the the selected methodology identified?	VVM	123	Yes	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
d. Does the monitoring plan contains all necessary parameters?	VVM	123	Yes Only the quantity of net electricity supplied by the project to the grid is required ($EG_{y,export}$) by the ACM0002, version 12.2.0. This parameter is included in the Monitoring plan	OK	OK
e. Are the parameters clearly described?	VVM	123	Yes	OK	OK
f. Does the means of monitoring described in the plan comply with the requirements of the methodology?	VVM	123	Yes	OK	OK
g. Are all data and parameters monitored as per monitoring methodology?	ACM	0002 v.12.2 .0	Yes	OK	OK
h. Are all data collected as part of monitoring archived electronically and kept at least for 2 years after the end of the last crediting period?	ACM	0002 v.12.2 .0	Yes. By monitoring procedure, data will be archived and kept 2 years after the crediting period	OK	OK
i. Are 100% of the data monitored, if not indicated otherwise?	ACM	0002 v.12.2 .0	Yes	OK	OK
j. Are measurements conducted with calibrated measurement equipment according to relevant industry standards?	ACM	0002 v.12.2 .0	Yes. The monitoring meter will be calibrated every year by authorized parties. Validation team confirm the calibration procedure is compliance with Vietnamese standards	OK	OK
k. Are the monitoring provisions in the tools referred to in the methodology correctly applied?	ACM	0002 v.12.2 .0	Yes	OK	OK
l. Are the monitoring arrangements described in the monitoring plan feasibl within the project design?	VVM	123	Yes	OK	OK
m. Are the following means of implementation of the monitoring plan sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be	VVM	123		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
reported ex post and verified:					
i. data management procedures?	VVM	123	Yes	OK	OK
ii. quality assurance procedures?	VVM	123	Yes	OK	OK
iii. quality control procedures?	VVM	123	Yes	OK	OK
8. Sustainable development					
a. Does the CDM project activity assists Parties not included in Annex I to the Convention in achieving sustainable development?	VVM	125	Pending on close CAR-1	~~Pending~~	OK
b. Does the letter of approval by the DNA of the host Party confirm the contribution of the proposed CDM project activity to the sustainable development of the host Party?	VVM	126	Pending on close CAR-1, CAR-2	~~Pending~~	OK
9. Local stakeholder consultation					
a. Were local stakeholders (public, including individuals, groups or communities affected, of likely to be affected, by the proposed CDM project activity or actions leading to the implementation of such an activity) invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website?	VVM	128	Yes. Representatives of local People Committees, local people in the affected areas were interviewed to join the meeting in order to consult and comment on the proposed project in Mar 2009	OK	OK
b. Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVM	129	Yes Yes. The local stakeholders are all supportive of the proposed project. Hence, it is unnecessary to modify the project design according to comments received CL-7 was issued CL-7: In section D.1, PDD version 1.0 informed	~~CL-7~~	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			the Project will affect about 187.99 ha forest. However, no evidence to justify this information		
c. Is the summary of the comments received as provided in the PDD complete?	VVM	129	Yes By record checking and interviewing, validation team can confirm	OK	OK
d. Have the project participants taken due account of any comments received and described this process in the PDD?	VVM	129	Yes	OK	OK
10. Environmental impacts					
a. Have the project participants submitted documentation on the analysis of the environmental impacts of the project activity?	VVM	131	Yes Environmental Impact Assessment Report was made by authorized party and approved by Local People Committee	OK	OK
b. Have the project participants undertaken an analysis of environmental impacts?	VVM	132	Yes	OK	OK
c. Does the host Party require an environmental impact assessment?	VVM	132	Yes	OK	OK
d. If yes, have the project participants undertaken an environmental impact assessment?	VVM	132	Yes	OK	OK

