



VALIDATION REPORT

RENEWAL OF THE CREDITING PERIOD

COLBUN S.A.

CHILE: QUILLECO HYDROELECTRIC PROJECT

UNFCCC REF. No. : 1265

CP #2 from 2015-07-09 to 2022-07-08
(incl. both days)

Report No: 11492 – 15/022

Date: 2016-03-22

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R-No.: 11492 – 15/022

Validation Report:	Report No.	Rev. No.	Date of 1st issue:	Date of this rev.
	11492 – 15/022	2.1	2015-09-10	2016-03-22
Project:	Title:		Registr. Date:	UNFCCC-No.:
	Chile: Quilleco Hydroelectric Project		2008-07-09	1265
	Project Scale:			
	<input checked="" type="checkbox"/> Large Scale <input type="checkbox"/> Small Scale			
Crediting Periods:	Crediting period renewal:			
	<input checked="" type="checkbox"/> 1 st renewal <input type="checkbox"/> 2 nd renewal			
	Crediting periods (actual / planned):		From:	To:
	First Crediting Period		2008-07-09	2015-07-08
	Second Crediting Period		2015-07-09	2022-07-08
	Third Crediting Period		N/A	N/A
Project Participant(s):	Client:			
	Colbun S.A.			
	Non-Annex 1 country:		Annex 1 country:	
	Chile	Netherlands		
		United Kingdom of Great Britain and Northern Ireland		
		Japan		
		Italy		
		Luxembourg		
		Spain		
	PP from Non-Annex 1 country: (*)		PP from Annex 1 country: (*)	
Colbun S.A.	- Netherlands' Ministry of Infrastructure and the Environment (IenM) (withdrawn) - International Bank for Reconstruction and Development (IBRD) as Trustee of the Netherlands CDM Facility (NCDMF) (withdrawn) - Electrabel NV/SA - Idemitsu Kosan Co., Ltd. - Japan Petroleum Exploration Co., Ltd. - The Okinawa Electric Power Co., Inc. - Sumitomo Joint Electric Power Co., Ltd. - Suntory Holdings Limited - Tokyo Electric Power Company, Incorporated - Sumitomo Chemical			
	- Italian Ministry for the Environment Land and Sea - International Bank for Reconstruction and Development (IBRD) as Trustee of the Bio Carbon Fund (BioCF)			

R-No.: 11492 – 15/022

		- Ministry of Sustainable Development and Infrastructure - Kingdom of Spain- Ministry of the Agriculture, Food and Environment & Ministry of Economy and Competitiveness				
Applied methodology/ies:	Title (at registration):	Version No.:	Scope(s) / TA(s)			
	<i>Methodology for zero-emissions grid-connected electricity generation from renewable sources in Chile or in countries with merit order based dispatch grid</i>	AM0026 ver. 2	1 / 1.2			
	Title (at renewal of CP)	Version No.:	Scope(s) / TA(s)			
	<i>Methodology for zero-emissions grid-connected electricity generation from renewable sources in Chile or in countries with merit order based dispatch grid</i>	AM0026 ver. 3	1 / 1.2			
Validation team / Technical Review and Final Approval:	Validation Team:	Technical review:	Final approval:			
	Ricardo Lopes Sergio Cruz	Marcelo Sebben	Stefan Winter			
PDD Versions (for the new CP)	Reg. PDD		Draft RCP PDD		Final RCP PDD	
	Date	Version	Date	Version	Date	Version
	2012-10-05	2.2	2014-12-10	3	2016-03-22	8
Expected Emission reductions: [t CO₂e]	Expected emission reductions over the last crediting period [t CO₂e]:			Expected emission reductions over the new crediting period [t CO₂e]:		
	1,205,232			2,078,174		
Summary of Validation opinion	<input checked="" type="checkbox"/> Positive validation opinion			<input type="checkbox"/> Negative validation opinion		
	As a result of the validation the validation team confirms that: <input checked="" type="checkbox"/> The baseline for the new crediting period is in compliance with the national and/or sectoral policies and circumstances applicable at the time of requesting the renewal of the crediting period and with the latest approved baseline methodology applicable. <input checked="" type="checkbox"/> The monitoring plan is in line with the latest monitoring methodology applicable to the project activity. <input checked="" type="checkbox"/> The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 2,078,174 t CO ₂ e are most likely to be achieved in the 2 nd CP.					
Document information:	Filename:			Confidential content:	No. of pages:	
	FValRep_Quilleco_final.docx			<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	84	

(*) as per the Project view page at UNFCCC website before the end of renewal process.

Abbreviations

BAU	Business as usual
CA	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDEC-SIC	Economic Load Dispatch Centre of the Central Interconnected System
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CO₂	Carbon dioxide
CO_{2e}	Carbon dioxide equivalent
CONAMA	National Commission of the Environment
CP	Certification Program // Crediting Period
DNA	Designated National Authority
EB	CDM Executive Board
ER	Emission Reductions
ETS	Emission Trading Scheme
FAR	Forward Action Request
GHG	Greenhouse gas(es)
HGV	Hidroelectrica Guardia Vieja S.A.
IPCC	Intergovernmental Panel on Climate Change
LOA	Letter of Approval
MOC	Modalities of Communication
PCP	CDM Project Cycle Procedure
PDD	Project Design Document
PP	Project Participant
PS	CDM Project Standard
QC/QA	Quality control/Quality assurance
RCP	Renewal of Crediting Period
SIC	Central Interconnected System (Chilean National Electric System)
UNFCCC	United Nations Framework Convention on Climate Change
VVS	CDM Validation and Verification Standard

Table of Contents	Page
1 OBJECTIVE / SCOPE	7
2 GHG PROJECT DESCRIPTION.....	8
2.1 Project Characteristics	8
2.2 Involved Parties and Project Participants	8
2.3 Project Location	9
2.4 Technical Project Description	10
2.5 Project History	10
3 METHODOLOGY AND VALIDATION SEQUENCE.....	12
3.1 Validation Steps	12
3.2 Contract review	12
3.3 Appointment of team members and technical reviewers	12
3.4 Validation Protocol	13
3.5 Review of Documents	14
3.6 Follow-up Interviews	14
3.7 Resolution of Clarification and Corrective Action Requests	15
3.7.1 Definition	15
3.7.2 Draft Validation	15
3.7.3 Final Validation	16
3.8 Technical review	16
3.9 Final approval	16
4 VALIDATION FINDINGS	17
5 VALIDATION ASSESSMENT SUMMARY	27
5.1 Notification to the UNFCCC	27
5.2 Project description	27
5.3 Participation	27
5.4 Applied Methodologies and tools	28
5.5 Methodology applicability conditions	29
5.6 Project Boundary	29
5.7 Original Baseline validity and update	29
5.7.1 Baseline scenario	29
5.7.2 Compliance of the baseline with relevant policies	30
5.7.3 Impact of circumstances	30
5.7.4 Likelihood of investments	30
5.7.5 Validity of data and parameters determined ex-ante	31
5.8 Additionality	31
5.9 Monitoring Plan	32

5.10	Calculation of GHG Emission Reductions	33
5.11	Crediting Period	33
5.12	Environmental impacts	33
5.13	Local stakeholder consultation	33
5.14	PDD update	33
6	VALIDATION OPINION	34
7	REFERENCES	35
	ANNEX 1: VALIDATION PROTOCOL.....	42
	ANNEX 2: ASSESSMENT OF APPLICABILITY CRITERIA	80
	ANNEX 3: STATEMENTS OF COMPETENCE OF INVOLVED PERSONNEL	84

1 OBJECTIVE / SCOPE

Colbún S.A. (as the legal owner of company Hidroelectrica Guardia Vieja S.A.) has commissioned the TÜV NORD JI/CDM Certification Program to carry out validation of the request for renewal of the crediting period (RCP) for the project

“Chile: Quilleco Hydroelectric Project”

with regard to the relevant UNFCCC requirements. The project has been registered on 2008-07-09 under the UNFCCC registration No. 1265. The PPs have chosen a 7 year crediting period which is now due for renewal. The PPs have thus notified the UNFCCC about their intention to request the renewal of the crediting period.

The objective of this RCP validation is the review by an independent entity whether the project is still compliant with the applicable sections of:

- the CDM project standard,
- the CDM cycle procedure,
- the updated applied UNFCCC Methodology AM0026 ver. 3, and
- the methodological tool “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period”.

As per the requirements of the CDM Validation and Verification Standard^{/VVS/} (section 11) the validation is based on

- the registered and/or latest updated version of the PDD (including revisions of the monitoring plan)^{/PDD/},
- the updated emission reduction calculation spread sheet^{/XLS/},
- further supporting documents made available to the validator as well as
- information collected through performing interviews and during the on-site assessment.

Furthermore publicly available information, such as the host country legislation, was considered as far as available and required.

2 GHG PROJECT DESCRIPTION

2.1 Project Characteristics

Essential data of the project is presented in the following table 2-1.

Table 2-1: Project Characteristics

Item		Data
Project title		Chile: Quilleco Hydroelectric Project
Project size		<input checked="" type="checkbox"/> Large Scale <input type="checkbox"/> Small Scale
Project Scope (according to UNFCCC sectoral scope numbers for CDM)	<input checked="" type="checkbox"/>	1 Energy Industries (renewable- /non-renewable sources)
	<input type="checkbox"/>	2 Energy distribution
	<input type="checkbox"/>	3 Energy demand
	<input type="checkbox"/>	4 Manufacturing industries
	<input type="checkbox"/>	5 Chemical industry
	<input type="checkbox"/>	6 Construction
	<input type="checkbox"/>	7 Transport
	<input type="checkbox"/>	8 Mining/Mineral production
	<input type="checkbox"/>	9 Metal production
	<input type="checkbox"/>	10 Fugitive emissions from fuels (solid, oil and gas)
	<input type="checkbox"/>	11 Fugitive emissions from production and consumption of halocarbons and hexafluoride
	<input type="checkbox"/>	12 Solvents use
	<input type="checkbox"/>	13 Waste handling and disposal
	<input type="checkbox"/>	14 Afforestation and Reforestation
	<input type="checkbox"/>	15 Agriculture
	<input type="checkbox"/>	16 Carbon Capture and Storage
Applied Metho- dology	At registration	AM0026 ver. 2: Methodology for zero-emissions grid-connected electricity generation from renewable sources in Chile or in countries with merit order based dispatch grid
	At RCP	AM0026 ver. 3: Methodology for zero-emissions grid-connected electricity generation from renewable sources in Chile or in countries with merit order based dispatch grid
Technical Area(s)		1.2
Renewal of crediting period		<input checked="" type="checkbox"/> first renewal <input type="checkbox"/> second renewal
CDM registration No.		1265
Date of registration		2008-07-09

2.2 Involved Parties and Project Participants

The following parties to the Kyoto Protocol and project participants are involved in this project activity (Table 2-2).

Table 2-2: Project Parties and project participants

Characteristic	Party	Project Participant
----------------	-------	---------------------

Characteristic	Party	Project Participant
Non-Annex 1 Country	Chile	- Colbun S.A.
Annex 1 Countries	Netherlands	- Netherlands' Ministry of Infrastructure and the Environment (IenM) (withdrawn) - International Bank for Reconstruction and Development (IBRD) as Trustee of the Netherlands CDM Facility (NCDMF) (withdrawn)
	United Kingdom of Great Britain and Northern Ireland	- Electrabel NV/SA
	Japan	- Idemitsu Kosan Co., Ltd. - Japan Petroleum Exploration Co., Ltd. - The Okinawa Electric Power Co., Inc. - Sumitomo Joint Electric Power Co., Ltd. - Suntory Holdings Limited - Tokyo Electric Power Company, Incorporated - Sumitomo Chemical
	Italy	- Italian Ministry for the Environment Land and Sea - International Bank for Reconstruction and Development (IBRD) as Trustee of the Bio Carbon Fund (BioCF)
	Luxembourg	- Ministry of Sustainable Development and Infrastructure
	Spain	- Kingdom of Spain- Ministry of the Agriculture, Food and Environment & Ministry of Economy and Competitiveness

2.3 Project Location

The details of the project location are given in table 2-3:

Table 2-3: Project Location

No.	Project Location	
Host Country		
Region:	8 th Region of Bio-Bio	
Project location address:	South bank of a branch of the Laja River – City of Los Ángeles, Comuna de Quilleco	
Site:	<u>Power House</u>	<u>Intake</u>
Latitude:	37°20'10"S	37°21'26"S
Longitude:	71°56'59"W	71°52'39"W

2.4 Technical Project Description

Quilleco Hydroelectric plant consists of a run-of-river hydro power plant of 70 MW of effective installed capacity that uses the hydraulic potential of the water discharged by Rucúe Hydropower plant. It uses two sets of vertical Francis turbines and generators with an average net electricity generation of 422 GWh/year.

The technical key data are provided in table 2-4 below.

Table 2-4: Technical data of the project activity

Parameter	Unit	Value
Total Installed Capacity	MW	71.76
Effective Installed Capacity	MW	70
<u>Turbines</u>		
Quantity		2
Type		Francis – vertical axis
Model		PO70-B-280
Serial Numbers – 1 2		1110 1111
Manufacturer		LMZ
Capacity (per unit)	kW	35,880
<u>Generators</u>		
Quantity		2
Type		CB 483/153-28 YXЛ4
Serial Numbers – 1 2		N 364448 N 364453
Manufacturer		Electrosila
Capacity (per unit)	kVA	38,000
Power factor		0.95

2.5 Project History

Essential events since the registration of the project are presented in the following Table 2-5.

Table 2-5: Status of previous Monitoring Periods

#	Item	Time	Status
1	Project Registration	2008-07-09	Registered
1	1 st Monitoring period	2008-07-09 to 2009-07-08	Issued
2	2 nd Monitoring period	2009-07-09 to 2011-11-30	Issued
3	3 rd Monitoring period	2011-12-01 to 2013-12-31	Issued
4	4 th Monitoring period	2014-01-01 to 2014-12-31	Awaiting issuance request

An overview of all Post Registration Changes is given in the following table.

