




**Verification and certification report form for
CDM project activities
(Version 02.1)**

Complete this form in accordance with the instructions attached at the end of this form.

BASIC INFORMATION

Title and UNFCCC reference number of the project activity	Cote Small-Scale Hydropower Plant UNFCCC ID: 0251
Version number of the verification and certification report	2.0
Completion date of the verification and certification report	07/02/2019
Monitoring period number and duration of this monitoring period	MP 2 nd of 2CP 01/01/2013- to 31/03/2017(including both days)
Version number of the monitoring report to which this report applies	6.0
Crediting period of the project activity corresponding to this monitoring period	01/04/2010 to 31/03/2017 (including both days)
Project participants	<p>Compañía Nacional de Fuerza y Luz (CNFL); International Bank for Reconstruction and Development (IBRD) as Trustee of the Prototype Carbon Fund (PCF); Fortum Corporation; Government of Finland - Ministry of Foreign Affairs of Finland; RWE Power AG; Chubu Electric Power Co., Inc; The Chugoku Electric Power Co., Inc.; Kyushu Electric Power Co., Inc.; Mitsubishi Corporation; Shikoku Electric Power Co., Inc.; Tohoku Electric Power Co.,Inc.; The Tokyo Electric Power Co., Inc.; Japan International Cooperation Agency (JICA); Mitsui & Co. Ltd.; Electrabel S.A.; Netherlands' Ministry of Infrastructure and the Environment (IenM); Netherlands' Ministry of Economic Affairs, Agriculture and Innovation (EL&I); Government of Norway – Ministry of Foreign Affairs; Norsk Hydro ASA; Statoil ASA; Swedish Energy Agency;</p>

	Deutsche Bank AG; BP Alternative Energy International Ltd.; GDF SUEZ
Host Party	Costa Rica
Applied methodologies and standardized baselines	CDM Methodology: AMS-I.D.: Grid connected renewable electricity generation Version 17.0
Mandatory sectoral scopes linked to the applied methodologies	Scope: 1 / Technical Area: 1.2
Conditional sectoral scope(s) linked to the applied methodologies	Scope: N/A / Technical Area: N/A
Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	12,184 t CO _{2e}
Certified amount of GHG emission reductions or GHG removals for this monitoring period	11,780 t CO _{2e}
Name and UNFCCC reference number of the DOE	TÜV NORD CERT GmbH; E-0022
Name, position and signature of the approver of the verification and certification report	 Kunal Rami Final Approver

SECTION A. Executive summary

International Bank for Reconstruction and Development (IBRD) as Trustee of the Prototype Carbon Fund (PCF) has commissioned the TÜV NORD JI/CDM Certification Program to carry out this periodic verification of the project:

“Cote small-scale hydropower plant”

with regard to the relevant requirements for CDM project activities.

This verification covers the period as indicated on the title page.

The project reduces GHG emissions due to due to generation of hydroelectric energy feed into the national grid which displaces energy from fossil fuels.

Details of the project location are given in table A-1 below:

Table A-1: Project Location

No.	Project Location	
Host Country	Costa Rica	
Region:	Guanacaste and Alajuela Provinces	
Project location address:	Over the Nuevo Arenal (in Tilarán) and Cote (in Guatuso) Districts.	
Project polygon coordinates:	North	West
	10° 34' 29.26"	84° 54' 58.30"
	10° 32' 51.62"	84° 54' 58.12"
	10° 32' 51.74"	84° 53' 52.33"
	10° 34' 29.38"	84° 53' 52.51"

Basic technical details of the project are summarized in table A-2.

Table - A-2: Technical data of the project activity

Parameter	Unit	Value
VATECH Turbine, type Francis (Serial: 110001)	kW	6,786
	rpm	600
Toshiba Generator, type TAKL (Serial: 0020091100)	kW	6525
	kVA	7250
	Cap. factor	0.9
	rpm	600
Diesel Generator SDMO type PG 75U (Serial: AVP 01.169.01.G002)	kW	75.2
	kVA	94
	Cap. factor	0.8
Reservoir volume	m ³	3,000,000
Design flow (caudal)	m ³ /s	8.4

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated project design document.
- the monitoring plan is in accordance with the applied approved CDM methodology,
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately.
- the monitoring system is in place and functional. The project has generated GHG emission reductions.

As the result of this periodic verification, the verifier confirms that the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.

SECTION B. Verification team, technical reviewer and approver**B.1. Verification team member**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader	El	Quireza	Oliver	TN México	x	x	x	x

B.2. Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer & Approver	IR	Rami	Kunal	TÜV NORD CERT GmbH

SECTION C. Application of materiality**C.1. Consideration of materiality in planning the verification**

In order to ensure a complete, transparent and timely execution of the verification task the team leader has planned the complete sequence of events necessary to arrive at a substantiated final verification opinion.

Various tools have been established in order to ensure an effective verification planning.

Materiality Threshold

The verification is based on the materiality threshold identified in table C-1 below:

Table C-1: Applied Materiality Threshold

	Threshold	Related to
<input type="checkbox"/>	0.5 %	Emission reductions or removals for registered CDM project activities achieving a total emission reduction or removal equal to or more than 500,000 tonnes of carbon dioxide equivalent per year ¹ ;
<input type="checkbox"/>	1 %	Emission reductions or removals for registered CDM project activities achieving a total emission reduction or removal of between 300,000 and 500,000 tonnes of carbon dioxide equivalent per year;
<input type="checkbox"/>	2 %	Emission reductions or removals for registered large-scale CDM project activities achieving a total emission reduction or removal of 300,000 tonnes of carbon dioxide equivalent per year or less;

¹ A year refers to a period of 12 consecutive months.

	Threshold	Related to
<input checked="" type="checkbox"/>	5 %	Emission reductions or removals for registered small-scale CDM project activities other than registered CDM project activities covered under next category below;
<input type="checkbox"/>	10 %	Emission reductions or removals for the type of registered CDM project activities referred to in decision 3/CMP.6, paragraph 38 (referred to as microscale project activities).

Strategic Analysis

At the beginning of the verification the verification team leader has assessed the nature, scale and complexity of the verification tasks by carrying out a strategic analysis of all activities relevant to the project activity. The team leader has collected and reviewed the information relevant to assess that the designated verification team is sufficiently competent to carry out the verification and to ensure that it is able to conduct the necessary risk analysis.

Risk analysis and detailed audit testing planning

For the identification and assessment of potential reporting risks and to determine the necessary detailed audit testing procedures for residual risk areas the following table is used.

N o.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1	Overlook relevant differences when cross checking electricity data from both meters (ICE and CNFL) and invoices	low	Even though there is procedures in place for all metering and cross checking processes the personnel could overlook important differences when performing the electricity reports.	Interview with personnel as well as demonstration of how the cross check is done. Cross check electricity data from both meters and invoices directly by the VT.
2	Omissions and misstatements in data transfer from SCADA into digital Excel ER spreadsheet	Medium	Ineffective quality control of data transfer due to unclear QA/QC procedure	Check QM procedure/manual. PP may demonstrate how to transfer data and how this is crosschecked. Conduct interview with related personnel whether procedure is actually conducted but not adequately described.
3	Missing data due to failure of measurement equipment	Low	The monitoring plan defines emergency procedures in case a meter fails. Besides back-up meters are either installed or available onsite for fast exchange.	Check if related meters are installed as per monitoring plan. Check if emergency procedure is known across related personnel via interviews. Check back-up meters on correct calibration.

On the basis of the risk analysis the verification has been planned. A detailed audit/verification plan has been prepared and submitted to the project participant(s) in due time before the onsite inspection.

C.2. Consideration of materiality in conducting the verification

Based on the verification planning the verification has been carried out. The concept of materiality has been considered. A breakdown of the chosen approaches is included in the following table.

<i>Parameter</i>	<i>Approach*</i>	<i>Errors* detected</i>	<i>Findings reference</i>	<i>Correc- ted</i>	<i>Remaining verification risk</i>
EG _{BL,y}	CDC	<input checked="" type="checkbox"/>	CAR 01 CAR 02	<input checked="" type="checkbox"/>	Not material
FC _{i,j,y}	CDC	<input type="checkbox"/>		<input type="checkbox"/>	Not material
NCV _{i,y}	CDC	<input type="checkbox"/>		<input type="checkbox"/>	Not material
EFCO _{2,i,y}	CDC	<input type="checkbox"/>		<input type="checkbox"/>	Not material
Aggregate					Materiality threshold not exceeded

*) incl. omissions and misstatements

+) Verification Approaches:

- CDC: Complete data check of data including all data aggregation steps
 NDC: Non-complete data check – omissions not material
 SPL: Sampling approach (all data available)
 ASP: Acceptance Sampling
 COM: Data check at higher data aggregation levels and sampling at original data levels

SECTION D. Means of verification

D.1. Desk/document review

During the desk review all documents initially provided by the client and publicly available documents relevant for the verification were reviewed. The main documents are listed below:

- the last revision of the PDD including the monitoring plan^{/PDD/},
- the last revision of the validation report^{/VAL/},
- documentation of previous verifications^{/VER/},
- the monitoring report, including the claimed emission reductions for the project^{/MR/},
- the emission reduction calculation spreadsheet^{/XLS/}.

Other supporting documents, such as publicly available information on the UNFCCC website and background information were also reviewed.

D.2. On-site inspection

Duration of on-site inspection: 16/05/2018 to 17/05/2018				
No.	Activity performed on-site	Site location	Date	Team member
1.	Kick off meeting	Project Site	16/05/2018	Oliver Quireza
2.	Viewing of relevant site points Metering equipment room, substation, control room	Project Site	16/05/2018	Oliver Quireza
3.	Evidence assessment	CNFL main offices	17/05/2018	Oliver Quireza
4.	Preparation of the DVR	CNFL main offices	17/05/2018	Oliver Quireza
6.	Findings summary to the client	CNFL main offices	17/05/2018	Oliver Quireza

D.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1	Bustoleul	Marcelo	CNFL	16/05/2018	Meters, Project description, equipment	Oliver Quireza
2	Delgado	Walter	CNFL	16/05/2018	Meters, Project description, equipment	Oliver Quireza
3	Croce	Claudia	WB	17/05/2018	ER calculation and information backup	Oliver Quireza
4	Hernandez	Guillermo	WB	17/05/2018	Electricity data	Oliver Quireza
5	Valverde	Alfonso	CNFL	17/05/2018	Electricity data and invoicing	Oliver Quireza
6	Delgado	Oscar	WB	17/05/2018	Project description, equipment	Oliver Quireza

D.4. Sampling approach**D.4.1 Sampling during monitoring**

<input checked="" type="checkbox"/>	No sampling approach has been used by the PP to determine the monitored parameters				
<input type="checkbox"/>	A sampling approach has been taken for the following monitored parameter(s):				
	Parameter	Sampling approach ¹⁾	Sampling Type ²⁾	Population	Sample Size
	Name_of Parameter:				
	Name_of Parameter:				
	Name_of Parameter:				
	Name_of Parameter:				

¹⁾ Sampling Approaches:

- SiRS: Simple Random Sampling
 StRS: Stratified Random Sampling
 SS: Systematic Sampling
 CS: Cluster Sampling
 MSS: Multi-stage Sampling
 AS: Acceptance Sampling

²⁾ Sampling Types:

- PS: Parameter Sampling

D.4.2 Sampling approaches during verification

<input checked="" type="checkbox"/>	No sampling approach has been used by the VT to verify the monitored parameters				
<input type="checkbox"/>	A sampling approach has been applied by the VT for the following monitored parameter(s):				
	Parameter	Sampling approach ¹⁾	Sampling Type ²⁾	Population	Sample Size
	Name_of Parameter:				
	Name_of Parameter:				
	Name_of Parameter:				

¹⁾ Sampling Approaches:

SiRS: Simple Random Sampling
 StRS: Stratified Random Sampling
 SS: Systematic Sampling
 CS: Cluster Sampling
 MSS: Multi-stage Sampling

²⁾ Sampling Types:

AS: Acceptance Sampling
 PS: Parameter Sampling
 COM: Full data check at higher data aggregation levels and sampling at original data levels

D.5. Clarification requests (CLs), corrective action requests (CARs) and forward action requests (FARs) raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
Compliance of the monitoring report with the monitoring report form	-	-	-
Compliance of the project implementation and operation with the registered PDD	-	-	-
Post-registration changes	-	-	-
Compliance of the registered monitoring plan with the methodologies including applicable tools and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	-	-
Compliance with the calibration frequency requirements for measuring instruments	-	1	-
Assessment of data and calculation of emission reductions or net removals	-	1	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Others (please specify)	-	-	-
Total	-	2	-

SECTION E. Verification findings**E.1. Compliance of the monitoring report with the monitoring report form**

Means of verification	<p>A draft monitoring report was submitted to the verification team by the project participants. The DOE has made this report publicly available prior to the start of the verification activities. No comments were received.</p> <p>By means of the UNFCCC website it has been checked whether the latest applicable MR template CDM-MR-FORM has been used.</p> <p>Further it has been checked whether the latest instructions for filling out the MR template have been followed. Every section has been checked against the respective guidance.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /MRT/ • /unfccc/ 		
Findings	<input checked="" type="checkbox"/>	The latest reporting template CDM-MR-FORM as listed on the UNFCCC website has been used for the Monitoring Report to be uploaded.	
	<input type="checkbox"/>	The latest instructions for filling out the MR have been followed. No adverse finding has been identified in the course of this verification.	
	<input type="checkbox"/>	The respective requirements have widely been complied with; however; the following issues needed to be addressed in this context:	

Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
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E.2. Remaining forward action requests from validation and/or previous verifications

During the validation the validating DOE might have raised issues that could not be closed or resolved during the validation stage. For this purpose FARs might have been raised. Likewise FARs might have been raised in the course of previous verifications.

In the course of this verification the latest version of the PDD ^{/PDD/} and the previous verification report ^{/VER/}, where applicable, have been checked in order to identify any remaining forward action requests. For the current monitoring period the following applies:

(i) Open issues from validation:

<input checked="" type="checkbox"/>	There were no open issues which have been addressed in the latest version of the validation report.
<input type="checkbox"/>	All open issues from the validation have been appropriately addressed in the context of previous verifications.
<input type="checkbox"/>	All issues related to the validation have been appropriately addressed in the course of the current monitoring period (for details please refer to appendix 4)
<input type="checkbox"/>	The following issues related to the validation have not yet been appropriately addressed (for details please refer to appendix 4):
	- N/A

(ii) Open issues from previous verifications:

<input type="checkbox"/>	N/A – as this is the first monitoring period for this CDM project activity.
<input checked="" type="checkbox"/>	There were no open issues which have been addressed in the previous verification report
<input type="checkbox"/>	All issues related to the previous verification have been appropriately addressed in the course of the current monitoring period (for details please refer to appendix 4)
<input type="checkbox"/>	The following issues related to the previous verification have not yet been appropriately addressed (for details please refer to appendix 4):
	- N/A

E.3. Compliance of the project implementation and operation with the registered project design document

Means of verification	<p>By means of an in-depth review of the PDD in its latest form – as downloaded from the UNFCCC project site - and the checks carried out during the on-site visit an assessment has been carried out whether the project has been implemented and operated in line with the latest approved version of the PDD and whether all physical features of the project are in place. The following has been checked: implemented technology, project equipment as well as monitoring and metering equipment.</p> <p>Further is has been checked if relevant technical equipment of the project activity has been exchanged or modified during the monitoring period and consistent notations of key equipment (meters etc.) in PDD, MR and calculation spreadsheet are applied.</p> <p>Interviews with operational personnel have been carried out, QMS records, maintenance records, instrument specifications were checked in this context.</p>
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	<p>Special focus has further been laid to determine whether a potential phase wise implementation has occurred within the crediting period or any delays with respect to the starting dates have occurred.</p> <p>Further it has been checked whether any observed deviations from the registered project design have been correctly addressed as PRCs.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /PDD/ • /MR/ • /VVS/ • /XLS/ • /QMS/ • /MTR/ • /INSTR/ • /unfccc/ 	
Findings	<input checked="" type="checkbox"/>	The project has been implemented as described in the latest version of the PDD as well as in section B.1 of the monitoring report. No deviations thereof have been identified in the course of this verification.
	<input type="checkbox"/>	The following deviations from the registered / approved project design and or the project description in the MR have been identified in the course of this verification (for further details please refer to section E.4): - N/A
	<input type="checkbox"/>	In this context the following CARs, CLs have been raised:
	<i>In case of phased implementation:</i>	
	<input type="checkbox"/>	N/A
	<input checked="" type="checkbox"/>	The phased implementation has correctly and in sufficient detail been described in the latest version of the PDD.
	<input type="checkbox"/>	The description in section B.1 of the MR differs in content or the level of detail from the latest version of the PDD. However, the description in the MR is correct and reflects the situation during the site inspection.
Conclusion	<input type="checkbox"/>	The project description in the PDD/MR is not deemed sufficient. The detailed implementation timeline is as follows: N/A or add as appropriate
	<input checked="" type="checkbox"/>	No CARs/CLs have been raised in this context. No correction was required in the context. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
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E.4. Post-registration changes

E.4.1. Temporary deviations from the registered monitoring plan, applied methodologies or applied standardized baselines

It has been checked whether Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM) have been applied during this monitoring period. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No Temporary deviations from the registered monitoring plan (TDfrMP) or Temporary deviations from monitoring methodology or standardized baseline (TDfMM) have been submitted to the UNFCCC prior to the current monitoring period.		
<input type="checkbox"/>	The following TDfrMP or TDfMM have been approved or are under approval by the UNFCCC		
	1	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)
		Appr.date	
		Ref. No.	

	2	Title	
		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved (approval No.:)
		Appr.date	
		Ref.No.	
<input type="checkbox"/>	During the verification of the current MP no need for a TDfrMP or TDfMM has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
<input type="checkbox"/>	An approval of the following TDfrMP or TDfMM is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.		
	1	Issue:	
	2	Issue:	
<input type="checkbox"/>	The following TDfrMP or TDfMM for which appendix 1 of the PS is applicable have been applied:		
	1	Issue:	
	2	Issue:	

E.4.2. Corrections

It has been checked whether any corrections to project information or parameters fixed at validation have been approved during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	During the verification of the current MP no need for corrections has been identified.		
<input type="checkbox"/>	The following corrections have been applied:		
	1	Issue:	
	2	Issue:	
	The PDD has been revised accordingly: (New) version No.: Revision date:		
	It is confirmed that the updated / corrected information is an accurate reflection of the actual project information and that the corrected parameters are in accordance with the applied methodology and the monitoring plan.		
	<input type="checkbox"/> A related post registration change has been submitted prior to the issuance request. The approval has been received on DD/MM/YYYY via approval number PRC-XXXX-00Z. <input type="checkbox"/> A related post registration change is submitted along with this issuance request. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.		

E.4.3. Change to the start date of the crediting period of the project activity

<input type="checkbox"/>	N/A - as this is not the first verification within the crediting period
<input checked="" type="checkbox"/>	The PPs do not intend to change the start date of the crediting period.
<input type="checkbox"/>	As the change in the start date was below the related time period as indicated in PS § 234 and § 235 no prior approval was required but only a notification. This notification has been submitted by the PP without involvement of the DOE. The change and new start date has been checked from the related UNFCCC project webpage.

<input type="checkbox"/>	The PPs intend to change the start date of the crediting period. As the intended change in start date beyond the related time period as indicated in PS § 236 and as per §237 prior approval by the Board is required. For detailed assessment of the change please refer to related PRC validation report. As per assessment in this report the DOE confirms that the change to the start date of the crediting period are in line with the related requirements of the VVS and PS.
<input type="checkbox"/>	The approval to change the start date of the crediting period has been received on DD/MM/YYYY via approval number PRC-XXXX-00Z

E.4.4. Inclusion of a monitoring plan

<input checked="" type="checkbox"/>	N/A - as this monitoring plan was part of the registered PDD
<input type="checkbox"/>	In line with PS § 238 and §78 the PP has forwarded a monitoring plan to the DOE for validation. No prior approval of the monitoring plan was required as the PP in line with PS § 78 wished to submit the monitoring plan together with the request for issuance for the first monitoring period. Please refer to the related PRC report submitted along with this issuance request for further details w.r.t. the assessment of the PRC.
<input type="checkbox"/>	In line with PS § 238 and §78 the PP submitted a monitoring plan prior to the submission of the request for issuance for validation to the DOE. A DOE has assessed the monitoring plan in line with related VVS requirements and submitted a related PRC report for prior approval. The approval has been received on DD/MM/YYYY via approval number PRC-XXXX-00Z.

E.4.5. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other applied standards or tools

It has been checked whether any permanent changes from the registered monitoring plan (PCfrMP) or applied methodologies (PCfMM) including standardized baselines (PCfSB) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No PCfrMP, PCfMM or PCfSB have been submitted to the UNFCCC prior to the current monitoring period									
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB have been approved or are under approval by the UNFCCC									
	1	<table border="1"> <tr> <td>Title</td> <td></td> </tr> <tr> <td>Status</td> <td><input type="checkbox"/> under approval; <input type="checkbox"/> approved</td> </tr> <tr> <td>Appr.date</td> <td></td> </tr> <tr> <td>Ref. No.</td> <td></td> </tr> </table>	Title		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved	Appr.date		Ref. No.	
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	2	<table border="1"> <tr> <td>Title</td> <td></td> </tr> <tr> <td>Status</td> <td><input type="checkbox"/> under approval; <input type="checkbox"/> approved</td> </tr> <tr> <td>Appr.date</td> <td></td> </tr> <tr> <td>Ref.No.</td> <td></td> </tr> </table>	Title		Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved	Appr.date		Ref.No.	
Title										
Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved									
Appr.date										
Ref.No.										
<input type="checkbox"/>	During the verification of the current MP no need for a PCfrMP, PCfMM or PCfSB has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA									
<input type="checkbox"/>	An approval of the following PCfrMP, PCfMM or PCfSB is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.									
	1	Issue:								
	2	Issue:								
<input type="checkbox"/>	The following PCfrMP, PCfMM or PCfSB for which appendix 1 of the PS is applicable have been applied:									

	1	Issue:	
	2	Issue:	

E.4.6. Changes to the project design

It has been checked whether any changes to the project design (CoPD) have been approved prior or during this monitoring period or submitted with this monitoring report. The result is summarized in the table below.

