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CDM Validation Report

Enterprise

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Service

Audit/Assessment:	CDM Validation
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Project name:	Dak Srong 2A Hydropower Project
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UNFCCC Scope(s)/Technical area(s):	1/TA 1.2
UNFCCC Methodology:	ACM0002 Consolidated Methodology for Grid Connected Electricity Generation from Renewable Sources Version 11
UNFCCC Scale:	Large Scale
Team:	Mr Hansruedi Bader Mr Rudolf Brodbeck

Approved by	**Date**	**Signature**
Lead auditor/assessor: Mr Hansruedi Bader	11/03/2011	
Reviewer: Mr Jürg Liechti, PhD	25/03/2011	
Member of the Executive Board: Mr Silvio Leonardi, PhD	07/04/2011	

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1 Introduction

1.1 Objective

Bunge Emissions Holding Sarl c/o Bunge SA has commissioned SQS to perform a validation of the "Dak Srong 2A Hydropower Project" (hereafter called "the project"). The validation objective is an independent assessment by a Designated Operational Entity (DOE) of a proposed project activity against all defined criteria set for the registration under the Clean Development Mechanism (CDM). Validation is part of the CDM project cycle and will finally result in a conclusion by the executing DOE whether a project activity is valid and should be submitted for registration to the CDM Executive Board (CDM-EB). The ultimate decision on the registration of a proposed project activity rests with the CDM-EB and the Parties involved.

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the criteria stated in

- The Kyoto Protocol, in particular § 12 and modalities and procedures for the CDM
- Decision 2/CMP1 and Decision 3/CMP.1 (Marrakech Accords)
- MODALITIES AND PROCEDURES FOR A CLEAN DEVELOPMENT MECHANISM
- CLEAN DEVELOPMENT MECHANISM VALIDATION AND VERIFICATION MANUAL (v 1.2)
- Decisions and specific guidance by the EB published under http://cdm.unfccc.int
- ACM002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" version 11, EB52
- Tool for the demonstration and assessment of additionality, version 5.2, EB 39
- Combined tool to identify the baseline scenario and demonstrate additionality, version 2.2, EB28
- Tool to calculate project or leakage CO2 emissions from fossil fuel combustion, version 2, EB41
- Tool to calculate the emission factor for an electricity system, version 1.1, EB 35 annex 12 – at the time the baseline calculation was carried out by the DNA of Vietnam for the calculation of the official Grid Emission Factor, this version of the tool was the only one available.
- Guidelines on the Assessment of Investment Analysis, version 03.1

The validation team has used a risk-based approach focusing on the identification of significant risks for project implementation and the generation of CERs.

1.3 Project description

The objective of the "Dak Srong 2A Hydropower Project", Vietnam project activity is to build and operate a run-of- river hydropower plant with a small run-of-river reservoir located in Yang Nam, and Dak Kning Communes, Kong Chro District, Gia Lai Province in the highlands area of Vietnam.
The project involves the installation of three turbine and gensets with a total capacity of 18MW (generator capacity) - average annual production of 57,624MWh. The project consists of a weir and spillway dam, a penstock, a powerhouse (containing turbines and generators) and a tailrace as shown in Fig. A.3 in the PDD. The electricity produced will be fed into the national grid. The project will reduce annually 33,214 tCO2 by producing electricity from a renewable source thus substituting electricity produced in Vietnam to a large extent by fossil means.

Project participants are Hoang Anh Gia Lai Hydropower Joint Stock Company (private entity) and Bunge Emissions Holdings Sarl (private entity). The project activity started at the signing of the first contract for civil works for the project dated 18/02/2009. The 7-year crediting period starts on 31/03/2011 or after registration whichever is later.

1.4 Validation methodology

The SQS auditors apply standard auditing techniques to assess the correctness of the information provided by the project participants, including, where appropriate, but not limited to:

(a) Document review, involving: review of data and information to verify the correctness, credibility and interpretation of presented information and cross checks between information provided in the PDD and information from sources other than that used, if available, and if necessary independent background investigations

(b) Follow-up actions (on-site visit, telephone, email interviews), including: interviews with relevant stakeholders in the host country, personnel with knowledge of the project design and implementation and cross-check of information provided by interviewed personnel to ensure that no relevant information has been omitted from the validation

(c) Reference to available information relating to projects or technologies similar to the proposed CDM project activity under validation

(d) Review, based on the approved methodology being applied, of the appropriateness of formulae and correctness of calculations.

If, during the validation of a project activity, the auditor identifies issues that need to be further elaborated upon, researched or added to in order to confirm that the project activity meets the CDM requirements and can achieve credible emission reductions, the auditor shall ensure that these issues are correctly identified, discussed and concluded in the validation report.

The auditor shall raise a corrective action request (CAR) if one of the following occurs:

(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 auditor shall raise a clarification request (CL) if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

The auditor shall raise a forward action request (FAR) during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.

The auditor shall resolve or “close out” CARs and CLs only if the project participants modify the project design, rectify the PDD or provide adequate additional explanations or evidence that satisfy the SQS’s concerns. If this is not done, the SQS shall not recommend the project activity for registration to the CDM Executive Board.

In order to ensure transparency, a validation protocol (Checklist CDM Validation) was customized for the project. 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 validation protocol consists checklists. The different columns in these checklists are described in below Figure.

The completed validation protocol is enclosed in appendix F to this report.

Validation Protocol 1-3: Requirements	
Requirement	The requirements the project must meet.
Ref.	Normative references
MoV *(Means of Validation)*	Explains how conformance with the requirements is investigated. DR = Document Review, I = Interview, N/A = Not Applicable
Comment / Cross Reference	The section is used to elaborate and discuss the conformance to the requirement. May give reference to the PDD or documents.
Draft Concl. / Final Concl. *(Draft and/or Final Conclusion)*	OK = Conform, CAR = Corrective Action Request, CL = Clarification Request, FAR = Forward Action Request

Validation Protocol 4: Summary of Requests	
No.:	The requests (CAR, CL, FAR) are numbered and listed in this section.
Reference:	Reference to the checklist question number in Protocol 1-3 where the request is explained.
Validator findings / request:	The section is used to elaborate and discuss the request. May give reference to the PDD or documents.
Project proponent response:	The responses given by the client or other project participants during the communications with the validation team should be summarised in this section.
Validator conclusion:	This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Protocol 1-3, under "Final Conclusion".
Date:	Date when request was closed.

2 Validation Opinion

2.1 Summary of the validation conclusions

It is SQS' opinion, that the project "Dak Srong 2A Hydropower Project" described in the PDD version 4.1 with the crediting period from 31/03/2011 to 28/02/2018 meets all relevant criteria of the listed references in paragraph 1.2. SQS confirms that the approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" Version 11, EB52 is applicable for this project activity and that the criteria are discussed in an exhaustive manner in the PDD and supported by the submitted documents. Furthermore, the approved methodology is correctly applied and therefore, SQS requests the registration of given CDM project.

2.2 Summary of the validation methodology and process used and the validation criteria applied

The validation process has been carried out using the methodology described in paragraph 1.4. This has included a desk review of the PDD, and its annexes and additional documents listed in the Appendix C of this report, an on-site visit on 06/06/2010 and interviews (see Appendix B) and an inspection of the project site.
28 CLs have been raised. All of them are closed. 6 CARs have been raised and closed without exception. 4 FARs have been raised and have been accepted by PP without exception.

2.3 Description of project components or issues not covered by the validation process

All project components have been covered by the validation process.

2.4 Statement on the validation of the expected emission reductions

SQS confirms that the calculation of the expected emission reduction of 33,214 tCO_{2e} per year and 232,501 tCO_{2e} for the first 7 years crediting period is carried out in a transparent and conservative manner – see SQS ref. [67], so that the calculated emission reductions are most likely to be achieved, given that the underlying assumptions do not change. SQS confirms that the starting date of the first crediting period is planned for 31/03/2011 or registration date, whichever is later.

2.5 Statement whether the proposed CDM project activity meets the stated criteria

Based on the observations made during the validation process, SQS concludes that the proposed project is accurate, conservative, relevant, complete, credible and reliable and meets the stated criteria.

3 Validation Findings

3.1 Approval

A letter of approval by the host country Vietnam was requested and issued on 20/04/2010, Ref: 05/2010/DMHCC-BCD. Switzerland, as the second party involved, has also issued a letter of approval, dated 27/09/2010, Ref: G514-3487. Both are considered as authentic without doubts and are unconditional. SQS received these letters from the project participant directly.

SQS confirms that the letters refer precisely to the proposed CDM project activity title in line with the title in the PDD "Dak Srong 2A Hydropower Project". In addition, the LoA statements are clear and unambiguous with respect to all required content such as Kyoto Protocol ratification status and voluntary participation. The Vietnamese LoA also confirms that the proposed CDM project activity contributes to the sustainable development of Vietnam.

SQS confirms that the approval of participation is valid for the proposed project participant – see [55] and [56]. The CL 22 related to the LOA issuance of the Host and Annex I Parties therefore is closed.
SQS considers the Letters of Approval are in accordance with paragraphs 45 – 48 of the VVM version 1.2 (EB 55, Annex 1, paragraph 49).

3.2 Participation

The names of the two project participants "Hoang Anh Gia Lai Hydropower Joint Stock Company (Vietnam)" and "Bunge Emissions Holdings Sarl (Switzerland)" are listed in the PDD in tabular form in section A.3.
The participants are approved by means of the Letter of Approval of the host party. The letter of approval is issued, thus SQS' confirmation of participation by a Party to the Kyoto Protocol can be given.

3.3 Project design document

The latest available version of the template: CLEAN DEVELOPMENT MECHANISM PROJECT DESIGN DOCUMENT FORM (CDM-PDD) version 03 – in effect as of: 28 July 2006 has been used.

3.4 Project description

The description of the project activity contained in the PDD is understandable and gives a good picture of the project. Its content was confirmed to be realistic by means of an on-site visit and interviews on 06/06/2010 with local project participants.
Main changes between the PDD (version 3.0, 06/04/2010) published for the 30 days stakeholder commenting period and the final version (version 4.1) submitted for registration are issues related to the CARs, CLs and FARs identified during validation. The key PDD changes are as follows

Alignments of the PDD associated with the use of the "Tool to calculate the emission factor for an electricity system, version 1.1, EB 35 annex 12".

CL 7: In the case of the parameter $EF_{CO2,i}$ the source of data shall be referenced exactly. Document name and which table/page was used. In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this parameter will not be used ⇨ The data source has been changed to use the GEF from the Department of Meteorology, Hydrology and Climate Change, CL 7 is closed.
CL 8: Table A.3 shall be reviewed for correctness of indication of years ⇨ This has been corrected – CL 8 is closed.
CL 9: The Internet link in reference 5 shall be verified. ⇨ The Internet link has been corrected – CL 9 is

closed.
CL 10: The Internet link in reference 8 shall be verified. ⇨ The Internet link has been corrected – CL 10 is closed.
CL 11: The Internet link in reference 12 shall be verified⇨ The link is corrected in the PDD – CL 11 is closed.
CL 15: The coordinates shall be verified for correctness⇨ Coordinates have been re-verified and are correct. CL 15 is closed.
The CLs have been closed.

The coordinates of the project activity mentioned in the PDD are: latitude of 13°41'40"N and longitude of 108°33'54"E. They have been verified and are deemed correct.

It is SQS' opinion that the project description is accurate and complete.

3.5 Baseline and monitoring methodology

3.5.1 General requirement

The project applies a large-scale methodology:
- Approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" version 11, EB52

The project applies the following tools:
- Tool for the demonstration and assessment of additionality, version 5.2, EB 39
- Combined tool to identify the baseline scenario and demonstrate additionality, version 2.2, EB28
- Tool to calculate project or leakage CO2 emissions from fossil fuel combustion, version 2, EB41
- Tool to calculate the emission factor for an electricity system, version 1.1, EB 35 annex 12 – at the time the baseline calculation was carried out by the DNA of Vietnam for the calculation of the official Grid Emission Factor, this version of the tool was the only one available.
- Guidelines on the Assessment of Investment Analysis, version 03.1

3.5.2 Applicability of the selected methodology to the project activity

Applicability Criteria ACM0002	**Project Activity as discussed in the PDD**	**Means of validation and Validation Opinion**
The project activity is the installation or modification/ retrofit 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.	The project activity involves the installation of a new hydropower project with a small run-of-river reservoir.	On site visit, reference [20], Construction schedule, reference [21], Equipment contract, reference [22], first contract.
In case of hydro power plants, one of the following must apply: The project activity is implemented in an existing reservoir, with no change in the volume of the reservoir; or The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the power activity, as per definitions given in the Project Emissions section, is greater than 4 W/m2	The new reservoir associated with this project has a power density of ~ 145 W/m2 as defined in ACM0002	Power-Density calculation is based on ref. [32], Feasibility Study Plant load factor, page 9 where is mentioned the surface of the reservoir. See also PDD p.25.
The geographic and system boundaries for the relevant electricity grid can be clearly identified and	This is the case, please refer to section B.4.	Consistency between ACM0002 and PDD has been

information on the characteristics of the grid is available.		verified and can be confirmed.

SQS confirms that the approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" Version 11, EB52 is applicable for this project, that the criteria are discussed in an exhaustive manner in the PDD and supported by the submitted documents.

3.5.3 Project boundary

Requirements ACM0002	**Sources of evidences**	**Validation Opinion**
Project power plant	PDD page 10, Figure B.1.	Figure B.1. includes Power plant – site visit on 06/06/2010 confirmed description in the PDD – requirements are fulfilled.
All power plants connected physically to the electricity system that the CDM project power plant is connected to.	PDD page 10, description of project boundary and Figure B.1. as well section B.4. page 11.	Project boundary includes correct electricity system – in this case the national grid (EVN). Requirements are fulfilled.
Baseline Emissions: CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity		
• CO_2 emission	PDD page 10, Table B.1.	CO_2 emission is defined as main emission source
• CH_4	PDD page 10, Table B.1.	CH_4 is not included as defined in ACM0002
• N_2O	PDD page 10, Table B.1.	N_2O is not included as defined in ACM0002 validator conclusion: Requirements are fulfilled.
Project activity For hydropower plants, emission of CH_4 from the reservoir		
• CO_2 emission	PDD page 10, Table B.1.	CO_2 is not included as defined in ACM0002
• CH_4	PDD page 10, Table B.1.	CH_4 is included as defined in ACM0002
• N_2O	PDD page 10, Table B.1	N_2O is not included as defined in ACM0002 validator conclusion: Requirements are fulfilled

The spatial and conceptual project boundary is defined in the PDD chapter B.3. The project boundary is shown in Figure B.1 in the PDD "The Project Boundary". The definition is consistent with the methodologies of ACM0002. SQS' lead auditor Hansruedi Bader conducted an on-site visit (6 and 7 June 2010). The boundary was verified during the on-site visit. The detailed plans, the construction schedule and the coordinates of the project have been consulted and verified. The choice of boundary, sources and gases corresponds to the methodology and is rated justified by SQS.

3.5.4 Baseline identification

As it is a new grid-connected renewable power plant, the baseline scenario is the electricity delivered to the grid by the project activity.

The Emission Factor is - in accordance to ACM0002 and Tool to calculate the emission factor for an electricity system, version 1.1, EB 35 annex 12, derived after calculating combined margin (CM) according to the procedures prescribed in the "Tool to calculate the Emission Factor for an electricity system". Simple OM is chosen and a proof for the correctness of the choice is given under B.6.1. All applicable steps are considered explained and proved in the PDD under B.6.1. and calculation under B.6.3. The Grid Emission Factor has been verified by the DOE at the office of the Department of Meteorology, Hydrology and Climate Change in Hanoi and is deemed correct.
All the assumptions and data used by the project participants are listed in the PDD, including their references and sources.
All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD.
Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable.
The PDD also provides an accurate and auditable description of the baseline scenario which includes the continued use of fossil fuel power plants to supply electricity to the grid.

DOE raised CAR 1: The calculated emission factor (0.602) is not conservative. The document "Study, definition of Vietnam Grid Emission Factor, 2010" <http://www.noccop.org.vn/Data/vbpq/Airvariable_ldoc_vnHe%20so%20phat%20thai.pdf>" calculates a factor of 0.5764.The calculation of the GHG emission reductions must be recalculated.⇨ PP introduced the Grid Emission Factor given in SQS ref. [46] "Study, definition of Vietnam Grid Emission Factor" (DNA report on GEF), implemented by Ozone Layer Protection Centre, Department of Meteorology, Hydrology and Climate Change, 12/2009.

