



RINA


VALIDATION OPINION FOR RENEWAL OF THE CREDITING PERIOD

“Pesqueiro Energia Small Hydroelectric Project (PESHP)”
in
Brazil


Validation Opinion N°2009-BQ-42-ME

Revision N°0.1

VALIDATION OPINION FOR RENEWAL OF THE CREDITING PERIOD

Project Title: "Pesqueiro Energia Small Hydroelectric Project (PESHP)"		Country: Brazil	CDM Registration Reference N°: 0242	
Client: Pesqueiro Energia S.A.		Client contact: Mr. Rosmir Cesar de Oliveira		
Report No.: 2009-BQ-42-ME		Revision: 0.1	Date of this report: 13/06/2012	
Approved by:  Roberto Cavanna			Date of approval: 15/06/2012	
Methodology				
Number: AMS-I.D	Version: 17 of 03/06/2011	Title: Grid connected renewable electricity generation	Scale Small	SS(s): 1
<p>RINA Services S.p.A. (RINA), commissioned by Pesqueiro Energia S.A., has performed the validation for renewal of the crediting period for the registered project activity "Pesqueiro Energia Small Hydroelectric Project (PESHP)" in Brazil.</p> <p>In conclusion, it is RINA's opinion that the project meets the requirements for the renewal of the crediting period stated in the "Procedures for renewal of the crediting period of a registered CDM project activity" (version 06.0, EB63 - Annex 29) and the approved methodology AMS-I.D, version 17 of 03/06/2011. The original baseline of the second crediting period is confirmed to be still valid.</p> <p>Hence RINA requests that the renewal of the crediting period of the project activity "Pesqueiro Energia Small Hydroelectric Project (PESHP)" in Brazil.</p>				

Work carried out by: Vicente San Valero, Cintia Mara Miranda Dias, Américo Varkulya	<input checked="" type="checkbox"/> No distribution without permission from the Client organizational unit responsible <input type="checkbox"/> Strictly confidential <input type="checkbox"/> Unrestricted distribution
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Work verified by:  Laura Severino	Keywords: Climate Change, Kyoto Protocol, Clean Development Mechanism, Validation
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Abbreviations

ANNE	Brazilian Electric Energy Agency - “Agência Nacional de Energia Elétrica”
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CER(s)	Certified Emission Reduction(s)
CH ₄	Methane
CL	Clarification Request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
CRT	Coordination and Technical Control Staff
DCI	Certification Division of RINA Services Spa
DNA	Designated National Authority
DOE	Designated Operational Entity
EB	Executive Board
EIA	Environmental Impact assessment
ER	Emission Reductions
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LoA	Letter of Approval
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
NGO	Non-governmental Organization
ODA	Official Development Assistance
PDD	Project Design Document
PE	Project Emission
PP(s)	Project Participant(s)
Ref.	Document Reference
RINA	RINA Services Spa
SS(s)	Sectoral Scope(s)
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

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1 INTRODUCTION

Pesqueiro Energia S.A. has commissioned RINA to carry out the validation of the updated PDD version 6 of 07/03/2012 for the CDM project activity “Pesqueiro Energia Small Hydroelectric Project (PESHP)” project in Brazil for the renewal of the crediting period for this project. The second renewable crediting period for the project ends on 26/01/2017.

This report summarizes the findings from the validation of the updated PDD of the project, performed on the basis of UNFCCC criteria for CDM, as well as criteria given by the “Procedure for renewal of the crediting period of a registered CDM project activity (Annex 11 version 05 of EB 46).

1.1 Objective

The objective of the Validation is to have an independent evaluation of the updated PDD’s compliance with relevant UNFCCC requirements and host Party criteria to confirm that the original project baseline is still valid, taking into account of new data where applicable. In particular, the project’s baseline, monitoring plan and the project’s compliance with relevant UNFCCC requirements and host Party criteria are validated in order to confirm the correctness of the application of the approved baseline methodology AMS-I.D version 17 of 03/06/2011 for the determination of the continued validity of the baseline/or its update, and estimation of the emission reductions for the applicable crediting period from 27/01/2010 to 26/01/2017 reported for the “Pesqueiro Energia Small Hydroelectric Project (PESHP)” project in Brazil.

1.2 Scope

The validation scope is to review the updated PDD against the UNFCCC criteria for CDM.

UNFCCC criteria for CDM refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures, the simplified modalities and procedures for small-scale CDM project activities and the subsequent decisions by the CDM Executive Board.

This validation opinion is also to be seen in conjunction with the validation report and protocol submitted at the time of requesting registration of the project (DNV – Validation Report No. 2005-0595 version 3 of 05/01/2006) /26/.

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

2 METHODOLOGY

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

The validation of the updated PDD is consequence of the verification activity which consisted of the following three phases:

- Document review
- Follow-up actions;
- The resolution of outstanding issues and the issuance of the final validation report.

The validation opinion is issued within nine to six months prior to the date of expiration of the current crediting period.

The following sections outline each step in more detail.

2.1 Document Review

The updated PDD, version 6 of 07/03/2012 /1/, in particular the applicability of the methodology, the baseline determination, the emission reduction calculations provided in the form of a spreadsheet, “Pesqueiro_CERs_rev.5_2011.12.23.xls” revision 5, dated 23/12/2011/4/ and the documents listed in the table below, were reviewed during the validation.

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/1/	Ecoinv Global Ltda.: CDM-PDD for project activity “Pesqueiro Energia Small Hydroelectric Project (PESHP)” in Brazil version 1 of 30/04/2009; Ecopart Assessoria em Negócios Empresariais Ltda: CDM-PDD for Project activity “Pesqueiro Energia Small Hydroelectric Project (PESHP)” in Brazil version 2 of 24/12/2009; Ecopart Assessoria em Negócios Empresariais Ltda: CDM-PDD for Project activity “Pesqueiro Energia Small Hydroelectric Project (PESHP)” in Brazil version 3 of 17/06/2010; Ecopart Assessoria em Negócios Empresariais Ltda: CDM-PDD for Project activity “Pesqueiro Energia Small Hydroelectric Project (PESHP)” in Brazil version 4 of 13/08/2010; Ecopart Assessoria em Negócios Empresariais Ltda: CDM-PDD for Project activity “Pesqueiro Energia Small Hydroelectric Project (PESHP)” in Brazil version 5 of 23/12/2011. Ecopart Assessoria em Negócios Empresariais Ltda: CDM-PDD for Project activity “Pesqueiro Energia Small Hydroelectric Project (PESHP)” in Brazil version 6 of 07/03/2012.
/2/	CDM Executive Board: Validation and Verification Manual, version 01.2 of 30/07/2010 – EB 55 Annex 1.
/3/	CDM Executive Board: Baseline and monitoring methodology “AMS-I.D”, “Grid connected renewable electricity generation”, version 17 of 03/06/2011.
/4/	Ecoinv Global Ltda.: spreadsheet with CER calculation “Pesqueiro_CERs.xls” received on 28/05/2009; Ecopart Assessoria em Negócios Empresariais Ltda: spreadsheet with CER calculation “Pesqueiro_CERs_rev.1_2009.12.24.xls” dated 24/12/2009; Ecopart Assessoria em Negócios Empresariais Ltda: spreadsheet with CER calculation “Pesqueiro_CERs_rev.1_2010.06.07_AW.xls” dated 07/06/2010 (received on 21/06/2010; Ecopart Assessoria em Negócios Empresariais Ltda: spreadsheet with CER calculation “Pesqueiro_CERs_rev.4_2010.08.13_AW.xls” dated 13/08/2010; Ecopart Assessoria em Negócios Empresariais Ltda: spreadsheet with CER calculation “Pesqueiro_CERs_rev.5_2011.12.23.xls” dated 23/12/2011.
/5/	Ecoinvest Assessoria Ltda.: CDM-PDD for project activity “Pesqueiro Energia Small Hydroelectric Project (PESHP)” in Brazil version 3B of 03/01/2006.
/6/	CDM Executive Board: “Procedures for Renewal of the Crediting Period of a Registered CDM Project Activity”, version 06.0 of 29/09/2011- EB 63, Annex 29.
/7/	CDM Executive Board: “Tool for Validity of the Original/Current Baseline and to Update the Baseline at the Renewal of a Crediting Period” version 03.0.0 of 25/11/2011- EB 65 Annex 20.
/8/	CDM Executive Board: “Guidelines for Completing the Simplified Project Design Document (CDM-SSC-PDD) and the Form for Proposed New Small Scale Methodologies (CDM-SSC-NM)”, version 5 of 14/09/2007 – EB 34 annex 9.
/9/	Pesqueiro Energia S.A. “PCH Pesqueiro Operation License , number 17892, protocol number 74098800”, dated 05/02/09 valid until 05/02/2013.
/10/	CDM Executive Board: “Conference of the Parties Serving the Meeting of the Parties to the Kyoto Protocol” dated 30/03/2006 – “Simplified Modalities and Procedures for Small-Scale Clean Development Mechanism Project Activities - Appendix B: Indicative Simplified Baseline and Monitoring Methodologies for Selected Small-scale CDM Project Activity Categories.
/11/	CDM Executive Board: “Conference of the Parties Serving the Meeting of the Parties to the Kyoto Protocol” dated 30/03/2006 – “Simplified Modalities and Procedures for Small-Scale Clean Development Mechanism Project Activities - Appendix C: Determining the Occurrence of Debundling.
/12/	CDM Executive Board: “Tool to calculate the emission factor for an electricity system” version 02.2.1 of 29/09/2011 – EB 63 Annex 19.
/13/	CDM Executive Board: ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, version 12.2.0 of 15/11/2011 – EB 65 annex 16.
/14/	Brazilian Electric Energy Agency - ANEEL Dispatch # 410, dated 29/06/2001 available in Portuguese at http://www.aneel.gov.br/cedoc/dsp2001410.pdf accessed by RINA on 24/01/2012.
/15/	Brazilian Electric Energy Agency – ANEEL Resolution # 325, dated 13/08/2001 available in Portuguese at http://www.aneel.gov.br/cedoc/res2001325.pdf accessed by RINA on 24/01/2012.
/16/	CDM Executive Board: “Conference of the Parties – Report of the Conference of the Parties on Its Seventh Session, held at Marrakesh from 29 October to 10 November 2001, dated 21/01/2002” –

