




**Validation report form for post-registration changes for
CDM project activities
(Version 03.0)**

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	Lautaro Generation Project UNFCCC ID: 8099
Process track	<input type="checkbox"/> Prior approval <input type="checkbox"/> Issuance <input checked="" type="checkbox"/> Renewal of crediting period
Version number of the validation report	01
Completion date of the validation report	24/06/2021
Type(s) of PRCs	<input type="checkbox"/> Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents ¹ <input type="checkbox"/> Corrections <input type="checkbox"/> Changes to the start date of the crediting period <input type="checkbox"/> Inclusion of a monitoring plan <input type="checkbox"/> Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents <input checked="" type="checkbox"/> Changes to the project design <input type="checkbox"/> Changes specific to afforestation and reforestation project activities
Version number of PDD to which this report applies	11
Project participants	COMASA S.A
Host Party	Chile
Applied methodologies and standardized baselines	ACM0018: Consolidated methodology for electricity generation from biomass residues in power-only plants", Version 4.0.0 Standardized baselines: N/A
Mandatory sectoral scopes	Scope: 01 Energy industries (renewable-/non-renewable) Technical Area: 1.1 and 1.2
Conditional sectoral scopes, if applicable	N/A
Name and UNFCCC reference number of	Name: KBS Certification Services Pvt. Ltd.

¹ Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

the DOE	UNFCCC Reference Number: E-0051
Name, position and signature of the approver of the validation report	 Kaushal Goyal Managing Director KBS Certification Services Pvt. Ltd.

SECTION A. Executive summary

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The “KBS Certification Services Pvt. Ltd.” has been commissioned by COMASA SA to carry out validation of the post registration changes for the project:

“Lautaro Generation Project” (UNFCCC No. 8099)

The project activity is an implementation of a biomass power generation plant interconnected to the Chilean electricity grid SEN with a steam turbine with capacity of 25 MW located in La Araucanía IX region of Chile. The project activity will consume biomass residues as energy sources, among the biomass residues that will be consumed are: forestry residues, wood chips, bark, sawdust and other wood residues, cereal straw and husk. The proposed project will achieve greenhouse gas (GHG) emission reductions through the renewable electricity generation.

The validation scope is defined as an independent and objective review of the updated project design document (PDD). The PDD is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology (ACM0018 (Ver. 4) /7/. The validation was performed in accordance with CDM Project Standard version 02.0 /10/ and the Validation and Verification Standard version 02.0 /11/.

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

The overall validation, was conducted using KBS internal procedures. The validation consisted of following three phases:

- i) A desk review of the project design and the baseline and monitoring plan;
- ii) Follow-up interviews with project stakeholders;
- iii) The resolution of outstanding issues and the issuance of the final validation report and opinion.

In summary, it is KBS's opinion that the project activity “Lautaro Generation Project”, as described in the updated PDD meets the relevant UNFCCC requirements for the post registration changes.

Scope of validation

KBS is contracted by PP to perform the validation of post-registration changes made to the registered project activity. The scope of validation includes assessment of the post-registration changes (changes to the programme design) in the registered Project. This validation is an independent and objective review of the post registration changes proposed in registered PDD against latest CDM Validation and Verification Standard (VVS), Project Standard (PS), Project Cycle Procedure (PCP) and other related requirements, as appropriate.

Validation process

The validation process is undertaken by the validation team, involving a desk review of proposed changes as submitted by PP, interview or interactions with the representative of PP, reporting and closure of findings, as appropriate and preparing a draft validation report complying with the CDM requirements. The cross checks between information provided in the PDD and information from sources other than those used, if available, the validation team's sectoral or local expertise and, if necessary, independent background investigations.

In particular, the post-registration changes in the PDD are validated in order to confirm that the revised PDD is sound and reasonable and meets the stated requirements and identified criteria. The validation is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reduction (CER).

UNFCCC criteria refer to the Kyoto Protocol criteria and the CDM rules and modalities and related decisions by the COP/MOP and the CDM Executive Board

A complete desk review of the submitted revised PDD, as well as all applicable country legal requirement and supportive evidences have been checked by the validation team.