PP adapted the PDD using the official GEF. The GEF has been validated with a positive result by the DOE in the office of the Department of Meteorology, Hydrology and Climate Change in Hanoi on 16 and 17 November 2010. CAR 1 is closed.

3.5.5 Algorithms and/or formulae used to determine emission reductions

The review has been done in the office of the Department of Meteorology, Hydrology and Climate Change in Hanoi (who calculated the official GEF for the DNA) on 16 and 17 November 2010. The DNA report transparently lays out all the steps and methodological choices necessary to arrive at the final GEF. Our review showed that Mr. Quang (editor of the official document SQS ref. [46]) applied the baseline methodology correctly to calculate project/baseline emissions, leakage and emission reductions. Data sources are referenced. The values used were found to be plausible and conservative.

SQS is satisfied that there are no project activity GHG emissions which will contribute more than 1% of the expected ER/year and which are not addressed in the applied methodology.

SQS concludes that the selected methodology, ACM0002 and Tool to calculate the emission factor for an electricity system, version 1.1, EB 35 annex 12 was the only available version at the time of the calculation, the methodology is applied and selected correctly.
Parameters, options selected and the mathematical operations used for the ex-ante estimation of the project's emission reductions are correct, plausible and conservative as per the methodology applied. As ex-ante option is selected, monitoring is not required.
All assumptions and data used by the DNA in preparing the Study are listed in the PDD, including their references and sources.

All estimates of the baseline emissions are reasonable, correctly quoted and could be replicated using the data and parameter values provided in the PDD during interview with the DNA.

3.6 Additionality of project activity

Following "Tool for the demonstration and assessment of additionality, version 5.2, EB 39", PP identified at step 1 three alternatives:

a. The proposed project activity undertaken without being registered as a CDM project activity;
b. Construction of a fossil-fuel fired power plant or any other type of energy renewable power plant with equivalent amount of annual electricity generation;
c. Continuation of the current situation (no project activity or other alternatives undertaken).

Alternative a is not credible and realistic, without assistance of CDM the project is not attractive.
Alternative b - being in a mountainous location with no access roads, it is an unsuitable site for a fossil fuel power station for either the Project Entity or state to build a fossil fuel powered plant. Also the PP has no experience with fossil fuel power stations.
Alternative c - Only alternative c is judged credible and realistic as the location being mountainous and remote would not support a fossil fuel plant. Also the PP has no experience with fossil fuel power stations. See PDD B.5. p. 11 and 12.

3.6.1 The main barrier identified is the investment barrier. This is clearly described in section B.5. in the PDD and DOE con Prior consideration of the clean development mechanism

Evidence to assess prior consideration of the project and start date was assessed at the project site during the validation visit. Documentation was confirmed as authentic since original company stamped documents were supplied. A crosscheck was performed by interview with PP and comparison with other documents was made (such as construction schedule and approval dates). Also consulted was the original of SQS ref. [8], the Board resolution dated 11/08/2008. This date is after the publication of the FSR (Feasibility Study report) SQS ref. [32], [33], [34] and [35], dated February 2008 (latest figures in the FSR).

Start date of the project activity was set to 18/02/2009 which is the date when the contract for civil works for the project was signed – see SQS ref. [22], DS 2A first contract. Prior consideration of the CDM was shown during the interview on site visit with a chronological milestone list considering CDM with documentary proof and resolution dated 11/08/2008 which states that the project is not feasible without CDM. As further means of authenticating documentation, the signatory of the resolution participated in the onsite verification (see appendix A and B of this report).

The CDM activity complies with the requirement of EB41 Annex 46 because the project activity started prior to validation and after 02/08/2008 and is thus considered a new project activity in line with EB 49 Annex 22.
The request for notification of prior consideration of the CDM was sent on 06/07/2009 to UNFCCC secretariat so PP respected the 6 months timeline in accordance to VVM – see SQS ref. [7] DS 2A, Prior consideration.
Evidences for continued actions to secure CDM status is evidenced with SQS ref. [11], Carbon asset Management contract and SQS ref. [12], Emissions Purchase contract dated 24/12/2008.

SQS confirms that this is appropriate.

3.6.2 Identification of alternatives

In identifying alternatives to the proposed project, three possibilities were identified, including the proposed project activity undertaken without being registered as a CDM project activity. The project proponent provided the explanation of how second option, i.e. construction of a fossil-fuel fired power plant or any other energy renewable power plants with equivalent amount of annual electricity generation, has been eliminated. The explanation is deemed reasonable and complete, in line with the Tool for the demonstration

and assessment of additionality (version 05.2).

3.6.3 Investment analysis

The financial returns of the proposed project are insufficient to justify the investment according to the validated IRR of 9.58% compared to a benchmark of 14.40%.

Accuracy of the key parameters was assessed by looking at original copies of feasibility study reports, the same which were presented to local authorities to obtain planning permission for the project. This evidence was cross-checked by interviews with (for example) the Project Proponent's Director and Chief of Planning. Please see Appendix B of validation report.

The feasibility study report was completed in February 2008, so before the decision to proceed with the project – signing the first contract for civil works at February 18 2009 - , and also within an acceptable timeframe so that the data would still be valid. DOE can confirm that values in the PDD are fully consistent with the Feasibility Study Report (FSR).

The following table lists the issues mentioned in "Guidelines on the assessment of Investment Analysis" version 03.1.

EB Guideline	Project	Validation
3: Period of assessment	The period of assessment taken is 30 years. This is in accordance with the technical lifetime of the equipment used in the project. This is also more than the official depreciation time which is 10 years for hydropower equipment and 20 years for construction facilities based on the Decision 206/2003/QD-BTC of the Ministry of Finance.	The Decision 206/2003/+D-BTC of the ministry of finance has been consulted and confirms the statement of the PP. The chosen lifespan can be considered as appropriate.
4: Salvage value	Salvage value: The technical lifetime is taken and a salvage value is included.	The financial analysis is calculated over a period of 30 years – the technical lifetime - see Doc financial spreadsheet. DOE can confirm that the fair value is calculated. A final salvage value of 5% of the total project cost has been provided – this is conservative.
5: Depreciation and other non-cash items	Depreciation and other non-cash items such as amortization are not included when calculating the IRR.	Can be confirmed by the DOE. Depreciation and interest on term loan is added back to the profit after tax to calculate the net cash flow.
6: Time of assessment	All calculations are based on data available as of December 2007 i.e. before project start but within two years of decision to proceed.	Project start is 18/02/2009 – date of signature of the contract for civil works – see SQS ref.[22], DS 2A first contract. DOE confirms that the listed input values are consistently applied in all calculations and the gap between publication of the feasibility study and start date of the project is short enough that input values would still be valid when the project activity began.
7: Cessation of implementation	Not relevant for project	Can be confirmed by the DOE.
8: Provision of spreadsheet	Spreadsheet is provided	Spreadsheet - SQS ref. [61] IRR_Dak_Srong_2 A_18_MW_v20 contains all investment analysis. DOE confirms that the results can be reproduced. The spreadsheet will be available to the executive Board, UNFCCC Secretariat and others contracted.
9: Finance expenditures	Financing expenditures are not included when calculating the project IRR.	DOE has verified Financial analysis and can confirm that the costs of financing expenditures are not included in the calculation of project IRR.
10: Equity IRR	The project IRR and not equity IRR is calculated.	DOE has verified the Financial analysis and can confirm that
11: Tax	The project IRR is post-tax.	DOE has verified the Financial Analysis and confirms that actual interest rate has been used in

		the calculation of income tax as per guidance
12: Benchmark selection	The project IRR is calculated and therefore the local commercial lending rate is applied as benchmark. The appropriateness of the commercial lending rate is given as the company will finance the investment with a commercial credit. The usage of this benchmark also corresponds to the Annex Guidance on the Assessment of Investment Analysis of the Additionality tool point 11: "In cases where a benchmark approach is used the applied benchmark shall be appropriate to the type of IRR calculated. Local commercial lending rates or weighted average costs of capital (WACC) are appropriate benchmarks for a project IRR."	DOE has verified project IRR through official documents provided – SQS ref. [14], [28], [30] , IRR_Dak_Srong_2 A_18_MW_v20 SQS ref. [61] SBV Annual Report 2007 As proved through SQS ref.[30] State Bank of Vietnam Base Interest rate and SQS ref. [14] Average Base Rate – DS2A, - the weighted average base rate in the period approaching the decision to proceed was 9.6%. Therefore, according to the country's civil code, commercial interest rate being 150% of the base rate, 14.4% is the benchmark used (according to the decision of the State Bank of Vietnam and the Vietnamese Civil Law codes Article 476 SQS ref. [31]). The benchmark is chosen according to the Guideline.
13: Benchmark validation	The benchmark is based on publicly available data sources.	The data sources have been provided by the PP and proved online by the DOE and can be confirmed as correct. See references in Benchmark selection.
14: Internal company benchmarks	Not applied by project.	
15: Risk premiums	No risk premiums are applied by the project.	
16: Benchmark analysis	A benchmark analysis is made (see identification of appropriate analysis method above)	Comparison analysis is not applicable to the project.
17 and 18: Sensitivity analysis	Sensitivity analysis is made assuming 10% change of project costs, Plant load factor, O&M cost and tariff (change of energy sales). The incidence of operational costs is low, however their variation is included as they are the only annual operational cost factor. These are the variables which constitute more than 20% of cost respectively revenue.	Sensitivity analysis is shown in SQS ref. [61] (IRR_Dak_Srong_2_A_18_MW_v20). The parameter chosen are correct, the variation chosen is 10%, all has been verified on the sheet and the IRR is never higher than 10.05% - so lower than the Benchmark of 14.4%. The likelihood of conditions, such as decrease in construction/operational costs, will only ever go up in a normal economic cycle. Vietnam is experiencing high inflation. So drop in costs is unlikely. PLF is unlikely to change as it is based on hydrological study going which takes rainfall date in that specific are over several years. Three conditions are fulfilled: The data is Government/official approved (State Bank and Decision of State Bank); it is used for investment decisions; and data sources are publicly available.

Parameter	Value applied	Unit	Source of information	SQS ref. Document	DoE assessment		
					Correctness of value applied	Appropriatness of information source	Comment
Benchmark	14.4	%	State Bank of Viet Nam + legally mandated mark up	[14], [28], [30], [31]	OK	OK	According to the country's civil code, commercial interest rate being 150% of the base rate, 14.4% is the benchmark used (according to the decision of the State Bank of Vietnam and the Vietnamese Civil Law codes Article 476 SQS ref. [31]). The benchmark is chosen according to the Guideline.

Depreciation	5 (civils) 10 (equipment)	% %	Decree 203/2009/TT-BTC from the Ministry of Finance	[18]	OK	OK	According to the Decree 203/2009/TT-BTC from the Ministry of Finance PP has chosen 5 % for civil works and 10% for equipment as is it also present practice in Vietnam
Generation capacity	18	MW	Project feasibility study	[33]	OK	OK	The generation capacity is consistent with SQS ref. [33] Feasibility Study, installed capacity. It is also consistent with SQS ref. [21], Equipment contract signed between Hoang Anh Gia Lai Hydropower Joint Stock Company as buyer and Hong Kong Tongqing International Trading Limited as seller.
Plant load factor	37.29	%	Project feasibility study	[32]	OK	OK	Based on feasibility study, in accordance with EB 48 Annex 11 "Guidelines For The Reporting And Validation Of Plant Load Factors" II.3.b [32].
Electricity generated per annum	58,800	MWh	Calculated	[64]	OK	OK	SQS confirms that the product of the annual operation hours with the generation capacity is correctly calculated and verified.
Auxiliary consumption	2.0	%	Estimated		OK	OK	The value and has been crosschecked with other registered projects and is confirmed as conservative.
Electricity sold to the grid	57,624	MWh	Calculated	[64]	OK	OK	SQS confirms that the Electricity generated minus auxiliary consumption is correctly calculated and verified.
Tariff price	761.4	VND/ kWh	Project feasibility study	[38] [65]	OK	OK	The Tariff price is defined in the Project feasibility study [38] with 0.045 USD. This was cross-checked against the Tentative Decisions on Assessment of Economy and Finance for Electricity Generation Projects (Decision 2014/QD-BCN – SQS ref. [65]) as announced by the Ministry of Industry (13 June 2007) stating that hydropower projects' power purchase price are in the range of 2.7 to 5.2 cent/kWh during the dry season and 2.5 to 5.0 cent/kWh during the rainy season respectively. Thus, it is both appropriate as well as conservative as it is on the higher side of the applicable range. It should also be noted that according to the Electricity Law 2005, electricity generators will have the right to sell electricity under a definite-term contract. The experienced inflation the last years in Vietnam has devaluated the Viet Nam Dong significantly against the US-Dollar – currency used in Decision 2014/QD-BCN. The Tariff price of Dak Srong 2a has been assessed against the last few registered large scale projects as well, and it was found to be either in line with the average or more conservative. So the proposed project tariff price can have significant variations. DOE confirms that PP applies the correct value.

Income Tax	0 / 12.5 / 25	%	DECREE 124/2008/ND-CP	[44] [66]	OK	OK	According to Decree No 124_2008_NĐ-CP, INCOME TAX,[44] new enterprises have tax exemption for 4 years. The plant falls under List A domains as defined in Law No 14/QH/2008 [44] so its eligible for investment preferences. The base tax is 25%. The project is located in List C of the tax law – it's in a area with special economic difficulties, so for 5 year the project profits for a tax reduction of 50% – see SQS ref. [44].
Insurance	0.25	%	Estimate	N/a	OK	OK	The value has been crosschecked with SQS ref. [68] – Decision of Minister of Finance. DOE confirms that PP chose a conservative value.
Interest rate on term loan	14.4	%		N/a	OK	OK	DOE confirms that interest rate on term loan is according the FSR – SQS ref. [33] and is correct.
Natural resource tax	2	%	Decision 16/2008/QD-BTC	[19]	OK	OK	Is accordingly to the government decision 16/2008/QD-BTC [19]
Operation and Maintenance costs	1	%		[67]	OK	OK	Decision 2014QD-BCN, 2007, O&M COST [65] defines O&M costs for hydropower projects ≤ 30 MW in the range of 1-2% of the investment costs – PP has chosen the most conservative value.
Project investment costs in general	353'356'000	000's VND	Project feasibility study	[34] [35]	OK	OK	The investment costs are estimated in the Project feasibility study [34] and [35]. The appropriateness of the cost has cross-checked by reviewing the Vietnamese Master plan for Electricity production, "National Development Plan for Electricity, Period 2006-2015, Vision 2025 (June 2006)" which states that per kW investment costs for hydropower projects in Vietnam have a range of 15 million VND/kW to 25 million VND/kW. As the per kW cost of this project is found to be a little under 20 million VND/kW, it was deemed that the overall investment cost is reasonable and correctly applied. The project investment costs including contingency and resettlement costs of Dak Srong 2a have been assessed against the last few registered large scale projects as well, and it was found to be either in line with the average or more conservative.
Project investment costs: Administration and other costs	32,902,000	000's VND	Project feasibility study	[34] [35]	OK	OK	Includes monitoring costs, management cost, land use application fee, environmental protection fee, appraisal fees, COD ceremony fund, equipment and labour force transportation fees, health and safety equipment fund, site audit fees. The cost is taken directly from the feasibility study report – SQS ref. [34] and [35], the original copy of which was presented to the DOE by senior staff management of the PP during the site visit.