Table 2-6: Overview Post Registration Changes

#	Applicable from – to / as of	MP	Type of post registration change ¹⁾	Description	Status ²⁾ / Date
1	2008-07-09	-	CrPDD	It has been clarified that 70 MW is the effective installed capacity of the project activity and it has been included the value of the nameplate capacity of the installed turbines which is 71.76 MW (35.88 MW each one). In addition, it has been included a footnote to clarify that the effective capacity of the project activity represents the power that the project can deliver to the grid at the connection point.	Approved 2013-02-28
2	2008-07-09	-	CrPDD	Electrabel NV/SA has been included as project participant	Approved 2013-02-28

- ¹⁾ TDfrMP : Temporary deviation from registered monitoring plan
TDfMM : Temporary deviation from the monitoring methodology
CrPDD : Corrections to the registered PDD
ChSD : Change to the start date of the crediting period
PCfrMP : Permanent changes from registered Monitoring Plan
PCfMM : Permanent changes from Monitoring Methodology
CoPD : Changes to the project design of a registered project activity

- ²⁾ Approval (by EB) or Acceptance (by DOE)

3 METHODOLOGY AND VALIDATION SEQUENCE

3.1 Validation Steps

The validation of the project consisted of the following steps:

- Contract review
- Appointment of team members and technical reviewers
- Desk review of the PDD and supporting documents
- Validation planning
- On-Site assessment
- Background investigation and follow-up interviews with personnel of the project developer and its contractors
- Draft validation reporting
- Resolution of corrective actions (if any)
- Final validation reporting
- Technical review
- Final approval of the validation

3.2 Contract review

To assure that

- the project falls within the scopes for which accreditation is held,
- the necessary competences to carry out the validation can be provided,
- Impartiality issues are clear and in line with the CDM accreditation requirements

a contract review was carried out before the contract was signed.

3.3 Appointment of team members and technical reviewers

On the basis of a competence analysis and individual availabilities a validation team, consistent of one team leader and one additional team member, were appointed. Furthermore also the personnel for the technical review and the final approval were determined.

The list of involved personnel, the tasks assigned and the qualification status are summarized in the table 3-1 below.

Table 3-1: Involved Personnel

	Name	Company	Function ¹⁾	Qualification Status ²⁾	Scheme Competence ³⁾	Technical Competence ⁴⁾	Verification Competence ⁵⁾	Host country Competence	On-site visit
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Ricardo Lopes	BRTÜV	TL ^{A)}	SA	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Sergio Cruz	BRTÜV	TM ^{A)}	SA	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Marcelo Sebben	BRTÜV	TR ^{B)}	LA	<input checked="" type="checkbox"/>	1.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	-
<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Stefan Winter	TÜV NORD, Germany	FA ^{B)}	SA	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input type="checkbox"/>	-

¹⁾ TL: Team Leader; TM: Team Member, TR: Technical review; OT: Observer-Team, OR: Observer-TR; FA: Final approval

²⁾ GHG Auditor Status: A: Assessor; LA: Lead Assessor; SA: Senior Assessor; T: Trainee; TE: Technical Expert

³⁾ GHG auditor status (at least Assessor)

⁴⁾ As per S01-MU03 or S01-VA070-A2 (such as 1.1, 1.2, ...)

⁵⁾ In case of verification projects

^{A)} Team Member: GHG auditor (at least Assessor status), Technical Expert (incl. Host Country Expert or Verification Expert), not ETE

^{B)} No team member

All team members contributed to the review of documents, the assessment of the project activity and to the preparation of this report under the leadership of the team leader.

Statements of competence for the above mentioned team members are enclosed in annex 3 of this report.

3.4 Validation Protocol

In order to ensure consideration of all relevant assessment criteria, a validation protocol is used. The protocol shows, in a transparent manner, criteria and requirements, means of validation and the results from pre-validating the identified criteria. The validation protocol reflects the CDM requirements for RCP. The validation protocol serves the following purposes:

- It organizes, details and clarifies the applicable requirements;
- It ensures a transparent validation process where the validating entity will document how a particular requirement has been validated and the result of the determination.

The validation protocol is described in Figure 1.

Validation Protocol Table A-1: Requirement checklist				
Checklist Item	Reference	Validation Team Comments	Draft Conclusion	Final Conclusion
<i>The checklist items in table A-1 are linked to the various requirements the project should meet. The checklist is organized in various sections. Each section is then further sub-divided as per the requirements of the topic and the individual project activity.</i>	<i>Gives reference to the information source on which the assessment is based.</i>	<i>The section is used to elaborate and discuss the checklist item in detail. It includes the assessment of the validation team and how the assessment was carried out. The reporting requirements of the VVS shall be covered in this section.</i>	<i>Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CL or FAR (see below) is raised. The assessment refers to the draft validation stage.</i>	<i>In case a corrective action or a clarification the final assessment at the final validation stage is given.</i>

Figure 1: Validation protocol table

The completed validation protocol is enclosed in Annex 1 to this report.

3.5 Review of Documents

The revised PDD version and supporting background documents related to the RCP were reviewed.

Furthermore, the validation team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data.

3.6 Follow-up Interviews

The validation team has carried out interviews in order to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for RCP.

All sites included in the project activity have been visited.

During validation the validation team has performed interviews to confirm selected information and to resolve issues identified in the document review. The main topics of the interviews are summarized in table 3-2.

Table 3-2: Interviewed persons and interview topics

Interviewed Persons / Entities	Interview topics
Project proponent representatives / Project consultant	<ul style="list-style-type: none"> - Project history - Monitoring and measurement equipment and

Interviewed Persons / Entities	Interview topics
	<p>system.</p> <ul style="list-style-type: none"> - Remaining lifetime of equipment - Crediting period - Baseline study assumptions - Roles & responsibilities of the project participants - National legislation - ER calculation - Ex-ante parameters - Changes of parameters - Editorial issues of the revised PDD

A comprehensive list of all interviewed persons is part of section 7 'References'.

3.7 Resolution of Clarification and Corrective Action Requests

3.7.1 Definition

A **Corrective Action Request (CAR)** is established where:

- mistakes have been made in assumptions, application of the methodology or the project documentation which will have a direct influence on the project results,
- the requirements relevant for validation of the renewal of crediting period have not been met, or
- omissions or incomplete information might lead to a risk that the renewal of crediting period could not be approved by the UNFCCC, or
- Required information has not been provided.

A **Clarification Request (CL)** is issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

A **Forward Action Request (FAR)** will be issued when certain issues related to project implementation should be reviewed during the subsequent verification.

3.7.2 Draft Validation

After reviewing all relevant documents and taken all other relevant information into account, the validation team issues all findings in the course of a draft validation report and hands this report over to the project participant(s) in order to request responses on the issues raised and to revise the project documentation accordingly.

3.7.3 Final Validation

The final validation starts after issuance of the proposed corrective action (CA) of the CARs, CLs and FARs by the project proponent. The validation team has to reply on those and the requests are “closed out” by the validation team in case the response is assessed as sufficient. If applicable, the project proponent has to respond on raised FARs, identifying the necessary actions to ensure that the topics raised in this finding are likely to be resolved at the latest during the subsequent verification. The validation team has to assess whether the proposed action is adequate or not.

In case the findings from CARs and CLs cannot be resolved by the project proponent or the proposed action related to the FARs raised cannot be assessed as adequate, no positive validation opinion can be issued by the validation team.

The CAR(s), CL(s) and FAR(s) are documented in chapter 4.

3.8 Technical review

Before submission of the final validation report a technical review of the whole RCP validation procedure is carried out. The technical reviewer is a competent GHG auditor being appointed for the scope this project falls under. The technical reviewer is not considered to be part of the validation team and thus not involved in the decision making process up to the technical review.

As a result of the technical review process the validation opinion and the topic specific assessments as prepared by the validation team leader may be confirmed or revised. Furthermore reporting improvements might be achieved.

3.9 Final approval

After successful technical review of the final report an overall (esp. procedural) assessment of the complete validation will be carried out by a senior assessor located in the accredited premises of TÜV NORD.

Only after this step the document submission to the UNFCCC can be started (in case of a positive validation opinion).

4 VALIDATION FINDINGS

In the following table the findings from the desk review of the revised PDD, visits, interviews and supporting documents are summarized:

Table 4-1: Summary of CARs, CLs and FARs issued

Validation topic ¹⁾	No. of CAR	No. of CL	No. of FAR
General description of project activity (A) <ul style="list-style-type: none"> - Project specification - Technical project description - Participation 	0	3	0
Project Baseline, Estimated Emission Reductions and Monitoring Plan (B) <ul style="list-style-type: none"> - Application of the Methodology - Baseline validity and update - Calculation of GHG emission reductions Project emissions Baseline emissions Leakage <ul style="list-style-type: none"> - Applicability of data and parameters defined ex-ante - Monitoring Methodology - Monitoring Plan 	1	5	0
Duration of the Project / Crediting Period (C)	0	0	0
PDD editorial aspects (D)	0	0	0
SUM	1	8	0

¹⁾ The letters in brackets refer to the validation protocol

The following tables include all raised CARs, CLs and FARs. For an in depth evaluation of all validation items it should be referred to the validation protocols (see Annex 1).

Finding	A1		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding	At Section A.1, it is missing the annual CERs estimates, according		

Finding	A1
<i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	to the Instructions for filling out the project design document form for CDM project activities.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The information of annual average and total CERs estimates has been added in Section A.1 of the updated PDD.
	<input checked="" type="checkbox"/> Changes in PDD Section(s): A.1 New version No.: 4 <input type="checkbox"/> Changes in XLS Worksheet(s): New version No.:
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The annual CERs estimates have been included at Section A.1 of the PDD. <u>CL is closed</u>
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Finding	A2
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	At Section A.3, it is missing the lifetime of main equipment, according to the Instructions for filling out the project design document form for CDM project activities.
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The information of the lifetime of the project's equipment has been added in Section A.3 of the updated PDD.
	<input checked="" type="checkbox"/> Changes in PDD Section(s): A.3 New version No.: 4 <input type="checkbox"/> Changes in XLS Worksheet(s): New version No.:
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The lifetime of main equipment is over 40 years according to industry standards and technical specific literature presented to the validation team. This information has been included at Section A.3 of the PDD. <u>CL is closed</u>
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Finding	A3
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR

Finding	A3		
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In Appendix 1, Colbún S.A. is listed as PP, but it is not a PP as per PDD and UNFCCC webpage. On the other hand, Hidroelectrica Guardia Vieja S.A., which is PP, is not listed. Further, at Front Page and Section A.4, only active PPs shall be mentioned. Moreover, at Section 4, it is not indicated whether entities are public or private, as required by the Instructions for filling out the project design document form for CDM project activities.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	Effectively there was an error in Appendix 1 since the PP Hidroelectrica Guardia Vieja S.A was not listed and instead the information of Colbún S.A. was included. This information was corrected. Also in the Front Page and in Section A.4 the information of not active PPs was deleted. It was also indicated if the PPs correspond to private or public entities. It's important to note that there have been incorporated new PPs. This information was not stated previously in PDD since this information was published in the UNFCCC Web page after the PDD was submitted for revalidation.		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): Front Page; Section A.4; Appendix 1	New version No.: 4
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The Front Page, Section A.4 and Appendix 1 of the MR have been revised in order to include all active PPs of the project activity. All sections are consistent among them and in accordance with the information at UNFCCC website. Nevertheless, a clarification is necessary as the contractual relationship for the renewal of the crediting period of the project activity is with Colbún S.A. that is not one of the PPs which is required by VVS requirements. <u>CL remain open</u>		
Corrective Action #2 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	Hidroelectrica Guardia Vieja S.A merged into Colbún S.A. on 20/11/2012, as the latter company acquired 100% of the shares of Hidroelectrica Guardia Vieja S.A, as it can be checked in the evidence sent to the DOE, specifically in the Board Meeting Act of 03/12/2012, page 4, therefore Colbún S.A is responsible of all the assets, liabilities and obligations of Hidroelectrica Guardia Vieja S.A and acts as the legal successor of the company.		
	<input type="checkbox"/> Changes in PDD	Section(s): -	New version No.: -
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #2 <i>The assessment shall encompass all open issues in annex</i>	The Board of Directors of Hidroelectrica Guardia Vieja S.A meeting minutes ^{/COL/} presented to the validation team clearly demonstrates		

Finding	A3
A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.	<p>that the company Hidroelectrica Guardia Vieja S.A merged into Colbún S.A. and all its assets have been incorporated. Thus, Quilleco Hydroelectric plant and the project activity itself have also been incorporated by Colbún S.A. which explains why the contractual relationship for the renewal of the crediting period of the project activity is among Colbún S.A. and TUV Nord.</p> <p>CL is closed</p> <p>Note₁: in order to be consistent with UNFCCC website, even the withdrawn PPs remained at the new PDD and at this Report.</p> <p>Note₂: as the LoA was transferred from Hidroelectrica Guardia Vieja S.A to Colbun S.A. (as per the Validating Letter^{LOA/} issued by the Ministry of the Environment – Chile's Designated National Authority on 2016-01-21) and this information was officialized at the UNFCCC website at the project view page before the end of renewal process, the name of Colbun S.A. was included at this final report as the authorized participant of Chile.</p>
Conclusion Tick the appropriate checkbox	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Finding	B4		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section B.2, the applicability criteria of baseline methodology are neither listed nor respective justification is given for each one.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The information of the applicability conditions of the baseline methodology and the respective justification have been added in section B.2 of updated PDD.		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.2	New version No.: 4
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The applicability criteria of baseline methodology are now discussed at Section B.2 of the PDD. The project activity complies with the criteria to apply the chosen methodology.		
	<u>CL is closed</u>		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed		