The validation report prepared by the validation team is reviewed by an independent Technical Review team. The Technical Reviewer will either accept or reject the recommendation made by the assessment team. The findings can be raised at this stage and the PP Implementer must resolve them within agreed timeline.

The opinion recommended by Technical Reviewer will be confirmed by Manager Technical & Certification and finally authorized by the Managing Director on behalf of KBS as final validation opinion. The Technical Reviewer and Manager T&C may be the same person.

Conclusion

The post-registration changes done in the registered PDD meets all relevant UNFCCC requirements for the CDM PDD and correctly applies the selected baseline and monitoring methodology. This report is the assessment opinion of the changes proposed in the registered PDD. The proposed PRC involves design changes to the registered PDD which is also updated for the RCP.

The DOE confirm that all the documents referred in the Project Standard as part of post-registration changes have been submitted by the PP to the DOE. KBS confirms that the post-registration changes in the revised PDD is in compliance with the applicable requirements of the CDM VVS for Project Activities (version 02.0) and CDM Project Standard for Project Activities (version 02.0). The changes have been accepted by the assessment team. Hence in line with the requirements of the CDM VVS for project activities (version 02.0), the validation opinion is being submitted for the post-registration changes.

SECTION B. Validation team, technical reviewer and approver

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B.1. Validation 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 review	On-site inspection	Interview(s)	Verification findings
1.	Team Leader	EI	Oliver	Quireza	Central	✓	-	✓	✓
2.	Team member	EI	Mitre	Raúl	Central	✓	-	✓	✓

B.2. Technical reviewer and approver of the validation report on PRCs

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	IR	Kandari	Sanjay	Central Office
2	Manager T & C	IR	Chaudhari	Tushar	Central Office
3	Approver	IR	Goyal	Kaushal	Central Office

SECTION C. Means of validation**C.1. Desk/document review**

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In addition to the updated PDD/1/ submitted to request a renewal of the crediting period of the project activity, KBS reviewed:

- The registered PDD /2/ and the corresponding validation report /20/
- Project Design Document form /9/
- Methodology ACM0018 (Ver. 4)/7/ applied by the project
- Relevant decisions, clarifications and guidance from the CMP and the CDM EB
- Relevant national and sectoral policies

During the desk review, KBS has applied standard auditing techniques to assess the quality of information provided. The following activities were performed:

- A review of the data and information presented to verify their completeness;
- Cross checks between information provided in the updated PDD and information from sources other than other used, paying particular attention to project baseline, emission reduction calculation and monitoring plan.

C.2. On-site inspection

Due to the travel restrictions from the COVID19 pandemic no on site inspection took place but a remote site visit was performed. Also the PRC remote visit took place together with the RCP remote visit.

Duration of on-site inspection: 19/01/2021				
No.	Activity performed on-site	Site location	Date	Team member
1.	Kick off meeting	Remote	19/01/2021	Oliver Quireza Raul Mitre
2.	Discussion and review of records (e.g., letter of approval, MoC form, baseline establishment, operational lifetime, starting date of project and crediting period)	Remote	19/01/2021	Oliver Quireza Raul Mitre
3.	Discussion and review of calculation (baseline/project/leakage emissions and emission reductions)	Remote	19/01/2021	Oliver Quireza Raul Mitre
4.	Review of completeness of ex ante and ex post parameters and such validation	Remote	19/01/2021	Oliver Quireza Raul Mitre
5.	Monitoring plan (feasibility, QA/QC procedures, responsibility and recording of monitoring results and sampling methods, if applied)	Remote	19/01/2021	Oliver Quireza Raul Mitre
6.	Others aspects (ODA check/public funding, project category check, Debundling/Bundling aspects etc.)	Remote	19/01/2021	Oliver Quireza Raul Mitre
7.	Feedback and interactions with local stakeholders	Remote	19/01/2021	Oliver Quireza Raul Mitre

C.3. Interviews

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			

1.	Hernandez	Encarnacion	ALLCOT AG	19/01/2021	PDD and CDM rules	Oliver Quireza Raul Mitre
2.	Aramburu	Asier	ALLCOT AG	19/01/2021	PDD and CDM rules	Oliver Quireza Raul Mitre
3.	Izquierdo	Rodrigo	COMASA	19/01/2021	Operation / Biomass	Oliver Quireza Raul Mitre
4.	Sanchez	Carlos	Consultant	19/01/2021	Carbon issues	Oliver Quireza Raul Mitre
5.	Madriga	Fernando	COMASA	19/01/2021	Generation	Oliver Quireza Raul Mitre