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	Decision 17/CP.7: Modalities and procedures for a clean development mechanism, as defined in Article 12 of the Kyoto Protocol (Paragraph 6 c-i).
/17/	UNFCCC: website with Status of Ratification of the Kyoto Protocol available in English on http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php accessed by RINA on 27/01/2012.
/18/	UNFCCC: website with location of DNA available in English on http://cdm.unfccc.int/DNA/index.html accessed by RINA on 27/01/2012.
/19/	CDM Executive Board: "AMS-I.D Grid connected renewable electricity generation" version 07 of 28/11/2005.
/20/	Ministry of Science and Technology – MCT Interministerial Commission on Global Climate Change – CIMGC: Notes of explanation (emission factor), available at http://www.mct.gov.br/upd_blob/0024/24834.pdf , accessed on 30/01/2012 (English version).
/21/	Ministry of Science and Technology / MCT Interministerial Commission on Global Climate Change – CIMGC: Resolution # 8, dated 26/05/2008. Available at http://www.mct.gov.br/index.php/content/view/72738.html , accessed on 30/01/2012 (only in Portuguese).
/22/	Ministry of Science and Technology / MCT Interministerial Commission on Global Climate Change – CIMGC: emission factor data, available at http://www.mct.gov.br/index.php/content/view/307492.html , accessed on 30/01/2012 (English version).
/23/	ANEEL Electricity Generation Data: copy of screen obtained from ANEL website http://www.aneel.gov.br/aplicacoes/capacidadebrasil/capacidadebrasil.asp , accessed by RINA on 26/03/2012.
/24/	Brazilian DNA: website with data of Brazilian emission factor referent to year 2008 http://www.mct.gov.br/index.php/content/view/303077.html#ancora available in Portuguese accessed by RINA on 31/10/2012.
/25/	ANNEEL: SIGEL - Geo-referenced Information System of the Electric Sector : http://sigel.aneel.gov.br/ print screen referent to Pesqueiro SHP.
/26/	DNV: "Validation Report - Pesqueiro Energia Small Hydroelectric Project (PESHP) Report # 2005-0595", dated 05/01/2006 (http://cdm.unfccc.int/Projects/DB/DNV-CUK1137160660.09/view).
/27/	Bureau Veritas: Verification Report Pesqueiro Energia S/A, REPORT NO. BRAZIL-VER/00403/2010, dated 27/04/2010.
/28/	Generator's Nameplate pictures files "Placa Ide. Gerador 01 - Maquina 01.jpeg" and "Placa Ide. Gerador 02 - Maquina 02.jpeg"
/29/	Turbine's Nameplate pictures files "Placa Ide. Turbina 01 - Maquina 01.Jpeg" and "Placa Ide. Turbina 02 - Maquina 02.jpeg"

2.2 Follow-up actions

On 10/08/2009, RINA visited Jaguariáva Municipality, where the office of Pesqueiro Energia S.A is located and, on 11/08/2009 RINA visited the project site to resolve questions and issues identified during the document review of the updated PDD related to the renewable crediting period from 27/01/2010 to 26/01/2017. The key personnel interviewed and the main topics of the interviews are summarized in the table below.

	Date	Name and Role	Organization	Topic
/a/	10/08/2009	Rosmir César de Oliveira Rosmir César de Oliveira/ General Coordinator	Pesqueiro Energia S/A	<ul style="list-style-type: none"> Review of baseline and estimated emission reduction calculations; Installed equipments,
/b/	10/08/2009	Luiz Alfredo Strickert / Administrative Coordinator	Pesqueiro Energia S/A	<ul style="list-style-type: none"> Compliance with National Laws and regulations,
/c/	10/08/2009	Tateki Kanjo Kojima / Technical Coordinator	Pesqueiro Energia S/A	<ul style="list-style-type: none"> Monitoring Plan Monitored data

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	11/08/2009			
/d/	10/08/2009 11/08/2009	Ricardo Besen / Consultant	Ecopart Assessoria em Negócios Empresariais Ltda	

2.3 Resolution of outstanding issues

The objective of this phase of the validation was to resolve any outstanding issues which needed to be clarified prior to RINA's positive validation opinion for the renewal of the crediting period.

2.4 Internal quality control

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

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

2.5 Validation team and the technical reviewer(s)

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

Role	Last Name	First Name	Country
Team Leader CDM	San Valero	Vicente	Brazil
CDM Validator	Varkulya Jr.	Américo	Brazil
CDM Validator/ Technical Expert CDM	Mara Miranda Dias	Cintia	Brazil
Technical Reviewer	Valoroso	Rita	Italy
Technical Reviewer (FVR)	Menon	Rekha	India

3 VALIDATION FINDINGS

The findings of the validation related to the project, as described in the updated PDD version 6 of 07/03/2012 /1/, as well as previous PDD versions 1, 2, 3, 4 and 5 /1/, are stated in the following sections.

3.1 Project activity details

Project UNFCCC reference	0242
Date of registration	26/02/2006
Title of the project activity	"Pesqueiro Energia Small Hydroelectric Project (PESHHP)"
Methodology(ies)	AMS-I.D - Grid connected renewable electricity generation, version 17 of 03/06/2011
Renewable crediting period	From 27/01/2010 to 26/01/2017

The project activity consists of generation and delivery of renewable electricity to the Brazilian National Interconnected System, through a Small Hydroelectric Plant (SHP).

The "Pesqueiro Energia Small Hydroelectric Project (PESHHP)" first crediting period started on 27/01/2003 and expired on 26/01/2010, and it was built at Paraná State, at Jaguariaíva Municipality (latitude 24° 07' 58" South and longitude 49° 38' 09" West, as stated in PDD version 6 and confirmed by RINA).

The total installed capacity of the project activity is 12.44 MW with an estimated generation of 80,942 MWh/year (value of assured energy 9.24 MW multiplied by 8,760 hours/year).

During the site visit, all equipments of this project activity were verified and their technical specifications are in line with table 2 of PDD version 6 /1/ and in line with data provided in section 3.1 of the latest available verification report, dated 27/04/2010 /27/, which covered the crediting period from 01/03/2008 to 26/01/2010.

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The following parameters of generators employed by this project activity, which are in line with pictures of its respective nameplates /28/, were checked:

Generator 1

- Installed capacity – 6,800 KVA;
- Frequency – 60 Hz;
- Power Factor – 0.92
- Serial number – 100803

Generator 2

- Installed capacity – 6,800 KVA;
- Frequency – 60 Hz;
- Power Factor – 0.92
- Serial number – 100802

Regarding both turbines employed by this project activity, the following parameters, which are in line with pictures of its respective nameplates /29/, were checked:

Turbines 1 and 2

- Installed capacity – 6,220 kW
- Water fall – 86 m;
- Water flow – 8.05 m³/s
- Rotation - 514.3 RPM

3.2 Participation requirements

The project's host Party is Brazil and the Annex I Parties are Japan, Switzerland, United Kingdom of Great Britain and Northern Ireland.

