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CDM Validation Report

Enterprise

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Service

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Date

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Signature

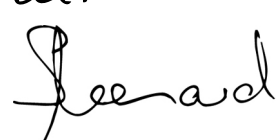


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1 Introduction

1.1 Objective

EnBW Kraftwerke AG has retained SQS to validate the Las Pizarras Project, Peru (hereafter referred to as "the project").

The objective of the validation is an independent assessment by a Designated Operational Entity (DOE) of a proposed project activity against the defined set of criteria for registration under the Clean Development Mechanism (CDM). Validation is part of the CDM project cycle and will finally result in a conclusion by the DOE whether a project activity 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.

1.2 Scope

The scope of the validation is an independent and objective review of the project design document (PDD) and the DOE uses a risk-based approach focusing on the identification of significant risks for project implementation and the generation of CERs 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 (ver. 01.2)
- Decisions and specific guidance issued by the CDM EB published under <http://cdm.unfccc.int>
- Glossary of CDM terms (Version 06)
- Clean Development Mechanism Validation and Verification Manual (ver. 01.2)
- ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources, version 12.3.0
- Tool to calculate the emission factor for an electricity system, version 02.2.0 EB 61 Annex 12
- Tool for the demonstration and assessment of additionality, version 6.0.0, EB 65 Annex 21
- Guidelines on the Assessment of Investment Analysis, version 05, EB 62, Annex 05
- Guidance on Prior Consideration of CDM Version 04, EB 62 Annex 13
- A comprehensive list of the normative references given in the validation protocol

SQS has remained independent during the validation process, free from bias and conflict of interest. SQS has maintained objectivity throughout the validation to ensure that the findings and conclusions will be based on objective evidence generated during the validation.

SQS has maintained trust, integrity, confidentiality and discretion throughout the validation process. This report reflects truthfully and accurately the validation activities.

SQS has exercised due professional care and judgement in accordance with the importance of the task performed.

1.3 Project description

The objective of the Las Pizarras project, Peru, is to build and operate a run-of-river hydropower plant on the Chancay river. The proposed project is located in the hamlet of Sexi, district of Sexi, province of Santa Cruz, region of Cajamarca, in Peru.

The project involves the installation of an 18 MW run-of-river hydropower plant without any reservoir or regulation tank for its normal operation, only a water diversion and a forebay with a design discharge of 22.1 cubic

meters per second (m^3/s). The water is directly diverted from Chancay river, going through a low-pressure tunnel with an upstream (length: 2.03 km) and a downstream (length: 0.96 km) tram, reaching the penstock (length: 90 metres) and then splitting into two trams of 30.03 m and 32.35 m taking the water to the power house turbines.

The electricity production is estimated to be 103.32 GWh per year. The project will therefore reduce an estimated 68 132 tCO_2e per annum by producing electricity from a renewable source substituting for fossil fuel-based electricity generation.

Project participants are:

- Empresa Eléctrica Río Doble S.A. registered in Peru and
- EnBW Kraftwerke AG, registered in The Federal Republic of Germany

The project activity starting date is 14/03/2011, the date on which the company Río Doble (owner of the project) changed ownership [26].

The project uses the renewable 21-year period and its first 7-year crediting period will start on 01/01/2013.

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, including: 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 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.

The project participant shall respond to all requests with sufficient evidence.

The DOE 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 satisfies the DOE's concerns. If this is not done, the DOE shall not recommend the project activity for registration to the CDM Executive Board.

In order to ensure transparency, a validation protocol (CDM Validation Protocol) 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 in which the DOE will document how a particular requirement has been validated and the result of the validation;
- The validation protocol consists of several tables, as described below.

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

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

CDM Validation Protocol 4: Summary of Requests	
<i>No.</i>	The requests (CAR, CL, FAR) are numbered and listed in this section.
<i>Ref.</i>	Reference to the requirement number in Protocol 1 - 3 where the request is explained.
<i>DOE request</i>	The section is used to elaborate and discuss the request. The DOE may give reference to the PDD or documents.
<i>Project participant response</i>	The responses given by the project participants during the communications with the DOE is summarised in this section.
<i>DOE conclusion</i>	This section should summarise the DOE's responses and final conclusions. The conclusions should also be included in Protocol 1 - 3, under "Final Conclusion".
<i>Date</i>	Date when request was closed.

2 Validation Opinion

2.1 Summary of the validation conclusions

Based on

- PDD of Las Pizarras Project, Peru, version 4, dated 16/07/2012 [2]
- Consulted documents listed in Appendix C
- ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources, version 12.3.0
- Tool to calculate the emission factor for an electricity system, version 02.2.0 EB 61 Annex 12
- Tool for demonstration and assessment of additionality, version 6.0.0. EB 65 Annex 21
- Guidelines on the Assessment of Investment Analysis, version 05, EB 62, Annex 05
- Guidance on Prior Consideration of CDM version 04 (EB 62 Annex 13)
- Validation and Verification Manual version 01.2, EB55
- Site visit and meetings with authorities and developer in Lima on 03-06/10/2011

It is SQS' opinion that the project "Las Pizarras Project" described in PDD version 4, dated 16/07/2012 [2] with a renewable crediting period starting from 01/01/2013 to 31/12/2019 meets all relevant criteria of the listed references.

SQS confirms that the approved baseline and monitoring methodology ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources, version 12.3.0 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, site visits and interviews.

The selected methodology is applicable to the proposed CDM project activity and is correctly applied. 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. The validation included a desk-review of the PDD and its annexes and additional documents listed in Appendix C of this report, an on-site visit with an inspection of the project site on 04/10/2011 and interviews (see Appendix A-B) subsequently

20 CLs have been raised. All of them are closed.

3 CARs have been raised. All of them are closed.

0 FAR has been raised.

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

All project components were 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 68 132 tCO₂e per year and 476 926 tCO₂e for the first 7-year crediting period is carried out in a transparent and conservative manner. 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 01/01/2013.

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, credible and reliable and meets the stated criteria.

3 Validation Findings

3.1 Approval

The Letter of Approval (LoA) by the host country, Peru, was issued with the date of 22/09/2011, Ref: 194/2011/DGCCDRH/DVMDERN/MINAM, [7]. The LoA from the DNA of Peru confirms in accordance with VVM version 01.2 paragraph 45:

- Peru is a Party to the Kyoto Protocol with a Designated National Authority for the Kyoto Protocol (first paragraph)
- The participation is voluntary (second paragraph)
- The project contributes to sustainable development in Peru (first paragraph)

SQS therefore confirms that the letter refers precisely to the proposed CDM project activity in line with VVM paragraph 53. 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 Peruvian LoA also confirms that the proposed CDM project activity contributes to the sustainable development of Peru.

The Federal Republic of Germany, as the second party involved, has issued the LoA on 28/03/2012 Ref.E.16-18410-0385 [8].

The Letter of Approval (LoA) from the DNA of The Federal Republic of Germany confirms in accordance with VVM Version 01.2 paragraph 45:

- The Federal Republic of Germany is a Party to the Kyoto Protocol (Section II of LoA issued)
- The participation is voluntary (Section II of LoA issued)
- The LoA refers exactly to the project title “Las Pizarras Project”

Both LoAs are considered as authentic without doubts and are unconditional. SQS received these letters from the project participant directly.

The SQS validation team was able to confirm the authenticity of the LoA issued by the DNA of Peru by consulting the DNA of Peru (on 21/11/2011 with Mr Manuel Garcia Rosell of the DNA) and by identifying the status of the project with an approval letter issued. The SQS validation team was able to confirm the authenticity of the LoA issued by the DNA of the Federal Republic of Germany by checking the official website of the DNA of the Federal Republic of Germany¹ and its listing of the issued German LoAs. SQS validation team compared the LoA received from the PP with the LoA published by the DNA of the Federal Republic of Germany and found them to be identical.

SQS confirms that the approval of participation is valid for the proposed project participant – see [7] and [8]. 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).

Letters of approval do not contain additional specifications / conditions for the registration of the project activity, such as the PDD version number.

3.2 Participation

The names of the two project participants “Empresa Eléctrica Río Doble S.A.” (Peru) and “EnBW Kraftwerke

¹ <https://www.jicdm.dehst.de/promechg/pages/project1.aspx> (last accessed on 18/06/2012)

AG" (Germany) are listed in the PDD in tabular form in Section A.3. This information is consistent with the contact information details of the project participants as provided in Annex I of the latest version of the PDD. No entities other than those approved as project participants are included in these sections of the PDD. The participation of "Empresa Eléctrica Río Doble S.A." is approved by means of the Letter of Approval of the host party.

The participation of "EnBW Kraftwerke AG" is approved by means of the Letter of Approval of The Federal Republic of Germany. Therefore, in addition to the host party an Annex I Party has approved the project.

By reviewing the latest version of the completed Modalities of Communication Form (F-CDM-MOC) [9] for the project activity signed by all project participants, the validation team was able to confirm that this form is completed correctly. The names and authorized signatories of the project participants indicated in the MoC are consistent with the ones in the PDD.

3.3 Project design document

The PDD is compliant with the latest template and guidance of the CDM EB available on the UNFCCC website.

The validation team can confirm that the PDD version 4, dated 16/07/2012 [2] is based on the currently valid PDD template version 03 and is completed in accordance with the applicable guidance document.

3.4 Project description

The description of the project activity contained in the PDD [2] is unambiguous, detailed and provides a good overview of the project. Its content was confirmed by means of document review, an on-site visit and interviews held in the 03/10/2011 - 06/10/2011 period in order to validate the accuracy and completeness of the project description.

Main changes between the PDD (version 1, dated 26/06/2011) published for the 30-day stakeholder commenting period and the final version (version 4, dated 16/07/2012), submitted for registration are issues related to the CARs and CLs identified during validation. The PDD changes are related to the following CLs and CARs:

CAR 1: LoAs

CL1, CL6: inclusion of transmission line

CL2: elaboration of ownership structure

CAR 2, CL8, CL11, CL15: investment analysis amendments

CAR 3: Common practice

CL 20: Barrier analysis

CL16: monitoring plan amendments

CL9, CL10: chronology of project related events

CL 19: Annex I funding

CL4, CL5, CL6, CL7, CL12, CL13, CL14, CL17, CL18: editorial changes to improve clarity and comprehension

The proposed project is a new run-of-river hydroelectric power plant with 18 MW installed capacity. The project will employ two new Francis turbines with horizontal shafts and of 9 MW each, designed for a water-flow of 10.06 m³/s. The proposed project is located in the basin of the Chancay river, in the hamlet of Sexi, district of Sexi, province of Santa Cruz, region of Cajamarca, in Peru.

Technological Characteristics*

Characteristic	Value	Unit
Turbine		
Type	Francis Horizontal Axis	2
Discharge	22.10	m ³ /s
Rated net head	95.67	m
Expected lifetime	40	Years
Expected energy generation	103.32	GWh
Alternator		
Type	Synchronic three-phase	
Capacity	10.125	MVA
Voltage	6.6	kV
Expected lifetime	40	Years
Transformer		
Primary voltage	6.6	kV
Secondary voltage	138	kV
Capacity	20	MVA
Transmission Line		
Length	14.43	km
Connection voltage	138	kV
Arrival substation	Espina Colorada	

*based on [2, 10-17,82]

The geographical coordinates listed in the PDD are based on the Peruvian water permits issued by the National Water Authority, ANA [80,81] defining the location of the water intake and discharge. On-site GPS measurements during the on-site visit resulted in confirming the geographical coordinates of Longitude -78.99442485, Latitude -6.620835649 (intake) and Longitude -79.05998099, Latitude -6.658534724 (discharge), though the site could not be accessed and could only be observed from the overlooking hillsides. SQS has investigated and confirmed that Las Pizarras is the first HPP on the river Chancay. Based on the above-mentioned location, the geographical coordinates provided in the PDD are correct.

The PDD has additional data listed in its annexes No.2, 3 and 4. The project will not receive any public funding; this has been declared by Empresa Eléctrica Río Doble S.A. [93]. Additional information regarding the base-line and monitoring is contained in Annex 2 and Annex 3.

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 the following methodology:

- ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources (version 12.3.0).

The project applies the following tools and guidelines:

- Tool for the demonstration and assessment of, version 6.0.0 EB 65 Annex 21
- Tool to calculate the emission factor for an electricity system version 02.2.0, EB 61, Annex 12.
- Guidelines on the Assessment of Investment Analysis, version 05, EB 62, Annex 05

3.5.2 Applicability of the selected methodology to the project activity

	Applicability Criteria for ACM0002	Project Activity
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.	The project is a new hydro power plant.
2	In the case of capacity additions, retrofits or replacements, 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.	The project is a new hydro power plant. This criterion is therefore not applicable.
3	In the case of hydro power plants, one of the following conditions must apply: 1. The project activity is implemented in an existing reservoir, with no change in the volume of reservoir. 2. The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m². 3. The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m².	There is no reservoir or regulating tank in the project, as it involves only the construction of an intake, tunnel, low-pressure tunnel, forebay, and powerhouse a typical setup for smaller-scale hydro projects. As the applicability requires a greater than 4 W/m ² power density the following can be demonstrated: The 18MW installed capacity is associated with an indefinitely small reservoir/regulating tank/desander equalling to the surface of the intake. If the power density is calculated based on the 18MW installed capacity and the insignificant surface of the intake the resulting power density is far bigger than the required 4 W/m ² (also higher than 10W/m ²).

4	The methodology is not applicable to the following: 1. Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site. 2. Biomass fired power plants. 3. Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m².	1. Not applicable 2. Not applicable 3. Not applicable. However, as explained in the compliance with applicability criteria No .3. above, a power density calculation will result in a far higher than 4W/m² value (also higher than 10W/m²).
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SQS confirms that the baseline and monitoring methodology ACM0002, Consolidated baseline methodology for grid-connected electricity generation from renewable sources version 12.3.0 is applicable for this project, that the criteria are discussed in an exhaustive manner in the PDD and supported by the submitted documents. Subsequently, SQS also confirms based on the validation of the baseline identification and additional steps that the applicability criteria of the methodology are fully met.

3.5.3 Project boundary

The project boundary is defined in the PDD Chapter B.3. and is shown in Figure 4 "Project Boundary". The definition is consistent with ACM0002, Consolidated baseline methodology for grid-connected electricity generation from renewable sources version 12.3.0. Within the system boundary, there are no project emissions as there are no reservoir emissions due to the lack of a reservoir, and there will be no backup generation. If there is power outage then they will import power from the grid. Leakage is considered zero in line with the methodology. Baseline emissions are attributed to the fossil-fuel emissions used for generating electricity for the Peruvian National Grid. SQS confirms that all sources and GHGs required by the methodology have been included within the project boundary.

The physical project boundary was verified during the on-site visit on the 04/11/2011. On-site GPS measurements during the on-site visit on 04/11/2011 resulted in confirming the geographical coordinates of Longitude -78.99442485, Latitude -6.620835649 (intake) and Longitude -79.05998099, Latitude -6.658534724 (discharge) though the site could not be accessed, and only be observed from the overlooking hillsides. SQS has investigated and confirmed that Las Pizarras is the first HPP on the river Chancay. Based on the above-mentioned information, the physical project boundary provided in the PDD is correct.

The detailed plans, the construction schedule and the coordinates of the project have been consulted and verified [10-17,35,51,74] Therefore, the project boundary fully corresponds to the applied methodology.

3.5.4 Baseline identification

According to ACM0002 if the project activity is the installation of a new grid-connected renewable power plant/unit, the baseline scenario is the following:

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".

In line with the methodology, as the project is a new grid-connected renewable power plant, the baseline scenario is therefore electricity delivered to the grid by the operation of grid connected power plants and by the addition of new generation sources to the national grid of Peru.

The Emission Factor is - in accordance with "Tool to calculate the Emission Factor for an electricity system" - based on calculating the combined margin (CM) according to the procedures prescribed in the tool. The ap-

plied emission factor for the Peruvian electricity system used in the calculations is calculated from the latest available power sector data publicly available from the National Interconnected Electric Grid (COES)². SQS confirms that the grid Emission Factor calculation was based on the most recent data available [5,6] at the time of submission of the PDD to the DOE for validation in line with the requirements of the applicable Tool. The applied emission factor for the Peruvian electricity system therefore used the available data for calendar year 2010.

With regard to the criteria 87 of VVM, SQS confirms the following statements:

- 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 is 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.
- Relevant national and sectoral policies and circumstances are considered and listed in the PDD.
- 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
- The PDD also provides an accurate description of the baseline scenario which includes the continued use of fossil-fuel power plants to supply electricity to the grid.

SQS concludes that no reasonable baseline scenario was excluded.