C.4. Sampling approach

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No sampling was used

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

Areas of validation findings	No. of CL	No. of CAR	No. of FAR
Compliance with PDD form	-	-	-
Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents	-	-	-
Corrections	-	-	-
Changes to the start date of the crediting period	-	-	-
Inclusion of a monitoring plan	-	-	-
Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents	-	-	-
Changes to the project design	-	CAR 01	-
Changes specific to afforestation and reforestation project activities	-	-	-
Others (please specify)	-	-	-
Total	-	1	-

SECTION D. Validation findings

D.1. Compliance with PDD form

Means of validation	As per the paragraph 403 of VVS-PA version 2.0 /11/, the validation team has checked if PP used a later valid version of the PDD form for the updated PDD. The validation team is to determine whether information transferred to the later valid version of the PDD form is materially the same as that in the registered PDD. The validation team has determined whether PP has updated the PDD updating applicability section as per the latest version of the applied methodology /7/, baseline section, calculation of emission reduction section, monitoring section and other relevant sections of the PDD in accordance with the requirements as per Project standard for project activities version 2.0/10/ (hereinafter referred to as Project Standard). The updated PDD provided by the project participant has been verified against the latest PDD form /9/ and the registered PDD.
Findings	No findings raised
Conclusion	The validation team confirms that the PDD form used by the project activity for its crediting period renewal is version 11 /9/, which is valid at the time of submission of the request for the renewal of the crediting period. Information transferred to the updated PDD is materially the same as that in the registered PDD.

D.2. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents

Means of validation	Not applicable
Findings	Not applicable
Conclusion	Not applicable

D.3. Corrections

Means of validation	Not applicable
Findings	Not applicable
Conclusion	Not applicable

D.4. Changes to the start date of the crediting period

Means of validation	Not applicable
Findings	Not applicable
Conclusion	Not applicable

D.5. Inclusion of a monitoring plan

Means of validation	Not applicable
Findings	Not applicable
Conclusion	Not applicable

D.6. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

Means of validation	Not applicable
Findings	Not applicable
Conclusion	Not applicable

D.7. Changes to the project design

Means of validation	<p>The change is summarized as follows: The registered PDD considered a mix of biomass types including paper fiber waste from a paper mill located 231 Km from the project site. The paper fiber waste was eliminated from the biomass types used in the project activity because, such was never used from the beginning of the operation. It is important to notice that the project was never verified during the 1st CP.</p> <p>The VT validated the PRC in line with the VVS and PS as follows: Does the project description in revised PDD accurately reflects the implementation, operation and monitoring of the modified project activity The PP provided in appendix 7 of the updated PDD the justification in line with the VVS and PS with regard to the applicability of the methodology, Compliance with the monitoring plan, level of accuracy and completeness compared with the registered monitoring plan, additionality of the project and the scale of the project activity.</p> <p>Data and Parameters Monitored As per the following biomass is considered in the registered PDD:</p>
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Freight type	Df,m
Sawdust	53,873
Bark	111,353
Chips	2,903
Shavings	24,499
pine offcuts	182,840
side cuts	4,553
Oat husk	28,200
paper fibers	1,716
cereal straw	50,264

The PP updated the following two monitoring parameters used in the ex ante calculation as follow:

- ✓ **Df,m** - Return trip road distance between the origin and destination of freight transportation activity *f* in monitoring period *m*

Freight type	Df,m
Sawdust	83
Bark	83
Chips	83
Shavings	83
pine offcuts	83
side cuts	83
Oat husk	44
cereal straw	44

- ✓ **FRf,m** - Total mass of freight transported in freight transportation activity *f* in monitoring period *m*

Freight type	Df,m
Sawdust	53,873
Bark	111,353
Chips	2,903
Shavings	24,499
pine offcuts	182,840
side cuts	4,553
Oat husk	28,200
cereal straw	50,264

As observed in the tables above the paper fiber waste was eliminated from the parameters.