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1 and 2	Summary of project owner response	Validation team conclusion
CAR-1: The Letter of Approval from Vietnam is not available in this stage of validation.	1.a 1.b 1.c 1.e 1.f 1.g 2.b 2.g 2.h 2.i 8.a 8.b	Letter of Approval from Vietnam is provided.	The LoA of Vietnam has already submitted to Bureau Veritas by scanned version. It was officially signed by Mr. Tran Hong Ha, Vice Minister of Ministry of Natural Resource and Environment of Viet Nam, Chairman of Viet Nam National Steering Committee for UNFCCC and Kyoto Protocol, DNA of Vietnam. This has been cross – checked via UNFCCC website. In the LoA, it is clearly stated that Vietnam has already ratified the Kyoto Protocol and that it participates voluntarily in the CDM. Besides, it authorized Power Engineering Consulting Joint Stock Company 1 and Energy and Environment Consultancy Joint Stock Company to participate the Project without obligations. It also confirmed that the Project contributes the sustainable development in Vietnam. This document is assessed reliable. Comparing the PDD and LoA, it could be confirmed that the title of the Project and the name of project participants are exactly matching. Thus, CAR is closed

CAR-2: The Letter of Approval from Switzerland will be provided before submission for registration.	1.a 1.b 1.c 1.e 1.f 1.g 2.b 2.g 2.h 2.i 8.b	Letter of Approval from Switzerland is provided.	The LoA of Switzerland has already submitted to Bureau Veritas by scanned version. It was officially signed by Mr. Yvan Keckeis, Senior Policy Officer, Federal Office for the Environment, DNA of Switzerland. This has been cross – checked via UNFCCC website. In the LoA, it is clearly stated that Switzerland has already ratified the Kyoto Protocol and that it participates voluntarily in the CDM. It also authorized Vietnam Carbon Assets Ltd to participate the Project without obligations. This document is assessed reliable. Comparing the PDD and LoA, it could be confirmed that the title of the Project and the name of project participants are exactly matching. Thus, CAR is closed
CAR-3: In the PDD version 1.0, the parasitic and loss load is 1%. However, in the excel spread sheet, the applied parasitic and loss load is 1.5%. Therefore, the emission reductions in the excel spread sheet is inconsistent with the PDD	3.d 3.i	The parasitic and loss load has been revised in the PDD, version 2.3. The parasitic and loss load for the proposed project is determined in the approved FSR for the project. The use of 1.5% for parasitic and loss load is the common practice for hydropower projects in Viet Nam. It could be cross checked by the registered projects in Vietnam with the range for parasitic and loss load are from 1% to 2%. Evidences are attached herewith.	By checking National legislation, Validation team confirmed that the parasitic and loss load was properly applied for the Project. Cross – checking with relevant calculation, Validation team confirmed that all calculation is corrected. CAR is closed

CAR-4: In the PDD version 1.0, section A.4.3, table 1 provided main technical parameters of the Project. However, some main technical parameters as Efficiency of Generator, Efficiency of Turbine are not available. Table 1 stated that the annual river flow is 117.9m^3/s. However, by cross – checking provided documents, Validation team found that the annual river flow is 118.13m^3/s	3.h	The technical parameters as required have been added in the revised PDD, version 2.3 The annual river flow is determined based on hydrological surveys in long term basis. The annual river flow has been corrected in the revised PDD, version 2.3 Main technical specifications in the Equipment Contract with Hydrochina Zhongman-Zhefu are attached herewith.	By checking provided contract and cross – checking with revised PDD, Validation team confirmed that all technical specifications are correctly and consistently identified and stated. CAR is closed
CAR-5: In the PDD version 1.0, section A.4.3 stated that the main equipment will be imported via tender. This information and supporting documents do not justify the description of how environmentally safe and sound technology and know-how to be used	3.h	Section A.4.3 has been revised accordingly in the PDD version 2.3 Date of Equipment contract with Hydrochian Zhongman-Zhefu have been indicated in Section B.5 of the PDD version 2.3	By checking PDD version 2.3 and cross – checking with provided equipment contract, Validation team confirmed that the information about equipment contract was correctly and sufficiently provided. CAR is closed
CAR-6: In the PDD version 1.0, section A.4.4 and B.6.4 calculated Emission Reductions for full year 2012 and 2019. However, emission reductions of these 2 years are incorrect with other years (2013 – 2018)	3.i 3.s 5.e.c	The calculation of Emission Reductions for two years 2012 and 2019 is considered for six months only. The revision has been made accordingly in the PDD, version 2.3	By checking revised PDD, Validation team confirmed that estimated emission reduction is correctly calculated. CAR is closed