3.5.5 Algorithms and/or formulae used to determine emission reductions

SQS has assessed the calculations of project emissions, baseline emissions, leakage, and emission reductions. Corresponding calculations were carried out based on calculation spreadsheets. The equation comparison has been made explicitly following all the formulae presented in the calculation files. Parameters, options selected and the mathematical functions used for the *ex-ante* estimation of the project's emission reductions are appropriate, correct, plausible and conservative as per the methodology and its applicable tools applied.

ACM0002 version 12.3.0

SQS has validated the calculations, data and parameters used in the PDD and Attachment 1 to the PDD (excel spreadsheet) [4] by using a checklist for Methodology ACM0002 version 12.3.0 (refer to Protocol 2 of this report).

According to the methodology, as the project is a run-of-the-river project without a reservoir, it does not lead to any GHG emissions and therefore project emissions are considered to be zero.

According to the applied methodology no leakage emissions are considered.

² <http://www.coes.org.pe/wcoes/coes/salaprensa/estadannual.aspx?anio=2010> (last accessed on 15/07/2012)

The data and parameters used in the equations were correctly applied; they are as follows:

PROJECT EMISSIONS (PE_y)

Project emissions are appropriately considered zero for the hydro power activities in which there is no reservoir associated with the hydro power plant..

$$PE_y = 0$$

BASELINE EMISSIONS (BE_y)

The following equation is used to calculate baseline emissions from electricity generation the new hydro power plant:

$$BE_y = EG_{PJ,y} \cdot EF_{grid,CM,y} \quad (1)$$

Where:

- BE_y = Baseline emissions in year y (tCO₂e/yr)
- EG_{PJ,y} = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
- EF_{grid,CM,y} = Combined margin CO₂ emission factor for grid connected power generation in year y calculated using the latest version of the "Tool to calculate the emission factor for an electricity system" (tCO₂/MWh)

Calculation of EG_{PJ,y}

The calculation of EG_{PJ,y} is different for (a) greenfield plants, (b) retrofits and replacements, and (c) capacity additions. For the each CPA methodology (a) is used as the PoA allows for greenfield plants only. The CPA will consist of a wind power generation project that is grid-connected and falls under option (a).

Greenfield renewable energy power plants

As the CPA is the installation of a new grid-connected renewable power plant/unit at a site where no renewable power plant was operated prior to the implementation of the project activity, EG_{PJ,y} is calculated as follows:

$$EG_{PJ,y} = EG_{facility,y} \quad (2)$$

Where:

- EG_{PJ,y} = Quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the CDM project activity in year y (MWh/yr)
- EG_{facility,y} = Quantity of net electricity generation supplied by the project plant/unit to the grid in year y (MWh/yr)

The baseline emission is calculated as the product of electrical energy baseline, expressed in MWh, produced by the hydropower unit and multiplied by the grid emission factor. The grid emission factor has been calculated by using the applicable Tool as described below.

Tool to calculate the emission factor for an electricity system version 02.2.0

The Tool to calculate the emission factor for an electricity system determines the CO₂ emission factor for the displacement of electricity generated by power plants in an electricity system by calculating the “operating margin”, “build margin” and “combined margin” through the following 6 steps:

- Step 1 : Identify the relevant electric power system.
- Step 2 : Choose whether to include off-grid power plants in the project electricity system (optional).
- Step 3 : Select a method to determine the operating margin (OM).
- Step 4 : Calculate the operating margin emission factor according to the selected method.
- Step 5 : Calculate the build margin (BM) emission factor.
- Step 6 : Calculate the combined margin (CM) emission factor.

SQS has validated the calculations, data and parameters used in the PDD and Attachment 2 to the PDD (excel spreadsheet) [5,6] by using a checklist for Tool to calculate the emission factor for an electricity system version 02.2.0 (refer to Protocol 3 of this report).

The Tool to calculate the emission factor for an electricity system has been applied correctly to calculate the emission factor of the Peruvian electricity system. SQS checked the calculations from the available 2010 power sector data publicly available from the National Interconnected Electric Grid (COES)³ and found that the combined margin has been established correctly and without any mistakes. The resulting combined margin is 0.65943 tCO₂e/MWh.

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.

All assumptions and data used by the PP are listed in the PDD, including their references and sources.

All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD.

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 are reasonable, correctly quoted and could be replicated using the data and parameter values provided in the PDD.

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

³ <http://www.coes.org.pe/wcoes/coes/salaprensa/estadanual.aspx?anio=2010> (last accessed on 15/07/2012)

3.6 Additionality of project activity

As mandated by the methodology ACM0002 version 12.3.0, the project participants identified the baseline scenario and demonstrated additionality by using version 6.0.0 of the “Tool for demonstration and assessment of additionality”.

The PDD analyses the project additionality carrying out the steps established in the tool and performed “Investment Analysis” detailed below.

Regarding the application of the additionality tool, the following four steps were followed transparently:

Step 1. Identification of alternative to the project activity

Step 2. Investment Analysis

Step 3. Barrier Analysis

Step 4. Common practice analysis

The four steps of the tool mentioned were followed correctly by the project participant. For this reason, it can be confirmed that the project has demonstrated additionality correctly and transparently. The step by step validation findings are presented below.

3.6.1 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 as original company documents were supplied and cross-checked.

Start date of the project activity is 14/03/2011, the date when the total shares of Río Doble were sold to the company Eólica Galenova [26]. Eólica Galenova had considered carbon revenues in the financial analysis of the project purchase, and an ERPA agreement [28] was signed at that date between EnBW Kraftwerke AG and Río Doble. Prior consideration of the CDM was demonstrated with a chronological list with documentary proofs showing that the project is not financially feasible without the CDM revenues. The key project events in their chronological order are listed in the table below:

01/11/2009	The consultant firm Exergia undertakes a basic design study of Pizarras HPP.	The document considers income from the sale of CERs in its financial analysis, thus demonstrating prior consideration of CDM [17].
09/04/2010	A pre due diligence of Las Pizarras is undertaken by the consultancy firm Fichtner.	The report considers the income from the sale of CERs in its financial analysis [20].
26/04/2010	<u>Prior Consideration of Las Pizarras HPP.</u>	The Prior Consideration of the project was announced to the UNFCCC [77]. Empresa Eléctrica Río Doble's prior consideration statement as listed on UNFCCC website, Prior consideration section ⁴
16/06/2010	Shareholder agreement between Aluz and EnBW Kraftwerke AG	At this moment Aluz Clean Energy was the owner of Río Doble. The parties agree to develop Las Pizarras as a CDM project under a Special Purpose Vehicle (SPV) company that would be owned by both (55% Aluz and 45% EnBW Kraftwerke AG) [18,27].
03/10/2010	Proposal from the consultancy com-	ÉcoRessources sends a proposal to

⁴ <http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html> (last accessed: 16/10/2012)

	pany ÉcoRessources to develop CDM documentation.	Aluz to develop the CDM documentation and process of the Las Pizarras HPP.
18/12/2010	The company Eólica Galenova demonstrates interest in the purchase of Río Doble.	Eólica Galenova proposes a purchase of Aluz's shares in Río Doble.
06/01/2011	The law firm Estudio Olaechea sends a proposal for the legal due diligence of the purchase of Río Doble.	The proposal establishes the conditions to undertake the legal due diligence of the purchase of Río Doble by Eólica Galenova (represented by Alarde).
21/01/2011	Agreement signed between ÉcoResources Carbono S.A.C. and EnBW.	The agreement assigns ÉcoResources Carbono as the consultants in charge of developing the CDM documentation of the project and assisting during the validation and registration processes [23].
31/01/2011	The consultancy company Socoin presents the results of its technical due diligence of the Las Pizarras HPP.	Earlier that month Eólica Galenova (represented by Alarde) commissioned Socoin to undertake a technical due diligence of the project as part of their final process towards the decision of purchasing Río Doble [10-15].
14/03/2011	Eólica Galenova purchases Río Doble. <u>This is the start date of the project.</u>	The total shares of Río Doble were sold to the company Eólica Galenova. Eólica Galenova had considered carbon revenues in the financial analysis of the project purchase, and an ERPA agreement was signed at that date [26].
14/03/2011	Emission Reductions Purchase Agreement (ERPA) signed between EnBW Kraftwerke AG and Río Doble.	The signed ERPA grants EnBW Kraftwerke AG the rights to the carbon credits that the project may generate and secures Río Doble's income from the certificates [28].
14/04/2011	Construction initiated.	The construction of the access roads was initiated.
10/08/2011	National Approval Process initiated.	The project's file is submitted to the Peruvian Designated National Authority, the Ministry of the Environment (MINAM), to start the process that will end with the Letter of Approval. The date of the ministerial receipt of the submission of the request for the LoA (11/08/2012) as stated in the LoA [7] confirms the initiation date of the national approval process.
22/09/2011	The Letter of Approval was issued by the Peruvian DNA.	The Ministry of the Environment (MINAM) issued the project's Letter of Approval [7].

It must be noted that prior consideration of Las Pizarras HPP was communicated to the UNFCCC on 26/04/2010 at the time of pre-due diligence activities of Fichtner for Río Doble, the project company. The development of the project uncovered that the costs were likely to become higher than expected and Aluz Clean Energy decided to pull out of the project. A new investor was sought and the total shares of Río Doble were sold to the company Eólica Galenova. The new company Eólica Galenova had considered carbon revenues in the financial analysis of the project purchase, and subsequently an ERPA agreement was signed at that date between EnBW Kraftwerke AG and Río Doble. The date on which Eólica Galenova purchased Río Doble is the project starting date in line with CDM Glossary definitions. The selected starting date is the first project-related activity with a substantial financial commitment; all previous actions are of preparatory nature only, despite the

very early stage (26/04/2010) of prior consideration communication to the UNFCCC. The project history detailed above has sufficiently demonstrated its continuing and real actions taken in order to secure the project CDM status in parallel with its implementation.

The time elapsed between continuous actions is less than 2 years and in line with point 6b of EB 49 Annex 22.

In compliance with the requirements of the Guidance on Prior Consideration of CDM version 04 (EB 62 Annex 13) the validation team has assessed the above documented evidences presented by the PP by means of documentation review and on-site interview. On that basis, the validation team confirms that those documented evidences are authentic. It is also confirmed that the Río Doble notified the CDM EB (on 26/04/2010 as prior consideration notice is registered on the UNFCCC website) of their intention to develop the project as a CDM project in line with the guidance, as this project falls under Section 2, "Proposed project activities with a start date from 2 August 2008".

In compliance with the requirements of the Guidance on Prior Consideration of CDM version 04, the validation team has assessed the above-documented evidences presented by the PP by means of documentation review and on-site interview. On that basis, the validation team confirms that the documented evidence is authentic. SQS thus concluded that the project has sufficiently demonstrated its continuing and real actions taken in order to secure the project CDM status in parallel with its implementation. Based on the above as per VVM paragraph 104 (c) SQS confirms that the project fully complies with the latest version of the Guidance on Prior Consideration of CDM (version 04, EB 62 Annex 13).

3.6.2 Identification of alternatives to the project activity consistent with current laws and regulations.

The Tool requires the (Sub-step 1a) definition of alternatives to the project activity. As per ACM0002 since the project activity is the installation of a new grid-connected renewable power plant, the baseline scenario is the electricity delivered to the grid by the project activity that would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources. This leads to two alternative scenarios: Scenario 1, implementation of the project without CDM incentives and Scenario 2, continuation of the current practice, whereas the project participants do not invest and that power is generated by the operation of grid-connected power plants and by the addition of new generation sources.

The Tool requires the (Sub-step 1b) the checking of consistency with mandatory laws and regulations of the Host Country. PP has provided detailed analyses with legal compliance and its conclusion is that both scenarios are plausible have been confirmed.

Both scenarios are in compliance with all applicable legal and regulatory requirements, including the Electric Concessions Law⁵ (ECL) [29,30] with its modifications and regulations including the Law to Ensure the Efficient Development of the Electric Generation No 28832 (2006). The ECL demonstrates that the scenarios identified are valid and realistic options.

In article 9 of the ECL the environmental preservation and sustainability is listed as part of the project evaluation required for any concessions:

Article 9: The Peruvian Government seeks to preserve the environmental quality and cultural heritage of the country, as well as the rational use of natural resources in the development of activities related to generation, transmission and distribution of electricity.

⁵ Electric Concessions Law, Law No. 25844 (Ley de Concesiones Eléctricas, Ley No. 25844).
<http://www2.osinerg.gob.pe/MarcoLegal/pdf/LEYCE-DL25844.pdf> - (last accessed on 15/07/2012)

The environmental assessments in the energy sector are ruled by the Supreme Decree N° 29-94-EM.- Approval of the Rulebook of Environmental Protection in Electric Activities (1994)⁶, stating the detailed requirements of the environmental evaluations needed for new or extension projects. However, the lower threshold for an EIA, defined in the so-called Generation Authorisation applicable to smaller scale plants, was increased to 20 MW in the Law to Ensure the Efficient Development of the Electric Generation No 28832 (2006). As a result, Scenario 1 is not legally bound to present an EIA.

Based on the applicable Peruvian governing rules and regulations SQS concludes that Scenario 1, which is the HPP project without considering CDM benefits, would be in compliance with current laws and regulations, as:

There is no specific law that prevents the construction of a new HPP (including its environmental implications).

There is no regulation or law enforcing the construction of a new HPP.

SQS concludes that Scenario 2, which is to continue with the current situation, is clearly consistent with prevailing laws and regulations as there is no regulation in Peru that prevents the continuation of this current practice.

3.6.3 Investment analysis

As prescribed by the additionality tool itself, the project developer has chosen project IRR to demonstrate the additionality of the project by evaluating the financial attractiveness of the project without CDM income. As the alternative to the project activity is the supply of electricity from a grid and this is not an investment, the benchmark analysis is appropriate. Therefore, the sub-step 2a (Determine appropriate analysis method) has been conducted appropriately.

Sub-step 2b resulted in correctly choosing "Option III. Apply benchmark analysis" and applying Sub-step 2c (Calculation and comparison of financial indicators)

The financial returns of the proposed project are insufficient to justify the investment according to the validated IRR of 9.82% compared to a benchmark of 12.00%.

The parameters used in the financial calculations have been validated based on an assessment of the sources presented in the PDD. The main source of inputs to the investment model which led to the investment decision is the cost estimation from the Pre-due diligence report and Studies and Design Revision, realised by external, independent companies (Fichtner and Socoin, respectively), dated 09/04/2010 and 31/01/2011 [20,10-15,35]. The DOE can also confirm that the values in the PDD are fully consistent with these referenced documents. The following table lists the issues mentioned in "Guidelines on the assessment of Investment Analysis" version 05, EB 62, Annex 05.

IRR Calculations

The IRR calculations Excel sheet was checked for all of its input values and calculation functions. SQS verified that calculations were conducted appropriately. PP has calculated the IRRs of the project without and with CER revenues. The calculation is based on publicly available, Point Carbon (Carbon Market Daily)[41], CER price of 11.88 EUR available for 16/12/2010 corresponding to the dates of Socoin reports [10-15] describing project costs. SQS deems the use of 11.88 EUR as a CER price correct as it corresponds with the CER prices observed in March 2011, the starting date of the project activity.

Independent studies and statements by Socoin [10-15, 35] and Fichtner [20] and Andritz hydro [16] are the key sources of investment data. Given the fact that these documents not only served as the basis for planning the project, but also for the selling of the assets of the project company Río Doble their consistent values have a high level of certainty and had already been checked by various parties even before the start of

⁶ Supreme Decree N° 29-94-EM.- Approval of the Rulebook of Environmental Protection in Electric Activities (1994). <http://intranet2.minem.gob.pe/Web/archivos/dgaee/legislacion/DS-029-94.pdf>, (last accessed on 15/07/2012).

validation. SQS has checked the authenticity of the documentation available for the entire project history and found the values authentic. Moreover, SQS has compared the investment and operational-cost values to other similar projects and found them reasonable in terms of investment costs/installed MWh and annual operation and maintenance costs as percentage of initial investment.