Reasons for these changes taking place

At registration time the project considered the use of the paper fiber waste as an alternative biomass. The reason is that for the project operator is easier and cheaper to use forestry biomass which is very abundant in the project area. So it isn't necessary to buy paper fiber waste which is furthermore very far from the project site. At the time of project registration the PP expected to get the paper fiber for free, nevertheless the paper mill changed owner and as a consequence the new owner included cost to the paper fiber waste.

Operation/ability of the project activity to deliver emission reductions

The changed couldn't be known before the registration time because the paper fiber waste situation was known once the the PP started operating the project.

As mentioned before the amount of paper fiber waste considered at registration time is only 1% of the total biomass mass, so the change doesn't affect the project ability to deliver the ER

Additionality

	<p>The additionality is demonstrated by investment analysis and this is not affected by the change in the biomass because the change imply only a decrease of the biomass transportation cost of around 0.3 % which can be considered negligible. It is concluded that the change doesn't affect the additionality of the project.</p> <p>Has the PP modified the affected key parameters in original spreadsheet? The key parameters of the investment analysis have not been affected by the change. The identified change effect is negligible because it would represent only approximately 0.3% of the fuel expenses for the biomass transportation.</p> <p>Has it been assessed that identified barriers in registered PDD are valid under new circumstances? As per barrier analysis in the registered PDD the project faces investment barrier. The implemented change doesn't change the investment barrier, as described before the financial impact of the change is negligible.</p> <p>Is the actual/proposed change in project design adversely affecting investment analysis/barrier analysis in the registered PDD? As described above the key parameters of the investment analysis have not been affected by the change. The identified change effect is negligible because it would represent only approximately 0.3% of the fuel expenses for the biomass transportation.</p> <p>Are the changes affecting the ER calculation (directly/indirectly)? As it can be seen the paper fiber waste represents only a minimum share of the total biomass with only 3% (wet weight). Such change impacted the annual average PE slightly and also the final ER calculation.</p> <p>The updated BL, PE and ER yearly calculation in the updated PDD was updated as follows:</p> <p>Registered PDD: Table 35 Emission Reductions calculation:</p> <table border="1"> <thead> <tr> <th>Emissions</th><th>tCO₂e /year</th></tr> </thead> <tbody> <tr> <td>Baseline emissions</td><td>87,616</td></tr> <tr> <td>Project emissions</td><td>13,323</td></tr> <tr> <td>Leakage</td><td>0</td></tr> <tr> <td>Emission reductions</td><td>74,293</td></tr> </tbody> </table> <p>Updated PDD due to PRC and RCP Table 35 Emission Reductions calculation:</p> <table border="1"> <thead> <tr> <th>Emissions</th><th>tCO₂e /year</th></tr> </thead> <tbody> <tr> <td>Baseline emissions</td><td>69,277</td></tr> <tr> <td>Project emissions</td><td>14,151</td></tr> <tr> <td>Leakage</td><td>0</td></tr> <tr> <td>Emission reductions</td><td>55,126</td></tr> </tbody> </table> <p>Nevertheless is important to notice that the change in the PE and final ER is not due to the PRC but mainly to the RCP which includes the updated EF and also the updated GWP of the CH₄.</p>	Emissions	tCO ₂ e /year	Baseline emissions	87,616	Project emissions	13,323	Leakage	0	Emission reductions	74,293	Emissions	tCO ₂ e /year	Baseline emissions	69,277	Project emissions	14,151	Leakage	0	Emission reductions	55,126
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Leakage	0																				
Emission reductions	55,126																				
Findings	CAR 01 was raised during the validation process, which was closed successfully. Refer the Appendix 4 for more details																				
Conclusion	All changes due to the upgraded methodology has been considered appropriately and in line with the CDM PS. The ER calculation is done as per the applied methodology ACM0018 ver. 4. The calculation in the Excel spreadsheet and the corresponding calculation tables in the PDD have been checked, they are traceable and consistent. The proposed change has considered all the relevant aspects foreseen in the VVS and PS.																				