<input checked="" type="checkbox"/>	No CoPD has been submitted to the UNFCCC prior to the current monitoring period		
<input type="checkbox"/>	The following CoPD have been approved or are under approval by the UNFCCC		
1	Title		
	Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved	
	Appr.date		
	Ref. No.		
2	Title		
	Status	<input type="checkbox"/> under approval; <input type="checkbox"/> approved	
	Appr.date		
	Ref.No.		
<input type="checkbox"/>	During the verification of the current MP no need for a CoPD has been identified. The monitoring plan is in accordance with the approved methodology applied by the PA		
<input type="checkbox"/>	An approval of the following CoPD.is to be requested from the EB for the current MP as appendix 1 of the project standard does not apply.		
1	Issue:		
2	Issue:		
<input type="checkbox"/>	The following CoPD for which appendix 1 of the PS is applicable have been applied:		
1	Issue:		
2	Issue:		

E.4.7. Changes specific to afforestation and reforestation project activities

<input checked="" type="checkbox"/>	N/A - as this is no A/R project activity
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E.5. Compliance of the registered monitoring plan with the methodology including applicable tools and standardized baselines

Means of verification	<p>By means of comparison of the MR with</p> <ul style="list-style-type: none"> (i) the applied CDM methodology (ii) all applicable CDM Meth tools and (iii) if applicable, a standardized baseline <p>the verification team has checked whether the MP is in compliance with the MP related requirements of the applied methodology/tools/SB.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /METH/
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		<ul style="list-style-type: none"> • /TOOL/ • /unfccc/ 		
Findings	<input checked="" type="checkbox"/>	The MP is completely in accordance with the approved methodology applied by the CDM project (last registered/approved version of the PDD)		
		The breakdown of MP accordance of the referenced tools is as follows:		
	<input checked="" type="checkbox"/>	1	Title (of the tool)	Tool to calculate the emission factor for an electricity system
			Version	1
			MP compliance	<input checked="" type="checkbox"/> full compliance <input type="checkbox"/> findings have been raised <input type="checkbox"/> N/A (for MP)
		2	Title (of the tool)	Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion
			Version	1
			MP compliance	<input checked="" type="checkbox"/> full compliance <input type="checkbox"/> findings have been raised <input type="checkbox"/> N/A
	<input checked="" type="checkbox"/>		The breakdown of MP accordance of the applicable SB is as follows:	
		1	Title (of the SB)	Name of SB
		Version		
		MP compliance		
<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:			
	-			
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.		
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.		
		-		

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	By means of comparison of the MR and the ER calculation with the latest version of the registered PDD the verification team has checked whether all parameters fixed ex-ante or at renewal of the crediting period have been applied correctly. Further it has been checked whether the GWP for the respective period have been correctly applied. The following list of ex-ante fixed parameters have been applied:				
	Nbr.	Parameter abbreviation	Description	Value	Unit
	1	EF _{CO₂,grid,y}	Combined margin emission factor	0.2022	tCO ₂ /MWh
	The following sources of information have been used in this context: <ul style="list-style-type: none"> • /MR/ • /XLS/ • /PDD/ • /PS/ • /VVS/ • /unfccc/ 				
Findings	<input checked="" type="checkbox"/>	The MR and the ER calculation have considered the parameters fixed ex-ante or at the renewal of the crediting period correctly, no deviations have been observed.			
	<input type="checkbox"/>	The following deviations from the parameters fixed ex-ante or at renewal of crediting period have been identified in the course of this verification:			

		- N/A
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: -
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	-	

E.6.2. Data and parameters monitored

Means of verification	During the verification all relevant monitoring parameters (as listed in chapter B.7.1 of the PDD) have been verified with regard to the (i) appropriateness of the applied measurement / determination method, (ii) the correctness of the values applied for ER calculation, (iii) the accuracy, and applied QA/QC measures. The results as well as the verification procedure are described parameter-wise in the project specific verification checklist (Appendix 5).	
Findings	For details please refer to appendix 5	
Conclusion	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	Calibration delays were identified, please see section E.7. It can be confirmed that all monitoring parameters have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements.	

E.6.3. Implementation of sampling plan

Means of verification	The verification team has been checked whether the PPs have applied a sampling approach to determine the monitored values. Further it has been checked whether the PPs have correctly applied the implemented sampling plan including (i) description of the implemented sampling design (ii) collected data (iii) analysis of collected data (iv) demonstration on whether the required confidence/precision has been met. The following sources of information have been used in this context: • /MR/ • /XLS/ • /PDD/.			
Findings	<input checked="" type="checkbox"/>	The PPs have not applied sampling approaches for the parameters monitored.		
	<input type="checkbox"/>	The PPs have applied sampling approaches for the following parameters monitored.		
		1	Parameter:	
			Name:	
			Description on how the sampling efforts and survey comply with the validated sampling plan:	
	2	Parameter:		
	Name:			

		Description on how the sampling efforts and survey comply with the validated sampling plan:	
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:	
		-	
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.	
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.	
		-	

E.7. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	<p>During the verification the relevant monitoring equipment has been checked whether the calibration requirements have been met; especially if the calibration frequency is in line with the requirements of the validated PDD and/or the applicable calibration standards.</p> <p>The results as well as the verification procedure are described equipment-wise in the project specific verification checklist (Appendix 6).</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /XLS/ • /CAL/ • /PDD/ 		
Findings	<input type="checkbox"/>	Based on the details listed in appendix 6 the verification team can confirm that all installed monitoring equipment has been duly calibrated for this entire monitoring period.	
	<input checked="" type="checkbox"/>	<p>Based on the assessment and information as per appendix 6 delay(s) in calibration have been identified. The PP has applied the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration.</p> <p>From the related calibration certificates and emission reduction calculation the verification team confirms that the maximum permissible error has been applied in a conservative manner so that the adjusted measured values due to the delayed calibration result in fewer claimed emission reductions.</p> <p>For details please refer to appendix 6</p>	
	<input checked="" type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised:</p> <p>CAR 01</p>	
Conclusion	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.	
	<input checked="" type="checkbox"/>	<p>The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.</p> <p><i>It is important to clarify that there were three discrepancies (larger than 0.5%) between the ICE and CNFL readings along the Monitoring period: February 2014 0.66%, March 2014, 5.86% and August 2016, -1.25%. Considering that ICE did not confirm any malfunction of its meter, the PP considered that the CNFL meter with serial AQ-306A054-03 which was in operation in February and March 2014 to double-check ICE's reading has a malfunction and hence has to be replaced. and that is why it was replaced instead of calibrating it.</i></p> <p><i>The application of the maximum permissible error by the PP to the CNFL meter was done, in order to confirm that the cross-check done between the ICE and CNFL measurements is correct. This is done in sheet /error/ of the ER calculation file for the following periods:</i></p> <p><i>07/10/2012 to 25/05/2014</i></p> <p><i>01/03/2016 to 31/03/2017</i></p> <p><i>Also, it is important to clarify that the ICE meters which register the data for the energy estimation and ER calculation are not calibrated on a regular basis, as per</i></p>	

	<p>registered PDD and according to ICE rules the meters shall be calibrated when discrepancies are observed. The national Costa Rican regulation doesn't specify any rule about power meters calibration. Furthermore, the meters are not under control of the PP, so that the PP shall report any observed discrepancies between the metered energy data for both meters (ICE and CNFL), nonetheless the ICE is not obliged to perform any calibration if they don't consider it necessary.</p> <p>According to the registered PDD, as a discrepancy between the readings from ICE and CNFL meters in August 2016 was observed the PP applied the 0.2% error as a conservative approach to the readings of ICE meter from 1 September 2016 to 31 March 2017.</p> <p>After correction and clarification from the PP It can be confirmed that all monitoring parameters have been measured / determined without material misstatements and in line with all applicable standards and relevant requirements.</p>
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E.8. Assessment of data and calculation of emission reductions or net removals

E.8.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	<p>During the verification the calculation of baseline GHG emissions has been checked. In detail the following has been verified:</p> <ul style="list-style-type: none"> • <i>Transparency</i>: It has been checked whether the calculation of baseline emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae. • <i>Parameter consistency</i>: It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spreadsheet. • <i>Correctness</i>: It has been checked whether the applied formulae and methods for calculating baseline emissions are in accordance with the monitoring plan and the approved methodology. • <i>Completeness</i>: It has been checked whether all calculations are complete and without omissions. <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /XLS/. 						
Findings	<table border="1"> <tr> <td><input checked="" type="checkbox"/></td><td> <p>The calculation of the baseline emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of baseline GHG emissions or baseline net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information has been identified.</p> </td></tr> <tr> <td><input type="checkbox"/></td><td> <p>The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.</p> </td></tr> <tr> <td><input checked="" type="checkbox"/></td><td> <p>In this context the following CARs, CLs, FARs have been raised:</p> <p>CAR 02</p> </td></tr> </table>	<input checked="" type="checkbox"/>	<p>The calculation of the baseline emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of baseline GHG emissions or baseline net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information has been identified.</p>	<input type="checkbox"/>	<p>The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.</p>	<input checked="" type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised:</p> <p>CAR 02</p>
<input checked="" type="checkbox"/>	<p>The calculation of the baseline emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of baseline GHG emissions or baseline net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information has been identified.</p>						
<input type="checkbox"/>	<p>The verification team has identified mistakes in the baseline emissions calculation or the underlying calculation approaches.</p>						
<input checked="" type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised:</p> <p>CAR 02</p>						
Conclusion	<table border="1"> <tr> <td><input type="checkbox"/></td><td> <p>No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</p> </td></tr> <tr> <td><input checked="" type="checkbox"/></td><td> <p>The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.</p> </td></tr> </table> <p>The emission reductions are calculated by baseline emissions and deducting project and leakage emissions via $ER = BE - PE - LE$. The baseline emissions are calculated by multiplying the combined margin grid emissions factor times the net amount of electricity generated and fed into the corresponding connected grid via</p>	<input type="checkbox"/>	<p>No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</p>	<input checked="" type="checkbox"/>	<p>The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.</p>		
<input type="checkbox"/>	<p>No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</p>						
<input checked="" type="checkbox"/>	<p>The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.</p>						

	<p>BE = CM x EG_{m,y} = 0.2022 tCO₂e/MWh x 58,292.702 MWh = 11,784 tCO₂e. Further there are small amounts of project emissions due to a diesel generator. The related project emissions based on fossil fuel use (diesel) are calculated by amount of diesel used times net calorific value times related diesel fuel emission factor vide PE = FC_{j,y} x NCV_{j,y} x EF CO_{2,i} = 0.59083 m³ x 43.3 GJ/m³ x 0.0748 tCO₂e/GJ = 4 tCO₂e. The applied equations are correct and in line with the registered PDD and monitoring plan as well as methodology. Leakage is considered zero as per E.8.2.</p> <p>Where corrections were required a revised baseline emissions calculation was prepared by the PPs and presented to the verification team. All raised issues were addressed appropriately so that it can be confirmed that the baseline calculation is overall correct.</p>
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E.8.2. Calculation of project GHG emissions or actual net GHG removals by sinks