Investment analysis key assumptions and parameters:

EB Guideline	Project	Validation
3: Period of assessment	The period of assessment taken is 40 years. This is in accordance with the guidance "In general a minimum period of 10 years and a maximum of 20 years will be appropriate". The project is taking a longer period which is more conservative.	The chosen technical lifespan of 40 years can be considered as appropriate and conservative and is supported by a Peruvian regulation.
4: Salvage value	The salvage value is zero.	The financial analysis is calculated over a period of 40 years. As assets are fully depreciated after 33 years according to Peruvian depreciation rules [38,39], the issue of salvage value should not arise.
5: Depreciation and other non-cash items	Depreciation and other non-cash items such as amortization are included when calculating the IRR.	Treatment is in line with Peruvian Income Tax Law (http://www.sunat.gob.pe/legislacion/renta/reglamento.html#), Chapter VI, Article 22: defines the standard depreciation rates per category.[38,39]
6: Time of assessment	All input values are based on data available as of 14/03/2011. This is the date that the company Río Doble (owner of the project) was sold to a new investor.	Fichtner and Socoin report data has been consistently used in all calculations. Therefore, costs at the time of decision making are deemed relevant and correct.[10-15,20,35]
7: Cessation of implementation	Not relevant for project.	Not applicable.
8: Provision of spreadsheet	Spreadsheet is provided.	Spreadsheet "Cash Flow Las Pizarras.xls" [3] contains all investment analysis data and calculations. The DOE confirms that the results can be reproduced.
9: Finance expenditures	Financing expenditures are not included when calculating the project IRR	DOE has validated the 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 that project IRR has been calculated.
11: Taxation	Taxation is applied in accordance with relevant tax laws on income tax and "Distribution of Income to Workers" fee.	DOE has verified that the financial analysis only includes the corporate income tax and the so called "Distribution of Income to Workers" in accordance with the Peruvian tax rules and regulations. DOE confirms the correctness of the treatment of taxation.[38,39]
12 - 18: Benchmark selection	The applied benchmark is a 12% discount rate established by the government in the Electric Concession Law (Law 25844 – Electric Concessions Law. Article 79, Page 40)[29,39] as the reference rate to evaluate investments in the power sector.	DOE has verified the benchmark IRR through the official documents provided [29,30].
19: If the alternative to the project activity is the supply of electricity from a grid this is not to be considered an investment and a benchmark approach is considered appropriate	The only credible alternative to the project going ahead with CERs is the continuation of the baseline scenario (grid electricity predominantly derived from fossil fuels).	A benchmark approach is applicable according to the Guideline.
20: Choice of variables for sensitivity analysis	Sensitivity analysis is made assuming the following variables to reach the benchmark (12%) level: +22% higher income from electricity sale (tariff) +38% higher Plant Load Factor	DOE has assessed the financial parameters and the variations of the parameters and confirms the correctness of the sensitivity analysis calculations.

	-18% (lower) project investment costs -154% (lower) operational costs These are all important cost/revenue variables.	
21: Range of variation of sensitivity analysis	The sensitivity analysis covers the range to reach the benchmark IRR (see point 20 above). Additionally, an ex-post assessment is made and a cross comparison if data ranges and their variations are plausible.	The parameters chosen are correct. All has been verified on the sheet. It is highly unlikely that a scenario will occur and the project activity will have a higher IRR than the benchmark.

The table below contains all input values used for the benchmark analysis calculation establishing the project IRR and their respective validation findings.

Item	Unit	Value	Data Source	Validation
Benchmark	%	12	The applied benchmark is a 12% discount rate established by the government in the Electric Concession Law (Law 25844 – Electric Concessions Law. Article 79, Page 40 [29,30]) as the reference rate to evaluate investments in the power sector.	DOE has verified the benchmark IRR through the official documents provided [29, 30]. This 12% rate corresponds to the EB 62 Annex 5 Group 1 rate of 11.75% for Peruvian energy projects. The chosen value is below the longer term commercial lending rate in Peru at the time of the starting date of the project therefore it does not only comply with Peruvian legislation, but also conservative)
Period of assessment	Years	40	The period of assessment taken is 40 years. This is in accordance with the guidance "In general a minimum period of 10 years and a maximum of 20 years will be appropriate". The project is taking a longer period which is more conservative.	The chosen technical lifespan of 40 years can be considered as appropriate and conservative and is supported by a Peruvian regulation.
Salvage value	Million USD	0	The salvage value is zero.	The financial analysis is calculated over a period of 40 years. As assets are fully depreciated after 33 years, the issue of salvage value should not arise.
Operating hours (Plant Load Factor)	Hours	5782 (66%)	Fichtner and Socoin studies	Based on studies [10-15,20,35] dated which were produced by independent consultancies, in accordance with EB 48 Annex 11 "Guidelines For The Reporting And Validation Of Plant Load Factors" II.3.b. The PLF has been cross-checked against other registered hydropower plants in Peru and can thus be considered as reasonable and conservative.
Generation capacity	MW	18	Based on technical design.	The generation capacity is consistent with the technical design [17,35]. All documents such as PPA contract [31]and government approvals [80-85] have been analyzed and the value can

				be confirmed as correct.
Total electricity generated per annum	MWh	103 320	Calculated with PLF and 18 MW capacity.	The installed capacity will be 18 MW as described above. The calculations have been done with the capacity of 18 MW. The electricity production by 18 MW with a 66% PLF is 103,320 MWh and thus confirmed by the DOE.
Electricity sold to the grid per annum	MWh	103 320 (104 000 in financial calculations as conservative rounded value)	The volume is defined by the PLF(66%) and generation capacity (18MW) [3] and based on the Fichtner and Socoin studies [10-15, 20,35]. and corresponding to the total produced and sold under the PPA [31] and the spot market	A conservative, rounded value of 104 000 MWh is used in the calculations). The PPA [31] defines (on page 31) the volume (85,000 MWh per annum) to be sold under the PPA. This defines the remaining amount to be sold on the spot market (19,000 MWh) remaining from the total generation capacity of 104,000 MWh per annum)
Electricity sale price	USD / KWh and US\$ per kw per month	Electricity Price - Peak Hours = 0.037087 USD / KWh Electricity Price – Off/Peak Hours = 0.030155 PPA Price = 0.064 Guaranteed Power Capacity Tariff (US\$ per kw per month) = 5.816327	PPA [31] and Resolution OSINERGMIN N° 079-2010-OS/CD [36]	The values were cross-checked with the applicable regulations and the PPA [31] itself. SQS confirms that in line with the Peruvian electricity concession law [29,30] the prices are defined and not subject to change in the future. This fixed PPA pricing - covering peak and off-peak tariffs and power capacity fee – defines the financial boundaries for the project. Resolution OSINERGMIN N° 079-2010-OS/CD [36] defines the applicable prices for the peak and off-peak hours for all Peruvian substations. In case of Las Pizarras the “Carhuaqueuero” SEIN substation is the applicable connection point and the peak (10,54), off peak (8,57) and power capacity (16,53) tariff is defined (page 8). The compulsory Peruvian sol USD exchange rate is defined on page 18 of the resolution as 2.842 soles/USD. The Peak (from 18.00h to 23.00h) and Off-Peak Hours are defined by OSINERG Resolution of the Commission on Electrical Tariffs No. 024-97 P/CTE ⁷
Annual operation and maintenance cost	USD	796,200	Project developer calculation [3, 24] based on the Fichtner and Socoin studies [10-15, 20,35 calculation [15,27]. State-sanctioned tariffs and contributions to OSINERG [37] and water fees for the Water Authorities (ANA)[29,30]are also included under this heading. The obligatory profit-sharing with workers [40] is listed under taxation.	PP has chosen an adequate, conservative value for O&M cost estimations. based on the Fichtner and Socoin studies [10-15, 20,35]. It must be noted that the values are taken from independent studies and the O&M costs need to change by 154% in order to reach the IRR benchmark (i.e. even if the O&M costs are zero the benchmark is not reached) . The proportion of annual costs to the overall investment costs (2.7%) is in line with similar hydro projects. SQS has validated all of the state/sanctioned, tariff like cost factors

⁷ Peak and off-peak hours defined in Section A (3) <http://www2.osinerg.gob.pe/Resoluciones/1997/24-1997.html> (last accessed on 16/10/2012)

				(contributions to OSINERG [37], water fees for the Water Authorities (ANA)[29,30]. SQS confirms the correctness and conservativeness of the calculations.
Project investment costs Civil works Machinery and Equipment cost Other costs	Thousand USD	33,727,143 18,088,401 11,647,596 3,991,146	Based on Fichtner and So-coin reports [[10-15, 20,35]	DOE can confirm that values in the PDD are fully consistent with the So-coin referenced document [10-15,35]. The appropriateness of the costs has been checked and it was deemed that the overall investment costs are reasonable and correctly applied. The per installed MW cost (cc. 1.874 million USD per installed MW) of the project reflect the design and the terrain where the project is implemented After assessment of all referenced documents, SQS assumes that the costs are appropriate and conservative.
Inflation considered	Percentage	No inflation was considered	Based on Fichtner and So-coin reports [[10-15, 20,35]	In order to establish the applicable project investment costs at the time of the project starting date the third party cost estimations were not adjusted with the inflation rate of Peru for the period between the date of the estimations and the project stating date of 14/03/2011.
Income tax and Distribution of Income to Workers	Percentage	30% 5%	Taxation is applied in accordance with relevant tax laws on income tax and "Distribution of Income to Workers"[40]fee.	DOE has verified that the financial analysis only includes the corporate income tax (30%) and the so called "Distribution of Income to Workers"(5%) in accordance with the Peruvian tax rules and regulations. DOE confirms the correctness of the treatment of taxation and the correctness of the value used. [38,40]
Depreciation	Percentage	10% for equipment, 3% for civil works	Peruvian Income Tax Law, Capitulo VI, Article 22 [39]	As the PP followed the Tax Law [39] on this parameter, these values are considered appropriate.
Exchange rate	USD/Euro Peruvian Sol / USD	1.35 2.842	Energy market regulation prescribing exchange rates for calculating tariffs (Resolución OSINERGMIN N°079-2010-OS/CD: "Resolución que fija los Precios en Barra aplicables al período comprendido entre el 01 de mayo de 2010 y el 30 de abril de 2011"[36]) and corresponding USD&EUR rate valid at the time of project starting date.	The Peruvian energy market regulations are correctly applied when establishing the exchange rate of 2.842 Peruvian Sol / USD (page 18 of [36]) The the corresponding USD/EUR rate valid at the time of project starting date has been established correctly ⁸ .
Price of CERs	EUR /CER	11.88 EUR	Carbon Market Daily 16/12/2010 [41]	The used CER price estimates were realistic at the time of the decision to proceed with the project.[41]

⁸Online converter with particula dates/types of conversion <http://www.oanda.com/lang/de/currency/converter/> (Last accessed on 16/10/2012)

The above mentioned Fichtner and Socoin reports [10-15, 20,35] were once again cross-checked against the PDD, and the DOE has conducted a further examination of the computations in the spreadsheet [3] in addition to the procedures to ensure correctness applied during validation.

All referenced documents have been verified and reviewed by the DOE and it can be confirmed that the values are correct.

All the input values used in the investment analysis (such as values used for the benchmark calculation, operating hours, internal consumption and total investment) were applicable at the time of investment decision.

Sensitivity analysis

The sensitivity analysis is a crucial part of the investment analysis as it guarantees that reasonable changes in the assumptions do not lead to fundamentally different conclusions related to the project. Based on the modeling results, SQS is on the opinion that the sensitivity analysis conducted by the project participant correctly applied realistic ranges for key factors and calculated their likely impacts on the IRR.

A sensitivity analysis has been conducted in line with Sub-step 2d (Sensitivity Analysis)

The sensitivity analysis was done for the project with variation of project's energy sales (both from changes in prices and changes in load factor), initial investment costs and O&M cost. These parameters are fully in line with the applicable guidance and include all those parameters that are contributing more than 20% to the total costs/revenues. The PP therefore conducted sensitivity analysis on the factors that are required and subsequently its sensitivity analysis results are found to be correct.

The project design document includes a calculation for each parameter with which the project benchmark IRR is exceeded and the assessment of the possibility of this occurring. Each of these calculations shown in the table below and corresponding PP statements have been found correct.

Turning point condition to reach the benchmark of 12%			
Energy Sales (from variations in the price of energy)	Energy Sales (from variations in the load factor)	Initial Investment Costs	Operation & Maintenance Costs
+22%	+38%	-18%	-154%

The smallest change of a parameter that would result in reaching the benchmark IRR is 22%. The factor by factor values and probabilities are as follows:

- Power tariff (energy sales increase): To reach the 12% benchmark value, the power tariff would need to increase by significantly more (+22%). This is not likely as a fixed priced Power Purchase Agreement is in place for more than 80% of the electricity generated.
- Plant Load Factor (energy sales increase): To reach the 12% benchmark value, The Plant Load Factor would need to be increased by significantly more (+38%). Power generation has been properly estimated based on climatic condition study which is carried out over a period of many years. The most likely scenario is a small fluctuation of PLF throughout the crediting period. The 66% load factor increased by 38% would result in a 91% PLF, this is not possible given the hydrology of the region and the lack of reservoir associated with the run-of-river plant.
- Total investment costs: To reach the 12% benchmark value, total investment costs would need to decrease

by significantly more (-18%). This is unlikely in Peru. The most likely outcome is an increase in costs. The likelihood and the means of a 18% decrease of investment costs was cross-checked against recent HPP infrastructure investments and project history. SQS found that no HPP projects were implemented within the budgetary estimations and their investments costs grew higher than the prevailing inflation rate. Moreover, SQS verified that the project's last updated budget presents a figure of 42.56 million USD, which is already 26% higher than the investment figure 33.73 million USD available at the start date of the project used in the investment analysis in the PDD. In other words, the present budget has to be decreased by 44% to reach the 12% benchmark value and this is considered highly unlikely by SQS.

- O&M costs: To reach the 12% benchmark value, in case O&M costs are reduced to a hypothetical value of zero, the IRR would not even reach the benchmark. Again, due to inflation in Peru, the most likely outcome is an increase in costs.

For all the chosen parameters +/- 10% variation was calculated during the validation; it is confirmed that the benchmark is not reached with a +/- 10% variation. This outcome of the sensitivity analysis was already proven by the PDD calculations of the changes that are required to reach the benchmark (.i.e. 22% is the smallest required change that is required to reach the benchmark; this 22% increase is required in case of energy price). Hence, the project additionality is confirmed.

The sensitivity and turning point analysis is conclusive: No realistic deviations from the key input prices resulted in an IRR that is above the benchmark of 12%.

The benchmark analysis, including the sensitivity analysis, demonstrated that the project cannot be economically feasible without the revenues associated with CDM. The PDD contains the calculation of the IRR values with CER revenues; these calculations based on the prevailing CER prices at the time of the project activity starting date (14/03/2011) are found correct.

The project IRR is increased to 11.76% when calculating with the CER revenue; this IRR value will be close to the applied benchmark of 12.00%. Therefore, the CER revenues are the only way for the PP to obtain a close to benchmark return on its hydropower investment.

SQS has used its local and sectoral experience to confirm that the underlying assumptions are accurate and appropriate and the financial calculations are correct.

The financial calculations have been reproduced by the validation team with the same result and are therefore considered correct.

SQS concluded that the CDM benefits will enable the project to become financially attractive by raising the IRR above the benchmark and consequently would enable the project developer to overcome the investment barrier.

3.6.4 Barrier analysis

The PDD section Barrier analysis (Step 3) of the Additionality Tool provides detailed description of the financial and technical barriers and it is conclusive regarding their nature. The PDD is unambiguous whether these barriers are real, but not preventive from the perspective of the project. The additionality barrier analysis is complementing the Investment analysis (Step 2) and the Common practice analysis (Step 4) and therefore the Barrier analysis section is additional and descriptive in its nature. The wording of the PDD is clear regarding the conclusion of the barrier analysis and the way on how it is used for supporting the additionality established by the Investment analysis (Step 2) and the Common practice analysis (Step 4).

The PP has identified investment and technological barriers in line with Sub-step 3a (Identify barriers that

would prevent the implementation of the proposed CDM project activity) and in line with Sub-step 3 (Show that the identified barriers would not prevent the implementation of at least one of the alternatives) demonstrated that scenario 1, the proposed project without CDM, faces restrictions due to the identified investment and technological barriers. The only remaining scenario is the baseline (scenario 2, production of electricity generated by the operation of grid-connected power plants and by the addition of new generation sources), which requires no investment from the project developer.

SQS has used its local and sectoral experience to confirm that the underlying barrier analyzes assumptions are accurate and appropriate and the barrier analysis is correct.

The investment analysis (Step 2 of the Tool) and the barrier analysis (Step 3 of the Tool) has resulted in the unambiguous identification and confirmation of the baseline, electricity generated by the operation of grid-connected power plants and by the addition of new generation sources.

3.6.5 Common practice analysis

In line with Sub-step 4a (Analyse other activities similar to the proposed project activity) PP has identified the thermoelectric and hydropower plants that were built since 2000 and 2005 respectively in Peru. PP has defined the geographic scope of the entirety of the host country, Peru, as the relevant area for the common practice analysis. SQS has verified that due to the nationwide nature of the electricity grid the geographical scope of the common practice analysis has been identified correctly. Following the Sub-step 4b (Discuss any similar options that are occurring) PP elaborated the key features of thermo-electric and hydropower plants.

SQS has assessed the available official information about HPP developments in Peru by consulting various sources such as the 2010 and 2011 annual reports⁹ of the Committee for the System's Economic Operation (COES) [44] and the Ministry of energy and Mining (MINEM) reports [45,46] describing the trends and details of hydropower production that has increased very little as compared to the dynamic growth of gas-based generation.