Finding	B5
Classification	<input checked="" type="checkbox"/> CAR <input type="checkbox"/> CL <input type="checkbox"/> FAR
Description of finding Describe the finding in unam-	At Section B.4, in the revalidation of baseline:

Finding	B5						
<i>biguous style; address the context (e.g. section)</i>	<p>a. the baseline given by the methodology is not stated;</p> <p>b. although it may be applicable, Step 1.3 has not been discussed;</p> <p>c. in Step 1.4, the text is not sufficiently clear and weights of build and operating margins for second crediting period are not mentioned.</p>						
<p>Corrective Action #1</p> <p><i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i></p>	<p>a. The baseline given in the methodology has been added in Section B.4 of the updated PDD.</p> <p>b. Step 1.3 is discussed in the updated PDD. This step is not applicable as this is a Greenfield project and the baseline scenario did not involve existing equipment.</p> <p>c. The text in Step 1.4 of section B.4 has been modified to make it clearer and also the build and operating margin weights have also been mentioned.</p> <table border="1"> <tr> <td><input checked="" type="checkbox"/> Changes in PDD</td><td>Section(s): B.4</td><td>New version No.: 4</td></tr> <tr> <td><input type="checkbox"/> Changes in XLS</td><td>Worksheet(s):</td><td>New version No.:</td></tr> </table>	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.4	New version No.: 4	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.4	New version No.: 4					
<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:					
<p>DOE Assessment #1</p> <p><i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>a. the baseline given by the methodology is now stated at Section B.4;</p> <p>b. Step 1.3 is not sufficiently discussed as the explanation is not clear;</p> <p>c. Step 1.4 is now clear and the weights of build and operating margins for second crediting period that need to be updated are now mentioned.</p> <p><u>CAR remains open</u></p>						
<p>Corrective Action #2</p> <p><i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i></p>	<p>b. The step 1.3 has been modified in the updated PDD in order to clarify the discussion.</p> <table border="1"> <tr> <td><input checked="" type="checkbox"/> Changes in PDD</td><td>Section(s): B.4</td><td>New version No.: 5</td></tr> <tr> <td><input type="checkbox"/> Changes in XLS</td><td>Worksheet(s):</td><td>New version No.:</td></tr> </table>	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.4	New version No.: 5	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.4	New version No.: 5					
<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:					
<p>DOE Assessment #2</p> <p><i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i></p>	<p>Step 1.3 has been revised and it is now clear that the baseline is the continuation of the pre-project scenario and no investment nor exchange of the baseline equipment during the upcoming crediting period is likely to occur as the lifetime of the existing main equipment exceeds the new crediting period.</p> <p><u>CAR is closed</u></p>						
<p>Conclusion</p> <p><i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input type="checkbox"/> Additional action should be taken (finding remains open)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>						

Finding	B6		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>At Section B.6.1, it is mentioned the existence of a mathematical tool to calculate emission factor which is not used at all in the calculations.</p> <p>In addition, the methodological steps are not sufficiently clearly described.</p>		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	<p>The corresponding correction has been made where it appeared, as it is not a mathematical tool which is used, but excel spreadsheets.</p> <p>Also in Section B.6.1 the methodological steps have been described more in accordance with corresponding methodology.</p>		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.6.1	New version No.: 4
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>The statement about the mathematical tool to calculate emission factor has been excluded as it is not used.</p> <p>In addition, the methodological steps are now clearly described.</p> <p><u>CL is closed</u></p>		
Conclusion <i>Tick the appropriate checkbox</i>	<p><input type="checkbox"/> To be checked during the first periodic verification</p> <p><input type="checkbox"/> Additional action should be taken (finding remains open)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>		

Finding	B7		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	<p>At Section B.7.1, parameter <i>Generation</i>, it is indicated as cross check, the measurement data of the “back up” meters at the generating units.</p> <p>However, there is a more robust cross-check available that can be used giving more confidence for the parameter.</p> <p>Further, justification is not given for the value applied ex-ante.</p>		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	<p>The cross-check procedures have been changed. In parameter <i>Generation</i> it is now stated that the cross-check will be performed against records for sold electricity, which are publicly available at the CDEC-SIC web page.</p> <p>The justification of the value applied ex ante is now provided in section “Additional comment”.</p>		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.7.1	New version No.: 4
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #1	The cross check of parameter <i>Generation</i> is now indicated as the		

Finding	B7
<i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>records of sold electricity which can be acquired directly from CDEC-SIC website which is official and public available.</p> <p>The value applied ex-ante is the same used during first validation and is based on long term observations and measuring.</p> <p><u>CL is closed</u></p>
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed

Finding	B8		
Classification	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
Description of finding <i>Describe the finding in unambiguous style; address the context (e.g. section)</i>	In section B.7.1, in table of parameter A_i , the monitoring frequency is incorrectly indicated as “hourly” and the source of data is missing. Further in tables of parameters CEF and $Oxid$, there is no monitoring frequency indicated.		
Corrective Action #1 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	The parameter A_i , in section B.7.1 was corrected since the source of data was missing. However, the monitoring frequency is correctly indicated as hourly, as it is indicated by the methodology.		
	For parameters CEF and $Oxid$, it is not applicable to indicate a monitoring frequency, as per methodology AM0026 v.3 these parameters are obtained from the IPCC default values.		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.7.1	New version No.: 4
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	For parameter A_i , the hourly frequency is indeed in accordance with the applied methodology. Nevertheless, the unit and source of data have been corrected and completed. For parameters CEF and $Oxid$, the applied methodology does not set a monitoring frequency (as it does for the other parameters). Nevertheless, it is understood that if there is a revision at IPCC values, a change may be necessary.		
	<u>CL remains open</u>		
Corrective Action #2 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	In the updated version of the PDD it is now explained in the monitoring frequency section of parameters CEF and $Oxid$ that IPCC publications will be checked periodically in order to confirm the values of the parameters.		
	<input checked="" type="checkbox"/> Changes in PDD	Section(s): B.7.1	New version No.: 5
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #2 <i>The assessment shall encompass all open issues in annex</i>	At Section B.7.1, for the parameters CEF and $Oxid$, it has been included that IPCC publications will be annually checked in order to		

Finding	B8		
A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.	check if a revision of the values has occurred. Nevertheless, it is necessary for the parameter A_i to clarify why it was used at the Excel spreadsheet the maximum hourly energy generation during the year and not the actual plant capacity in MW as requested by the applied methodology. <u>CL remains open</u>		
Corrective Action #2 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	In accordance to the methodology AM0026 v.3, the definition of the parameter A_i corresponds to the “Maximum energy generation of the marginal plant ‘i’ in MWh/h (equivalent to the actual plant capacity in MW)” (page 9). Taking into account this definition, and using the official available data, the PP, in order to comply with the methodology and in a conservative manner, determined this parameter considering the maximum hourly value of the energy generated during the year for each power plant. This criterion not only complies with the methodology but also is conservative.		
	<input type="checkbox"/> Changes in PDD	Section(s):	New version No.: 6
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.:
DOE Assessment #2 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The values used for parameter A_i are the maximum hourly value of the energy generated during the year for each power plant. This approach complies with the requirement of the methodology. <u>CL is closed</u>		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification <input type="checkbox"/> Additional action should be taken (finding remains open) <input checked="" type="checkbox"/> The finding is closed		

Finding	B9
Classification	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<p>Description of finding Describe the finding in unambiguous style; address the context (e.g. section)</p>	<p>In the Excel sheet for calculation of EF_{OM}, the CDM plants are ordered by date of registration, whereas the methodology requires date of beginning of operation.</p>
<p>Corrective Action #1 This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</p>	<p>In accordance to methodology AM0026 v.3.0, for the EF_{OM} calculation, the process for ordering the j^{th} CDM power plant for estimating D (energy displacement of the marginal plant ‘i’ due to the proposed CDM project ‘j’), has to take into account “the cumulative generation from the N CDM projects in the order of first CDM project (Nth) introduced into the system to the most recent CDM plant introduced in the system (1)” (page 9 of the methodology).</p> <p>A CDM project is considered as such when achieves registration in the CDM since this is “the formal acceptance by the Board of a CDM project activity” (page 16 of the CDM Glossary v. 07.0). Therefore, to calculate the EF_{OM} of Quilleco power plant, the CDM</p>

Finding	B9		
	<p>power plants of the SIC grid were ordered considering for j=1 the most recent power plant registered in the CDM (Ensenada, registered on April 10th 2013) and j=43 the first power plant registered in the CDM (La Higuera, registered on March 20th 2006).</p> <p>Ordering the CDM power plants from their registration date is a more consistent and conservative argument than ordering them from their operation date. The CDM acceptance is a condition that distinguishes a renewable power plant from other renewable power plants operating in the grid. In this case, in the SIC grid there are many renewable power plants currently operating but they are not CDM, therefore, they are not recognized as additional, hence they don't reduce anthropogenic GHG emissions below the level that would have occurred in the absence of the project, that is why they are not taken into account in the calculation.</p> <p>Considering the above, there are many CDM power plants that started operation before being registered, i.e. San Clemente hydro power plant, which started operation on September 16th 2010 and was registered on September 22nd 2011, which is more than a year after. In this case, if the power plants were sorted out by their operation date, San Clemente would have been considered displacing energy from marginal plants (and therefore reducing anthropogenic GHG emissions) a year before, when in fact this is not correct from the CDM point of view.</p> <p>Also, considering the example above, the EF_{OM} of year 2010 would have been calculated considering the displacement of more marginal power plants, since more CDM power plants would be considered, demonstrating that the current argument is also more conservative.</p>		
	<input type="checkbox"/> Changes in PDD	Section(s):	New version No.:
	<input type="checkbox"/> Changes in XLS	Worksheet(s):	New version No.: 2
DOE Assessment #1 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	<p>In fact, ordering the CDM power plants from their registration date is more consistent and more conservative than ordering them from their operation starting date. In addition, this approach is much more in accordance with the purpose of the applied methodology.</p> <p>Therefore, the validation team acknowledges the approach used by the PP as it is more conservative and in accordance with AM0026 v.3.</p> <p>Nevertheless, it is necessary to clarify why in the Excel file “3 EF OM” – tab “Displace data” – cell J3, the comments relates marginal plants to the last fossil fuel plants, although the plant in the cell is a dam.</p> <p><u>CL remains open</u></p>		

Finding	B9		
Corrective Action #2 <i>This section shall be filled by the PP. It shall address the corrective action taken in details. In case the PDD is changed as part of the CA, the PP is requested to indicate the revised sections as well as the new version No.</i>	There is a typo error in the comment of the cell J3. The term “fossil fueled” Power Plant is incorrectly used since, as per the applied methodology, marginal plants correspond to “those power plants listed in the top of the grid system dispatch order during hour ‘h’ needed to meet the electricity demand at the hour “h” without the generation of CDM project(s)” (page 11 of the methodology). Marginal plants can be fossil fueled (thermal) or other kind of power plants (such as dam power plants for example) being in this case the emission factor equal to zero.		
	Considering the above, the term “fossil fueled” has been erased from the updated excel file 3.EF OM, tab “Displace data” – cell J3 and also from the Hourly OM Data 2013 excel spreadsheets.		
	<input type="checkbox"/> Changes in PDD	Section(s):	New version No.:
	<input checked="" type="checkbox"/> Changes in XLS	Worksheet(s): 3.EF OM	New version No.: 3
DOE Assessment #2 <i>The assessment shall encompass all open issues in annex A-1. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	The editorial mistake has ben corrected.		
	Indeed, the expression “marginal plants” is related to different types of power plants. Thus, the calculations are in accordance with applied methodology.		
	<u>CL is closed</u>		
Conclusion <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the first periodic verification		
	<input type="checkbox"/> Additional action should be taken (finding remains open)		
	<input checked="" type="checkbox"/> The finding is closed		

5 VALIDATION ASSESSMENT SUMMARY

5.1 Notification to the UNFCCC

The project has been registered on 2008-07-09 and the first renewable crediting period has been started on the same day. As per the project cycle procedure the PPs shall notify the UNFCCC within a given timeframe from 270 to 180 days prior to the date of expiration of the current crediting period. The respective dates are given in following table:

Table 5-1: Notification dates

Event	Date
Date of Registration	2008-07-09
Start of notification window (-270d)	2014-10-11
End of notification window (-180d)	2015-01-09
Actual date of notification	2014-12-22
UNFCCC confirmation date	2015-01-06

¹⁾ The letters in brackets refer to the validation protocol

As the UNFCCC has confirmed the receipt, the formal notification requirements for a directly adjacent 2nd crediting period are considered to be met for this project activity.

5.2 Project description

Basically the project activity did not change since finalization of the registered PDD. Therefore section A of the revised PDD has basically only been migrated from the registered PDD version. Only a few editorial changes have been identified which do not impact the project design or the project's ability to generate emission reductions.

5.3 Participation

The names of the project participants as listed in the revised PDD (sections A.4. and Appendix 1) are consistent with those listed on the dedicated UNFCCC project website as well as in the last version of the modalities of communication^{/MOC/}. For the complete list of project participants please refer to table 2-2 of this report.

It is important to note that although Colbun S.A. was not listed as project participant at the UNFCCC website, the contractual relationship for the renewal of the crediting period of the project activity has been signed among Colbun S.A. and TUV Nord as the company Hidroelectrica Guardia Vieja S.A merged into Colbun S.A. and all its

assets have been incorporated by it, according to the Board of Directors of Hidroelectrica Guardia Vieja S.A meeting minutes^{/COL/}.

As the LoA was transferred from Hidroelectrica Guardia Vieja S.A to Colbun S.A. (as per the Validating Letter^{/LOA/} issued by the Ministry of the Environment – Chile's Designated National Authority on 2016-01-21) and this information was officialized at the UNFCCC website at the project view page before the end of renewal process, the name of Colbun S.A. was included at this final report and at the PDD as the authorized participant of Chile.