D.8. Changes specific to afforestation and reforestation project activities

Means of validation	Not applicable
Findings	
Conclusion	

SECTION E. Internal quality control

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Following the completion of the assessment process and a recommendation by the assessment team, the validation opinion prepared by Team Leader is independently reviewed by internal Technical Reviewer. TR reviews if all the KBS procedures have been followed and all conclusions are justified in accordance with applicable standards, procedures, guidance and CDM decisions. The TR either is qualified for the technical area within the CDM sectoral scope(s) applicable to project activity or is supported by qualified independent technical expert at this stage.

The Technical Reviewer will either accept or reject the recommendation made by the assessment team. The findings can be raised at this stage and PP must resolve them within agreed timeline.

The opinion recommended by Technical Reviewer will be confirmed by Manager Technical & Certification and finally authorized by the Managing Director on behalf of KBS as final validation opinion. The Technical Reviewer and Manager T&C may be same person.

SECTION F. Validation opinion

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KBS Certification Services Pvt. Ltd. has been contracted by "COMASA SA" to perform a validation of the post-registration changes of the project:

Project title: Lautaro Generation Project

Host Country: Chile

The validation was performed in accordance with the UNFCCC criteria for the Clean Development Mechanism, CDM VVS for project activities, V02.0 and related Standards/Guidance and host country criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting. The report is based on the assessment of the revised PDD undertaken through application of standard auditing techniques including but not limited to desk review, follow up actions (e.g., electronic (telephone or e-mail) interviews) and also the review of the applicable approved methodological and relevant tools, guidance's and CDM decisions.

The proposed PRC involves changes to the project design, in the registered PDD. The change in the registered PDD complies with the VVS, PCP and PS for Project activities, version 02. The description in the revised PDD meets all relevant UNFCCC requirements for the CDM. The validation confirms that the implementation of the post registration changes is in line with the relevant CDM rules/requirements and all other applicable tools and guidance.

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CNE	National Energy Commission
CO ₂	Carbon dioxide
CO ₂ eq	Carbon dioxide equivalent
CONAMA	Environmental National Commission – DNA of Chile - “Comisión Nacional del Medio Ambiente” – (now: Environmental Ministry)
CL	Clarification Request
COP	Conference of Parties
DOE	Designated Operational Entity
ER	Emission Reduction
FAR	Forward Action Request
GHG	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
Lautaro	Lautaro Generation Project
Magallanes	Electricity Interconnected System of Magallanes
MP	Monitoring Plan
MR	Monitoring Report
OM	Operating Margin
PA	Project Activity
PDD	Project Design Document
PP	Project Participant
QA/QC	Quality Assurance / Quality Control
RfR	Request for Registration
SEN	National Interconnected System
SIC	Central Interconnected System – “Sistema Interconectado Central”
SING	North Electricity Interconnected System “Sistema Interconectado Norte Grande”
T&C	Technical & Certification
UNFCCC	United Nations Framework Convention on Climate Change
VT	Validation / Verification Team
VVS	Validation and Verification Standard
XLS	Emission Reduction Calculation Spread Sheet

Appendix 2. Competence of team members and technical reviewers

Personnel Name:		Oliver Quireza	
Qualified to work as:			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input checked="" type="checkbox"/>	Local Expert (Mexico)	<input checked="" type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope	Technical Area		
Energy industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
	TA 1.2: Energy generation from renewable energy sources		
Approved by (Manager C & T)	Sanjay Kandari		
Approval date:	18/01/2021		

Personnel Name:		Raul Mitre	
Qualified to work as:			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input type="checkbox"/>
Technical Reviewer	<input checked="" type="checkbox"/>	Local Expert (Mexico)	<input checked="" type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope	Technical Area		
Energy industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
	TA 1.2: Energy generation from renewable energy sources		
Approved by (Manager C & T)	Sanjay Kandari		
Approval date:	18/01/2021		

Personnel Name:		Sanjay Kandari	
Qualified to work as:			
Team Leader	<input checked="" type="checkbox"/>	Technical Expert	<input checked="" type="checkbox"/>
Validator/Verifier	<input checked="" type="checkbox"/>	Financial Expert	<input checked="" type="checkbox"/>
Technical Reviewer	<input checked="" type="checkbox"/>	Local Expert (India)	<input checked="" type="checkbox"/>
Area(s) of Technical Expertise			
Sectoral Scope	Technical Area		
Energy Industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Energy demand	TA 3.1. Energy Demand		