PP has demonstrated that the construction of thermal power plants has been the common practice in Peru, adding most of the power generation capacity over the last years. Over the last 6 years all hydropower projects have been registered under the CDM or are currently under validation (except one small-scale project with a low 658 USD/kW investment cost). The 658 USD/kW cost project is the Roncador Hydropower Plant, which cannot be considered as similar to the proposed project activity, due to the fact that it has a far smaller, 3.8 MW, installed capacity. In fact, this project falls outside the +/-50% size range for the F , N_{all} , N_{diff} calculations and therefore, should not be considered as a "similar activity".

Subsequently, the quantitative analysis resulted in $N_{all} = 12$ and $N_{diff} = 11$ according to paragraph 47 of the Tool, and subsequently the difference $N_{all} - N_{diff}$ is one (1) and $F = 1 - N_{diff} / N_{all} = 1 - 11/12 = 0.08$. The analyses conducted have been fully in line with paragraph 47 of the Tool. The common practice quantification for F ($=0.08$) and difference $N_{all} - N_{diff}$ ($=1$) results in demonstrating that the project is not common practice. If F is below 0.2 and the result of $N_{all} - N_{diff} = 1$, is below 3, then the project activity is not considered a common practice and is additional.

Therefore, SQS confirms that the proposed CDM project activity is not common practice in Peru and it is additional.

The DOE has cross-checked the information and sources contained in the updated PDD on all matters related to the baseline and additionality.

⁹ <http://www.coes.org.pe/wcoes/coes/salaprensa/estadanual.aspx?anio=2010> (last accessed on 15/07/2012)
<http://www.coes.org.pe/wcoes/coes/salaprensa/estadanual.aspx?anio=2011> (last accessed on 15/07/2012)

3.7 Monitoring plan

The monitoring plan described in the PDD was checked by desk-review and on-site.

Parameters determined *ex-ante*

The *ex-ante* parameter for the emission factor of the grid (0.65943 tCO₂e/MWh) used in the calculations is calculated from the latest available power sector data (covering 2010) publicly available from the National Interconnected Electric Grid (SEIN) at the time of submission of the PDD to the DOE for validation in line with the requirements of the applicable Tool [5,6]. All necessary parameters of $EF_{CO2,i,y}$ and $EF_{CO2,m,i,y}$, $EF_{EL,m,y}$ for establishing the emission factor of the grid ($EF_{CO2,grid,y} = EF_{grid,CM,y}$) have been validated by SQS and found correct.

As the project does not involve any reservoir or regulation tank for its normal operation, only a water diversion and a forebay therefore reservoir related *ex ante* parameters CAP_{BL}, A_{BL} are not applicable.

Parameters monitored *ex-post*

According to the documentation the following parameters are to be monitored:

- a) the quantity of net electricity supplied to the grid (auxiliary consumption; the electricity supplied to the grid by the project and the electricity delivered from the grid to the project)
- b) parameters that are required to calculate the combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM), according to the procedures prescribed in the Tool to calculate the emission factor for an electricity system.

The “surface area of the reservoir when the reservoir is full parameter” is not monitored as the project does not have a reservoir.

The monitoring procedures of those parameters have been sufficiently identified in the PDD.

The net electricity supplied to the grid will be measured and recorded in every 15 minutes by a power-meter calibrated by Peru's COES. This data will be used for invoicing electricity sales.

Methods of measurement are as per ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources (version 12.3.0) guidance.

The validation team thus confirmed that the parameters identified to be monitored are completely in accordance with the selected methodology.

The technical experts of the PP involved with the project activity have substantial experience in the field of energy generation. Therefore, it is SQS's unambiguous opinion that the project participant has the ability to implement the monitoring plan as required under CDM.

Management system and quality assurance

The project owner is reported to be responsible for the management of monitoring and reporting of the project. The management team for monitoring the project is identified in the PDD.

Detailed procedures have been developed in the PDD as follows:

- Data to be monitored;
- Operational and Management Structure for Monitoring plan;
- Monitoring of the net electricity supplied to the grid by the project;
- Quality assurance and quality control;
- Data management and training program; and
- Verification

The monitoring arrangements described in the monitoring plan of the PDD have been assessed by the validation team, by means of documentation review, interviewing the representative from the project owner and on-site observation. On that basis, the effective implementation of the monitoring plan is considered feasible. The validation team considered that the project owner is capable to implement the monitoring plan.

The DOE confirms the compliance of the monitoring plan with the requirements of the methodology and that it is feasible to be implemented.

The net energy input to the grid will be measured by COES. The net electricity supplied to the grid will be monitored by a power meter calibrated according to national standards with continuous measurement and monthly recording. COES owns the measurement equipment and is responsible for its calibration. PP also installs a second meter for quality assurance purpose only. Readings and invoicing are based on the COES meter.

The annual monitoring reports and data quality check will be realized by PP.

It is the DOE's opinion that the project participant is able to implement and follow the monitoring plan.

3.8 Sustainable development

The LoA from Peru [7] was issued during the validation process and it confirms explicitly that the proposed project meets the sustainable development criteria set by the host country for CDM projects. For confirmation to the contribution of the project to the sustainable development criteria of the host party, also refer to Section 3.1 of this report.

3.9 Local stakeholder consultation

The stakeholder groups that have been identified and interviewed are local residents, affected persons, local authorities. In SQS' opinion, these are groups affected by the project, and the project participants selected the right groups, conducted the consultation and reported the local stakeholder consultation correctly and sufficiently. The FONAM (National Environmental Fund¹⁰) organised stakeholder meetings were held on 08/06/2011 and another one on 10/06/2011 [48].

SQS has checked the documentation and attendance list of the local stakeholder consultation [48].

It is SQS' opinion that the process for invitation was adequate for CDM and that the stakeholders formally invited were identified in a fair and appropriate manner. The documents provide sufficient evidence for an unrestricted, open and detailed stakeholder consultation. This was also checked during the on-site visit by interviewing a few participants.

The Social Investment Plan that was elaborated by Rio Doble incorporating the stakeholders comments defined the following elements:

1. The company will support the dissemination of environmental knowledge by contributing with two environmental education modules, one for each secondary-school of the region. Scheduled for March 2013.
2. The company will support the Santa Cruz high-schools with 10 computers for each school (a total of 20 computers). Scheduled for March 2012.

¹⁰ <http://www.fonamperu.org/default.php> last accessed on 17/07/2012

3. The company will coordinate with the city of Santa Cruz to develop a reforestation programme. Scheduled for January 2014.
4. The company will support the Health Center of Santa Cruz with a contribution of USD 7,000 to purchase one portable X-ray machine and a lighting system for the surgery room. Scheduled for September 2012.

These four elements of the Social Investment Plan have been reported precisely by FONAM [48] on page 52-53 of the LSC report guaranteeing that they remain in the public domain and are accountable during the implementation of the project. The Peruvian DNA regularly conducts checks regarding the Social Investment Plan of CDM projects guaranteeing the implementation of the pledges made by the project participants.

SQS is satisfied about the adequacy and the manner on how the local stakeholder consultation was conducted.

3.10 Global stakeholder consultation

The PDD (Version 1 dated 26/06/2011) was published from 12/08/2011 to 10/09/2011 on the UNFCCC website. One comment was received but not deemed relevant. It was a wholesale copy and pasted from another project currently being validated by SQS. As the comment appeared to indicate a belief that the project activity does not comply with the CDM requirements, SQS requested further clarification from the sender via email as no other contact details were provided. As with all the other validations, where the same person has sent her/his standard non-project specific comments, SQS received no answer. SQS considers that it has taken the necessary steps to follow-up and address the questions submitted.

3.11 Environmental impacts

According to Peruvian law (Law to Assure the Efficient Development of Electric Generation; Law No. 28832 of 23/07/2006) [47] hydropower plants do not require to have their environmental impacts assessed with an Environmental Impact Assessment (EIA) provided their installed capacity is below 20 MW.

The area where the project is located is mainly unpopulated terrain, without any protected natural areas or species.

PP has defined and has implemented actions to reduce any identified negative impacts of the project, mainly taking place during the construction phase.

The PP is obliged to guarantee that during construction and operation phases the applicable environmental norms are followed.

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. The protocol shows in a 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 technical reviewer. The reviewer is not a member of the validation team. Certificates of Competence for each validation team member are included in Appendix D to this report.

Name	Role (1)	Country	Duties				
			Desk review	On-site audit	Resolution of CAR & CL	Report	Technical review
Zsolt Lengyel	LA	Switzerland	X	X	X	X	
David Gazdag	TM	Switzerland	X				
Martin Enderlin. PhD	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, underwent an internal review (by a member of the validation team) before being submitted to the project participants. The final validation report undergoes a technical review for final approval before requesting registration of the project activity. The technical reviewer is qualified in accordance with SQS' qualification scheme for CDM validation and verification.

7 Appendix A-B: On-Site Visit Program & Interviews

Date: 3 – 6 October, 2011

Time from to		Topic	Function/Department	People interviewed
03.11.2011				
9.00	12.00	Project presentation and analysis of technical aspects	Director, EcoRessources Consultant, EcoRessources PP representative, ENBW Kraftwerke AG	Mr Luis Salgado Ms Isabel Malaga Ms Cora Voigt
13.00	17.00	Project investment analysis (financial aspects)	Director, EcoRessources Consultant, EcoRessources PP representative, ENBW Kraftwerke AG	Mr Luis Salgado Ms Isabel Malaga Ms Cora Voigt
04.11.2011				
11.00	16.00	On-site visit (Las Pizarras Project location) Stakeholder consultation and environmental analysis.	Municipal Manager and Coordinator of the Water Users Association, Municipality of Santa Cruz Principal (Director), Juan Ugaz Elementary and Secondary School – Santa Cruz Doctor – Director, Health post – Santa Cruz	Mr Waldemar Vargas Llanos Mr Henry Perales Mr Roger Fernandez
05.11.2011				
9.00	14.00	Discussion ER-Calculation	Consultant, EcoRessources PP representative, ENBW Kraftwerke AG	Ms Isabel Malaga Ms Cora Voigt
14.00	15.00	Grid connection, Grid emission factor (dispatch order) and Electricity pricing (PPAs) regulations	Director of Operations, Peruvian grid operator - COES	Mr Francisco Torres
15.30	17.00	Regulatory issues related to water use for energy/irrigation purposes	Director – Water Resources Administration Direction - ANA Water Resources Administration Office	Mr José Luis Aguilar Huertas

06.11.2011				
10.00	11.30	Regulatory obligations for HPPs and CDM projects	CDM and Carbon Market Specialist , Ministry of Environment - Peruvian DNA	Mr Manuel García Rosell
13.00	16.00	Initial CAR/CL identification, closing of OSV	Director, EcoRessources Consultant, EcoRessources PP representative, ENBW Kraftwerke AG	Mr Luis Salgado Ms Isabel Malaga Ms Cora Voigt

8 Appendix C: Documents Reviewed

SQS Reference	File name/description
1a	PDD Las Pizarras Project version 1 26/06/2011
1b	PDD Las Pizarras Project version 2 26/10/2011
1c	PDD Las Pizarras Project version 3, dated 26/06/2012
2	PDD Las Pizarras Project version 4, dated 16/07/2012
3	Cash Flow Las Pizarras xls
4	ER 2011 v2.2.xls
5	OM 2011 v2.2.xls
6	BM 2011 v2.2.xls
7	LoA Peru dated 22/09/2011
8	LoA From the Federal Republic of Germany dated 28/03/2012
9	MoC Form signed by PPs
10	Socoin (2011). Proyecto Básico Las Pizarras (Basic Project Las Pizarras).
11	Socoin (2011). Proyecto Básico Las Pizarras (Basic Project Las Pizarras) – Annex I Hydrology.
12	Socoin (2011). Proyecto Básico Las Pizarras (Basic Project Las Pizarras) – Annex II Geology.
13	Socoin (2011). Proyecto Básico Las Pizarras (Basic Project Las Pizarras) – Annex III Hydraulic Calculations.
14	Socoin (2011). Proyecto Básico Las Pizarras (Basic Project Las Pizarras) – Annex IV Production Calculations.
15	Socoin (2011). Proyecto Básico Las Pizarras (Basic Project Las Pizarras) – Annex V Blueprints.
16	Andritz Hydro (2011). Letter with a technical lifetime assessment of the main equipment.
17	Exergia (2009). Central Hidroeléctrica Las Pizarras – Diseño Básico de la Central (Basic Design of HPP Las Pizarras).
18	Shareholder agreement between Aluz and EnBW Kraftwerke AG
19	Proposal from ÉcoRessources Carbone for CDM documentation of Las Pizarras CDM Project.
20	Fichtner (2010). Pre-Due-Diligence of Hydropower Projects in Peru – Las Pizarras HPP.
21	Email where Eólica Galenova demonstrates interest in purchasing Río Doble.
22	Offer Letter Aluz – Río Doble.
23	Contract between ÉcoRessources Carbone and EnBW Kraftwerke AG
24	Operation and Maintenance Costs Budget.
25	Board Meeting 14_03_2011 Eólica Galenova Purchase of Río Doble.
26	Purchase Contract Eólica Galenova – Aluz.
27	Purchase Contract Eólica Galenova – EnBW Kraftwerke AG
28	ERPA signed between EnBW Kraftwerke AG and Río Doble.
29	Electric Concessions Law No. 25844.

30	Electric Concessions Law No. 25844 – Rulebook.
31	Power Purchase Agreement for Rio Doble. & Addendum to Power Purchase Agreement for Rio Doble.
32	ESMAP (2011). Peru Opportunities and Challenges for Small Hydropower Development.
33	COES (2009). Annual Statistics Report. Chapter XIII.
34	The World Bank (2006). Technical and Economic Assessment of Off-Grid, Mini-Grid and Grid Electrification Technologies Summary Report.
35	Socoin (2011). Revisión de Estudios y Diseño (Studies and Design Revision).
36	OSINERGMIN Resolution N° 079-2010-OS/CD. Fixed prices applicable for the period between 01/05/2010 and 30/04/2011.
37	Contribution to Osinerg – D.S. 136-2002-PCM.
38	Rulebook for the Income Tax Law, Chapter VI.
39	Income Tax Law, Chapter VII.
40	Law 892 for Worker's Participation in Income.
41	Carbon Market Daily 16/12/2010.
42	Peru Price Indexes.
43	Law for Promotion of the Development of the Natural Gas Industry No. 27133.
44	COES (2010). Annual Statistics Report.
45	MINEM (2010). Perú Sector Eléctrico (Peru Electricity Sector Report).
46	MINEM (2007). Portafolio de Proyectos de Centrales de Generación (Portfolio of Generation Projects).
47	Law to Promote the Efficient Development of Electric Generation – Law 28832.
48	Local Stakeholder Consultation Report.
49	COES certificate of pre-operation study.
50	Letter from IESA S.A. confirming the participation of local workers in the construction of the HPP.
51	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN).
52	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex I.

53	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex II.
54	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex III.
55	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex IV.
56	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex V.
57	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex VIa.
58	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex VIb.
59	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex VIIa.
60	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex VIIb.
61	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex VIII.
62	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex IX.
63	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex X.
64	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex XI.
65	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex XII.
66	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex XIII.
67	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex XIV.
68	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex XV.
69	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex XVI.
70	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex XVII.
71	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex XVIII.
72	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex XIX.
73	Estudio de Pre-Operatividad de la Conexión al SEIN (Pre Operation Study of the Connection to the SEIN). Annex XX.
74	Project Chronogram.
75	Rio Doble Project Budget June 2011.
76	Internal Group Transfer EnBW International Climate Projects.