Project investment costs: Compensation and land clearance	2,238,000	000's VND	Project feasibility study	[34] [35]	OK	OK	The cost is taken directly from the feasibility study report – SQS ref. [34] and [35], the original copy of which was presented to the DOE by senior staff management of the PP during the site visit. This figure has been approved by the local authorities and hence it was possible for the PP to obtain an LoA from the host DNA. It has been verified that the values have been estimated based on government Decree 197-/2004/ND-CP.
Project investment costs: Contingency	24,604,000	000's VND	Project feasibility study	[34] [35]	OK	OK	The cost is taken directly from the feasibility study report – SQS ref. [34] and [35], the original copy of which was presented to the DOE by senior staff management of the PP during the site visit. The contingency costs over 24,604,000,000 VND represents 7% of entire project cost so is deemed reasonable and conservative.
Project investment costs: IDC (Loan interest)	21,196,000		Project feasibility study	[34] [35]	OK	OK	The cost is taken directly from the feasibility study report – SQS ref. [34] and [35], the original copy of which was presented to the DOE by senior staff management of the PP during the site visit. The figure is consistent with the FSR and 1-3 year moratorium is common practice in Vietnam.
Residual value	5	%	Conservative value added	N/a	OK	OK	The financial analysis is calculated over a period of 30 years – the technical lifetime - see Doc financial spreadsheet [64]. DOE can confirm that the fair value is calculated. A final salvage value of 5% of the total project cost has been provided – this is conservative.

Has been raised:
CL 28: In IRR calculation is an error in the formula in row 28. It has to be corrected ⇨ PP corrected this in IRR v2.0 – CL 28 is closed.
CAR 7: Escalation in O&M costs is an estimation and shall be supported with documentary proofs or be removed from the calculation. If it will be removed, IRR has to be recalculated and resubmitted and Table B.3. Key-Input Parameters has to be adapted. ⇨ PP removed escalation of O&M costs – CAR 7 is closed.

The above mentioned copies of the feasibility reports were once again cross-checked against the PDD, and the DOE has conducted a further examination of the computations in the spreadsheet in addition to the procedures to ensure correctness applied during validation.
DOE has used its local and sectoral experience to confirm that the underlying assumptions are accurate and appropriate and the financial calculations are correct.

3.6.4 Barrier analysis

Step 3 (Barrier analysis) is not performed according to the choice of Step 2 (Investment analysis).
SQS confirms that there is no obligation to proceed to step 3 if step 2 is chosen.

Has been raised:
CAR 8: PP shall submit supporting data for Barrier Analysis or indicate a clear statement that barrier analysis is not performed according to the choice of Step 2 (Investment analysis). ⇨ As this step is optional as per additionality tool, PP removed this step from section B5 of the PDD for simplicity – CAR 8 is closed.

3.6.5 Common practice analysis

The chosen geographical scope of the common practice analysis is the whole of Vietnam. This is deemed reasonable because EVN makes no distinction in policy between power plants in the North or South. There are no sub-grids, for example. So selecting the whole grid as geographical scope is appropriate.
Are considered all existing and planned plants in Vietnam from 2006-2008 listed in EVN Masterplan 2006 for electricity production 2006-2015 – SQS ref. [45], [56],[57],[58], [59] and [60].
Categorization of plants was done in two ways, list all plants which are government/state involved and then separate by size, all projects less than 15MW are considered small scale and are not comparable. Categorization is considered appropriate because government backed projects are very different because the state owned / involved projects have better access to funding, human resource and are not built with the need for shareholder return. Land use are easier (in Vietnam no-one outside of the state can truly own land due to Socialist political system).
PP statistically demonstrates that 107 or 88% of the hydro power plants are developed by the State in the form of state owned IPPs, EVN ownership or by the state taking a shareholding in the power producer – SQS ref. [56], [57], [58], [59] and [60].
Are considered privately owned 14 or 12%. For those plants for which no information was publically found, it has been conservatively assumed that there is private ownership.
Excluding the small scale plants there is still 1 project left. This one was built in 1943 – so not comparable.
It is, hence, concluded that the construction of hydro power plants of the size of Dak Srong 2A by private corporations is not a common practice in Vietnam. Common practice is the development of large scale hydropower by the state.

CAR 5: Remove projects from the common practice data that have been listed on the EB website; and Compare the projects which, after categorising by state/private ownership and large/small scale projects are found to be "similar" to Dak Srong 2A.- ⇨ The dates are verified and corrected – CAR 5 is closed.

DOE can confirm that the proposed CDM project activity is not common practice.

3.7 Monitoring plan

The monitoring plan described in the PDD was checked by desk-review and on-site.
Have been raised:
CL 27: The tables in B.7.1. shall be reformatted according to CDM Template . PDD has to be adapted. ⇨ This has been corrected in the PDD v3.8 ⇨ CL 27 is closed.
CAR 2: Under B.7.1 Parameter Cap_{PJ}, A_{PJ} hast to be integrated, ACM0002 p.17 ⇨ Parameter Cap_{PJ}, A_{PJ} has been integrated - CAR 2 is closed.
CAR 4: The point of measurement has to be described to assure that energy loss of transformers is integrated in the monitoring. This could be integrated in Figure B.1. Project boundary ⇨ The point of measurement will be at the point of delivery of electricity to the grid. A connection diagram is provided demonstrating this (Please see CAR4 Electricity connection diagram.pdf) ⇨ CAR 4 is closed.
CAR 9: PP shall introduce the monitoring of Cap_{PJ} and A_{PJ} as required by ACM0002 ⇨ PP introduced the parameters in the updated PDD – CAR 9 is closed.

FAR 1: The calibration status of Monitoring equipments has to be submitted to DOE. ⇨ To be concluded at the verification stage.
FAR 2: The Monitoring manual has to be established ⇨ To be concluded at the verification stage.
FAR 3: The training plan and the training proofs have to be submitted to the DOE ⇨ To be concluded at the verification stage.
FAR 4: The monitoring system shall be described in more detail. Do the EVN receipts show the net amount of electricity delivered to the grid?
Is on-site metering placed at output to the grid? Does it exclude internal consumption? An electric scheme could be useful.⇨ To be concluded at the verification stage.

DOE's confirms the compliance of the monitoring plan with the requirements of the methodology and that it is feasible to be implemented. This was assessed by interview with the Chief of Planning for the project (see below). Also, the PP has experience of building another hydropower project earlier on and so hopes to take forward experience from that project into this project.
It is DOE's opinion that the project participant's ability to implement and follow the monitoring plan is positive.

The net energy input to the grid will be measured by EVN (State company of Electricity). EVN also owns the measurement equipment and is responsible for their calibration.

3.8 Sustainable development

The Letters of Approval are issued. The confirmation of sustainable development by the host party DNA is confirmed – see SQS ref. [52] and [53].
The host Party's DNA confirmed the contribution of the project to the sustainable development of the host Party.

3.9 Local stakeholder consultation

The stakeholder groups that have been identified and interviewed are local residents, farmers, people affected persons and local political authorities. Staff members from the local environment protection agency also attended. In SQS' opinion, these are the groups affected by the project, and the project participants selected the right groups. The stakeholder meeting for Dak Srong 2 A was held starting at 9 AM on July 28 2008 at the Administrative Building of Kong Ch'ro District People's Committee, Gia Lai Province. SQS ref. [25] DS2A Stakeholder meeting lists the presence and personal evaluations of those present. Different questions were raised and answered correctly. PP was able to give positive answers.
During the on-site visit, the validator was able to verify that a safe and professional solution will be implemented and that the project participants have responded properly to that issue. SQS is satisfied with the manner that the consultation of local stakeholders has been conducted.

3.10 Global stakeholder consultation

The PDD (version 3.0, dated 06/04/2010) was published from 13/05/2010 to the 11/06/2010 on the UNFCCC website. No comments were received.

3.11 Environmental impacts

According to Vietnamese law, hydropower plants need to have their environmental impacts assessed with an Environmental Impact Assessment (EIA), Environmental Impact Evaluation (EIE) or Environment Protection Commitment. The requirement as to which is required depends on the specific project (generally determined based on its reservoir size). The Dak Srong 2 A project has undergone an EIA – SQS ref. [3] and [4] EIA- Dak Srong 2A_VN and EN. This EIA was approved by the relevant local authorities, Gia Lai Provincial People's Committee, on 29/09/2008, SQS ref. 27 DS 2A EIA Approval. In EIA several impact sources are listed during construction phase and Operation phase. PP discusses the list of impacts in PDD Section D1 in detail and actions are described.
Have been defined in EIA as main sources due to the project activity:

- Land clearance;
- Storage and operation employing fuels, machines, transportation and workers;
- Constructing access roads;
- Land levelling and excavation;
- Building of support facilities;
- Constructing main items: nodal sites, penstock, a powerhouse, a tailrace, outside power yard (OPY) station;

- Reservoir bed cleaning;
- Repair and maintenance of vehicles, machines and equipment during construction;
- Maintenance and repair during the operation phase.

PP has defined and realized actions and methods to reduce negative impacts During site visit, the validator could verify that the actions are realized.

3.12 Validation protocol

In order to ensure transparency and organize the corrective or additional information and measures a validation protocol was established for the project (see appendix F). The protocol shows in transparent manner the criteria (requirements), the means of validation and the results from validating the identified criteria including any resulting CAR, FAR and CL.

4 List of Interviewees and Documents Reviewed

The on-site audit and interviews were done according to the on-site visit program (see appendix A) which was communicated to the project owner in advance of the audit.
The following stakeholders have been interviewed during the validation (see appendix B).
The following documents have been assessed during the validation (see appendix C).

5 Validation Team and Reviewer

The following matrix shows the names and roles of the members of the validation team and the reviewer. The reviewer is not a member of the validation team. Certificates of Competence for each validation team member are included in appendix E to this report.

Name	Role (1)	Country	Duties				
			Desk review	On-site audit	Resolution of CAR & CL	Report	Technical review
Hansruedi Bader	LA	Switzerland	X	X	X	X	
Rudolf Brodbeck	TM	Switzerland	X				
Jürg Liechti	TR	Switzerland					X

(1) LA = Lead auditor/assessor; TM = Team member; TE = Technical expert (if any); TR = Technical reviewer

6 Quality Control

Cross checks and/or other plausibility checks undertaken during validation are mentioned in the report or in the protocol. The draft validation report, including the initial validation findings, is checked by an internal reviewer (a member of the validation team) before being submitted to the project participants. The final validation report undergoes a technical review before requesting registration of the project activity. The technical reviewer (not a member of the validation team) is qualified in accordance with SQS' qualification scheme for CDM validation and verification.

7 Appendix A: On-Site Visit Programme

Time from	Time to	Subject	Function Department	Person(s) to contact
06/06/2010				
10.00	13.00	Visit Building site Dak Srong 2 A	HAGL Group Chief of planning	Mr. Nguyen Duy Tan
07/06/2010		**Office Hagl Group**		
08.00	09.00	Meet & greet, kick-off, review PDD	HAGL Group Director Chief of planning Responsible for CDM Projects Kyoto Energy, Project executer Kyoto Energy Project Manager	Mr. Nguyen Van Hung Mr. Nguyen Duy Tan Ms Nguyen Thi Thanh Thao Mr. Bui Thanh Binh Mr. Antony Abraham
09.00	10.00	Financial audit	HAGL Group Fin. Control	Ms Truong Thi thanh Nhung
10.00	12.00	PDD, Monitoring, VVM requirements	Responsible for CDM Projects Kyoto Energy, Project Executive Kyoto Energy Project Manager	Ms Nguyen Thi Thanh Thao Mr. Bui Thanh Binh Mr. Antony Abraham
13.00	16.00	PDD, Monitoring, VVM requirements	Responsible for CDM Projects Kyoto Energy, Project executer Kyoto Energy Project Manager	Ms Nguyen Thi Thanh Thao Mr. Bui Thanh Binh Mr. Antony Abraham

8 Appendix B: Interviews

Family Name	First Name	Organisation	Function	Issues
Mr. Nguyen	Van Hung	HAGL Group Hydropower Joint Stock Co.	Director	Prior considerations, board decisions, financial and technical aspects of the project.
Mr. Nguyen	Duy Tan	HAGL Group Hydropower Joint Stock Co.	Chief of planning	Construction schedule, environment impacts, management of the building site
Ms Truong	Thi Thanh Nhung	HAGL Group Hydropower Joint Stock Co.	Fin. Control	Contract list, invoices, contract management
Ms Nguyen	Thi Thanh Thao	HAGL Group Hydropower Joint Stock Co.	Responsible for CDM Projects	Additionality, Methodology, Project development
Mr. Bui	Thanh Binh	Kyoto Energy Pte. Ltd., CDM Carbon asset Manager	Project Executive	Additionality, Methodology, Project development, PDD, Requests
Mr. Antony	Abraham	Kyoto Energy Pte. Ltd., CDM Carbon asset Manager	Project Manager	Additionality, Methodology, Project development, PDD, Requests

9 Appendix C: Documents Reviewed

SQS Reference	PP Reference	Issuance and/or submission date	Title/Type of Document	Author/Editor/ Issuer
[01]	PDD_Dak Srong 2A	06/04/2010 Version 3.0	Project Design Document	PP
[02]	PDD_Dak Srong 2A	13/07/2010 Version 3.2	Project Design Document	PP
[03]	PDD_Dak Srong 2A	17/08/2010 Version 3.3	Project Design Document	PP
[04]	PDD_Dak Srong 2A	02/09/2010 Version 3.4	Project Design Document	PP
[05]	PDD_Dak Srong 2A	02/09/2010 Version 3.5	Project Design Document	PP
[06]	PDD_Dak Srong 2A	18/11/2010 Version 3.6	Project Design Document	PP
[07]	PDD_Dak Srong 2A	18/11/2010 Version 3.7	Project Design Document	PP
[08]	PDD_Dak Srong 2A	18.11.2010 Version 3.8	Project Design Document	PP
[09]	PDD_Dak Srong 2A	01/12/2010 Version 3.9	Project Design Document	PP
[010]	PDD_Dak Srong 2A	10/12/2010 Version 3.91	Project Design Document	PP
[2]	1.		DS 2A; Business Licence	
[3]	3a	02/2008	EIA – Dak Srong 2A_VN Environment impact assessment	
[4]	3b	02/2008	EIA – Dak Srong 2A_EN Environment impact assesment	
[5]	4,13.	03/06/2008	DS 2A, Investment license	
[6]	5.	12/11/2008	DS 2A, land use approval	
[7]	6,12.	06/07/2009	DS 2A, Prior Consideration	
[8]	8.	11/08/2008	DS 2A Board Resolution	
[9]	10a,37,38,39	02/2008	DS 2A Main Report 2-2008 1	
[10]	10b	02/2008	DS 2A Total estimation 2-2008	
[11]	11a	-	Carbon Assed Management Contract	
[12]	11b	24/12/2008	Emissions Purchase Contract	
[13]	15,16	-	IRR_Dak_Srong_2 A_18_MW	PP
[14]	17,36	-	Average Base Rate – DS2A	PP
[15]	18	26/10/2009	DS 2A, Non ODA	
[16]	19	07/12/2007	Connection Approval	
[17]	20	23/10/2007	DS 2A PPA Approval	
[18]	21	20/10/2009	Depreciation	
[19]	22	14/04/2008	Water tax 2008BTC	
[20]	23	09/2008	DS 2A Construction schedule	
[21]	24	07/07/2009	DS 2A Equipment Contract	
[22]	25	-	DS 2A first contract	
[23]	26	-	DS 2A Project Layout	
[24]	27,40	13/06/2007	Technical Lifespan	
[25]	28	28/07/2008	DS2A Stakeholder Meeting	
[26]	30	37/06/2009	DS2A Trainee List	
[27]	42	29/09/2008	DS 2A EIA Approval	
[28]	Average Base rate	-	Average Base Rate- DS2A	PP