CAR-7: In the PDD version 1.0 (dated 25th Apr 2011); the version of "Tool to calculate the emission factor for an electricity system" (version 2) is not latest version. Version 2.1 of that tool was already issued on 15th Apr 2011	3.k 3.p	The latest version of "Tool to calculate the emission factor for an electricity system"/Version 2.2.1 has been applied in the revised PDD, version 2.3	By checking revised PDD version 2.3, Validation team confirmed that the latest version of "Tool to calculate the emission factor for an electricity system" was applied accordingly. CAR is closed
CAR-8: In the PDD version 1.0, section B.6.2, the description of $EF_{grid,BM,y}$ and $EF_{grid,CM,y}$ are incorrect	3.q	Description of $EF_{grid,BM,y}$ and $EF_{grid,CM,y,}$ has been revised in the PDD, version 2.3	By checking revised PDD, Validation team confirmed that the description of $EF_{grid,BM,y}$ and $EF_{grid,CM,y}$ are correctly modified. CAR is closed
CAR-9: In section B.7.1, PDD version 1.0, Parameters of "Installed capacity" and "Area of reservoir" are not available	3.t	Parameters of "Installed capacity" and "Area of reservoir" have been added in Section B.7.1 of the PDD, version 2.3	By checking revised PDD, Validation team confirmed that mentioned parameters were sufficiently provided and will be monitored accordingly. CAR is closed
CAR-10: In the PDD version 1.0, accuracy class of meter system is not available as per requirements of Vietnamese Technical Standards	3.u 3.mm	Accuracy class for main meter system has been added in the PDD, version 2.3	By checking revised PDD and provided document (Vietnamese legislation), Validation team confirmed that accuracy classes of meters were described sufficiently and correctly. CAR is closed
CAR-11: In the PDD version 1.0, section C.1.2, the source to substantiate the expected operational lifetime of the Project is not available	3.x 6.c.g	The source to substantiate the expected operational lifetime of the Project is added in the PDD, version 2.3	By checking revised PDD, Validation team confirmed that source for operational lifetime of the Project was sufficiently provided. It is consistent with Annex 15 of EB 50. CAR is closed

CAR-12: In the PDD version 1.0, section C.2.1.1, the starting date of the first crediting period is required to add the information of registration date	3.aa	The information of registration date regarding the first crediting period has been added in the PDD, version 2.3	In the revised PDD, Validation team found that registration date was mentioned in relevant section. CAR is closed
CAR-13: In section E.1, PDD version 1.0 stated that the Project owner informed to Provincial People Committee and DNA about the proposed project activity on 20th Aug 2008. However, by cross – checking with relevant documents and key milestones in B.5, this documents was issued on 20th Aug 2009	3.gg	There was a typo-mistake. The revision has been made accordingly in the PDD, version 2.3 Supporting document is attached herewith.	By checking revised PDD and provided document, Validation team confirmed that notification to DNA was on 20th Aug 2009. PDD was correctly revised. CAR is closed
CAR-14: In PDD version 1.0, section E.3 do not provide sufficiently the actions was taken of comments received on negative impacts of the Project	3.ii	Section E.3 has been revised concerning the actions was taken of comments received on negative impacts of the Project.	In the PDD version 2.3, all impacts of the Project were described fully in the relevant section. By cross – checking with related documents, Validation team confirmed that all impacts are provided consistently. CAR is closed
CAR-15: In the PDD version 1.0, section B.5, table 5 indicated "the Levered Beta for CDM project" with Can Don Hydropower JSC is 092. However, by cross – checking with relevant sources, this data is 0.92	6.q 6.c.b 6.c.c 6.c.k	The Levered Beta for CDM project regarding Can Don Hydropower JSC has been corrected in the revised PDD, version 2.3	By checking revised PDD and cross – checking with provided sources, Validation team confirmed that the indicator in the PDD was correctly applied. CAR is closed