Brazil and all Annex I countries involved in this project activity fulfill the requirements to participate in the CDM. All have ratified the Kyoto protocol and established a DNA as the participating requirements for CDM under the Kyoto Protocol. Brazil ratified the Kyoto Protocol on 23/08/2002 /17/ and established as DNA the Interministerial Commission on Global Climate Change (from Portuguese "*Comissão Interministerial de Mudança Global do Clima*") as per the UNFCCC website /18/; Japan ratified the Kyoto Protocol on 04/06/2002 /17/ and established as DNA the Liaison Committee for the Utilization of the Kyoto Mechanisms, as per UNFCCC website /18/; Switzerland ratified the Kyoto Protocol on 09/07/2003 /17/ and established as DNA the Federal Office for the Environment - FOEN, Climate Division, as per the UNFCCC website /18/; United Kingdom of Great Britain and Northern Ireland ratified the Kyoto Protocol on 31/05/2002 /17/ and established as DNA the Environment Agency, as per the UNFCCC website /18/.

The project participant Pesqueiro Energia S.A. is from Brazil and the following project participants are from Annex I countries: Ecopart Assessoria em Negócios Empresariais Ltda from United Kingdom of Great Britain and Northern Ireland; The Chugoku Electric Power Co. Inc. from Japan; CM Capital Markets Holding S.A. and Trading Emissions PLC from Switzerland. All project participants are private entities. The project participants are correctly listed in table A.3 of the PDD and the information is consistent with the contact details provided in Annex 1 of the PDD /1/.

3.3 Application of latest approved version of a baseline and monitoring methodology.

The project was originally registered based on version 07 of the approved baseline and monitoring methodology AMS-I.D "Grid connected renewable electricity generation" of 28/11/2005 /19/; the revised PDD, version 6 of 07/03/2012 //1// applied version 17 of 03/06/2011 of the same baseline and monitoring methodology /3/.

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3.4 Assessment of the validity of the original/current baseline and to update the baseline at the renewal of a crediting period.

RINA assessed the validity of the original baseline scenario or its update applying the “Procedures for Renewal of the Crediting Period of a Registered CDM Project Activity”, version 06.0 of 29/09/2011- EB 63, Annex 29 /6/ and “Tool for Validity of the Original/Current Baseline and to Update the Baseline at the Renewal of a Crediting Period” version 03.0.0 of 25/11/2011- EB 65 Annex 20 /7/.

The following steps have been applied to evaluate whether the current baseline is still valid for the next crediting period from 27/01/2010 to 26/01/2017 and to update the baseline in case that the current baseline is not valid anymore for the next crediting period.

Step 1: assess the validity of the current baseline for the next crediting period.

Based on EB requirement, RINA has assessed the impact of new relevant national and/or sectoral policies and circumstances on the baseline, using the following Sub-steps.

Step 1.1: assess compliance of the current baseline with relevant mandatory national and/or sectoral policies.

The applied baseline for the crediting period renewal AMS-I.D Grid connected renewable electricity generation version 17 of 03/06/2011 /3/ of “Pesqueiro Energia Small Hydroelectric Project (PESHP)” project activity defines that “The baseline scenario is that the electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources into the grid.” This definition is in line with the baseline defined by Grid connected renewable electricity generation AMS-I.D version 07 and applied on the registered PDD, which multiplies the electric energy produced by the renewable generation unit by the Brazilian grid emission factor, thus demonstrating that, in the absence of the project activity, the electric energy would be produced by Brazilian grid, which is partly based on fossil fuel.

The applied baseline is in compliance with all relevant mandatory Brazilian and/or sectoral policies (all applicable legal and regulatory requirements) that are in force at the time of requesting the renewal of the crediting period. There has been no significant change in the relevant national and/ or sectoral policies since the date of earlier registered PDD till now. Hence, it can be concluded that the current baseline still complies with all relevant policies.

The project activity is in line with environmental requirements, as demonstrated by the Operation License # 17892, dated 05/02/09, valid until 05/02/2013 /9/.

The project activity is also in accordance with Brazilian Regulatory Agency ANEEL, as demonstrated by ANEEL Dispatch # 410, dated 29/06/2001/14/, which approves the basic design of Pesqueiro SHP and describes its installed capacity of 12,440 kW, what is in accordance with table 2 of PDD version 6 (2 x 6.22 MW). Also the geographical coordinates described in section A.4.1.4 of PDD version 6 are in accordance with the mentioned ANEEL Dispatch # 410. The value of assured energy of 9.24 MW, applied on spreadsheet with CER’s calculations /4/ and on section B.6.3 of PDD version 6 is in accordance with ANEEL Resolution # 325, dated 13/08/2001 /15/.

Step 1.2: assess the impact of circumstances

When the project activity was registered (26/06/2006), the Brazilian emission factor was calculated based on data published by the Brazilian DNA and provided by ONS (National Electric System Operator) and considering the South-Southeast-Midwest regions (subsystems). After project's registration, the Brazilian DNA, (CIMGC) in its 43rd Meeting, on 29/04/2008 /20/ “*decided to adopt a SINGLE SYSTEM as the pattern for CDM projects using the tool for calculating emission factors associated with the ACM0002 methodology to estimate their greenhouse gas reductions*”, and also pointing out “*the expansion of electricity transmission support between the subsystems will promote gradual reductions in transmission constraints and will enable a project implemented in a given subsystem to produce benefits in the other subsystems of the SIN*”. Furthermore, the Interministerial Commission on Global Climate Change (CIMGC), through its Resolution # 8 /20/ dated 26/05/2008, and with effect on the date of its publication, decided:

“Art. 1st – Adopt the single system comprised of the union of National Interconnected System (NIS) subsystems as a definition of the “Project Electric System” for any Clean Development Mechanism (CDM) project activity connected to the NIS, supplying or using electricity from the grid, and applying the ACM0002 and AMS-I.D. methodologies and/or the “Tool to calculate the emission factor for an electricity system” approved by the CDM Executive Board.

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Sole paragraph - This definition, when applicable, shall be extended to any other methodologies dealing with project activities connected to the grid that come to be approved by the CDM Executive Board, unless expressed otherwise in a deliberation by this Commission".

Therefore, for the second crediting period, the Brazilian grid emission factor was updated based on the latest published available OM and BM emission factors of the Brazilian National Interconnected System, which are calculated by the Brazilian DNA (CIMGC) /22/ according to the "Tool to calculate the emission factor for an electricity system" and considering the National Interconnected System - SIN (North, Northeast, South and Southeast-Midwest), as stated in the Resolution # 8 /20/.

Step 1.3: assess whether the continuation of the use of current baseline equipment(s) is technically possible.

The most likely baseline scenario for this project activity (SHP) is the continuation of the Brazilian electricity grid being supplied by large hydro projects and by fossil fuel power plants, as it can be verified in ANNEL's Electricity Generation Data website /23/. According to this website (values accessed by PP on June 2010 – PDD version 6), in middle 2010, the SHP's represented 2.85 % of total installed capacity in Brazil, while large hydropower plants (69.39%) and thermal power plants (25.03%) represented 94.69% (large hydro + thermal) of total Brazilian Installed capacity. This high percentage of large hydropower plants and thermal power plants in the Brazilian Electric Matrix was also confirmed by RINA as still very significant (ANNEL's Electricity Generation Data website values assessed by RINA on 26/03/2012) in 2012, when the following percentages were found: SHP's represent 2.88% of total installed capacity in Brazil, while large hydropower plants (69.89%) and thermal power plants (24.50%) represent 94.39% (large hydro + thermal) of total Brazilian Installed capacity.

Thus, it is extremely likely that the Brazilian electricity grid will continue to be supplied mostly by large hydro and fossil fuel power plants, for a period much longer than this next 7 years period. It is also important to mention that the project activity, implemented 7 years ago, did not implied (and will not imply) in any transfer, retrofit or substitution of other plants.

Step 1.4: assessment of the validity of the data and parameters.

For the first crediting period, the combined margin (CM) emission factor, applying the Simple Adjusted method, was calculated *ex ante* as the weighted average ($W_{OM} = 0.5$ and $W_{BM} = 0.5$) of the operating margin (OM) and build margin (BM) emission factors, based on data published by the Brazilian DNA and provided by ONS (National Electric System Operator) and considering the South-Southeast-Midwest regions (subsystems).

The Brazilian grid emission factor estimated (*ex ante*), at the start of the first crediting period is not longer valid and thus has to be updated. The PDD version 6 of 07/03/2012 /1/ applied, for the calculation of Build margin of Brazilian grid, the information available at the time of submission of the request for renewal of the crediting period to the DOE, (2008), what is in line with "Tool to calculate the emission factor for an electricity system" version 02.2.1 /12/ and, consequently, the data applied for the operating are referent to the same year.

Therefore, for the second crediting period, the *ex ante* estimative for the Brazilian grid emission factor was calculated using the latest available emission factor (2008 - *data that was available at the time of submission of the request for renewal of the crediting period to the DOE*) of the Brazilian grid system. For 2008 the value applied of Build Margin is 0.1458 tCO₂/MWh and it is directly obtained from DNA website /24/. In case of Operational Margin, project participants provided a calculation based on assured energy /15/ and on average hourly Brazilian grid emission factor referent to year 2008, also provided by Brazilian DNA /24/, resulting in a value of 0.4487 tCO₂/MWh (CM=0.2215 tCO₂/MWh). This value is more conservative than the simple monthly average of Brazilian Operational Margin that results in 0.4766 tCO₂/MWh.