5.4 Applied Methodologies and tools

The project activity was registered under the following methodology (table 5-2):

Table 5-2: Applied methodology/ies at registration and RCP stage

At registration stage		At RCP stage	
<i>Name of methodology</i>	<i>Version</i>	<i>Name of methodology</i>	<i>Version</i>
Methodology for zero-emissions grid-connected electricity generation from renewable sources in Chile or in countries with merit order based dispatch grid	AM0026 ver. 2	Methodology for zero-emissions grid-connected electricity generation from renewable sources in Chile or in countries with merit order based dispatch grid	AM0026 ver. 3

This methodology has not been withdrawn or consolidated to an ACM. However, since registration the methodology has been updated to the version indicated in the above table. This version is applied for the purpose of renewal of crediting period.

Furthermore the methodological tools as listed in the table below have been applied at registration stage and/or have to be considered at this RCP stage.

Table 5-3: Applied methodological tools

At registration stage		At RCP stage	
<i>Name of tool</i>	<i>Version</i>	<i>Name of tool</i>	<i>Version</i>
Tool for the demonstration of additionality	03	Tool for the demonstration of additionality	03
-	-	Tool to calculate the emission factor for an electricity system	04.0
-	-	Assessment of the validity of the original/current baseline	3.0.1

At registration stage		At RCP stage	
		and update of the baseline at the renewal of the crediting period	

By means of checking the UNFCCC website it is confirmed that the selection of the applied methodology and methodological tools has been done correctly in line with the applicable requirements for the RCP.

5.5 Methodology applicability conditions

All applicability conditions of the updated methodology are still met as detailed in Annex 2 of this report. Thus the methodology is deemed fully applicable for the new crediting period and no request for deviation with regards to the applicability of the methodology is required.

5.6 Project Boundary

The project boundaries (geographic and also related to GHG sources and gases) are correctly given in the updated PDD, as described in section B.3 and comply with the requirements of the methodology.

There are no other sources which are impacted by the project that are not addressed by the applied methodology.

5.7 Original Baseline validity and update

5.7.1 Applicability of a Standardized Baseline

No standardized baseline is applicable to the project activity. This has been checked by an analysis of the current list of valid standardized baselines on the UNFCCC website.

5.7.2 Baseline scenario

The baseline scenario of the project as per the registered project is in accordance with applied methodology and can be described as follows:

The baseline scenario for the Project is the continuing operation of the existing and future power plants, without the Quilleco electricity generation, to meet the actual electricity demand. In the project scenario the same electricity demand is met with the Quilleco generation dispatched in the base load displacing the generation from existing power plants and future power developments. Because the project uses renewable sources to produce electricity, there are no additional emissions from the project activity and the emissions reductions are generated by the displaced generation from the Central Interconnected System.

As per the project standard this scenario is not subject to re-assessment and is thus deemed to be applicable for the next crediting period.

However the baseline itself i.e. the calculation of baseline emissions has been checked regarding the continued validity of underlying assumptions and parameter values. The assessment steps are described in the following subsections.

5.7.3 Compliance of the baseline with relevant policies

The baseline of the registered PDD has been assessed to be compliant with the national legislation and policies applicable for the project activity at the time of validation. During the first crediting period the PP has frequently reviewed the legal requirements and policies relevant for the baseline of the project. On the basis of this the PP has arrived at the conclusion that the baseline is still in line with all applicable legislations and policies.

The validation team has independently reviewed the host country legislation as well as current policies, such as:

- Economic Load Dispatch Centre of the Central Interconnected System^{/cdec-sic/};
- Ministry of the Environment of Chile^{/mma/}, and
- Chilean DNA's directives^{/dna/}.

On the basis of this analysis the validation team confirms that the baseline is still in compliance with the currently applicable national legislation and other national and/or sectoral policies. Therefore the baseline did not need to be adjusted due to changes in this respect.

5.7.4 Impact of circumstances

As the baseline scenario is given by the methodology, there are no changed circumstances (e.g. market conditions, market prices, etc.), that could affect the baseline.

5.7.5 Likelihood of investments

The baseline scenario has been identified as the continuation of the pre-project scenario and no investment nor exchange of the baseline equipment during the upcoming crediting period is deemed as the most likely scenario. The lifetime of the main equipment is over 40 years, as per industry standards and technical specific literature^{/LIFE/}.

Furthermore no other reasons for a possible investment – other than possible legal requirements – have been identified.

Thus, the validation team confirms that no changes to the baseline are required due to investments in equipment and infrastructure which impacts the baseline.

5.7.6 Validity of data and parameters determined ex-ante

The only parameters fixed ex-ante at the registered PDD used during the 1st crediting period were *Fuel Carbon Content*, *Combustion efficiency* and *CO₂ conversion factor* which were substituted by more specific parameters for the revised PDD in accordance with the applied methodology.

The parameters fixed ex-ante were corrected introduced for this new crediting period:

- **$EG_{m,y}$** : Net electricity generated and delivered to the grid by power plant / unit m included in the build margin calculation in year y – several values listed at the PDD;
- **$EF_{BM,y}$** : Build margin emission factor – 0.79074;
- **$EF_{CO_2,m,i,y}$** : CO₂ emission factor of fuel type i used in power unit m in year y – several values listed at the PDD;
- **$FC_{i,m,y}$** : Amount of fuel type i consumed by power plant/unit m included in the build margin calculation in year y – several values listed at the PDD;
- **$NCV_{m,i,y}$** : Net calorific value of fossil fuel type i consumed by power plant / unit m included in the build margin calculation in year y – several values listed at the PDD;
- **$\eta_{m,y}$** : Energy conversion efficiency – several values listed at the PDD;
- **w_{BM}** : Weight for build margin emission factor – 75%;
- **w_{OM}** : Weight for operating margin emission factor – 25%.

These changes have been appropriately considered in the updated PDD as per the applied methodologies, tools and guidelines.

It is important to note that the build margin (BM) emission factor is calculated ex-ante based on the most recent information available on units already built at the time of the submission of the request for renewal of the crediting period to the DOE in accordance with paragraph 68 the “Tool to calculate the emission factor for an electricity system” – version 04.0, option 2. The DOE has validated the data from year 2013 used to calculate the build margin as the most recent official information available at CDEC-SIC website^{/cdec-sic/} at the time of submission of the request for renewal of the crediting period.

5.8 Additionality

The project’s additionality has been demonstrated at registration stage. As per the project standard PPs are not requested to justify the additionality of the project again at RCP stage. Thus the corresponding parts have simply been transferred to the respective section of the applicable PDD template version 5.0.

It is confirmed that the transfer has been done appropriately. No further assessment regarding additionality has been carried out by the validation team.

5.9 Monitoring Plan

The monitoring plan in the PDD has been updated to comply with the latest applicable version of the monitoring methodology and tool (AM0026 – version 3 and “Tool to calculate the emission factor for an electricity system” – version 04.0).

All monitored parameters of the revised PDD were already monitored parameters at the registered PDD. The parameters used to calculate the Build margin emission factor have been transferred to Section B.6.2 of the new PDD as it is now calculated ex-ante. In addition, the weights for emission factor (w_{BM} and w_{OM}) are now also included as fixed parameters.

With the new version of methodologies and tool, the monitored parameters for the new crediting period can be summarized as follows:

- **EF_y** : Emission factor for displaced grid electricity;
- **$EF_{OM,y}$** : Operating margin emission factor;
- **$EF_{j,h}$** : Operating margin emission factor for hour h ;
- **$Generation_y$** : Electricity exported to the grid by proposed CDM project, in year y ;
- **$D(j,y)$** : Electricity displaced by j th CDM project from i th marginal plant in the system;
- **d_i** : Emission factor for electricity displaced $D(j,i)$;
- **SFC_i** : Specific fuel consumption per unit of electricity produced in i th marginal plant;
- **M** : Number of electricity generation plants on the margin, that would supply to the system in the absence of the CDM projects in the system;
- **N** : List of CDM registered plants in the system;
- **C_j** : Electricity generated by j th CDM plant in hour h ;
- **A_i** : Generation capacity of i th plant on margin during hour h ;
- **B_i** : Electricity generated of the i th plant on margin during hour h ;
- **CEF_i** : Carbon emission factor of fuel used in i th plant;
- **$Oxid_i$** : Fraction of fuel oxidized on combustion.

The validation team has duly assessed all the required changes due to the upgraded methodological requirements and the re-assessment of the baseline. The validation team has concluded that

- all necessary changes have been appropriately reflected in the updated PDD;
- the monitoring plan in the PDD is in compliance with the applied monitoring methodologies;
- the monitoring arrangements described in the PDD can be implemented and are feasible within the project design.

The DOE has validated the data from year 2013 used to calculate the operating margin as the most recent official information available at CDEC-SIC website^{/cdec-sic/} at the time of submission of the request for renewal of the crediting period.

5.10 Calculation of GHG Emission Reductions

The calculation of ERs is done as per the applied methodology (AM0026 – version 3). All changes due to the upgraded methodology and the re-assessment of the baseline have been considered appropriately. The calculation in the Excel spreadsheet and the corresponding calculation tables in the PDD have been checked and no mistakes have been identified. The estimates of emission reductions for the 2nd crediting period is deemed plausible and conservative.

5.11 Crediting Period

As the UNFCCC secretariat has been notified within the specified timeframe, as detailed in table 5-1, the project's 2nd crediting period may start immediately after the expiration of the 1st one, given that all other applicable criteria are met.

It is thus confirmed that the start date (2015-07-09) and the length of the crediting period (7 years) are in compliance with the project standard.

5.12 Environmental impacts

Environmental impacts only need to be re-assessed with regards to their potential influence on the baseline determination. For the current case it is confirmed that the corresponding section has been correctly migrated to the revised PDD version.

5.13 Local stakeholder consultation

In line with the project standard the local stakeholder consultation is not to be repeated at the RCP stage. It is confirmed that the information included in the registered PDD has been correctly transferred to the revised PDD version.

5.14 PDD update

The PDD has been revised on the basis of the latest applicable template.

In line with the requirements of the project standard only the sections of the registered PDD relating to the baseline, estimated GHG emission reductions and the monitoring plan have been updated. All other sections have basically only been migrated to version 5.0.

It has further been checked whether the information included in the PDD sections and annexes that have not been part of the registered PDD are correct and in compliance with the project standard.

6 VALIDATION OPINION

Colbun S.A. (as the legal owner of company Hidroelectrica Guardia Vieja S.A.) has commissioned the TÜV NORD JI/CDM Certification Program to re-validate the project “Chile: Quilleco Hydroelectric Project” for the purpose of renewal of the crediting period. The validation is based on the relevant UNFCCC requirements.

In the course of the validation 01 Corrective Action Request (CAR) and 08 Clarification Requests (CLs) were raised and successfully closed. No FAR has been raised.

The review of the updated project design documentation and additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews have provided TÜV NORD JI/CDM Certification Program with sufficient evidence to validate the fulfilment of the stated criteria applicable for RCP.

In detail the conclusions can be summarized as follows:

- The current baseline of the project is in line with the national and/or sectoral policies and circumstances at the time of requesting renewal of crediting period.
- The monitoring plan is transparent and adequate and in line with the applicable monitoring methodology (AM0026 ver. 3).
- The calculation of the project emission reductions is carried out in a transparent and conservative manner, so that the calculated emission reductions of 2,078,174 tCO_{2e} are most likely to be achieved within the second renewable crediting period of 7 years.

The conclusions of this report show, that the project, as it was described in the project documentation, is in line with all criteria applicable for the renewal of the crediting period.

São Paulo, 2016-03-22



Ricardo Lopes

TÜV NORD JI/CDM Certification
Program

Validation Team Leader

Essen, 2016-03-22



Stefan Winter

TÜV NORD JI/CDM Certification
Program

Final Approval

7 REFERENCES

Table 7-1: Documents provided by the project participant

Reference	Document
/COL/	Board of Directors of Hidroelectrica Guardia Vieja S.A meeting minutes – 2012-12-03
/EF/	<p><u>Emission Factor calculation:</u></p> <ul style="list-style-type: none"> - Info Base (data from 2013 is the most recent official information available at CDEC-SIC website): <ul style="list-style-type: none"> o General Information documents; o Actual Daily Operations of the SIC (spreadsheets); o Dispatch order (spreadsheets) - Monthly Marginal Plants Data Base (spreadsheets) - Hourly OM Data 2013 per month (spreadsheets) - EF OM 2013 - EF Calculation 2013
/LIC/	Environmental License – Exempt Resolution #338 – CONAMA – 2000-12-26
/LIFE/	<p><u>Lifetime of Main Generating Equipment</u> (including turbines and generators):</p> <ul style="list-style-type: none"> - Hydroelectric Power - A Guide for Developers and Investors (page 71 – Table 11-1) – International Finance Corporation – World Bank Group
/LOA/	<ul style="list-style-type: none"> - Letter of Approval from DNA of Chile – 2005-08-31 - Letter of Approval from DNA of the United Kingdom of Great Britain and Northern Ireland – 2009-07-17 - Validating Letter – Ministry of the Environment (Chile's Designated National Authority) – 2016-01-21
/MAIL1/	Notification mail by the PP to the UNFCCC indicating the intention to renew the crediting period – 2014-12-22