CAR-16: In section B.5, PDD version 1.0 stated that the electricity price for Investment analysis is 714 VND/kWh (as expected in the Feasibility Study Report). However, the FSR is not approved yet.	6.q 6.c.b 6.c.c 6.c.k	FSR has been approved by the People's Committee of Quang Nam province. The documented evidence is attached herewith.	By checking provided FSR, Validation team confirmed that the FSR was legally approved. All financial indicators and parameters in the approved FSR are consistently. CAR is closed
CAR-17: In the PDD version 1.0, in the investment analysis, the resources tax is 2%. However, no source to substantiate the application of the resources tax.	6.q 6.c.b 6.c.c 6.c.k 6.c.l 6.c.m 6.c.n 6.c.o 6.c.y	Source to substantiate the application of the resources tax has been added in the revised PDD, version 2.3	Sources to substantiate the application of resources tax are provided and PDD was accordingly revised. By checking PDD and cross – checking with sources, Validation team confirmed that Resources tax was consistently applied in the Investment analysis of the Project. CAR is closed
CAR-18: In Common practice analysis, PDD version 1.0. justifications to exclude Quang Tri hydropower project and Srok Phu Mieng hydropower project did not substantiate sufficiently the provided information	6.aa 6.e.g	Further information regarding Quang Tri hydropower project and Srok Phu Mieng hydropower project is attached herewith. Sources regarding Srok Phu Mieng hydropower project have been updated and the relevant description has been made in the PDD, version 2.3.	By checking revised PDD and provided sources, Validation team confirmed that all sources are accessible and reliable. They are able to substantiate that the Project is not Common practice in Vietnam. CAR is closed

CAR-19: In section B.5, PDD version 1.0 stated that the Investment License of Song Bung 5 hydropower project was issued on 05th Apr 2010. However, by cross – checking with relevant documents, this Investment License was issued on 11th May 2009	6.a.b	Date of the Investment License for Song Bung 5 hydropower project has been revised in the PDD, version 2.3 Supporting document is attached herewith. The milestone has been added in Section B.5 of the PDD version 2.3	By checking provided hard copy and revised PDD, Validation team confirmed that the information was sufficiently provided. CAR is closed
CAR-20: During the Validation stage, no evidence of approval of Feasibility Study Report of the Project	6.a.b	FSR for the proposed project is approved by the national authority (People's Committee of Quang Nam province). Approval of Feasibility Study Report of the project is attached herewith. Date of the approval has been stated in Section B.5 of the PDD, version 2.3	By checking provided FSR, Validation team confirmed that the FSR was legally approved. All financial indicators and parameters in the approved FSR are consistently. CAR is closed
CL-1: Information of the distance of the transmission line is not available in the PDD version 1.0	3.d	Information of the distance of the transmission line has been added in the PDD, version 2.3	By checking revised PDD and cross – checking with relevant record, Validation team confirmed that the transmission line's distance was accordingly provided and correct. CL is closed
CL-2: In section B.6.3, PDD version 1.0 did not stated calculation of Project Emissions (PE_y)	3.r	The statement regarding the calculation of Project Emission (PE_y) has been added in the PDD, version 2.3	By checking PDD version 2.3, Validation team confirmed that the justification of PE_y was sufficiently provided and correctly calculated. CL is closed

CL-3: In section E.1, PDD version 1.0 stated that "On 02nd – 03rd March 2009, meetings between the project owner and the following representatives of the local people was held in order to consult local people on the social-economic and environment impacts of the proposed project in order to develop this project as a CDM activity". However, no substantiation of how the invitation was done	3.gg	The substantiation regarding the way of delivering the invitation for comments by local stakeholders has been made in the revised PDD to ensure the openness and transparency, facility comments to be received from local stakeholders, and allow for a reasonable time for comments to be submitted.	By interviewing Local Communes and Local affected people, Validation team confirmed that local people in the communes were invited by the Project owner prior to publication of the Project in order to raise their comments on the Project. Local Communes and local people confirmed with Validation team that the Project owner had informed them about the Project 1 week before the invitation of meeting, The manner of invitation is confirmed as clear. CL is closed
CL-4: No supporting information to justify that the option I of Investment analysis (Simple cost analysis) is not applicable	6.l	Supporting information to justify that the Option I of Investment Analysis (Simple cost analysis) has been added in the PDD, version 2.3	By checking relevant document, Validation team confirmed that the Project will sell the generated electricity to Vietnamese national grid. Option I (Simple cost analysis) was correctly excluded. CL is closed
CL-5: In the Sensitivity analysis PDD version 1.0, the statement to excluded total O&M cost is not available	6.r 6.c.vv	The statement to exclude total O&M cost has been added in the PDD, version 2.3	By checking PDD and excel calculation sheet, cross – checking with Vietnamese legislation, Validation team confirmed that O&M costs are consistently excluded from Sensitivity analysis. CL is closed
CL-6: In the Common practice, the justification of load factor of the Project is not available	6.aa 6.e.g	The justification of load factor of the Project has been added in the PDD, version 2.3	By checking revised PDD and cross – checking with provided approved FSR, Validation team confirmed that the load factor of the Project was correctly calculated. CL is closed