The weighting values of the operating ($W_{OM} = 0.25$) and Build ($W_{BM} = 0.75$) margin emissions factors applied on CER calculation by project participants for the second crediting period are in line with latest available version of the "Tool to calculate the emission factor for an electricity system".

The combined margin emission factor ($EF_{grid,CM,y}$) will be calculated/updated *ex post* using the publicly available CO₂ emission factors for the build margin and operating margin, that are provided by the Brazilian DNA. CO₂ emission factors for the build margin and the operational margin for electricity generation in Brazil's National Interconnected System (SIN) are calculated, according to the dispatch analysis, from generation records of plants dispatched in a centralized manner by the National Electric System Operator (ONS).

Step 2: update the current baseline and the data and parameters.

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Step 2.1: update the current baseline.

Project participants properly updated the baseline methodology AMS-I.D version 07 of 28/11/2005 applied in registered PDD /5/ to AMS-I.D Grid connected renewable electricity generation, version 17 of 03/06/2011 applied in revised PDD version 6 of 07/03/2012. As described in previous sections of this report, the applied baseline is in compliance with all relevant mandatory Brazilian and/or sectoral policies (all applicable legal and regulatory requirements) and “Pesqueiro Energia Small Hydroelectric Project (PESHP)” are in line with environmental law /9/ and ANEEL requirements /14/, /15/.

The emissions reductions were updated and calculates based on the emission factor of the Brazilian grid system for 2008 (data available at the time of the submission of PDD for renewal of crediting period to DOE) provided by the Brazilian DNA,

Step 2.2: update the data and parameters.

As per AMS-I.D version 17 of 03/06/2011, “Parameters relevant to reservoir based hydro and geothermal plants not included in this table shall be monitored following the most recent version of ACM0002 /13/” thus the following parameters available at validation were include by project participants:

- Cap_{BL} - Installed capacity of the hydro power plant before the implementation of the project activity. In accordance with the ACM0002 methodology, for new hydropower plants, this value is zero;
- A_{BL} - Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full. In accordance with the ACM0002 methodology, for new reservoirs, this value is zero.

3.5 Monitoring

The project applies the approved monitoring methodology AMS-I.D “Grid connected renewable electricity generation” version 17 of 03/06/2011 /3/. The selected monitoring methodology is applicable to the registered project activity.

3.5.1 Monitored data for project emission

As defined by applied baseline methodology AMS-I.D version 17 of 03/06/2011 /3/, the project emissions must be calculates as defined by the latest available version ACM0002 /13/. Thus, the project emissions must be considered only in cases where the value of power density (PD), calculated as follows, is higher than 10 W/m^2 :

$PD = (Cap_{PJ} - Cap_{BL}) / (A_{PJ} - A_{BL})$, where:

- Cap_{PJ} - Installed capacity of the hydro power plant after the implementation of the project activity (W) - in case of this project activity, this values is 12,440,000 W /14/
- Cap_{BL} - Installed capacity of the hydro power plant before the implementation of the project activity (W). For new hydro power plants, this value is zero
- A_{PJ} - Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full (m^2) - in case of this project activity this value is 0.33 km^2 ($330,000 \text{ m}^2$) /25/
- A_{BL} - Area of the single or multiple reservoirs measured in the surface of the water, before the implementation of the project activity, when the reservoir is full (m^2). For new reservoirs, this value is zero

Thus the power density of this project activity is 37.7 W/m^2 and project emissions do not need to be considered in emission reductions calculations.

3.5.2 Monitored data for leakage

As the equipments employed by “Pesqueiro Energia Small Hydroelectric Project (PESHP)” project activity were not transferred from another activity, as per AMS-I.D version 17 of 03/06/2011, the leakage does not need to be addressed.

3.5.3 Monitored data for baseline emissions

The following monitored parameters were included in project activity in line with AMS-I.D version 17 of 03/06/2011 /3/ :

- $EG_{BL,y}$ - Quantity of net electricity supplied to the grid as a result of the implementation of the CDM project activity in year y. This parameter is equivalent to the parameter $EG_{PJ,y}$ used to calculate the operating

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margin CO₂ emission factor of the grid, as mentioned in the “Tool to calculate the emission factor for an electricity system” . The applied value of 80,942 MWh, corresponds to the value of assured energy 9.24 MW /15/ multiplied by 8,760 hours/year.

- $EG_{PJ,h}$ - Electricity displaced by the project activity in hour h of the year y. The electricity delivered to the grid is monitored by the project owner. Hourly aggregated information will be used to determine the operating margin CO₂ emission factor the applied value of 9.24 MW is in line with ANEEL Resolution # 325, dated 13/08/2001.
- $EF_{EL,DD,h}$ - CO₂ emission factor for power units in the top of the dispatch order in hour h in year y. Data provided from Brazilian DNA;
- Cap_{PJ} - Installed capacity of the hydro power plant after the implementation of the project activity. In line with ANEEL Dispatch # 410, dated 29/06/2001 /14/;
- A_{PJ} - Area of the single or multiple reservoirs measured in the surface of the water, after the implementation of the project activity, when the reservoir is full. Verified by SIGEL - Geo-referenced Information System of the Electric Sector /25/.

3.5.4 Estimation of the GHG emissions for the renewal crediting period

The project is expected to result in an annual average of 125,492 tCO₂ during the second 7 years renewable crediting period starting from 27/01/2010 to 26/01/2017 (annual average emission reductions of 17,927 tCO₂/year). The spreadsheet used to calculate the values was verified and found to be correct /4/.

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4 VALIDATION OPINION

RINA Service Spa (RINA) has performed a validation of the updated PDD for the project activity “Pesqueiro Energia Small Hydroelectric Project (PESHP)” in Brazil, CDM Registration Reference N° 0242. The validation of the updated PDD has been performed for the 7 years renewal crediting period (from 27/01/2010 to 26/01/2017) and is based on the information made available to us.

RINA has performed this validation on the basis of the following documents:

- Procedures for renewal of the crediting period of a registered CDM project activity (version 06.0 of 29/09/2011- EB 63, Annex 29);
- Clean Development Mechanism Validation and Verification Manual version 01.2 of 30/07/2010;
- Approved baseline and monitoring methodology AMS-I.D version 17 of 03/06/2011.

It is RINA's opinion that the project meets the requirements for the renewal of the crediting period stated in the “Procedures for renewal of the crediting period of a registered CDM project activity”.

Hence RINA requests the renewal of the crediting period of the project activity “Pesqueiro Energia Small Hydroelectric Project (PESHP)” in Brazil.

Brazil, 13/06/2012



Vicente San Valero
CDM Team Leader
RINA Brazil

Genova, 15/06/2012



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

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APPENDIX A

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Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests	Summary of project participants' response	Validation team conclusion
CAR-1 The project activity falls into Category D, Electricity Generation for a system and Type 1, Renewable energy projects. Please correct the category mentioned in the updated PDD.	The category was corrected in the updated PDD.	The PDD version 2 correctly revised the project category on page 10, Section B.2. This CAR is closed.
CAR-2 The beginning of the renewed crediting period is the first day after the ending date of the previous crediting period. As the first crediting period expires on 26/01/2010, the first day of the renewed crediting period should be 27/01/2010. Please correct PDD's table 3 - item A.4.3.	The first day of the renewed crediting period was corrected in sections A.4.3 and B.6.4 and in the CERs calculation.	The second crediting period was correctly revised (27/01/2010 until 26/01/2017) on the PDD version 2 - Sections A.4.3 and B.6.4. This CAR is closed.
CAR-3 The CERs calculation must be based on the electricity produced by the renewable generating unit multiplied by a plant load factor, which results in a generation of 80,942 MW/year (assured energy = 9.24 MW - average, defined by ANEEL Resolution number 325, dated 13/08/2001), and not on the turbines specifications. Please correct the CERs calculation spreadsheet (formulas) accordingly.	CERs calculation was corrected and is presented in spreadsheet "Pesqueiro_CERs_rev.1_2009.12.08". Note that assured energy multiplied by the number of hours of operation in a year results in 80,942 MWh and this value multiplied by a capacity factor of 74.3% results in 60,140 MWh (this calculation was included in the PDD, page 24)	The value of the assured energy is achieved multiplying the total installed capacity of project activity (12.44 MW) by a plant load/capacity factor of 74.3%. Thus, calculation of CERs must be based on power plant operational time and the assured energy, since the plant load/capacity factor was already considered in the determination of the assured energy (= 9.24 MW), and the power plant operational time (8,760 hours) must be clearly indicated in the spreadsheet. Summarizing, the following should be revised/explained: - on revised PDD page 4, the capacity factor is mentioned as equal to 75% while the PPs response and CERs spreadsheet mention a capacity factor of 74.3%; - please confirm the power factor ($\cos \Phi$) value for the two generators and include it in the