Reference	Document
/MAIL2/	Confirmation mail by the UNFCCC in response to /MAIL1/ – 2015-01-06
/MAN/	<u>Manual of main equipment:</u> <ul style="list-style-type: none"> - Electricity Meters – International Standards for Electricity Meters 62052-11 – International Electrotechnical Commission - 2003 - Generators – Hydroelectric Generator – Type CB 483/153-28 YXJ14 – Operation Instructions – 2006 - Turbines – Turbines Francis PO 70-B-280 – Operation Instructions – Power Machines – 2007-01-01
/MI/	<u>List of Monitoring Instruments</u> (at the time of the Renewal of the Crediting Period): <ul style="list-style-type: none"> - M1: Schneider Electric – Type ION 7650 – Serial # PJ-0911A507-02 - M2: Schneider Electric – Type ION 7650 – Serial # PJ -1009A683-02 - M3: Schneider Electric – Type ION 7650 – Serial # PJ-0911A868-02 - M4: Schneider Electric – Type ION 7650 – Serial # PJ-0911A860-02 - M5: Schneider Electric – Type ION 7650 – Serial # PJ-0911A866-02
/MOC/	Modalities of Communication: all versions listed at UNFCCC website
/PDD/	RCP Project Design document “Chile: Quilleco Hydroelectric Project” <ul style="list-style-type: none"> - version 3 – 2014-12-10 - version 4 – 2015-07-23 - version 5 – 2014-12-10 - version 6 – 2015-09-01 - version 7 – 2015-10-15 - version 8 – 2016-03-22
/SGI/	<u>Procedures and Management System:</u> <ul style="list-style-type: none"> - Manual of the Integrated Management System – MGI.01 – version 4 – Colbún – Oct/2012 - Glossary of the Integrated Management System – version 5 – Colbún –

Reference	Document
	<p>Mar/2015</p> <ul style="list-style-type: none"> - Directives of Occupational Safety, Environment and Quality – Colbún – Mar/2014 - Procedure for Verification and Exchange of Energy Meters – PO.17 – version 02 – Colbún – Jan/2013 - Procedure for Collecting Data from the Energy Meters – PO.18 – version 03 – Colbún – Jan/2013 - Emergency Plan – PA.17 - CLA.01 – RE.02 – version 6 – 2015-03-31
/TRAIN/	<p><u>Training</u> (attendance lists):</p> <ul style="list-style-type: none"> - CDM Training Procedures and Procedures PO.17 and PO.18 – Colbún – 2012-12-20 - CDM Training Procedures and Procedures PO.17 and PO.18 – Colbún – 2013-12-12 - CDM Training Procedures and Procedures PO.17 and PO.18 – Colbún – 2014-12-10
/WATER/	<p><u>Water Rights:</u></p> <ul style="list-style-type: none"> - Authorization to explore the water potential of Rivers Laja and Rucúe – DGA #444/91 – Ministry of Public Works – 1991-10-31 - Change of Water Intake – DGA #VIII 012/96 – Ministry of Public Works – 1996-03-18 - Authorization to explore the surface water of River Laja – DGA #131/99 – Ministry of Public Works – 1999-02-08 - Rectification of DGA #131/99 – DGA #785/99 – Ministry of Public Works – 1999-09-23
/XLS/	<p><u>Emission reduction calculation spreadsheet:</u></p> <ul style="list-style-type: none"> - Generation_and_ER_Quilleco_CP Renewal

Table 7-2: Background investigation and assessment documents

Reference	Document
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Reference	Document
/CPM/	TÜV NORD JI / CDM Certification Program Manual (incl. procedures and forms)
/IPCC/	<ul style="list-style-type: none"> • IPCC Good Practice Guidance & Uncertainty Management in National Greenhouse Gas Inventories, 2000 • Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual
/KP/	Kyoto Protocol (1997)
/MA/	Decision 3/CMP. 1 (Marrakesh – Accords & Annex to decision (17/CP.7))
/MT/	<p><u>Methodological Tools:</u></p> <ul style="list-style-type: none"> - Tool to calculate the emission factor for an electricity system – version 4.0 - Tool for the demonstration and assessment of additionality – version 3.0
/METH-1/	AM0026 ver. 2 - Methodology for zero-emissions grid-connected electricity generation from renewable sources in Chile or in countries with merit order based dispatch grid
/METH-2/	AM0026 ver. 3 - Methodology for zero-emissions grid-connected electricity generation from renewable sources in Chile or in countries with merit order based dispatch grid
/PCP/	CDM project cycle procedure – version 7.0
/PDD-Reg/	Registered Project Design Document named “Chile: Quilleco Hydroelectric Project” (Version 2.2 – 2012-10-05)
/PDD-T/	Project Design Document Form (CDM-PDD-FORM) - Version 5.0 including Attachment: Instructions for filling out the project design document form for CDM project activities
/PS/	CDM project standard – version 7.0
/TVB/	Methodological Tool: “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” version 03.0.1
/VAL/	Validation Report for CDM project “Chile: Quilleco Hydroelectric Project” – Report N° 2007-0812 – revision 02 – DNV – 2008-06-30

Reference	Document
/VVS/	CDM Validation and Verification Standard – version 07.0

Table 7-3: Websites used

Reference	Link	Organization
/cdec-sic/	www.cdec-sic.cl	Economic Load Dispatch Centre of the Central Interconnected System – <i>Centro de Despacho Económico de Carga del Sistema Interconectado Central</i>
/dna/	www.mma.gob.cl/1304/w3-channel.html	DNA of Chile
/ippc/	www.ippc.ch	IPPC
/mma/	http://huellachile.mma.gob.cl/	Ministry of the Environment
/unfccc/	www.unfccc.int	United Nations Framework Convention on Climate Change

Table 7-4: List of interviewed persons

Reference	Mol ¹		Name	Organization / Function
/IM01/	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Paula Reyes	Colbún / Project Engineer
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Darío Cáceres	Colbún / Environmental - Safety and Occupational Health Supervisor
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Jaime Muñoz	Colbún / Chief of Operations
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Pablo Poblete	Colbún / Chief of Control
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Segundo Almendras	Colbún / Operator
/IM01/	V	<input checked="" type="checkbox"/> Mr. <input type="checkbox"/> Ms.	Richard Velásques	Colbún / Operator

R-No.: 11492 – 15/022

Reference	Mol ¹		Name	Organization / Function
/IM02/	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Mariela Ramos	Poch Ambiental / Project Engineer
/IM02/	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Maria Luz Farah	Poch Ambiental / Chief of Projects
/IM02/	V	<input type="checkbox"/> Mr. <input checked="" type="checkbox"/> Ms.	Fiona Bello	Poch Ambiental / Project Engineer

¹⁾ Means of Interview: (Telephone, E-Mail, Visit)

ANNEX

- A1:** Validation Protocol
- A2:** Assessment of Applicability
Criteria
- A3:** Statements of competence of
involved Personnel

ANNEX 1: VALIDATION PROTOCOL

Table A-1: Requirements Checklist

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
A. Description of Project Activity				
A.1. Purpose and general description of the project activity				
<p>A.1.1. Is the description of the project activity in section A.1 correct ?</p> <p><i>(Please check whether the information given is correct with regards to the actual situation and possible changes since the registration / last update of the PDD. Please also check whether the guidelines for completing the PDD form have been followed.</i></p>	/PDD-T/	<p>The validation team has checked section A.1 of the updated PDD and confirms that the information provided is complete and correct with regards to the following:</p> <p><input type="checkbox"/> Section A.1 is in compliance with the instructions for filling out the PDD form ^{/PDD-T/}.</p> <p><input checked="" type="checkbox"/> The section A.1 of the revised PDD has been appropriately updated and reflects the actual situation. Relevant information previously included in other sections of the PDD has been considered.</p> <p>In this context the following findings have been identified:</p> <p>(CL A1) At Section A.1, it is missing the annual CERs estimates, according to the Instructions for filling out the project design document form for CDM project activities.</p>	CL A1	OK

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
A.2. Location of the project activity				
<p>A.2.1. Has the location of the project activity correctly been correctly described in section A.2?</p> <p><i>Please check whether the information given is correct with regards to the actual situation and possible changes since the registration / last update of the PDD. Please also check whether the guidelines for completing the PDD form have been followed.</i></p>	/PDD-T/	<p>The validation team has checked section A.2 of the updated PDD and confirms esp. on the basis of information gathered during the site visit that the information provided is complete and correct with regards to the following:</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Section A.2 is in compliance with the instructions for filling out the PDD form /PDD-T/. <input checked="" type="checkbox"/> The section A.2 of the revised PDD has been appropriately updated and reflects the actual situation with regards to the following: <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Host Party <input checked="" type="checkbox"/> Region / State Province <input checked="" type="checkbox"/> City / Town / Community <input checked="" type="checkbox"/> Physical/geographical location incl. Longitude/Latitude <p>In this context the following findings have been identified: N/A</p>	OK	OK
A.3. Technology and/or measures				
<p>A.3.1. Is the description of the technology employed in the revised PDD in accordance with the real situation?</p> <p><i>The content of the registered PDD shall be compared to the</i></p>	/PDD-T/	<p>On the basis of the site visit and the desk review of the updated PDD the validation team confirms the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Section A.3 is in compliance with the instructions for filling out 	CL-A2	OK

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.																
<i>content of the revised PDD and the situation observed during the site visit. In case of changes of the implemented technology this should be described in detail.</i>		<p>the PDD form^{/PDD-T/}.</p> <p><input checked="" type="checkbox"/> The technology of the project has not been changed.</p> <p><input checked="" type="checkbox"/> The description in the PDD reflects the actual situation and the section A.3 of the PDD has been migrated from the registered PDD without significant changes.</p> <p>In this context the following findings have been identified:</p> <p>(CL A2) At Section A.3, it is missing the lifetime of main equipment, according to the Instructions for filling out the project design document form for CDM project activities.</p>																		
A.4. Parties and project participants																				
<p>A.4.1. Are the names of the project participants of the registered project still consistent with the PPs as per this request for renewal of crediting period?</p> <p>(VVS V.7.0 § 361)</p> <p><i>It should be referred to the project specific CDM website. The PPs listed shall be compared to the PPs listed in the revised PDD.</i></p> <p><i>In case differences are identified, have these chnages been duly notified to the Secretatiat?</i></p>	<p>/PDD/ /IM01/ /unfccc/</p>	<p>The list of project participants listed in the updated PDD (section A.4 and Appendix 1) has been checked against the list of project participants on the project specific UNFCCC website. The following table includes a respective comparison.</p> <table><tr><th>No.</th><th>A-1</th><th>UNFCCC – Website</th><th>Updated PDD</th></tr><tr><td>1</td><td><input type="checkbox"/></td><td>Colbun S.A.</td><td>Colbun S.A.</td></tr><tr><td>2</td><td><input checked="" type="checkbox"/></td><td>Netherlands' Ministry of Infrastructure and the Environment (IenM) (withdrawn)</td><td>Netherlands' Ministry of Infrastructure and the Environment (IenM) (withdrawn)</td></tr><tr><td>3</td><td><input checked="" type="checkbox"/></td><td>International Bank for Reconstruction and</td><td>International Bank for Reconstruction and</td></tr></table>	No.	A-1	UNFCCC – Website	Updated PDD	1	<input type="checkbox"/>	Colbun S.A.	Colbun S.A.	2	<input checked="" type="checkbox"/>	Netherlands' Ministry of Infrastructure and the Environment (IenM) (withdrawn)	Netherlands' Ministry of Infrastructure and the Environment (IenM) (withdrawn)	3	<input checked="" type="checkbox"/>	International Bank for Reconstruction and	International Bank for Reconstruction and	CL A3	OK
No.	A-1	UNFCCC – Website	Updated PDD																	
1	<input type="checkbox"/>	Colbun S.A.	Colbun S.A.																	
2	<input checked="" type="checkbox"/>	Netherlands' Ministry of Infrastructure and the Environment (IenM) (withdrawn)	Netherlands' Ministry of Infrastructure and the Environment (IenM) (withdrawn)																	
3	<input checked="" type="checkbox"/>	International Bank for Reconstruction and	International Bank for Reconstruction and																	

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)				Draft Concl.	Final Concl.
				Development (IBRD) as Trustee of the Netherlands CDM Facility (NCDMF) (withdrawn)	Development (IBRD) as Trustee of the Netherlands CDM Facility (NCDMF) (withdrawn)		
		4	<input checked="" type="checkbox"/>	Electrabel NV/SA	Electrabel NV/SA		
		5	<input checked="" type="checkbox"/>	Idemitsu Kosan Co., Ltd.	Idemitsu Kosan Co., Ltd.		
		6	<input checked="" type="checkbox"/>	Japan Petroleum Exploration Co., Ltd.	Japan Petroleum Exploration Co., Ltd.		
		7	<input checked="" type="checkbox"/>	The Okinawa Electric Power Co., Inc.	The Okinawa Electric Power Co., Inc.		
		8	<input checked="" type="checkbox"/>	Sumitomo Joint Electric Power Co., Ltd.	Sumitomo Joint Electric Power Co., Ltd.		
		9	<input checked="" type="checkbox"/>	Suntory Holdings Limited	Suntory Holdings Limited		
		10	<input checked="" type="checkbox"/>	Tokyo Electric Power Company, Incorporated	Tokyo Electric Power Company, Incorporated		
		11	<input checked="" type="checkbox"/>	Sumitomo Chemical	Sumitomo Chemical		
		12	<input checked="" type="checkbox"/>	Italian Ministry for the Environment Land and Sea	Italian Ministry for the Environment Land and Sea		
		11	<input checked="" type="checkbox"/>	International Bank for Reconstruction and	International Bank for Reconstruction and		

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)				Draft Concl.	Final Concl.
				Development (IBRD) as Trustee of the Bio Carbon Fund (BioCF)	Development (IBRD) as Trustee of the Bio Carbon Fund (BioCF)		
		12	<input checked="" type="checkbox"/>	Ministry of Sustainable Development and Infrastructure	Ministry of Sustainable Development and Infrastructure		
		13	<input checked="" type="checkbox"/>	Kingdom of Spain- Ministry of the Agriculture, Food and Environment & Ministry of Economy and Competitiveness	Kingdom of Spain- Ministry of the Agriculture, Food and Environment & Ministry of Economy and Competitiveness		
		All project participants that have been listed in the updated PDD are also found on the UNFCCC website (during the renewal process). Nevertheless, at Appendix 1, Colbún S.A. is listed instead of Hidroelectrica Guardia Vieja S.A. and the withdrawn PPs are still listed. Thus, CL A3 is raised for clarifications.					
		In this context the following findings have been identified: (CL A3) In Appendix 1, Colbún S.A. is listed as PP, but it is not a PP as per PDD and UNFCCC webpage. On the other hand, Hidroelectrica Guardia Vieja S.A., which is PP, is not listed. Further, at Front Page and Section A.4, only active PPs shall be mentioned. Moreover, at Section A.4, it is not indicated whether entities are public or private, as required by the Instructions for filling out the project design document form for CDM project activities.					