CL-7: In section D.1, PDD version 1.0 informed the Project will affect about 187.99 ha forest. However, no evidence to justify this information	9.b	There was a typo-mistake. A relevant revision has been made in the PDD, version 2.3 Evidence is attached herewith.	By checking provided document, Validation team confirmed that the Project will affect 173.01 ha of forest. PDD was correctly revised. CL is closed

Appendix B: COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

According to the modalities for the Validation of CDM projects, the DOE shall make publicly available the project design document and receive, within 30 days, comments from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available.

BUREAU VERITAS CERTIFICATION published the project documents on the UNFCCC CDM website (http://cdm.unfccc.int) on 11/05/2011 and invited comments within 09/06/2011 by Parties, stakeholders and non-governmental organizations. Comments were received for the CDM project "Song Bung 5 hydropower project". The comments received for the said CDM project are compiled below in tabular format.

Sr. No.	Details of the commenter	Date of the comment	Comment [unedited]
1	Zhong Zhou Li, zhongzhouli8@gmail.com	23/05/2011	It is evident from the PDD that the values are consistent and it is definitely forged and cooked up values to show a non CDM project as a CDM project. What is this? DoE to check the Detailed Project Report and Feasibility Report which is submitted to the other agencies and Banks by Project owner and ensure that the values match with the DPR/FR submitted to DoE also. After careful study of PDD it is found that DPR/FR is in different versions made and submitted with different purposes to different agencies which are totally unacceptable, illegal and unethical. PP/Consultant may show some undertaking letter from bank manager to DoE stating that both DPR's are same. These kinds of letters should not be accepted and entertained by DoE. While collecting the DPR/FR from banks and other agencies, all DPR/FR pages should be counter signed by Banks and other agencies so that the real DPR/FR given to other parties by the PP/Consultant is same as the one submitted to DOE. In this particular project there is clear cut evidence that DPR/FR values are changed/ fabricated mischievously and intentionally. This must be probed fully. DOE must take a written undertaking from the PP/Consultant about the list of parties to whom this DPR/FR is submitted and for what purposes. Then DOE should cross check with all the parties and confirm that the same DPR/FR is submitted to all the parties correctly without any changes. DOE must not accept any reports and undertakings from PP/Consultant. DOE must make independent evaluation and use totally different parties without informing the PP or Consultant to cross check the facts. DOE to write to the party who prepared the DPR/FR which is submitted to the banks and other agencies and the same is verified against the one submitted to the DOE by PP/Consultant. This project is a fabricated and fake CDM project and must be rejected by the DOE right away. DOE should not support this kind of projects otherwise CDM EB should suspend this DOE for at least one year.
2	Lawrance, lawrance_38@yahoo.com	23/05/2011	1) Layout of power transmission lines from the generation to the consumer with the metering system is not shown. It should include the distance of transmission lines. DOE has to check the meters are installed to monitor electricity generated, net electricity used in Bhutan, net electricity exported to India. Pls. clarify.