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	<p>Response #2</p> <ul style="list-style-type: none"> - The precise capacity factor's value is 74.3%, the PDD and the CERs spreadsheet were corrected accordingly; - The generators power factor is calculated in accordance with COPEL's standards, which are based on daily measures, the average obtained in 2010 is 0.9745; - The assured energy value was corrected; 	<p>CERs spreadsheet;</p> <ul style="list-style-type: none"> - the estimated CERs for an entire year ("Pesqueiro_CERs_rev.1_2009.12.24.xls") is 13,737 tCO₂ and according to the ANEEL's assured energy and operational time figures (8,760 hours), should be 18,495 tCO₂. <p>This CAR is still open.</p> <p>Conclusion regarding client's Response # 2 dated 21/06/2010.</p> <p>The capacity factor correct value, equal to 74.3 %, was included on page 4 of PDD version 3, dated 17/06/2010. The CERs calculation is based on an assured energy of 9.24 MW and the baseline calculations considered 8,760 hours/year (24 hours x 365 days).</p> <p>According to the "Tool to calculate the emission factor for an electricity system" version 2, the default weighting values of the operating (W_{OM}) and Build (W_{BM}) margin emissions factors are to be, respectively, 0.25 and 0.75, for the second and third crediting period.</p> <p>The alternative values proposed by project participants (described on section B.6.1, page 30 of PDD version 3) are 0.75 (W_{OM}) and 0.25 (W_{BM}), which are the default values applicable to wind and solar power generation project activities. The document "<i>Pesqueiro-2010 03 27-Alternative weights for SHP.pdf</i>", provided by project participants, explains that the proposed alternative weights were adopted, due to the similarity of the dispatch characteristics between Pesqueiro SHP and wind power plants in Brazil. The "Tool to calculate the emission factor for an</p>
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	<p>- The CERs calculations were recalculated considering the corrections requested. Additionally, PP considered an alternative weight at combined margin emission factor calculation ($wOM = 0.75$ and $wBM = 0.25$) in line with the guidance in the methodological “tool to calculate the emission factor for an electricity system” (version 2). Please refer to the document “<i>Pesqueiro Small Hydro Power Plant - Proposed alternative weights for the combined margin emission factor</i>” annexed.</p> <p>Response #3</p> <p>As recon by the Validation team conclusion, the assured energy concept’s is not related to the plant’s real generation, it’s describes the system average output, and it’s an important reference for commercial contracts not CDM baseline emission calculation. Therefore, based on this clarification, and considering: Pesqueiro’s intermittent output; the fact that the proposed BM/OM weights are foreseen by the tool for project activities with similar output characteristics; and to the fact that PP can submit alternative weights for projects through a deviation from the tool’s use, PP request a reevaluation of the request for alternative weights for the combined margin emission factor.</p> <p>Response #4</p> <p>Project Participans (PPs) submitted to the Small Scale Working Group (SSC WG) a Request for Revision (SSC_486) proposing new weights for build and operating margins. In January, 2011, the SSC WG forwarded the issue to the attention of the Meth Panel, since a revision in the tool would be necessary. The</p>	<p>electricity system” version 2 defines:</p> <p>* on its footnote 9: “<i>Project participants can submit alternative proposal, for revision of tool or the methodology or deviation from its use, if the weightage does not reflect their situation with an explanation for the alternative weight</i>”;</p> <p>* on page 17: “<i>Projects with output of an intermittent nature (e.g. wind or solar projects) may have limited capacity value, depending on the nature of the (wind/solar) resource and the grid in question, and to the extent that a project’s capacity value is lower than that of a typical grid resource its BM weight can be reduced. Potential adjustments to the OM/BM margin should take into account available methods (in technical literature) for estimating capacity value</i>”.</p> <p>Considering the above, other Brazilian similar plants generation values (performance) and that the determination of the assured energy (defined for each plant by ANEEL) is associated to the conditions in the long term (thousands of possibilities of statistically created flow sequences) that each plant can supply to the system assuming an specific risk criteria of non-attendance to the market (risk of deficit), considering mainly the hydrologic variability to which the plant is submitted, it is RINA’s opinion that this alternative is not acceptable and therefore PPs are requested to apply the default values, as defined by the tool.</p> <p>This CAR is still open.</p> <p>Conclusion regarding client’s Response # 3 dated 13/08/2010</p> <p>According to Thematic Notebook “Assured</p>
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	<p>Meth Panel (MP), at its 50th meeting, decided not to revise the methodological tool as proposed by the PP. However, in their final response, the MP indicated that the revision of weights could be made individually for each CDM Project Activity.</p> <p>On October 11th, 2011, PPs forward to MP a request for deviation from the tool (M-DEV-0450). However, this request was ultimately not accepted by the Board. The Board's reasoning is available at http://cdm.unfccc.int/Projects/deviations/38843.</p> <p>In this sense, the PDD and CERs spreadsheet were revised considering the latest versions of the applicable tools and methodology, as described in section B.6.1. of the PDD. Please refer to the fifth version of the documents, dated 23/12/2011.</p>	<p>Energy", published by ANEEL, dated April 2005, the values of assured energy to SHP were calculated by ANEEL Resolution # 169, dated 03/05/2001. The Decree 5163, dated 30/07/2004 defined that the calculation of assured energy would be done by Mines and Energy Ministry (MME) instead of ANEEL. MME published on 18/11/2004, the Decree # 303, which defines the methodology to be applied on assured energy calculation. The Decree # 120 dated 17/03/2005, defined the calculation of assured energy to SHP, which must contemplate the following topics:</p> <ul style="list-style-type: none"> I - Hydrological series of monthly average stream flow of where the hydroelectric plant is located, covering no less than 30 years; II - The value of the Forced Outage (IF) and the Scheduled Outage (IP) of hydroelectric power plant III - The value of performance of turbine-generator set, falling average gross and hydraulic losses. <p>The mentioned topics already considered the critical operational conditions on the assured energy calculation, and consequently in output of SHP.</p> <p>The different output to Brazilian SHP and wind power may be demonstrated, based on data provided by ANEEL, Table Power Plants and Generation Units (from Portuguese Usinas e centrais Geradoras) available on web site : http://www.aneel.gov.br/aplicacoes/capacidadebrasil/energiaassegurada.asp and accessed by RINA on 15/09/2010,</p>
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The difference on the relation “Assured Energy (MW)/Installed Capacity (potência outorgada) (MW)” to SHP and wind power is presented by table below:

Power Factor	Average	Maximum	Minimum
Wind Power	31,05 %	48,44%	16,48%
SHP	61,60 %	95,95%	18,75%

Also according to ANEEL, the total installed capacity of solar energy (Photovoltaic) in Brazil is 85,74 kW (available on <http://www.aneel.gov.br/aplicacoes/capacidadebrasil/GeracaoTipoFase.asp?tipo=8&fase=3>)

Thus, considering the different output parameters presented between the wind energy and SHP, project participants are requested to calculate the Brazilian based on the default values defined by the tool “Tool to calculate the emission factor for an electricity system” version 2”

This CAR is still open

Conclusion regarding client’s Response # 4 dated 23/12/2011

The PDD version 5, dated 23/12/2011 presents on its sections A.4.3 and B.6.4 the CER calculation based on Brazilian grid emission factor referent to year 2008, which was calculated applied data made available by

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		<p>Brazilian DNA.</p> <p>The applied value of Build Margin is directly obtained of 0.1458 tCO₂/MWh is directly obtained from DNA website (http://www.mct.gov.br/index.php/content/view/303077.html#ancora). In case of Operational Margin, project participants provided a calculation based on assured energy and on average hourly Brazilian grid emission factor, resulting a value of 0.4487 tCO₂/MWh, This value is more conservative than the simple monthly average of Brazilian Operational Margin that results in 0.4766 tCO₂/MWh</p> <p>The weighting values of the operating ($W_{OM} = 0.25$) and Build ($W_{BM} = 0.75$) margin emissions factors applied on CER calculation by project participants are in line with last available version of "Tool to calculate the emission factor for an electricity system".</p> <p>This CAR is closed</p>
<p>CAR-4</p> <p>The validity of the calibration certificates of the energy meters (EG_y monitoring), presented during the validation visit, has expired and new certificates should be provided. Furthermore, please confirm if COPEL (Companhia Paranaense de Energia) is still the responsible for the calibration of the energy meters. Otherwise, please indicate in the updated PDD the responsible for this procedure.</p>	<p>Calibration certificates were presented and copied during validation visit in August/2009. The calibration carried out by Copel was valid until October/2009. Copel will be no more responsible for the calibration. Pesqueiro will hire another company, which is still being defined, and a new calibration will be done in the beginning of 2010.</p>	<p>Section B7.2 of revised PDD describes that "...meters are scheduled to be calibrated every two years by the local concessionary COPEL (Companhia Paranaense de Energia). However, although the calibration is under the local concessionary responsibility, Pesqueiro will supervise this procedure in order to guarantee that the 2 years interval between calibrations is fulfilled.". Please revise this section according to the provided response (...another company will be hired). Moreover please provide the new calibration certificates.</p> <p>This CAR is still open.</p>