Means of verification	<p>During the verification the calculation of project GHG emissions has been checked. In detail the following has been verified:</p> <ul style="list-style-type: none"> • Transparency: It has been checked whether the calculation of project emissions is fully traceable and, where used, the Excel calculation provides all calculation formulae. • Parameter consistency: It has been checked whether all internal and external parameters and data used for the calculation are applied consistently in the monitoring report and the calculation spreadsheet. • Correctness: It has been checked whether the applied formulae and methods for calculating project emissions are in accordance with the monitoring plan and the approved methodology. • Completeness: It has been checked whether all calculations are complete and without omissions. <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /XLS/. 								
Findings	<table border="1"> <tr> <td><input checked="" type="checkbox"/></td><td> <p>The calculation of the project emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of project GHG emissions or actual net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information have been identified.</p> </td></tr> <tr> <td><input type="checkbox"/></td><td>The verification team has identified mistakes in the project emissions calculation or the underlying calculation approaches.</td></tr> <tr> <td><input type="checkbox"/></td><td>In this context the following CARs, CLs, FARs have been raised:</td></tr> <tr> <td></td><td>-</td></tr> </table>	<input checked="" type="checkbox"/>	<p>The calculation of the project emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of project GHG emissions or actual net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information have been identified.</p>	<input type="checkbox"/>	The verification team has identified mistakes in the project emissions calculation or the underlying calculation approaches.	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:		-
<input checked="" type="checkbox"/>	<p>The calculation of the project emissions was found to be fully compliant with the above stated principles.</p> <p>The calculations of project GHG emissions or actual net GHG removals have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in emission or removal calculations have been justified. Appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information have been identified.</p>								
<input type="checkbox"/>	The verification team has identified mistakes in the project emissions calculation or the underlying calculation approaches.								
<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:								
	-								
Conclusion	<table border="1"> <tr> <td><input checked="" type="checkbox"/></td><td>No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.</td></tr> <tr> <td><input type="checkbox"/></td><td>The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.</td></tr> </table> <p>The emission reductions are calculated by baseline emissions and deducting project and leakage emissions via ER = BE – PE – LE. The baseline emissions are calculated by multiplying the combined margin grid emissions factor times the net amount of electricity generated and fed into the corresponding connected grid via BE = CM x EG_{m,y} = 0.2022 tCO₂e/MWh x 58,292.702 MWh = 11,784 tCO₂e. Further there are small amounts of project emissions due to a diesel generator. The related project emissions based on fossil fuel use (diesel) are calculated by amount of diesel used times net calorific value times related diesel fuel emission factor vide PE = FC_{j,y} x NCV_{j,y} x EF CO_{2,i} = 0.59083 m³ x 43.3 GJ/m³ x 0.0748 tCO₂e/GJ = 4 tCO₂e. The applied equations are correct and in line with the</p>	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.				
<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.								
<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.								

	<p>registered PDD and monitoring plan as well as methodology. Leakage is considered zero as per E.8.2.</p> <p>Where corrections were required a revised PE calculation was prepared by the PPs and presented to the verification team. All raised issues were addressed appropriately so that it can be confirmed that the baseline calculation is overall correct.</p>
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E.8.3. Calculation of leakage GHG emissions

Means of verification	<p>During the verification it has been checked whether leakage emissions have to be considered and, in cases where leakage emissions have to be calculated, the respective calculation of leakage GHG emissions has been checked. In such cases the same verification principles have been considered as for the baseline and project emissions calculation. Please refer to E.8.1 and E.8.2.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /XLS/. 	
Findings	<input checked="" type="checkbox"/>	No leakage emissions were to be considered (LE = 0).
	<input type="checkbox"/>	<p>The calculation of the leakage emissions was found to be fully compliant with the above stated principles (see 8.1 and 8.2).</p> <p>The calculations of leakage GHG emissions have been carried out in accordance with the formulae and methods described in the registered monitoring plan, the applied methodology and, where applicable, the applied standardized baseline. Any assumptions used in leakage emissions calculations have been justified. Where applicable, appropriate emission factors, IPCC default values, GWPs and other reference values have been correctly applied.</p> <p>No errors, miscalculations, omissions, misstatements or incomplete information have been identified.</p>
	<input type="checkbox"/>	The verification team has identified mistakes in the project emissions calculation or the underlying calculation approaches.
	<input type="checkbox"/>	<p>In this context the following CARs, CLs, FARs have been raised:</p> <p>-</p>
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	-	-

E.8.4. Summary of calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	<p>The verification team has checked if the MR includes a summary table of the emission reductions calculation specifying separately</p> <ul style="list-style-type: none"> - Total baseline emissions, - Total project emissions, - Total leakage, - Total emission reductions. <p>It has been assessed whether the values are correct or need to be revised as a consequence of issues identified above.</p>	
Findings	<input checked="" type="checkbox"/>	Section E.4 of the MR includes in a summary table of the emission reductions calculation.
	<input checked="" type="checkbox"/>	The summary table specified the total baseline, project and leakage emissions as well as the total emission reductions separately.
	<input checked="" type="checkbox"/>	The values as specified in the ER summary table are correct; no issues have been identified during the verification which requires changes in the ER calculation.
	<input type="checkbox"/>	During the verification issues with impact on the ER calculation have been identified.
	-	In this context the following CARs, CLs, FARs have been raised:

	<input checked="" type="checkbox"/>	CAR 2
Conclusion	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input checked="" type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		<p>The emission reductions are calculated by baseline emissions and deducting project and leakage emissions via $ER = BE - PE - LE$. The baseline emissions are calculated by multiplying the combined margin grid emissions factor times the net amount of electricity generated and fed into the corresponding connected grid via $BE = CM \times EG_{m,y} = 0.2022 \text{ tCO}_2\text{e/MWh} \times 58,292.702 \text{ MWh} = 11,784 \text{ tCO}_2\text{e}$. Further there are small amounts of project emissions due to a diesel generator. The related project emissions based on fossil fuel use (diesel) are calculated by amount of diesel used times net calorific value times related diesel fuel emission factor vide $PE = FC_{j,y} \times NCV_{j,y} \times EF_{CO_2,i} = 0.59083 \text{ m}^3 \times 43.3 \text{ GJ/m}^3 \times 0.0748 \text{ tCO}_2\text{e/GJ} = 4 \text{ tCO}_2\text{e}$. The applied equations are correct and in line with the registered PDD and monitoring plan as well as methodology. Leakage is considered zero as per E.8.2.</p> <p>Therefore the final emission reductions are</p> <p>$ER = BE - PE - LE = (11,784 - 4 - 0) \text{ tCO}_2\text{e} = 11,780 \text{ tCO}_2\text{e}$</p>

E.8.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks with estimates in registered PDD

Means of verification	The verification team has checked if the MR includes a comparison of actual values of the monitoring period with the estimations in the registered PDD. It has further checked which of the below listed cases is applicable for the calculated ER of the current monitoring period.	
Findings	<input checked="" type="checkbox"/>	Case 1: The ex-ante estimated value was found to be proportionally higher than the ex-post determined value. No further action is deemed required.
	<input type="checkbox"/>	Case 2: The ex-ante estimated value fits very good to the actually monitored value. No further justification is deemed required.
	<input type="checkbox"/>	Case 3: The ex-ante estimated value was found to be proportionally lower than the ex-post determined value.
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: -
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
		-

E.8.6. Remarks on difference from estimated value in registered PDD

Means of verification	On the basis of the above comparison of actual values of the monitoring period with the estimations in the registered PDD the verification team has checked whether (in case 3) an appropriate explanation is included in the MR.	
Findings	<input checked="" type="checkbox"/>	No further justification or explanation is deemed required as actual emissions of this MP do not exceed significantly the ex-ante calculated emission reductions (applicable for case 1 and 2).
	<input type="checkbox"/>	For case 3: The PP has provided a related justification in the MR. The reasons for the increase are as follows: - N/A
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised: -
Conclusion	<input checked="" type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.

	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	-	

E.8.7. Actual GHG emission reductions or net anthropogenic GHG removals by sinks during the first commitment period and the period from 1 January 2013 onwards

Means of verification	The verification team has checked chapter E.4 of the MR and the emission reduction calculation sheet /XLS/.			
Findings	<input checked="" type="checkbox"/> The MR in section E.4 includes a summary table of the ER breakdown <ul style="list-style-type: none"> a) ER before 01/01/2013 and b) ER from 01/01/2013 onwards <input checked="" type="checkbox"/> The breakdown of the ERs before 01/01/2013 (during the first commitment period) and from 01/01/2013 onwards is as follows: <ul style="list-style-type: none"> <input type="checkbox"/> The ER have completely been generated before 01/01/2013 (during the first commitment period) <input checked="" type="checkbox"/> The ERs have completely been generated from 01/01/2013 onwards, <input type="checkbox"/> The ERs have partly been generated before 01/01/2013 (during the first commitment period) and partly from 01/01/2013 onwards. <input checked="" type="checkbox"/> The breakdown of the ERs is correct, considering the applicable guidance.			
		before 01/01/2013	from 01/01/2013	Sum
	Emission reductions [tCO_{2e}]	0	11,780	11,780
	<input type="checkbox"/> In this context the following CARs, CLs, FARs have been raised: -			
Conclusion	<input checked="" type="checkbox"/> No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.			
	<input type="checkbox"/> The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.			
	The data provided in the MR is correct as well as the related breakdown. The calculations of GHG emission reductions or net anthropogenic GHG removals are in accordance with the project standard.			

E.9. Assessment of reported sustainable development co-benefits

Means of verification	<input checked="" type="checkbox"/>	N/A – as the PP has not monitored the sustainable development co-benefits of the registered CDM project activity or not requested the DOE to verify them.
	<input type="checkbox"/>	The project participants have monitored the sustainable development co-benefits of the registered CDM project activity, and requested the DOE to verify them. The following sources of information have been used in this context: <ul style="list-style-type: none"> • /MR/ • /PDD/ • /DSD/ • /unfccc/.
Findings	<input checked="" type="checkbox"/>	N/A – as the PP has not monitored the sustainable development co-benefits of the registered CDM project activity or not requested the DOE to verify them.
	<input type="checkbox"/>	Therefore the DOE has assessed and confirms that: (a) The monitoring has been carried out in accordance with the document for monitoring sustainable development co-benefits, if such document was developed and published on the UNFCCC CDM website in accordance with the “CDM project standard for project activities”;

		(b) The reported monitoring results correspond to the sustainable development co-benefits of the project activity as observed by the DOE.
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised:
		-
Conclusion	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	<input checked="" type="checkbox"/>	N/A – as the PP has not monitored the sustainable development co-benefits of the registered CDM project activity or not requested the DOE to verify them.
		-

E.10. Global stakeholder consultation

Means of verification		<p>In accordance with the PCP the DOE has submitted the initial version of the monitoring report provided by the PP for this monitoring period to be published on the UNFCCC webpage.</p> <p>The monitoring report has been published from</p> <p>16/02/2018 onwards as per UNFCCC email confirmation received.</p> <p>The following sources of information have been used in this context:</p> <ul style="list-style-type: none"> • /MR/ • /unfccc/.
Findings	<input checked="" type="checkbox"/>	No comments have been received on the published monitoring report for this monitoring period.
	<input type="checkbox"/>	Comments have been received and the DOE has concluded that comments are related to issues outside the CDM rules and requirements. Please refer to the list provided under Conclusion of this Section below for related information.
	<input type="checkbox"/>	<p>Comments have been received.</p> <p>The DOE has</p> <ul style="list-style-type: none"> - requested further information from the submitters of the comments - informed the project participants of the comments received, and requested their feedback within a specified timeframe, - considered the input received and has assessed whether such comments are relevant to the CDM project activity, - acknowledged receipt of all submitted comments on the MR of the proposed CDM project activity, - assessed whether the comments are related to the CDM rules and requirements (if so related findings have been raised as per below), - used all possible means to determine the authenticity of the name and contact details of the individual or organization on whose behalf the comments have been submitted, - contacted the secretariat to make them publicly available (if only addressed to the DOE), - determined whether authentic and relevant comments in the global stakeholder consultation were taken into due account in the PDD of the proposed CDM project activity.
	<input type="checkbox"/>	In this context the following CARs, CLs, FARs have been raised, i.e. as the DOE concludes that the comments are related to the CDM rules and requirements:
		-
Conclusion	<input type="checkbox"/>	No CARs/CLs/FARs have been raised in this context. No correction was required. The project is in line with the respective requirements.
	<input type="checkbox"/>	The raised CARs/CLs/FARs have been addressed appropriately. The PP has carried out the requested corrections. All respective findings could be closed out. For details please refer to Appendix 4.
	<input checked="" type="checkbox"/>	N/A – as the PP has not monitored the sustainable development co-benefits of the registered CDM project activity or not requested the DOE to verify them.