[29]	CL18	04/08/2010	List of Registered CDM Projects in Vietnam	
[30]	CL 19 a	11/08/2010	State Bank of Vietnam Base Interest Rates	
[31]	CL 19 b	25/12/2001	Vietnamese Civil Law codes	
[32]	CL 21 a	02/2008	Feasibility Study Plant load factor	
[33]	CL 21 b	02/2008	Feasibility Study_installed capacity	
[34]	CL 21 c	02/2008	Feasibility Study_total investment	
[35]	CL 21 d	02/2008	Feasibility Study_loan equity ratio	
[36]	CL 21 e	07/12/2007	Grid connection approval	
[37]	CL 21 f	02/2008	Feasibility Study_loan repayment	
[38]	CL 21 g	02/2008	Feasibility Study_tariff	
[39]	CL 21 h	10/07/2010	Contracts overview	
[40]	CL 21 i1	02/2008	EIA Vietnamese	
[41]	CL 21 i2	-	EIA English	
[42]	CL 21 i3	29/09/2008	EIA Approval	
[43]	CL 21 j	11/12/2008	1232008NDCP	
[44]	CL 21 k	03/06/2008	142008QH12	
[45]	CL 24 l	11/2006	3837QDBCN in Power Master Plan	
[46]	EF5 GEF	11/2006	EF5 calculation report.160610	
[47]	EF5 GEF	26/03/2010	EF5 GEF calculation VN	
[48]	IRR	-	IRR_Dak_Srong_2 A_18_MW_v18	
[50]	CL16		ND1642003	
[51]	MOC-Dak Srong 2 A	02/09/2010	Modalities of Communication Form	
[52]	CL22b Host country LoA	20/04/2010	Letter of Approval Host country	
[53]	CL22a Annex 1LoA	27/09/2010	Letter of Approval Switzerland	
[54	CAR 4	12/2009	Electricity connection diagram	
[55]	CAR 5 a	-	Common Practice Analysis	
[56]	CAR 5 b	11/2006	National Power Development masterplan	
[57]	CAR 5 c	-	Overview Policy Renewable Energy Vietnam	
[58]	CAR 5 d	-	Common practice_updated_clean	
[59]	CAR 5 e	-	Common practice_updated_annotated	
[60]	CAR 5 f	-	Common practice_updated_notes	
[61]	IRR	-	IRR Dak Srong 2A V 19	
[62]	Build-Margin		Build-margin – update projectsw	
[63]	MOC	01/12/2010	MOC_Dak Srong 2A	
[64]	IRR	-	IRR Dak Srong 2A	
[65]	Decision 2014QD—BCM	2007	Decision 2014QD-BCN, 2007, O&M COST	Government
[66]	Decree No 124	2008	Decree No 124_2008_NĐ-CP, INCOME TAX	Government
[67]	DakSrong2A		CER Spreadsheet	PP
[68]	33/2004/QĐ-BTC	12/04/2004	Decision of Minister of Finance promulgating construction insurance	Government

10 Appendix D: Certificates of Competence

Name: Hansruedi Bader

Scopes of expertise:		
1	Energy industries (renewable/non-renewable sources)	X
	TA 1.1: Thermal energy generation from fossil fuels as well as thermal energy from solar	X
	TA 1.2: Energy generation from renewable energy sources	X
	TA 1.3: Other energy industries	□
2	Energy distribution	□
	TA 2.1: Electricity distribution	□
	TA 2.2: Heat distribution	□
3	Energy demand	□
	TA 3: Energy demand	□
4	Manufacturing	□
	TA 4.1: Cement sector	□
	TA 4.2: Aluminium	□
	TA 4.3: Iron and steel	□
	TA 4.4: Refinery	□
	TA 4.5: Other manufacturing industries	□
5	Chemical production	□
	TA 5.1: Chemical process industries	□
6	Construction	X
	TA 6.1: Construction	X
7	Transport	□
	TA 7.1: Transport	□
8	Mining/mineral production	□
	TA 8.1: Mining and mineral processes, excluding those included in TA 8.2 below	□
	TA 8.2: Oil and gas industry, coal mine methane recovery and use	□
9	Metal production	□
	TA 9.1: Metal production	□
10	Fugitive emissions from fuels	□
	TA 10.1: Mining and mineral processes, excluding those included in TA 10.2 below	□
	TA 10.2: Oil and gas industry, coal mine methane recovery and use	□
11	Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	□
	TA 11.1: Chemical process industries	□
12	Solvent use	□
	TA 12.1: Chemical process industries	□
13	Waste handling and disposal	X
	TA 13.1: Waste handling and disposal	X
14	Afforestation and reforestation	□
	TA 14.1: Forestry	□
15	Agriculture	□
	TA 15.1: Agriculture	□

Name: Mr Rudolf Brodbeck

Scopes of expertise:

1	Energy industries (renewable/non-renewable sources)	X
	TA 1.1: Thermal energy generation from fossil fuels as well as thermal energy from solar	□
	TA 1.2: Energy generation from renewable energy sources	X
	TA 1.3: Other energy industries	X
2	Energy distribution	□
	TA 2.1: Electricity distribution	□
	TA 2.2: Heat distribution	□
3	Energy demand	□
	TA 3: Energy demand	□
4	Manufacturing	X
	TA 4.1: Cement sector	□
	TA 4.2: Aluminium	□
	TA 4.3: Iron and steel	□
	TA 4.4: Refinery	□
	TA 4.5: Other manufacturing industries	X
5	Chemical production	X
	TA 5.1: Chemical process industries	X
6	Construction	□
	TA 6.1: Construction	□
7	Transport	X
	TA 7.1: Transport	X
8	Mining/mineral production	□
	TA 8.1: Mining and mineral processes, excluding those included in TA 8.2 below	□
	TA 8.2: Oil and gas industry, coal mine methane recovery and use	□
9	Metal production	□
	TA 9.1: Metal production	□
10	Fugitive emissions from fuels	□
	TA 10.1: Mining and mineral processes, excluding those included in TA 10.2 below	□
	TA 10.2: Oil and gas industry, coal mine methane recovery and use	□
11	Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	□
	TA 11.1: Chemical process industries	□
12	Solvent use	X
	TA 12.1: Chemical process industries	X
13	Waste handling and disposal	□
	TA 13.1: Waste handling and disposal	□
14	Afforestation and reforestation	□
	TA 14.1: Forestry	□
15	Agriculture	X
	TA 15.1: Agriculture	X

Name: Mr Jürg Liechti, PhD

Scopes of expertise:

1	Energy industries (renewable/non-renewable sources)	X
	TA 1.1: Thermal energy generation from fossil fuels as well as thermal energy from solar	X
	TA 1.2: Energy generation from renewable energy sources	X
	TA 1.3: Other energy industries	X
2	Energy distribution	X
	TA 2.1: Electricity distribution	X
	TA 2.2: Heat distribution	X
3	Energy demand	X
	TA 3: Energy demand	X
4	Manufacturing industries	X
	TA 4.1: Cement sector	X
	TA 4.2: Aluminium	X
	TA 4.3: Iron and steel	X
	TA 4.4: Refinery	□
	TA 4.5: Other manufacturing industries	X
5	Chemical industry	X
	TA 5.1: Chemical process industries	X
6	Construction	□
	TA 6.1: Construction	□
7	Transport	X
	TA 7.1: Transport	X
8	Mining/mineral production	□
	TA 8.1: Mining and mineral processes, excluding those included in TA 8.2 below	□
	TA 8.2: Oil and gas industry, coal mine methane recovery and use	□
9	Metal production	X
	TA 9.1: Metal production	X
10	Fugitive emissions from fuels	□
	TA 10.1: Mining and mineral processes, excluding those included in TA 10.2 below	□
	TA 10.2: Oil and gas industry, coal mine methane recovery and use	□
11	Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	X
	TA 11.1: Chemical process industries	X
12	Solvent use	X
	TA 12.1: Chemical process industries	X
13	Waste handling and disposal	X
	TA 13.1: Waste handling and disposal	X
14	Afforestation and reforestation	□
	TA 14.1: Forestry	□
15	Agriculture	X
	TA 15.1: Agriculture	X

11 Appendix E: Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CH4	Methane
CL	Clarification Request
CO2	Carbon dioxide
CO2e	Carbon dioxide equivalent
DNA	Designated National Authority
FAR	Forward Action Request
GEF	Grid Emission Factor
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IEE	Initial Environmental Examination
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MVP	Monitoring and Verification Plan
N2O	Nitrous oxide
NGO	Non-governmental Organisation
ODA	Official Development Assistance
PDD	Project Design Document
SQS	Swiss Association for Quality and Management Systems
UNFCCC	United Nations Framework Convention on Climate Change

12 Appendix F: Validation Protocol

Index

Introduction

Objective of CDM validation ([1] 26)
The purpose of validation is to ensure a thorough, independent assessment of proposed project activities submitted for registration as a proposed CDM project activity against the applicable CDM requirements.

Requests ([1] 35-37)

- The DOE shall raise a corrective action request (CAR) if one of the following occurs:
  (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 DOE shall raise a clarification request (CL) if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.
- The DOE shall raise a forward action request (FAR) during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.

Normative References

No.	*Title*	*Version*
[1]	CLEAN DEVELOPMENT MECHANISM VALIDATION AND VERIFICATION MANUAL	01.2
[2]	GUIDELINES ON THE DEMONSTRATION AND ASSESSMENT OF PRIOR CONSIDERATION OF THE CDM	03
[3]	GUIDANCE ON THE ASSESSMENT OF INVESTMENT ANALYSIS	02.1
[4]	GLOSSARY OF CDM TERMS	05
[5]	MODALITIES AND PROCEDURES FOR A CLEAN DEVELOPMENT MECHANISM	unedited

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Protocol 1: General CDM requirements

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
1	**Validation requirements based on paragraph 37 of the CDM modalities and procedures**				
1.1	**APPROVAL**				
(i)	All Parties involved have approved the project activity.	[1] 44	DR	CL	Ok
	Comment / Cross Reference: CL see below.				
1.1.1	The DOE shall determine whether the DNA of each Party indicated as being involved in the proposed CDM project activity in section A.3 of the PDD has provided a written letter of approval. The DOE shall determine whether each letter confirms that: (a) The Party is a Party to the Kyoto Protocol; (b) Participation is voluntary; (c) In the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country; (d) It refers to the precise proposed CDM project activity title in the PDD being submitted for registration.	[1] 45	DR	~~CL 22~~	Ok
	Comment / Cross Reference: CL 22 The LoAs have to be submitted to the auditors				
1.1.2	The DOE shall determine whether the letter(s) of approval is unconditional with respect to (a) to (d) above.	[1] 46	DR	~~CL 22~~	Ok
	Comment / Cross Reference: See CL 22; see 1.1.1.				
1.1.3	The DOE shall determine whether the letter(s) of approval has been issued by the respective Party's designated national authority (DNA) and if in doubt, shall verify with the DNA that the letter of approval is valid for the proposed CDM project activity under validation. A list of DNAs is available on the UNFCCC CDM website.	[1] 47	DR	~~CL 22~~	Ok
	Comment / Cross Reference: Indicate whether the DOE received this letter from the project participants or directly from the DNA; CL 22; see 1.1.1.				
1.1.4	If the DOE doubts the authenticity of the letter of approval, the DOE shall verify with the DNA that the letter of approval is authentic.	[1] 48	DR	~~CL 22~~	Ok
	Comment / Cross Reference: Indicate the means of validation employed to assess the authenticity if paragraph 48 above applies; CL 22, see 1.1.1.				

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	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
1.2	**PARTICIPATION**				
(i)	All project participants have been listed in a consistent manner in the project documentation, and their participation in the project activity has been approved by a Party to the Kyoto Protocol.	[1] 51	DR	~~CL 22~~	Ok
	Comment / Cross Reference: CL 22 The LoAs have to be submitted to the auditors.				
1.2.1	The DOE shall confirm that the project participants are listed in tabular form in section A.3 of the PDD and that this information is consistent with the contact details provided in annex 1 of the PDD. The DOE shall determine whether the participation of each project participant has been approved by at least one Party involved, either in a letter of approval or in a separate letter specifically to approve participation. The DOE shall confirm that no entities other than those approved as project participants are included in these sections of the PDD.	[1] 52	DR	~~CL 22~~	Ok
	Comment / Cross Reference: CL 22 The LoAs have to be submitted to the auditors.				
1.2.2	The DOE shall ensure that the approval of participation has been issued from the relevant DNA and if in doubt shall verify with the DNA that the approval of participation is valid for the proposed project participant.	[1] 53	DR	~~CL 22~~	Ok
	Comment / Cross Reference: CL see 1.1.1.				
1.3	**PROJECT DESIGN DOCUMENT**				
(i)	The PDD used as a basis for validation shall be prepared in accordance with the latest template and guidance from the CDM Executive Board available on the UNFCCC CDM website.	[1] 55	DR	Ok	Ok
	Comment / Cross Reference:				
1.3.1	The DOE shall determine whether the PDD is in accordance with the applicable CDM requirements for completing PDDs.	[1] 56	DR	~~CL 1~~	Ok
	Comment / Cross Reference: PDD form used is version 03. CL 1: The PDD shall have an unequivocal identification; name and version number. Current name: CDM-Executive Board – it can be integrated in the foot-line so it's visible on every page and identified.				

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	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
1.4	**PROJECT DESCRIPTION**				
(i)	The PDD shall 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.	[1] 58	DR	Ok	Ok
	Comment / Cross Reference:				
1.4.1	The DOE shall confirm that the description of the proposed CDM project activity as contained in the PDD sufficiently covers all relevant elements, is accurate and that it provides the reader with a clear understanding of the nature of the proposed CDM project activity.	[1] 59	DR	~~CL 7~~ ~~CL 8~~ ~~CL 9~~ ~~CL 10~~ ~~CL 11~~ ~~CL 15~~	Ok
	Comment / Cross Reference:	CL 7: In the case of the parameter $EF_{CO2,i}$ the source of data shall be referenced exact. Document name and which table/page was used. In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this parameter will not be used. CL 8: Table A.3 shall be reviewed for correctness of indication of years. CL 9: The Internet link in reference 5 shall be verified. CL 10: The Internet link in reference 8 shall be verified. CL 11: The Internet link in reference 12 shall be verified. CL 15: The coordinates shall be verified for correctness.				
1.4.2	For proposed CDM project activities in existing facilities or utilizing existing equipments, the DOE shall conduct a physical site inspection to confirm that the description in the PDD reflects the proposed CDM project activity for the following types of CDM project activities unless other means are specified in the methodology: (a) Large scale projects; (b) Non-bundled small scale projects with emission reductions exceeding 15,000 tonnes per year; (c) Bundled small scale projects, each with emission reductions not exceeding 15,000 tonnes per year; in such case the number of physical site visits may however be based on sampling, if the sampling size is appropriately justified through statistical analysis.	[1] 60	DR	n/a	n/a
	Comment / Cross Reference:	Not applicable			

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	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
1.4.3	For other individual proposed small scale CDM project activities with emission reductions not exceeding 15,000 tonnes per year the DOE may conduct a physical site visit as appropriate.	[1] 61	DR	n/a	n/a
	Comment / Cross Reference:				
1.4.4	For all other proposed CDM project activities not referred to in paragraphs 59 - 61, the DOE shall undertake the validation by reviewing available designs and feasibility studies and may conduct comparison analysis to equivalent projects, as appropriate. The DOE may conduct physical site visit to assess the plan. For proposed CDM project activities for which the DOE does not undertake a physical site inspection this shall be appropriately justified.	[1] 62	DR	Ok	Ok
	Comment / Cross Reference: A physical on site visit has been made on 06/06/2010.				
1.4.5	If the proposed CDM project activity involves the alteration of an existing installation or process, the DOE shall ensure that the project description clearly states the differences resulting from the project activity compared to the pre-project situation.	[1] 63	DR	n/a	Ok
	Comment / Cross Reference:				
1.5	**BASELINE AND MONITORING METHODOLOGY**				
1.5 (a)	***General requirement***				
1.5 (a) 1	The DOE shall ensure that the baseline and monitoring methodologies selected by the project participants comply with the methodologies previously approved by the CDM Executive Board.	[1] 65	DR	Ok	Ok
	Comment / Cross Reference: Also refer to Protocol 2 Methodology ACM0002.				
1.5 (a) 2	To ensure that the project activity meets this general requirement, the DOE shall determine whether: (a) The selected methodology is applicable to the project activity; (b) The selected methodology had been correctly applied.	[1] 66	DR	Ok	Ok
	Comment / Cross Reference: Selected methodology is applicable. Methodology had been correctly applied.				
1.5 (a) 3	The DOE shall ensure that the selected methodology applies to the project activity and has been correctly applied with respect	[1] 67	DR	~~CL 20~~	Ok

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	to following: (a) Project boundary; (b) Baseline identification; (c) Algorithms and/or formulae used to determine emission reductions; (d) Additionality; (e) Monitoring methodology.			~~CL 21 CAR 2~~	
	Comment / Cross Reference:	CL 20: The monitoring system shall be described more in details. Do the EVN receipts show the net amount of electricity delivered to the grid? Is on-site metering placed at output to the grid? Does it exclude internal consumption? An electric scheme would be useful. CL 21 Shall be submitted to DOE the following documents: • Feasibility study and EIA – relevant parts in VN and English version as o Bases for plant load factor o Installed capacity o Total of Investment o Loan: equity ratio o Approval connecting to the grid o Plant load factor o Operational hours o Loan repayment period o Grid price • Overview contract and/or investment situation • EPC (Environment Protection Commitment) in VN and English version, EIA approval • Law/Decree No 24/2007/ND-CP • Law No 14/2008/QH12 dt 03/6/2008 Decision No. 3837QD/BCN on 22/11/2005 (p 19) of Ministry of Industry in VN and English translation. CAR 2: Under B.7.1 Parameter Cap_{PJ}, A_{PJ} hast o be integrated, ACM0002 p.17				
1.5 (b)	***Applicability of the selected methodology to the project activity***				
(i)	The DOE shall validate that the selected baseline and monitoring methodology previously approved by the CDM Executive Board, is applicable to the project activity.	[1] 68	DR	Ok	Ok
	Comment / Cross Reference:				
1.5 (b) 1	The DOE shall determine whether the methodology is correctly quoted and applied by comparing it with the actual text of the applicable version of the methodology available on the UNFCCC CDM website.	[1] 69	DR	Ok	Ok
	Comment / Cross	ACM0002 is correctly applied.			