Waste Handling and Disposal	TA 13.1 Waste Handling and Disposal TA 13.2 Manure
Approved by (Manager C & T)	Akhilesh Joshi
Approval date:	11/12/2015

Appendix 3. Documents reviewed or referenced

No	Author	Title	References to the document	Provider
1.	PP	Updated PDD project : Lautaro Generation Project, Versions: version 9, 25/01/2021 Version 10, 15/04/2021 Version 11, 24/06/2021	N/A	PP
2.	PP	Registered PDD project : Lautaro Generation Project, version 8, 22/11/2012	https://cdm.unfccc.int/Projects/DB/RWTUV1352367287.05/view	UNFCCC
3.	PP	ER calculation sheet: ver. 07/01/2021 Ver. 25/05/2021	N/A	PP
4.	IPCC	<ul style="list-style-type: none"> IPCC Good Practice Guidance & Uncertainty Management in National Greenhouse Gas Inventories, 2000 Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Reference Manual 	https://www.ipcc-nggip.iges.or.jp/public/gp/english/	IPCC
5.	UNFCCC	Kyoto Protocol (1997)	https://unfccc.int/kyoto_protocol	UNFCCC
6.	UNFCCC	Decision 3/CMP. 1 (Marrakesh – Accords & Annex to decision (17/CP.7))	https://unfccc.int/decisions?search2=marrakesh	UNFCCC
7.	UNFCCC	Consolidated methodology for electricity generation from biomass residues in power-only plants - ACM0018, Version 4	https://cdm.unfccc.int/methodologies/DB/PPD05TZOC0USIW5JBE24X7IDBTZ4MQ	UNFCCC
8.	UNFCCC	CDM project cycle procedure, version 2.0	https://cdm.unfccc.int/Reference/Standards/index.html	UNFCCC
9.	UNFCCC	Project Design Document Form (CDM-PDD-FORM) - Version 11.0 including Attachment: Instructions for filling out the project design document form for CDM project activities	https://cdm.unfccc.int/Reference/PDDs_Forms/index.html	UNFCCC
10.	UNFCCC	CDM project standard, version 2.0		UNFCCC
11.	UNFCCC	CDM Validation and Verification Standard, Version 2.0	https://cdm.unfccc.int/methodologies/SSCmethodologies/approved	UNFCCC
12.	UNFCCC	TOOL 11 - Assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" v. 03.0.1	https://cdm.unfccc.int/methodologies/DB/PPD05TZOC0USIW5JBE24X7IDBTZ4MQ	UNFCCC
13.	UNFCCC	TOOL 07 - to calculate the emission factor for an electricity system, v.7	https://cdm.unfccc.int/methodologies/DB/PPD05TZOC0USIW5JBE24X7IDBTZ4MQ	UNFCCC
14.	UNFCCC	TOOL 09 -Determining the baseline efficiency of thermal or electric energy generation systems, version 2.0	https://cdm.unfccc.int/methodologies/DB/PPD05TZOC0USIW5JBE24X7IDBTZ4MQ	UNFCCC
15.	UNFCCC	TOOL12 -Project and leakage emissions from road transportation of freight, v. 1.1.	https://cdm.unfccc.int/methodologies/DB/PPD05TZOC0USIW5JBE24X7IDBTZ4MQ	UNFCCC
16.	UNFCCC	TOOL 03 - to calculate project or leakage CO2 emissions from fossil fuel combustion v. 03	https://cdm.unfccc.int/methodologies/DB/PPD05TZOC0USIW5JBE24X7IDBTZ4MQ	UNFCCC
17.	UNFCCC	TOOL 04 - Emissions from solid waste disposal site v.8.0	https://cdm.unfccc.int/methodologies/DB/PPD05TZOC0USIW5JBE24X7IDBTZ4MQ	UNFCCC