	As the DOE has concluded that comments are related to issues outside the CDM rules and requirements the comments and information gathered are listed as follows:			
	Nbr.	Original comment received	Feedback by the PP	Statement by DOE
	1			
	2			
	3			
	4			

SECTION F. Internal quality control

Before the submission of the final verification report a technical review of the whole verification procedure was carried out. The technical reviewers are competent GHG auditors being appointed for the scope this project falls under. The technical reviewers are not considered to be part of the verification team and thus not involved in the decision making process up to the technical review.

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

After the successful technical review an overall (esp. procedural) assessment of the complete verification has been carried out by a senior assessor located in the accredited premises of TÜV NORD.

After this step the submission for requesting for issuance is conducted.

SECTION G. Verification opinion

International Bank for Reconstruction and Development (IBRD) as Trustee of the Prototype Carbon Fund (PCF) has commissioned the TÜV NORD JI/CDM Certification Program to carry out the 2nd periodic verification of the 2nd CP of the project: "Cote small-scale hydropower plant", with regard to the relevant requirements for CDM project activities. The project reduces GHG emissions due to generation of hydroelectric energy feed into the national grid which displaces energy from fossil fuels. This verification covers the period from 01/01/2013 to 31/03/2017 (including both days).

As a result of this verification, the verifier confirms that:

- all operations of the project are implemented and installed as planned and described in the validated project design document,
- the monitoring plan is in accordance with the applied approved CDM methodology,
- the installed equipment essential for measuring parameters required for calculating emission reductions are calibrated appropriately,
- the monitoring system is in place and functional. The project has generated GHG emission reductions,
- the GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.

TÜV NORD JI/CDM CP further confirms that the project has achieved emission reductions in the above mentioned reporting period as stated on the title page.

SECTION H. Certification statement

As a duly accredited DOE, TÜV NORD CERT confirms that the project

"Cote small-scale hydropower plant"

registered under

UNFCCC-No. : 0251

has achieved emission reductions in accordance with all applicable requirements for registered CDM project activities during the current monitoring period

MP-No.: 2nd of the 2nd CP

from: 01/01/2013

to: 31/03/2017

(including both days) as follows:

Emission reductions: 11,780 tCO_{2e}.

Queretaro, 07/02/2019



Oliver Quireza
Team leader

Appendix 1. Abbreviations

Abbreviations	Full texts
CLZ	Corrective Action / Clarification Action
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CNFL	Compañía Nacional de Fuerza y Luz, the project developer. This company is owned by ICE.
CO ₂	Carbon dioxide
CO _{2eq}	Carbon dioxide equivalent
CL	Clarification Request
DVerR	Draft Verification Report
ECA	Accreditation Costa Rican Entity “Entidad Costarricense de Acreditación”, this entity is a national body that evaluates and accredits laboratories and other facilities under several standards
El Cote	Cote small-scale hydropower plant
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
GSC	Global Stakeholder Consultation
ICE	Instituto Costarricense de Electricidad, stated owned vertically integrated utility that manages the power sector being the only power purchaser in Costa Rica
ION View	Software ION Enterprise (version 5.0 and 6.0) used for the monitoring of power measurements and generation of database of the ION Meters used by CNFL in all its power units.
IM	Interview Memo
MINAE	Environment and Energy Ministry of Costa Rica
MP	Monitoring Plan or Monitoring Period
MR	Monitoring Report
PA	Project Activity
PDD	Project Design Document

Abbreviations	Full texts
PP	Project Participant
PS	Project Standard
QA/QC	Quality Assurance / Quality Control
RIME	Informatic Network of Power Measurement “Red Informática de Medición Eléctrica”, software PRIME READ (version 5.0 and 6.0) used for the monitoring of power measurements and generation of database for all CNFL power units. This software is used by the Energy Management Section of CNFL Technical Services Department for the online and real measurement of power generation.
RIME Web	Internal interphase for the consulting of operational data so as power generation. This interphase is also known as PRIME web.
SCADA	Supervisory Control and Data Acquisition - System utilized by CNFL to control the operation of the project.
SIGE	Management Data System “ <i>Sistema de Información Gerencial</i> ”, this system has the consolidated data of the operational records of all the power units of the company. This system is mainly used for the preparation of the annual technical summaries and the decision making of the company.
SIGEDI	Generation and Distribution Data System “ <i>Sistema de Información de Generación y Distribución</i> ”, internal system for the management of energy production and consumption, records of operational issues, etc. This system manages the data of all the power generation units of the company. This system is fed manually.
SIGEMPLA	Plant Maintenance Management System “ <i>Sistema de Gestión de Mantenimiento de Plantas</i> ”. Internal online system that includes the program and registry of the planned and performed maintenance activities.
UNFCCC	United Nations Framework Convention on Climate Change
VERSA Pro	VERSA Pro is a data management system developed by General Electric and it is used for the operation of Cote power plant and for monitoring the electricity generation from the turbine.
VVS	Validation and Verification Standard
VT	Verification Team
XLS	Emission Reduction Calculation Spread Sheet

Appendix 2. Competence of team members and technical reviewers



Statement of Competence

Appointment and authorization according to the procedures of the TUV NORD J/CDM Certification Program

Mr. Oliver Quireza Campos

SCHEME	STATUS	VALID UNTIL
CDM	Lead Assessor (Validation, Verification)	2021-05-28
VCS / ISO 14064-2	Lead Assessor	2021-05-28

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.1	Thermal energy generation
1.2	Renewables
13.1	Solid waste and wastewater
13.2	Manure

337 - Rev. 5, Date: 2018-08-17



Statement of Competence

Appointment and authorization according to the procedures of the TUV NORD J/CDM Certification Program

Mr. Kunal Rami

SCHEME	STATUS	VALID UNTIL
CDM	Senior Assessor (Validation, Verification) Technical Reviewer	2020-03-26
VCS / ISO 14064-2	Senior Assessor Technical Reviewer	2020-03-26

Authorization status for technical areas within sectoral scopes:

CODE	TECHNICAL AREA
1.2	Renewables
6.1	Construction
13.1	Solid waste and wastewater

224 - Rev. 6, Date: 2017-03-27

337_501-VA060-F20_2018-08-17_rev5.doc

501-VA060-F20 rev3 / 2012-10-25

224_501-VA060-F20_2017-03-27_rev6.doc

501-VA060-F20 rev1 / 2012-10-25

Appendix 3. Documents reviewed or referenced

No	Author	Reference	Title	References to the document	Provider
1	UNFCCC	/AMS-I.D /	AMS-I.D.: Grid connected renewable electricity generation Version 17.0		Other
2	DOE	/CPM/	TÜV NORD JI / CDM CP Manual (incl. CP procedures and forms)		Other
3	PP	/DSD/	Documents for monitoring sustainable development co-benefits		Other
4	UNFCCC	/GOT/	Glossary “CDM terms” (version 09.1)	https://cdm.unfccc.int/filestorage/e/x/t/extfile-20170831165430180-Glos_CDMv9_1.pdf/Glos_CDMv9_1.pdf?t=THR8cDB1cjhfDA3nY9J2NxQKB7POsLROrM-	Other
5	IPCC	/IPCC/	1. 1996 IPCC Guidelines for National Greenhouse Gas Inventories: work book 2. 2006 IPCC Guidelines for National Greenhouse Gas Inventories: work book	www.ipcc-nggip.iges.or.jp	Other
6	UNFCCC	/KP/	Kyoto Protocol (1997)	http://unfccc.int/kyoto_protocol/items/2830.php	Other
7	UNFCCC	/MA/	Decision 3/CMP. 1 (Marrakesh – Accords)	http://cdm.unfccc.int/Reference/COPMOP/index.html	Other
8	PP	/MR/	Monitoring Report for CDM project: “Cote Small-Scale Hydropower Plant” versions: - 1, dated 01/02/2018 - 2, dated 18/08/2018 - 3, dated 03/09/2018 - 4, dated 09/10/2018 - 5, dated 23/10/2018 -6, dated 07/02/2019		Other
10	UNFCCC	/MRT/	Monitoring Report Form (CDM-MR-FORM), Version 6.0	https://cdm.unfccc.int/Reference/PDDs_Forms/index.html	Other
11	UNFCCC	/PDD/	Project Design Document for CDM project: “Cote Small-Scale Hydropower Plant” version 7, dated 21/08/2012		Other

No	Author	Reference	Title			References to the document	Provider
12	UNFCCC	/PS/	CDM Project Standard (Version 2.0)			http://cdm.unfccc.int/Reference/Standards/index.html	Other
13	UNFCCC	/SAMPLE/	“Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities” (Version 04.0) “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities” (version 7.0)			https://cdm.unfccc.int/Reference/Guidclarif/index.html http://cdm.unfccc.int/Reference/Standards/index.html	Other
14	UNFCCC	/TOOL/	Rel.	Name	Ver.	http://cdm.unfccc.int/Reference/tools/index.html	Other
			<input checked="" type="checkbox"/>	Tool to calculate project or leakage CO ₂ emissions from fossil fuel combustion	3		
			<input type="checkbox"/>	Emissions from solid waste disposal sites	7		
			<input type="checkbox"/>	Tool to calculate baseline, project and/or leakage emissions from electricity consumption	1		
			<input type="checkbox"/>	Project emissions from flaring Version	2.0.0		
			<input checked="" type="checkbox"/>	Tool to calculate the emission factor for an electricity system	7		
			<input type="checkbox"/>	Tool to determine the mass flow of a greenhouse gas in a gaseous stream	2.0.0		
			<input type="checkbox"/>	Tool to determine the baseline efficiency of thermal or electric energy generation systems	1		
			<input type="checkbox"/>	Tool to determine the remaining lifetime of equipment	1		
			<input type="checkbox"/>	Project and leakage emissions from transportation of freight	1.1.0		
			<input type="checkbox"/>	Project and leakage emissions from composting	1		
			<input type="checkbox"/>	Project and leakage emissions from anaerobic digesters	1		
			<input type="checkbox"/>	Upstream leakage emissions associated with fossil fuel use	2.0		
			<input type="checkbox"/>	Project and leakage emissions from biomass	2		
<input type="checkbox"/>	Leakage in biomass small-scale project activities	4.0					
15	PP	/VAL/	Validation Report for CDM project “Cote Small-Scale Hydropower Plant” version 0, dated 23/10/2012				Other
16	PP	/VER/	Documents of previous verifications (Monitoring report,				Other