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	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	Reference:				
1.5 (b) 2	A selected approved methodology applies to the project activity if the applicability conditions of the methodology are met and the project activity is not expected to result in emissions other than those allowed by the methodology. The DOE shall determine whether the choice of methodology is justified and the project participants have shown that the project activity meets each of the applicability conditions of the approved methodology or any tool or other methodology component referred to therein. This shall be done by validating the documentation referred to in the PDD and by verifying that its content is correctly quoted and interpreted in the PDD. If the DOE, based on local and sectoral knowledge, is aware that comparable information is available from sources other than that used in the PDD, then the DOE shall cross check the PDD against the other sources to confirm that the project activity meets the applicability conditions of the methodology.	[1] 70	DR	Ok	Ok
	Comment / Cross Reference: Refer to protocol 2 Methodology ACM0002.				
1.5 (b) 3	If the DOE cannot make a determination regarding the applicability of the selected methodology to the proposed CDM project activity then the DOE shall request clarification of the methodology in accordance with the guidance provided by the CDM Executive Board.	[1] 71	DR	n/a	n/a
	Comment / Cross Reference:				
1.5 (b) 4	If the DOE determines that the proposed CDM project activity does not comply with the applicability conditions of the methodology the DOE may proceed by means of requesting revision to or deviation from the methodology in accordance with the guidance provided by the CDM Executive Board.	[1] 72	DR	n/a	n/a
	Comment / Cross Reference:				
1.5 (b) 5	If the DOE has requested clarification of, revision to or deviation from a methodology, the DOE shall not submit a request for registration until the CDM Executive Board has approved the proposed deviation or revision.	[1] 73	DR	n/a	n/a
	Comment / Cross Reference:				

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
1.5 (b) 6	Under no circumstance shall the DOE consider the submission of a request for registration as a means of seeking clarification from the CDM Executive Board on the applicability of a methodology.	[1] 74	DR	n/a	n/a
	Comment / Cross Reference:				
1.5 (c)	***Project boundary***				
(i)	The PDD shall correctly describe the project boundary, including the physical delineation of the proposed CDM project activity included within the project boundary for the purpose of calculating project and baseline emissions for the proposed CDM project activity.	[1] 77	DR	Ok	Ok
	Comment / Cross Reference: The spatial extent of the project boundary includes the project power plant and all power plants connected physically to the electricity system that the CDM project power plant is connected to.				
1.5 (c) 1	Based on documented evidence and corroborated by a site visit where required by paragraphs 59-62 above, the DOE shall determine whether the delineation in the PDD of the project boundary is correct and meets the requirements of the selected baseline methodology. The DOE also shall confirm that all sources and GHGs required by the methodology have been included within the project boundary. If the methodology allows project participants to choose whether a source or gas is to be included within the project boundary, the DOE shall determine whether the project participants have justified that choice. The DOE shall confirm that the justification provided is reasonable, based on assessment of supporting documented evidence provided by the project participants and corroborated by observations if required.	[1] 78	DR	~~CAR 3~~	Ok
	Comment / Cross Reference: CAR 3: The reservoir has to be included to the project boundary After resolving CAR 3, document reviewed and on site visit, the project boundary can be proofed valid and in accordance to ACM0002.				
1.5 (d)	***Baseline identification***				
(i)	The PDD shall 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.	[1] 80	DR	Ok	Ok
	Comment / Cross Reference: The project is a Greenfield project. As baseline existing power plants would provide electricity to the grid. The baseline is identified correctly and sufficiently.				
(ii)	The DOE shall confirm that any procedure contained in the methodology to identify the most reasonable baseline scenario,	[1] 81	DR	~~CL 16~~	Ok

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	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	has been correctly applied. If the selected methodology requires 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 baseline scenario, the DOE shall consult the methodology on the application of these tools. In such cases, the guidance in the methodology shall supersede the tool. The DOE shall check each step in the procedure described in the PDD against the requirements of the methodology.			~~CL 18 CAR 1~~	
	Comment / Cross Reference: CL 16: The evidences that construction of electric power plants falls under List A domains shall be submitted to DOE. CL 18: PP shall confirm that the listed projects are not CDM projects. In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this part of the PDD has to be adapted. CAR 1: The calculated emission factor (0.602) is not conservative. The document "Study, Definition of Vietnam Grid Emission Factor implemented by Ozone Layer Protection Centre, department of Meteorology, Hydrology and Climate change, 12/2002 <http://www.noccop.org.vn/Data/vbpq/Airvariable_ldoc_vnHe%20so%20phat%20thai.pdf>" calculates a factor of 0.5764. The calculation of the GHG emission reductions must be recalculated. The baseline was identified in accordance to AMS0002.				
1.5 (d) 1	If the methodology requires several alternative scenarios to be considered in the identification of the most reasonable baseline scenario, the DOE shall, based on financial expertise and local and sectoral knowledge, determine whether all scenarios that are considered by the project participants and are supplementary to those required by the methodology, are reasonable in the context of the proposed CDM project activity and that no reasonable alternative scenario has been excluded.	[1] 82	DR	Ok	Ok
	Comment / Cross Reference: See protocol 2 – AMC0002				
1.5 (d) 2	The DOE shall determine whether the baseline scenario identified is reasonable by validating the assumptions, calculations and rationales used, as described in the PDD. It shall ensure that documents and sources referred to in the PDD are correctly quoted and interpreted. The DOE shall cross check the information provided in the PDD with other verifiable and credible sources, such as local expert opinion, if available.	[1] 83	DR	Ok	Ok
	Comment / Cross Reference: See also protocol 3				
1.5 (d) 3	The DOE shall determine whether all applicable CDM requirements have been taken into account in the identification	[1] 84	DR	Ok	Ok

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	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	of the baseline scenario for the proposed CDM project activity, including "relevant national and/or sectoral policies and circumstances." Drawing on its knowledge of the sector and/or advice from local experts, the DOE shall confirm that all relevant policies and circumstances have been identified and correctly considered in the PDD, in accordance with the guidance by the CDM Executive Board.				
	Comment / Cross Reference: Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD and in submitted documents.				
1.5 (d) 4	The DOE shall determine whether the PDD provides 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.	[1] 85	DR	~~CL 12~~ ~~CL 13~~	Ok
	Comment / Cross Reference: CL 12: Which option is chosen: A1 or A2? In annex 3 (p.44) is used A1. The decision shall be documented. In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this part of the PDD has to be adapted. CL 13: Which option is chosen: A1 or A2? In Annex 3 (p.45) is used A1. The decision shall be documented. In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this part of the PDD has to be adapted. 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 CDM project activity.				
1.5 (e)	***Algorithms and/or formulae used to determine emission reductions***				
(i)	The steps taken and equations applied to calculate project emissions, baseline emissions, leakage and emission reductions shall comply with the requirements of the selected baseline and monitoring methodology.	[1] 88	DR	Ok	Ok
	Comment / Cross Reference:				
1.5 (e) 1	The DOE shall determine whether the equations and parameters in the PDD have been correctly applied by comparing them to those in the selected approved methodology. If the methodology provides for selection between different options for equations or parameters, the DOE shall confirm that adequate justification has been provided (based on the choice of the baseline scenario, context of the proposed CDM project activity and other evidence provided) and that the correct equations and parameters have been used, in	[1] 89	DR	~~CL 2~~ ~~CL 3~~ ~~CL4~~ ~~C L5~~ ~~CL6~~	Ok

	Topic / Question		Ref	MoV	Draft Concl.	Final Concl.
	accordance with the methodology selected.					
	Comment / Cross Reference:	CL2: In the case of the parameter "Fi,j,y" the source of data shall be referenced exact. Document name and which table/page was used. Is the correct name of the parameter FCi,y? Please correct it. Which data in Annex 3 correspond to this parameter? In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this parameter will not be used. CL 3: In the case of the parameter "Installed Capacity" the source of data shall be referenced exact. Document name and which table/page was used. Which data in Annex 3 correspond to this parameter? In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this parameter will not be used. CL 4: In the case of the parameter "Electricity Generated" the source of data shall be referenced exact. Document name and which table/page was used. Is the correct name of the parameter is EGy? Please correct it. Which data in Annex 3 correspond to this parameter? In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this parameter will not be used. CL 5: In the case of the parameter "Internal Electricity Consumption" the source of data shall be referenced exact. Document name and which table/page was used. In which formula do you need the parameter? Which data in Annex 3 correspond to this parameter? In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this parameter will not be used. CL 6: In the case of the parameter $EF_{CO2,i}$ the source of data shall be referenced exact. Document name and which table/page was used. In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this parameter will not be used. Equations have been applied and options chosen correctly. Equations and parameters are in accordance with AMC0002.				
1.5 (e) 2	The DOE shall verify the justification given in the PDD for the choice of data and parameters used in the equations. If data and parameters will not be monitored throughout the crediting period of the proposed CDM project activity but have already been determined and will remain fixed throughout the crediting period, the DOE shall assess that all data sources and assumptions are appropriate and calculations are correct, applicable to the proposed CDM project activity and will result in a conservative estimate of the emission reductions. If data and parameters will be monitored on implementation and hence become available only after validation of the project activity, the DOE shall confirm that the estimates provided in the PDD for these data and parameters are reasonable.		[1] 90	DR	Ok	Ok

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	Comment / Cross Reference: All values used in the PDD are considered reasonable in the context of the proposed CDM project activity. The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions. All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.				
1.6	**ADDITIONALITY OF A PROJECT ACTIVITY**				
(i)	The PDD shall describe how a proposed CDM project activity is additional.	[1] 93	DR, I	Ok	Ok
	Comment / Cross Reference:				
1.6.1	The DOE shall assess and verify the reliability and credibility of all data, rationales, assumptions, justifications and documentation provided by project participants to support the demonstration of additionality. This requires the DOE to critically assess the presented evidence, using local knowledge and sectoral and financial expertise.	[1] 93	DR,I	Ok	Ok
	Comment / Cross Reference: The validation report shall clearly describe all steps taken, and sources of information used, by the DOE to cross-check the information contained in the PDD on this matter. The validation report shall contain information regarding how the DOE has determined that the documentation assessed is authentic, where appropriate.				
1.6.2	The DOE shall consider tools and documents provided by the CDM Executive Board to demonstrate the additionality of proposed CDM project activities, as well as specific complementary or alternative requirements included in approved CDM methodology.	[1] 94	DR,I	Ok	Ok
	Comment / Cross Reference: The additionality was shown by means of investment barrier.				
1.6 (a)	***Prior consideration of the clean development mechanism***				
(i)	If the project activity start date is prior to the date of publication of the PDD for stakeholder comments, it shall be demonstrated that the CDM benefits were considered necessary in the decision to undertake the project as a proposed CDM project activity.	[1] 96	DR	Ok	Ok
	Comment / Cross Reference:				
1.6 (a) 1	The DOE shall confirm that the start date of the project activity, reported in the PDD, is in accordance with the "Glossary of CDM terms". If the reported date is not in accordance with the glossary, the DOE shall raise a CAR to ensure that the start	[1] 97	DR	Ok	Ok

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	Topic / Question		Ref	MoV	Draft Concl.	Final Concl.
	date is correctly reported in a revised PDD. In particular, for project activities that require construction, retrofit or other modifications, the date of commissioning cannot be considered the project activity start date.					
	Comment / Cross Reference:	Start date is in accordance with the "Glossary of CDM terms". Start date is defined as the date on which the contract of civil works was signed (18/02/2009).				
1.6 (a) 2	The DOE, in accordance with the guidance from the Board [2], shall determine whether it is a new project activity (project activities with staring date on or after 02 August 2008) or an existing project activity (project activities with a start date before 02 August 2008).		[1] 98	DR, I	Ok	Ok
	Comment / Cross Reference:	Starting date is after 02/08/2008. As per guidance of EB Meeting report, annex 22, the PP notified the UNFCCC of the intent to implement the project as CDM project activity within six months and his notification was accordingly acknowledged as received on 06/07/2009.				
1.6 (a) 3	For a new project activity with a start date on or after 2 August 2008 and for which PDD has not been published for global stakeholder consultation or a new methodology proposed to the Executive Board before the project activity start date, the DOE shall ensure by means of confirmation from the DNA or UNFCCC secretariat that PPs had informed the Host Party DNA and/or the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status. If such a notification has not been provided by the project participants the DOE shall determine that the CDM was not seriously considered in the decision to implement the project activity.		[1] 99	DR, I	Ok	Ok
	Comment / Cross Reference:	Starting date is after 02/08/2008. As per guidance of EB Meeting report, annex 22, the PP notified the UNFCCC of the intent to implement the project as CDM project activity within six months and his notification was accordingly acknowledged as received on 06/07/2009.				

<table>
<tr><th></th><th>Topic / Question</th><th>Ref</th><th>MoV</th><th>Draft Concl.</th><th>Final Concl.</th></tr>
<tr><td rowspan="2">1.6 (a) 4</td><td>For an existing project activity with a start date before 2 August 2008, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, the DOE shall assess the project participant's prior consideration of the CDM through document reviews and shall satisfy following requirements:
(a) Evidence that must indicate that awareness of 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. Evidence to support this would include, inter alia, 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.
(b) 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. Evidence to support this should include, inter alia, contracts with consultants for CDM/PDD/methodology services, Emission Reduction Purchase Agreements or other documentation related to the sale of the potential CERs (including correspondence with multilateral financial institutions or carbon funds), evidence of agreements or negotiations with a DOE for validation services, submission of a new methodology to the CDM Executive Board, publication in newspaper, interviews with DNA, earlier correspondence on the project with the DNA or the UNFCCC secretariat.