No	Author	Title	References to the document	Provider
			5TZOC0USIW5JBE24X 7IDBTZ4MQ	
18.	UNFCCC	TOOL 05 - to calculate baseline, project and/or leakage emissions from electricity consumption v.3.0	https://cdm.unfccc.int/methodologies/DB/PPD05TZOC0USIW5JBE24X7IDBTZ4MQ	UNFCCC
19.	UNFCCC	TOOL 16 - Project and leakage emissions from biomass, v.4.0	https://cdm.unfccc.int/methodologies/DB/PPD05TZOC0USIW5JBE24X7IDBTZ4MQ	UNFCCC
20.	UNFCCC	Validation Report for CDM project "Lautaro Generation Project" version 1, dated 30/01/2013	N/A	UNFCCC
21.	SEVERAL	<ul style="list-style-type: none"> ✓ Decree 29, March 3, 2014, that "Approves bidding regulations for the provision of annual blocks of energy from non-conventional renewable energy generation means". ✓ Decree 31, March 16, 2017, that "Approves regulations for the determination and payment of compensation for unavailability of electricity supply". ✓ Law 20,698, October 22, 2013, that "Promotes the expansion of the electrical matrix, by non conventional renewable sources". ✓ Law 20,257, April 1, 2008, that "Introduces modifications to the General Law of Electrical Services regarding to the electrical energy generation by non conventional renewable energy sources". ✓ Decree No.244, January 17, 2006, that "Approves regulation to unconventional generation means and small generation means, as established in the General Law of Electrical Services". 	N/A	OTHER
22.	SEVERAL	<p><u>Forestry residues:</u></p> <ul style="list-style-type: none"> • Biomass Forestry Analysis - "<i>Potencial de Biomasa Forestal – Potencial de Generación de Energía por Residuos del Manejo Forestal en Chile</i>" (including Annex 3), GTZ y CNE, January 2008. • Statistics of generation and consume of forestry residues from INFOR web site (evidence of biomass surplus calculation); • E-mail from Evaristo Pardo INFOR (epardo@infor.gob.cl) dated 2010/08/25/ (Evidence of conversion factor from m³ st to m³) <p><u>Agricultural residues:</u></p> <ul style="list-style-type: none"> • Agriculture Statistics 2009 - "<i>Compendio Estadístico 2009</i>" - "2.2 Estadísticas Agropecuarias" by INE (page 284); • Straw Availability in the wheat stubbles of three provinces of Chile - "<i>Disponibilidad de Paja en los rastrojos de Trigo en tres provincias de Chile</i>" by Edmundo Hetz H. Janette de la Cerda A. and Marco Lopez R. (evidence of straw density factor, page 397 and common practice /burning/, pg. 400); • Availability Biomass Survey - "<i>Informe Disponibilidad de Biomasa en la region de la Araucania</i>" by COMASA, March 2008; • Calculation spread sheet of the availability of oat husk - "<i>Disponibilidad Avena</i>". • Agricultural Statistics 2020, Oficina de Estudios y Políticas Agrarias (Odepa) del Ministerio de Agricultura, Gobierno de Chile. 	https://www.odepa.gob.cl/estadisticas-del-sector/estadisticas-productivas	PP
23.	CNE	<p>Evidence used to calculate the EF:</p> <ul style="list-style-type: none"> • Energy Annual Statistics 2017, 2018, 2019 2019 by CNE 	https://www.cne.cl/nuestros-servicios/reportes/informacion-y-estadisticas/	PP
24.	SEVERAL	<ul style="list-style-type: none"> • Environmental Impact Declaration - "<i>Proyecto Generación Energía Renovable Lautaro</i>" dated 	N/A	PP