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
A.5. PDD editorial aspects				
<p>A.5.1. Have relevant sections of the registered PDD been updated? (VVS 7.0 § 358)</p> <p><i>Please provide explanation whether the sections relevant for the baseline, the estimated emission reductions and the monitoring plan have been updated.</i></p>	/PDD-T/	<p><i>Description:</i> The PDD is based on the latest PDD version template (v. 5.0) which is structured differently compared to the registered PDD.</p> <p>Nevertheless, several sections about CERs estimates, baseline and methodological steps have not been correctly filled up.</p> <p><i>Validator's action:</i> The registered PDD as well as the revised PDD have been compared. Besides, the methodology has been checked to confirm the updated sections.</p> <p><i>Conclusion:</i></p> <p>(CAR B5) At Section B.4, in the revalidation of baseline:</p> <ul style="list-style-type: none"> a. the baseline given by the methodology is not stated; b. although it may be applicable, Step 1.3 has not been discussed; c. in Step 1.4, the text is not sufficiently clear and weights of build and operating margins for second crediting period are not mentioned. <p>(CL B6) At Section B.6.1, it is mentioned the existence of a mathematical tool to calculate emission factor which is not used at all in the calculations.</p>	<p>CAR B5 CL B6</p>	OK

R-No.: 11492 – 15/022

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.						
		In addition, the methodological steps are not sufficiently clearly described.								
A.5.2. Have other sections been identified in the registered PDD which have been updated?	/PDD-T/	<p><i>Description:</i> The PDD is based on the latest PDD version template (v. 5.0).</p> <p>Sections B.6.1, B.6.2, B.6.3, B.6.4 and B.7.1 have been also updated to apply new requirements and values in accordance with applied methodology and tool.</p> <p><i>Validator's action:</i> The registered PDD as well as the revised PDD have been compared. Besides, the methodology has been checked to confirm the updated sections.</p> <p><i>Conclusion:</i> Several sections have been updated in order to comply to new requirements of the methodology and tool.</p>	OK	OK						
B. Project Baseline and Monitoring Plan										
B.1. Reference of the Methodology										
B.1.1. Which methodology/ tool has been applied in the registered PDD? Is this the latest applicable version? (PS, § 287 (a) & (b)) <i>The applied methodology(ies) and the tool(s) applied in the registered PDD shall be listed here. It shall be confirmed</i>	/unfccc/ /PDD/ /METH-2/ /MT/	<p>The following methodology/ies has/have been used in the updated PDD:</p> <table><tr><th>No.</th><th>Name</th><th>Version</th></tr><tr><td>AM0026</td><td>Methodology for zero-emissions grid-connected electricity generation from</td><td>3.0</td></tr></table>	No.	Name	Version	AM0026	Methodology for zero-emissions grid-connected electricity generation from	3.0	OK	OK
No.	Name	Version								
AM0026	Methodology for zero-emissions grid-connected electricity generation from	3.0								

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)			Draft Concl.	Final Concl.												
whether the latest applicable version at the time of submission of renewal of the crediting period has been applied.	/TVB/		renewable sources in Chile or in countries with merit order based dispatch grid															
		This methodology/ies refers to the methodological tools as follows:																
		<table><tr><th>No.</th><th>Name</th><th>Version</th></tr><tr><td><input checked="" type="checkbox"/></td><td>Tool to calculate the emission factor for an electricity system</td><td>4.0</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Tool for the demonstration and assessment of additionality</td><td>3.0</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period</td><td>03.0.1</td></tr></table>					No.	Name	Version	<input checked="" type="checkbox"/>	Tool to calculate the emission factor for an electricity system	4.0	<input checked="" type="checkbox"/>	Tool for the demonstration and assessment of additionality	3.0	<input checked="" type="checkbox"/>	Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period	03.0.1
No.	Name	Version																
<input checked="" type="checkbox"/>	Tool to calculate the emission factor for an electricity system	4.0																
<input checked="" type="checkbox"/>	Tool for the demonstration and assessment of additionality	3.0																
<input checked="" type="checkbox"/>	Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period	03.0.1																
		For both the methodology/ies and applicable tools it is confirmed that																
		<div><input checked="" type="checkbox"/> all applicable references in the updated PDD are correct.</div> <div><input checked="" type="checkbox"/> all applicable tools have been correctly identified in the updated PDD.</div>																
		In this context the following findings have been identified:																
		N/A																

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
B.2. Applicability of the Methodology				
B.2.1. Have all applicability criteria defined in the methodology been met? (PS, §287; VVS 7.0 § 78)	/unfccc/ /PDD/ /METH-2/	<p><i>Description:</i> Although all criteria of applied methodology have been met, as described in detail in Annex, the applicability criteria have not been individually justified in section B.2 of the PDD.</p> <p><i>Validator's action:</i> The content of the PDD has been compared with the requirements of the methodology. Relevant evidence has been checked. For details please refer to Annex 2 of this report.</p> <p><i>Conclusion:</i> Annex 2 of this report provides a detailed assessment of all applicability requirements.</p> <p>In this context the following findings have been identified:</p> <p>(CL B4) In section B.2, the applicability criteria of baseline methodology are neither listed nor respective justification is given for each one.</p>	CL B4	OK
B.2.2. In case one or more applicability criteria have not been met, has the PP a) select another applicable methodology, b) requested deviation from the methodology? (PS, § 287 (c))	/unfccc/ /PDD/ /METH-2/	Refer above to B.2.1.	CL B4	OK

R-No.: 11492 – 15/022

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
B.3. Validity and update of the baseline <i>The assessment of the continued validity and update of the baseline at the renewal of the crediting period is carried out according to the stepwise approach given in the "Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period", EB 66/Annex 47.</i> <i>(VVS 7.0 §359, 360)</i>				
B.3.1. Baseline applied				
B.3.1.1. Standardized Baseline Check <i>Check if a standardized baseline is applicable for the project and if so, has it been applied correctly.</i>	/unfccc/ /PDD/ /METH-2/ /TVB/	By means of checking the respective UNFCCC website it is confirmed that <input checked="" type="checkbox"/> no standardized baseline is currently applicable for the project activity. <input checked="" type="checkbox"/> no standardized baseline that might become applicable for the project is currently at application stage. <input type="checkbox"/> the following standardized baseline has been applied correctly: Name: - In this context the following findings have been identified: N/A	N/A	N/A
B.3.1.2. What has been identified as original/current baseline?	/unfccc/	<i>Description:</i> The original and current baseline is given by AM0026: <i>Electricity delivered to the grid by the project would have otherwise</i>	CAR B5	OK

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<i>Describe the chosen BL scenario. Indicate whether it is in line with the applied methodology.</i>	/PDD/ /METH- 2/	<p><i>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 below.</i></p> <p><i>Validator's action:</i> The registered PDD as well as the revised PDD have been compared. Besides, the new version of the methodology has also been checked.</p> <p><i>Conclusion:</i> The current baseline is the same of the original one and given by the applied methodology. Nevertheless, CAR B5 was raised.</p> <p>(CAR B5) At Section B.4, in the revalidation of baseline:</p> <ul style="list-style-type: none"> a. the baseline given by the methodology is not stated; b. although it may be applicable, Step 1.3 has not been discussed; c. in Step 1.4, the text is not sufficiently clear and weights of build and operating margins for second crediting period are not mentioned. 		
B.3.2. Step 1: Assess the validity of the current baseline for the next crediting period <i>The validity of the current baseline is assessed using the following Sub-steps:</i>				
B.3.2.1. Step 1.1: Assess compliance of the current	/cdec-	<i>Description:</i> There are no national and/or sectoral policies which	OK	OK

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<p><i>baseline with relevant mandatory and/or sectoral policies</i></p> <p>Does the current baseline comply with all relevant mandatory national and/or sectoral policies which came into effect after the submission of the project activity for validation or the submission of the previous request for renewal of the crediting period and are applicable at the time of requesting renewal of the crediting period?</p> <p><i>If yes go to step 1.2, otherwise the baseline needs to be updated.</i></p> <p><i>Describe how this issue was validated.</i></p>	<p>sic/ /dna/ /mma/ /TVB/ /PDD/</p>	<p>came into effect after the submission of the project activity for validation.</p> <p><i>Validator's action:</i> The national authorities' websites have been checked and interviews were performed during the site visit.</p> <p><i>Conclusion:</i> No legislation changes have been observed and Step 1.1 of the assessment of the validity of the baseline has been correctly used.</p>		
<p>B.3.2.2. Step 1.2: Assess the impact of circumstances</p> <p>Do new circumstances exist at the time of requesting renewal of the crediting period which make the continued validity of the baseline not plausible?</p> <p><i>Assess the impact of circumstances existing at the time of requesting renewal of the crediting period on the current baseline emissions, without reassessing the baseline scenario. If new circumstances make the continued validity not plausible, then the current baseline needs to be updated for the subsequent crediting period.</i></p>	<p>/TVB/ /PDD/</p>	<p><i>Description:</i> There are no new circumstances after the submission of the project activity for validation.</p> <p><i>Validator's action:</i> Interviews were performed during the site visit.</p> <p><i>Conclusion:</i> No new circumstances have been observed and Step 1.2 of the assessment of the validity of the baseline has been correctly used.</p>	<p>OK</p>	<p>OK</p>

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<i>Describe how this issue was validated.</i>				
<p>B.3.2.3. Step 1.3: Assess whether the continuation of the use of current equipment(s) is technically possible or if rather an investment would be made.</p> <p>Does the remaining lifetime of the current equipment that would continue to be used exceeds the crediting period for which renewal is requested (more 7 years)?</p> <p><i>The step should only be applied if the identified baseline in the previous crediting period was the continuation of the current / pre-project practice.</i></p> <p><i>Describe the steps taken to validate the remaining lifetime.</i></p>	<p>/TVB/ /PDD/ /LIFE/</p>	<p><i>Description:</i> Step 1.3 have not been discussed and also the lifetime of the equipment has not been stated at the PDD although it exceeds the crediting period for which renewal is requested (as per technical literature, the main generating equipment has an expected useful life of 40 years), thus CL A2 and CAR B5 were raised.</p> <p><i>Validator's action:</i> PDD has been checked against manuals and technical literature.</p> <p><i>Conclusion:</i></p> <p>(CL A2) At Section A.3, it is missing the lifetime of main equipment , according to the Instructions for filling out the project design document form for CDM project activities.</p> <p>(CAR B5) At Section B.4, in the revalidation of baseline:</p> <ul style="list-style-type: none"> a. the baseline given by the methodology is not stated; b. although it may be applicable, Step 1.3 has not been discussed; c. in Step 1.4, the text is not sufficiently clear and weights of build and operating margins for second crediting period are not mentioned. 	<p>CL A2 CAR B5</p>	<p>OK</p>
<p>B.3.2.4. Step 1.4: Assessment of the validity of the data and parameters</p>	<p>/TVB/ /PDD/</p>	<p>The validation team has checked the validity of the ex-ante parameters defined in the original PDD and confirms the following:</p>	<p>CAR B5</p>	<p>OK</p>

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.																		
<p>Are all data and parameters that were only determined at the start of the (previous) crediting period and not monitored during the (previous) crediting period still valid or should they be updated?</p> <p><i>Updates should be undertaken:</i></p> <ul style="list-style-type: none"><i>where IPCC default values are used, the values should be updated if any default values have been adopted and published by the IPCC;</i><i>where emission factors, values or emission benchmarks are used and determined only once for the crediting period, they should be updated, except if the emission factors, values or emission benchmarks are based on the historical situation at the site of the project activity prior to the implementation of the project and cannot be updated because the historical emission does not exist anymore as a result of the CDM project activity</i> <p><i>List the parameters and provide an assessment.</i></p>		<div><div><input type="checkbox"/> All data and parameters determined ex-ante for the 1st crediting period are still valid.</div><div><input checked="" type="checkbox"/> The following data and/or parameters determined ex-ante for the 1st crediting period are no longer valid and have been updated in accordance with the “Tool to assess the validity of the original/current baseline and to update the baseline at the renewal of a crediting period”:</div></div> <table><tr><th>Parameter</th><th></th></tr><tr><td>Description</td><td>Build margin emission factor</td></tr><tr><td>Unit</td><td>tCO₂/MWh</td></tr><tr><td>Value</td><td>0.79074</td></tr><tr><td>Assessment</td><td>According to the Tool to calculate the emission factor for an electricity system – v. 4.0</td></tr></table> <table><tr><th>Parameter</th><th></th></tr><tr><td>Description</td><td>Weight for Build Margin emission factor</td></tr><tr><td>Unit</td><td>%</td></tr><tr><td>Value</td><td>75</td></tr></table>	Parameter		Description	Build margin emission factor	Unit	tCO ₂ /MWh	Value	0.79074	Assessment	According to the Tool to calculate the emission factor for an electricity system – v. 4.0	Parameter		Description	Weight for Build Margin emission factor	Unit	%	Value	75		
Parameter																						
Description	Build margin emission factor																					
Unit	tCO ₂ /MWh																					
Value	0.79074																					
Assessment	According to the Tool to calculate the emission factor for an electricity system – v. 4.0																					
Parameter																						
Description	Weight for Build Margin emission factor																					
Unit	%																					
Value	75																					