<table><tr><th>Evidence for prior consideration of CDM</th><th>Yes / No</th></tr><tr><td>Evidence of awareness of the CDM prior to the project activity start date.</td><td>Yes</td></tr><tr><td>Evidence that the benefits of the CDM were a decisive factor in the decision to proceed with the project,</td><td>Yes</td></tr><tr><td>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</td><td>Yes</td></tr><tr><td></td><td></td></tr></table></td><td>[1] 100</td><td>DR</td><td>n/a</td><td>n/a</td></tr>
<tr><td colspan="5">Comment / Cross Reference: See SQS Reference 1.</td></tr>
<tr><td>1.6 (a) 5</td><td>If evidence to support the serious prior consideration of the CDM as indicated above is not available the DOE shall determine that the CDM was not considered in the decision to implement the project activity.</td><td>[1] 101</td><td>DR</td><td>n/a</td><td>n/a</td></tr>
</table>

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	Comment / Cross Reference:				
1.6 (b)	***Identification of alternatives***				
(i)	The PDD shall identify credible alternatives to the project activity in order to determine the most realistic baseline scenario, unless the approved methodology that is selected by the proposed CDM project activity prescribes the baseline scenario and no further analysis is required (e.g., methodology ACM0002).	[1] 103	DR	Ok	Ok
	Comment / Cross Reference:				
1.6 (b) 1	The DOE shall assess the list of alternatives given in the PDD and ensure that: (a) 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; (b) 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; (c) The alternatives comply with all applicable and enforced legislation.	[1] 104	DR	Ok	Ok
	Comment / Cross Reference: Also refer to protocol 2.				
1.6 (c)	***Investment analysis***		Ok		
(i)	If investment analysis has been used to demonstrate the additionality of the proposed CDM project activity, the PDD shall provide evidence that the proposed CDM project activity would not be: (a) The most economically or financially attractive alternative; or (b) Economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs).	[1] 106	DR	Ok	Ok
	Comment / Cross Reference: Evidence (b) is sufficiently given in the PDD.				
(ii)	Project participants can show this through one of the following approaches: (a) Demonstrate that 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	[1] 107	DR	~~CL 19~~	Ok

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	and demonstrate that there is at least one alternative which is less costly than the proposed CDM project activity; (b) The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative; (c) The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.				
	Comment / Cross Reference: CL 19: The reference 3 "State Bank of Vietnam and Vietnamese civil law codes" shall figure in the text of the page. If footnote 3 is relevant – please submit Vietnamese and English version of relevant parts. Investment analysis was done by means of option (c).				
(iii)	The DOE shall comply with the latest version of the "Guidance on the Assessment of Investment Analysis" as provided by the CDM Executive Board.	[1] 108	DR	Ok	Ok
	Comment / Cross Reference: Investment analysis compiles with the "Guidance on the Assessment of Investment Analyses" version 3.				
1.6 (c) 1	To verify the accuracy of financial calculations carried out for any investment analysis, the DOE shall: (a) Conduct 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; (b) Cross-check the parameters against third-party or publicly available sources, such as invoices or price indices; (c) Review feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants; (d) Assess the correctness of computations carried out and documented by the project participants; (e) Assess the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur, and the likelihood of these conditions.	[1] 109	DR	Ok	Ok
	Comment / Cross Reference: See Validation Report.				
1.6 (c) 2	To confirm the suitability of any benchmark applied in the investment analysis, the DOE shall: (a) Determine whether the type of benchmark applied is suitable for the type of financial indicator presented; (b) Ensure that any risk premiums applied in determining the benchmark reflect the risks associated with the project type or activity; (c) Determine whether it is reasonable to assume that no	[1] 110	DR	Ok	Ok

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	investment would be made at a rate of return lower than the benchmark by, for example, assessing previous investment decisions by the project participants involved and determining whether the same benchmark has been applied or if there are verifiable circumstances that have led to a change in the benchmark.				
	Comment / Cross Reference: (a) Determination of type of Benchmark is done by means of data provided by the State Bank of Vietnam. Benchmark applied is deemed suitable by the auditors. See also Validation Report.				
1.6 (c) 3	The Board clarified that in cases where project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed project activities, DOEs are required to ensure that: (a) The FSR has 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; (b) The values used in the PDD and associated annexes are fully consistent with the FSR, and where inconsistencies occur the DOE should validate the appropriateness of the values; (c) On the basis of its specific local and sectoral expertise, confirmation is 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.	[1] 111	DR	Ok	Ok
	Comment / Cross Reference: Confirm whether the underlying assumptions are appropriate and the financial calculations are correct.				
1.6 (d)	***Barrier analysis***				
(i)	If barrier analysis has been used to demonstrate the additionality of the proposed CDM project activity, the PDD shall demonstrate that the proposed CDM project activity faces barriers that: (a) Prevent the implementation of this type of proposed CDM project activity; (b) Do not prevent the implementation of at least one of the alternatives.	[1] 113	DR	n/a	n/a
	Comment / Cross Reference:				
1.6 (d) 1	Issues that have a clear direct impact on the financial returns of the project activity cannot be considered barriers and shall be assessed by investment analysis. This does not refer to either	[1] 114	DR	n/a	n/a

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	(a) Risk related barriers, for example risk of technical failure, that could have negative effects on financial performance, or (b) Barriers related to the unavailability of sources of finance for the project activity.				
	Comment / Cross Reference:				
1.6 (d) 2	The DOE shall apply a two-step process to assessing the barrier analysis performed, as follows: (a) *Determine whether the barriers are real.* The DOE shall assess the available evidence and/or undertake interviews with relevant individuals (including members of industry associations, government officials or local experts if necessary) to determine whether the barriers listed in the PDD exist. The DOE shall ensure 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. If existence of a barrier is substantiated only by the opinions of the project participants, the DOE shall not consider this barrier to be adequately substantiated. If the DOE considers, on the basis of its sectoral or local expertise, that a barrier is not real or is not supported by sufficient evidence, it shall raise a CAR to have reference to this barrier removed from the project documentation; (b) *Determine whether the barriers prevent the implementation of the project activity but not the implementation of at least one of the possible alternatives.* Since not all barriers present an insurmountable hurdle to a project activity being implemented, the DOE shall apply its 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.	[1] 115	DR	n/a	n/a
	Comment / Cross Reference:				
1.6 (e)	***Common practice analysis***				
(i)	For large-scale CDM project activities, unless the proposed project type is first-of-its kind, common practice analysis shall be carried out as a credibility check of the other available evidence used by the project participants to demonstrate additionality. This is a test to complement the investment analysis (Step 2 of the additionality tool) or barrier analysis (Step 3 of the additionality tool) to confirm that the project	[1] 117	DR	~~CAR 5~~	Ok

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	activity is not widely observed and commonly carried out in the region.				
	Comment / Cross Reference: CAR 5: Remove projects from the common practice data that have been listed on the EB website; and Compare the projects which, after categorising by state/private ownership and large/small scale projects are found to be "similar" to Dak Srong 2a.				
1.6 (e) 1	The DOE shall use its local and sectoral expertise to: (a) Assess whether the geographical scope (e.g. the defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type. For certain technologies the relevant region for assessment will be local and for others it may be transnational / global. If a region other than the entire host country is chosen, the DOE shall assess the explanation why this region is more appropriate; (b) Using official sources and local and industry expertise, determine 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; (c) If similar and operational projects, other than CDM project activities, are already "widely observed and commonly carried out" in the defined region, assess whether there are essential distinctions between the proposed CDM project activity and the other similar activities.	[1] 118	DR	n/a	n/a
	Comment / Cross Reference:				
1.7	**MONITORING PLAN**				
(i)	The PDD shall include a monitoring plan. This monitoring plan shall be based on the approved monitoring methodology applied to the proposed CDM project activity.	[1] 120	DR	Ok	Ok
	Comment / Cross Reference:				
1.7.1	The DOE shall apply a two-step process to assessing compliance with this requirement, as follows: (a) *Compliance of the monitoring plan with the approved methodology.* The DOE shall: (i) By means of document review, identify the list of parameters required by the selected approved methodology; (ii) Confirm that the monitoring plan contains all necessary parameters, that they are clearly described and that the means	[1] 121	DR	~~CL 14~~ ~~CAR 4~~ ~~FAR 1~~ ~~FAR 2~~ ~~FAR~~	Ok

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	of monitoring described in the plan complies with the requirements of the methodology; (b) *Implementation of the plan.* The DOE shall, by means of review of the documented procedures, interviews with relevant personnel, project plans and any physical inspection of the proposed CDM project activity site in accordance with paragraphs 59-62, assess whether: (i) The monitoring arrangements described in the monitoring plan are feasible within the project design; (ii) The means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified.			~~3~~ ~~FAR~~ 4	
	Comment / Cross Reference:	CL 14: The consistency of terms for function used shall be verified and synchronized. Shall be included the responsibility for data archiving CAR 4 The point of measurement has to be described to assure that energy loss of transformers is integrated in the monitoring. This could be integrated in Figure B.1. Project boundary FAR 1: The calibration status of Monitoring equipments has to be submitted to DOE. FAR 2: The Monitoring manual has to be established FAR 3: The training plan and the training proofs have to be submitted to the DOE. FAR 4: The monitoring system shall be described more in details. Do the EVN receipts show the net amount of electricity delivered to the grid? Is on-site metering placed at output to the grid? Does it exclude internal consumption? An electric scheme could be useful. The monitoring plan is in accordance with the methodology; monitoring arrangements are feasible and project participants able to implement the monitoring plan.				
1.8	**SUSTAINABLE DEVELOPMENT**				
(i)	CDM project activities shall assist Parties not included in Annex I to the Convention in achieving sustainable development.	[1] 123	DR, I	~~CL~~	Ok
	Comment / Cross Reference:	See CL below			
1.8.1	The DOE shall determine whether the letter of approval by the DNA of the host Party confirms the contribution of the proposed CDM project activity to the sustainable development of the host Party.	[1] 124	DR, I	~~CL 16~~	Ok

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	Comment / Cross Reference: CL 16: Letter of approval has not been issued yet.				
1.9	**LOCAL STAKEHOLDER CONSULTATION**				
(i)	Local stakeholders [4] shall be invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website.	[1] 126	DR, I	Ok	Ok
	Comment / Cross Reference:				
1.9.1	The DOE shall, by means of document review and interviews with local stakeholders as appropriate, determine whether: (a) Comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity, have been invited; (b) The summary of the comments received as provided in the PDD is complete; (c) The project participants have taken due account of any comments received and have described this process in the PDD.	[1] 127	DR, I	Ok	Ok
	Comment / Cross Reference: A stakeholder consultation has been conducted and actions taken/answers given deemed as appropriate by the audit team.				
1.10	**ENVIRONMENTAL IMPACTS**				
(i)	Project participants shall submit documentation to the DOE on the analysis of the environmental impacts of the project activity in accordance with paragraph 37(c) of the CDM modalities and procedures [5].	[1] 129	DR, I	Ok	Ok
	Comment / Cross Reference:				
1.10.1	The DOE shall confirm, by means of a document review and/or using local official sources and expertise, whether the project participants have undertaken an analysis of environmental impacts and, if required by the host Party, an environmental impact assessment.	[1] 130	DR, I	Ok	Ok
	Comment / Cross Reference: The validation report shall describe whether the project participants have undertaken an analysis of environmental impacts and, if required by the host Party, an environmental impact assessment in accordance with procedures as required by the host Party.				
2	**Specific validation activities VVM V1.2 Section F, paragraph 134 to 171 not applicable**				

Protocol 2: Methodological requirements (incl. tools)

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
3	**Methodology ACM0002 version 11**				
3.1	**General applicability**				
3.1.1	This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant) (b) involve a capacity addition (c) involve a retrofit of (an) existing plant(s) (d) involve a replacement of (an) existing plant(s).		DR	Ok	ok
	Applicability checklist: Criterion discussed in the PDD? — Yes Compliance provable? — Yes Compliance verified? — Yes Is the option correctly presented and confirmed? — Yes				
	Comment / Cross Reference: It is a new power plant.				
3.1.2	Applicability Criterion 1 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;		DR	Ok	ok
	Applicability checklist: Criterion discussed in the PDD? — Yes Compliance provable? — Yes Compliance verified? — Yes				
	Comment / Cross: Project activity is the installation of a new hydro power plant with reservoir.				

MoV = Means of Validation; DR = Document Review; I = Interview; N/A = Not Applicable
CAR = Corrective Action Request, CL = Clarification Request, FAR = Forward Action Request

<table>
<tr><th></th><th>Topic / Question</th><th>Ref</th><th>MoV</th><th>Draft Concl.</th><th>Final Concl.</th></tr>
<tr><td></td><td>Reference:</td><td></td><td></td><td></td><td></td></tr>
<tr><td>3.1.3</td><td>Applicability Criterion 2

In the case of capacity additions, retrofits or replacements (except for wind, solar, wave or tidal power capacity addition projects which use 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 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;

<table><tr><th>Applicability checklist</th><th>Yes / No / NA</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr><tr><td></td><td></td></tr></table></td><td></td><td>n/a</td><td>Ok</td><td>ok</td></tr>
<tr><td></td><td>Comment /
Cross
Reference:</td><td></td><td></td><td></td><td></td></tr>
<tr><td>3.1.3</td><td>Applicability Criterion 3

In case of hydro power plants, one of the following conditions must apply:

<table><tr><th>Applicability checklist</th><th>Yes / No / NA</th></tr><tr><td>The project activity is implemented in an existing reservoir, with no change in the volume of reservoir</td><td>NA</td></tr><tr><td>The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m^2</td><td>NA</td></tr><tr><td>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/m^2</td><td>Yes</td></tr></table></td><td></td><td>DR</td><td>Ok</td><td>ok</td></tr>
<tr><td></td><td>Comment /
Cross
Reference:</td><td></td><td></td><td></td><td></td></tr>
</table>

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	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
3.1.3	Applicability Criterion 4 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. Applicability checklist: Criterion discussed in the PDD? — Yes / No / NA Compliance provable? — Yes / No / NA Compliance verified? — Yes / No / NA Comment / Cross Reference:		DR	n/a	n/a
3.2	**Description of the sources and gases included in the project boundary**				
	Integrate the required amount of sub-checklists for sources and gases as given by the methodology applied and comment on at least every line answered with "No"				
3.2.1	Baseline CO_2 emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. Boundary checklist: Source and gas(es) discussed in the PDD? — Yes Inclusion / exclusion justified? — Yes Explanation / Justification sufficient? — Yes Consistency with monitoring plan? — Yes Comment / Cross Reference:		DR	n/a	n/a
3.2.2	Project Activity For geothermal power plants, fugitive emissions of CH_4 and CO_2 from non-condensable gases contained in geothermal steam**.** Boundary checklist: Source and gas(es) discussed in the PDD? — Yes / No Inclusion / exclusion justified? — Yes / No Explanation / Justification sufficient? — Yes / No Consistency with monitoring plan? — Yes / No		DR	n/a	n/a

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	Comment / Cross Reference:				
3.2.3	Project Activity CO_2 emissions from combustion of fossil fuels for electricity generation in solar thermal power plants and geothermal power plants. **Boundary checklist** / **Yes / No** Source and gas(es) discussed in the PDD? — Inclusion / exclusion justified? — Explanation / Justification sufficient? — Consistency with monitoring plan? —		DR	n/a	n/a
	Comment / Cross Reference:				
3.2.3	Project Activity For hydro power plants, emissions of CH4 from the reservoir. **Boundary checklist** / **Yes / No** Source and gas(es) discussed in the PDD? Yes Inclusion / exclusion justified? Yes Explanation / Justification sufficient? Yes Consistency with monitoring plan? Yes		DR	OK	Ok
	Comment / Cross Reference:				
3.3	**Description of how the baseline scenario is identified and description of the identified baseline scenario**				
3.3.1	If the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following: **Baseline identification checklist** / **Yes / No** Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system". — Yes Explanation / Justification sufficient? — Yes Compliance provable? — Yes		DR	~~CAR 1~~ ~~CL 23~~	

<table>
<tr><th></th><th>Topic / Question</th><th>Ref</th><th>MoV</th><th>Draft Concl.</th><th>Final Concl.</th></tr>
<tr><td></td><td>Comment / Cross Reference:</td><td colspan="4">CL 23: In the PDD version 3.2, dated 13/07/2010, PP submitted the Emission factor of the grid as described in “Tool to calculate the emission factor for an electricity system” version 02. DOE raised CAR 1. The official Grid Emission Factor of Vietnam published by the Department of Meteorology, Hydrology and Climate Change of 12/2009 is lower than the calculated Grid Emission Factor of the PP.
SQS is on the opinion that the use of official GEF is conservative – so applicable – if this factor is more conservative that the calculated factor through PP following “Tool to calculate the emission factor of…”
To satisfy EB DOE see two possibilities:
To have access to the data used for the official GEF calculation to validate it following “Tool to calculate” or that PP introduces again his proper calculation of the GEF in a way that it can be validated against the ‘tool to calculate…’ to proof the conservativeness of the official GEF and choose then the official for conservativeness.</td></tr>
<tr><td rowspan="2">3.3.2</td><td>If the project activity is a capacity addition to existing grid-connected renewable power plant/unit, the baseline scenario is the following:

<table><tr><th>Baseline identification checklist</th><th>Yes / No</th></tr><tr><td>In the absence of the CDM project activity, the existing facility would continue to supply electricity to the grid at historical levels, until the time at which the generation facility would likely be replaced or retrofitted ($DATE_{BaselineRetrofit}$). From that point of time onwards, the baseline scenario is assumed to correspond to the project activity, and no emission reductions are assumed to occur.</td><td></td></tr><tr><td>Explanation / Justification sufficient?</td><td></td></tr><tr><td>Compliance provable?</td><td></td></tr></table></td><td></td><td>DR, I</td><td>n/a</td><td>n/a</td></tr>
<tr><td>Comment / Cross Reference:</td><td colspan="4"></td></tr>
<tr><td rowspan="2">3.3.3</td><td>If the project activity is the retrofit or replacement of existing grid-connected renewable power plant/unit(s) at the project site, the following step-wise procedure to identify the baseline scenario shall be applied:

<table><tr><th>Step 1 realistic and credible alternative baseline scenarios for power generation</th><th>Yes / No</th></tr><tr><td>Is Step 1 to identify realistic and credible alternative baseline scenarios for power generation correctly applied using the "Combined tool to identify the baseline scenario and demonstrate additionality?</td><td></td></tr><tr><td>Do the options considered include P1, P2 and P3?</td><td></td></tr><tr><td>Explanation / Justification sufficient?</td><td></td></tr><tr><td>Compliance provable?</td><td></td></tr></table></td><td></td><td>DR, I</td><td>n/a</td><td>n/a</td></tr>
</table>

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	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	<table><tr><th>Step 2 Barrier Analysis</th><th>Yes / No</th></tr><tr><td>Is Step 2 correctly applied by using Step 2 of the “Combined tool to identify the baseline scenario and demonstrate additionality”?</td><td></td></tr><tr><td>Explanation / Justification sufficient?</td><td></td></tr><tr><td>Compliance provable?</td><td></td></tr></table> <table><tr><th>Step 3 Investment Analysis</th><th>Yes / No</th></tr><tr><td>Apply an investment comparison analysis, if more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P3.</td><td></td></tr><tr><td>Has the investment comparison analysis been applied following Step 3 of the “Combined tool to identify the baseline scenario and demonstrate additionality”?</td><td></td></tr><tr><td>Apply a benchmark analysis, if more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P2.</td><td></td></tr><tr><td>Has the benchmark analysis been applied following Step 2b of the “Tool for the demonstration and assessment of additionality”?</td><td></td></tr></table> Comment / Cross Reference:				
3.3.4	In case of any modification or retrofit of existing facilities: Is data available to determine the historic production level?		DR, I	n/a	n/a
	Comment / Cross Reference:				
3.3.5	In case of any modification or retrofit of existing facilities: Have conservative assumptions been applied in order to estimate the point in time when the existing equipment needs to be replaced?		DR, I	n/a	n/a
	Comment / Cross Reference:				
3.3.6	Describe why the alternative scenarios are credible and realistic?		DR, I	Ok	Ok
	Comment / Cross See PDD, B4. Reference:				
3.3.7	Can the list of alternatives considered to be complete, why? Is as baseline scenario the project activity without being registered as CDM project included?		DR	Ok	Ok

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CAR = Corrective Action Request, CL = Clarification Request, FAR = Forward Action Request

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	Comment / Cross Reference:				
3.3.8	In case several different facilities, technologies, outputs or services are present in the project, are separately alternative scenarios for each of them included? Have realistic combinations been considered as project scenario?		DR	n/a	n/a
	Comment / Cross Reference:				
3.3.9	Does the project identify correctly and exclude those options not in line with regulatory or legal requirements?		DR	Ok	Ok
	Comment / Cross Reference:				
3.3.10	If a scenario does not comply with the mandatory laws and regulations; it is clearly demonstrated that the law and/or regulation is systematically not enforced in the country?		DR	Ok	Ok
	Comment / Cross Reference:				
3.3.11	Changes are required for methodology implementation in 2nd and 3rd crediting periods: Has the continued validity of the baseline been correctly assessed?		DR	n/a	n/a
	Comment / Cross Reference:				

Protocol 3 Tool to calculate the emission factor for an electricity system

According ACM0002 baseline emissions include only CO_2 emissions from electricity generation in fossil fuelfired power plants that are displaced due to the project activity. The methodology assumes that all project electricity generation above baseline levels would have been generated by existing grid-connected powerplants and the addition of new grid-connected power plants. Thus ACM0002 requires the use of the "Tool to calculate the emission factor for an electricity system" to determine the combined margin (CM) CO_2 emission factor.

<table>
<tr><th></th><th>Topic / Question</th><th>Ref</th><th>MoV</th><th>Draft Concl.</th><th>Final Concl.</th></tr>
<tr><td>4</td><td colspan="5">Tool to calculate the emission factor for an electricity system</td></tr>
<tr><td>4.1</td><td colspan="5">Justification of the choice of the tool and why it is applicable to the project activity.</td></tr>
<tr><td rowspan="2">4.1.1</td><td>Is the applied tool considered the most appropriate one?</td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="5">Comment / Cross Reference: The tool required by ACM0002.</td></tr>
<tr><td rowspan="2">4.1.1</td><td>Criterion 1:
Is the tool used for the purpose of calculating baseline emissions where a project activity supplies electricity to a grid?
<table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>Yes</td></tr></table></td><td></td><td>DR</td><td>Ok</td><td>Ok</td></tr>
<tr><td colspan="5">Comment / Cross Reference:</td></tr>
<tr><td rowspan="2">4.1.1</td><td>Criterion 2:
Is the tool used for the purpose of calculating baseline emissions for a project activity that results in savings of electricity that would have been provided by the grid?
<table><tr><th>Applicability checklist</th><th>Yes / No</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Yes</td></tr><tr><td>Compliance provable?</td><td>Yes</td></tr><tr><td>Compliance verified?</td><td>yes</td></tr></table></td><td></td><td>DR</td><td>Ok</td><td>Ok</td></tr>
<tr><td colspan="5">Comment / Cross Reference:</td></tr>
<tr><td>4.1.1</td><td>Criterion 3:
Is the tool used for the purpose of calculating project and leakage emissions in case where a project activity consumes electricity from the</td><td></td><td>DR</td><td>n/a</td><td>n/a</td></tr>
</table>

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CAR = Corrective Action Request, CL = Clarification Request, FAR = Forward Action Request

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	grid or results in increase of consumption of electricity from the grid outside the project boundary? Applicability checklist / Yes / No Criterion discussed in the PDD? Compliance provable? Compliance verified?				
	Comment / Cross Reference:				
4.2	**Description of the parameters included in the tool**				
	Integrate the required amount of sub-checklists for parameters as given by the tool applied and comment on at least every line answered with "No"				
4.2.1	Parameter: $EF_{grid,CM,y}$ Combined margin CO2 emission factor for grid connected power generation in year y Unit: tCO2/MWh Type: calculated Boundary checklist / Yes / No Parameter discussed in the PDD? Yes Inclusion / exclusion justified? Yes Explanation / Justification sufficient? Yes Consistency with monitoring plan? Yes		DR	Ok	Ok
	Comment / Cross Reference:				
4.2.2	Parameter: $EF_{grid,BM,y}$ Build margin CO2 emission factor for grid connected power generation in year y Unit: tCO_2/MWh Type: calculated Boundary checklist / Yes / No Parameter discussed in the PDD? Yes Inclusion / exclusion justified? Yes Explanation / Justification sufficient? Yes Consistency with monitoring plan? Yes				
	Comment / Cross				

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	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	Reference:				
4.2.3	Parameter: $EF_{grid,OM,y}$ Operating margin CO2 emission factor for grid connected power generation in year y Unit: tCO_2/MWh Type: calculated **Boundary checklist** / **Yes / No** Parameter discussed in the PDD? — Yes Inclusion / exclusion justified? — Yes Explanation / Justification sufficient? — Yes Consistency with monitoring plan? — Yes		DR	Ok	Ok
	Comment / Cross Reference:				
4.2.4	Parameter: $FC_{i,m,y}$, $FC_{i,y}$, $FC_{i,j,y}$, $FC_{i,k,y}$, $FC_{i,n,y}$ and $FC_{i,n,h}$ Amount of fossil fuel type i consumed by power plant / unit m, j, k or n (or in the project electricity system in case of FCi,y) in year y or hour h Unit: mass or volume unit Type: official publication **Boundary checklist** / **Yes / No** Parameter discussed in the PDD? Inclusion / exclusion justified? Explanation / Justification sufficient? Consistency with monitoring plan?		DR	n/a	n/a
	Comment / Cross Reference:				
4.2.5	Parameter: $EF_{CO2,I,y}$ CO2 emission factor of fossil fuel type i in year y Unit: tCO2/GJ Type: **Boundary checklist** / **Yes / No** Parameter discussed in the PDD? — Y Inclusion / exclusion justified? — Y Explanation / Justification sufficient? — Y Consistency with monitoring plan? — Y		DR	n/a	n/a
	Comment / Cross				

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<table>
<tr><th></th><th>Topic / Question</th><th>Ref</th><th>MoV</th><th>Draft Concl.</th><th>Final Concl.</th></tr>
<tr><td></td><td colspan="5">Reference:</td></tr>
<tr><td rowspan="2">4.2.6</td><td>Parameter: $EG_{m,y}$, EG_y, $EG_{j,y}$, $EG_{k,y}$ and $EG_{n,h}$
Net electricity generated and delivered to the grid by power plant / unit m, j, k or n (or in the project electricity system in case of EGy) in year y or hour h
Unit: MWh
Type: monitored
<table><tr><th>Boundary checklist</th><th>Yes / No</th></tr><tr><td>Parameter discussed in the PDD?</td><td>Yes</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Yes</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Yes</td></tr><tr><td>Consistency with monitoring plan?</td><td>Yes</td></tr></table></td><td></td><td>DR</td><td>Ok</td><td>Ok</td></tr>
<tr><td colspan="5">Comment / Cross Reference:</td></tr>
<tr><td rowspan="2">4.2.7</td><td>Parameter (only for dispatch data OM): $EGP_{J,h}$

Electricity displaced by the project activity in hour h of year y

Unit: MWh
Type: Monitored
<table><tr><th>Boundary checklist</th><th>Yes / No</th></tr><tr><td>Parameter discussed in the PDD?</td><td></td></tr><tr><td>Inclusion / exclusion justified?</td><td></td></tr><tr><td>Explanation / Justification sufficient?</td><td></td></tr><tr><td>Consistency with monitoring plan?</td><td></td></tr></table></td><td></td><td>DR</td><td>n/a</td><td>n/a</td></tr>
<tr><td colspan="5">Comment / Cross Reference:</td></tr>
<tr><td rowspan="2">4.2.8</td><td>Parameter: (only for dispatch data OM) $\eta_{m,y}$
Average net energy conversion efficiency of power unit m in year y
Unit: -
Type:
<table><tr><th>Boundary checklist</th><th>Yes / No</th></tr><tr><td>Parameter discussed in the PDD?</td><td></td></tr><tr><td>Inclusion / exclusion justified?</td><td></td></tr><tr><td>Explanation / Justification sufficient?</td><td></td></tr><tr><td>Consistency with monitoring plan?</td><td></td></tr></table></td><td></td><td>DR</td><td>n/a</td><td>n/a</td></tr>
<tr><td colspan="5">Comment / Cross</td></tr>
</table>

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	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
	Reference:				
4.2.9	Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PDD?		DR	Ok	Ok
	Comment / Cross Reference:				
4.3	**Description of how the baseline methodology procedure is identified and description of the identified baseline procedure**				
4.3.1	Is every selection of options offered by the tool correctly justified and is this justification in line with the situation verified on-site?		DR	Ok	Ok
	Comment / Cross Reference:				
4.3.2	Are the formulae required for the determination of the Operating Margin correctly presented, enabling a complete identification of parameter to be used and / or monitored?		DR	Ok	Ok
	Comment / Cross Reference:				
4.3.3	Is the method to calculate the Operating Margin (Simple OM, Simple Adjusted OM, Dispatch data OM, or Average OM), the most appropriated one?		DR	Ok	Ok
	Comment / Cross Reference:				
4.3.4	Are the formulae required for the determination of the Build Margin correctly presented, enabling a complete identification of parameter to be used and / or monitored?		DR	Ok	Ok
	Comment / Cross Reference:				
4.3.5	Is the set of power units (the set of five power units that have been built most recently, or the set of power capacity additions in the electricity system that comprise 20% of the system generation (in MWh) and that have been built most recently), comprising the larger annual generation?		DR	Ok	Ok
	Comment / Cross Reference:				
4.3.6	Are the formulae required for the determination of the Combined Margin correctly presented, enabling a complete identification of parameter to be used and / or monitored?		DR	Ok	Ok
	Comment / Cross Reference:				

	Topic / Question	Ref	MoV	Draft Concl.	Final Concl.
4.3.7	Are the values used for w_{OM} and w_{BM} correctly applied?		DR	Ok	Ok
	Comment / Cross Reference:				
4.3.8	Is the calculation of the operating margin and build margin emission factors documented electronically in a spreadsheet attached to the CDM-PDD. This should include all data used to calculate the emission factors		DR	n/a	n/a
	Comment / Cross Reference:	DOE raised CAR 1: The calculated emission factor (0.602) is not conservative. The document "Study, definition of Vietnam Grid Emission Factor, 2010" <http://www.noccop.org.vn/Data/vbpq/Airvariable_ldoc_vnHe%20so%20phat%20thai.pdf>" calculates a factor of 0.5764.The calculation of the GHG emission reductions must be recalculated.⇨ PP introduced the Grid Emission Factor given in SQS ref. [46] "Study, definition of Vietnam Grid Emission Factor" (DNA report on GEF), implemented by Ozone Layer Protection Centre, Department of Meteorology, Hydrology and Climate Change, 12/2009. PP adapted the PDD using the official GEF. The GEF has been validated with a positive result by the DOE in the office of the Department of Meteorology, Hydrology and Climate Change in Hanoi on 16 and 17 November 2010. CAR 1 is closed. The electronically documentation can be consulted at the Department of Meteorology, Hydrology and Climate Change in Hanoi.			
4.3.9	Are the default efficiency factors for power plants used according to annex I of the tool?		DR	Ok	Ok
	Comment / Cross Reference:				

Protocol 4: Summary of requests

No.:	CL 1	Reference: PDD in general
Validator request:	The PDD shall have an unequivocal identification; name and version number. Current name: CDM-Executive Board – it can be integrated in the foot-line so it's visible on every page and identified.	
Project owner response:	Updated PDD to introduce a footer with the document name and version number.	
Validator conclusion:	DOE agrees – CL 1 is closed.	Date: 30/08/2010
Project owner response:	Due to latest experiences with EB PP will delete the footer in the PDD to not change the Template of the PDD at all.	
Validator conclusion:	DOE can accept it – CL 1 is closed.	Date: 20/11/2010

No.:	CL 2	Reference: PDD p.28
Validator request:	In the case of the parameter "Fi,j,y" the source of data shall be referenced exactly. Document name and which table/page was used. Is the correct name of the parameter FCi,y? Please correct it. Which data in Annex 3 correspond to this parameter? In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this parameter will not be used.	
Project owner response:	This parameter has been removed with the application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009	
Validator conclusion:	DOE agrees – CL 2 is closed.	Date: 30/08/2010

No.:	CL 3	Reference: PDD p.28
Validator request:	In the case of the parameter "Installed Capacity" the source of data shall be referenced exactly. Document name and which table/page was used. Which data in Annex 3 correspond to this parameter? In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this parameter will not be used.	
Project owner response:	This parameter has been removed with the application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009	
Validator conclusion:	DOE agrees – CL 3 is closed.	Date: 30/08/2010

No.:	CL 4	Reference: PDD p. 29
Validator request:	In the case of the parameter "Electricity Generated" the source of data shall be referenced exactly. Document name and which table/page was used. Is the correct name of the parameter is EGy? Please correct it. Which data in Annex 3 correspond to this parameter? In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this parameter will not be used.	
Project owner response:	This parameter has been removed with the application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009	
Validator conclusion:	DOE agrees – CL 4 is closed	Date: 30/8/2010

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No.:	CL 5	Reference: PDD p.29
Validator request:	In the case of the parameter "Internal Electricity Consumption" the source of data shall be referenced exactly. Document name and which table/page was used. In which formula do you need the parameter? Which data in Annex 3 correspond to this parameter? In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this parameter will not be used.	
Project owner response:	This parameter has been removed with the application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009	
Validator conclusion:	DOE agrees – CL 5 is closed.	Date: 30/08/2010