77	Prior Consideration UNFCCC.
78	Estudio Olacchea proposal for legal due diligence of purchase of Rio Doble.
79	Registry of Eólica Galenova Perú's shares.
80	Resolution No. 001-2008-INRENA-IRH (Water Rights).
81	Resolution No. 0078-2009-ANA-DARH (Water Rights).
82	Concession Contract 04_02_2009.
83	Concession transferred to Rio Doble 09_12_2009.
84	Concession Contract for Renewable Energy Supply 30_11_2010.
85	Municipal Authorization for Construction Works.
86	Projection for Evaluation of Possibility of PPA Price Changes
87	Letter of ownership of Eólica Galenova Perú S.A.
88	Letter of relationship between Eólica Galenova and Alarde.
89	Andritz Hydro Initial Investment Payment Distribution.
90	EnBW Annual Report 2010.
91	National approval process initiated.
92	Social Investments Chronogram
93	Statement of No Public Funding from Empresa Eléctrica Río Doble S.A. regarding the project
94	
95	

9 Appendix D: Certificates of Competence

Name: Mr Zsolt Lengyel

Scopes of expertise:

1	Energy industries (renewable/non-renewable sources) 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 ☐ X
2	Energy distribution TA 2.1: Electricity distribution TA 2.2: Heat distribution	X ☐ X
3	Energy demand TA 3.1 Energy demand	X X
4	Manufacturing industries TA 4.1: Cement sector TA 4.2: Aluminium TA 4.3: Iron and steel TA 4.4: Refinery	☐ ☐ ☐ ☐ ☐
5	Chemical industry TA 5.1: Chemical process industries	☐ ☐
6	Construction TA 6.1: Construction	☐ ☐
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 TA 11.2: GHG capture and destruction	☐ ☐ ☐
12	Solvents use TA 12.1: Chemical process industries	☐ ☐
13	Waste handling and disposal TA 13.1: Waste handling and disposal TA 13.2: Animal waste management	X X ☐
14	Afforestation and reforestation TA 14.1: Forestry	☐ ☐
15	Agriculture TA 15.1: Agriculture TA 15.2: Animal waste management	☐ ☐ ☐

Name: Mr David Gazdag

Scopes of expertise:		
1	Energy industries (renewable/non-renewable sources) 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	☐ ☐ ☐
2	Energy distribution TA 2.1: Electricity distribution TA 2.2: Heat distribution	☐ ☐ ☐
3	Energy demand TA 3.1 Energy demand	☒ ☒
4	Manufacturing industries TA 4.1: Cement sector TA 4.2: Aluminium TA 4.3: Iron and steel TA 4.4: Refinery	☐ ☐ ☐ ☐ ☐
5	Chemical industry TA 5.1: Chemical process industries	☐ ☐
6	Construction TA 6.1: Construction	☐ ☐
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 TA 11.2: GHG capture and destruction	☐ ☐ ☐
12	Solvents use TA 12.1: Chemical process industries	☐ ☐
13	Waste handling and disposal TA 13.1: Waste handling and disposal TA 13.2: Animal waste management	☐ ☐ ☐
14	Afforestation and reforestation TA 14.1: Forestry	☐ ☐
15	Agriculture TA 15.1: Agriculture TA 15.2: Animal waste management	☐ ☐ ☐

Name: Mr Martin Enderlin, PhD

Scopes of expertise:		
1	Energy industries (renewable/non-renewable sources) 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 X X
2	Energy distribution TA 2.1: Electricity distribution TA 2.2: Heat distribution	X □ X
3	Energy demand TA 3.1 Energy demand	X X
4	Manufacturing industries TA 4.1: Cement sector TA 4.2: Aluminium TA 4.3: Iron and steel TA 4.4: Refinery	□ □ □ □ □
5	Chemical industry TA 5.1: Chemical process industries	□ □
6	Construction TA 6.1: Construction	□ □
7	Transport TA 7.1: Transport	X 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 TA 11.2: GHG capture and destruction	□ □ □
12	Solvents use TA 12.1: Chemical process industries	□ □
13	Waste handling and disposal TA 13.1: Waste handling and disposal TA 13.2: Animal waste management	X X □
14	Afforestation and reforestation TA 14.1: Forestry	□ □
15	Agriculture TA 15.1: Agriculture TA 15.2: Animal waste management	□ □ □

10 Appendix E: Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CH ₄	Methane
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	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
LFG	Landfill Gas
MP	Monitoring Plan
MVP	Monitoring and Verification Plan
N ₂ O	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

**Swiss Association for Quality and
Management Systems (SQS)**

B e r n s t r a s s e 1 0 3
P . O . B o x 6 8 6
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F a x . + 4 1 3 1 9 1 0 3 5 4 5
h e a d o f f i c e @ s q s . c h
w w w . s q s . c h

CDM Validation Protocol

Enterprise

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Service

Audit/Assessment:	CDM PoA Validation
Audit/Assessment beginning/end:	01/08/2011 – 19/10/2012
Project name:	Las Pizarras Project
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UNFCCC Scope(s)/Technical area(s):	1 Energy
UNFCCC Methodology:	ACM0002 (Version 12.3.0) for Consolidated baseline methodology for grid-connected electricity generation from renewable sources
UNFCCC Scale:	Large-scale
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Introduction

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

[VVM] 35: The DOE shall raise a corrective action request (CAR) if one of the following occurs:

- The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- The CDM requirements have not been met;
- There is a risk that emission reductions cannot be monitored or calculated.

[VVM] 36: 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.

[VVM] 37: 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/Documents

No.	Title	Version
[1]	Clean Development Mechanism Validation and Verification Manual	1.2
[2]	Guidance in the demonstration and assessment of prior consideration of CDM	4
[3]	Guidelines on the Assessment of Investment Analysis	5
[4]	Glossary of CDM terms	6
[5]	Modalities and Procedures for a Clean Development Mechanism	unedited
[6]	ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources,	12.3.0
[7]	Tool for the demonstration and assessment of additionality	06.0.0
[8]	Tool to calculate the emission factor for an electricity system	02.2.0

Protocol 1: General CDM Requirements

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
1	Validation requirements based on paragraph 37 of the CDM modalities and procedures				
1.1	APPROVAL				
[1] 44	All Parties involved have approved the project activity.	7,8	DR	CAR1	OK
	Comment: CAR1: Please provide the Annex I Letter of Approval for the Project and its project participants. LoAs of both countries were received and therefore, CAR 1 was closed.				
1.1.1 [1] 45	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.	7,8	DR	OK	OK
	Comment: The LoAs are in accordance with CDM modalities and procedures. Neither of the LoAs contains reference to the version number of the PDD.				
1.1.2 [1] 46	The DOE shall determine whether the letter(s) of approval is unconditional with respect to (a) to (d) above.	7,8	DR	OK	OK
	Comment: The LoAs are unconditional with respect to (a) to (d) of para 45 of the VVM.				
1.1.3 [1] 47	The DOE shall confirm that the letter(s) of approval was issued by the respective Party's designated national authority (DNA) and is valid for the proposed CDM project activity under validation. A list of DNAs is available on the UNFCCC CDM website.	7,8	DR	OK	OK
	Comment: The DOE received both LoAs from the project participant. The Annex I country LoA is available directly through the Annex I country DNA's website.				
1.1.4 [1] 48	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.	7,8	DR	OK	OK
	Comment: The authenticity of both LoAs is unambiguous and has been checked with the issuing DNAs.				
1.2	PARTICIPATION				
[1] 51	All project participants have been listed in a consistent manner in the project documentation. Also, their participation in the project activity was approved by a Party to the Kyoto Protocol.	2,7, 8,9	DR	OK	OK
	Comment: Documentation, including the MoC form, is consistent. The PP's participation was approved by parties to the Kyoto Protocol.				
1.2.1 [1] 52	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 PP has been approved by at least one Party involved, either in a LoA 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.	2	DR	OK	OK

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
	Comment: The PP is listed appropriately in the PDD and they are the only entities that were approved by the respective DNAs.				
1.2.2 [1] 53	The DOE shall ensure that the approval of participation was issued from the relevant DNA and if in doubt shall verify with the DNA that the approval of participation is valid for the proposed CDM project participant.	7,8	DR	OK	OK
	Comment: The authenticity of both LoAs is unambiguous.				
1.3	PROJECT DESIGN DOCUMENT				
[1] 55	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.	2	DR	OK	OK
	Comment: The PDD has applied the latest template.				
1.3.1 [1] 56	The DOE shall determine whether the PDD is in accordance with the applicable CDM requirements for completing PDDs.	2	DR	OK	OK
	Comment: The PDD is in full compliance with relevant forms and guidance.				
1.4	PROJECT DESCRIPTION				
[1] 58	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.	2	DR	OK	OK
	Comment: Project activities in the PDD are clearly described.				
1.4.1 [1] 59	The DOE shall confirm that the description of the proposed CDM PoA 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.	2	DR	CAR2 CAR3 CL1 CL2 CL3 CL4 CL5 CL6 CL7 CL8 CL9 CL10 CL11 CL12 CL13 CL14 CL15 CL16 CL17 CL18 CL20	OK
	See Protocol 4 for the detailed description of the CAR-CLs.				
	Comment: The PDD has been amended and supportive materials have been provided regarding the above listed CARs and CLs and therefore these CARs and CLs have been closed.				
	The project description is therefore accurate and complete.				

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
1.4.2 [1] 60	For proposed CDM project activities in existing facilities or utilising existing equipment, 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 tons per year; (c) Bundled small scale projects, each with emission reductions not exceeding 15 000 tons per year; in such case the number of physical site visits may be based on sampling, if the sampling size is appropriately justified through statistical analysis.	2	DR, I	OK	OK
	Comment: An on-site visit confirmed that the description in the PDD reflects the proposed project activity accurately.				
1.4.3 [1] 61	For other individual proposed small scale CDM project activities with emission reductions not exceeding 15 000 tons per year, the DOE may conduct a physical site visit as appropriate.			N/A	N/A
	Comment:				
1.4.4 [1] 62	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.			N/A	N/A
	Comment:				
1.4.5 [1] 63	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.			N/A	N/A
	Comment:				
1.5	BASELINE AND MONITORING METHODOLOGY				
1.5.1	General requirement				
1.5.1.1 [1] 65	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.	2	DR	OK	OK
	Comment: The baseline and monitoring methodology used in the project fully complies with CDM EB requirements.				
1.5.1.2 [1] 66	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 PP has correctly applied the selected methodology.	2	DR	OK	OK
	Comment: The baseline and monitoring methodology used in the project fully complies with CDM EB requirements.				
1.5.1.3 [1] 67	The DOE shall ensure that the selected methodology applies to the project activity and has correctly been applied with respect to the following: (a) Project boundary; (b) Baseline identification; (c) Algorithms and/or formulae used to determine emission reductions;	2	DR	CAR2 CAR3	OK

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
	(d) Additionality; (e) Monitoring methodology.				
	Comment: CAR2: Correction to the sensitivity calculation and its parameters are needed as not all key factors are included. PDD amended therefore CAR 2 is closed. CAR 3: The Common practice analysis of the Additionality Tool does not include the required quantification as laid out in paragraph 47. PDD amended therefore CAR 6 is closed.				
1.5.2	Applicability of the selected methodology to the project activity				
[1] 68	The DOE shall validate that the selected baseline and monitoring methodology previously approved by the CDM Executive Board is applicable to the project activity, including that the used version is valid.	2	DR	OK	OK
	Comment: The methodology is applicable and the version used is the latest one available.				
[1] 69	The DOE shall apply specific guidance provided by the CDM Executive Board in respect to any approved methodology.	2	DR	OK	OK
	Comment: The applicability of the methodology is unambiguous.				
1.5.2.1 [1] 70	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.	2	DR	OK	OK
	Comment: The methodology and its supporting tools are correctly quoted and applied.				
1.5.2.2 [1] 71	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 the one 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.	2	DR	OK	OK
	Comment: The project activity is in line with applicability criteria. Therefore, the validation opinion is unambiguous regarding the applicability of the selected methodology to the proposed CDM project.				
1.5.2.3 [1] 72	If the DOE cannot make a determination regarding the applicability of the selected methodology to the proposed CDM project activity, the DOE shall request clarification of the methodology in accordance with the guidance provided by the CDM Executive Board.			N/A	N/A
	Comment:				
1.5.2.4 [1] 73	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.			N/A	N/A
	Comment:				

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
1.5.2.5 [1] 74	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.			N/A	N/A
	Comment:				
1.5.2.6 [1] 75	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.			N/A	N/A
1.5.3	Project boundary				
[1] 78	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.	2	DR	OK	OK
	Comment: Project boundary is appropriately described.				
1.5.3.1 [1] 79	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.	2	DR	OK	OK
	Comment: Project boundary is appropriately described.				
1.5.4	Baseline identification				
[1] 81	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.	2	DR	OK	OK
	Comment: Baseline has been established in line with the methodology.				
[1] 82	The DOE shall confirm that any procedure contained in the methodology to identify the most reasonable baseline scenario has correctly been 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.	2	DR	OK	OK
	Comment: The identification of the most reasonable baseline scenario has correctly been conducted.				
1.5.4.1 [1] 83	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			N/A	N/A

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
	to those required by the methodology, are reasonable in the context of the proposed CDM project activity and that no reasonable alternative scenario was excluded.				
	Comment:				
1.5.4.2 [1] 84	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.	2	DR	OK	OK
	Comment: Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable.				
1.5.4.3 [1] 85	The DOE shall determine whether all applicable CDM requirements have been taken into account in the identification 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.	2,29 ,30, 36,4 7,	DR	OK	OK
	Comment: Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD. It must be noted that grid connected electricity generation is stringently regulated and all Power Producers tendering for capacities/connection to the grid must comply with regulations.				
1.5.4.4 [1] 86	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.	2	DR	OK	OK
	Comment: 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.				
1.5.5	Algorithms and/or formulae used to determine emission reductions				
[1] 89	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.	2,4, 5,6	DR	OK	OK
	Comment: The equations applied to calculate project emissions, baseline emissions, leakage and emission reductions are compliant with the methodology and its applicable tools.				
1.5.5.1 [1] 90	The DOE shall determine whether the equations and parameters in the PDD were 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 was 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 were used, in accordance with the methodology selected.	2,4, 5,6	DR	OK	OK
	Comment: All assumptions and data used by the PPs are listed in the PDD, including their references and sources. All documentation used by the PPs as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD.				
1.5.5.2 [1] 91	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	2,4, 5,6	DR	OK	OK

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
	that 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.				
	Comment: All values used in the PDD are considered reasonable in the context of the proposed CDM project activity. The baseline methodology was 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				
[1] 94	The PDD shall describe how a proposed CDM project activity is additional.	2	DR	OK	OK
	Comment: The PDD sufficiently describes the additionality of the project.				
1.6.1 [1] 95	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.	2,3	DR	OK	OK
	Comment: The PDD describes the relevant aspects of energy generation in a reliable and credible manner.				
1.6.2 [1] 96	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.	2,3	DR	OK	OK
	Comment: The additionality tool is used and no alternative/additional requirements are applicable.				
1.6.1	Prior consideration of the clean development mechanism				
[1] 98	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.	2,18 - 28,7 7	DR	OK	OK
	Comment: Starting date of the project activity and prior consideration of CDM has been appropriately demonstrated and available evidence has been checked.				
1.6.1.1 [1] 99	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 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.	2	DR	OK	OK
	Comment: 14/03/2011 is the start date of the project activity. This is the date that the company Rio Doble (owner of the Project) was sold to a new investor and this action is defined as the first real action of the Project activity.				
1.6.1.2 [1] 100	The DOE, in accordance with the guidance from the CDM Executive Board, shall determine whether it is a new project activity (a project activity with a start date on or after 02/08/2008) or an existing project activity (a project activity with a start date before 02/08/2008).	2, 18- 28,7 7	DR	OK	OK
	Comment: The project is a "new project activity" according to the EB guidance.				