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)		Draft Concl.	Final Concl.
		Assessment	According to the Tool to calculate the emission factor for an electricity system – v. 4.0 for the 2 nd crediting period		
		Parameter			
		Description	Weight for Operating Margin emission factor		
		Unit	%		
		Value	25		
		Assessment	According to the Tool to calculate the emission factor for an electricity system – v. 4.0 for the 2 nd crediting period		
		Nevertheless, as Step 1.4 is not sufficiently clear and weights are not mentioned, CAR B5 was raised. Refer to it above at B.3.2.3.			
		It is further confirmed that no other parameters are required to be updated.			
B.3.3. Step 2: Update of the current baseline and					

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
the data and parameters <i>This step is only applicable if any of the Steps 1.1, 1.2, 1.3 and/or 1.4 showed that the current baseline needs to be updated.</i>				
B.3.3.1. Step 2.1: Update the current baseline. Has the baseline been updated according to the latest approved version of the methodology? <i>The procedure shall be applied in the context of the sectoral policies and circumstances that are applicable at the time of request for renewal of the crediting period.</i>	/TVB/ /PDD/	<p><i>Description:</i> The baseline has not been stated and the steps 1.3 and 1.4 of the “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period” have to be reassessed . Thus, CAR B5 was raised.</p> <p><i>Validator’s action:</i> The PDD was reviewed against the “Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period”.</p> <p><i>Conclusion:</i> Refer to CAR B5 above at Section B.3.2.3.</p>	CAR B5	OK
B.3.3.2. Step 2.2: Update the data and parameters Have all data and parameters that were identified in Step 1.4 above as not valid anymore been updated? <i>Guidance in Step 1.4 shall be followed.</i>	/TVB/ /PDD/ /METH-2/ /MT/	<p><i>Description:</i> Although weights of build and operating margins for the second crediting period are not mentioned at Step 1.4, all parameters that are not valid anymore have been updated (build margin emission factor and weights of build and operating margins).</p> <p><i>Validator’s action:</i> The PDD was reviewed against the methodology and applied tool.</p> <p><i>Conclusion:</i> All parameters that are not valid anymore have been</p>	OK	OK

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
		updated.		
B.4. Algorithms and/or formulae used to determine emissions reductions <i>It is assessed whether the steps taken and the equations and parameters applied in the PDD to calculate project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s).</i>				
B.4.1. Are the equations applied correctly according to the applied approved methodology? (VVS 7.0, §359) <i>Describe clearly the steps taken to assess whether the methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions. Further take into consideration that all estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.</i>	/PDD/ /METH-2/	<p><i>Description:</i> Section B.6.1. in the revised PDD includes the formulae as per the applied methodology and in line with the actual situation of the project activity.</p> <p><i>Validator's action:</i> Section B.6.1. has been compared to the requirements of the methodology.</p> <p><i>Conclusion:</i> The equations have been correctly applied according to the approved methodology. The way of calculating the baseline emissions, the project emissions and the emission reductions is</p>	CAR B9	OK

[illegible]

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<i>interpreted in the PDD.</i>		<i>Conclusion:</i> Project emissions are zero in accordance with applied methodology.		

R-No.: 11492 – 15/022

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.																												
B.5. Monitoring of Emission Reductions <i>It is assessed whether the monitoring plan is appropriate for the project activity and in line with the applied methodology.</i>																																
B.5.1. Monitoring methodology (VVS 7.0 §§ 73 (e), 138, 139 (a) (i)) <i>Assess whether all applicable parameters listed in the methodology applied are included in the monitoring plan.</i> <i>Pl. check further whether the selection of parameters not to be monitored (section B.6.2) is appropriate and in line with the applied methodology.</i> <i>In case of different approaches can be chosen acc. to the methodology assess whether the selection of parameters is justified and correct.</i>	/PDD/	The validation team has checked the validity of the monitoring parameters defined in the original PDD and confirms the following: <input type="checkbox"/> The monitoring methodology applied for the previous crediting period is still valid and no changes have been carried out. <input checked="" type="checkbox"/> The monitoring section of the revised PDD has been updated in order to be compliant with the monitoring methodology applied. In this context the following finding has been identified: N/A	OK	OK																												
B.5.2. Monitoring Parameter: Combined Margin emission factor for displaced grid electricity – EF_y (VVS 7.0 § 139 (a), (ii)) <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i> <i>For checking the use of international standards in the nomenclature, consider:</i>	/PDD-Reg/ /PDD/	<table><tr><th>Requirement</th><th>OK</th><th>Not OK</th><th>N/A</th></tr><tr><td>Label</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Data Unit</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Description</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Source of data</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>Measurement equipment / measurement method</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr><tr><td>Monitoring frequency</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr></table>	Requirement	OK	Not OK	N/A	Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Source of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Measurement equipment / measurement method	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Monitoring frequency	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OK	OK
Requirement	OK	Not OK	N/A																													
Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																													
Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																													
Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																													
Source of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																													
Measurement equipment / measurement method	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																													
Monitoring frequency	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																													

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<p>a) <i>Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i></p> <p>b) <i>Values shall be directly given in SI units – or additionally to original units transferred to SI.</i></p> <p>c) <i>Short scale naming system: (Only) million = 10⁶ and billion 10⁹ shall be used.</i></p>		<p>QA/QC procedures <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Purpose of data <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Standard format <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>SI units <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Short scale naming <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>In detail the following issues have been identified: N/A</p>		

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)			Draft Concl.	Final Concl.	
B.5.3. Monitoring Parameter: Operating margin emission factor – $EF_{OM,y}$ (VVS 7.0 § 139 (a), (ii)) <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i> <i>For checking the use of international standards in the nomenclature, consider:</i> <i>a) Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i> <i>b) Values shall be directly given in SI units – or additionally to original units transferred to SI.</i> <i>c) Short scale naming system: (Only) million = 10^6 and billion 10^9 shall be used.</i>	/PDD-Reg/ /PDD/	Requirement	OK	Not OK	N/A	OK	OK
		Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Source of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Measurement equipment / measurement method	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
		Monitoring frequency	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		QA/QC procedures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Purpose of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Standard format	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		SI units	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Short scale naming	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		In detail the following issues have been identified: N/A					
B.5.4. Monitoring Parameter: Operating margin emission factor for hour h – $EF_{j,h}$ (VVS 7.0 § 139 (a), (ii)) <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i>	/PDD-Reg/ /PDD/	Requirement	OK	Not OK	N/A	OK	OK
		Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Source of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Measurement equipment /	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

R-No.: 11492 – 15/022

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<p><i>For checking the use of international standards in the nomenclature, consider:</i></p> <p>a) <i>Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i></p> <p>b) <i>Values shall be directly given in SI units – or additionally to original units transferred to SI.</i></p> <p>c) <i>Short scale naming system: (Only) million = 10⁶ and billion 10⁹ shall be used.</i></p>		<p>measurement method</p> <p>Monitoring frequency <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>QA/QC procedures <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Purpose of data <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Standard format <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>SI units <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Short scale naming <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>In detail the following issues have been identified:</p> <p>N/A</p>		

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)			Draft Concl.	Final Concl.	
B.5.5. Monitoring Parameter: Electricity exported to the grid by proposed CDM project, in year y – Generation_y (VVS 7.0 § 139 (a), (ii)) <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i> <i>For checking the use of international standards in the nomenclature, consider:</i> a) <i>Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i> b) <i>Values shall be directly given in SI units – or additionally to original units transferred to SI.</i> c) <i>Short scale naming system: (Only) million = 10⁶ and billion 10⁹ shall be used.</i>	/PDD-Reg/ /PDD/	Requirement	OK	Not OK	N/A	CL-B7	OK
		Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Source of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Measurement equipment / measurement method	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Monitoring frequency	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		QA/QC procedures	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
		Purpose of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Standard format	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		SI units	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Short scale naming	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		In detail the following issues have been identified: (CL B7) At Section B.7.1, parameter <i>Generation</i> , it is indicated as cross check, the measurement data of the “back up” meters at the generating units. However, there is a more robust cross-check available that can be used giving more confidence for the parameter. Further, justification is not given for the value applied ex-ante.					
B.5.6. Monitoring Parameter: Electricity displaced by jth CDM project from ith marginal plant in the	/PDD-Reg/	Requirement	OK	Not OK	N/A	OK	OK
		Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

R-No.: 11492 – 15/022

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)			Draft Concl.	Final Concl.	
system – D(j,y) (VVS 7.0 § 139 (a), (ii)) <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i> <i>For checking the use of international standards in the nomenclature, consider:</i> a) Standard format (e.g. 1,000 representing one thousand and 1.0 representing one). b) Values shall be directly given in SI units – or additionally to original units transferred to SI. c) Short scale naming system: (Only) million = 10 ⁶ and billion 10 ⁹ shall be used.	/PDD/	Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Source of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Measurement equipment / measurement method	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
		Monitoring frequency	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		QA/QC procedures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Purpose of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Standard format	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		SI units	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Short scale naming	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		In detail the following issues have been identified: N/A					
B.5.7. Monitoring Parameter: Emission factor for electricity displaced D(j,i) – d_i (VVS 7.0 § 139 (a), (ii)) <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i> <i>For checking the use of international standards in the nomenclature, consider:</i> a) Standard format (e.g. 1,000 representing one thousand	/PDD-Reg/ /PDD/	Requirement	OK	Not OK	N/A	OK	OK
		Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Source of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Measurement equipment / measurement method	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
		Monitoring frequency	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<p>and 1.0 representing one).</p> <p>b) Values shall be directly given in SI units – or additionally to original units transferred to SI.</p> <p>c) Short scale naming system: (Only) million = 10^6 and billion 10^9 shall be used.</p>		<p>QA/QC procedures <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Purpose of data <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Standard format <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>SI units <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Short scale naming <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>In detail the following issues have been identified: N/A</p>		

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)			Draft Concl.	Final Concl.	
B.5.8. Monitoring Parameter: Specific fuel consumption per unit of electricity produced in ith marginal plant – SFC_i (VVS 7.0 § 139 (a), (ii)) <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i> <i>For checking the use of international standards in the nomenclature, consider:</i> <i>a) Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i> <i>b) Values shall be directly given in SI units – or additionally to original units transferred to SI.</i> <i>c) Short scale naming system: (Only) million = 10⁶ and billion 10⁹ shall be used.</i>	/PDD-Reg/ /PDD/	Requirement	OK	Not OK	N/A	OK	OK
		Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Source of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Measurement equipment / measurement method	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
		Monitoring frequency	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		QA/QC procedures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Purpose of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Standard format	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		SI units	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Short scale naming	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		In detail the following issues have been identified: N/A					
B.5.9. Monitoring Parameter: Number of electricity generation plants on the margin, that would supply to the system in the absence of the CDM projects in the system – M (VVS 7.0 § 139 (a), (ii)) <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including</i>	/PDD-Reg/ /PDD/	Requirement	OK	Not OK	N/A	OK	OK
		Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Source of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Measurement equipment /	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

R-No.: 11492 – 15/022

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<p><i>applicable tool(s) in the aspects listed.</i></p> <p><i>For checking the use of international standards in the nomenclature, consider:</i></p> <p>a) <i>Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i></p> <p>b) <i>Values shall be directly given in SI units – or additionally to original units transferred to SI.</i></p> <p>c) <i>Short scale naming system: (Only) million = 10⁶ and billion 10⁹ shall be used.</i></p>		<p>measurement method</p> <p>Monitoring frequency <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>QA/QC procedures <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Purpose of data <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Standard format <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>SI units <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Short scale naming <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>In detail the following issues have been identified: N/A</p>		

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)			Draft Concl.	Final Concl.	
B.5.10. Monitoring Parameter: Number – N (VVS 7.0 § 139 (a), (ii)) <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i> <i>For checking the use of international standards in the nomenclature, consider:</i> <i>a) Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i> <i>b) Values shall be directly given in SI units – or additionally to original units transferred to SI.</i> <i>c) Short scale naming system: (Only) million = 10⁶ and billion 10⁹ shall be used.</i>	/PDD-Reg/ /PDD/	Requirement	OK	Not OK	N/A	OK	OK
		Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Source of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Measurement equipment / measurement method	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
		Monitoring frequency	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		QA/QC procedures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Purpose of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Standard format	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		SI units	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Short scale naming	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		In detail the following issues have been identified: N/A					
B.5.11. Monitoring Parameter: Electricity generated by jth CDM plant in hour h – C_j (VVS 7.0 § 139 (a), (ii)) <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i>	/PDD-Reg/ /PDD/	Requirement	OK	Not OK	N/A	OK	OK
		Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Source of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Measurement equipment /	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<p><i>For checking the use of international standards in the nomenclature, consider:</i></p> <p>a) <i>Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i></p> <p>b) <i>Values shall be directly given in SI units – or additionally to original units transferred to SI.</i></p> <p>c) <i>Short scale naming system: (Only) million = 10⁶ and billion 10⁹ shall be used.</i></p>		<p>measurement method</p> <p>Monitoring frequency <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>QA/QC procedures <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Purpose of data <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Standard format <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>SI units <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Short scale naming <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>In detail the following issues have been identified:</p> <p>N/A</p>		

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)			Draft Concl.	Final Concl.	
B.5.12. Monitoring Parameter: Generation capacity of ith plant on margin during hour h – A_i (VVS 7.0 § 139 (a), (ii)) <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i> <i>For checking the use of international standards in the nomenclature, consider:</i> <i>a) Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i> <i>b) Values shall be directly given in SI units – or additionally to original units transferred to SI.</i> <i>c) Short scale naming system: (Only) million = 10⁶ and billion 10⁹ shall be used.</i>	/PDD-Reg/ /PDD/	Requirement	OK	Not OK	N/A	CL B8	OK
		Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Source of data	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
		Measurement equipment / measurement method	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
		Monitoring frequency	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
		QA/QC procedures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Purpose of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Standard format	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		SI units	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Short scale naming	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		In detail the following issues have been identified: (CL B8) In section B.7.1, in table of parameter A _i , the monitoring frequency is incorrectly indicated as “hourly” and the source of data is missing. Further in tables of parameters CEF and Oxid, there is no monitoring frequency indicated.					
B.5.13. Monitoring Parameter: Electricity generated of the ith plant on margin during hour h – B_i (VVS 7.0 § 139 (a), (ii))	/PDD-Reg/ /PDD/	Requirement	OK	Not OK	N/A	OK	OK
		Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<p>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</p> <p>For checking the use of international standards in the nomenclature, consider:</p> <p>a) Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</p> <p>b) Values shall be directly given in SI units – or additionally to original units transferred to SI.</p> <p>c) Short scale naming system: (Only) million = 10^6 and billion 10^9 shall be used.</p>		<p>Description <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Source of data <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Measurement equipment / measurement method <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>Monitoring frequency <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>QA/QC procedures <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Purpose of data <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Standard format <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>SI units <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Short scale naming <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>In detail the following issues have been identified: N/A</p>		