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	<p>Response #2</p> <p>A metrology company will be hired to calibrate the energy meters every two years. The latest calibration was done by LACTEC (from Portuguese "<i>Instituto de Tecnologia para o Desenvolvimento</i>"). The PDD was revised and the latest calibration certificates follows annexed.</p>	<p>Conclusion regarding client's Response # 2 dated 21/06/2010</p> <p>The section B7.2 was properly revised on PDD version 3, dated 17/06/2010.</p> <p>The calibration certificates of both Pesqueiro SHP energy meters (main and back up), model SAGA 1000 1681 and serial numbers 226377 and 226378, were provided and verified. The calibration was executed by LACTEC on 19/03/2010 and the certificates were issued on 22/03/2010.</p> <p>This CAR is closed.</p>
<p>CAR-5</p> <p>Emission reductions were estimated using the 2007 grid emission factor of the Brazilian National Interconnected System ($EF_{grid,CM,y} = 0.1309$ tCO₂/MWh). Please, revise all calculus using the latest data publicly available (2008 $EF_{grid,CM,y} = 0.2285$ tCO₂/MWh - $w_{OM} = 0.25$ and $w_{BM} = 0.75$) in the Brazilian DNA site.</p>	<p>Grid emission factor of the Brazilian National Interconnected System was updated for 2008.</p> <p>Response #2</p> <p>The emission factor value was corrected at the PDD latest version.</p> <p>PPs calls the attention to the alternative weights proposed for the combined margin emission factor, in accordance with methodological "tool to calculate the emission factor for an electricity system" (version 2). For more details, please refer to the annexed document "Pesqueiro Small Hydro Power Plant - Proposed alternative weights for the combined margin emission factor".</p> <p>Response #3</p> <p>PP considered the latest available data for the Brazilian grid emission factor. For consideration due w_{om} and w_{bm}, please refer to CAR3.</p>	<p>The value of the emission factor ($EF_{grid,CM,y} = 0.1309$ tCO₂/MWh) is still mentioned in the revised PDD (for instance, sections A.4.3 and B.7.1).</p> <p>This CAR is still open.</p> <p>Conclusion regarding client's response dated 21/06/2010.</p> <p>The weights' values of the operating margin emission factor (w_{OM}) and Build margin emission factor (w_{BM}) applied by project participants on PDD version 3 are not in line with the applied "Tool to calculate the emission factor for an electricity system" version 2 (See CAR3).</p> <p>This CAR is still open.</p> <p>Conclusion regarding client's Response # 3 dated 13/08/2010</p>

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	<p>Response #4</p> <p>As answered in CAR 3, PP adopted the default weighting values of the operating and built margin for the emission factor calculation. In this sense, the value of the Brazilian grid emission factor, on section B.6.3 was corrected.</p> <p>Also note that, in accordance with the latest version of the tool to calculate the emission factor for an electricity system, the information available at the time of submission of the request for renewal of the crediting period to the DOE, i.e., 2008, was used to calculate the build margin (page 14 of the tool). To be consistent, information from this same year was used to determine the operating margin, which will be monitored and verified ex-post. Please refer to the fifth versions of the PDD and CERs spreadsheet, both dated 23/12/2011.</p>	<p>The applied weights values of operating margin emission factor (W_{OM}) and Build margin emission factor (W_{BM}) presented on spreadsheet "Pesqueiro_CERs_rev.4_2010.08.13_AW.xls" (see CAR3). Moreover, the value of Brazilian grid emission factor, on section A4.3 of PDD version 4, equal to 0.1214 tCO₂e/MWh differs from the value of 0.2055 tCO₂e/MWh presented on section B.6.3 of the same PDD.</p> <p>This CAR is still open</p> <p>Conclusion regarding client's Response # 4 dated 23/12/2011</p> <p>The PDD version 5, 23/12/2011 was properly revised. The applied weights values of operating margin emission factor (W_{OM}) and Build margin emission factor (W_{BM}) are in line with the latest version of "Tool to calculate the emission factor for an electricity system".</p> <p>This CAR is closed.</p>
<p>CAR-6</p> <p>As per AMS-I.D version 15, measurement results (the net electricity supplied by the project activity to the grid) shall be cross-checked with records for sold electricity. Please revise PDD accordingly.</p>	<p>Section B.7.1 was revised accordingly.</p>	<p>The PDD version 2 was revised accordingly.</p> <p>This CAR is closed.</p>
<p>CL-1</p> <p>Please include the Postfix/ZIP of Pesqueiro Energia S.A. (PDD-Annex 1) and confirm the inclusion of Ecoinv Global Ltda as project participant, since it was not included in the registered PDD (referent to the first crediting period).</p>	<p>Postfix/ZIP of Pesqueiro was included in the PDD. Ecopart Assessoria is included as project participant.</p>	<p>The Postfix/ZIP of Pesqueiro Energia S. A. and Ecopart Assessoria em Negócios Empresariais Ltda were included in Annex 1 of revised PDD. Ecopart Assessoria em Negócios Empresariais Ltda was also included on Table 1 of revised PDD as project participant and it is also the</p>

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		responsible by completion of the application of the baseline and monitoring methodology. This CL is closed.
CL-2 Project participants shall update all references to the applied methodology (AMS-I.D – “Grid connected renewable electricity generation” version 13) to its latest version (Version 15, valid from 30/10/2009 onwards).	Version of AMS-I.D was updated.	The PDD version 2 was revised accordingly to the latest version (15) of AMS-I.D. This CL is closed.
CL-3 The Dispatch number 410, emitted by ANEEL, in June 29 of 2001, indicates that the GPS coordinates of the project activity are 24° 07' 58" S and 49° 38' 09" W whereas the updated PDD mentions latitude 24° 15' 04" South and longitude 49° 42' 21" West. Please clarify.	GPS coordinates are the ones informed by ANEEL. PDD was revised accordingly.	The PDD version 2 was revised accordingly and the GPS coordinates were corrected on section A.4.1.4. This CL is closed.
CL-4 Please include in PDD-Annex 3 the available tables used in the calculation of the Brazilian Grid emission factor.	Tables used in the calculation of the Brazilian Grid emission factor were included in Annex 3.	The PDD version 2 was revised accordingly. This CL is closed.
CL-5 The website presented in the updated PDD, referent to ANEEL's Geo-referenced Information Systems of the Electric Sector (reservoir's area), is not available. Please clarify.	The data is available at SIGEL (from Portuguese Sistema de Informação Georeferenciadas do Setor Elétrico) at section: “SHPP generation”. Annexed follows the available data. It's worth noticing that the information is also available at an Google Earth plug-in that integrates ANEEL's data, please see at http://sigel.aneel.gov.br/brasil/downloads/empsigel.kmz , please verify “Pesqueiro” data at Google Earth's layer “PCH EM OPERAÇÃO - MAR2010” .	The SIGEL website provided by project participants was accessed on 04/05/2010. The area of reservoir was confirmed to be 0.33 km ² , as described on PDD version 2. This CL is closed.
CL-6 Please provide the specifications (measurement methods, accuracy...) of the energy meters.	Copies of the specifications were provided during validation visit in August/2009. Meters are bidirectional and specified according to CCEE standards.	Both energy meters, principal and back up, are manufactured by LANDIS+GYR, model SAGA 1000 1681 with the following serial numbers:

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		<p>226377 and 226378. The provided specifications are in line with the last available verification report of this CDM project activity, for a monitoring period from 01/04/2006 to 29/02/2008.</p> <p>This CL is closed.</p>
<p>CL-7</p> <p>Project participants are kindly requested to provide the confirmation that the notification informing the intention to request the renewal of the project's crediting period, sent on 04/05/2009, was properly received by the CDM Secretariat.</p>	<p>See annexed document "Pesqueiro_Request of Renewal"</p>	<p>The e-mail sent from Barbara Baldus (BBaldus@unfccc.int) to Melissa Hirschheimer (melissa.hirschhe@ecopart.com.br) informing the request for the renewal of the crediting period for project 0242 "Pesqueiro Energia Small Hydroelectric Project (PESHP)" was provided and found acceptable.</p> <p>This CL is closed.</p>
<p>CL-8</p> <p>Regarding the submitted PDD for the crediting period renewal, project participants are further requested to provide/revise the following:</p> <ul style="list-style-type: none"> - an updated PDD in track changes format (word file) with respect to the registered PDD; - update the version of the <i>"Tool to calculate the emission factor for an electricity system"</i> (PDD-section B.1) to its latest version (02). 	<p>Updated PDD is tracked and tool version was updated.</p>	<p>The version of this tool was updated on the revised PDD's Section B.1. The Section B.6.1 indicates version 1.1 of the mentioned tool as the version used by the Brazilian DNA.</p> <p>Nevertheless, RINA acknowledges that the version used by the Brazilian DNA to calculate the grid emission factor for 2008 (which is usually available until middle of the next year, 2009) shall be version 1.1 as it was valid until 15/10/2009 and not version 2 as it was previously requested.</p> <p>It is important to mention that, although the latest valid version of this tool is version 2, valid from 16/10/2009 onwards (and also mentioned, besides versions 1 and 1.1, in the Brazilian DNA website), the changes from version 1.1 to version 2 do not affect CERs calculations and so the presented factors are accepted to be used in the <i>ex-ante</i> estimation of the emission reductions.</p>