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
1.6.1.3 [1] 101	For a new project activity, for which the PDD has not been published for global stakeholder consultation or a new methodology proposed to the CDM Executive Board before the project activity start date, the DOE shall ensure by means of confirmation from the UNFCCC secretariat that PPs had informed the host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status. If such a notification has not been provided by the project participants within six months of the project activity start date, the DOE shall determine that the CDM was not seriously considered in the decision to implement the project activity.	2	DR	OK	OK
	Comment: Prior consideration confirmation to the UNFCCC was communicated on 26/04/2010.				
1.6.1.4 [1] 102	For an existing project activity, 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 which must indicate that the 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 which 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.	2, 18- 28,7 7	DR	OK	OK
	Comment: Starting date of the project activity and prior consideration of CDM has been appropriately demonstrated and available evidence has been checked.				
1.6.1.5 [1] 103	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.			N/A	N/A
	Comment:				
1.6.2	Identification of alternatives				
[1] 105	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.	2	DR	OK	OK
	Comment: The approved methodology prescribes the baseline scenario.				
1.6.2.1 [1] 106	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.	2	DR	OK	OK

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
	Comment: See 1.5.4. and 1.6.2 above.				
1.6.3	Investment analysis				
[1] 108	If the 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).	2,3	DR	CAR2	OK
	Comment: CAR2: Correction to the sensitivity calculation and its parameters are needed as not all key factors are included. PDD/calculations were amended accordingly and therefore CAR 2 is closed. Investment analysis has been used appropriately to demonstrate the additionality of the project.				
[1] 109	Project participants can show this through one of the following approaches, by demonstrating that: (a) The proposed CDM project activity would produce no financial or economic benefits other than CDM-related income. Document the costs associated with the proposed CDM project activity and the alternatives identified, and demonstrate that there is at least one alternative which is less costly than the proposed CDM project activity; (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.	2,3	DR	OK	OK
	Comment: The proposed CDM activity is less economically or financially attractive than at least one other credible and realistic alternative, and the financial returns of the proposed project activity would be insufficient to justify the required investment.				
[1] 110	The DOE shall comply with the latest version of the "Guidance on the Assessment of Investment Analysis" as provided by the CDM Executive Board and with other relevant guidance, including the latest guidelines on plant load factors "guidelines for the reporting and validation of plant load factors".	2,3	DR	OK	OK
	Comment: The investment analysis is compliant with the respective EB guidance.				
1.6.3.1 [1] 111	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.	2,3, 29,3 0	DR	OK	OK
	Comment: The parameters used in the financial analysis were validated by comparing official sources (e.g. IRR benchmark of the electric concession law etc.) and expert judgement (e.g. CAPEX of proposed project).				
1.6.3.2 [1] 112	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	2,3, 29,3 0	DR	OK	OK

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
	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 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: The IRR used in the PDD was compared to the EB guidance value and the Electric Concession Law defined 12% benchmark rate.				
1.6.3.3 [1] 113	The CDM Executive Board clarified that in cases where project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed CDM 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.			N/A	N/A
	Comment: FSR or similar studies are not required by Peruvian authorities.				
1.6.4	Barrier analysis				
[1] 115	If barrier analysis was 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.	2	DR	OK	OK
	The additionality was demonstrated based on the investment analysis.				
	Comment: However, barrier analysis demonstrated the additional difficulties the project activity is facing without discriminating the findings established in the investment analysis. Barrier analysis information was given for information purposes only and complements the investment analysis in its understanding.				
1.6.4.1 [1] 116	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: (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.	2	DR	OK	OK
	Comment: See 1.115 above.				
1.6.4.2 [1] 117	The DOE shall apply a two-step process to assessing the barrier analysis performed as follows: (a) <i>Determine whether the barriers are real.</i> 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	2	DR	OK	OK

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
	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) <i>Determine whether the barriers prevent the implementation of the project activity but not the implementation of at least one of the possible alternatives.</i> 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 <i>at least one of the possible alternatives</i>, in particular the identified baseline scenario.				
	Comment: See 1.115 above.				
1.6.5	Common practice analysis				
[1] 119	For proposed 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 activity is not widely observed and commonly carried out in the region.	2	DR	CAR-3	OK
	As a compulsory credibility check on the investment analysis results, a common practice analysis was conducted. Comment: CAR3: The Common practice analysis of the Additionality Tool does not include the required quantification as laid out in paragraph 47. The PDD has been amended accordingly, including the calculation of the factors F, Nall, Ndiff, therefore CAR 3 is closed.				
1.6.5.1 [1] 120	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. 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 as well as local and industry expertise, determine to what extent similar and operational projects (e.g., using similar technology or practice), other than CDM project activities, were 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.	2	DR	OK	OK
	Comment: The proposed activity is not common practice. See 1.6.5 above.				
1.7	MONITORING PLAN				
[1] 122	The PDD shall include a monitoring plan. This monitoring plan shall be based on the approved monitoring methodology applied to the proposed CDM project	2	DR	OK	OK

MoV = Means of Validation, DR = Document Review, I = Interview, N/A = Not Applicable

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

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
	activity.				
	Comment: The monitoring plan is based on the approved monitoring methodology.				
1.7.1 [1] 123	The DOE shall apply a two-step process to assessing compliance with this requirement as follows: (a) <i>Compliance of the monitoring plan with the approved methodology.</i> 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 of monitoring described in the plan complies with the requirements of the methodology; (b) <i>Implementation of the plan.</i> 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.	2	DR	OK	OK
	Comment: The monitoring plan is in compliance with the requirements of the methodology.				
1.8	SUSTAINABLE DEVELOPMENT				
[1] 125	CDM project activities shall assist Parties not included in Annex I to the convention in achieving sustainable development.	2,7	DR	OK	OK
	Comment: The host country LoA explicitly refers to the project benefits to sustainable development.				
1.8.1 [1] 126	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.	7	DR	OK	OK
	Comment: The host party's DNA confirmed the contribution of the project to the sustainable development of the host party.				
1.9	LOCAL STAKEHOLDER CONSULTATION				
[1] 128	Local stakeholders 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.	2,48	DR	OK	OK
	Comment: LSC has been conducted and documented appropriately by PP and FONAM.				
1.9.1 [1] 129	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.	2,48	DR	OK	OK
	Comment: The local stakeholder consultation was appropriately and adequately conducted.				

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
1.10	ENVIRONMENTAL IMPACTS				
[1] 131	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.	2,29 ,30	DR	OK	OK
	Comment: According to the Peruvian Electric Concessions Law (Law No. 25844), for the development of hydroelectric power plants of less than 10 MW the only requirement is a Generation Authorization, and a completion of an Environmental Impact Assessment (EIA) or its approval is not required. With the introduction of the Law to Assure the Efficient Development of Electric Generation (Law No. 28832) on 23/07/2006, the limit for a Generation Authorization was increased to 20 MW. As a result, the Project is not legally required to present an EIA.				
1.10.1 [1] 132	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.	2,29 ,30	DR	OK	OK
	Comment: See 1.131 above.				
2	Specific validation activities				
2.1	BACKGROUND				
[1] 134	Project participants may contract a DOE to undertake certain specific validation activities. For such validation activities, the DOE shall apply the general means of validation and reporting requirements described above as well as those described below.				
2.2	PROJECT DESIGN OF SMALL-SCALE CLEAN DEVELOPMENT MECHANISM PROJECT ACTIVITIES				
[1] 135	The DOE shall determine whether a proposed small-scale CDM project activity meets the requirements of the simplified modalities and procedures for small-scale CDM project activities.			N/A	N/A
	Comment:				
2.2.1 [1] 136	During its validation of a small-scale project activity, the DOE shall confirm that: (a) The project activity qualifies within the thresholds of the three possible types of small-scale project activities. It may include more than one component; for example, a type III methane recovery component activity and a type I electricity component activity; (b) The project activity conforms to one of the approved small-scale categories and applies the relevant tool or methodology. The DOE shall confirm that the small-scale methodologies are applied in conjunction with the general guidelines to SSC CDM methodologies, which provides guidelines on the equipment capacity, equipment performance/lifetime, baseline identification for type-II/III Greenfield project activities, sampling and other monitoring-related issues; (c) The project activity is not a debundled component of a large-scale project, in accordance with the rules defined in Appendix C of the simplified modalities and procedures for small-scale CDM project activities; (d) Whether an assessment of the environmental impacts of the proposed CDM project activity is required by the host Party.			N/A	N/A
	Comment:				
2.3	AFFORESTATION OR REFORESTATION PROJECT ACTIVITIES UNDER THE CLEAN DEVELOPMENT MECHANISM				
2.3.1	General requirement				

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
[1] 138	The guidance provided in section 1 above also applies to the validation of A/R CDM project activities to the extent defined in modalities and procedures for afforestation or reforestation (A/R) CDM project activities and relevant guidance by the CDM Executive Board.			N/A	N/A
	Comment:				
2.3.1.1 [1] 139	In addition, the DOE shall confirm that specific requirements, as defined in the modalities and procedures for A/R CDM project activities, were followed, including: (a) Project boundary for A/R CDM project activities; (b) Selection of carbon pools; (c) Eligibility of land; (d) Approach proposed to address non permanence; (e) Timing of management activities, including harvesting cycles, and verifications; (f) Socio-economic and environmental impacts, including impacts on biodiversity and natural ecosystems.			N/A	N/A
	Comment:				
2.3.2	Project boundary for A/R CDM project activities				
[1] 140	The PDD shall contain a description of the project boundary that geographically delineates the proposed afforestation or reforestation CDM project activity under the control of the project participants. The proposed A/R CDM project activity may contain more than one discrete area of land.			N/A	N/A
	Comment:				
2.3.2.1 [1] 141	The DOE shall confirm whether the PDD contains a description of the CDM project boundary which encircles discrete areas of land planned for the proposed afforestation or reforestation CDM project activity under the control of the project participants.				
	Comment:				
2.3.2.2 [1] 142	The DOE shall, through document review and/or interviews, validate that the project participants for all areas of land planned for A/R CDM project activity: (a) Have already established the control over afforestation or reforestation activities; or (b) The control over afforestation or reforestation is expected to be established in accordance to the guidance specified in the EB 44 report, Annex 16. The control has to include at minimum the exclusive right, defined in a way acceptable under the legal system of the host country, to perform the A/R activity with the aim of achieving net anthropogenic GHG removals by sinks. If the total number of documents to be reviewed and persons/entities to be interviewed is not less than ten, then the DOE may apply a sampling approach.			N/A	N/A
	Comment:				
2.3.3	Selection of carbon pools				
[1] 144	Proposed A/R CDM project activity may account for verifiable changes in the following carbon pools within the project boundary: above-ground biomass, below-ground biomass, litter, dead wood, and soil organic carbon.			N/A	N/A
	Comment:				

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
2.3.3.1 [1] 145	The DOE shall determine whether the PDD selected the carbon pools to be considered in the proposed A/R CDM project activity in accordance with the requirements of the selected approved methodology. If the approved methodology allows for an option to exclude certain carbon pools, the DOE shall confirm that verifiable information was provided to justify the exclusion. For this, the DOE shall ensure that all documents referred to in the PDD are correctly quoted and interpreted. If relevant, the DOE shall cross check the information provided in the PDD with other available information from public sources or local experts.			N/A	N/A
	Comment:				
2.3.4	Eligibility of land				
[1] 147	Project participants shall provide evidence that the land within the planned project boundary is eligible for a proposed A/R CDM project activity following the most recent version of the "Procedures to demonstrate the eligibility of land for A/R CDM project activities".			N/A	N/A
	Comment:				
2.3.4.1 [1] 148	The DOE shall validate, based on review of information that reliably discriminates between forest and non-forest land according to the particular thresholds adopted by the host country (exemplary sources are listed in the abovementioned procedures) and a site visit, that the area of land included within the project boundary is eligible for afforestation or reforestation activity.			N/A	N/A
	Comment:				
2.3.5	Conservative choice and application of default data				
[1] 150	Project participants shall ensure that application of default data in estimation of the net anthropogenic GHG removals by sinks results in conservative, but not overly conservative, estimates. An acceptable method for satisfying the above-mentioned requirement is provided in the most recent version of the "Guidelines on conservative choice and application of default data in estimation of the net anthropogenic GHG removals by sinks".			N/A	N/A
	Comment:				
2.3.5.1 [1] 151	The DOE shall review the PDD to ensure satisfactory application of "Guidelines on conservative choice and application of default data in estimation of the net anthropogenic GHG removals by sinks" in order to prevent any overestimation of reductions in anthropogenic emissions according to the provisions of the modalities and procedures for afforestation and reforestation CDM project activities.			N/A	N/A
	Comment:				
2.3.6	Approach proposed to address non permanence				
[1] 153	Project participants shall specify the approach proposed to address non permanence in accordance with paragraph 38 of the modalities and procedures for afforestation or reforestation CDM project activities.			N/A	N/A
	Comment:				
2.3.6.1 [1] 154	The DOE shall review the PDD to ensure an approach to address that non permanence is selected according to the provisions of the modalities and procedures for afforestation or reforestation CDM project activities.			N/A	N/A

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
	Comment: The validation report shall describe the approach selected by the project participants to address non-permanence.				
2.3.7	Timing of management activities, including harvesting cycles, and verifications				
[1] 156	Project participants shall plan management activities, including harvesting cycles, and verifications such that a systematic coincidence of verification and peaks in carbon stocks would be avoided.			N/A	N/A
	Comment:				
2.3.7.1 [1] 157	The DOE shall review the forest management plan and the monitoring plan for the proposed A/R CDM project activity to ensure that a systematic coincidence of verification and peaks in carbon stocks is avoided.			N/A	N/A
	Comment:				
2.3.8	Socio-economic and environmental impacts, including impacts on biodiversity and natural ecosystems				
[1] 159	Project participants shall submit to the DOE documentation on their analysis of the socioeconomic and environmental impacts, including impacts on biodiversity and natural ecosystems, and impacts outside the project boundary of the proposed afforestation or reforestation project activity under the CDM.			N/A	N/A
	Comment:				
2.3.8.1 [1] 160	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 the socio-economic and environmental impacts, including impacts on biodiversity and natural ecosystems, and impacts outside the project boundary.			N/A	N/A
	Comment:				
2.3.8.2 [1] 161	Should the above-mentioned analysis lead to conclusion that any negative impact that may be considered significant by the project participants or the host Party was detected, then the DOE shall, by means of document review, ascertain that a socio-economic impact assessment and/or an environmental impact assessment has been undertaken in accordance with relevant host Party regulations, and that the outcome of such impact assessment is summarized in the PDD. The DOE shall also ascertain that a description of the planned monitoring and remedial measures to address the negative impacts has been included in the PDD.			N/A	N/A
	Comment:				
2.4	PROJECT DESIGN OF SMALL-SCALE AFFORESTATION OR REFORESTATION PROJECT ACTIVITIES				
[1] 163	Small-scale afforestation or reforestation CDM project activities shall be validated using the requirements for afforestation or reforestation CDM project activities as described in section 2.3 above, while taking into account the simplified modalities and procedures for small-scale afforestation and reforestation CDM project activities.			N/A	N/A
	Comment:				
2.4.1 [1] 164	During its validation of a proposed small-scale A/R CDM project activity, the DOE shall determine whether: (a) The project activity complies with the thresholds for the small-scale A/R CDM project activities;			N/A	N/A

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
	(b) The project activity complies with one of the types of small-scale A/R project activities defined in Appendix B of the Annex to decision 6/CMP.1 and qualifies to apply one of the approved simplified baseline and monitoring methodology for small-scale afforestation and reforestation project activities; (c) The proposed CDM project activity is not a part of a debundled large-scale A/R project activity, in accordance with the rules defined in Appendix C of the Annex to decision 6/CMP.1; (d) The proposed CDM project activity was developed or implemented by low-income communities and individuals as confirmed by the host Party.				
	Comment:				
2.5	PROGRAMME OF ACTIVITIES				
[1] 165	The CDM Executive Board has provided guidance and procedures for registering a programme of activities (PoA) as a single CDM project activity. In validating a PoA and any CDM programme activities (CPAs) proposed to be included in the PoA, the DOE shall, in general, apply the means of validation and reporting requirements described in this Manual. However, there are a number of requirements unique to PoAs for which additional instructions are provided below. The precise extent of validation required in each of these areas will need to be determined by the DOE, based on the type or PoA being validated.			N/A	N/A
	Comment:				
2.5.1	Operational and management arrangements for the PoA				
[1] 166	The DOE shall assess the operational and management arrangements which have been established by the coordinating/managing entity in order to determine whether these arrangements are suitable for the PoA being validated. The arrangements shall be sufficient to ensure that the coordinating/managing entity will have control of all records and information related to the implementation of individual CPAs and will be in a position to ensure that each CPA is being operated in accordance with the specific requirements of the programme. Where the DOE considers the arrangements to be unsatisfactory or insufficient, a CAR shall be raised. A request for registration shall not be submitted until the CAR has been resolved to the satisfaction of the DOE.			N/A	N/A
	Comment:				
2.5.2	Eligibility criteria for CPAs				
[1] 167	The DOE shall assess the specified eligibility criteria in the POA-DD in order to determine whether or not these criteria are sufficient to ensure that all CPAs would comply with the CDM requirements applicable to the PoA. These requirements will include, inter alia, the means of demonstrating the additionality of the CPA and the applicability of the applied methodology. The eligibility criteria represent an essential element of ensuring the smooth functioning or programmatic CDM. Therefore, the DOE may raise CARs which ensure the ease of application of the eligibility criteria.			N/A	N/A
	Comment:				
2.5.3	Validation of CPAs				
[1] 168	The DOE shall assess any proposed CPA, which a coordinating/managing entity wishes to include in the PoA, to determine whether or not it complies with the eligibility criteria specified in the POA-DD. The means of validation to determine compliance with this requirement will be specific to the PoA. The DOE may			N/A	N/A

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
	consider a desk review of the documentation sufficient to determine compliance in certain instances. It may also consider follow-up interviews and/or site visits necessary for other types of PoA.				
	Comment:				
2.6	RENEWAL OF CREDITING PERIOD				
[1] 169	When contracted to validate a proposed CDM project activity for a second or further crediting period, the DOE shall undertake a thorough reassessment of the validity of the original baseline or any updates thereto proposed by the project participants, and the corresponding estimation of emission reductions for the applicable crediting period, based on the latest version of the procedures for renewing the crediting period, the latest applicable version of approved methodology and the means of validation described in this Manual.			N/A	N/A
	Comment:				
2.7	CHANGES TO THE START DATE OF THE CREDITING PERIOD				
[1] 170	The CDM Executive Board has revised procedures for requesting post registration changes to the start date of the crediting period. The requirement for the Host Country to re-confirm that the delay in the start date of crediting period will not affect project's contribution to sustainable development was removed, and that these revised procedures also contain provisions for project activities hosted in Least Developed Countries (LDCs). If project participants wish to delay the start date of the crediting period by more than one year but less than two years, and if project participants of projects hosted by a LDC wish to delay the start date of the crediting period by more than two year but less than four years, the DOE shall validate the baseline scenario in accordance with chapter V, section E, subsection 5(d) above.			N/A	N/A
	Comment:				