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)			Draft Concl.	Final Concl.	
B.5.14. Monitoring Parameter: Carbon emission factor of fuel used in ith plant – CEF_i (VVS 7.0 § 139 (a), (ii)) <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i> <i>For checking the use of international standards in the nomenclature, consider:</i> <i>a) Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i> <i>b) Values shall be directly given in SI units – or additionally to original units transferred to SI.</i> <i>c) Short scale naming system: (Only) million = 10⁶ and billion 10⁹ shall be used.</i>	/PDD-Reg/ /PDD/	Requirement	OK	Not OK	N/A	CL-B8	OK
		Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Source of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Measurement equipment / measurement method	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
		Monitoring frequency	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
		QA/QC procedures	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
		Purpose of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Standard format	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		SI units	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Short scale naming	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		In detail the following issues have been identified: Refer to CL B8 above at B.5.12.					
B.5.15. Monitoring Parameter: Fraction of fuel oxidized on combustion – Oxid_i (VVS 7.0 § 139 (a), (ii)) <i>Indicate whether the provided information for the monitoring parameter complies with the approved methodology including applicable tool(s) in the aspects listed.</i>	/PDD-Reg/ /PDD/	Requirement	OK	Not OK	N/A	CL-B8	OK
		Label	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Data Unit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Description	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Source of data	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
		Measurement equipment /	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

R-No.: 11492 – 15/022

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<p><i>For checking the use of international standards in the nomenclature, consider:</i></p> <p>a) <i>Standard format (e.g. 1,000 representing one thousand and 1.0 representing one).</i></p> <p>b) <i>Values shall be directly given in SI units – or additionally to original units transferred to SI.</i></p> <p>c) <i>Short scale naming system: (Only) million = 10⁶ and billion 10⁹ shall be used.</i></p>		<p>measurement method</p> <p>Monitoring frequency <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/></p> <p>QA/QC procedures <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/></p> <p>Purpose of data <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Standard format <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>SI units <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>Short scale naming <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>In detail the following issues have been identified: Refer to CL B8 above at B.5.12.</p>		

R-No.: 11492 – 15/022

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<p>B.5.16. Are the means of monitoring of all parameters contained in the monitoring plan feasible within the project design?</p> <p>(VVS 7.0 §§ 139 (b) (i), 140 (b))</p> <p><i>Describe the steps undertaken to assess whether the monitoring arrangements described in the monitoring plan are feasible within the project design.</i></p>	/PDD-Reg/ /PDD/	<p><i>Description:</i> The monitoring of most parameters are feasible and complete. Nevertheless, as the monitoring of parameters A_i, CEF and Oxid needs revision, CL B8 was raised.</p> <p><i>Validator's action:</i> The procedures for monitoring and calculating the monitored parameters are described in the monitoring plan and were checked against the applied methodologies.</p> <p><i>Conclusion:</i> The means of monitoring of most parameters contained in the monitoring plan are feasible within the project design. Nevertheless some revisions are necessary, so CL B8 was raised. Refer to it at B.5.12 above.</p>	CL-B8	OK
<p>B.5.17. Is it likely that the monitoring arrangements described in the PDD can properly be implemented in the context of the project activity?</p> <p>(VVS 7.0 § 139 (b) (ii))</p> <p><i>Assess whether the described monitoring arrangements are sufficient and realistic to enable a thorough monitoring. Pl. consider also special monitoring conditions, e.g. downtimes of monitoring equipment etc.</i></p>	/PDD-Reg/ /PDD/	<p><i>Description:</i> The monitoring arrangements are clear.</p> <p><i>Validator's action:</i> Interviews were performed and the PDD was reviewed.</p> <p><i>Conclusion:</i> The monitoring arrangements described in the PDD can be properly implemented in the context of the project activity.</p>	OK	OK
<p>B.5.18. Are the QA/QC procedures appropriate sufficient to ensure the emission reductions</p>	/PDD-Reg/	<p><i>Description:</i> The QA/QC procedures are appropriate for the presented parameters with the exception of parameter</p>	CL-B7	OK

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<p>achieved from the project activity can be reported ex-post and verified?</p> <p>(VVS 7.0 § 139 (b) (ii))</p> <p><i>Please consider the description given in section B.7.2. Describe which QA/QC provisions are considered. Address Quality Management System provisions, calibration and maintenance of equipment. Address further any review procedures.</i></p>	/PDD/	<p>"Generation". Thus, CL B7 was raised.</p> <p><i>Validator's action:</i> Sections B.7.1 and B.7.2 of the PDD have been checked and interviews with PPs representatives have been performed to assess this issue.</p> <p><i>Conclusion:</i> QA/QC procedures are appropriate and sufficient for most of the parameters to ensure the emission reductions achieved from the project activity can be reported ex-post and verified. Nevertheless, the QA/QC procedures for parameter "Generation" have to be better explained.</p> <p>Refer to B.5.5 above.</p>		
<p>B.5.19.Are procedures identified for data management?</p> <p>(VVS 7.0 § 139 (b) (ii))</p> <p><i>Check whether appropriate provisions are considered for data management including responsibilities, what records to keep, storage area of records and how to process performance documentation</i></p> <p><i>Check further the data archiving provisions for the project activity and ensure that provisions are made to archive data for the whole crediting period + 2 years.</i></p>	/PDD-Reg/ /PDD/	<p><i>Description:</i> Yes, procedures, type of data and responsibilities are identified and provisions for data archiving are made.</p> <p><i>Validator's action:</i> There are identified procedures for data management system described in Section B.7.3 of the PDD.</p> <p><i>Conclusion:</i> The procedures for data management are properly identified.</p>	OK	OK
C. Duration of the Project/ Crediting Period				

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
<i>It is assessed whether the temporary boundaries of the project are clearly defined.</i>				
C.1. What is the current crediting period?	/unfccc/ /PDD/	<p><i>Description:</i> The new crediting period is from 2015-07-09 until 2022-07-08.</p> <p>The first crediting period was from 2008-07-09 to 2015-07-08.</p> <p><i>Validator's action:</i> The project specific UNFCCC website has been checked to confirm this.</p> <p><i>Conclusion:</i> The current crediting period has been correctly described in the PDD.</p>	OK	OK
C.2. Has the PP informed the CDM Secretariat about the intention to request renewal of crediting period 270 to 180 days prior to expiration of the current crediting period? Has an updated PDD been submitted? (PCP, § 262)	/MAIL1/ /MAIL2/	<p><i>Description:</i> The UNFCCC has sent an e-mail to PP requesting a statement from the PPs regarding their intention to renew the CP. The PPs have forwarded an e-mail to the CDM Secretariat on 2014-12-22 indicating the intention to renew the crediting period and the assignment of the DOE. Also an updated PDD was submitted.</p> <p>The CDM Secretariat confirmed the receipt of this notification on 2015-01-06.</p> <p><i>Validator's action:</i> The e-mail communication has been checked by the validation team.</p>	OK	OK

R-No.: 11492 – 15/022

Checklist Item (incl. guidance for the validation team)	Ref.	Validation Team Comments (justification and substantiation of information, data and evidence)	Draft Concl.	Final Concl.
		<i>Conclusion:</i> The CDM Secretariat has been informed about the intention of renewal crediting period and UNFCCC has confirmed the receipt of the same. Therefore this point has been met.		
<p>C.3. Is the start and end date of the renewed crediting period clearly defined and reasonable?</p> <p><i>Check whether the envisaged starting date of the crediting period is realistic, taking into account the end date of the last crediting period.</i></p>	/PDD/	<p><i>Description:</i> The start date of the second crediting period is 2015-07-09 as defined in section C.2.2. in the revised PDD. The second crediting period is 7 years. Hence, the end date of the second crediting period is 2022-07-08.</p> <p><i>Validator's action:</i> The PDD has been checked.</p> <p><i>Conclusion:</i> The start and end dates of the second crediting period are clearly defined and realistic w.r.t. the dates of the first crediting period. The second crediting period shall start immediately after the end of the first crediting period.</p>	OK	OK

ANNEX 2: ASSESSMENT OF APPLICABILITY CRITERIA

Table A-2: Assessment of Applicability Criteria (VVS 7.0 § 78)

Applicability Criteria	Evidence used	met	not met	N/A	Assessment of validation team (results and means of assessment)
#1: Projects that are renewable electricity generation projects of the following types: (a) Run-of-river hydro power plants and hydroelectric power projects with existing reservoirs where the volume of the reservoir is not increased; (b) New hydroelectric power projects with reservoirs having power densities (installed power generation capacity divided by the surface area at the full reservoir level) greater than 4 W/m ² . (c) Wind sources; (d) Solar sources; (e) Geothermal sources; (f) Wave and tidal sources.	/LIC/ /WATER/	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>The project activity fulfils the criterion as it is a renewable electricity generation project. It is a run-of-river hydro power plant with no reservoir. Thus it follows type (a) of the criterion.</p> <p>This could be verified on the site visit and all documents related to the plant (i.e. Environmental License – Exempt Resolution #338 and Water Rights authorizations granted by the Ministry of Public Works).</p>

<p>#2: Projects that are connected to the interconnected grids of the Republic of Chile and Projects that fulfils all the legal obligations under the Chilean Electricity Regulation.</p>	<p>/LIC/ /WATER/</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>The project activity fulfils the criterion as it is connected to the Central Interconnected System (Chilean National Electric System) – SIC.</p> <p>This could be verified on the site visit and all documents related to the plant (i.e. Environmental License – Exempt Resolution #338 and Water Rights authorizations granted by the Ministry of Public Works).</p>
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R-No.: 11492 – 15/022

<p>#3: Proposed projects implemented in countries other than Chile provided the country has a regulatory framework for electricity generation and dispatch that meets the following conditions:</p> <p>(a) An identifiable independent identity is responsible for optimal operation of the system based on the principle of lowest marginal costs.</p> <p>(b) The data for merit order based on marginal costs is publicly made available by the authority responsible for operation of the system.</p> <p>(c) The data on specific fuel consumption for each generation source in the system is publicly available.</p> <p>(d) It is possible with the information available, to ensure that power plants dispatched for other considerations (e.g. safety conditions, grid stability, transmission constraints, and other electrical reasons) are not identified as marginal plants.</p>	/PDD/	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Not applicable as the project activity is in Chile.
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<p>#4: Not applicable if the proposed CDM project activities that involve switching from fossil fuels to renewable energy at the site of the project activity.</p>	<p>/LIC/ /WATER/</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>The project activity fulfils the criterion as It is a run-of-river hydro power plant, thus it does not involve switching from fossil fuels to renewable energy at the site of the project activity.</p> <p>This could be verified on the site visit and all documents related to the plant (i.e. This could be verified on the site visit and all documents related to the plant (i.e. Environmental License – Exempt Resolution #338 and Water Rights authorizations granted by the Ministry of Public Works).</p>
<p>#5: Not applicable if the baseline is the continued use of fossil fuels at the site.</p>	<p>/LIC/ /WATER/</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<p>The project activity fulfils the criterion as It is a run-of-river hydro power plant, thus the baseline is not the continued use of fossil fuels at the site.</p> <p>This could be verified on the site visit and all documents related to the plant (i.e. This could be verified on the site visit and all documents related to the plant (i.e. Environmental License – Exempt Resolution #338 and Water Rights authorizations granted by the Ministry of Public Works).</p>



R-No.: 11492 – 15/022

ANNEX 3: STATEMENTS OF COMPETENCE OF INVOLVED PERSONNEL

Statement of Competence
Appointment and authorization according to the provisions of the TÜV NORD JI/CDM Certification Program

Mr. Ricardo Lopes

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	2018-03-03
VCS / ISO 14064-2	Senior Assessor	2018-03-03

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
13.1	Solid waste and wastewater

77 - Rev. 6, Date: 2015-03-04

ISO 14064-2:2015

Statement of Competence
Appointment and authorization according to the provisions of the TÜV NORD JI/CDM Certification Program

Mr. Sergio Cruz

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	2017-12-16
VCS / ISO 14064-2	Senior Assessor	2017-12-16

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
13.1	Solid waste and wastewater

185 - Rev.6, Date: 2015-01-07

ISO 14064-2:2015

Statement of Competence
Appointment and authorization according to the provisions of the TÜV NORD JI/CDM Certification Program

Mr. Marcelo Sebben

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification)	2017-08-31
VCS / ISO 14064-2	Lead Assessor	2017-08-31

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
13.1	Solid waste and wastewater

297 - Rev. 6, Date: 2015-01-07

ISO 14064-2:2015

Statement of Competence
Appointment and authorization according to the provisions of the TÜV NORD JI/CDM Certification Program

Mr. Stefan Winter

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification)	2017-07-27
VCS	Senior Assessor (Validation, Verification)	2017-07-27

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal energy generation
1.2	Renewables
2.1	Energy distribution
3.1	Energy demand
4.1	Cement and lime production
4.2	Paper
5.2	Caprolactam, nitric and adipic acid
9.1	Aluminium and magnesium production
9.2	Iron, steel and Ferro-alloy production
13.1	Solid waste and wastewater
13.2	Manure

163 - Rev. 4, Date: 2015-01-05

ISO 14064-2:2015