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	<p>Response #2</p> <p>The tool's version¹ applied was altered, and the PDD was revised accordingly.</p>	<p>Due to the above explanation, PPs are kindly requested to revise the mentioned tool version in the PDD to version 1.1.</p> <p>This CL is still open.</p> <p>Conclusion regarding client's response dated 21/06/2010</p> <p>The PDD version 3 was revised accordingly.</p> <p>This CL is closed.</p>
<p>CL-9</p> <p>It is mentioned in the updated PDD (section B.7.1 - EGY monitoring table) that "<i>Energy metering QA/QC procedures are explained in Annex 4</i>" while Annex 4 is not explaining any procedure. Furthermore, hourly measurement and monthly recording are required for the monitoring of the net electricity supplied by the project activity to the grid.</p>	<p>Energy metering QA/QC procedures are explained in section B.7.2 (reference to Annex 4 was corrected). Monitoring frequency of EGY was included in section B.7.1</p> <p>Response #2</p> <p>As reported at CAR 4 – second response the company hired to do the meters calibration was altered, and the respective calibration certification follows annexed. The section B.7.2 was revised accordingly.</p>	<p>The monitoring frequency of EGY was included in table B.7.1 and reference to section B.7.2 was revised accordingly.</p> <p>The PDD version 2, on section B.7.2, describes that the calibration is under responsibility of the local concessionary COPEL (Companhia Paranaense de Energia). Nevertheless, project participants informed on CAR 4 that Pesqueiro will hire another company to do the calibration of energy meters during the second crediting period. Please revise the PDD accordingly, considering this change of the calibration responsible.</p> <p>This CL is still open.</p> <p>Conclusion regarding client's response dated 21/06/2010</p> <p>The PDD version 3 was revised accordingly.</p>

¹ Tool to calculate the emission factor for an electricity system

VALIDATION OPINION FOR RENEWAL OF THE CREDITING PERIOD

<p>CL 10 Please confirm/provide evidences referent to the equipments lifetime and its manufacturing/installation date.</p>	<p>Generators were manufactured in 2002 and turbines in 2001. They were installed in 2003. Lifetime is 30 years, which, with good maintenance, can be extended for other 30 years, according to ANEEL's resolution nº61, 21/03/2000.</p> <p>Response #2</p> <p>The potency of 10.96 MW refers to the assured energy value, not to the total installed capacity of the plant that is equal to 12.44MW. These information can be found at:</p> <ul style="list-style-type: none"> - ANEEL's resolution # 410 emitted on 29/06/2001 - SIGEL's online database: http://sigel.aneel.gov.br/ (the referred SIGEL's data can be found at an spreadsheet annexed) - Pesqueiro's first validation report (available at 	<p>This CL is closed.</p> <p>The PDD mentions a lifetime of 25 years and the ANEEL Resolution number 61, dated 22/03/2000 and published on 23/03/2000, describes on its 7th article that <u>the authorization</u> to Cooperativa de Eletrificação Rural Castrolanda - ELETORRURAL is <u>valid</u> for 30 years from 23/03/2000 on. ANEEL resolution number 476, dated 06/12/2000, transfers the previous authorization (Resolution number 61) from ELETORRURAL to Pesqueiro Energia S.A.</p> <p>PPs are requested to provide evidences referent to equipments lifetime from manufacturer or other literature.</p> <p>Moreover the installed capacity of Pesqueiro SHP, according to all mentioned ANEEL resolutions (and also ANEEL resolution number 88, dated 18/02/2002), is 10.96 MW (PDD mentions 12.44 MW), please clarify.</p> <p>This CL is still open.</p> <p>Conclusion regarding client's response dated 21/06/2010</p> <p>RINA verified the lifetime of hydroelectric plants in documents from Copel (30 years) and Eletrobras (50 years) and cross-checked with other manufacturers specifications (~25 years) and, also based on Pesqueiro equipments manufacturing/installation dates, it is confirmed that the defined lifetime (25 years, as also defined in the Validation Report/published PDD) is deemed acceptable.</p>
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VALIDATION OPINION FOR RENEWAL OF THE CREDITING PERIOD

	<p>http://cdm.unfccc.int/UserManagement/FileStorage/8I1XIG22ATONBTYREFP6PQFQDWJ1WL).</p> <p>The generators lifetime can be confirmed by ANEEL's resolution #002 emitted on 24/12/1997 which establishes the electrical generator lifetime as 30 years, besides this official document, the lifetime value considered at the PDD can also be found at Pesqueiro's first validation report, at page 5, which states "<i>The expected operational lifetime of the project is 25 years</i>", therefore PP adopted 25 years as a conservative measure.</p>	<p>Nevertheless, the value of assured energy is defined by ANEEL Resolution #325, dated 13/08/2001, and it is equal to 9.24 MW, which is the value used on CERs calculation.</p> <p>ANEEL's Dispatch #410, dated 29/06/2001, makes reference only to the total installed capacity of 12.44 MW. In the other hand, ANEEL's Resolution #88 (dated 18/02/2002, and thus after Dispatch #410) makes reference to a total installed capacity of 10.96 MW (not assured energy), as already mentioned.</p> <p>The SIGEL web site indicates that the "supervised power" (from the Portuguese, "<i>Potência fiscalizada</i>") of Pesqueiro SHP is 12,44 MW and the "granted power" (from the Portuguese "<i>Potência outorgada</i>") is 10,96 MW. Therefore, is clear that the 10.96 MW is really the "granted power" and that the assured energy is 9.24 MW.</p> <p>This CL is closed.</p>
<p>CL 11</p> <p>The updated PDD should include and explain (approach) all the requirements of the "<i>Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period</i>" (Annex 1 of the "Procedures for renewal of the crediting period of a registered CDM project activity" / EB46-Annex 11).</p>	<p>"Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period" was included and explained in section B.5 of the PDD.</p>	<p>Step 1: Assess the validity of the current baseline for the next crediting period</p> <p>Step 1.1: Assess compliance of the current baseline with relevant mandatory national and/or sectoral policies:</p> <p>The baseline for the project remains to be the product of electrical energy baseline expressed in kWh of electricity produced by the renewable generating unit multiplied by an emission factor (measured in kg CO₂e/kWh) calculated in a transparent and conservative manner as the combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM).</p> <p>During the validation, the baseline scenario</p>

VALIDATION OPINION FOR RENEWAL OF THE CREDITING PERIOD

		<p>(alternative to the project activity) was the continuation of the current situation with the national electricity grid being supplied by large hydro projects and by fossil fuel power plants. This scenario is still in compliance with all relevant mandatory national and/or sectoral policies.</p> <p>Nevertheless, according to its F-CDM-REG, the request for validation of Pesqueiro Energia Small Hydroelectric Project occurred on 05/01/2006, thus the article used by project participants on sub step 1.1, which demonstrates four fragilities of Brazilian energy regulations published in 2004 is not in line with the <i>“Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period”</i>. Please update or remove this information from PDD.</p> <p>Moreover, the following links/websites require password to be accessed: http://www1.folha.uol.com.br/fsp/opiniaofz1001200801.htm; and http://www1.folha.uol.com.br/fsp/dinheirofi1710200730.htm; and the below link/website http://www.epe.gov.br/Lists/LeilaoA32007/DispForm.aspx?ID=44 can not be opened/accessed. The article mentioned on page 14 of the revised PDD is not the same found in the provided link/website http://www.usp.br/mudarfuturo/2009/cap4.htm. Please provide all the documents referent to the above mentioned websites.</p> <p>Step 1.2: Assess the impact of</p>
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VALIDATION OPINION FOR RENEWAL OF THE CREDITING PERIOD