Protocol 2: Methodological Requirements (incl. tools)

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.										
3	Methodology ACM0002: Consolidated baseline methodology for grid-connected electricity generation from renewable sources - Version 12.2.0														
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). <table><tr><th>Applicability checklist</th><th>Yes / No / NA</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Y</td></tr><tr><td>Compliance provable?</td><td>Y</td></tr><tr><td>Compliance verified?</td><td>Y</td></tr><tr><td>Is the option correctly presented and confirmed?</td><td>Y</td></tr></table>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	Y	Compliance provable?	Y	Compliance verified?	Y	Is the option correctly presented and confirmed?	Y	2	DR	OK	OK
Applicability checklist	Yes / No / NA														
Criterion discussed in the PDD?	Y														
Compliance provable?	Y														
Compliance verified?	Y														
Is the option correctly presented and confirmed?	Y														
	Comment: Applicability has been confirmed.														
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. <table><tr><th>Applicability checklist</th><th>Yes / No / NA</th></tr><tr><td>Criterion discussed in the PDD?</td><td>Y</td></tr><tr><td>Compliance provable?</td><td>Y</td></tr><tr><td>Compliance verified?</td><td>Y</td></tr></table>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	Y	Compliance provable?	Y	Compliance verified?	Y	2	DR	OK	OK		
Applicability checklist	Yes / No / NA														
Criterion discussed in the PDD?	Y														
Compliance provable?	Y														
Compliance verified?	Y														
	Comment: The project is aiming at building a new hydro power plant (Greenfield).														
3.1.3	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>NA</td></tr><tr><td>Compliance provable?</td><td>NA</td></tr><tr><td>Compliance verified?</td><td>NA</td></tr></table>	Applicability checklist	Yes / No / NA	Criterion discussed in the PDD?	NA	Compliance provable?	NA	Compliance verified?	NA	2	DR	OK	OK		
Applicability checklist	Yes / No / NA														
Criterion discussed in the PDD?	NA														
Compliance provable?	NA														
Compliance verified?	NA														

MoV = Means of Validation, DR = Document Review, I = Interview, N/A = Not Applicable

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

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.																				
	Comment: The criterion is not applicable as the project covers a new hydro power plant (See Criterion no 1 above)																								
3.1.4	Applicability Criterion 3: In case of hydro power plants, one of the following conditions must apply: <table><tr><th>Applicability checklist hydro</th><th>Yes / No / NA</th></tr><tr><td>The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of reservoirs.</td><td>N</td></tr><tr><td>The project activity is implemented in an existing single or multiple reservoirs, where the volume of any of reservoirs is increased and the power density of each reservoir, as per the definitions given in the Project Emissions section, is greater than 4 W/m².</td><td>N</td></tr><tr><td>The project activity results in new single or multiple reservoirs and the power density of each reservoir, as per the definitions given in the Project Emissions section, is greater than 4 W/m².</td><td>Y</td></tr></table> In case of hydro power plants using multiple reservoirs where the power density of any of the reservoirs is lower than 4 W/m² ALL the following conditions must apply: <table><tr><th>Applicability checklist hydro B</th><th>Yes / No / NA</th></tr><tr><td>The power density calculated for the entire project activity using equation 5 is greater than 4 W/m².</td><td>NA</td></tr><tr><td>Multiple reservoirs and hydro power plants located at the same river and where are designed together to function as an integrated project that collectively constitute the generation capacity of the combined power plant.</td><td>NA</td></tr><tr><td>Water flow between multiple reservoirs is not used by any other hydropower unit which is not a part of the project activity.</td><td>NA</td></tr><tr><td>Total installed capacity of the power units, which are driven using water from the reservoirs with power density lower than 4 W/m², is lower than 15 MW.</td><td>NA</td></tr><tr><td>Total installed capacity of the power units, which are driven using water from reservoirs with power density lower than 4 W/m², is less than 10% of the total installed capacity of the project activity from multiple reservoirs.</td><td>NA</td></tr></table> Comment: There is no reservoir or regulating tank in the Project, as it involves only the construction of an intake, tunnel, low-pressure tunnel, forebay, and powerhouse a typical setup for smaller-scale hydro projects. As the applicability requires a greater than 4 W/m² power density the following can be demonstrated: The 18MW installed capacity is associated with an indefinitely small reservoir/regulating tank/desander equalling to the surface of the intake. If the power density is calculated based on the 18MW installed capacity and the insignificant surface of the intake the resulting power density is far bigger than the required 4 W/m² (also higher than 10W/m²).	Applicability checklist hydro	Yes / No / NA	The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of reservoirs.	N	The project activity is implemented in an existing single or multiple reservoirs, where the volume of any of reservoirs is increased and the power density of each reservoir, as per the definitions given in the Project Emissions section, is greater than 4 W/m ² .	N	The project activity results in new single or multiple reservoirs and the power density of each reservoir, as per the definitions given in the Project Emissions section, is greater than 4 W/m ² .	Y	Applicability checklist hydro B	Yes / No / NA	The power density calculated for the entire project activity using equation 5 is greater than 4 W/m ² .	NA	Multiple reservoirs and hydro power plants located at the same river and where are designed together to function as an integrated project that collectively constitute the generation capacity of the combined power plant.	NA	Water flow between multiple reservoirs is not used by any other hydropower unit which is not a part of the project activity.	NA	Total installed capacity of the power units, which are driven using water from the reservoirs with power density lower than 4 W/m ² , is lower than 15 MW.	NA	Total installed capacity of the power units, which are driven using water from reservoirs with power density lower than 4 W/m ² , is less than 10% of the total installed capacity of the project activity from multiple reservoirs.	NA	2	DR	OK	OK
Applicability checklist hydro	Yes / No / NA																								
The project activity is implemented in an existing single or multiple reservoirs, with no change in the volume of any of reservoirs.	N																								
The project activity is implemented in an existing single or multiple reservoirs, where the volume of any of reservoirs is increased and the power density of each reservoir, as per the definitions given in the Project Emissions section, is greater than 4 W/m ² .	N																								
The project activity results in new single or multiple reservoirs and the power density of each reservoir, as per the definitions given in the Project Emissions section, is greater than 4 W/m ² .	Y																								
Applicability checklist hydro B	Yes / No / NA																								
The power density calculated for the entire project activity using equation 5 is greater than 4 W/m ² .	NA																								
Multiple reservoirs and hydro power plants located at the same river and where are designed together to function as an integrated project that collectively constitute the generation capacity of the combined power plant.	NA																								
Water flow between multiple reservoirs is not used by any other hydropower unit which is not a part of the project activity.	NA																								
Total installed capacity of the power units, which are driven using water from the reservoirs with power density lower than 4 W/m ² , is lower than 15 MW.	NA																								
Total installed capacity of the power units, which are driven using water from reservoirs with power density lower than 4 W/m ² , is less than 10% of the total installed capacity of the project activity from multiple reservoirs.	NA																								
3.1.5	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	2	DR	OK	OK																				

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.	
	Applicability checklist	Yes / No / NA				
	Criterion discussed in the PDD?	NA				
	Compliance provable?	NA				
	Compliance verified?	NA				
	Comment:	Not applicable. However, as explained in the compliance with applicability criteria No .3. (See 3.1.4), a power density calculation will result in a far higher than 4W/m ² value (also higher than 10W/m ²).				
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.		2,3, 4,6	DR	OK	OK
	Boundary checklist	Yes / No				
	Source and gas(es) discussed in the PDD?	Y				
	Inclusion / exclusion justified?	Y				
	Explanation / Justification sufficient?	Y				
	Consistency with monitoring plan?	Y				
Comment:	Grid factor calculations have been carried out in line with the methodology and applicable tool requirements.					
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.				N/A	N/A
	Boundary checklist	Yes / No				
	Source and gas(es) discussed in the PDD?					
	Inclusion / exclusion justified?					
	Explanation / Justification sufficient?					
	Consistency with monitoring plan?					
Comment:						
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.				N/A	N/A
	Boundary checklist	Yes / No				
	Source and gas(es) discussed in the PDD?					
	Inclusion / exclusion justified?					
	Explanation / Justification sufficient?					
	Consistency with monitoring plan?					
Comment :						
3.2.3	Project Activity: For hydro power plants, emissions of CH ₄ from the single or multiple reservoirs.		2	DR	OK	OK
	Boundary checklist	Yes / No				
	Source and gas(es) discussed in the PDD?	Y				
	Inclusion / exclusion justified?	Y				
	Explanation / Justification sufficient?	Y				
	Consistency with monitoring plan?	Y				

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.										
	The 18MW installed capacity is associated with an indefinitely small reservoir/regulating tank/desander equalling to the surface of the intake. If the power density is calculated based on the 18MW installed capacity and the insignificant surface of the intake the resulting power density is far bigger than the required 4 W/m² (also higher than 10W/m²). However, as explained in the compliance with applicability criteria No .3 (see 3.1.4), a power density calculation will result in a far higher than 4W/m² value (also higher than 10W/m²). Therefore, emissions of CH₄ are excluded.														
3.3	DESCRIPTION OF HOW THE BASELINE SCENARIO IS IDENTIFIED AND 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: <table><tr><th>Baseline identification checklist</th><th>Yes / No</th></tr><tr><td>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".</td><td>Y</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Y</td></tr><tr><td>Compliance provable?</td><td>Y</td></tr></table> Comment: The methodology prescribes the baseline.	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".	Y	Explanation / Justification sufficient?	Y	Compliance provable?	Y	2	DR	OK	OK		
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".	Y														
Explanation / Justification sufficient?	Y														
Compliance provable?	Y														
3.3.2	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> Comment:	Baseline identification checklist	Yes / No	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.		Explanation / Justification sufficient?		Compliance provable?				N/A	N/A		
Baseline identification checklist	Yes / No														
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.															
Explanation / Justification sufficient?															
Compliance provable?															
3.3.3	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>	Step 1 realistic and credible alternative baseline scenarios for power generation	Yes / No	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?		Do the options considered include P1, P2 and P3?		Explanation / Justification sufficient?		Compliance provable?				N/A	N/A
Step 1 realistic and credible alternative baseline scenarios for power generation	Yes / No														
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?															
Do the options considered include P1, P2 and P3?															
Explanation / Justification sufficient?															
Compliance provable?															

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
	Step 2 Barrier Analysis				
	Is Step 2 correctly applied by using Step 2 of the "Combined tool to identify the baseline scenario and demonstrate additionality"?				
	Explanation / Justification sufficient?				
	Compliance provable?				
	Step 3 Investment Analysis				
	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.				
	Has the investment comparison analysis been applied following Step 3 of the "Combined tool to identify the baseline scenario and demonstrate additionality"?				
	Apply a benchmark analysis, if more than one alternative is remaining after Step 2 and if the remaining alternatives include scenarios P1 and P2.				
	Has the benchmark analysis been applied following Step 2b of the "Tool for the demonstration and assessment of additionality"?				
	Comment:				
3.3.4	In case of any modification or retrofit of existing facilities: Is data available to determine the historic production level?			N/A	N/A
	Comment:				
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?			N/A	N/A
	Comment:				
3.3.6	Describe why the alternative scenarios are credible and realistic?	2	DR	OK	OK
	Comment: The methodology prescribes the baseline. Therefore, the PDD focus is not on "baseline selection" but on "additionality".				
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?	2	DR	OK	OK
	Comment: The additionality analysis focuses on comparing the project activity scenario with the project activity without being registered as CDM.				
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?			N/A	N/A
	Comment:				
3.3.9	Does the project identify correctly and exclude those options not in line with regulatory or legal requirements?			N/A	N/A
	Comment:				
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?			N/A	N/A

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
	Comment:				
3.3.11	Changes are required for methodology implementation in 2 nd and 3 rd crediting periods: Has the continued validity of the baseline been correctly assessed?			N/A	N/A
	Comment:				

Tool to calculate the emission factor for an electricity system

The ACM0002 methodology requires the use of the “Tool to calculate the emission factor for an electricity system” to determine the CO₂ emission factor for the displacement of electricity generated by power plants in an electricity system, by calculating the “Operating Margin” (OM) and “Build Margin” (BM) as well as the “Combined Margin” (CM).

CHECKLIST TOPIC / QUESTION	Ref.	MoV*	Draft Concl	Final Concl								
H. Tool to calculate the emission factor for an electricity system												
H.1. Justification of the choice of the tool and why it is applicable to the project activity												
H.1.1. Is the applied tool considered the most appropriate one?	2	DR	OK	OK								
Comment:	Yes, the tool is considered the most appropriate one.											
H.1.2. Criterion 1: Is the tool used for the purpose of calculating baseline emissions where a project activity supplies electricity to a grid?	2,5,6	DR	OK	OK								
<table border="1"> <thead> <tr> <th>Applicability checklist</th> <th>Yes / No</th> </tr> </thead> <tbody> <tr> <td>Criterion discussed in the PDD?</td> <td>Y</td> </tr> <tr> <td>Compliance provable?</td> <td>Y</td> </tr> <tr> <td>Compliance verified?</td> <td>Y</td> </tr> </tbody> </table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Y	Compliance provable?	Y	Compliance verified?	Y				
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Y											
Compliance provable?	Y											
Compliance verified?	Y											
Comment:	The tool is used for the purpose of calculating baseline emissions where a project activity supplies electricity to a grid.											
H.1.3. 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?			N/A	N/A								
<table border="1"> <thead> <tr> <th>Applicability checklist</th> <th>Yes / No</th> </tr> </thead> <tbody> <tr> <td>Criterion discussed in the PDD?</td> <td></td> </tr> <tr> <td>Compliance provable?</td> <td></td> </tr> <tr> <td>Compliance verified?</td> <td></td> </tr> </tbody> </table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?		Compliance provable?		Compliance verified?					
Applicability checklist	Yes / No											
Criterion discussed in the PDD?												
Compliance provable?												
Compliance verified?												
Comment:												
H.1.4. 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 grid or results in increase of consumption of electricity from the grid outside the project boundary?			N/A	N/A								
<table border="1"> <thead> <tr> <th>Applicability checklist</th> <th>Yes / No</th> </tr> </thead> <tbody> <tr> <td>Criterion discussed in the PDD?</td> <td>Y</td> </tr> <tr> <td>Compliance provable?</td> <td>Y</td> </tr> <tr> <td>Compliance verified?</td> <td>Y</td> </tr> </tbody> </table>	Applicability checklist	Yes / No	Criterion discussed in the PDD?	Y	Compliance provable?	Y	Compliance verified?	Y				
Applicability checklist	Yes / No											
Criterion discussed in the PDD?	Y											
Compliance provable?	Y											
Compliance verified?	Y											
Comment:												
H.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”												
H.2.1. Parameter: EF _{grid,CM,y}	2,5,6	DR	OK	OK								
Combined margin CO ₂ emission factor for grid connected power generation in												

CHECKLIST TOPIC / QUESTION		Ref.	MoV*	Draft Concl	Final Concl										
year y Unit: tCO ₂ /MWh Type: calculated <table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Parameter discussed in the PDD?</td><td>Y</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Y</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Y</td></tr><tr><td>Consistency with monitoring plan?</td><td>Y</td></tr></table>		Boundary checklist	Yes / No	Parameter discussed in the PDD?	Y	Inclusion / exclusion justified?	Y	Explanation / Justification sufficient?	Y	Consistency with monitoring plan?	Y				
Boundary checklist	Yes / No														
Parameter discussed in the PDD?	Y														
Inclusion / exclusion justified?	Y														
Explanation / Justification sufficient?	Y														
Consistency with monitoring plan?	Y														
Comment:	Combined margin CO ₂ emission factor for grid connected power generation in year y is calculated correctly.														
H.2.2. Parameter: EF _{grid,BM,y} Build margin CO ₂ emission factor for grid connected power generation in year y Unit: tCO ₂ /MWh Type: calculated <table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Parameter discussed in the PDD?</td><td>Y</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Y</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Y</td></tr><tr><td>Consistency with monitoring plan?</td><td>Y</td></tr></table>		Boundary checklist	Yes / No	Parameter discussed in the PDD?	Y	Inclusion / exclusion justified?	Y	Explanation / Justification sufficient?	Y	Consistency with monitoring plan?	Y	2,5,6	DR	OK	OK
Boundary checklist	Yes / No														
Parameter discussed in the PDD?	Y														
Inclusion / exclusion justified?	Y														
Explanation / Justification sufficient?	Y														
Consistency with monitoring plan?	Y														
Comment:	Build margin CO ₂ emission factor for grid connected power generation in year y is calculated correctly.														
H.2.3. Parameter: EF _{grid,OM,y} Operating margin CO ₂ emission factor for grid connected power generation in year y Unit: tCO ₂ /MWh Type: calculated <table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Parameter discussed in the PDD?</td><td>Y</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Y</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Y</td></tr><tr><td>Consistency with monitoring plan?</td><td>Y</td></tr></table>		Boundary checklist	Yes / No	Parameter discussed in the PDD?	Y	Inclusion / exclusion justified?	Y	Explanation / Justification sufficient?	Y	Consistency with monitoring plan?	Y	2,5,6	DR	OK	OK
Boundary checklist	Yes / No														
Parameter discussed in the PDD?	Y														
Inclusion / exclusion justified?	Y														
Explanation / Justification sufficient?	Y														
Consistency with monitoring plan?	Y														
Comment:	Operating margin CO ₂ emission factor for grid connected power generation in year y is calculated correctly.														
H.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 FC _{i,y}) in year y or hour h Unit: mass or volume unit Type: official publication <table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Parameter discussed in the PDD?</td><td>Y</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Y</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Y</td></tr><tr><td>Consistency with monitoring plan?</td><td>Y</td></tr></table>		Boundary checklist	Yes / No	Parameter discussed in the PDD?	Y	Inclusion / exclusion justified?	Y	Explanation / Justification sufficient?	Y	Consistency with monitoring plan?	Y	2,5,6	DR	OK	OK
Boundary checklist	Yes / No														
Parameter discussed in the PDD?	Y														
Inclusion / exclusion justified?	Y														
Explanation / Justification sufficient?	Y														
Consistency with monitoring plan?	Y														