No.:	CL 6	Reference: PDD p.29
Validator request:	In the case of the parameter $EF_{CO2,i}$ the source of data shall be referenced exactly. Document name and which table/page was used. In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this parameter will not be used	
Project owner response:	This parameter has been removed with the application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009	
Validator conclusion:	DOE agrees – CL 6 is closed.	Date: 30/08/2010

No.:	CL 7	Reference: PDD p.22
Validator request:	In the case of "[13] Source:" the document shall be referenced exactly. Document name and which table/page was used.	
Project owner response:	The data source has been changed to use the GEF from the Department of Meteorology, Hydrology and Climate Change.	
Validator conclusion:	DOE agrees – CL 7 is closed.	Date: 30/08/2010

No.:	CL 8	Reference: PDD p.7
Validator request:	Table A.3 shall be reviewed for correctness of indication of years.	
Project owner response:	This has been corrected.	
Validator conclusion:	DOE agrees – CL 8 is closed.	Date: 30/08/2010

No.:	CL 9	Reference: PDD p.16
Validator request:	The Internet link in reference 5 shall be verified.	
Project owner response:	The Internet link has been corrected.	
Validator conclusion:	DOE has checked the function of the link, it works, CL 9 is closed.	Date: 04/08/2010

No.:	CL 10	Reference:	PDD p.17
Validator request:	The Internet link in reference 8 shall be verified.		
Project owner response:	The Internet link has been corrected.		
Validator conclusion:	DOE has checked the function of the link, it works, CL 10 is closed.	Date:	04/08/2010

No.:	CL 11	Reference:	PDD p. 20
Validator request:	The Internet link in reference 12 shall be verified.		
Project owner response:	The link is corrected in the PDD.		
Validator conclusion:	DOE agrees, link has been checked, CL 11 is closed.	Date:	04/08/2010

No.:	CL 12	Reference:	PDD p. 23 to 24
Validator request:	Which option is chosen: A1 or A2? In annex 3 (p.44) is used A1. The decision shall be documented. In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this part of the PDD has to be adapted.		
Project owner response:	The application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009 has remedied this.		
Validator conclusion:	DOE agrees – CL 12 is closed.	Date:	04/08/2010

No.:	CL 13	Reference:	PDD p. 25
Validator request:	Which option is chosen: A1 or A2? In Annex 3 (p.45) is used A1. The decision shall be documented. In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this part of the PDD has to be adapted.		
Project owner response:	The application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009 has remedied this.		
Validator conclusion:	DOE agrees – CL 13 is closed.	Date:	30/08/2010

No.:	CL 14	Reference:	PDD p. 31 to 32 and Annex 4 p.48
Validator request:	The consistency of terms for functions used shall be verified and synchronized. Shall be included the responsibility for data archiving.		
Project owner response:	This has been synchronized and updated.		
Validator conclusion:	DOE agrees – CL is closed.	Date:	30/08/2010

No.:	CL 15	Reference:	PDD p. 4
Validator request:	The coordinates shall be verified for correctness.		
Project owner response:	The coordinate on the map was seen to be off by 2 km. This has been rectified		

	in the PDD. The following text has been added as a footnote to explain the intent of the schematic diagram "The schematic diagram is neither drawn to scale nor intended to portray the specific geographic layout of the project – rather it is meant to show the relative positions of salient elements."	
Validator response	Please re-verify. If the coordinates are correct then Fig. A.3. not oriented to the north.	
Project owner response:	Coordinates have been re-verified and are correct. Fig. A.3. is not oriented to the north – footnote has been introduced.	
Validator conclusion:	DOE agrees – CL 15 is closed.	Date: 02/09/2010

No.:	CL 16	Reference:
Validator request:	The evidences that construction of electric power plants falls under List A domains shall be submitted to DOE.	
Project owner response:	Please see document CL16 CL 16 ND1642003.pdf (page 25)	
Validator conclusion:	DOE agrees – CL 16 is closed	Date: 30/08/2010

No.:	CL 17	Reference: MOC
Validator request:	The Modalities of communication form shall be submitted to the DOE.	
Project owner response:	The MOC is submitted.	
Validator conclusion:	DOE agrees – CL 17is closed.	Date: 02/11/2010

No.:	CL 18	Reference: PDD p. 45 Annex 3 Build Margin
Validator request:	PP shall confirm that the listed projects are not CDM projects. In case of application of the GEF from the Department of Meteorology, Hydrology and Climate Change of 12/2009, this part of the PDD has to be adapted.	
Project owner response:	A review of the UNFCCC website for registered CDM projects in Viet Nam, confirmed that none of the plants considered in the build margin are registered CDM projects. A screenshot of registered CDM projects in Vietnam is provided. (Please see document CL 18 List of Registered CDM Projects in Vietnam.pdf)	
Validator conclusion:	DOE agrees – CL 18 is closed.	Date: 30/08/2010

No.:	CL 19	Reference: PDD p. 14
Validator request:	The reference 3 "State Bank of Viet Nam and Vietnamese civil law codes" shall figure in the text of the page. If footnote 3 is relevant – please submit Vietnamese and English version of relevant parts.	
Project owner response:	Submitted documents: CL19 a State bank of Vietnam Base Interest Rates.pdf and CL19 b Vietnamese Civil Law codes.pdf.	
Validator conclusion:	DOE agrees- CL 19 is closed.	Date: 30/08/2010

No.:	CL 20	Reference: PDD B.7. Monitoring
Validator request:	The monitoring system shall be described more in details. Do the EVN receipts show the net amount of electricity delivered to the grid?	

	Is on-site metering placed at output to the grid? Does it exclude internal consumption? An electric scheme could be use full.	
Project owner response:	The EVN receipts will contain net amount of electricity delivered to the grid. The on-site metering will also be placed at the output to the grid, and will allow the net electricity (excluding internal consumption) to be monitored. The exact implementation may change before the implementation of the project. It is proposed that further details will be included in the detailed monitoring plan to be finalized after registration of the project and to be made available at first verification – due to the possibility of changes between now and final implementation of the project.	
Validator conclusion:	DOE agrees – CL is transformed in FAR 4 – CL is closed.	Date: 30/08/2010

No.:	CL 21	Reference: Documents
Validator request:	Shall be submitted to DOE the following documents: • Feasibility study and EIA – relevant parts in VN and English version as o Bases for plant load factor o Installed capacity o Total of Investment o Loan: equity ratio o Approval connecting to the grid o Plant load factor o Operational hours o Loan repayment period o Grid price • Overview contract and/or investment situation • EPC (Environment Protection Commitment) in VN and English version, EIA approval • Law/Decree No 24/2007/ND-CP • Law No 14/2008/QH12 dt 03/6/2008 • Decision No. 3837QD/BCN on 22/11/2005 (p 19).of Ministry of Industry in VN and English translation.	
Project owner response:	The documents are provided as below: • Feasibility study and EIA – relevant parts in VN and English version as o Bases for plant load factor Uploaded document CL21 a Feasibility Study_plant load factor.pdf o Installed capacity Uploaded document CL21 b Feasibility Study_installed capacity.pdf o Total of Investment Uploaded document CL21 c Feasibility Study_total investment.pdf o Loan: equity ratio Uploaded document CL21 d Feasibility Study_loan equity	

	ratio.pdf o Approval connecting to the grid Uploaded document CL21 e Grid connection approval.pdf o Plant load factor Uploaded document CL21 a Feasibility Study_plant load factor.pdf o Operational hours Uploaded document CL21 a Feasibility Study_plant load factor.pdf o Loan repayment period Uploaded document CL21 f Feasibility Study_loan repayment.pdf o Grid price Uploaded document CL21 g Feasibility Study_tariff.pdf • Overview contract and/or investment situation Uploaded document CL21 h Contracts overview.pdf • EPC (Environment Protection Commitment) in VN and English version, EIA approval Uploaded documents: CL 21 i1 EIA Vietnamese.pdf CL 21 i2 EIA English.pdf CL 21 i3 EIA Approval.pdf • Law/Decree No 24/2007/ND-CP Please see document CL21 j 1242008NDCP.pdf (updated version of the law requested) • Law No 14/2008/QH12 dt 03/6/2008 Please see document CL21 k 142008QH12.pdf Decision No. 3837QD/BCN on 22/11/2005 (p 19).of Ministry of Industry in VN and English translation. Please see document CL24 l 3837QDBCN in Power Master Plan.pdf	
Validator conclusion:	Documents are submitted - CL 21 is closed.	Date: 30/08/2010

No.:	CL 22	Reference: VVM 1.1.1 ff, 1.8.1
Validator request:	The LoAs have to be submitted to the auditors.	
Project owner response:	LoA Vietnam is under request. LoA Switzerland can only be requested once the draft final validation report is available.	
Validator conclusion:	LoA's are submitted – CL 22 is closed	Date: 01/11/2010

No.:	CL 23	Reference: Starting date crediting period
Validator request:	Starting period C.2.1.1 is not consistent with B.6.4 and A.4.4. PDD has to be corrected.	
Project owner response:	Corrected in PDD v3.7	
Validator conclusion:	DOE agrees – CL 23 is closed	Date: 01/12/2010

No.:	CL 24	Reference:	Title of the project activity
Validator request:	Please inform about the correct title of the project: Title in PDD: Dak Srong 2A Hydropower Project. On website UNFCCC: Dak Srong 2A Hydropower - https://cdm.unfccc.int/Projects/Validation/DB/GQ6XI7ZWUVN4YQZ6W80K391CGIHHNY/view.html		
Project owner response:	Project title is “Dak Srong 2A Hydropower Project”		
Validator conclusion:	DOE agrees and will ask UNFCCC to change it.	Date:	23/11/2010

No.:	CL 25	Reference:	PDD B.1, B.6.1. B.6.2.
Validator request:	The official GR of DNA Vietnam is based on “Tool to calculate the emission factor of an electricity system (version 1.01). References in the PDD have to be corrected.		
Project owner response:	This has been corrected in the PDD v3.8		
Validator conclusion:	DOE agrees – CL 25 is closed	Date:	01/12/2010

No.:	CL 26	Reference:	MOC
Validator request:	The MOC has no submission date. PP has to submit a dated MOC.		
Project owner response:	The updated MOC is sent with this response, filename MOC_Dak Srong 2A_01122010.pdf		
Validator conclusion:	DOE agrees – CL 26 is closed.	Date:	01/12/2010

No.:	CL 27	Reference:	Format of Table B.1.1
Validator request:	The tables in B.7.1 shall be reformatted acc. to CDM template. PDD has to be adapted.		
Project owner response:	This has been corrected in the PDD v3.8.		
Validator conclusion:	DOE agrees – CL 27 is closed.	Date:	01/12/2010

No.:	CL 28	Reference:	IRR calculation
Validator request:	In IRR calculation is an error in the formula in row 28. It has to be corrected		
Project owner response:	This has been corrected in IRR v2.0		
Validator conclusion:	DOE agrees – CL 28 is closed.	Date:	01/12/2010

No.:	CAR 1	Reference:	PDD p.22, 23, 30 and Annex 3 p.44-46
Validator request:	The calculated emission factor (0.602) is not conservative. The document "Study, definition of Vietnam Grid Emission Factor , 2010" <http://www.noccop.org.vn/Data/vbpq/Airvariable_ldoc_vnHe%20so%20phat%20thai.pdf>" calculates a factor of 0.5764. The calculation of the GHG emission reductions must be recalculated.		
Project owner response:	Please see supplied translation. Upon acceptance by DOE, PDD will be updated.		
Validator conclusion:	The GEF has been validated with a positive result by the DOE in the office of the Department of Meteorology, Hydrology and Climate Change in Hanoi (who calculated the official GEF for the DNA) on 16 and 17 November 2010. CL 23 is closed.	Date:	18/11/2010

No.:	CAR 2	Reference:	B.7.1 Parameters
Validator request:	Under B.7.1 Parameter Cap_{PJ}, A_{PJ} hast to be integrated, ACM0002 p.17		
Project owner response:	This has been updated in the PDD.		
Validator conclusion:	DOE agrees – CAR 2 is closed.	Date:	19/11/2010

No.:	CAR 3	Reference:	P.10 Figure B.1 Project boundary
Validator request:	The reservoir has to be included to the project boundary.		
Project owner response:	Our understanding was that the phrase "Dak Srong 2A Hydropower Project" as seen in figure B.1 includes all parts of the project, including reservoirs (if any). However, updates have been made to the diagram to explicitly include the reservoir.		
Validator conclusion:	DOE agrees – CAR 3 is closed.	Date:	19/11/2010

No.:	CAR 4	Reference:	PDD B.7.1 Data and parameters monitored
Validator request:	The point of measurement has to be described to assure that energy loss of transformers is integrated in the monitoring. This could be integrated in Figure B.1. Project boundary.		
Project owner response:	The point of measurement will be at the point of delivery of electricity to the grid. A connection diagram is provided demonstrating this. (Please see CAR4 Electricity connection diagram.pdf)		
Validator conclusion:	DOE agrees – CAR 4 is closed.	Date:	31/08/2010

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No.:	CAR 5	Reference:	B5 step 4, Common practice analysis
Validator request:	Remove projects from the common practice data that have been listed on the EB website; and Compare the projects which, after categorising by state/private ownership and large/small scale projects are found to be "similar" to Dak Srong 2A.		
Project owner response:	The data has been verified and corrected.		
Validator conclusion:	DOE agrees – CAR 5 is closed.	Date:	01/11/2010

No.:	CAR 6	Reference:	IRR analysis
Validator request:	As benchmark is considered post-tax by PP actual interest rate shall be used in IRR analysis. If the benchmark rate of return is 14.40% this value shall be used as the commercial lending rate in IRR analysis.		
Project owner response:	The interest rate has been corrected.		
Validator conclusion:	DOE agrees – CAR 6 is closed.	Date:	01/12/2010

No.:	CAR 7	Reference:	PDD B.5. Substep 2c
Validator request:	Escalation in O&M costs is an estimation and shall be supported with documentary proofs or be removed from the calculation. If it will be removed, IRR has to be recalculated and resubmitted and Table B.3. Key-Input Parameters has to be adapted.		
Project owner response:	PP agrees to remove in order to clear the issue (i.e. for simplicity's sake, but it is PP's view it is not correct to assume fixed costs over 30 years). Even so, once removed, the project still does not cross the benchmark even given favourable conditions in the sensitivity analysis.		
Validator conclusion:	DOE agrees- CAR 7 is closed.	Date:	11/03/2011

No.:	CAR 8	Reference:	PDD B.5. Step 3 Barrier Analysis
Validator request:	PP shall submit supporting data for Barrier Analysis or indicate a clear statement that barrier analysis is not performed according to the choice of Step 2 (Investment analysis).		
Project owner response:	As this step is optional as per additionality tool, PP will remove this step from section B5 of the PDD for simplicity.		
Validator conclusion:	DOE agrees-CAR 8 is closed.	Date:	11/03/2011

No.:	CAR 9	Reference:	PDD B.7. Monitoring plan
Validator request:	PP shall introduce the monitoring of Cap_{PJ} and A_{PJ} as required by ACM0002.		
Project owner response:	PP agrees, please refer to the updated PDD.		
Validator conclusion:	DOE agrees- CAR 9 is closed.	Date:	11/03/2011

MoV = Means of Validation; DR = Document Review; I = Interview; N/A = Not Applicable
CAR = Corrective Action Request, CL = Clarification Request, FAR = Forward Action Request

No.:	FAR 1	Reference:	
Validator request:	The calibration status of Monitoring equipments has to be submitted to DOE.		
Project owner response:	To be concluded at the verification stage.		
Validator conclusion:	n/a	Date:	04/08/2010

No.:	FAR 2	Reference:	
Validator request:	The Monitoring manual has to be established.		
Project owner response:	To be concluded at the verification stage.		
Validator conclusion:	n/a	Date:	04/08/2010

No.:	FAR 3	Reference:	
Validator request:	The training plan and the training proofs have to be submitted to the DOE.		
Project owner response:	To be concluded at the verification stage.		
Validator conclusion:	n/a	Date:	04/08/2010

No.:	FAR 4	Reference:	PDD B.7. Monitoring
Validator request:	The monitoring system shall be described in more details. Do the EVN receipts show the net amount of electricity delivered to the grid? Is on-site metering placed at output to the grid? Does it exclude internal consumption? An electric scheme is needed.		
Project owner response:	To be concluded at the verification stage.		
Validator conclusion:	n/a	Date:	04/08/2010