No	Author	Reference	Title	References to the document	Provider
			verification report, ER calculation sheet)		
17	UNFCCC	/VVS/	CDM Validation and Verification Standard (Version 02.0)	http://cdm.unfccc.int/Reference/Standards/index.html	Other
18	PP	/DIESEL/	<ul style="list-style-type: none"> ER calculation versions 1 and 2 Diesel purchase invoices covering the monitoring period 2013-2017. Xls file "Emergency plant control register 2013-2017. 		PP
19	ALPHA	/METERS/	<u>Power meters Technical Data</u> <ul style="list-style-type: none"> Meter ION 8550 Technical Data sheet, by Power Measurement Ltd, revision date 2001/06/29. Meter type A1RL+ by ALPHA Plus Technical Data sheet. 		PP
20	Consortio Hydrocote / SDMO	/TECH/	<u>Engineering Design</u> <ul style="list-style-type: none"> Technical design documentation included in the folder "<i>Planos As-Built</i>" dated on September 2003, issued by Consortio Hydrocote. Technical specification data of the turbine "<i>Especificación Técnica ET-110001-001</i>" issued by VATECH on 2002/08/14. <u>Diesel generator</u> <ul style="list-style-type: none"> Brochure of the diesel generator Power Products by SDMO, Global Power Solutions. ID. Pprint/SP-2008/1-50 Hz – 60Hz – Espanol. Technical specifications of the diesel generator type PG75U by SDMO Do Brasil Ltda. Consortio Hidrocote. 		PP
22	ICE	/INVO/	<ul style="list-style-type: none"> Electricity purchase invoices by ICE to CNFL covering the monitoring period from 01/01/2013 to 31/03/2017 		PP
23	CNFL	/MANUAL/	Job description Manual " <i>Manual de Cargos Direccion Desarrollo y Produccion</i> " by CNFL, October 2004		PP
26	PP	/LOG BOOK/	<u>Operational Log books</u>		PP

No	Author	Reference	Title	References to the document	Provider
.			<ul style="list-style-type: none"> Operational log book (located at the power house) Electrical Maintenance log book (located at the power house) 		
27	PP	/MAIN/	<u>Preventive maintenance:</u> <ul style="list-style-type: none"> Annual maintenance program (memorandums) covering the monitoring period 2013 to 2017 "<i>Mantenimiento Programado Mayor</i>", (by CNFL) Maintenance Reports "Informe de mantenimiento de PH Cote" (by El Cote) covering the monitoring period from 2013 to 2017 		PP
28	PP	/LIC/	<p>Operational license obtained on 2006/04/28, number RCH-ARST-657-2006 issued by the Health Ministry. This license is valid until 2011/04/28.</p> <p>-Environmental Management Plan "<i>Plan de Gestión Ambiental</i>" and its approval from the SETENA</p> <p>-Environmental Resolution num. 810-97-SETENA issued on 1997/12/08 and Resolution num. 482-2000-SETENA issued on 2000/06/15 (evidence of approval of the EIA, environmental authorization and legal requirements for the environmental monitoring of the project).</p>		PP
29	PP	/ENV/	<ul style="list-style-type: none"> Semester regency reports covering the monitoring period from 01/01/2013 to 01/03/2017 		PP
30	PP	/STOPS/	<p>Shutdown information:</p> <ul style="list-style-type: none"> Shutdowns excel spread sheet production weekly stops - "<i>Paros semanales en produccion – horas</i>" Operative availability indicator "<i>Indice de disponibilidad Operativa</i>" 		PP
31	PP	/SL/	Single line Diagram of El Cote measurement points issued on November 2008 by CNFL.		PP
32	PP	/WC/	<u>Water Concession</u> <ul style="list-style-type: none"> Law 4334 "<i>Declaratoria Zona Nacional de Reserva de Energía Eléctrica de las Lagunas de Arenal y Cote, y del Río Arenal</i>" issued on 1969/05/05. This law established that the hydraulic 		PP

No	Author	Reference	Title	References to the document	Provider
.			<p>resources of the Cote Lagoon are declared as power energy reserves that can be used by the ICE to warranty the utilization of these resources for energy generation.</p> <ul style="list-style-type: none"> • Communication DM-698-2006 issued on 2006/09/20 by the Environmental and Energy Ministry. This communication establishes that CNFL does not require any water use or power generation concession for the development of the company projects. 		
33	MINAE	/LAW/	<p><u>Environmental Regulation</u></p> <ul style="list-style-type: none"> • Environmental Organic Law "<i>Ley Orgánica del Ambiente</i>" (Law No. 7554) issued on 1995/11/13. (This law defines the general environmental requirements in Costa Rica). • Decree DE-31849-MINAE General Requirements of the EIA assessment "<i>Reglamento General sobre los Procedimientos de Evaluación de Impacto Ambiental (EIA)</i>" published on the official newspaper "La Gaceta", 2004/06/28 		DOE
34	INCONTEC	/ISO/	Certification Management Systems 9001: 2015, ISO 14001:2015, OHSAS 18001:2007		PP
35	PP	/XLS/	<p>ER Calculation, versions:</p> <p>-1, 17/05/2018</p> <p>-2, 19/06/2018</p> <p>-3, 03/09/2018</p> <p>-4, 07/02/2019</p>		PP
36	PP	/GEN/	<ul style="list-style-type: none"> • PH COTE power share 2016-2017 • Generation PH COTE 2013-2015 • Consumption report PH COTE 2013-2017 		

Appendix 4. Clarification requests, corrective action requests and forward action requests

Table 3. Remaining FAR from validation and/or previous verifications

FAR ID	xx	Section no.	E.2	Date: DD/MM/YYYY
Description of FAR				
n.a.				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				
				Date: DD/MM/YYYY

Table 4. CL from this verification

CL ID	xx	Section no.		Date: DD/MM/YYYY
Description of CL				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
DOE assessment				
				Date: DD/MM/YYYY

Table 5. CAR from this verification

CAR ID	CAR 01	Section no.	D.2	Date: 17/05/2018
Description of CAR				
<p>During the months of February and March and August 2016 it was identified a difference between measured electricity values between the ICE and CNFL meters larger than 0.5% so according to the registered PDD the PP requested notified the ICE, nonetheless the ICE did not changed the meter as they did not confirm any meter malfunction. Clarification is requested regarding this situation.</p> <p>Furthermore, the CNFL meters (cross check meters) were not calibrated at least once in 2 years as per monitoring plan.</p> <p>Also the maximum error of the meters have not been applied to the ER calculation as per VVS version 1 EB93 §§368-374.</p>				
Project participant response (Round 1)				Date: 29/05/2018
<p>The following clarification has been included in the QA/QC procedures of the parameter EGBL,y of the Section „D.2. Data and parameters monitored“ in the updated MR:</p> <p><i>The maximum error of the meters (0.2%) has been applied to the ER calculation as per VVS version 1 EB93 §§368-374. due discrepancies identified between the ICE and CNFL meters for the following periods:</i></p> <p><i>ICE main meter:</i></p> <ul style="list-style-type: none"> • Start date of error application 01/09/2016 • End date of error application 31/03/2017 <p><i>CNFL main meters:</i></p> <p><i>Error application Period 1:</i></p> <ul style="list-style-type: none"> • Start date of error application 01/01/2013 (the delay started on 07/10/2012) • End date of error application 31/05/2014 (the delay ended on 25/05/2014) 				

<p><i>Error application Period 2:</i></p> <ul style="list-style-type: none"> • <i>Start date of error application 01/03/2016 (the delay started on 21/03/2016)</i> • <i>End date of error application 31/03/2017 (the delay ended on 31/03/2017)</i> 	
Documentation provided by project participant (Round 1)	
<p><i>ER Calculation version 2, 18/05/2018</i> <i>MR version 2, 19/06/2018</i></p>	
DOE assessment (round 2)	Date: 08/10/2018
<p>There is no available ICE meter calibration to confirm the actual ICE meter error, the only available calibration is from 28/03/2011 nonetheless the ICE didn't report any malfunction of the meter which is in line with the monitoring plan, so the PP decision to apply the maximum permissible error of the meter (0.2%) for the discrepancies periods is considered appropriate, and it can be concluded that the ICE main meter is working properly. The corrected ER calculation version 2 includes correctly a reduction to the error (0.2%) to the monitored electricity data (generation and consumption) for a longer period than the discrepancies (whole month), which is conservative.</p> <p>Also, the electricity values from the CNFL meters values were deducted with the maximum permissible errors of the meters (0.2%) to ensure that the cross check performed by the PP in sheet /error/ column "H24" of the xls ER calculation against the ICE meters values is correctly applied.</p> <p>As the CNFL meter have calibration delay the PP has applied the meter's maximum permissible error to the discrepancy's periods as follow:</p> <p>ICE main meter from <i>01/09/2016 to 31/03/2017</i> <i>CNFL main meters:</i> <i>Error application Period 1: from 01/01/2013 (the delay started on 07/10/2012) to 31/05/2014 (the delay ended on 25/05/2014)</i> <i>Error application Period 2: from 01/03/2016 (the delay started on 21/03/2016) to 31/03/2017 (the delay ended on 31/03/2017)</i></p> <p>, nonetheless the last CNF meters' calibration reports have not been included in the MR ver.2</p>	
Project participant response (Round 2)	Date: 03/09/2018
<p>The information of CNFL's main and Back-Up meter has been included in the MR as follows:</p> <p>CNFL's MAIN METER: Meter Type: ION 8650 Serial No.: MW-1510a106-02 Accuracy class: 0.2 Calibration frequency: Once every 2 years. Installation: 05/06/2018 Date of last calibration: 08/06/2018 Validity: Up to 07/06/2020. CNFL calibrates its own meters once in two years following its internal standard practice. Status: operating</p> <p>CNFL's BACKUP METER: Meter Type ELSTER A3KLNQ-X Serial No. 19821960 Accuracy class: 0.2 Calibration frequency: Once every 2 years Installation: 05/06/2018 Validity: Up to 07/06/2020 Status: operating</p>	
Documentation provided by project participant (Round 2)	
<p><i>MR version 3, 03/09/2018</i></p>	
DOE assessment (round 3)	Date: 08/10/2018

The PP has provided the last CNFL's meters calibration reports, nonetheless the VT has noticed that the meters have been replaced. So the PP is requested to clarify the reason of changing the meters. Also, as no calibration of the old meter is available, the PP is requested to clarify and justify the good performance of the meters so that the meters' maximum error applied to the calculation is appropriate.

Project participant response (Round 3)**Date:** 09/10/2018

As per the registered PDD, the ICE's electricity meter is used to account for ERs and CNFL's own meter is used to double check accuracy of the project electricity generation registered by ICE's meter, as a QA/QC procedure. The calibration of ICE's meters is not within the control of CNFL (ICE calibrates meters only if CNFL notices any discrepancy with meter readings) and although manufacturer's specification for electricity meter do not require calibration, CNFL has established an internal standard practice to calibrate the equipment every two years. However, CNFL has found to be more practical to replace its own meters instead of calibrate them to increase accuracy. Therefore, although VVS version 1 EB93 §§368-374 requires the application maximum error of the meters (0.2%) due a delay in calibration for the monitoring equipment (ICE's electricity meter), CNFL has conservatively applied the maximum error of the meters (0.2%) when CNFL meters were not calibrated at least one in 2 years as per monitoring plan. To conclude, CNFL considers that procedures set out in VVS version 1 EB93 §§368-374 should only apply to the equipment used to account for ERs (ICE's electricity meter, which calibration is not within the control of CNFL) and the application of the error to the CNFL's meters (used to double check accuracy) should be considered appropriate in terms of conservativeness although they were changed instead of calibrated.