CHECKLIST TOPIC / QUESTION		Ref.	MoV*	Draft Concl	Final Concl										
Comment:	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 is calculated correctly.														
H.2.6. Parameter: EF _{CO2,i,y} CO ₂ emission factor of fossil fuel type i in year y Unit: tCO ₂ /GJ Type:		2,5,6	DR	OK	OK										
<table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Parameter discussed in the PDD?</td><td>Y</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Y</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Y</td></tr><tr><td>Consistency with monitoring plan?</td><td>Y</td></tr></table>		Boundary checklist	Yes / No	Parameter discussed in the PDD?	Y	Inclusion / exclusion justified?	Y	Explanation / Justification sufficient?	Y	Consistency with monitoring plan?	Y				
Boundary checklist	Yes / No														
Parameter discussed in the PDD?	Y														
Inclusion / exclusion justified?	Y														
Explanation / Justification sufficient?	Y														
Consistency with monitoring plan?	Y														
Comment:	CO ₂ emission factor of fossil fuel type i in year y is calculated correctly.														
H.2.7. 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		2,5,6	DR	OK	OK										
<table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Parameter discussed in the PDD?</td><td>Y</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Y</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Y</td></tr><tr><td>Consistency with monitoring plan?</td><td>Y</td></tr></table>		Boundary checklist	Yes / No	Parameter discussed in the PDD?	Y	Inclusion / exclusion justified?	Y	Explanation / Justification sufficient?	Y	Consistency with monitoring plan?	Y				
Boundary checklist	Yes / No														
Parameter discussed in the PDD?	Y														
Inclusion / exclusion justified?	Y														
Explanation / Justification sufficient?	Y														
Consistency with monitoring plan?	Y														
Comment:	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 is calculated correctly.														
H.2.8. Parameter (only for dispatch data OM): EG _{PJ,h} Electricity displaced by the project activity in hour h of year y Unit: MWh Type: monitored		2,4,5,6	DR	OK	OK										
<table><tr><td>Boundary checklist</td><td>Yes / No</td></tr><tr><td>Parameter discussed in the PDD?</td><td>Y</td></tr><tr><td>Inclusion / exclusion justified?</td><td>Y</td></tr><tr><td>Explanation / Justification sufficient?</td><td>Y</td></tr><tr><td>Consistency with monitoring plan?</td><td>Y</td></tr></table>		Boundary checklist	Yes / No	Parameter discussed in the PDD?	Y	Inclusion / exclusion justified?	Y	Explanation / Justification sufficient?	Y	Consistency with monitoring plan?	Y				
Boundary checklist	Yes / No														
Parameter discussed in the PDD?	Y														
Inclusion / exclusion justified?	Y														
Explanation / Justification sufficient?	Y														
Consistency with monitoring plan?	Y														
Comment:	Electricity displaced by the project activity in hour h of year y is calculated correctly.														
H.2.9. Parameter: (only for dispatch data OM) η _{m,y} Average net energy conversion efficiency of power unit m in year y Unit: - Type:		2,5,6	DR	OK	OK										

CHECKLIST TOPIC / QUESTION		Ref.	MoV*	Draft Concl	Final Concl
Boundary checklist	Yes / No				
Parameter discussed in the PDD?	Y				
Inclusion / exclusion justified?	Y				
Explanation / Justification sufficient?	Y				
Consistency with monitoring plan?	Y				
Comment:	Average net energy conversion efficiency of power unit m in year y is calculated correctly.				
H.2.10. Do the spatial and technological boundaries as verified on-site comply with the discussion provided by / indication included to the PDD?		2	DR	OK	OK
Comment:	The spatial and technological boundaries of the project as verified on-site comply with the PDD.				
H.3. Description of how the baseline methodology procedure is identified and description of the identified baseline procedure					
H.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?		2,5,6	DR	OK	OK
Comment:	Choice between the options offered by the tool are correctly justified.				
H.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?		2,5,6	DR	OK	OK
Comment:	All formulae required for the determination of the Operating Margin are correctly presented.				
H.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?		2,5,6	DR	OK	OK
Comment:	The Average OM has been selected and it is appropriate given the host country circumstances and data availability.				
H.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?		2,5,6	DR	OK	OK
Comment:	The formulae required for the determination of the Build Margin are correctly presented.				
H.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?		2,5,6	DR	OK	OK
Comment:	Capacity additions included in the Build Margin emission factor calculation are appropriately selected (the 5 plants have a cumulative capacity of 26.69%).				
H.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?		2,5,6	DR	OK	OK
Comment:	The formulae required for the determination of the Combined Margin are correctly presented.				
H.3.7. Are the values used for w_{OM} and w_{BM} correctly applied?		2,5,6	DR	OK	OK
Comment:	The values used for w_{OM} and w_{BM} are correctly applied.				
H.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		2,5,6	DR	OK	OK
Comment:	The calculation of the Operating Margin and Build Margin emission factors are documented electronically in a spreadsheet [7].				
H.3.9. Are the default efficiency factors for power plants used according to Annex I of the tool?		2,5,6	DR	OK	OK
Comment:	The default efficiency factors for power plants are used according to Annex I of the tool.				

Protocol 3: Project Specific Requirements

There are no project specific requirements beyond those already covered by Protocol 1 and Protocol 2. In case of PoA validations, the requirements of the PoA Standard (EB 65 Annex 3) are addressed directly in the Validation Report.

	Requirement	Ref.	MoV	Draft Concl.	Final Concl.
4	Project specific requirements				
4.1					
4.1.1					
	Comment:				
4.1.2					
	Comment:				
4.1.3					
	Comment:				
4.2					
4.2.1					
	Comment:				
4.2.2					
	Comment:				
4.2.3					
	Comment:				
4.3					
4.3.1					
	Comment:				
4.3.2					
	Comment:				
4.3.3					

Protocol 4: Summary of Requests

No.:	CL 1	Reference: A.2.
Verifier request:	Not all project elements are referred in Section A.2. (i.e. 138kV transmission line as part of the project and the obligation by COES to build the transmission line by PP at its own cost).	
Project participant response:	The sentence was changed to "the definitive study developed for the Project <i>includes</i> the construction of a 138 kV transmission line" The following sentence was also added "This transmission line is at the cost of the Project developer and is a requirement for the Project to be able to connect to the SEIN and therefore be able to sell its electricity to it."	
Verifier conclusion:	The PDD has been updated/amended therefore CL1 is closed.	Date: 27/02/2012

No.:	CL 2	Reference: A.2.
Verifier request:	A Figure/drawing describing the ownership relationship between the PP and other involved parties in the construction and operations of the hydropower project is missing.	
Project participant response:	The structure has been added as requested, as "Figure 1"	
Verifier conclusion:	The PDD has been updated/amended therefore CL2 is closed.	Date: 27/02/2012

No.:	CL 3	Reference: A.4.1.4.
Verifier request:	The GPS references of the project site and its various components contained in the ANA (water authority) and Concession describing the project are missing.	
Project participant response:	The coordinates stated in the water studies approval have been used for the PDD.	
Verifier conclusion:	The use of the GPS coordinates in the PDD is appropriate therefore CL3 is closed.	Date: 27/02/2012

No.:	CL 4	Reference: A.4.1.4. Figure 1
Verifier request:	The map showing the project area as it is not visible in printed versions of the document.	
Project participant response:	The map showing the project area has been modified so that it can be more clear, and tests have been run by printing the document in both colour and b/w and in both the map is shown completely.	
Verifier conclusion:	The PDD has been updated/amended therefore CL4 is closed.	Date: 27/02/2012

No.:	CL 5	Reference: A.4.3. Table 1
Verifier request:	Table 1 entries use the capital "M" mistakenly (rated net head is in meters not in M).	
Project participant	This has been corrected in the PDD.	

response:

Verifier conclusion:	The PDD has been updated/amended therefore CL5 is closed.	Date:	27/02/2012
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No.:	CL 6	Reference:	A.4.3. Table 1
Verifier request:	Table 1 does not include the main characteristics of the transmission line.		
Project participant response:	The main characteristics of the transmission line have been included as requested.		
Verifier conclusion:	The PDD has been updated/amended therefore CL6 is closed.	Date:	27/02/2012

No.:	CL 7	Reference:	B.3. Figure 3.
Verifier request:	Explicit reference to the Peruvian Grid (=SEIN) and the fossil fuel power plants that are connected to it is missing.		
Project participant response:	This has been included as requested.		
Verifier conclusion:	The PDD has been updated/amended therefore CL7 is closed.	Date:	27/02/2012

No.:	CL 8	Reference:	B.5. various
Verifier request:	The text does not reflect that the cost-overruns that led to the changing of ownership of the project company, Río Doble, are not related to and reflected in the project investment at time of the investment decision.		
Project participant response:	This has been changed as requested.		
Verifier conclusion:	The PDD has been updated/amended therefore CL8 is closed.	Date:	27/02/2012

No.:	CL 9	Reference:	B.5 Table 5
Verifier request:	Table 5 does not reflect the chronological order of the listed events. Table does not contain the Host Country LoA issuance date (22/09/2011)		
Project participant response:	This has been updated as requested in the PDD.		
Verifier conclusion:	The PDD has been updated/amended therefore CL9 is closed.	Date:	27/02/2012

No.:	CL 10	Reference:	B.5 Table 6
Verifier request:	Table 6 does not reflect the date of the PPA (28/08/2010) and the key characteristics of the PPA (volume: 85 000 MWh per annum) and does not elaborate the annual nature of the O&M costs.		

Project participant response:	This has been changed as requested in the PDD.		
Verifier conclusion:	The PDD has been updated/amended therefore CL10 is closed.	Date:	27/02/2012

No.:	CL 11	Reference:	B.5 Table 7
Verifier request:	Table 7 is not updated with latest financial indicator values.		
Project participant response:	This has been changed as requested in the PDD.		
Verifier conclusion:	The PDD has been updated/amended therefore CL11 is closed.	Date:	27/02/2012

No.:	CL 12	Reference:	B.5
Verifier request:	The gas subsidies/pricing that is mentioned in the PDD for energy generators are not sufficiently elaborated.		
Project participant response:	Gas is not subsidized in Peru, however its cost is very low when compared to international prices. Thermal generators used to pay only a fraction of the transport costs of gas and the rest was charged to consumers, but this is no longer the practice, therefore the sentence referring to this has been deleted from the PDD.		
Verifier conclusion:	The PDD has been updated/amended in line with the explanation provided by PP therefore CL12 is closed.	Date:	27/02/2012

No.:	CL 13	Reference:	B.5. Figure 4 and Figure 5
Verifier request:	Figure 4 and Figure 5 contain redundant information about various types of energy production capacities.		
Project participant response:	This has been changed as requested in the PDD.		
Verifier conclusion:	The PDD has been updated/amended therefore CL13 is closed.	Date:	27/02/2012

No.:	CL 14	Reference:	B.6.
Verifier request:	Use of real fonts for formulae used in the calculations (instead of pictures inserted) is required.		
Project participant response:	This has been changed as requested in the PDD.		
Verifier conclusion:	The PDD has been updated/amended therefore CL14 is closed.	Date:	27/02/2012

No.:	CL 15	Reference: B.7.1., Annex 4
Verifier request:	Auxiliary consumption/self consumption and cross check description and data with Annex 4 is missing.	
Project participant response:	This has been updated as requested in the PDD.	
Verifier conclusion:	The PDD has been updated/amended therefore CL15 is closed.	Date: 27/02/2012

No.:	CL 16	Reference: B.7.1.
Verifier request:	The periodicity of the EF factor recalculations is missing and the text does not reflect what happens if the $EF_{co\ Grid}$ is not available for a particular monitoring period.	
Project participant response:	This has been included as requested in the PDD.	
Verifier conclusion:	The PDD has been updated/amended therefore CL16 is closed.	Date: 27/02/2012

No.:	CL 17	Reference: E.3.
Verifier request:	The local social investment plant content is not in line with the agreement with the communities reflecting the reforestation and medical agreements.	
Project participant response:	Section E.3. considers all the final commitments undertaken by Río Doble and formalized during the local stakeholder consultation, including a reforestation program and the contribution to the medical post, among others. The estimated timing for each commitment has been added to the text in the PDD, obtained from a social investment chronogram from Río Doble (Ref Doc 52). Other actions are not included due to the fact that they are not final agreements. For example, the company is working with the municipality to specify what type of tools and inputs they can provide so that the municipality can use it in a plant nursery they have where they plan to produce 500,000 saplings. This is at the stage of conversations, as the support the municipality would need from Río Doble has not yet been defined.	
Verifier conclusion:	The explanation provided by PP is sufficient therefore CL17 is closed.	Date: 27/02/2012

No.:	CL 18	Reference: E.1.
Verifier request:	Section E.1. contains a reference to mining.	
Project participant response:	The reference to mining was only found in Annex 4 and has been eliminated.	
Verifier conclusion:	The PDD has been updated/amended therefore CL18 is closed.	Date: 27/02/2012

No.:	CL 19	Reference:	Annex 2
Verifier request:	Please submit statement by PP, ENBW Kraftwerke AG about public funding.		
Project participant response:	The statement (signed by both project participants) has been added to the reference documents – Ref Doc 53.		
Verifier conclusion:	The requested statement has been submitted therefore CL19 is closed.	Date:	27/02/2012

No.:	CL 20	Reference:	B,5
Validator request:	The PDD section Barrier analysis (Step 3) of the Additionality Tool provides detailed description of the financial and technical barriers however it is not conclusive regarding their nature. The PDD is not unambiguous whether these barriers are real/not real, preventive/not preventive from the perspective of the Project. The additionality analysis is based on Investment analysis complemented by the Common practice analysis and therefore the Barrier analysis section seems to be of additional and descriptive nature. However, the wording of the PDD regarding the conclusion of the Barrier Analysis and the way how Barrier Analysis is used for establishing additionality is unclear.		
Project participant response:	PDD has been amended to describe further details of the barrier analysis section.		
Validator conclusion:	The PDD has been amended accordingly the Additionality assessment sections and therefore CL 21 is closed.	Date:	16/07/2012

No.:	CAR 1	Reference: A.3
Verifier request:	Please provide the Annex I Letter of Approval for the Project and its project participants.	
Project participant response:	The LoA from Peru is included in the reference documents provided to the DOE (Ref Doc 51). The LoA from Germany (Annex I) has been received and forwarded to SQS.	
Verifier conclusion:	Both LoAs have been received therefore CAR 1 is closed.	Date: 20/06/2012

No.:	CAR 2	Reference: B.5 Table 8
Verifier request:	Correction to the sensitivity calculation and its parameters are needed as not all key factors are included.	
Project participant response:	The sensitivity analysis has been corrected and the load factor has been included as a variable. The calculations have been modified to show the necessary variations to reach the benchmark, and this has been updated in the PDD.	
Verifier conclusion:	The PDD has been updated/amended therefore CAR2 is closed.	Date: 27/02/2012

No.:	CAR 3	Reference: B,5
Validator request:	The Common practice analysis of the Additionality Tool does not include the required quantification as laid out in paragraph 47.	
Project participant response:	The PDD has been amended to include the common practice quantification.	
Validator conclusion:	The PDD has been amended therefore CL20 is closed.	Date: 20/06/2012