No	Author	Title	References to the document	Provider
		2009/11/06; <ul style="list-style-type: none"> Environment Impact Declaration approval Num. 34/2010, 2010/03/11; Environmental Impact Assessment Consolidated Report - <i>"Informe consolidado de la evaluación de Impacto Ambiental de la Declaración de Impacto Ambiental del Proyecto "Proyecto Generación Energía Renovable Lautaro"</i> 		
25.	CNE	<ul style="list-style-type: none"> ✓ Annual Report 2019, Generators of Chile. ✓ Electricity Market Report February 2020 - Systep ✓ FitchRatings, Chilean Electricity Sectors ✓ Annual Statistic of Energy 2019, Energy Ministry ✓ Installed capacity, CNE, Feb 2021 	N/A	PP
26.	Notaria	Official Document <i>"Escritura Pública"</i> No. 252.820 (Repertorio No. 881-2009) dated 2009/02/12 by Notaria de Santiago de don Gonzalo De la Cuadra Fabres. (Evidence of the power given to Roberto Izquierdo Menendez and Roberto Izquierdo Valdes).	N/A	PP
27.	PP	Single line Diagram <i>"Diagrama Unilinear"</i> , Comasa S.A. Planta Energía Renovable Lautaro	N/A	PP
28.	SEVERAL	Technical Specifications of the equipment: <ul style="list-style-type: none"> • <u>Boiler:</u> <ul style="list-style-type: none"> - Technical data sheet by Biochamm Calderas • <u>Generator:</u> <ul style="list-style-type: none"> - Technical data sheet by Biochamm Calderas WEG • <u>Turbine:</u> <ul style="list-style-type: none"> - Technical specification for steam turbine, MFG No. FORES-OE-11506, Rev. 0, 2010/01/18. • <u>Cooling tower:</u> <ul style="list-style-type: none"> - Technical Proposal by SINAX S.A., No. 620.4186.004, 2009/12/14. • <u>Diesel Generator (water capitation system):</u> <ul style="list-style-type: none"> - Hand Book Diesel Generator Set by CATERPILLAR, (256 ekW, 320 kVa, 50 Hz, 1500 rpm, 400 Volts), No. DM2268, 2009/08/06 (evidence of fuel consumption); • <u>Emergency Generator:</u> <ul style="list-style-type: none"> - Hand Book Diesel Generator Set by CATERPILLAR, (1600 ekW, 2000 kVa, 50 Hz, 1500 rpm, 400 Volts), No. DM8359, 2010/05/06 (evidence of fuel consumption); • <u>Bulldozer, Manitou & Wood cheaper (picador):</u> <ul style="list-style-type: none"> - Hand Book and/or e-mail from supplier (evidence of fuel consumption and operative capacity) 	N/A	PP
29.	PP	<ul style="list-style-type: none"> - Costs Lautaro 1 vs. Lautaro 2, COMASA, 2020 - Maintenance Reports 2020, 2021, Lautaro 1 Lautaro 2 		

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

Table 1. CLs from this validation

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 2. CARs from this validation

CAR ID	01	Section no.	Step 2.2	Date: 09/01/2021
Description of CAR (1st round)				
Step 2.2: Determination of BE_{BR,B2,y} The registered PDD assumes that Paper fiber wastes would be sent to Copiulemu Landfill (nearest landfill to the project site) which considers a capture and flaring system where there are no CH ₄ emissions in the baseline and according to the latest tool (version 08.0). As this may have changed from the validation time (2013) to date an analysis is requested to confirm whether this condition is still valid.				
Project participant response (1st round)				Date: 13/01/2021
Paper fiber wastes were removed from the project. Thus, references of Copiulemu Landfill are no longer needed. The PDD was updated.				
Documentation provided by project participant				
Revised PDD				
DOE assessment (1st round)				Date: 15/01/2021
According to the actual situation of the project, the paper fibers waste was never implemented so this change is assessed as PRC in a separate report. Nevertheless all ER calculation sheets have not been updated and still consider paper fiber. Correction is requested. Finding remain open				
Project participant response (Round 2)				Date: 19/01/2021
The correction was included in Appendix 7. In addition, the ER calculation sheets were updated.				
Documentation provided by project participant				
Revised PDD				
DOE assessment (Round 2)				Date: 19/01/2021
The elimination of the paper fiber waste in the ER calculation has been properly included. The updated PE and ER calculation is correct and reflect the change, are traceable and are in line with the applied methodology and tools. Finding is closed				

Table 3. FARs from this validation

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

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none">• Ensure consistency with version 02.0 of the “CDM validation and verification standard for project activities” (CDM-EB93-A05-STAN);• Make editorial improvements.
02.0	31 October 2017	Revision to align with the requirements in 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: Registration Keywords: post-registration change, project activities, validation report		