		<p>circumstances</p> <p>It was not identified any relevant impact on the circumstances existing at the time of requesting renewal of the crediting period on the current baseline emissions.</p> <p>Step 1.3: Assess whether the continuation of the use of current baseline equipment(s) is technically possible</p> <p>The project activity (SHP) is not common practice and the most likely baseline scenario is the continuation of the Brazilian electricity grid being supplied by large hydro projects and by fossil fuel power plants. The project activity, implemented 7 years ago, did not imply (and will not imply) in any transfer, retrofit or substitution of other plants.</p> <p>It is extremely likely that the Brazilian electricity grid will continue to be supplied mostly by large hydro projects and by fossil fuel power plants, for a period much longer than this next 7 years period.</p> <p>Nevertheless, this item should be more elaborated in this section of the PDD.</p> <p>Step 1.4: Assessment of the validity of the data and parameters</p> <p>The Emission Factor shall be calculated in a transparent and conservative manner as a 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'.</p> <p>Further explanations about the assessment of the validity of the data and parameters and</p>
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VALIDATION OPINION FOR RENEWAL OF THE CREDITING PERIOD

		<p>definition of the option (<i>ex-ante</i> or <i>ex-post</i>) selected to calculate the build margin (BM) are requested.</p> <p>Step 2: Update the current baseline and the data and parameters</p> <p>Step 2.1: Update the current baseline</p> <p>The baseline emissions for the second crediting period were updated, without reassessing the baseline scenario, based on the latest approved version of the methodology AMS-I.D. This update was applied in the context of the sectoral policies and circumstances that were applicable at the time of request for renewal of the crediting period.</p> <p>Project participants used the latest available data (2008) provided by the Brazilian DNA to calculate the Brazilian grid emission factor.</p> <p>Step 2.2: Update the data and parameters</p> <p>The updated parameters were the Brazilian Build and Operating Margins emission factors (2008), provided by the Brazilian DNA and used to calculate the Brazilian's grid emission factor. This data was included on Annex 3 of PDD version 2.</p> <p>The original (registered PDD) additionality analysis was kept in the revised PDD.</p> <p>This CL is still open.</p> <p>Conclusion regarding client's response dated 21/06/2010</p> <p>The requested documentation and further explanations were provided, PDD version 3 was revised accordingly, and the validity of the</p>
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VALIDATION OPINION FOR RENEWAL OF THE CREDITING PERIOD

	<p>Response #2</p> <p>The Assessment of the validity of the project baseline was remade; please verify the section B.5 of the revised PDD. The references cited on the assessment follows annexed.</p>	<p>original/current baseline was properly assessed.</p> <p>This CL is closed.</p>
<p>CL-12</p> <p>According to revised PDD, section A.3 there are two project participants: Pesqueiro Energia S.A. and Ecopart Assessoria em Negócios Empresariais Ltda. The MoC published in the UNFCCC web site, dated 25 September 2008, defines the following project participants: Ecoinvest Carbon do Brasil Ltda, Pesqueiro Energia S/A, The Chugoku Electric Power Co. Inc. and Trading Emission PLC, PPs are requested to confirm the projects participants mentioned in the referred MoC and, if applicable, provide a revised MoC or revise the PDD according to the published MoC.</p>	<p>The Chugoku Eletric Power Co. Inc. was included as PP. Since the legal entity of Ecoinvest Carbon do Brasil Ltda. changed to Ecopart Assessoria em Negócios Empresariais Ltda. A MoC revision will be requested. As soon PP receives UNFCCC confirmation, the DOE will be informed.</p> <p>Response #3</p> <p>Section A.3. was revised and is in accordance with the MoC published in the UNFCCC web site, please refer to the PDD's latest version.</p> <p>Response #4 (23/12/2011)</p> <p>The list of project participants was corrected in section A.3. in accordance with the list of parties involved in the project as presented in the UNFCCC website (http://cdm.unfccc.int/Projects/DB/DNV-CUK1137160660.09/view).</p> <p>In addition, the contact details of all project participants listed in section A.3. of the PDD were included in the fifth version of the PDD, dated 23/12/2011.</p> <p>The latest version of the Modalities of Communication Form is also attached to this protocol and confirms the entities added to the PDD. Nevertheless, it is worth mentioning that due to confidentiality reasons the</p>	<p>Conclusion regarding client's response dated 21/06/2010.</p> <p>PDD was revised (version 3) and it is mentioning 3 PPs, The Chugoku Electric Power Co. Inc., Pesqueiro Energia S.A. and Ecopart Assessoria em Negócios Empresariais Ltda. Nevertheless, Trading Emission PLC is still missing and it was not confirmed in PPs response if this PP will be withdraw or not in the revised MoC, that could be submitted at any time.</p> <p>This CL is still open.</p> <p>The MOC published on UNFCCC website (available on http://cdm.unfccc.int/UserManagement/FileStorage/14OMTRSEZBPAC82F03XIN57YUVD6QG), indicates Ecoinvest Carbon Ltda as project participant and focal point, what differs from project participants presented on Section A.4.3 of PDD version 4.</p> <p>The contact information of Ecoinvest Carbon Ltda (presented on MOC) and Ecopart Assessoria em Negócios Empresariais Ltda</p>

VALIDATION OPINION FOR RENEWAL OF THE CREDITING PERIOD

	<p>information available in this document is not publicly available in the UNFCCC website.</p>	<p>(presented on Annex 1 of PDD version 4) are the same.</p> <p>Project participants are requested to revise the annex 1, including the contact information of all project participants described on Section A.4.3 of PDD. <i>(Guidelines for Completing the simplified Project Design Document (CDM-SSC-PDD) and the Form for Proposed New Small Scale Methodologies (CDM-SSC-NM), Version 05, dated 14/07/2007).</i></p> <p>Moreover, Ecopart Assessoria em Negócios Empresariais Ltda is not indicated as project participant.</p> <p>This CAR is still open.</p> <p>Conclusion regarding client's Response # 4 dated 23/12/2011</p> <p>The PDD version 5, dated 23/12/2011 was revised and the information contacts of all project participants indicated on section A.3 were provided in annex '1 of PDD. Project participants also provided a Modality of Communication (MoC) that states all project participants on its Section 3 – Statement of Agreement</p> <p>This CL is closed.</p>
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RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

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

Vicente San Valero

è qualificato come¹:
is qualified as:

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

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

1.2, 2.1, 4.6, 13.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Energy generation from renewable energy sources	1
2.1	Electricity Distribution	2
4.6	Electrical / Electro technical products	4
13.1	Waste handling and disposal	13

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

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	31-01-2008	-
1	19-11-2008	-
2	11-05-2009	Annual revision
3	14-12-2009	Changes in module structure
4	25-03-2010	Annual revision
5	18-10-2010	Changes in certificate module
6	17-03-2011	Changes due to new accreditation standard
7	13-06-2011	Annual revision
8	28-09-2011	Extensions to TA 2.1

Il Responsabile di Schema
Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

¹ Legend:

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

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

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RINA

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

Americo Junior Varkulya

è qualificato come¹:
is qualified as:

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

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

1.1, 13.1

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.1	Thermal energy generation from fossil fuel and biomass including thermal electricity from solar	1
13.1	Waste handling and disposal	13.1

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

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	30-01-2009	-
1	04-05-2009	Annual Revision
2	14-12-2009	Changes in module structure
3	27-04-2010	Annual Revision
4	18-10-2010	Changes in certificate module
5	17-03-2011	Changes due to new accreditation standard
6	13-06-2011	Annual Revision

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Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

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RINA

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

Cintia Mara Miranda Dias

è qualificato come¹:
is qualified as:

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

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

1.2, 13.1, 13.2, 15.2

AREE TECNICHE TECHNICAL AREAS	DESCRIZIONE DELL'AREA TECNICA TECHNICAL AREA DESCRIPTION	SCOPO SETTORIALE SECTORAL SCOPE
1.2	Energy generation from renewable Energy sources	1
13.1	Waste Handling and Disposal	13
13.2	Animal waste management	13
15.2	Animal waste management	15

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

REVISIONE REVISION	DATA DATE	MOTIVAZIONI PER LA REVISIONE REASON FOR THE REVISION
0	03-11-2008	-
1	11-05-2009	Annual Revision
2	11-12-2009	Revision for changes in module structure
3	26-07-2010	Annual Revision
4	28-10-2010	Changes in certificate module
5	17-03-2011	Changes due to new accreditation standard
6	13-06-2011	Annual Revision

Il Responsabile di Schema
Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

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RINA

CERTIFICATO DI QUALIFICA QUALIFICATION CERTIFICATE

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

Rita Valoroso

è qualificato come¹:
is qualified as:

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

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

1.2, 13.1

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

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

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

Il Responsabile di Schema
Scheme Manager

Il Resp. Tecnico della Divisione
Head of CRT

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RINA

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Si attesta che il sig./sig.ra:

Rekha Menon

We declare that Mr/Mrs/Ms:

è qualificato come¹:
is qualified as:

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

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

1.2, 13.1

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

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

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

Il Responsabile di Schema
Scheme Manager

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