Furthermore, it is important to note that when measuring electrical consumption for billing or revenue, meter verification, reference, or other purposes, high accuracy electricity meter is required. When the metered data is to be used for billing purposes, a revenue certified/grade meter may be required by code or law. Revenue metering standards vary around the world, but usually fall under two standards bodies: ANSI and IEC. American National Standards Institute (ANSI) standards are mostly followed in America (i.e Costa Rica), with the rest of the world following the standards of the International Electrotechnical Commission (IEC). The ANSI C12.20 is an ANSI standard which establishes the physical aspects and performance criteria for a meter's accuracy class meeting Blondel's Theorem, which simplifies both the measurement of electrical energy and the validation of such measurements. Being Blondel Compliant identifies the meter as one that will measure correctly (within its accuracy class) under all conditions when correctly installed. Therefore, since both electricity meters installed in the project activity by CNFL (ION 8650 and ELSTER A3KLNQ-X) comply with the standard ANSI C12.20 for accuracy class 0.2 (meters are allowed up to a deviation of +/- 0.2%) which mean that the meters have passed the certification tests to become Blondel Compliant, ensuring that accuracy cannot exceed the +/- 0.2% deviation range."

Documentation provided by project participant (Round 3)

MR version 4, 09/10/2018

MR version 5, 23/10/2018 (new version provided due to small corrections)

DOE assessment (FINAL)**Date:** 24/10/2018

As per registered PDD, it is clear that the calibration of the ICE main meter is outside the control of the PP as the net operator is the owner, so although the PP reported electricity measurements discrepancies (in August and 2016) as per its procedure, the ICE did not confirm any malfunction of the meter and it was not calibrated either replaced. This is in line with the PDD as the ICE have to confirm malfunctioning to proceed to check the meters. So even though no calibration is available after the PP notification, it can be concluded that the PP acted according its internal procedure (and registered PDD) and did all its endeavour to maintain the meters under revision. Furthermore, for conservative reasons the PP applied the maximum permissible error of the meters to the ER calculation to be in line with the VVS version 1 EB93 §§368-374.

Finding closed.

CAR ID	CAR 02	Section no.	ER calculation	Date: 12/06/2018
Description of CAR				
It is not clear where do the data "Electricity used from the grid" come from in ER calculation sheet cells D12 to D16. Also the applier error is has to be applied to the consumed electricity data.				
Project participant response				Date: 03/09/2018
The data "Electricity used from the grid" has been updated based on the information provided to the DOE under the name "Reporte de Consumos PH COTE-2013- 2017" where the following data is used:				

From	To	Electricity used from the grid
		(MWh)
01/01/2013	31/12/2013	131.301
01/01/2014	31/12/2014	135.083
01/01/2015	31/12/2015	118.557
01/01/2016	31/12/2016	113.162
01/01/2017	31/03/2017	26.080
01/01/2013	31/12/2015	524.183

The file "ER Calculation_4th MP_Cote_180903" has been updated accordingly amongst the MR with the error application to the consumed electricity data, as follows:

From	To	<i>Ex Post</i>	
		Electricity used from the grid	
		Application of ERROR	(MWh)
01/01/2013	31/12/2013	0.20%	131.564
01/01/2014	31/12/2014	0.20%	135.353
01/01/2015	31/12/2015	0.20%	118.794
01/01/2016	31/12/2016	0.20%	113.388
01/01/2017	31/03/2017	0.20%	26.132
01/01/2013	31/12/2015		525.231

Documentation provided by project participant

ER Calculation_4th MP_Cote_180903 version 3
MR version 3

DOE assessment

Date: 06/09/2018

The ER calculation sheet has been corrected and in is clear how the net electricity supplied to the grid has been calculated. The consumed electricity by the project form the grid is clearly documented and used for the net electricity supply calculation. The file with the electricity consumption raw data "Reporte de Consumos PH COTE-2013- 2017", were revised and no discrepancies were found. Also the PP has applied the maximum permissible error of the power meters (0.2%) to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration, as per VVS version 1 EB93 §§368-374.
Finding closed.

Table 6. FAR from this verification

FAR ID	xx	Section No.	Date: DD/MM/YYYY
Description of FAR			
n.a.			
Project participant response			Date: DD/MM/YYYY
Documentation provided by project participant			
DOE assessment			
			Date: DD/MM/YYYY

Appendix 5. Monitored Parameters

Table A-5: Periodic Verification Checklist – Monitored Parameters

Checklist Item (incl. guidance for the verification team)	Reference	Verification Team Comments (Means and results of assessment)	Draft Concl.	Final Concl.
A. EGy		Electricity supplied to the grid by the project in year y		
<p>a) Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</p>	<p>/IM01/ /PDD/ /AMS-ID/ /MR/ /CAL/ /logbook/</p>	<p><i>Description:</i></p> <p>The net delivered electricity to the grid is measured and recorded continuously by ICE main and back-up meters which are owned by ICE. In addition, CNFL has installed one main and one back-up power meter as monitoring measure to cross check the electricity delivered to the grid. All power meters from CNFL and ICE located in the project substation (on site). All meters are bi-directional, sealed and are located in locked cabinets.</p> <p>Power meters installation and calibration details are include in appendix 6.</p> <p>According to the registered PDD the CNFL power meters are used for only internal cross checks to confirm the power delivered and consumed from the grid. During the crediting period CNFL power meters have been replaced several times, see appendix 6 for more details.</p> <p>It is important to clarify that the ICE meters which register the data for the energy estimation and ER calculation are not calibrated in a regular basis, as according to ICE rules the meters shall be calibrates when discrepancies are observed. The national Costa Rican regulation doesn't specify any rule about power meters calibration. This procedure is described in the registered PDD.</p> <p><i>Verifier's action:</i></p> <ul style="list-style-type: none"> • Revision of MR and PDD • Visual inspection of the meters 	OK	OK

		<ul style="list-style-type: none"> • Interviews with operations personnel • Revision of calibrations certificates • Revision of installation logbook <p><i>Conclusion:</i></p> <p>The measurement method is in line with the registered monitoring plan.</p> <div> <input type="checkbox"/> In this context the following findings have been raised: <div> <input type="checkbox"/> N/A <input type="checkbox"/> </div> </div>		
<p>b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374)</p> <p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p> <p><i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</i></p>	/CAL/ /MM/ /MR/	<div> <input type="checkbox"/> It is confirmed that the accuracy of the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan </div> <div> <input checked="" type="checkbox"/> For details regarding the accuracy and calibration details please refer to Appendix 6 </div> <div> <input type="checkbox"/> No delayed calibration has occurred </div> <div> <input type="checkbox"/> As per the initial assessment the monitored value is deemed to be correct. </div> <div> <input type="checkbox"/> Based on calibration certificates checked it can be confirmed that the monitoring equipment has been duly calibrated for this entire monitoring period. </div> <div> <input checked="" type="checkbox"/> Based on calibration certificates checked a delay in calibration has been identified for the following period: ICE main meter: Start date of delay: End date of delay: CNFL main meters: Start date of delay: 07/10/2012 End date of delay: 25/05/2014 </div>	CAR-01 CAR-02	OK

		Start date of delay: 21/03/2016 End date of delay: 31/03/2017		
		<input checked="" type="checkbox"/> A delay in calibration has been identified, the PP applied related actions and therefore the DOE can confirm that the:		
		<input checked="" type="checkbox"/> The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration		
		<input checked="" type="checkbox"/> The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument		
		<input type="checkbox"/> The error as identified during the delayed calibration has been applied as the error is beyond the maximum permissible error of the instrument		
		<input checked="" type="checkbox"/> The error has been applied in a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed GHG emission reductions or net anthropogenic GHG removals		
		<input checked="" type="checkbox"/> The error has been applied to all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.		
		<input checked="" type="checkbox"/> In this context the following findings have been raised:		
		<input checked="" type="checkbox"/> CAR 01, CAR 02		
		<input type="checkbox"/>		
B. FC_{i,j,y}		Quantity of fuel type i combusted in process j during the year y		
a) Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)).	/IM/ /PDD/ AMS-ID/	Description: The diesel used in the emergency plant is taken from the invoices. Verifier's action: <ul style="list-style-type: none"> Check the invoice issued by the fuel supply company Check fuel consumption log book 	OK	OK

<p>Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements.</p> <p>Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</p>		<ul style="list-style-type: none"> Interview the plant operators cross check the fuel information used in the ER calculations sheet <p>Conclusion:</p> <p>The fuel consumption has been done in line with the registered PDD and applicable tool for the calculation of project emissions.</p>																		
<p>b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374)</p> <p>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</p> <p>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</p> <p>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</p>	/IM/ /MM/ /MR/	<table border="1"> <tr> <td data-bbox="1046 579 1106 691"><input type="checkbox"/></td> <td data-bbox="1106 579 1856 691">It is confirmed that the accuracy of the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan</td> </tr> <tr> <td data-bbox="1046 691 1106 775"><input type="checkbox"/></td> <td data-bbox="1106 691 1856 775">For details regarding the accuracy and calibration details please refer to Appendix 6</td> </tr> <tr> <td data-bbox="1046 775 1106 831"><input type="checkbox"/></td> <td data-bbox="1106 775 1856 831">No delayed calibration has occurred</td> </tr> <tr> <td data-bbox="1046 831 1106 916"><input checked="" type="checkbox"/></td> <td data-bbox="1106 831 1856 916">As per the initial assessment the monitored value is deemed to be correct.</td> </tr> <tr> <td data-bbox="1046 916 1106 1023"><input type="checkbox"/></td> <td data-bbox="1106 916 1856 1023">Based on calibration certificates checked it can be confirmed that the monitoring equipment has been duly calibrated for this entire monitoring period.</td> </tr> <tr> <td data-bbox="1046 1023 1106 1193"><input type="checkbox"/></td> <td data-bbox="1106 1023 1856 1193"> Based on calibration certificates checked a delay in calibration has been identified for the following period: Start date of delay: DD/MM/YYYY End date of delay: DD/MM/YYYY </td> </tr> <tr> <td data-bbox="1046 1193 1106 1390"><input type="checkbox"/></td> <td data-bbox="1106 1193 1856 1390"> A delay in calibration has been identified, the PP applied related actions and therefore the DOE can confirm that the: <table border="1" data-bbox="1106 1273 1856 1390"> <tr> <td data-bbox="1117 1273 1178 1390"><input type="checkbox"/></td> <td data-bbox="1178 1273 1856 1390">The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration</td> </tr> </table> </td> </tr> </table>	<input type="checkbox"/>	It is confirmed that the accuracy of the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan	<input type="checkbox"/>	For details regarding the accuracy and calibration details please refer to Appendix 6	<input type="checkbox"/>	No delayed calibration has occurred	<input checked="" type="checkbox"/>	As per the initial assessment the monitored value is deemed to be correct.	<input type="checkbox"/>	Based on calibration certificates checked it can be confirmed that the monitoring equipment has been duly calibrated for this entire monitoring period.	<input type="checkbox"/>	Based on calibration certificates checked a delay in calibration has been identified for the following period: Start date of delay: DD/MM/YYYY End date of delay: DD/MM/YYYY	<input type="checkbox"/>	A delay in calibration has been identified, the PP applied related actions and therefore the DOE can confirm that the: <table border="1" data-bbox="1106 1273 1856 1390"> <tr> <td data-bbox="1117 1273 1178 1390"><input type="checkbox"/></td> <td data-bbox="1178 1273 1856 1390">The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration</td> </tr> </table>	<input type="checkbox"/>	The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration	OK	OK
<input type="checkbox"/>	It is confirmed that the accuracy of the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan																			
<input type="checkbox"/>	For details regarding the accuracy and calibration details please refer to Appendix 6																			
<input type="checkbox"/>	No delayed calibration has occurred																			
<input checked="" type="checkbox"/>	As per the initial assessment the monitored value is deemed to be correct.																			
<input type="checkbox"/>	Based on calibration certificates checked it can be confirmed that the monitoring equipment has been duly calibrated for this entire monitoring period.																			
<input type="checkbox"/>	Based on calibration certificates checked a delay in calibration has been identified for the following period: Start date of delay: DD/MM/YYYY End date of delay: DD/MM/YYYY																			
<input type="checkbox"/>	A delay in calibration has been identified, the PP applied related actions and therefore the DOE can confirm that the: <table border="1" data-bbox="1106 1273 1856 1390"> <tr> <td data-bbox="1117 1273 1178 1390"><input type="checkbox"/></td> <td data-bbox="1178 1273 1856 1390">The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration</td> </tr> </table>	<input type="checkbox"/>	The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration																	
<input type="checkbox"/>	The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration																			