Sr. No.	Details of the commenter	Date of the comment	Comment [unedited]
			2) The status of the construction & commission of the project is not stated in the PDD. 3) What is the basis of calculation for transmission loss, auxiliary consumption and transformer losses? What is the length of transmission line? 4) The project is claimed to be run of river hydro project. So the calculation of reservoir is wrong. The criterion 3 is applicable only to pumped storage or accumulation hydro projects. What does reservoir refer to as per PP? 5) The justification of opting out alternative 3 and alternative 4 is not justified adequately. It should be based on latest published data and figures. Refer B.4. Pls. clarify. 6) The bilateral agreements, PPA with India are the documents, DOE to check thoroughly. 7) Date of investment decision should be at the time of DPR preparation. So, the basis of the cost escalation factors at a later date for CDM consideration is not valid. Pls. clarify. Refer B5. Step 3a. (Investment barrier). 8) How the CDM benefit will alleviate the technical barriers. As per additionality tool, if the barriers are not alleviated by CDM, then the project is not additional. 9) Emission factor for state is not calculated. It should be made available to DOE to clearly validate this value. Emission factor for India is not as per "Tool for emission factor for the system". 10) Electricity generated by the project, auxiliary consumption, transmission losses, transformer losses, net electricity exported to India, net electricity exported to the grid. These parameters to be monitored continuously and to be cross checked with sale receipts. 11) The Meth mentions that if investment analysis option is used, apply the following: a) Apply an investment comparison analysis, as per Step 3 of the .Combined tool to identify the baseline scenario and demonstrate additionality., if more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P3; b) Apply a benchmark analysis, as per Step 2b of the .Tool for the demonstration and assessment of additionality. If more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P2. But PP failed to apply like this. Pls. clarify. 12) PLF should be based on EB48 Annex 11 guideline which says The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval; (b) The plant load factor determined by a third party contracted by the project participants (e.g. an engineering company); But PDD doesn't demonstrate how PLF has been arrived at. 13) Whether PLF includes machine shutdown, machine availability. Whether grid availability is accounted for in the calculation of gross generation. To my surprise, critical parameter like PLF is missing from the PDD. How DOE has allowed this.

Sr. No.	Details of the commenter	Date of the comment	Comment [unedited]
			14) Common practice analysis should be based on EB 39 Annex 10 (Additionality tool). Each step of common practice analysis should be fulfilled as per tool. 15) Emission reduction calculation should be based on EB 50 Annex 14 "Tool for emission factor for the electricity system. 16) Whether only one set of main meter, check meter set is enough for three projects. The monitoring parameters need to be checked by DOE. 17) The main meter and check meter technical parameters like accuracy level, make, etc. needs to be mentioned in the PDD.

Validation team has already investigated according to comment received. By checking documents, which are legally approved by National organizations in Vietnam, as well as cross – checking with original records (contracts, agreements), Validation team confirmed that the Project satisfy CDM requirements.

Feasibility Study Report of the Project was established by Power Engineering Consulting Joint Stock Company 1 (PECC1) in February 2009, Validation team already checked the original report and cross-checked the issued date, signed date, approved date appropriately. Subsequently, this was checked and approved by People Committee of Quang Nam Province on 30th May 2011. Validation team has checked original approval to confirm that the FSR and all assumptions in this FSR were approved legally in Vietnam.

The layout of the Project was checked on – site and confirmed that it was correctly described in the PDD. The construction and commission of the Project was planned in the PDD and cross – checked as well as confirmed by Validation team. Transmission line information of the Project was provided sufficiently in the PDD. Emission factor was validated by the Validation team with the provision of sources from DNA of Vietnam.

Decision evidences were provided to Validation team by the project owner. Validation team checked and confirmed that it is official decision from Project owner's management board and CDM benefit was appropriately considered.

With investment analysis, Validation team already checked and confirmed all financial parameters were correctly applied. Project IRR without CDM revenue was confirmed lower than the selected benchmark WACC.

Plant Load Factor was defined as calculated in the FSR, which is legally approved by Governmental organization. Validation team confirmed that the Plant load factor was adequately determined
Similar projects were sufficiently identified and discussed. According to reliable sources, Validation team confirmed that the Project is not common practice in Vietnam.

Meter system (including main and backup meters) will be properly installed as validated. The accuracy class and meter information were adequately provided in the PDD.

Bureau Veritas Certification thus requests registration of Song Bung 5 hydropower project as CDM project activity.