		<input type="checkbox"/> The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument <input type="checkbox"/> The error as identified during the delayed calibration has been applied as the error is beyond the maximum permissible error of the instrument <input type="checkbox"/> The error has been applied in a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed GHG emission reductions or net anthropogenic GHG removals <input type="checkbox"/> The error has been applied all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.		
		<input type="checkbox"/> In this context the following findings have been raised: <input type="checkbox"/> N/A		
C. NCV_{i,y}		Weighted average net calorific value of fuel type i in year y		
a) Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.	/IM/ /PDD/ /AMS-ID/ /MR/	Description: The applied value is taken from the default values from the 2006 IPCC Guidelines on National GHG inventories Chapter 1 vol. 2, which is in line with the registered PDD Verifier's action: <ul style="list-style-type: none"> Check the IPCC default NVC values, ER calculation sheet and MR and PDD Conclusion: The NVC applied values are in line with the registered PDD <input checked="" type="checkbox"/> In this context the following findings have been raised: <input type="checkbox"/> N/A <input type="checkbox"/>	OK	OK
b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374)	/CAL/ /MM/ /MR/	<input type="checkbox"/> It is confirmed that the accuracy of the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan	OK	OK

<p><i>In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs.</i></p> <p><i>Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance.</i></p> <p><i>Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</i></p>		<input type="checkbox"/>	For details regarding the accuracy and calibration details please refer to Appendix 6												
		<input type="checkbox"/>	No delayed calibration has occurred												
		<input checked="" type="checkbox"/>	As per the initial assessment the monitored value is deemed to be correct.												
		<input type="checkbox"/>	Based on calibration certificates checked it can be confirmed that the monitoring equipment has been duly calibrated for this entire monitoring period.												
		<input type="checkbox"/>	Based on calibration certificates checked a delay in calibration has been identified for the following period: Start date of delay: DD/MM/YYYY End date of delay: DD/MM/YYYY												
		<input type="checkbox"/>	A delay in calibration has been identified, the PP applied related actions and therefore the DOE can confirm that the: <table border="1" data-bbox="1108 730 1856 1262"> <tr> <td data-bbox="1108 730 1184 853"><input type="checkbox"/></td> <td data-bbox="1184 730 1856 853">The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration</td> </tr> <tr> <td data-bbox="1108 853 1184 949"><input type="checkbox"/></td> <td data-bbox="1184 853 1856 949">The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument</td> </tr> <tr> <td data-bbox="1108 949 1184 1045"><input type="checkbox"/></td> <td data-bbox="1184 949 1856 1045">The error as identified during the delayed calibration has been applied as the error is beyond the maximum permissible error of the instrument</td> </tr> <tr> <td data-bbox="1108 1045 1184 1168"><input type="checkbox"/></td> <td data-bbox="1184 1045 1856 1168">The error has been applied in a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed GHG emission reductions or net anthropogenic GHG removals</td> </tr> <tr> <td data-bbox="1108 1168 1184 1262"><input type="checkbox"/></td> <td data-bbox="1184 1168 1856 1262">The error has been applied all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.</td> </tr> </table>			<input type="checkbox"/>	The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration	<input type="checkbox"/>	The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument	<input type="checkbox"/>	The error as identified during the delayed calibration has been applied as the error is beyond the maximum permissible error of the instrument	<input type="checkbox"/>	The error has been applied in a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed GHG emission reductions or net anthropogenic GHG removals	<input type="checkbox"/>	The error has been applied all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.
		<input type="checkbox"/>	The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration												
		<input type="checkbox"/>	The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument												
		<input type="checkbox"/>	The error as identified during the delayed calibration has been applied as the error is beyond the maximum permissible error of the instrument												
		<input type="checkbox"/>	The error has been applied in a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed GHG emission reductions or net anthropogenic GHG removals												
		<input type="checkbox"/>	The error has been applied all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.												
		<input type="checkbox"/>	In this context the following findings have been raised:												
<input type="checkbox"/>	N/A														
D. EFCO _{2,i,y}		Weighted average CO ₂ emission factor of fuel type i in year y													

<p>a) Measurement / Determination method (VVS, §§ 363-367) Describe how the monitoring parameter was measured / determined. Focus primarily on the original data level (ODL) but also describe the applied data aggregation trails (from ODL to data aggregation level zero (DAL0)). Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Furthermore, verify the frequency of measurements as per the requirements. Assess whether the measurement / determination method is in line with the registered monitoring plan of the PDD and the applied methodology.</p>	/IM/ /PDD/ /AMS-ID/ /MR/	<p><i>Description:</i> The parameter is taken from the default values from Table 1.2 of Chapter 1 of Vol. 2 (Energy) of the 2006 IPCC Guidelines on National GHG Inventories.</p> <p><i>Verifier's action:</i> Check the IPCC default NVC values, ER calculation sheet and MR and PDD</p> <p><i>Conclusion:</i> The fuel emission factor applied values are in line with the registered PDD</p> <div> <input type="checkbox"/> In this context the following findings have been raised: <div> <input type="checkbox"/> N/A </div> </div>	OK	OK
<p>b) Accuracy, correctness and QA/QC Procedure (VVS, §§ 368-374) In case of measured (or estimated) values, check whether the accuracy of equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan or if significant inaccuracies occur; in this case, make sure that the most conservative assumptions theoretically possible have been made for calculating ERs. Describe whether all applicable QA/QC procedures are met. Assess further if the calibration of the monitoring equipment has been carried out in line with the latest EB guidance. Include calibration dates and information in validity of the installed monitoring equipment in the table in Appendix 6.</p>	/CAL/ /MM/ /MR/	<div> <input type="checkbox"/> It is confirmed that the accuracy of the equipment used for monitoring is controlled and calibrated in accordance with the monitoring plan </div> <div> <input type="checkbox"/> For details regarding the accuracy and calibration details please refer to Appendix 6 </div> <div> <input type="checkbox"/> No delayed calibration has occurred </div> <div> <input type="checkbox"/> As per the initial assessment the monitored value is deemed to be correct. </div> <div> <input type="checkbox"/> Based on calibration certificates checked it can be confirmed that the monitoring equipment has been duly calibrated for this entire monitoring period. </div> <div> <input type="checkbox"/> Based on calibration certificates checked a delay in calibration have been identified for the following periods: </div> <div> <input type="checkbox"/> A delay in calibration has been identified, the PP applied related actions and therefore the DOE can confirm that the: </div>	OK	OK

			<input type="checkbox"/>	The maximum permissible error of the instrument has been applied to the values during the period between scheduled date of calibration and the actual date of calibration		
			<input type="checkbox"/>	The result of the delayed calibration did not identify an error beyond the maximum permissible error of the instrument		
			<input type="checkbox"/>	The error as identified during the delayed calibration has been applied as the error is beyond the maximum permissible error of the instrument		
			<input type="checkbox"/>	The error has been applied in a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed GHG emission reductions or net anthropogenic GHG removals		
			<input type="checkbox"/>	The error has been applied all measured values taken during the period between the scheduled date of calibration and the actual date of calibration.		
		<input type="checkbox"/>	In this context the following findings have been raised:			
			<input type="checkbox"/>			

Appendix 6. Calibration dates and validity of installed monitoring equipment

Table A-6: Periodic Verification Checklist – Calibration details

Monitoring equipment	Related monitoring parameter as per applicable registered monitoring plan	Serial number	Type	Accuracy or accuracy class	Previous calibration (last calibration before start of this monitoring period)	Calibration date(s) during this monitoring period	Validity of calibration(s)	Delay in calibration: yes/no	Period of delayed calibration
ICE Main Meter	EGy	1142671	ELSTER A3KLNQ-X	0.2	Installed: 21/07/2011 Calibrated: 28/03/2011	-	*	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	From: To:
ICE backup Meter	EGy	1101126	ELSTER A3KLNQ-X	0.2	Installed 08/07/2011 Calibrated: 07/06/2011	-	*	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	From: To:
CNFL Main Mater	EGy	AQ-306A054-03	ION 8500	0.2	Installed: 16/03/2010 Calibrated 07/10/2010	Replaced: 25/04/2014	06/10/2012	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	From: 07/10/2012 To: 25/05/2014
CNFL Main Mater	EGy	1312A152-01	ION 8650	0.2	-	Calibrated 21/03/2014 Installed 25/04/2014	20/03/2016	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	From: 21/03/2016 To: 31/03/2017
CNFL Backup Meter	EGy	13102122	A3KLNQ-X	0.2	Installed 18/10/2012	Calibrated: 15/12/2015 Replaced 22/10/2015	14/12/2015	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	From: 18/10/2012 To: 22/10/2015**
CNFL Backup Meter	EGy	16438937	A3KLNQ-X	0.2	-	Installed 22/10/2015	11/11/2017	<input type="checkbox"/> No <input checked="" type="checkbox"/> Yes	From: 22/10/2015

CDM-VCR-FORM

Monitoring equipment	Related monitoring parameter as per applicable registered monitoring plan	Serial number	Type	Accuracy or accuracy class	Previous calibration (last calibration before start of this monitoring period)	Calibration date(s) during this monitoring period	Validity of calibration(s)	Delay in calibration: yes/no	Period of delayed calibration
						Calibrated: 12/11/2015			To: 02/11/2015**

Meters installed after the MP ***

Monitoring equipment	Related monitoring parameter as per applicable registered monitoring plan	Serial number	Type	Accuracy or accuracy class	Previous calibration (last calibration before start of this monitoring period)	Calibration date(s) during this monitoring period	Validity of calibration(s)	Delay in calibration: yes/no	Period of delayed calibration
CNFL Main Mater	EGy	MW-1510a106-02	ION8650	0.2	N/A	Installed 05/06/2018*** Calibrated: 08/06/2018	07/06/2020	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	From: To:
CNFL Backup Meter	EGy	19821960	ELSTER A3KLNQ-X	0.2	N/A	Installed 05/06/2018*** Calibrated: 20/06/2018	19/06/2020	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes	From: To:

*There are no calibration frequency requirements in the country; ICE calibrates meters only if the PP notifies any discrepancy with meter readings and ICE confirm a malfunction. The calibration of ICE's meters is not within the control of CNFL. According to the PP records there were 2 discrepancies along the MP (March 2014 and August 2016). The ICE did not confirm any malfunction of meters

**These calibrations don't affect the ER calculation because belong to the backup meters which are to be used only in case the main mater fails.

***This calibration took place after the MP

- - - - -

Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
02.0	31 October 2017	Revision to align with the requirements of the “CDM validation and verification standard for project activities” (version 01.0).
01.0	23 March 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: project activities, verifying and certifying		